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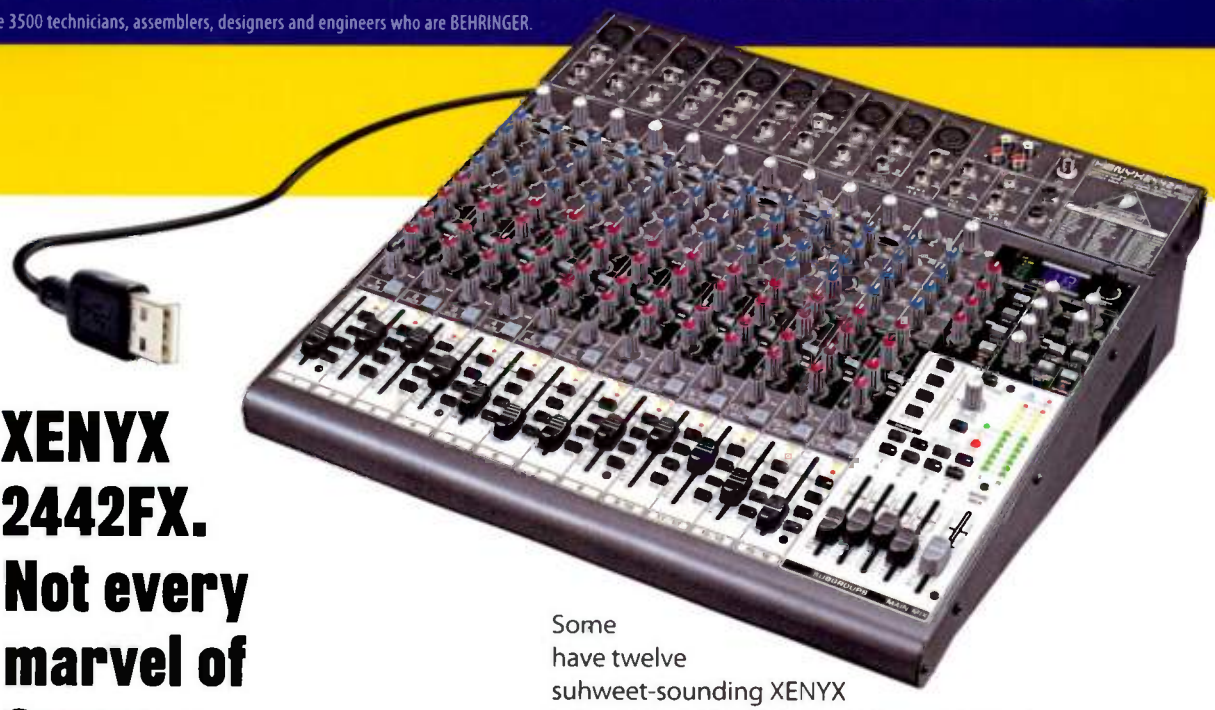

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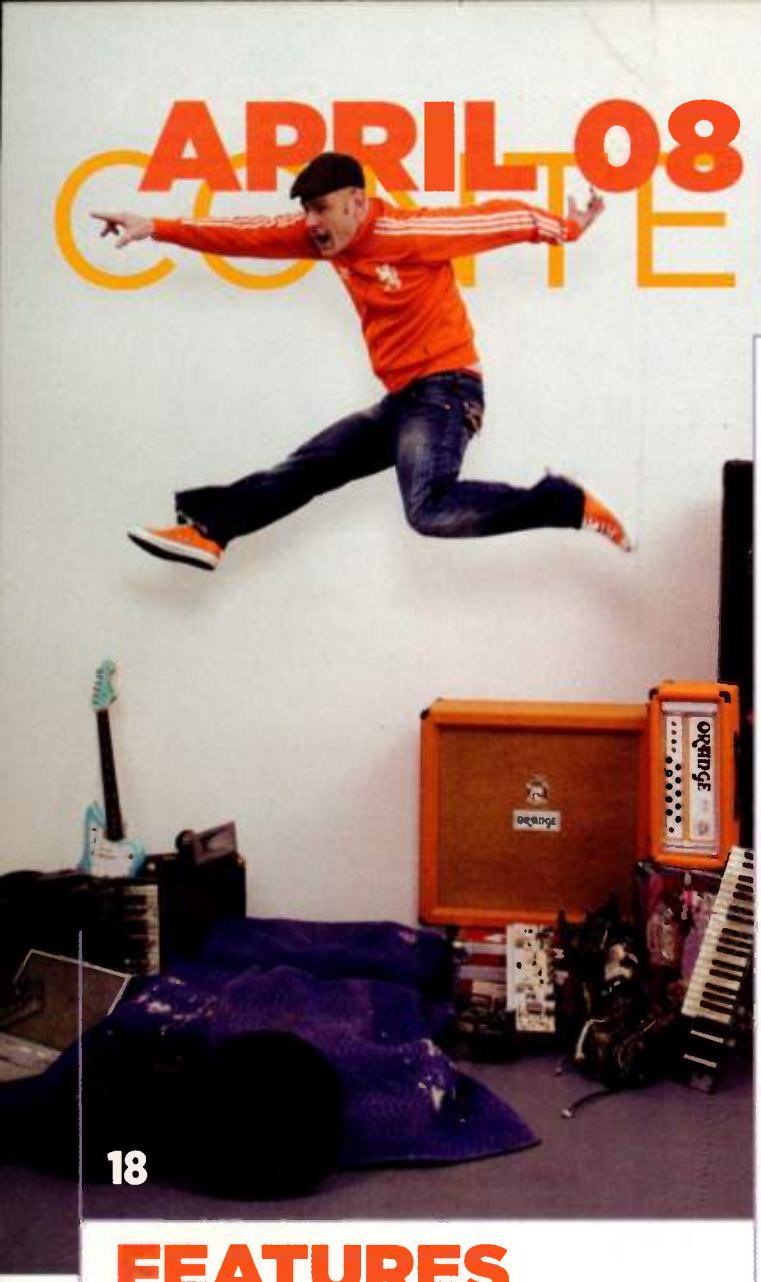

18

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I'm sure most people who read *EQ* are aware of the giant contributions Bob Moog made to what we do. Every time we tweak an ADSR envelope generator, play a sampled Minimoog bass, detune some sawtooth oscillators for a "fat" sound, sweep a 24dB/octave lowpass filter, or set up a VCO-VCF-VCA signal chain, we owe a debt to Bob. His instruments helped power the music of such giants as the Beatles, the Beach Boys, Wendy Carlos, Isao Tomita, Jan Hammer, Keith Emerson, the Byrds, and so many others.

