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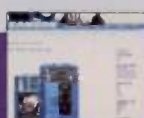
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Cover photo by James Minchin III

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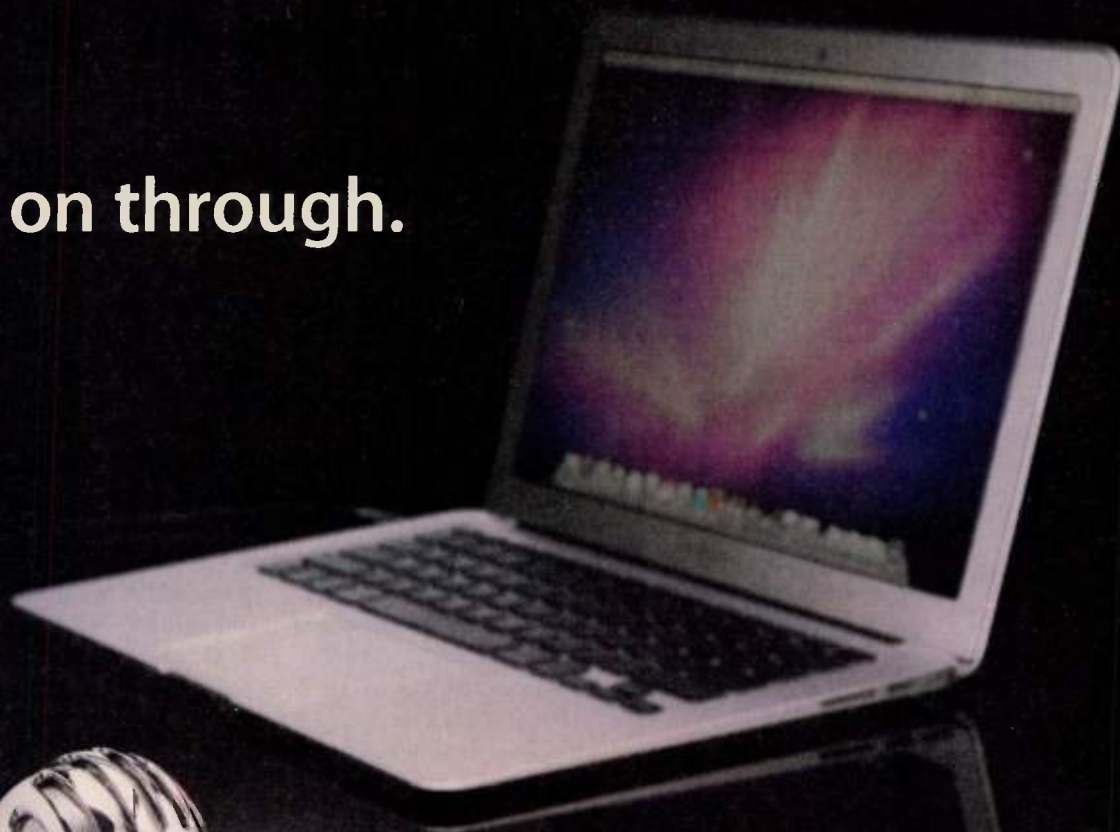
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TALKBOX



GIVE IT AWAY!

I'm not talking about music or possessions, but *knowledge*. Over the years, I've met engineers and producers who have "secret" techniques that they won't share with anyone else, and others who are more than happy to answer any question you might have. And I've noticed something interesting: The ones who are quick to share their knowledge tend to be the most successful, and the highest up on the recording "food chain."

Coincidence? I don't think so. Whether you subscribe to the concept of karma, believe that "as ye sow, so shall ye reap," or just think that Newton got it right when he said that every action has an equal and opposite reaction, being generous with your knowledge tends to give back far more than you give up.

When you help someone else, it's a natural, human reaction for them to want to do something for

you in return. Most people seem to have some kind of internal moral gyroscope that creates a desire to "even the score." On the negative side, this manifests as revenge, and the "eye for an eye" mentality. But on the positive side, it starts a feedback loop that's sort of like turning knowledge into open-source code, where everyone can contribute.

You may not always get an immediate, personal benefit from sharing your knowledge; maybe the person you helped will now be able to help someone else because of what you told them. And that's fine, too, because it's making the world a more open, helpful place—which will ultimately benefit you anyway.

Go ahead—give it away! You won't regret it.

Craig Anderton, EQ Executive Editor

LETTER OF THE MONTH

My Favorite Kick-Drum Miking Technique

I like capturing not only the impact of a kick drum, but also its tone and character. I noticed that recording engineers often go about positioning the snare and tom mics differently, rarely placing the mics inside, so I thought I'd try applying this technique on a kick drum. I place a large-diaphragm cardioid condenser in front of the kick drum, but instead of placing it directly in front and perpendicular to the kick drum, I place it close to the outer rim, with the microphone aiming across the front, much like the way someone might position a floor-tom mic. I'll aim the mic closer or farther from the side of the kick to try and balance out the woodiness of the kick and the skin tone. If the bleed from the cymbals and other drums is too much, I will sometimes take my wooden dining room chairs and wrap acoustic foam around them to form a sort of tunnel, placing them over the kick mic, and use sound treatment panels to surround the mic to minimize the bleed. This microphone technique tends to work for quieter sorts of music, such as

ballads, jazz, or simply times when the drummer is not wailing on the kit. It's not always right for the song; there are times when using a dynamic mic inside the kick



drum is indeed the best answer. But when it works, it brings a smile to the drummer's face. Drummers rarely hear the musical note of their kick drum on recordings, so if you can capture this, the note, the woodiness, and the fundamental character of the kick drum, you'll have made a friend for life. And a pretty good recording as a bonus.

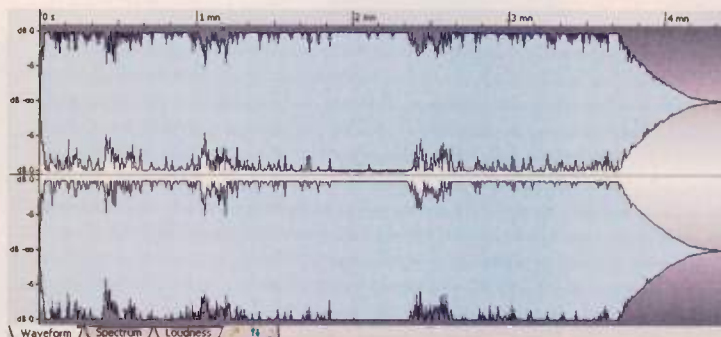
Ken Lee
Blueberry Buddha Recording Studios
Los Angeles, CA

Correction: In the February 2011 feature "Big Bottom," the screenshot referred to as Line 6's POD Farm 2 is actually the original POD Farm. However, the text is correct and refers to POD Farm 2. EQ regrets any confusion.

ASK EQ

In the November 2010 "Ask EQ" column, you mentioned that there are some "rookie errors" in a recording that mastering can't fix. Could you elaborate?

Shaun McArthur
London, Ontario, Canada
via email



A waveform that looks like this indicates a "slammed" mix, which doesn't give a mastering engineer much room to maneuver. It's also already faded out, which might create a problem when assembling an album.

Sure thing, Shaun. Here are the biggest ones. For more, see next month's in-depth mastering feature, with advice from top pros in the field. Stay tuned! —The Editors

Mixing so "hot" that clipping occurs. It's difficult at best to undo the results of clipped waveforms. It's not good enough to make sure that a red clip indicator doesn't light, because it usually doesn't take inter-sample distortion into account. Which brings us to . . .

Not leaving some headroom in the mix. Give the mastering engineer room to breathe—treat -6dB as 0. This should also ensure that clipping doesn't occur.

Strapping processors across the stereo bus and mixing with those processors in place. Processors such as maximizers, exciters, EQs, etc. may make your mix sound better—but so will a mastering engineer, who will likely have better tools to accomplish these functions, as well as the ears and experience to use them optimally. Go ahead and leave those processors on and run a mix for reference, then bypass *all* stereo bus processors and make a mix (with headroom!) for the mastering engineer. Send the reference along with the real file, and include a note that says, "Please make it sound like the reference, but better."

Not soloing and listening to each track, from

beginning to end, prior to mixing. Many times, a mastering engineer will pick up on clicks, pops, distortion, etc. that were overlooked during the mixing process. Listening to each track individually before mixing can spotlight those errors before they get "baked" into the mix.

Mixing in a room with bad acoustics. This guarantees that your mix won't be accurate. For example, if you don't have some kind of bass treatment, then there will usually be nulls at bass frequencies, causing you to mix the bass louder than it should be. Mastering can compensate for this to some extent, but not always. (See our back page for tips on optimizing your room.)

Forgetting that mastering is *not* mixing. Mastering affects *all* sounds at once. If the vocal is weak in the mix and mastering uses EQ to help bring it out, those changes will affect all other instruments in the same frequency range. Get the mix right before it goes off for mastering!

Ask EQ a technical audio-related question, and EQ will answer it. Send it to EQeditor@musicplayer.com.

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Question: How do you get the best take out of a vocalist?

Send your answers to EQeditor@musicplayer.com.





CAGE THE ELEPHANT

Channeling Creativity Through Studio Chaos

Kentucky quintet Cage the Elephant was either named after a Hindu symbol of strength and honesty or based on the exclamations of a frenzied drifter, depending on whom and when you ask. But listening to producer Jay Joyce describe the manic sessions for the band's sophomore album, *Thank You Happy Birthday*, the group's name acts just as appropriately to represent its lighting-in-a-bottle recording aesthetic.

"The biggest thing with Cage is you never know when it's going to all come together, but then you turn the chaos into something amazing," reflects Joyce, owner of West Nashville, TN, house-turned-studio Tragedy/Tragedy, where he also manned his SSL Duality console for the band's 2008 debut.

"The first album was more getting settings and going, with very subtle changes to the songs we'd written prior," recalls singer Matt Schultz. "This time, it turned into more of the spontaneous recording we'd wanted."

Reuniting in spurts with Joyce, Cage the Elephant took brackets of time between touring to capture intentionally "trashy," loud-soft-loud dynamics studied with analog details. While living in London and amassing a European fan base, the band assembled dozens of songs, but then they scrapped these ideas upon returning to Kentucky and entered the studio with three new weeks of immersive songwriting inspired by the taut and scrappy interplay of Gang of

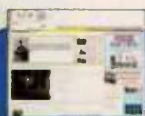
Four and the Clash with the needy spasms of Mudhoney, the Butthole Surfers, and the Pixies. It was then a matter of digging in until it was banging out.

Tracking primarily to tape, switching to Pro Tools HD for certain vocals and overdubs, Cage and Joyce manually dialed modulation till things clicked. This live-take foundation trickled down to fingers on the reel and Varispeeding tape machines as pitch tools. "Some things were done in the mix, but mostly, if we wanted fuzz bass or a distorted drum kit, we'd commit to what we were hearing," says Joyce.

Pedals were shuffled—including Electro-Harmonix Memory Man, Boomerang Looper, Z.Vex Effects Fuzz Factory, and Korg AX3000G tremolo—and these tones were cranked through many different amps, from Marshall stacks to eight-inch Magnatones. For drums, the crunch came from mixing vintage mics such as Altec 639As and Neumann U47s with converted Dictaphones, which contain their own limiters.

Even vocals were fed through pedals, with Joyce triggering live warble and feedback on certain phrases. Having varied, roomier vocal tones was a goal, so Schultz was placed in stairwells and wood-lined living rooms, several feet from the mic. Spring reverbs such as AKG BX10 and a '65 Fender added to natural ambiance (augmented by a Universal Audio EMT 140 Classic Plate Reverberator, the Cooper Time Cube Mk II Delay, SPL Transient Designer, and dbx 117 Dynamic Range Enhancer).

Jettisoning the pre-planning, Cage the Elephant indulged in its musical ADD and subsequently laid down the most honest representation of the band's ability to translate energy into new forms. **Tony Ware**

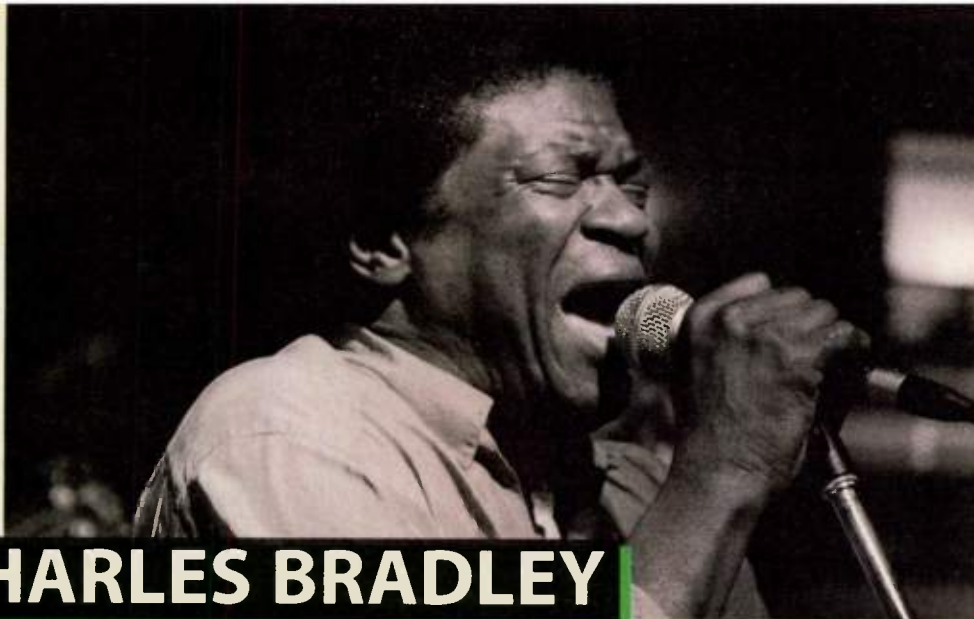


Read exclusive band interview outtakes.



Learn more about the odd origins of the band's name.

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CHARLES BRADLEY

Stripped-Down Soul

Tucked away in the three-room warehouse studio known as Dunham Sound in the South Williamsburg section of Brooklyn, 62-year-old singer Charles Bradley and youngblood producer/guitarist Tommy Brenneck are playing back their cover version, still in progress, of Neil Young's "Heart Of Gold." This one sounds funkier, darker, and somehow *older* than the original, and one glance at the half-inch reels rotating silently on the vintage Otari MX5050 8-track tape machine—the studio's recording hub, along with an MCI JH 400B mixing desk—tells part of the story.

"I'm heavy into that late-'60s, early-'70s soul sound," Brenneck says, citing influences ranging from Curtis Mayfield to Sly Stone to Ethiopian jazz legend Mulatu Astatké, "but there isn't a lot of studio trickery going on here. We spend so much more energy on the songwriting, arranging, and getting the performance right that I really don't believe in the gear helping too much. As long as there's a tape machine, it's cool."

High-octane performances are at the heart of Bradley's long-overdue debut album, *No Time For Dreaming* (Dunham, 2011). Started in 2005 in Brenneck's former bedroom studio, the album is a reverent throwback to the days of Muscle Shoals, Stax, and Studio One, when entire bands would cram into a room with just a couple of microphones—in this case, Brenneck's own six-piece Menahan Street Band, with only a Shure SM54 and an SM57 going into a TASCAM 12-channel mixer—and lay down a barrage of rhythm tracks that were bounced, squeezed, and compressed to make room on the tape for the wailing lead and background vocals.

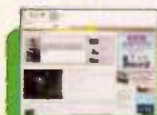
And Bradley does indeed wail, his gruff shouts on the title track conjuring a certain Godfather. "I always loved James Brown, Diana Ross, Aretha Franklin,

Sam Cooke," he notes, his sandpapery voice redolent of a tough life tempered with faith and resilience.

"When I'm not doing Charles Bradley, I normally end up doing James Brown, but thanks to Tommy, he pulled me away from that. He ain't *stopping* me, but he wants me to be *me*, and I respect that."

Smoldering embers like "The World (Is Going Up In Flames)," the rump-shaking "Golden Rule," and the after-hours serenade "Lovin' You Baby" make *No Time* a pithy slab of introspective soul that promises to be this year's sleeper hit from the Daptone camp. (Brenneck is a longtime member of the Dap-Kings and the Budos Band, and mixed the album with Daptone co-founder Gabriel Roth.) More importantly, it's evidence of how solid musicianship and the spontaneity of first and second takes can transcend the limitations of studio gear.

"Some of these tracks have the crunchiest organ and Rhodes sounds," Brenneck explains, "because they were getting bounced with the guitar [a '66 Harmony H74 through a '68 Ampeg Gemini amp], and of course every time you bounce, you get another generation of tape compression. You don't really need outboard gear when you do that, and you can end up with some really tough-sounding shit. Then you've got Bradley and the horn players just pinning the needles with tape distortion; there's no way I'm gonna record it again if what they just did is magic. It's all about commitment and hard work beforehand, and I think the sound just comes naturally as a result of that." **Bill Murphy**



Interview outtakes
with Charles Bradley
and Tommy Brenneck



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CUT COPY

Warehouse Drum Circles Raise Rhythmic Intensity of *Zonoscope*

A desire for low-key experimentation led Cut Copy to rent a Melbourne warehouse to record their new album, *Zonoscope*. But as the Australian electro-pop group started tracking and recording, the cavernous floor itself became a sonic element. Beyond the idle ladder used as an occasional percussion instrument, space became a key factor in capturing the interlacing and often tribal rhythms coming from drum kits, bongos, drum machines, and more.

"We really wanted to employ different percussion to make it more hypnotic and rhythmic," says Cut Copy frontman Dan Whiteford. "The whole idea was to create this separate world on the record."

The group felt that comfort led to better performances; Whiteford recorded vocals with a hand-held condenser at home so he'd be more relaxed. The warehouse was divided into clusters of recording stations, including a drum room and a kit set in the corner to achieve a more open, roomy, Jesus and Mary Chain sound, exemplified on the booming beats of "This Is All We've Got." Like everything else, the rhythm tracks were recorded through an RME

Fireface 800 into an iMac I7 running Cubase, but mics and mic placement were constantly altered, sometimes capturing the space's natural reverb.

To record the main kit, they used an AKG D112 into JLM NV500 mic pre for the kick, and an E-V RE20 into a JLM NV500 for the rack and the floor, though they subbed in a Sennheiser MD 421 for more bottom end. A Rode NT4 was set overhead, and the snare was double-miked, with either a Shure SM57 or RE20 on top or a Neuman KM184 on the bottom (all run through a JLM NV500). For some of the more open sounds, an M/S pair (Rode NTK and a modded SM Pro MC03 going into a JLM 99v) was set a few meters in front of the drums, and Nady RSM-2s and Studio Projects condensers were used as room mics.

Layering gave live percussion tracks more presence amid the synth melodies, especially the Yamaha CS-80 bass lines. Drum samples as well as the kick and snare from a 909 were layered over live recordings on "Sun God," adding emphasis to the already-strong rhythm section.

"The final recording isn't that obvious," says Whiteford, "but there's something about adding the kick and snare from the drum machine that creates a real mechanical sound. We also moved it around on the grid so it was quantized without sounding quantized." Patrick Sisson



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Learn about the mysterious *Zonoscope* and other influences.

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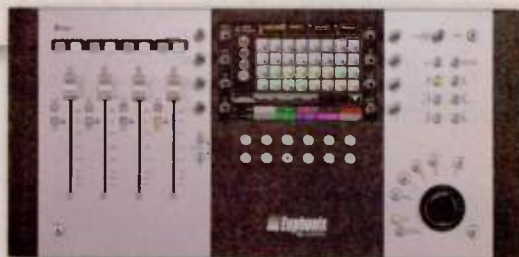
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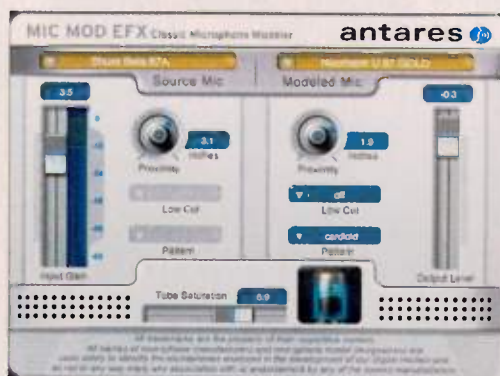
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GRIT AND GRACE

LUCINDA WILLIAMS FINDS
TRUE CONFIDENCE IN
THE STUDIO ON *BLESSED*

BY KEN MICALLEF





"Lucinda Williams is as great an artist as I've ever worked with," says Don Was. Having produced the Rolling Stones, Bob Dylan, Brian Wilson, and Willie Nelson, for starters, Was knows the score. "History will record Lucinda as one of the all-time greats. I really feel that. She's got such a presence; she leaps out of the speakers. If you listen to her performances, she doesn't waste a syllable. Her phrasing is impeccable. And it's not because she's studied it; she's a natural. She just sings, and she's for real and she's writing about real stuff."

Following years of frustrating recording experiences, along with the accolades, multiple Grammy Awards, and SRO shows, Lucinda Williams triumphs on *Blessed* (Lost Highway). Co-produced by Don Was, Williams' husband/manager Tom Overby, and longtime engineer Eric Liljestrang, *Blessed* is the culmination of Williams' 32-year career. An incredibly transparent recording (tracked at Capitol Records' famed Studios A and B in Los Angeles), *Blessed* documents 12 of Williams' best-ever songs, cut with her established band (Butch Norton, drums; David Sutton, bass; Val McCallum, guitars; Rami Jaffee, keyboards) with guest spots from Elvis Costello, Greg Leisz (guitars) and Matthew Sweet (vocals). While this may sound like PR ballyhoo, Williams is the first one to say she's risen to a new plateau on *Blessed*; further confirming the mastery exhibited on her recent albums *West* and *Little Honey* and her 1998 breakthrough, *Car Wheels on a Gravel Road*.

"Honestly, the older I've gotten, the more prolific I've become," Williams says, sitting at the well-worn

kitchen table where she writes songs from her Studio City, California home. "I'm wiser and more comfortable with my craft. I'm more confident about what I do and less afraid to take chances. And I've stretched out to absorb other kinds of stories and material to write about. I can't write about unrequited love forever. It's forced me to look elsewhere for material and it's coming more easily than I thought it would."

But even with this new-found confidence and artistic mastery, evident on such *Blessed* tracks as the gritty "Buttercup," lonesome moaner "Sweet Love," rock-and-roller "Seeing Black," and the celebratory title track, Williams' past still dogs her.

"You can be comfortable and still be in pain," Williams says. "I have a lot of pain, still. That's not going to go away. There's different kinds of pain. Just because you meet somebody and marry and love them doesn't mean you're not going to feel pain. I'm like a sponge walking through life. I soak everything up. I've got memories hanging around that I think about a lot. Maybe that's why I am writing more these days. But I am more confident as a writer. I'm not as insecure about it."

Capturing Spontaneity

Williams' kitchen table figured prominently into *Blessed*'s creativity. It's where she would place her beloved Zoom H2 Handy Recorder while writing new songs, producing the best-sounding demos of her career.

"I love this thing," she says. "It's brought everything to a whole new level. I'd record a song on the

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Zoom, then take it to Tom's office and burn a CD. Then later we'd listen to it—instant gratification! It sounds great! That in itself boosted my confidence. It's like having your own studio. I was able to get feedback while I was writing that I was never able to get before. We're releasing a bonus disc, *The Kitchen Tapes*, which are the demos I made on the Zoom. I would give the band copies of the CD made from the Zoom and by the time we got to Capitol everyone knew the songs."

Williams also directed her musicians as never before. Tracking vocals live with her 1979 Martin D28 (or Gibson LGO) in Capitol Studio B's vocal booth (really a treated air lock between A and B), she'd cut three or four takes, max.

"I do everything live with the band," she says. "I'm in the booth, so it's controlled, which makes me feel more comfortable. I like to feel that spontaneity of everybody playing live. I used to overdub my vocals all the time, now I can go in and just knock it out. Before, I would end up punching in or redoing it. I just don't make those mistakes anymore. Maybe I've learned to use my voice better and be more relaxed. So the album is entirely live."

Williams fell in love with Capitol Studios, where she sang through the same mic that Frank Sinatra used to cut his American Songbook masterpieces (through the studio's Neve 8068 onboard preamps).

"I actually sang through the Neumann U48 mic that Sinatra used," Williams marvels. "It was still in its original case with his name on it: 'Frank.' The Neumann U48 takes that sharpness off; it gives my voice so much more depth. I can hear all these cool, grainy textures. I love the sound in my headphones with the Neumann, and if I sound good, I am going to sing better."

Overby and Liljestrand co-produced Williams' last two albums, and were preparing to produce what would become *Blessed*, when Overby decided to pull in Don Was, literally days before tracking began. Overby witnessed the fast friendship between Williams and Was during a MusiCares benefit, and knew the seasoned producer would provide a great sounding board. Overby also knew the value of surrounding Lucinda with a supportive cast.

"She used to not enjoy the studio very much," Overby explains. "On *Happy Woman Blues*, without Lucinda knowing it, Folkways added a band over what she had done. Then *Car Wheels* . . . got made once, then remade; it took six years to finish. Lucinda made the first version with Gurf Morlix and her band producing, but it wasn't going right. Then she got Steve Earle to co-produce, that's when the falling out with Gurf happened. That experience was crazy for her. Then Steve Earle pushed her buttons. But it was a great record. She never liked being in the studio after that."

The Meaning of Was

Given that history, Don Was was the perfect choice for producer—his dreads, flip flops, and smiles-for-miles putting everyone at ease.

"The whole idea was to clear a path for Lucinda," Was recalls from his LA home studio. "Like clearing a path with a machete ahead of the queen! We wanted to keep everything out of the way of Lu's performance so she'd have room to sing. We made sure we could hear every breath of her voice. In Lu's singing, the way she ends a line, where she breathes, that's as important as the most emphatic syllable. You have to get the full dynamic range of

what she's doing to fully appreciate it. That required leaving a lot of space."

With the danger of too many cooks in the kitchen lurking, Was stepped lightly during the *Blessed* sessions, but he ultimately added just what Williams needed and what Overby envisioned: an ear for detail both macro and micro.

"I always listen to the singer," Was says, defining his role. "You try to leave a little demilitarized zone around the singer's note. Don't play her note, man! If you play it, and you're hitting the note in a different spot, now you're messing with her phrasing. If the listener hears that, they think the singer's phrasing is off. Willie Nelson suffered for years in Nashville because everyone thought he didn't have any timing in his singing. He has genius phrasing, but everyone else played into this rigid grid while he was singing over the bar line. There is never a good reason to play the singer's note, unless that is an effect you want, like to double the melody."

Unlike most producers, Was sits in the live room with the musicians, not in the hermetically sealed control room. Does he micro-manage the musicians' parts?

"Someone like [multi-instrumentalist] Greg Liesz is not hurting for ideas," he laughs. "A lot of it has to do with feel. What is the rhythm? Is the groove giving the singer something to float on top of? Or is it restricting the song? What did Lucinda have in mind when she wrote the song? And what is the groove of that, and are we fighting it? Where does the song lay? You can tell that if she isn't singing it well or it doesn't sound good, we are doing something wrong. These songs are Lu's babies. It's more helping everyone else to find where *she's* putting it."

Beyond production assistance and good vibes, Was hippped Williams and Overby to his favorite Grado headphones, which he carries with him wherever he goes.

"I use the Grado SR325s everywhere; I am on my fourth pair," he says. "It's the one headphone that doesn't have that boxy sound; it's very open. If I had to, I could mix with these. When I am jumping between studios, they are always consistent. At home, I listen on Yamaha NS10s, some JBLs that you can tune, KRKs. And I always have the Apogee Duet. If you use that with your MacBook, everything sounds great. The headphone jack on the MacBook is the weak link."

Tracking From the Player's Perspective

In addition to his longtime association with Lucinda Williams, veteran engineer/producer/musician Eric Liljestrand has worked with Hal Willner, Ringo Starr,



Engineer Eric Liljestrand.

Diamanda Galas, and Pharrell Williams, among others. Liljestrand has very clear philosophies about sound, recording, and the space in between the instruments.

"I come at it partially from a player's perspective," he says. "I thought about it: What am I trying to achieve with a track? If I am doing an acoustic guitar overdub, why am I aiming the mic slightly below the 12th fret? Why is it a cardioid? Because that's the way I've always done it. That's when I bought a matching pair of Schoeps omnis [CMC6/MK2]. The Schoeps for guitars and horns are clean and have virtually no coloration; you're getting the sound of the whole instrument. [Realize] that the sound doesn't come from one spot, it comes from the whole guitar, from the reflection off the floor, from how the player is holding the guitar: Is he muting the back, or is the back angled and open? There is a lot to it, and you don't get that if you mike that quarter-sized spot on the upper strings."

Liljestrand used a wide array of hardware from Capitols' plentiful goodie bag (Urei 1176s, Pultec EQP-1s, UA LA-2As, GML EQ, Alan Smart Compressor), and made use of Capitol's famed concrete echo chambers, but he's not against plug-ins.

"I have the Waves Mercury Bundle and I use the API emulations and the VEQ a lot," he explains. "So I am not against plug-ins. I do like the sound of the 8068 pres, but I will use external pres. I have a pair of Amek 9098s, the only ones I've ever seen. I've used those with a Manley Vari-Mu, as opposed to a Neve pre and an LA-2A. These are four-band parametric and a preamp, so it's a little tweakier. The knobs don't have fixed frequencies and they're sweepable. The cut and boost you can knock in half, so it's +18 normally, but you can knock it down to +9 so you can do very fine adjustments. It's got an extremely ballsy top end, so you can get a big boost way up high."