Bob was not into fame or accolades, and he never really received the financial rewards he so richly deserved for his work. As he once told me, "I just make tools." Yet he was acutely aware that he was in the middle of an historical transition in the way we made music, from electric to electronic. He was quite the historian, and over the decades built up a massive set of archives that are nothing less than the history of electronic music from the 60s onward—including correspondence, articles, prototypes, audio tapes, gear catalogs, phone logs, and much, much more.

Sadly, we're in danger of losing this wealth of information that documented history as it was being made. Bob's archives were literally rotting away in a warehouse in North Carolina; while the foundation has saved much of what's there, a ton of work remains to be done.

To Bob's daughter, Michelle (Executive Director of the Bob Moog Foundation), he wasn't "Bob Moog, synth pioneer" but simply "Dad" . . . and he always kept his career at arm's length from his family. But when he passed away, Michelle understood the importance of what Dad had archived over the years. She is now racing against time, alone save for a few volunteers, to save this profound legacy.

She needs our help, and we *must* help her.

For example, I'm donating a portion of what I make from my Minimoog Tribute Expansion Pack (for the Rapture soft synth) to the Bob Moog Foundation. So is Cakewalk. Roland's Ikutaro Kakehashi—a pioneer in his own right—has contributed to the foundation, as has Isao Tomita, Ableton, and Billy Corgan from Smashing Pumpkins.

That's a start, but the foundation needs more—and soon, because time is running out. Go to www.moogfoundation.org and give what you can, even if it's only $5. The current goal is to preserve what's there, and find a permanent home. It's a daunting task, but not an impossible one. And once that's done, there are other plans, like scholarships and educational outreaches.

We've all been touched by Bob's work, and he gave us so much. We all owe him big-time. This is your chance to do the right thing, and give something back—please, do it *now*.

eq

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MORE BASS TIPS

I recently restrung my 4-string Fender Jazz bass with heavier strings and retuned it to BEAD. To get a fuller sound after recording a bass track, I duplicate the track in my DAW and then multiply the pitch of the duplicate track up an octave. Depending on the plug-in used, the octave up sound might be a bit bubbly or weird. But in mixing, I only add a very low volume of it to the mix, just enough to add to the existing overtones. Any EQ or compression or other effect that I add to the original track, I usually add to the duplicate track too, except I move the EQ frequency up an octave from the original track.

I guess there are bass effects pedals available that can make an octave up output that would do the same thing. But if that octave out can be recorded to a separate track, you have much more control later in mixing.

Roy Al Rendahl (via email)

REASON CHEAT SHEET ADDENDA

We'd like to add a few comments to your Cheat Sheet on Reason in the 03/08 issue. When using MIDI guitar as described in the article, it's worth mentioning that you need to use the "Advanced Control" preferences page and "Advanced MIDI Device" part of the hardware interface. This also means you can only use it for live playing—what you play won't be recorded (as the MIDI goes directly to the devices rather than via the sequencer).

Also, regarding the MIDI implementation, the only time it's necessary to use the MIDI controller numbers is when you're ReWired and doing your MIDI sequencing in the ReWire host, or possibly if you're using a keyboard/controller without proper Remote support. Otherwise, you should definitely add your keyboard/controller in the Keyboards and Control Surfaces preference page and use Remote.

Propellerhead Software (via e-mail)

IN SORTE OUTRAGE

After reading the 01/08 issue of *EQ*, I am now convinced that the world is completely upside down. We live in a world wherein it is not considered appropriate by many to wish someone "Merry Christmas" for fear of possibly offending them. That concern is weird enough, but not frankly offensive. However, the *EQ* article "*Diabolus in Musica*" features a band, Dimmu Borgir, that is purposefully offensive.

Although some do not believe that "evil" or a dark spiritual world exists, any truly civilized society should not promote even the appearance of evil. This group promotes a very dark message in all aspects of what their image projects. Are they really evil guys? Who knows? However, what they promote via their actions speaks clearly. Yes, I am a Christian. However, you won't find Christian paraphernalia hanging on the walls of my recording studio. I don't open each recording session by gathering every band into a circle to pray.

Groups like Dimmu Borgir need to remain relegated to the dark corners of the Internet and not given any promotion through the mainstream press. Responsible people in positions of influence need to promote that which is inherently good and avoid that which is obviously bad. I have enjoyed your magazine and have read it cover to cover each month for years. I will continue to read it for many edifying reasons. I am not going to promote a silly boycott. I must hope that this article was simply one bad editorial decision and not a burgeoning trend for *EQ*.

Sincerely,

Alan Bean (via email)

Matt Harper responds:

First, thank you for expressing your objections in a measured, thoughtful, and refreshingly mature manner. You should see some of the letters we get. . . .

I agree fully with your assertion that the onus is on all of us to promote the greater good via our respective positions in our communities. That is our responsibility as individuals. However, there's another element at work here: With an unbiased media outlet, a critical component of overall editorial integrity is objectivity and service to the readers.

The decision to publish or not publish an article is based almost exclusively on whether the information will help our readers make better recordings and better music. A group or individual's personal affiliations—be they political, religious, sexual, or otherwise—are not qualifying factors in determining coverage. It's this singular goal that has led us to give ink to artists that make up an incredibly diverse landscape, both in the music they produce and, completely tangentially, their personal backgrounds. Whether it is Joshua Klipp [07/07], Bob Mould [03/08], or Dimmu Borgir (acts that are respectively associated with LGBT, Christian, and Satanic movements), what matters most to us is that the articles provide our readers with actionable, real-world examples of recording practices.