When tracking vocals, Liljestrand found the U48 to be the perfect mic for Williams' wild and rangy approach. "The U48 has a big, really fat, warm midrange," he says. "It feels like the top end is airy but it really rolls off and eliminates a lot of harshness. It seems to have a little dip around 4k, then a little rise, then it slowly rolls off. It is obviously colored, but it feels very open. It emphasizes the lips, and all the 'P's are present, but not poppy. Lu is in control of all of it—the grit, the shape of her throat, and how much she throws her voice up into her nose and her forehead.

"I go U48, Neve 1072 preamp, LA-2A, into tape or Pro Tools, then on the way back out I go through the LA-2A, and generally some form of Neve EQ," he says. "I boost a little around the 1k area for Lu. That pulls the voice more out in front of the mix. I sometimes do a little cut around the 4 or 6k area, but really, that combination I described makes that cut for me. Lucinda is a very dynamic singer so she can sing very quietly, then one syllable will be very loud because she wants to nail it in a certain way. So using two stages of compression—compression in, compression out—with the same compressor really helps me control that."

Tracking Williams' guitar simultaneously with her vocals, Liljestrand switched between an AKG 451 and

a Sennheiser MD-504. He placed the mics "pretty close on her guitar, 12th to 14th fret. Sometimes I would place the mic behind the bridge, 16 inches away and angled in from the butt end of the guitar. You get a similar sound but without so much string noise. I used a Simon Systems DI on her guitar as well."

For Leisz and McCallum's guitar amps (vintage Fenders for Leisz, and either a Divided by 13 or a 65 Amp borrowed from Rick Benson and Dan Boul for McCallum), Liljestrand started with a Sennheiser 409 or a Shure SM57, one on each amp off-center on the cone. He used Neumann U67s or a Brauner Velvet as distant mics, ideally placed six feet away.

"I was never a fan of Neumann U67s, but Capitol has a boatload of beautiful 67s, so I set two on omni and got a nice, big picture of the room," he explains. "I want the drum kit to sound like one instrument. I set the Brauner and an RCA 44DX right in front of the drum set. I like to use AKG C12As as drum overheads, 'cause they sound great. I put them in the middle, over the drummer's head, with the tops of the mics almost touching each other. I aim the one on the drummer's left forward, away from the hi-hat, and the other one slightly backward, to the floor tom, to get spread and de-emphasize the hat. I use a Shure SM81 on the hi-hat, aimed at where the stick strikes, so I don't get too much air. I used the Neumann U87

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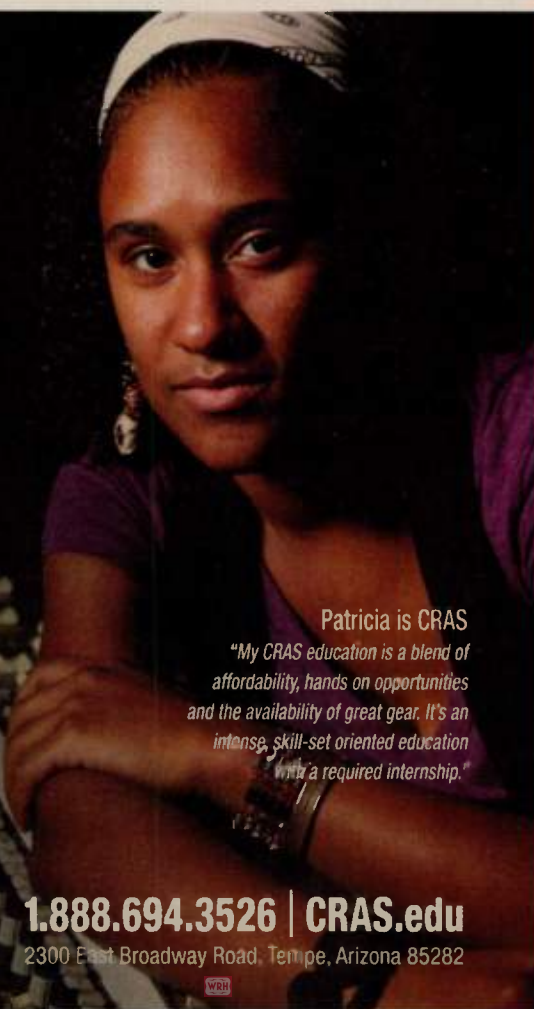
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on the toms; it lets them sing. I place them near the rim, aimed at that stick-hit area. For the snare, a Shure SM57, maybe six inches away, and a 451 as a bottom mic. It's a safety net; I really want the top sound. I lean toward a Motown approach, where there isn't much difference in EQ from the hi-hat to the bass drum—a difference in pitch, but not EQ. For the bass drum, I like an RE-20 inside and a Neumann FET 47 outside. I use Primacoustic Kickstands on the bass drum mics, and for pretty much anything loud on the floor—bass amps, guitar amps—they completely open the sound. I borrowed [legendary engineer] Al Schmitt's, so I could have two!"

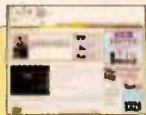
Bass duties were handled by a Manley DI or an Ampeg B15, miked with a FET 47. "Later on, we reamped the bass as well, with an Ampeg SVT and the RCA 44 in the room," says Liljestrand. "Upright bass was miked with an AKG 451, and a DI went through a Fairchild 670 compressor. For piano, I used another pair of U67s aimed at the hammers inside

the piano, or in an XY pattern outside the piano, right at the curve on the body of the instrument."

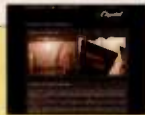
Better Than Ever

What ultimately strikes you when listening to *Blessed*, beyond its rich transparency and its focus on Williams voice, is the sound of a great American artist at work (or is that at play?). Often regarded, and often criticized, as a perfectionist, Lucinda Williams moves in that rarefied air where few exist. She's firing on all cylinders. She owns it. She knows the score.

"You gotta get great musicians and a great engineer," Williams says, offering sonic advice. "I think it's just getting people around you who have good ears and who know how to get a certain sound. And my confidence? For me, it comes from experience. I am certainly at a better place creatively than I've ever been. Now, everyone is making CDs and putting them online, but they're not playing live. That's how I got my confidence. I had to learn how to win over an audience. When I first went out, I didn't have a lot of my own songs. I was so shy. But rather than quit, something in me said, 'Okay, I need to work on my craft so that the audience will pay attention.' I decided I was going to get really good at writing songs. At the time, I didn't think of myself as a singer. Then over the years, that got better too. I'm better now than I used to be." **CS**



Read interview extras with Williams and the recording team.



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Left to right—Bright Eyes' Conor Oberst and Mike Mogis, with singer/songwriter M. Ward and My Morning Jacket's Jim James, take a break at Monsters of Folk.

Spiritual Spiritual Spiritual

Bright Eyes Mess With the Recipe on *The People's Key*

by Bud Scoppa

At the tail end of 2008, Conor Oberst started talking with the other two core members of Bright Eyes, guitarist/P-E-M Mike Mogis and keyboardist/arranger Nate Wolcott, about a direction for the band's sixth album. "All Conor said was what he didn't want to do—he didn't want to make another alt-country, neo-folk record, or whatever they're calling them these days," Mogis recalls, sitting at the 48-channel Neve 8048 in Control Room A of his righteously old-school ARC Studios (that's short for Another Recording Company), situated behind his house in Omaha. "And he didn't want to play acoustic guitar, so we gave him other things to play. We decided to make more of a rock record this time, but we also wanted to take a more experimental approach—to have some fun with it."

The album, which would eventually take the title *The People's Key*, would be the first Bright Eyes project to play out at ARC, which Mogis and his brother had painstakingly constructed after moving the facility from its original location in Lincoln. Owning the studio took the pressure off, enabling a more leisurely and

thought-out process. "The project felt very homey," says Mogis. "Conor lives in close proximity, and Nate lived in the guest house attached to the studio while we worked. It felt like we were woodshedding, but it was also the most collaborative we've ever been, so it was the best of both worlds, in that regard. It allowed us the time to step back, come up with different ideas, and reshape parts and tones to tie the songs together."

The album was made in three tracking sessions, beginning in January 2009, when they cut three key songs in "Shell Game" (surely the catchiest Bright Eyes track ever), "A Machine Spiritual (In the People's Key)," and "Beginner's Mind." Says Mogis, "We spent a fair amount of time thinking about stuff before we recorded it. Because it's our own studio, we had the luxury of rehearsing and doing pre-production while we were tracking. Typically, we'd record our practice and then record for real later that afternoon. Then, after we got the basic tracks done, Nate and I would spend a few hours refining our parts."

Continued



Left to right, Nate Wolcott, Mike Mogis, and Conor Oberst.

Mogis had begun collecting vintage analog synths for the recording of Bright Eyes' electronic lark *Digital Ash* in a *Digital Urn* back in '05, while Wolcott (not then a full member) was snapping up polyphonic synths. They eagerly combined their collections for the project. "Nate got an orchestral sound out of his polyphonic synths," says Mogis, "and that set the tone for the record. Nate and

I collaborated on working my guitar parts into his synth parts. I adopted this Police-meets-Cars rhythm style, very tight, muted stuff that lent itself to the thicker keyboard sounds and pads so that the parts didn't muddle each other up."

Surprisingly, given the intricacy of the finished album, the bulk of *The People's Key* was tracked like a conventional rock record. Mogis was on lead guitar and Wolcott was surrounded by a bank of synths and a Rhodes Suitcase, while Oberst sang guide vocals and led the band through the chord changes, usually on an electric baritone guitar. They were joined by a rhythm section—primarily bassist Matt Maginn of Cursive and drummer Clark Baechle of the Faint (both bands label-mates with Bright Eyes on Omaha's Saddle Creek Records). The five players cut the basics live off the floor in the tracking room of A, though a lot of the guitar and keyboard parts would be further developed in overdubbing, recording to two-inch tape in order to get the maximum punch out of the rhythm section.

One of the most striking aspects of the finished album is its huge, torqued-up bottom, as Mogis discovered, to his delight, just how much *oomph* he could get out of the natural acoustics of the tracking room. I use a U47 about eight feet off the kick," he says, "and the room is so balanced that it sounds almost like a pre-mixed drum kit." It didn't take him long to figure out the rest of the mic setup: a Sennheiser 421 on the kick, an AKG C535EB handheld condenser mic on the snare, and a Josephson e22 on the tom, with a Neumann SM69 overhead and a Beyer M160 rhythm mic placed in the sound-lock room with the door cracked open for a "distant" sound, which he then tucked underneath in the mix. The resulting spatial scale and impact is downright Bonham-like.

During the overdubbing, Wolcott spent countless hours in the B room—which is outfitted with a '70s-vintage, 24-channel API 2488—moving between an ARP 2600, Arp Odyssey, EML Electrocomp 101, Korg MS-20, and Roland Juno 106 and Jupiter 8, all of which Mogis DI'd and split into an amplifier. "Nate didn't drastically change his original parts," says the producer. "The main thing he dwelled on was getting tones, because a lot of these synths were

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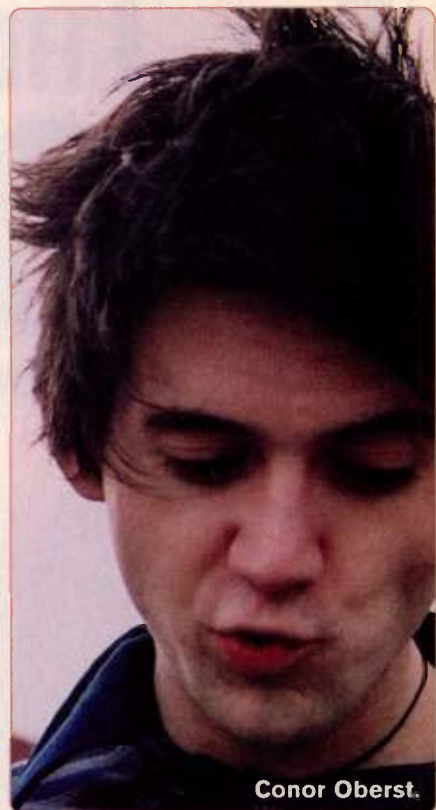


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new to him. He'd record the same part like five times with different synths."

The most radical aspect of this unconventional album is the doubled, treated sound of Oberst's vocals, most of which were printed through a Moog Voyager and run into a variety of guitar pedals, including a Roland RE 201 Space Echo,

Electro-Harmonix Holy Grail E-H Polychorus and Moog MURF, with EMT plate reverb. "That was something he wanted to do," Mogis points out, "and I was resistant at first, because if there's one thing that's sacred about Bright Eyes from a fan's perspective, it's Conor's vocals. When we started, he told me how



Conor Oberst.

effect-heavy he wanted it to be, and I was like, 'Are you serious?' But as the songs developed, we dialed in some sounds that we liked and just went for it, although I sometimes dialed it back in the mix."

When the album was completely recorded, Oberst called Denny Brewer from Austin's Refried Ice Cream, who made records for Conor's Team Love label, to come up and just talk off the top of his head while Mogis recorded him, and snippets of the resulting monologue open and close the album, as well as popping up here and there through its course, for a suitably out-there finishing touch. "He said a bunch of things that actually tied into the record," says Mogis. "We hit the jackpot with Denny."