We definitely respect your right not to agree with the personal leanings of the bands we cover; we don't always agree either, but we try not to let that get in the way of our editorial mission. And realistically, few people are without flaws. If we ran an article on Madonna, some would complain that we're publicizing someone who presents a bad role model to young girls. Or that if we cover dance music, people will claim we're glorifying drug culture, due to the genre's early involvement with ecstasy.

You raise two thought-provoking points that speak to this issue: "Are they really evil guys? Who knows?" Well, you won't know from reading the article, because it's not about their philosophy—whatever it is—but their recording techniques. We'll leave it to the "lifestyle" magazines to cover their personal beliefs. Also, you say that "Responsible people in positions of influence need to promote that which is inherently good and avoid that which is obviously bad." Bingo. This is why in our articles, we focus with laser-like intensity on recording techniques and applications. Regardless of what Dimmu Borgir believes, their engineer, Frederik Nordström, was the person interviewed for the article and he was friendly, forthcoming, and helpful in explaining particular recording decisions.

While the banner flown may differ between you, I, Dimmu Borgir, or any other artist, I think we can all agree that great music enriches the world, and our editorial mission is to help our community continue to do just that—one article at a time. And finally, we applaud your open-mindedness in rejecting just one article instead of the entire magazine.

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

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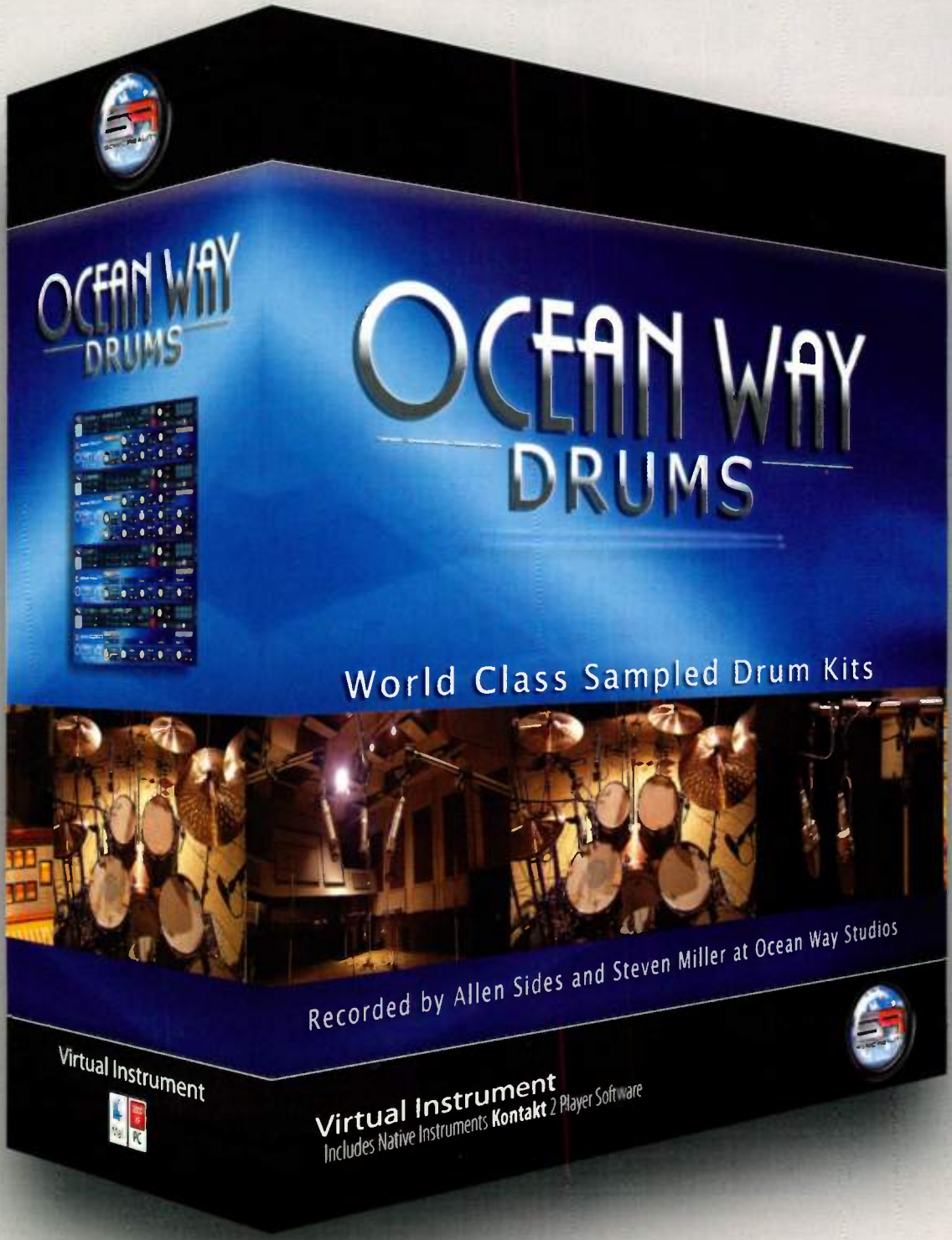

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PUNCH IN

DIRTY & SWEET

Mates of State Embrace Sonic Interference

BY JANICE BROWN

"We're kind of racing against the clock at this point," says producer/engineer Peter Katis, two days into the mixing stage of the latest Mates of State record. Mindful of an end date that could arrive at any moment, a very pregnant Kori Gardner—one half of Mates of State—echoes anxiously, "We'd love to finish the record by Friday."

For the most part—and, understandably, with a toddler at home and a baby on the way—Mates of State stayed local for the production of their self-titled fifth studio album, producing six of their ten new songs start-to-finish with Katis at Tarquin, his home studio in Bridgeport, CT. Though they worked on songs with Death Cab For Cutie's Chris Walla and Spoon's Jim Eno in San Francisco and Austin, respectively, the record truly came together at Tarquin.

For the uninitiated, Mates of State makes super-catchy indie-pop music, with infectious vocal duets, and rousing keys and drums. Since the band's 2000 debut, the husband-and-wife team of Gardner and Jason Hammel has written and recorded songs in a format they could recreate live as a duo. To fill out the sonic space, Gardner plays Yamaha Electone and Hammond B-3 organs, while Hammel handles the drum kit. The act's studio recordings have generally reflected its live show, but, for the new album, the duo jettisoned one of their signature sounds.

"This is the first record we wrote and recorded without the organ," says Gardner. "We started writing songs on piano, and a couple of new keyboards, and we became inspired by some of these different sounds. When we went back to play them on the organ, we just didn't like them as much."

"Also, we wanted a change, and the easiest way to change is to remove one of your main ingredients," adds Hammel.

"But," interjects Gardner, "one of our fears was that basing the songs around the piano would sound too fruity—too mainstream pop."

However, Katis' natural aversion to cloying poppy sounds kept the Mates "sweetness" levels under control.

"You have no idea how roomy and/or distorted you can make a piano, and it will still sound good," says Katis. "In fact, that's usually what it takes for me to like the sound of it. I like a roomier, honky-tonk, sort of trashy-sounding piano. I generally don't use close-miked piano sounds. When you're just getting up the sound, close mics always sound great, but when you put the track in the mix, it's just a mess."

Recording Gardner on piano, Katis and assistant engineer Greg Giorgio followed their time-tested piano miking setup: Switching between RCA 44 or Altec 639 ribbon mics positioned three or four feet in front of the bass side of the piano, and a Neumann U47 or Telefunken ELAM-251 set to omni mode placed approximately six to eight feet away from the treble side.

To further ensure the piano tracks weren't too pretty, the crew layered various synths, organs, and other sonic toys into the mix.

"When you're trying to make things sound less nice, it's sometimes just a matter of running some sort of sonic interference—adding something more distorted," say Katis.

"For example, we had a song that was really ballad-y sounding," says Gardner. "It was just piano and lots of harmonies and strings, and it was just too pretty. But I turned on my Mattel Optigan—a '70s keyboard that plays optical discs of samples—and it was like, 'Yes!' It transformed the song into something haunting and mysterious."

"The Optigan sounds pretty much like a rattling train wreck," adds Katis, "but it can add something really cool. We also used an old ARP string synth that has a razor-sharp sound that cuts through anything."

To record Hammel's drums, Katis placed the Altec 639 in front of the kit, and used either RCA 44s, RCA 77s, or Coles 4038s as overheads. This was another instance where the band departed from its live approach.

"Jason is used to carrying a lot of weight and filling space with a lot of cymbal action," explains Katis. "And it's hard to get exciting drum tones with

Mates of State's Kori Gardner and Jason Hammel.

excessive cymbal bashing—it limits your sonic options. Luckily, Jason was willing to experiment with different kits and drumming ideas. For example, the last two songs were pretty unformed when we started tracking them, and just to get cooler sounds, Jason played them less rocking. On 'Lullabye Haze' instead of playing an open hi-hat for this one part, he played just toms, and he didn't even touch a cymbal during the instrumental choruses. On every part of the song, a different drumming element takes the lead. It's really dynamic and cool."

"I think after five years, we've finally realized that *this* is the studio and *that* is the live show," admits Hammel. "In the studio, you're playing with totally different parameters, so you shouldn't be worrying about how you'll play it live."

The differences of live and studio approaches was also applied when recording Gardner's and Hammel's dynamic vocals, which, on previous albums, have sounded a bit belted-out.

"Their voices are pretty bright, so we went with the U47—which isn't dark, but it's not nearly as bright as my usual vocal microphone, the Telefunken ELAM 251," notes Katis. "I never use any kind of vocal booth, and I have the singer step back a little from the mic to get even more ambience. On background vocals, I have them stand further away from the mic so the sounds kind of mix themselves. You can only set the mic level so hot, and on songs such as 'Get Better,' where Kori starts out singing softly, I have to accommodate the vocal dynamics. So we made a point of doing a vocal pass where she sang the whole song quietly and delicately, and I jacked up the gain on the Thermionic Culture Early Bird mic preamp so that her voice has a hugeness that you wouldn't get otherwise."

On the tentatively titled "Rearranger"—one of several songs featuring Katis on a 6-string Rickenbacher played through a Vox AC30 amp miked with a Shure SM57)—Hammel wanted a really thin vocal, like "in the beginning of the Beatles' 'Lucy in the Sky with Diamonds.'"

"From verse to chorus, we wanted to make a significant sonic shift, so that when the chorus comes in, it sounds—all of a sudden—like it's right *there*," says Katis. "So, I made the verse vocals sound thinner and farther away using the Waves Renaissance EQ plug-in. The verse vocals are doubled, and they also have a little EMT 140 plate reverb on them. When the chorus hits, all the low-end in the vocals returns, the reverb and vocals doubles go away, and the music breaks down to just piano, bass, and a very dry drum sound. These changes aren't overwhelmingly apparent, but they make the transitions more dynamic, and when that chorus comes in, it's like 'Whoa!'" EQ

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AIR WAYS

John Altschiller Reveals his Miking Secrets

by Ken Micallef

Working from home—Altschiller finishing a mix in his cozy studio.

"What is my secret?" asks John Altschiller, the man behind the mix for everyone from the Foo Fighters to John Mayer. "I go into the control room at least twice before I touch *anything*. If I don't like what I'm hearing, I change mics or the mic positions. EQing should only be done to augment the natural sound you have—not to create a sound that doesn't naturally exist.