Now that he has some distance from the project, Mogis can reflect on both the record and his facility. "The studio goes beyond my expectations, which is a relief, because we spent all our money on it," he says with a laugh. "I also feel like I learned a lot making this record. It doesn't matter how long I've been producing or playing guitar in a band; every time I do a session, I take something away from it—new knowledge or a new appreciation of something. I feel that way with any session, honestly, with any band." **EQ**



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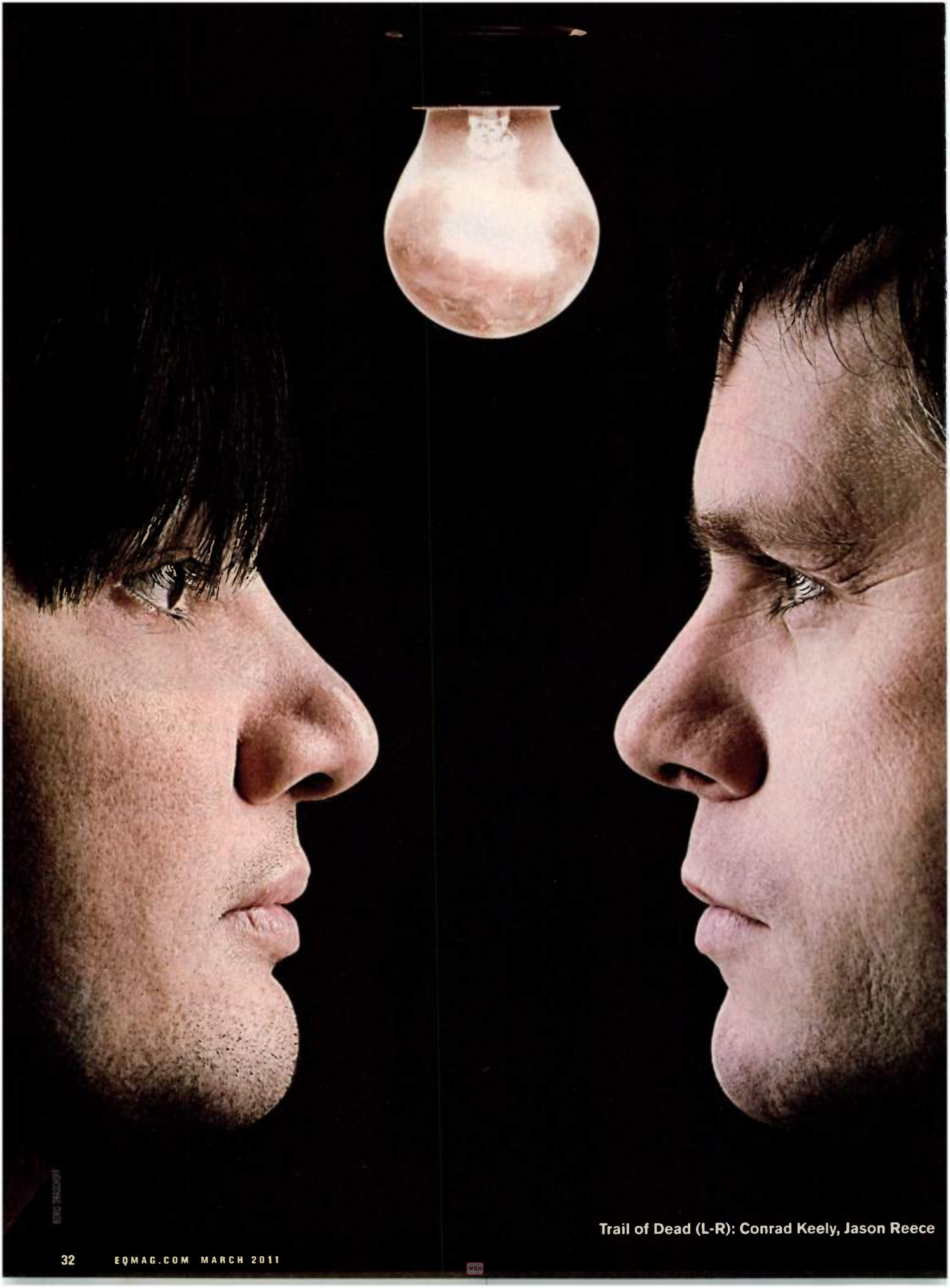
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Trail of Dead (L-R): Conrad Keely, Jason Reece

...And You Will Know Us by the Trail of Dead

Simplifying to Craft an Epic

by Jack Britton

...And You Will Know Us By the Trail of Dead got its start in Austin in the mid-'90s as a duo: Conrad Keely and Jason Reece both played guitar and drums and would switch back and forth as they unveiled their idiosyncratic original songs, which ranged from post-punk personal tunes to more abstract ramblings. Remembers Chris "Frenchie" Smith, who wound up co-producing both Trail of Dead's 1998 eponymous debut album and their newest, *Tao of the Dead*, "I was playing full-time in a local band called Sixteen Deluxe, and my main competition of cool in town was this little upstart band; these two guys. I *loved* them! Their psychoses were audible," he laughs.

By the time Smith went into Chris Cline's Stardog Studios in Austin to record Trail of Dead for Trance Syndicate (a local label founded by Butthole Surfers drummer King Coffey), they'd become a quartet and developed a *slightly* more conventional approach to their music. That album earned the group a substantial underground following, and beginning with their next outing, *Madonna*, they established a long working relationship with producer/engineer Mike McCarthy (who had also helped out on the first disc).

Continued

Over the course of several ambitious albums, Trail of Dead became purveyors of a dense, layered, eclectic brand of rock 'n' roll that had punk, hard rock and even British prog-rock antecedents. They did not shy away from complex, even theatrical, production ideas involving walls of guitars and vocals, deep reverbs, and anything that suited the song, from horns to strings. Trail of Dead was never really a "hit" band, but they accrued a fanatical following in parts of the U.S. and Europe for their sophisticated, but still rockin' sound, and lyrics that encompassed social and personal issues in fascinating ways. Some of *Tao of the Dead* is also tied loosely into a comic book created by Keely (who also designs the group's album covers).

During the making of 2009's *The Century of Self*, the group split from McCarthy, whose style of provoking the band and, in Reece's words, "pushing our buttons" had grown wearying after so many years together, and they finished the album with Chris Coaty (TV on the Radio) and their old Austin buddy Frenchie Smith, who hadn't worked with the band in about ten years. When it came time to make *Tao of the Dead*, Keely, Reece, and relatively recent additions Aaron Ford (drums, mostly) and Autry Fulbright (bass) started out by recording an epic, multi-part composition called "The Ship

Impossible" with Coaty at a rural studio near Woodstock, NY. Then they went back to Austin with a plan for the rest of the album, in which all the songs would connect with short musical interludes in the manner of Pink Floyd's *Dark Side of the Moon*, or works by the likes of Genesis, Yes, and King Crimson. They spent a week rehearsing in Frenchie Smith's Austin studio, known as The Bubble, then ten days recording most of the album at a studio outside of El Paso called Sonic Ranch. "That's one of the best studios I've worked at," Smith says. "It's a giant recording space with a mega Neve 8078 console and everything you could want in terms of outboard and other equipment." More guitar and vocal overdubs came later back at The Bubble. At both studios, Jason Buntz was the primary engineer.

"We don't usually work up demos, but this time we did," says Keely from Brooklyn, where he's lived for the past four years. "It was actually the first time we made a pretty clear roadmap, and it helped because we knew the time was limited. What we were trying to go for with this album was to be more stripped-down than our previous records. We weren't going to do as much layering. We wanted the songs to have what they needed to get the idea across, but to not go overboard."



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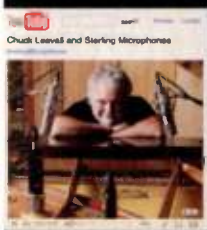
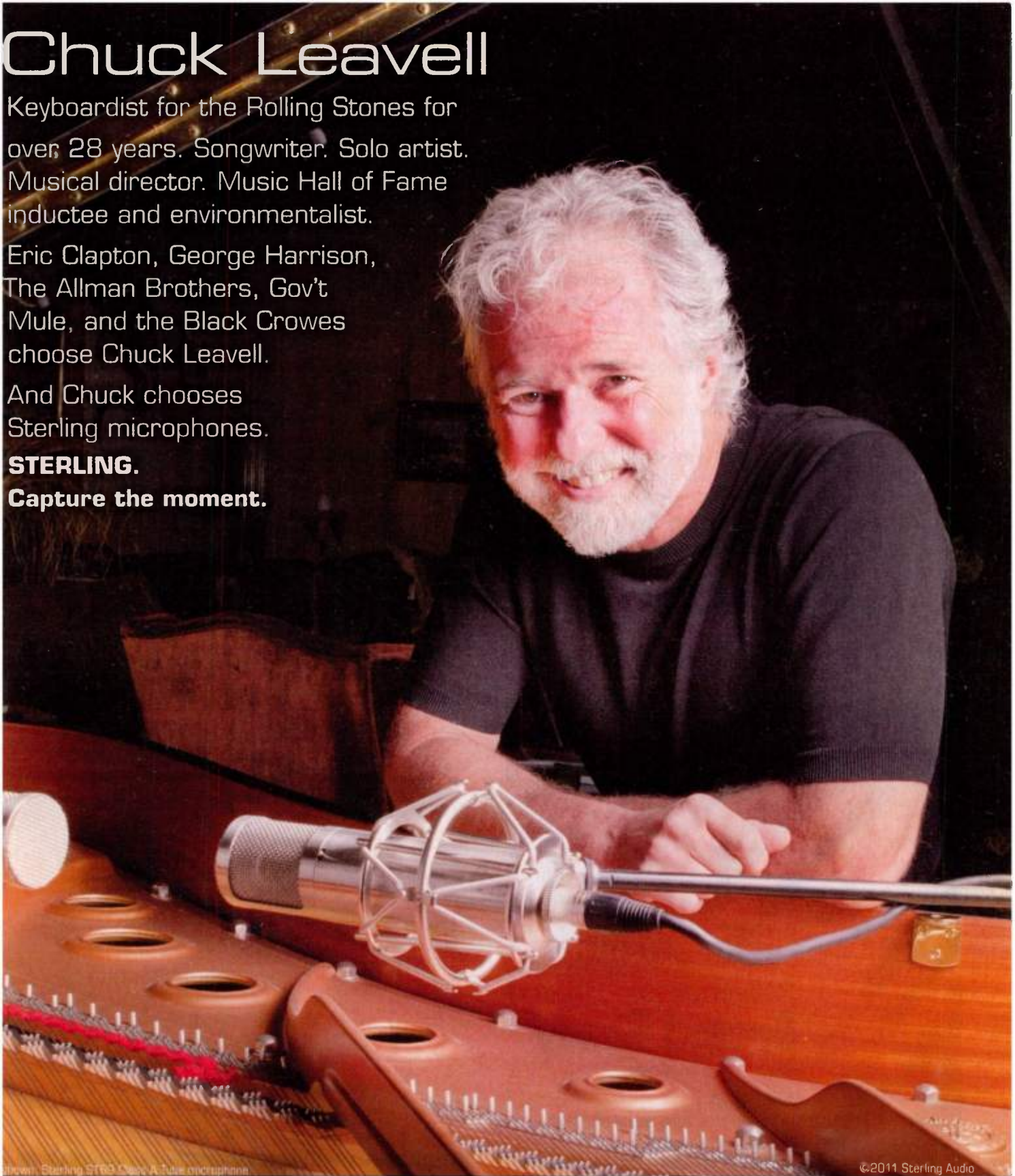
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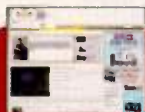
This isn't to say this is a simple album, by any means. There are still stacks of acoustic and electric guitars, vocals, and interesting sonic touches throughout, including the transitional material, much of which is dominated by old and new synths, particularly a Moog Voyager and Alesis Andromeda A6. Keely used just a few guitars, such as a Fender Jazzmaster, a Gretsch Country Classic, and what Smith calls "a kick-ass Mexican Fender Jaguar," usually through an Orange Tiny Terror amp head and a Fender Twin. Reece, who played more lead guitar on this album than previously, admits he was enthralled by multiple guitars, amps, and pedals—"Oh, I tried a lot of them," he says with a chuckle. "I was experimenting with this crazy Italian amp from the late '50s or early '60s; I don't even know what it was. But it sounded amazing until it would get too hot and shut down!" Reece also used a Marshall Bluesbreaker and a Vox AC30, in keeping with Smith's and the band's preference for British sonics.

Keely credits Smith with making the album such a pleasure to make. "We were used to taking up to nine months to make an album, but we went in and banged this one out and it was also painless," he says. "Frenchie was such a positive force. Whenever things got difficult, he was always there to be our life coach and get the mood back up."

For his part, Smith calls Trail of the Dead "the greatest band in the world" and he couldn't be more delighted to be back working with the band: "I hope I get to work with them on every album they ever make!"

Tao of the Dead was mixed in Pro Tools at The Bubble, utilizing Neve 8816 summing mixers. Smith notes, "I had a few of those upstairs with my RADAR rig and we were tracking to stereo sums of whatever the most updated rough mix of the Pro Tools sessions we had were." Adds Reece, "The Bubble turned into this crazy dual-studio situation, where someone might be working on guitar and vocal overdubs upstairs while Jason [Buntz] was mixing a song downstairs."

"It's amazing how well it all fell together," Keely concludes. "We wanted to make something that was different for us but still showed our roots in classic rock and also really sounded like a band. And this way of working let us do that." **ea**



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Prepping Your Kit for Recording

Whether you use one mic or many to track drums, make sure that the kit sounds good before you hit Record: You don't want extraneous sounds ruining an otherwise killer take. Often it's the little noises that you don't notice in rehearsal or onstage that can spoil a recording, and it's important to mitigate them before the band starts tracking. In this article, I'll point out some common problems and offer tips on how to deal with them.

Shake, Rattle, and Roll

As soon as the drums are set up, check the various parts for any noisy connections. You'd be surprised how often the source of a rattle is a single loose lug nut on a tom or the kick, usually on a bottom head. Tension rods can loosen themselves after a few gigs or while the drum is being transported. Fortunately, this is easy to fix by tightening them up with a drum key. Typically, before I begin setting up mics, I'll go around the kit and check each lug by hand so there are no surprises later. It's also a good time to make sure that the bass-drum spurs and floor-tom legs, as well as the wing nuts on the snare and cymbal stands, are tight and that nothing rattles.

Next, grab the tom mount above the bass drum and give the kit a shake. If the tom mounts rattle, find a way to mechanically secure them. If they can't be silenced on their own by tightening all of the nuts, try wrapping the noisy part in a towel or foam and taping it up with duct tape.

While you're still in the room, ask the drummer to play a simple beat, with occasional fills and cymbal crashes. Listen for any conspicuous noises that appear while the drummer is playing. Distracting squeaks, creaks, and rattles very often come from the hardware. If you hear unwanted sounds emanating from the kick pedal or hi-hat stand, treat the moving parts with a lubricant such as WD-40. The drum throne can also squeak as the drummer turns from side to side, and adding lubricant spray or powdered graphite where the stand attaches to the seat will minimize the noise.

What's the Buzz?

Sometimes the snare drum is the source of


unwanted noise. Mechanically speaking, it's the most complex instrument in the kit because of the snare apparatus. If any part of it isn't set up properly, you'll have a difficult time getting the drum to sound good.

The metal snares are connected at either end of the drum by cables or a strip, depending on the model of the drum. When the snare strainer is engaged and the snares are brought up against the bottom head, they should lie flat and be equidistant between the edges of the drum shell. If the snares are too far to one side, you can even them out by adjusting the strainer tension. If that doesn't work, you'll need to balance their position by reconnecting the cable or strip on each side of the snare assembly. Be sure to cut off any snares that have broken or come loose and are hanging down.

Your Drum Shop

Many drummers don't know how to properly set up a snare drum, so it's a good idea to have a decent one waiting in the wings—well-tuned and with relatively new heads—just in case the drummer's instrument is a lost cause. Of course, you can always use a drum-replacement plug-in later and swap out the bad sounding snare with a sample, but why not try to get the right sound up front? A quality instrument will inspire the drummer to give a better performance.

Every studio should, at the very least, have a few of the basics handy in case of an emergency: a snare drum and stand, a bass drum pedal, a couple of cymbal stands, a hi-hat stand, and extra pairs of sticks, mallets, and brushes—core items that can bring a song to a halt if they break. It's also a good idea to have a selection of well-made cymbals in common sizes—a ride, a crash or two, and hi-hats.

Remarkably, the most important things to have around are inexpensive accessories such as cymbal felts and sleeves, a drum key, an extra hi-hat clutch, and snare cord—small items that can be damaged or lost because players rarely pay attention to them. It's also useful to know how to tune a set of drums. Getting a lesson in tuning from a professional drummer will be money well-spent. 

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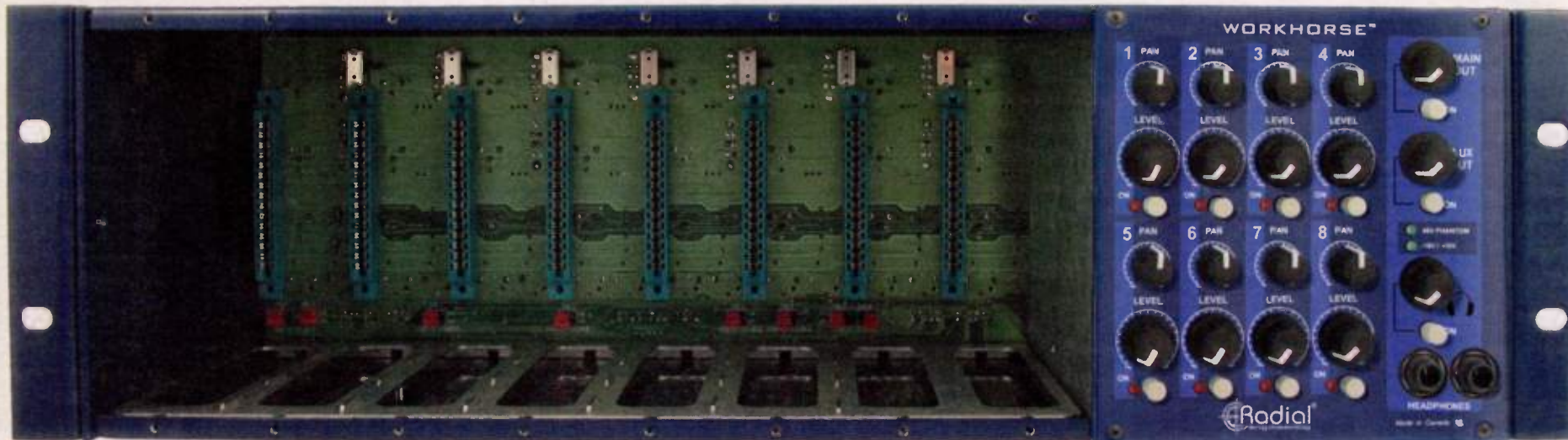
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Fig. 1. Try reversing a waveform to change up your groove. (Note green reverse-kick waveform here.)

Breathe New Life Into Your Old Drum Loops

It can sometimes be frustrating to work with the same old drum loops over and over again. They have served you well in the past, but sometimes you wish you could just find a way to milk some more life out of them. The following tricks will help you revitalize older drum loops in your mix and discover new sounds without a major overhaul of the groove.

Re-Imagine a Part's Potential

Try flipping the kick and snare. Reverse the actual waveform and see how it affects the groove. A kick drum with a soft attack will have a much different flavor and "groove sense" than one with a sharp attack. (See Figure 1.)

Vary Your "Acoustic" Space

There are times when I like to place the drums in a different acoustic space from the rest of the instruments; sometimes this can sound disconcerting, and sometimes this can be a stroke of brilliance. Try running a very large reverb on the drums—maybe a large concert hall with a short attack and no predelay. Bring it back on a separate aux track, then move the drums back and forth in space by simply changing the wet/dry relationship until you can get the perfect blend between the two.

Change the reverb to a chorus or a flange and see what the blend of the two tracks does for your mix. You can achieve a very industrial tone in this manner. Other ideas: Distort the drums, run them through a guitar amplifier, over-compress them, limit them to the point of distortion, and then beat them up with a compressor! (We're talking 5:1 at -15dB after distortion—go big!) Drums can be dirty, nasty, busy, anything they need to be, as long as you retain the groove.


Remix Loops "Live"

I get sick of loops quickly; to me, they become devoid of soul, spontaneity, and band-groove feel. My cure for that is to mix the loops "live," aka on the fly. Here's how I set it up:

First, I record the main drum loop—a loop containing a whole kit, or whatever is being used for a kit—and record all of the instruments over it. All the while, I explore the groove by combining loops to see how they sound in the mix. This is an ongoing process throughout the tracking of the song. When I have, say, six or seven loops that I think sound good, I add a separate kick and snare that work with the individual loops as well as the cluster. This assures that I will have predominant back beat without extraneous instruments or noise artifacts.

When my mix is basically set up, before any automation takes place, I bring up all of my loops up on my faders and begin to play them live in the mix via the Mute button. I am always in Write (automation) mode, so if I like something, I can remember what I have done.

I love this technique because it makes the drums feel like they're alive. You can create unexpected combinations and subtle mistakes that don't alter the groove, yet give the mix a human feel. If I'm really good, I'll create passes that are never repeated exactly the same way, which gives the mix a sense of urgency that a band has but a machine lacks.

It all comes down to breaking down barriers in your mind about how drums are "supposed" to sound. With a bit of resourcefulness and time, you will be able to milk brand-new drum-loop sounds for CDs to come. 



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Use Psychoacoustics to Craft a Huge-Sounding Mix



Fig. 1. iZotope Nectar adds pleasing harmonic distortion to vocal tracks to make them sound louder and bigger.

Psychoacoustics is all in your head—it's the branch of psychology concerning the perception of sound and its physiological effects. Using the principles of psychoacoustics, you can trick your listeners into thinking a mix sounds louder, wider, and deeper than it really is. Use these mind-bending tips to create an enormous-sounding mix.

Detonate The Chorus

Psychoacoustics dictates that abrupt sounds seem louder than those that build slowly to the same level. It is the sharpness in contrast between silence and peak level—and how quickly that transition occurs—that creates the impression that something is really loud.

If you want your mix to explode into the chorus—or “hook”—of your song, hold your fire during the verse and subchorus. Don't introduce additional instruments gradually as the song approaches the chorus. Wait until the downbeat of the hook to pile on extra tracks. Try introducing some percussive tracks when the first chorus begins. You might even consider muting all the drums until then. And if the song allows, consider having a half or full bar of silence (a musical rest) right before the downbeat of the chorus. The abrupt onslaught of additional tracks right after the peaceful calm will make your song's hook erupt with shock and awe.

Distort One or More Tracks

Play back—at the same level on your meters—two pre-recorded electric guitar tracks, one clean and the other overdriven with distortion. Which sounds louder? Unless the clean track is significantly brighter than the distorted one, your brain will always tell you the distorted one is the loudest. Distortion tricks the brain into thinking something is very loud, even when it's not.

Electric guitars aren't the only tracks that benefit from this sleight of hand. If you can't make your vocal track loud enough to command your mix without clipping, try adding a dash of distortion. The goal isn't to make the vocal sound noticeably fuzzy or dirty but to add just enough harmonics to make it sound louder. The SPL TwinTube, Soundtoys Decapitator, Softube Focusing Equalizer (part of the company's Passive-Active Pack bundle), and iZotope Nectar plug-ins are all outstanding for this purpose. (See Figure 1.) Add a little bit of plug-in processing to the vocal, and it will sound louder and bigger than the dry vocal at the same output level.

Put It Off Until Later

In last month's Techniques article “Learn How to Space Out,” I discussed how adding pre-delay to a reverb patch makes the resulting virtual acoustic space sound farther away. The longer it takes for a sound to arrive in

your ears, the farther away the brain interprets that sound's origination to be. But to complete the mental picture, you must also account for a real-world phenomenon called *high-frequency transmission loss*. This acoustic effect dictates that the farther a sound travels through air, the more its high frequencies will be attenuated.


The longer the pre-delay you program into your reverb patch, the more highs you should roll off the reverb return using either a low-pass filter (LPF) or high-shelving cut. That is, as the pre-delay's time in milliseconds increases, progressively lower the corner frequency for your LPF or shelving EQ. Doing so will add natural and convincing depth to your mix and trick your brain into thinking the sound is coming from behind your speakers! To fool your brain most effectively, make sure some other elements of your mix are mostly or completely dry. It's the *contrast* between dry and delayed sounds that tricks the brain into thinking one thing (the dry track) is very close to you and another (the pre-delayed reverb) is farther away. You can't create a sense of depth if *everything* is far away.

Make It Wide Using the Haas Effect

Just as delay can make something sound deeper, it can also be used to make a track sound wider. Hard-pan a mono keyboard comp part or rhythm guitar track to the left and bus the track to an aux channel via a send in your DAW's mixer. Insert a delay-modulation plug-in on the aux



Fig. 2. Some delay-modulation plug-ins, such as MOTU Chorus, allow sufficient parameter controls for you to create the Haas effect.

channel. Hard-pan the aux to the right, set the plug-in's output to 100% wet, and set the delay time to around 7 milliseconds. Now program a very slow and shallow modulation of the delayed signal: Set the plug-in's speed or rate control to around 0.8Hz and its depth or width control to roughly 17%. Modulating (cyclically varying) the delay time in this manner makes the track's delayed component sound alternately closer to and farther away from its dry sound in the opposite speaker, tricking the brain into constantly shifting the stereo image. The resulting Haas effect will make your mono track sound stereo and add subtly shimmering movement between left and right speakers. MOTU's Chorus plug-in (for Digital Performer) can easily create the Haas effect, and it sounds terrific. (See Figure 2.) 

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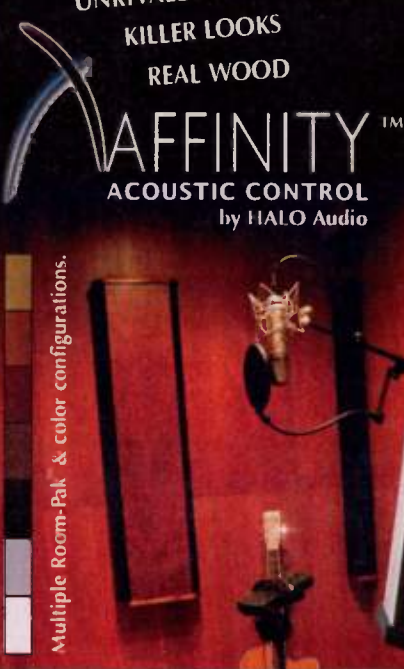
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Recording Indian Music



Anoushka Shankar
with a sitar.

Recording is a global scene these days, so it's a good idea to learn to record all types of genres of music. Indian music sessions are not very different than any other gig where the musicians sit on the floor in close proximity and leakage is at epic proportions. As a matter of fact, all those instruments are supposed to bleed together for the proper effect. Here, I'll go over ways to record the most common traditional Indian instruments, and share some killer miking tips that I learned from Wayne Newett, who engineered Ravi Shankar's *Music Circle*.

Sitar

Made from a gourd (or two), the sitar has one main melody string, three drone strings, two "chikari" strings (tuned in unison for rhythmic purposes), and up to 11 "sympathetic" strings. There are two "jiwari" bridges, usually made of ivory. Since the instrument is hollow, there's beaucoups harmonic and sympathetic energy going on with this sucker.

Most engineers would reach for a large-diaphragm condenser, but this can sound a little too crispy,

according to Newett. He recommends a Sennheiser MD441 large-diaphragm dynamic mic, saying, "It's big and ugly, but sounds *incredible*." Aim the mic perpendicular to the front of the instrument, six or seven inches from the spot where the player is picking with his "mizrab" (sitar pick that fits on the index finger). Make sure the mic doesn't get in the way of the player.

Depending on the quality of the sitar, placing another dynamic mic behind the neck, aimed into the resonant gourd, can beef up the sound and offer stereo effects. Avoid compression or limiting; even small amounts can suck the life out of the sitar's natural sound.

Tabla

A tabla comprises two drums, a large metal drum called the "baya" or "bayan," and the smaller, wooden drum called a tabla. (The correct term for both drums is "tabla," not "tablas.") Usually, the player will place his or her left hand on the baya and right hand on the tabla, and perform several

styles of finger and hand strokes to produce a multitude of tones on both drums.

Again, a large-diaphragm condenser is the way to go: Try centering a Sennheiser MD421 between the drums, about six inches away at a 45-degree angle, to make room for the player. This delivers a perfectly balanced sound, especially with an experienced player.

If you want to stereo-mike a tabla, try placing a MD421 on the baya and an AKG 414 large-diaphragm condenser on the tabla. The tabla has a "crackle" to it that the 414 really accentuates. (You can get similar results with other large-diaphragm condensers.) Aim the mics toward the center of each drum, about seven inches away at a 45-degree angle. As with sitar, compression seems to squash the tone here; tablas are quite dynamic instruments and impart extreme subtleties that can get squashed to death. They can get loud, so you'll just have to ride the faders.

Sarod

A sarod is like a banjo with a goatskin on the front. It is hollow, with a metal, fretless "fingerboard" and a resonant brass "gourd" on its back. The bridge is on the end of the instrument, and with ten sympathetic strings, seven drone strings, and one melody string, there is no lack of twang on hand.

Small-diaphragm condensers pointed as close to the middle of the goatskin "head" work best; that's where the most resonance emanates from. My reasonably-priced Audio-Technica AT2021 sounded just fine, but Mr. Newett got all pro on me, saying, "I would only use an AKG C451 or C452 on sarod."

Tamboura

Tamboura is a four-stringed instrument that is tuned to the tonic chord and strummed slowly throughout the piece, providing a "hypnotic," mood-building bed.

Mere mortals may be getting low on quality condenser mics at this point, but luckily, a modest Shure SM57 pointed five inches or so above the bridge—enough to clear the hand—captures the qualities of the tamboura very well.