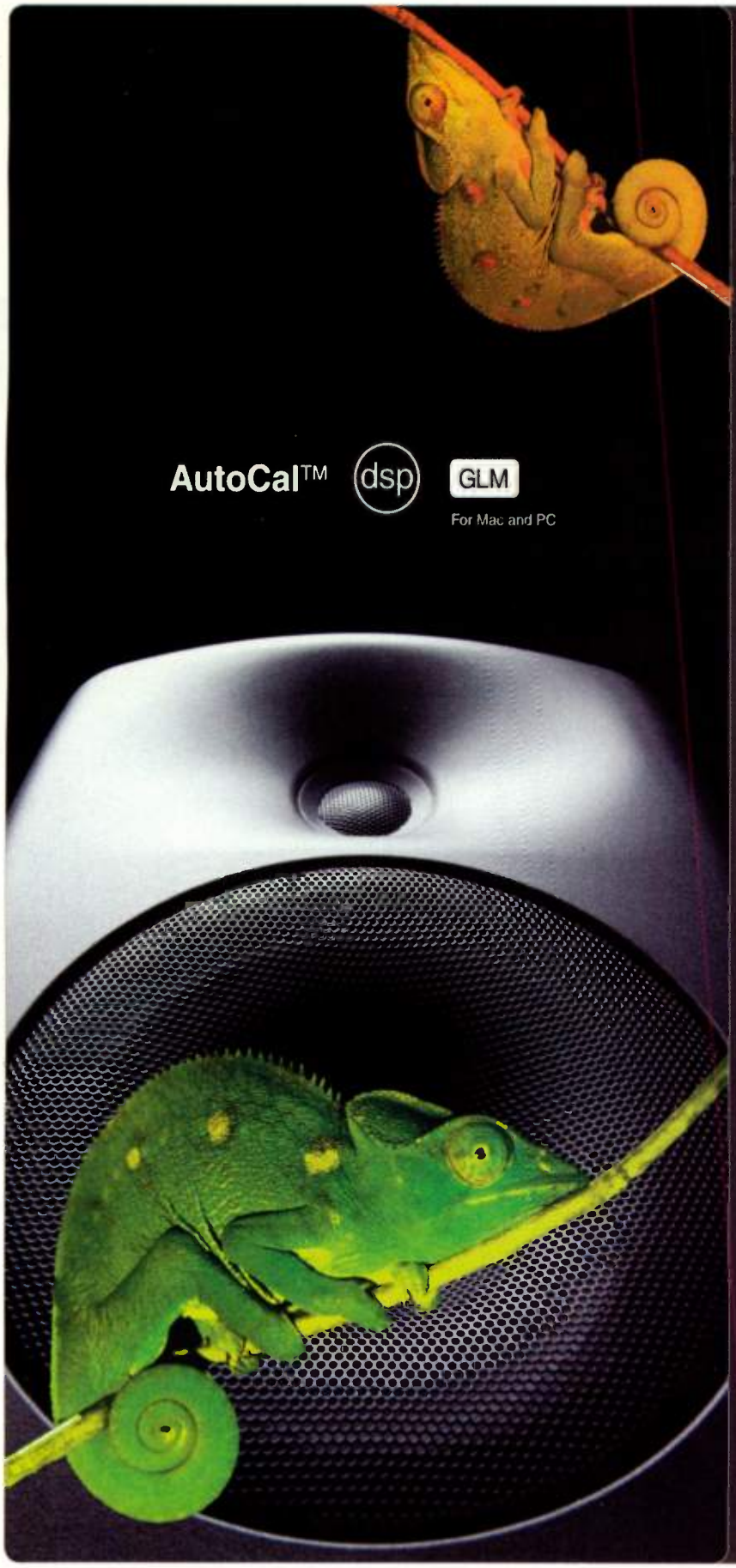
"Mic placement is a forgotten art. Today, in the interest of time, a lot of people throw a microphone in front of an instrument, and worry about it later at the mix. When I record an acoustic guitar or a violin or a clarinet, I always stick my ear on the instrument to see where the mic *should* go, because every instrument is different. I used this technique while recording Keller Williams for the album, *Dream*. For 'Kiwi and the Apricot' and 'Slo'mo Balloon,' we were recording acoustic guitar and vocal at the same time. I placed my ear by the 12th fret, because that's where I thought the right place might be, but that was not where the guitar sounded good to me. I found the perfect placement toward the back of his fretting hand. The guitar was full, and the phase relationship with the vocal microphone seemed good. I was, however, missing some sparkle, so I positioned a Blue Dragonfly near the top of the neck to get some top end.

"Air is a natural compressor. If you look at pictures of the Beatles' recording sessions, you'll notice how far the mics were placed from the instruments—and that's a different approach than a lot of people take today. But the Beatles' engineers knew. They were recording for mono, and getting a balance for the room. Air is your first line of compression, and I believe in exploiting it as a resource. I like far microphones on sources—from guitar amps to horns to vocals to drums. For example, I'll start with two Coles 4038s on a kit—one high over a drummer's head and one a few feet in front of a kick—and dial in my sound.

"But every drummer plays differently, and you also have to take that into account. For example, Phish's Jonathan Fishman is not a hard-hitting drummer who bashes the drums. He is light, fluid, and precise. So I had to take that into account when approaching his kit when I recorded him on *Picture of Nectar*—especially with the toms. We also had a challenge in the linoleum floors at White Crow studios in Burlington, VT. Linoleum doesn't resonate well, and it was making the kick and the toms sound flat. So we brought in an old wooden drum riser, and we placed the kit on top of it because, of course, wood resonates better than a hard surface like linoleum. This not only helped with the kick sound, but also with the toms.

"The kick was miked with an AKG D112—on the inside, to get the attack—and we compressed it heavily so it didn't sound too clicky. A Neumann FET U47 placed about eight inches from the outside of the back of the kick drum helped get the sound Jonathan had become used to hearing from where he sat behind the kit. For the toms, we used Neumann U89s, which are magical-sounding. The warm, round quality they imparted on the toms really enhanced the perceived balance of the kit. The mics were not placed directly over the head—they were slightly angled over the back of the tom to compensate for his light touch by focusing on his stick attack. Listen to 'Eliza' on the album to hear this technique at work.