Harmonium

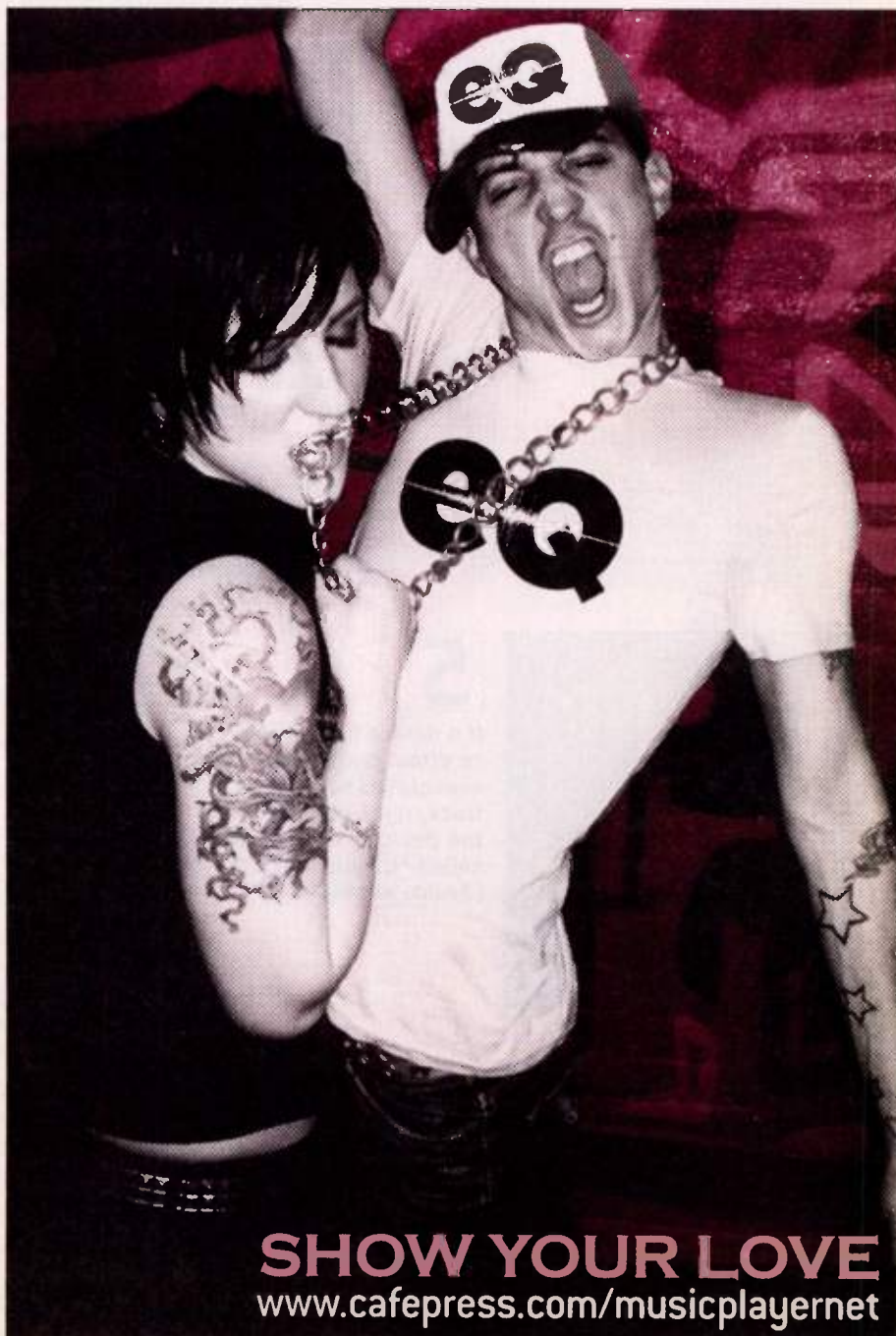
Chances are, someone may show up with a harmonium, especially if the musicians lean toward Middle-Eastern music. This little pump organ plays a drone chord while the player improvises melodies with the right hand, while pumping with the left.

Use your cheapest condenser and aim the capsule about 10 to 12 inches from the side where the sound comes out. You want to pay close attention to the harmonium player and give that fader a small nudge up when melody is

being played. Harmonium can stand a light compression ratio of 2:1, with a medium attack.

One Universal Tip

A raga is a fundamental melodic form in Indian classical music; it usually begins with a long sitar solo intro called an "alap," and then the tabla comes in, followed by the other instruments. When recording a raga, gate all instruments except sitar with a very low threshold so they don't feedback or buzz during the alap. 



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PROPELLERHEAD REASON 5 / M-AUDIO AXIOM

BY CRAIG ANDERTON

Use M-Audio's 2nd Gen Axiom keyboard controllers as a control surface for Reason

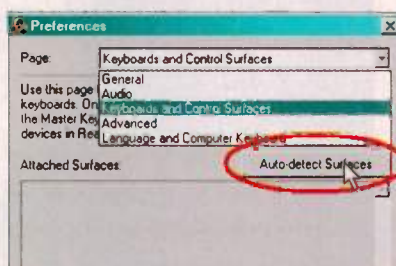
OBJECTIVE: Provide hands-on, tactile control for Reason's instruments and global functions.

BACKGROUND: 2nd Gen Axiom keyboards provide DirectLink support for Pro Tools, Cubase, Reason, Record, Garageband, Logic, and Ableton Live. DirectLink automatically maps keyboard faders, encoders, and buttons to program parameters, and shows assignments in its display. The following assumes the Axiom keyboard is connected via USB.



1

Go to www.m-audio.com/index.php?do=support&tab=driver and enter your specific keyboard and computer OS in the Drivers/Updates section. Drivers and software appear in the Results pane. Download and install the appropriate software.



2

Launch Reason, go to **Edit > Preferences**, select the "Keyboards and Control Surfaces" page, then click on "Auto-Detect keyboard."



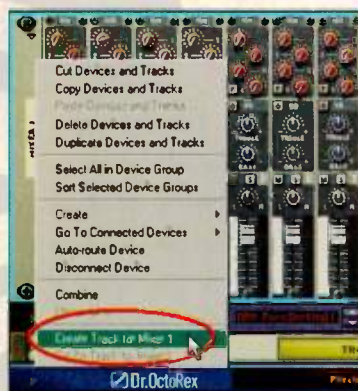
3

Your keyboard will show up as an attached surface. Make sure "Use with Reason" is checked, and "Standard" is selected for Master Keyboard Input, then close the window.

4

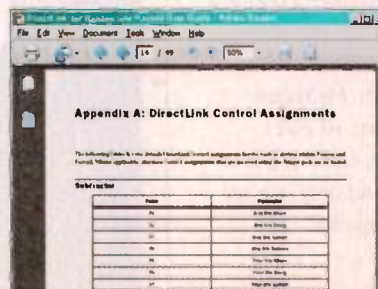


The Axiom's controls will affect the selected Reason instrument track. Use the Track \diamond buttons to step through tracks; the Axiom display shows an abbreviation of the track's associated device (in this picture, it's SubTractor).



5

If a device like a mixer or effect doesn't have an associated sequencer track, right-click within the device's GUI, then select "Create Track for [device name]."



6

Appendix A in the downloadable manual gives a complete listing of parameter control assignments.

Tips

- Mac: DirectLink drivers are not yet available for 64-bit versions of Snow Leopard; Reason DirectLink is not yet supported with OS X 10.6.5.
- Step 1: While on this page, click on the Manuals tab and using a procedure similar to locating software updates, download the DirectLink for Reason manual.
- Steps 2, 3: Once you've assigned the Axiom keyboard in Reason, you won't have to assign it again.
- Step 4: Step through the selected instrument's presets with the Axiom's Patch up/down buttons.

The John Lennon

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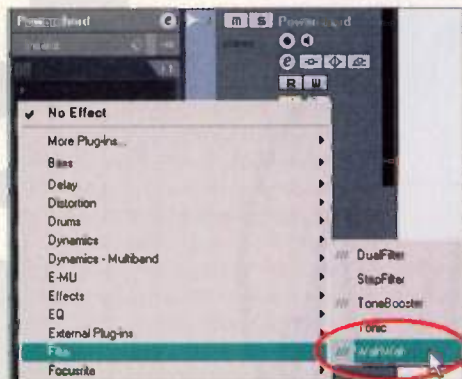
propellerhead

DIGITAL MEDIA Academy™

Use sidechaining to trigger effects in novel ways

OBJECTIVE: Use the audio characteristics of one track to trigger effects in a different track.

BACKGROUND: VST 3.0 effects with sidechaining capabilities can process one track while accepting a control/trigger signal from another track. In this example, we'll control a wah's filter frequency (that's processing guitar) from a drum part's dynamics.



1

Open the guitar track's Inspector, then click on "Inserts." In the Select Effect Type field, insert Cubase 5's VST 3.0 WahWah plug-in.



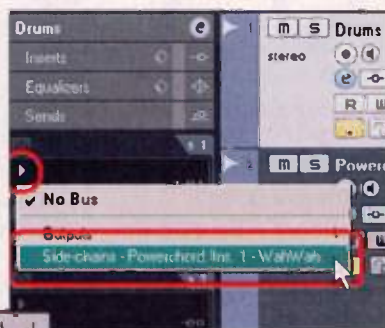
2

Click on the Wah Wah insert's "e" (edit) button. When the WahWah interface appears, click on the "Activate Side-Chain" button.



3

Open the drum track's Sends Inspector.



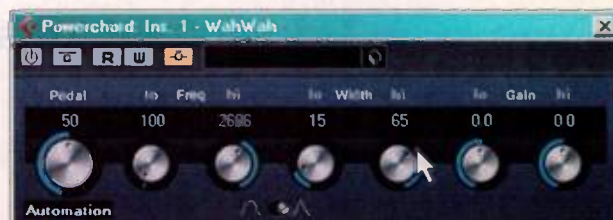
4

Click in a Select Send Destination field for the drums, then select the sidechain destination—in this case, WahWah.



5

Click on the Send's "power" button to activate it, then adjust the Send Level for the desired amount of interaction with the WahWah.



6

Adjust the WahWah parameters for the desired effect.

Tips

- Step 1: Cubase 5 effects with sidechaining capabilities include Delay, Dynamics, Modulation, and Filter.
- Step 4: If other sidechain-friendly effects are inserted, they'll also show up as available send destinations.
- Step 5: The orange button next to the power button indicates a *pre-fader* send, so the drum track's control signal will be constant regardless of its fader setting. Clicking on the orange button changes the mode to *post-fader*, where pulling down the fader also reduces the send level.

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THE CASE FOR MIDI IN THE 21ST CENTURY

**FROM AUTOMATION TO SONGWRITING, THIS
DECADES-OLD PROTOCOL STILL ROCKS**

BY CRAIG ANDERTON

"MIDI—hey, wasn't that the thing that happened, like, more than 25 years ago where a bunch of manufacturers thought that maybe computers were going to be the Next Big Thing in music? Wasn't it kind of slow and stupid, but people got behind it because it was cheap? Yeah, something like that. Well, now we have digital audio, so we'll just file MIDI under 'interesting historical footnotes,' and. . ."

Hold on there. MIDI is alive, well, and a vital part of what we do with recording—whether you know it or not. Sure, the 5-pin DIN connector isn't king of the MIDI hill any more; the data is more likely to fly over USB, and inside your computer. But it's controlling your virtual instruments, big chunks of your automation, and letting your control

surfaces talk to your computer—and that's not all MIDI can do by a long shot. Here are some tips and techniques you'll find essential for deep dives into the ever-evolving world of MIDI.

MIDI VS. DIGITAL AUDIO

MIDI isn't sound; MIDI is a computer language that consists of commands and data. For example, a command that emanates from a MIDI keyboard might be "play a note," with data that specifies the note pitch and the dynamics with which you played the note. Or the command might be, "change a mixer channel's level," with data that expresses the level of a control surface fader. Or the command might even be, "notify the guy holding this smart phone that someone's trying to call

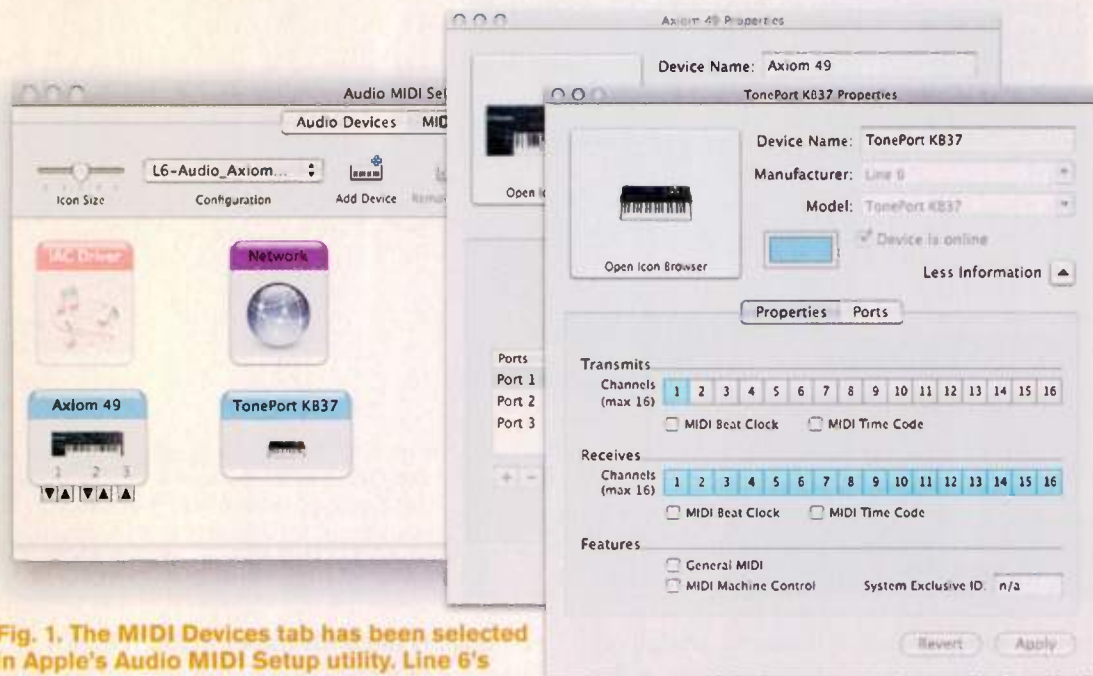


Fig. 1. The MIDI Devices tab has been selected in Apple's Audio MIDI Setup utility. Line 6's KB37 and M-Audio's Axiom 49 have been set up as MIDI devices, and their "properties" windows have been opened. Here, you can further edit the devices' functionality.

him," at which point MIDI triggers a ring tone. There are even MIDI commands for stage lighting, machine control, and my personal favorite—pyrotechnics. Why play a recording of the cannon in the 1812 Overture when you can trigger the *real thing* from a MIDI footswitch?

But seriously, being data gives MIDI unique characteristics, so let's discuss a few potential applications. However, first we need to set up our MIDI devices.

GETTING MIDI AND DAWS TO "PLAY NICE"

Here's the general setup procedure for getting MIDI devices like keyboard controllers and control surfaces to work with your DAW. The process is different for Windows and Mac systems; on a Mac, you can open the Audio MIDI Setup application (found in Applications > Utilities—see Figure 1) and add, edit, and set up inter-application communications among various devices. In Windows, you take care of your MIDI housekeeping within individual programs.