"I also use the old speaker-as-a-mic trick. I like using a Yamaha NS10 on bass drums. I use the speaker on the outside as a sub—you just wire the speaker into a mic cable, and just use the monitor as a mic. Any speaker can be used in either direction—to capture sound or monitor it. Take the two leads of the speaker, and hook one to positive, and one to negative in a standard mic cable, with the female end cut off, and plug the cable into a mic preamp. I place the speaker right in front of the drum head—which gets no attack, but great sonic low end. Then, Yamaha came out with the SKRM-100 SubKick for recording bass drums. It's a much cleaner setup. They were made for live applications, but they sound great in the studio. They get that thud-y Roland TR-808 kick sound. It sounds great, and it's perfect for getting that classic hip-hop kick sound without relying on samples." EQ



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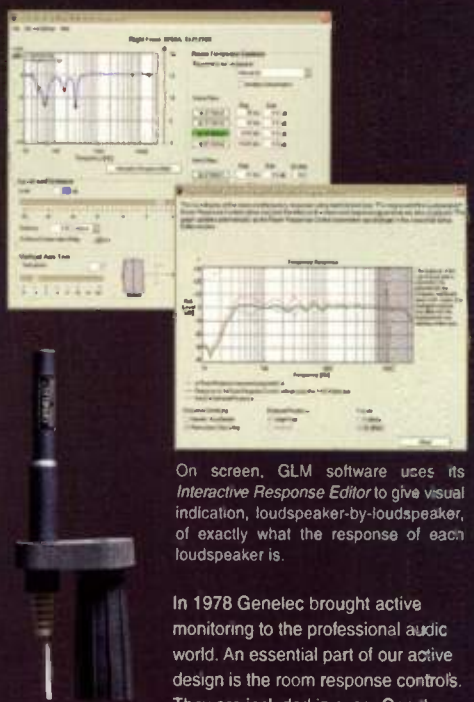

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PUNCH IN

TWISTED MINDS

Inside **Neon Neon's** Random Rhythms

Neon Neon's Gruff Rhys and Bryon Hollon.

by Lily Moayeri

Neon Neon's debut album, *Stainless Style* [Lex/Fontana], is a shameless homage to the radio-friendly synth-pop hits of the '80s, but written as a pseudo-concept album that mirrors the tumultuous life and times of carmaker John DeLorean. Recording the lion's share of the albums tracks in a home studio through a MOTU 828mkII into Logic 8, partners Bryon Hollon (*a.k.a.* Boom Bip) and Gruff Rhys' relied on the strategy of integrating vintage instruments into a digital environment to get what Hollon calls "an album of really big pop songs inspired by the sounds of old Italian disco, early electro, and '80s pop music."

Starting with an ARP 2600 and a Minimoog, Hollon creates the basis of the compositions, and imports the patterns into Logic, where he uses HyperDraw to "edit velocity and pitch bends in a way that is beyond what I can do with the modulation wheels on the synths I use. I'll also apply envelopes that randomly and indiscriminately manipulate the sounds I input in Native Instruments' Battery 3. It gets crazy. You can route this thing called 'Random Bipolar' to the tuning to randomly change pitch within a single cell. With drum sounds in Battery 3, I can add effects to individual cells, so that my 'kit' is behaving more like how a waveform is treated within a synth, and I can assign multiple drum cells to the multiple outputs of the 828mkII. Then, I can put different effects on different elements of the 'kit'—which really lets me tweak the drum sounds I get from my Elektron Monomachine or my crappy old Casios."

A good example of this practice, Hollon says, is on "Told Her On Alderaan." Running Roland V-Drums into Battery, Hollon randomly changed the velocities of the hits.

"I didn't want to quantize anything," he explains. "I wanted to do the exact opposite. Listening to the track now, I know that 'proper drumming' would have ruined the song." EQ

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John Vanderslice.

AUTUMN DEWILDE

THE DAMAGE DONE

John Vanderslice Reveals 3 Ways to Torture Beauty

BY KEVIN COLLIER

"Rock and roll needs some sort of sonic violence for me to get excited," says San Francisco-based musician/producer John Vanderslice when asked about the sounds he crafted for his latest album, *Emerald City* [Barsuk]. Interestingly enough, *Emerald City* is almost entirely devoid of the key element most artists rely on to achieve nasty rock sounds—namely, electric guitar. Instead, Vanderslice set out to cultivate musical aggression by abusing *acoustic* instruments. Here are Vanderslice's tips for getting acoustic guitar and piano sounds that are simultaneously grungy and tuneful.

WORK WITH WHAT YOU'VE GOT

"I had just two acoustic guitars to work with on this album—a Martin 000-16, and a 1952 Gibson J-45," says Vanderslice. "I wish I had a control room filled with all kinds of vintage outboard equipment to apply to those instruments, but I don't. Scott Solter, my producer, came up with a fix—to send my acoustic guitar signals into an old film dialogue recorder that was lying around. We dialed in its 40:1 limiter, instead of trying to track down an expensive piece of gear with similar specs, and it gave us the crushed acoustic sound we were looking for. It sounds amazing."

MOD THAT WHICH YOU CANNOT ACCEPT

"Our go-to preamp is a custom Bogen made for us by Skip Simmons—Sacramento's own audio genius. It's this old tube mic preamp from the '50s that he modded to add a lot of saturation to the source signal. This is what you hear on the guitars on 'Time to Go On.' When you crank the gain on the preamp, you get this out-of-control distortion. We thought we were going to have to run it into a Universal Audio 1176 to back the signal down, but we found that we didn't even need it—the tubes on the Bogen are hit so hard when you crank it that it does this very cool limiting."