If needed, install a MIDI driver. With an audio interface that has MIDI capability, if a driver is needed, it will be installed as part of the installation process. For gear that communicates over USB, in many cases you won't need a specific driver because the MIDI device will be *class-compliant*, which means that it provides basic MIDI communications. However, you may need a specialized, sophisticated driver like those from Yamaha and

Korg, which allow their keyboards to communicate MIDI data with your computer over USB for parameter editing—or even for using the keyboard as a physical "plug-in" in the virtual world.

Tell your DAW where to find your MIDI

device. Your interface may have a hardware MIDI input, where you plug in a hardware keyboard controller's MIDI out. Your DAW will have some kind of Preferences file that lets you tell it what you're using for a MIDI interface; in this case, you'd specify that particular port (Figure 2). Alternatively, your MIDI device might send/receive data over USB. In this case, the USB MIDI connection itself will be listed as one of the available MIDI devices.

Tell your DAW the specific MIDI device

you're using. This feature won't be available in all programs, but many DAWs have a list of "supported" devices and if the device you're using is supported, you may be able to take advantage of special features like mapping keyboard faders to mixer channels and the like (Figure 3). If you're using a device that's not supported, don't worry—there will generally be an option for "generic" controllers, and you can describe the features of your particular controller to your DAW. This setup may not offer as many functions as an officially-supported device, but ultimately, all that matters is being able to get data into (and out of) your DAW.

USING MIDI WITHIN YOUR DAW

Now that everything's configured, you won't have



Fig. 2. In Presonus Studio One Pro, the Options menu has a tab for External Devices, where you can select your main MIDI ports from a drop-down list that shows all available MIDI devices.

to think about setup again unless you change controllers or need to set up another program. At this point, you can get into using MIDI within your DAW. These days, it's really quite simple.

Create a MIDI track. You need a track that can record and playback MIDI data. This may be distinct from an audio track, or there may be no obvious differentiation other than how these two types of data are handled "under the hood." Note that you may not need to create a specific MIDI track with virtual instruments—some programs create "instrument tracks" that automatically create a MIDI track for receiving notes, while providing an audio output for the instrument.

Specify the MIDI track's input. The MIDI track will have some kind of input field that lets you choose the MIDI device you told your DAW about during setup. If you have several MIDI devices, you'll see a list where you choose which one you're using to provide input data. You may also have the option to specify a certain MIDI channel. This is because MIDI can "channelize" data so the MIDI input will accept data coming in over, for example, channel 1. Another option, "omni," means that the MIDI track will accept any incoming data. In most cases this is what you'll use, because it's convenient and there are better ways to channelize data. Namely . . .

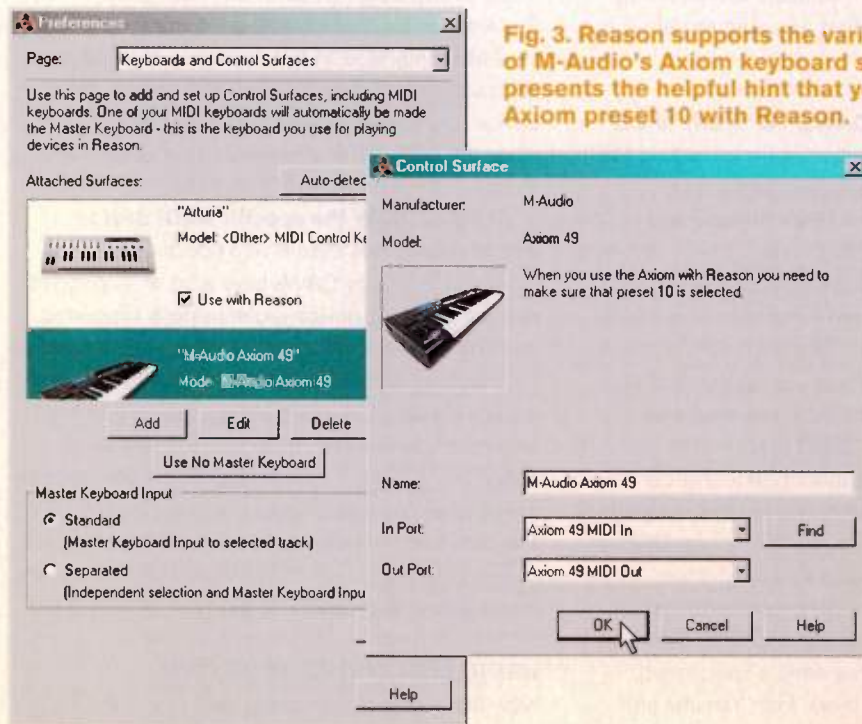


Fig. 3. Reason supports the various control aspects of M-Audio's Axiom keyboard series, and even presents the helpful hint that you should use Axiom preset 10 with Reason.



Fig. 4. Xpand for Pro Tools can play back four instrument sounds at once—it's an instant rhythm section for your songwriting endeavors.

Specify the MIDI track's output. This could be a virtual instrument, a physical MIDI output port on your audio interface that feeds a hardware synthesizer, a signal processor plug-in that accepts MIDI input for control, etc. This is also where you'll likely be able to specify an output channel. We'll see why this is important when we get into using MIDI for songwriting.

GOTCHAS!

Here are a few potential MIDI issues to watch for when you're working in your DAW:

Record filters. Some DAWs include record filters that let you record or exclude certain types of MIDI data. This feature is partly a holdover from the early days of MIDI, when computers weren't fast enough to handle large amounts of incoming data. MIDI parameters such as aftertouch (which indicates how much pressure you've applied to a key while holding it down—useful for adding vibrato and the like to sustaining notes) generated quite a bit of data, and could "clog" the MIDI stream. The ability to filter this out improved computer efficiency. While filtering MIDI data isn't as important today as it once was, there's no need to record data you don't need, especially if it clutters up your GUI and makes it harder to see the data that *does* matter.

Unintended note doubling. An issue arises when you use a hardware synthesizer as both a controller and a tone generator being driven by your DAW. Typically, the notes you play will trigger the sound generator, but your DAW will also pass your performance along to the MIDI out, which will also trigger the notes—giving an unintended "doubling"

effect. There may be a MIDI track "input echo" feature that you can turn off at the DAW (thus preventing the input data from making it to the output), but if not, your keyboard will likely have a feature called "local control on/off." This simply means that you can prevent the keyboard from feeding the internal tone generator; in this case, the only notes it receives come from your keyboard going into the DAW, and exiting via the MIDI out.

One instance at a time for hardware synths.

When using a hardware synth as a plug-in within a DAW (not all synths can do this, but many can), you can only insert one instance because the hardware is generating the sound, and there's only one piece of hardware. With virtual instruments, the computer generates sound based on instructions it receives, so it can create instrument sounds until it runs out of CPU power.

SONGWRITING: THE MIDI ADVANTAGE

Songwriting can be a very fluid process, as ideas come fast and furious—and part of that fluidity may involve changing key, tempo, or even instruments. With digital audio, all these types of changes are possible, but they're not always easy. However, MIDI, being data, doesn't care whether it spits out data at 85 or 175 bpm, or in the key of C or E.

For keyboard players, one of the best aspects of MIDI and songwriting involves *multi-timbral* instruments (Figure 4), which took off in the virtual world with instruments such as IK Multimedia's SampleTank, Native Instruments' Kontakt, and arguably the ultimate "MIDI studio," Propellerheads' Reason. With these, you can load up a collection of instruments—drums, bass,



Fig. 5. This shows three Cubase MIDI FX—StepDesigner, Context Gate, and Apache 5—and a fourth is about to be selected. Note how Cakewalk's MIDI FX show up in the menu, because a wrapper has been added to Cubase that lets it recognize MIDI FX from other manufacturers.

piano, effects, whatever—and basically lay down parts as fast as you can assign your keyboard controller to a particular sound. Each instrument responds to data over a specific MIDI channel, so all you need to do to trigger a specific instrument is to change a MIDI track's output channel assignment.

With today's DAWs, it's easy to route your keyboard controller to a particular instrument. Your DAW will often "know" which MIDI instruments are available, so when you select a track output, you may not have to think about a MIDI channel—you'll see a list of instruments. This even happens if, for example, you ReWire Reason into another DAW: When assigning an output to a Reason instrument, you can specify it by name rather than MIDI channel.

When songwriting, multi-timbral instruments let you lay down tracks easily. However, another advantage of MIDI is that it's so easy to replace instrument sounds. If you're playing a bass part, you can choose any bass sound as a placeholder, then concentrate on choosing the perfect option later.

MIDI EFFECTS

MIDI data lends itself to data processing, and some programs support MIDI plug-ins that process MIDI data in a way similar to how audio plug-ins process audio signals, while others include their own proprietary types of MIDI processors. Either way, MIDI processing allows for a variety of effects—some are

utilitarian functions, like compressing the dynamics of MIDI data or quantizing non-destructively in real time, while others can work like mini-drum machines or sophisticated step sequencers.

As with plug-in formats, unfortunately there are multiple MIDI effects formats and of course, they're incompatible—although the good news is that some "wrappers" allow programs to use the formats that they don't natively support.

The Windows-only MFX format is the granddaddy of MIDI effects. It's supported by Steinberg DAWs (Cubase and Nuendo; see Figure 5) as well as all Cakewalk DAWs (Sonar, Home Studio, Guitar Tracks, etc.—see Figure 6). With a suitable "wrapper," you can use Cakewalk's MFX (and MFX from other manufacturers) in Cubase without any problems—they show up on the MFX menu along with all of the other Steinberg MIDI FX.

Download the MFX wrapper from www.soundtrek.com/catalog/product_info.php?cPath=6&products_id=35, or just go to Steinberg's Knowledge Base and do a keyword search on MFX. Then drop the mfxwrapper.dll file into the Cubase "components" folder (C:\Program Files\Steinberg\Cubase 5\components), and you're good to go.

This doesn't work the other way around, though; you can't use Cubase/Nuendo's MIDI FX in Sonar because they're compiled into the executable program file, not separate DLLs as is the case with Sonar. Most

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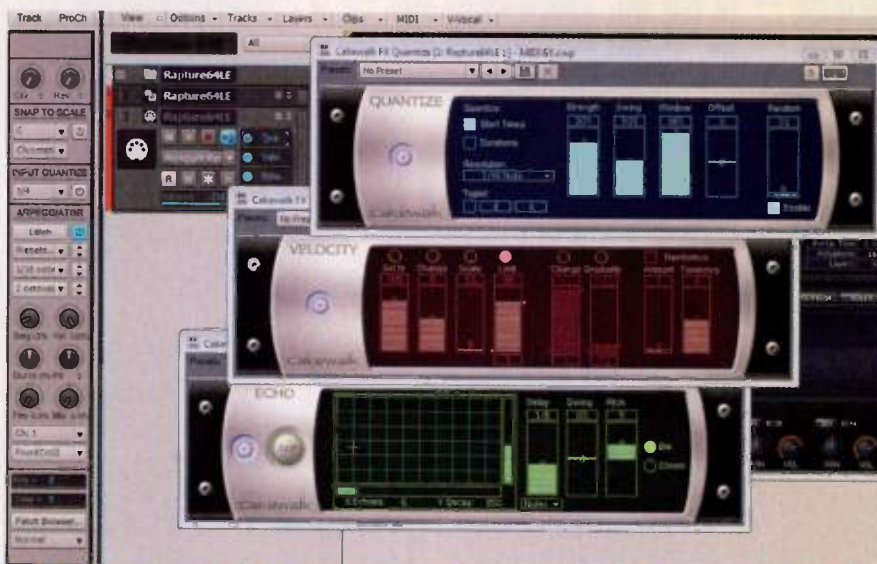


Fig. 6. Three Cakewalk MFX have been inserted as effects into a Sonar X1 MIDI track: Quantize, Velocity, and Echo. Note that an arpeggiator is included in every MIDI track, as shown in the track inspector on the left.

Cakewalk-compatible MFX files have an installer that takes care of getting them into your system, although if all you have is the DLL, you can drop it into Cakewalk's Shared MIDI Plugins folder (C:\Program Files\Cakewalk\Shared MIDI Plugins) and use Windows' regsvr32.exe routine to register them. To register, use the Windows "run" command line interface and type regsvr32 [filepath]\[name of dll]. Hit Return, and the plug-in will be registered.

Cubase is arguably the king of MIDI effects; the program includes 18 MIDI effects, and some of them are remarkably sophisticated—almost like mini-sequencers in themselves. Cakewalk's array of MFX processors is impressive as well, but Sonar also includes an arpeggiator that is built in to every MIDI track, and it can run Cakewalk Application Language (CAL) files—created with a LISP-like scripting language that provides MIDI functions like splitting notes, "strumming" chords, and the like. Cakewalk has de-emphasized CAL files over the years; however, there are many CAL files in existence, and a quick web search will unearth them.

In addition to MFX, there are also two types of VST MIDI plug-ins: "standard," and the less-used VST Module Architecture. These require a host where VST plug-ins can receive MIDI data, and the plug-in then outputs MIDI data. Compatible hosts include Cubase/Nuendo, Ableton Live, energyXT (Figure 7), FL Studio, and Tracktion.

Several programs offer their own ways of handling MIDI effects, which may or may not involve plug-ins. For example, Reaper has its own format, JS MIDI plug-ins, and comes with a JS plug-in scripting engine (very much like writing in C) so you can write your own scripts. Kontakt foregoes the MIDI plug-in concept but includes extensive scripting options, also similar to C, for processing incoming MIDI data. These aren't the only two programs that take this approach, but they're representative of the power of scripting. Ableton Live includes a wide variety of useful MIDI processing effects (Figure 8), but MAX for Live lets you take that whole concept even further by designing your own data processors. And while Reason doesn't offer MIDI plug-ins, per se, the RPG-8 arpeggiator is extremely full-featured as a note processor.

Logic Pro takes yet another approach by letting you construct MIDI processing within Logic's Environment. The possibilities are pretty much unlimited, including the ability to control channel strips, but casual users will probably find it intimidating. Fortunately, you don't have to get into creating MIDI effects, because Logic includes MIDI processors in the Track Inspector—you can even think of the Transform window as a MIDI effect.

MOTU's Digital Performer includes destructive MIDI effects (echo, transpose,

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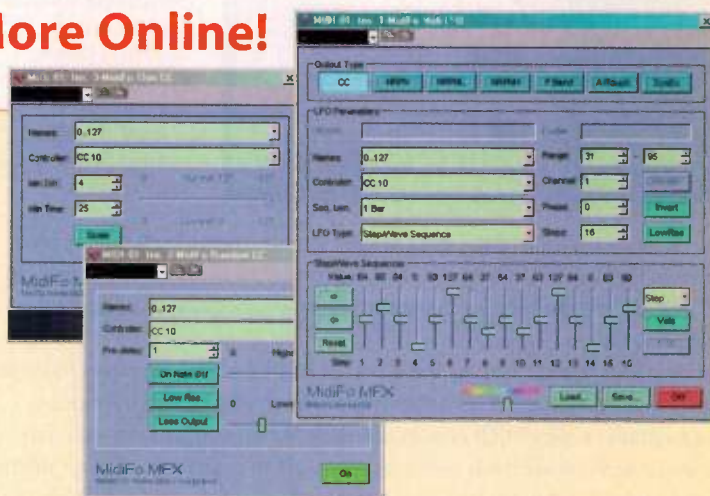
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50% for 2:1 compression), then add a value to all velocities to provide the MIDI compression equivalent of the "makeup gain" function found in analog compressors.