USE EFFECTS TO MORPH INSTRUMENT SOUNDS

"I don't have a control room full of modular synths, but I wanted to get a real tinny, oscillating sound for 'The Parade.' So I ran my acoustic guitar into an old Eventide H-949 harmonizer that I picked up for cheap. Brian Eno and David Bowie used it on *Low*—which is one of my favorite records of all time—to warp sounds, so I figured I would give it a go. I took the acoustic guitar signal, and inserted the H-949s pitch shifter into the feedback loop of the delay to get this shrieking, bird-like sound. It's terrifying. It sounds like the apocalypse." EQ

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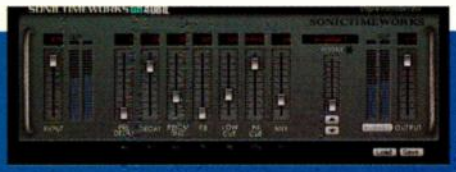

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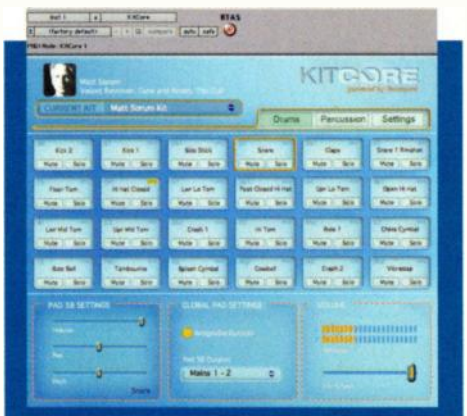

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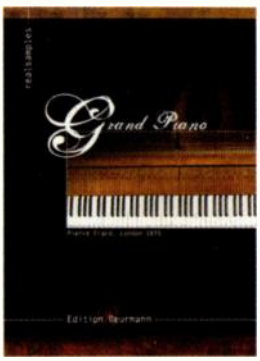

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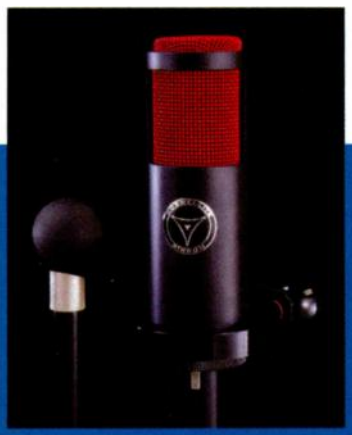

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XL
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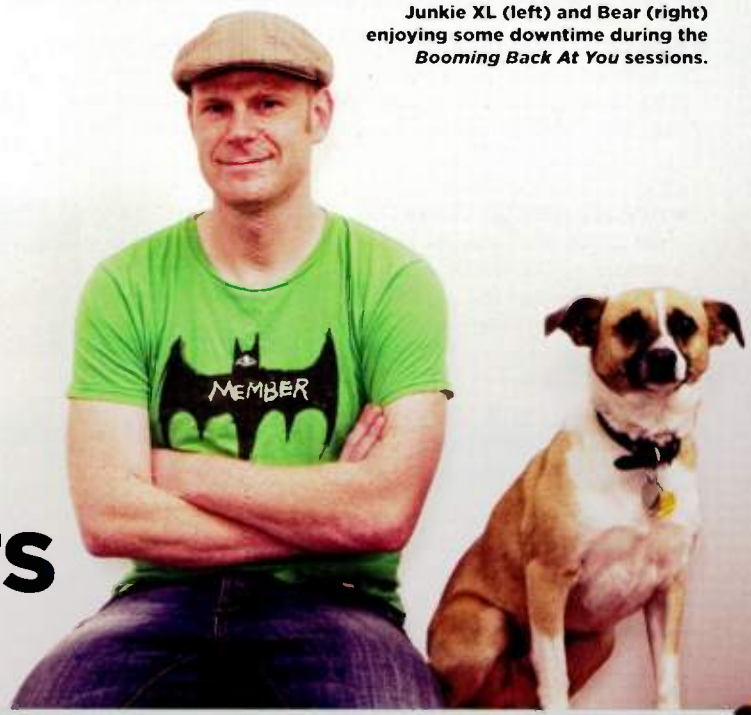
ATTITUDE ADJUSTMENTS

Junkie XL Embraces the Devils in the Details

by Richard Thomas



Junkie XL (left) and Bear (right) enjoying some downtime during the *Booming Back At You* sessions.

Tom Holkenborg—*a.k.a.* Junkie XL—is a consummate studio professional who constantly tweaks and fine tunes his sounds to perfection. But those who have seen the Dutch musician perform live—he doesn't DJ—can attest to his love of showmanship. Holkenborg works his audience like a conductor, smoothing over brash sonic beat downs with crowd-pleasing flourishes—sometimes even sacrificing a Korg MS-20 or two to the synth gods. On *Booming Back At You* [Nettwerk], his fifth studio album, Holkenborg successfully channels that live energy into the cozy confines of his studio workspace.

"Many fans wrote me saying, 'Tom, you should make a record that sounds like your live show,'" says Holkenborg. "And that's really what this record is—nothing more, nothing less. I've test driven these tracks for the last six months, so all of them are 100 percent club-proof, and they were a lot of fun to make on the production end—just messing around with the sounds to make them weird, heavy, and pumping."

Holkenborg relocated to the United States in 2002, and, although an admitted gear freak, the main room in his personal studio is surprisingly clutter-free. Pro Tools HD and Logic Pro 8 run separately on two of three Mac G5s, and everything is beautifully visualized on two 30-inch Apple Cinema display screens. Four PCs run GigaStudio, Kontakt 2, and all of Holkenborg's orchestral libraries, and the third G5 is the go-between to a server hosting over eight terabytes of Junkie XL archive material. Samplers and VST instruments

JUNKIE XL ON HIS SECRET WEAPONS

ELECTRO-HARMONIX MINI-SYNTHESIZER

"This is one of those boxes I found at a flea market for $25—the seller had no idea what he was selling. It's one of those really rare '80s synths, and it has this touch keyboard that's velocity sensitive. It only has a couple of faders, one oscillator, a couple of filters, and an envelope, but its sound is incredibly unique. If you run it through an amplifier or straight into your sequencer, it sounds so big." Used on: "Booming Right At You," "Mad Pursuit"

JOMOX XBASE-09

"In the mid '90s, there were a huge amount of companies that made 808 and 909 clones, and the JoMoX was one of the boxes that had a unique character. Every kick drum on the album consists of three to five samples, and one of them is always the JoMoX. I tune the sub kick drum to the key of whatever song I'm working on." Used on: Everything