SCRATCHING THE SURFACE

What? I'm out of space already? Well hopefully, the above will have inspired you to take a fresh look at the things MIDI can do in today's generation of DAWs. Don't forget that MIDI can also be a powerful tool for automating not just the usual suspects, like level and pan, but various effect and instrument parameters. And if you ever run out of hands while recording, a MIDI footswitch setup like the kind favored by guitarists might be just the ticket for remote foot control of crucial parameters and functions.

Sure, MIDI is over a quarter-century old... but it's definitely not ready for retirement. **ea**

More Online!

A suite of program shells from http://xlutop.com/buzz/zip/dxshell_v1.0.2b.zip allows, among other things, using MFX within Reaper and other programs that can work with VST shells—for example, some Reaper users have reported success running EastWest's Symphonic Choirs WordBuilder in Reaper using the mfxshell.dll (32-bits only). Bear in mind, though, that wrappers and shells are not always 100% foolproof.

www.tencrazy.com/gadgets/mfx/ is a great source for 23 nifty MFX plug-ins, and they're all free. Some of these are of particular interest to users of Garritan's GPO library.

For VST MIDI plug-ins, check out www.tobybear.de/p_midibag.html. There are 13 "donationware" plug-ins, and they're pretty cool.

www.MIDIplugins.com is an extensive listing of plug-ins. While not updated in a while, many of the links are still active and the site offers a ton of content.

Cuckos has a JS programming reference document/SDK at <http://reaper.fm/sdk/js/js.php>.

www.jasminemusic.com has a very interesting MFX, JMT Orchestrator 2.1 (\$49, additional style sets are \$29, with 10 style sets for \$174). Download a free, time-limited trial and check it out for yourself.

www.soundtrek.com/drummer/ offers an MFX that creates drum parts, and reminds me a bit of Cakewalk's original MIDI-oriented Session Drummer. A free trial is available.

MidiFo's effects used to be available commercially, but now they're open source and will work with Cubase or Sonar. There are six effects, including a MIDI LFO; download them from www.musophile.com/MidiFo/.

For information on how to write CAL applications, www.cakewalk.com/DevXchange/Article.aspx?aid=110 is the official Cakewalk resource, although there are lots of other CAL files on the web.

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Cheat Sheet delivers concise, explicit information on how to perform specific audio-production tasks. This installment describes tips and techniques for the energyXT DAW.

TIME-STRETCH AUDIO

Click on the audio file that you want to stretch. Show the Object bar by typing O. Under Resample, choose Stretch. Click-and-drag the file's beginning or end until it fits the desired number of measures (or beats). Hint: Enable Snap so the beginning or end lands exactly on a measure boundary.

PITCH-SHIFT AUDIO WITHOUT CHANGING DURATION

Click on the audio file you want to transpose. Type O to show the Object bar. Under Resample, choose Stretch. Edit the Coarse parameter to transpose in semitones, Fine to transpose in cents.

USE REX FILES

Drag into the track view or an existing audio track. REX files sync to tempo automatically.

SLICE AUDIO

For best results, temporarily set the project tempo to that of the audio, or stretch the audio to fit the tempo. Right-click on the audio you want to slice, then select *Process > Beatslice*. This slices the file based on the current Snap value. When you change tempo, the slices remain synced to tempo. (Choosing *Process > Autoslice* "guesses" where to add slices based on transients.)

GLUE SLICES

Beatslice slices arbitrarily at the Snap value, so it might slice in the middle of a sustained note (e.g., cymbal crash). Shift-click on adjacent slice name bars to select slices you want to glue back together, then right-click in any selected slice name bar and choose Glue. Do this while the project tempo is still set to the same value as the file that was sliced (as recommended above).

"PERCUSSIVATE" AUDIO

Slice audio as described previously, then use the Object bar's Fade In and Fade Out parameters to vary the percussive nature of the slices. Short Fade In and Fade Out times can also minimize clicks at slice boundaries.

SEE CONTROLLERS IN SEPARATE LANES

Click on the track and type E to open the in-track editor. Click on the + sign in the lower left to add a controller (for MIDI tracks) or automation (for audio tracks) lane. The button to the right of the + button shows/hides controller lanes. If you prefer showing automation superimposed on the waveform, click on the Stack/Overlay Controllers button to the show/hide button's right. Select the controller you want visible from the drop-down menu under the track name.

ADD VST MIDI FX TO THE SYNTHESIZER

Click on the Modular tab. Right-click on the green "MIDI cable" connecting the sequencer to the synthesizer, then select Undo Connection (or right-click on the "cable" beginning or end to delete the connection). Drag the MIDI VST FX (e.g., EnergyXT includes an Arpeggiator) into the Modular view. Click on the Sequencer's green MIDI cable output box and drag to the MIDI FX's green MIDI input box. Click on the MIDI FX's green MIDI cable output box and drag to the synthesizer's green MIDI input box. Double-click on the FX to open up its GUI for editing.

MOVE TRACKS TO A TRACK FOLDER

Right-click on the track name and select Move to Folder. If folders exist, they will show up as possible destinations. Or, choose New Folder to create a folder. Right-click on the Folder name and select Rename to change the name.

CHANGE THE LOOK

Go *File > Setup > Looks*. Choose between Light and Dark, customize individual elements, and save your particular skin.

CUSTOMIZE THE BROWSER

Go *File > Setup > Browser*. Choose the folders you want to include for Projects, Plugins, Presets, Clips, and Samples by selecting the category name, clicking on Add, then navigating to the folder(s) you want to add.

SAVE AN XTC FILE

An XTC file contains a MIDI clip and an associated instrument with its settings. After creating a MIDI clip with an

instrument, right-click on the MIDI clip and select Save As. Navigate to the location where you want to save the file (or click New to create a new folder), name the file, then click OK.

EDIT DRUM SAMPLE START AND END POINTS

In the drum track, click on the name of the drum sound you want to modify. The drum matrix opens, with the drum sound already selected. Click on the Waveform button (right-most button on the toolbar above the matrix). The sample editor opens. Drag the Start and End "flags" as desired.

SAMPLE EDITOR OPTIONS

In addition to changing Start and End points, you can change filter type/frequency/Q, modify pitch, alter EQ, and add insert or send effects for only that particular sound.

FADE IN/OUT AN AUDIO CLIP

Double-click on the audio clip to open the clip editor. Drag across the region where you want the fade to occur, then go *Part > Process* and choose fade in or out. You can also delete (removes the audio, leaving silence), cut (the section to the right of the cut moves left to close up the hole caused by cutting), trim (deletes anything that's not selected), and reverse (reverses the region).

EDIT THE SYNTHESIZER PATCH

Click on the Instrument track's Synthesizer label. The synth editor opens, with tabs for choosing the patch, assigning MIDI control to parameters, specifying zones, editing synth parameters, etc.

GLOBAL SOLO OR MUTE OFF

The Mute and Solo buttons at the top of the tracks (below the main toolbar, or Object bar if open) will be filled in if any tracks are muted or soloed. Clicking on one of these buttons will turn off all mutes or solos on all tracks.



Visit EnergyXT's YouTube channel to see 13 instructional videos.

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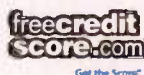
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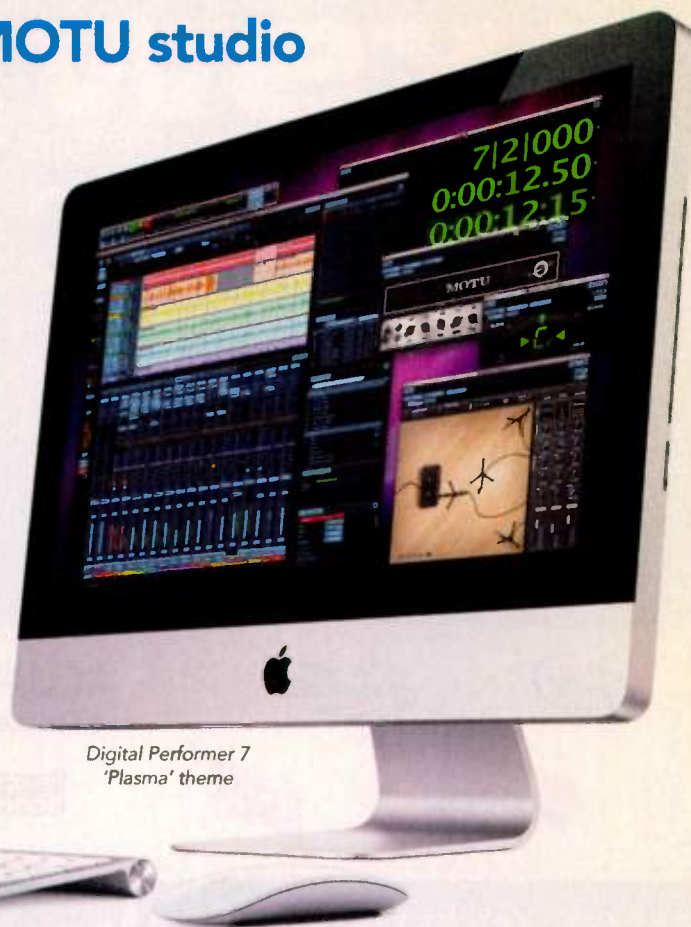
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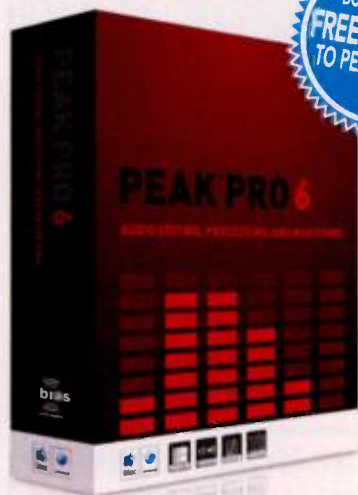
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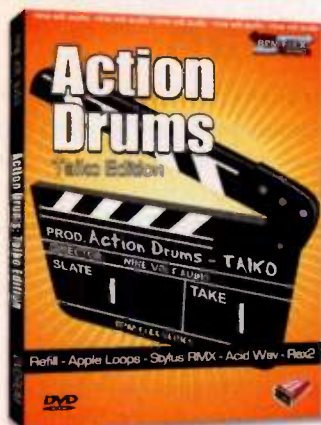
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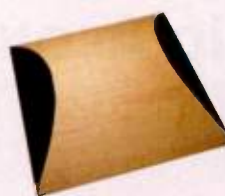
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Studio Acoustics Fix-It Man



Acoustician Bob Hodas has tuned more than 1,000 recording facilities around the world, including such legendary studios as Abbey Road Mastering, The Record Plant, and Lucasfilm; his clients have included Stevie Wonder and super-producer Rob Cavallo. Here, he shares a few DIY tips for optimizing your home studio.

What do you do when you tune a room?

I would say 75 to 80 percent of what I do is finding that one spot where the speakers and the listener get the best response out of the speaker system in the room. Once you've got these positions, you can easily find where the first-order reflections are and get those treated, and figure out where you want to put bass traps and what kind of bass traps to use. For icing on the cake, equalization would be the last thing.

What are the most common problems encountered in home studios?

As far as the room goes, lack of symmetry can be the number-one issue; controlling the space is primary. Also, in a home, sometimes the door is not in an ideal position for where you might want the speakers or some equipment to go. Or the windows. And you're typically working with low ceilings, which can create some issues.

Can you share any tips for identifying and eliminating issues without spending money?

The number-one thing is finding the correct speaker position. It's all about translation to the outside world: If you are sitting in your home studio mixing a record and you have a big hole at 100Hz, and you fill that hole in with EQ on the kick drum, when you take it out to the outside world, you're going to find that the kick drum is completely out of line with the rest of the mix.

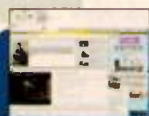
Without analysis gear, finding correct speaker placement can be time-consuming and difficult—but here's one simple way to improve your imaging and frequency response: Above 400Hz, sound and light act very much alike; it's simple geometry. I carry a plastic mirror around with me, and have somebody hold the mirror flat against the wall and the ceilings and move it around, and I sit in the listener position. And if I see the front of the speaker, the actual speaker cone, in the mirror, then I know that that's a point of first-order reflection that I'm going to want to treat.

There are a lot of myths out there concerning acoustic treatment. What are some home-studio don'ts?

I'd say the biggest misconception that I see is that corners are bad things and should always be treated. Every room is unique, and you need to figure out whether you need corner treatments or not. I've walked into a lot of rooms that had corner treatments, and there would be complaints about a big hole at 100Hz or 125Hz, and I tore the treatments out of the corner and all of the sudden, the hole went away. I'm not saying that corner treatments are bad; I'm saying that just applying a treatment isn't necessarily going to solve a problem. You may have a problem that's not happening in a corner; it might be a reflection from a back wall, so the treatment needs to go on the back wall. The important thing to remember is, there isn't one blanket solution that will work for all rooms.

Soundproofing is a big problem for home studios. Do you have any tips for keeping the neighbors happy?

Windows are a huge problem. You've got to either cover them up, or buy triple-paned glass, or add an extra layer of Plexiglas. Anything that passes air is going to pass sound—cracks under the doors, open windows. Mass is what stops sound; maybe add another layer or two of sheetrock if you can afford to do that. And you could put sound-isolating pucks under your subwoofers to minimize transmission through the floors and the walls. The hardest part of any home studio is keeping the neighbors happy. **ea**

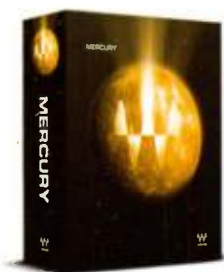


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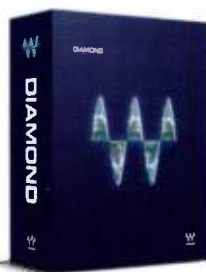
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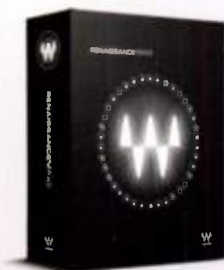
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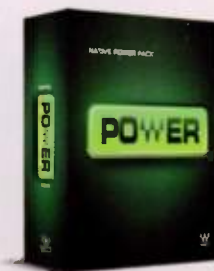
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