CIRCUIT-BENT NINTENDO GAMEBOY

"It's a really cool box done by this German company called Nanoloop. They put a little sequencer inside the Gameboy so you can program your own riffs with the sounds that came with the Nintendo. Then, you just take the output, run it into your interface, and edit in your DAW." Used on: "Stratosphere," "No Way"

KORG MS-20

"I've got all the synths made by Korg. They have a unique character—cold- and warm-sounding at the same time. The MS-20 has amazing distortion, and the resonance filters sound amazing. Actually, if you go a little overboard with the resonance, it starts feeding back internally. It's all over the album, whether sounds were generated with it, or audio signals were run through it to use the filters." Used on: Everything —*Richard Thomas*

are triggered with an M-Audio Keystation Pro 88, and the sound is piped in courtesy of two separate surround systems: an M-Audio Studiophile LX4, and a $26,000 Dynaudio AIR 25 package. Two Empirical Labs Distressors and one Fatso Jr—both used extensively on the new record—are the black boxes currently "in rotation," and a few top-secret weapons sit on a record shelf near the back wall.

Other go-to pieces include a Fender Strat, an Ibanez bass, a "cheap" acoustic, and his M-Audio Solaris mic. Suffice to say, this is only the tip of the iceberg. His old Amsterdam-based studio still houses the majority of his synth collection, but any sound that isn't readily stored in his archive is just an email away.

"Years ago, I sat down and spent months jamming out little sounds, riffs, and bass patterns that all live in my samplers in Logic," Holkenborg explains. "So if I need anything, I send MIDI files to my friend in Holland, who is taking care of my synths. Then, he'll redo the part, and send it back to me."

Holkenborg uses the EXS24 in Logic for most of his sample playback, and Native Instruments' Battery and Kontakt are used for minor sound alteration such as bit reduction, time stretching, and distortion. The majority of Holkenborg's complex audio design occurs within Kyma, SoundHack, and MetaSynth. Sounds that are (mis)treated in those programs are then refined in Pro Tools through plug-ins like the Waves' SSL 4000 collection. These sounds are then sent back to EXS24, where they are re-sequenced, spit out, and potentially tweaked again in Pro Tools.

"Sometimes, samples are treated five or six times," says Holkenborg. "I love destroying sounds to the bone, but then I want to mix them properly."

With heavyweight pieces like his Fairchild compressors, Klein + Hummel monitors, and DDA console still overseas, Holkenborg leans heavily on his domestic outboard collection of Empirical Labs and Manley gear to get the job done.

"The cool thing about those Empirical Labs models is that you can use them as an old-school engineer and mixer would, and just tweak the sound a little bit, or you can use them as you would a plug-in, and crank the crap out of them," says Holkenborg. "You can't really do that with the Manley stuff. If you compress a bass line through the Variable Mu, or live strings through the ELOP, it gives the sound a real touch of class—but those boxes aren't good for distorting stuff. I need to do both."

The duality between fine tones and distorted sounds is what makes a Junkie XL track so recognizable—whether it's the clean, Peter Hook-style bass riff on his Big Room Remix of Justin Timberlake's "What Goes Around," or the percolating, distorted breakbeat on Britney Spear's "Gimme More" remix. Sometimes finding that perfect mix of attitude and fidelity can be a tricky process. The new album's first single, "More"—as well as the Steve Aoki collaboration "1967 Poem"—aren't as technically perfect as Holkenborg would like, but the glossed-up versions didn't have the same bite as their rougher originals.

"When I grew up," remembers Holkenborg, "I couldn't play a record if the kick drum sounded horrible. That's how bad it was for me at a certain point, and it had nothing to do with the music. I'm a sound freak, so I try and make it as best sounding as possible without losing that edge. But the thing about new hip-hop or electro punk producers is that the way they produce is not based on whether it sounds good or not. It's based on attitude—which is a completely different approach than the old school producers."

One of the most fruitful collaborations on *Booming Back At You* occurred with Electrocute's Nicole Morier, who co-wrote three songs on the album, including the cat-and-mouse escapade "Mad Pursuit." Along with Morier, musicians Gus Seyffert, John Kirby, and Bram Inscore—who double as Electrocute's live band—used their collection of obscure synth gear to add character to nearly-completed Junkie XL tracks. As he does with his partner in Holland, Holkenborg would shuffle ideas over to Morier and company, and have them replay or embellish particular passages on the track using vintage pieces such as a Kawai SX-240, a Minimoog Model D, an Oberheim OB-8, a Vox Jaguar, a Suzuki Omnichords, and a Yamaha CS-01. Most of the material was recorded through Seyffert's Auditronics Grandson console, with the signals being warmed up by his Yamaha PM-1000 preamps. Some of the bass sounds were then re-amped through an old Ampeg B-15 miked with an Electro-Voice RE20, and then compressed heavily with a Purple Audio MC77. For additional reverb options, Seyffert and his group sent the signals through some old Fender Twin Reverbs, an old Fostex stereo spring reverb, and an Echoplex.

"The stuff they come up with isn't made in plug-in land or VST land," explains Holkenborg. "These are guys who sit down behind their Minimoog and turn knobs until they get the sound they want. They delivered so many little sounds, and I think I ended up using between 40 and 60 percent of what they gave me. They came up with the most insane stuff ever." EQ

3 WAYS TO GET BIG SOUNDS ON A SMALL BUDGET

LAYER YOUR REVERB

"You can use multiple reverbs at the same time that will build something that sounds as big as a really expensive reverb," says Holkenborg. "Just insert one that's fairly short with a lot of early reflection. Then, on top of that, insert a larger room, and, on top of that, insert a small hall."

COMPRESS WITH WHAT YOU HAVE

"The compressors that come with Pro Tools, Logic, or Cubase aren't the best on the planet, but they're not that terrible either. In fact, they're great for fking up sounds, and doing something drastic to them. When it comes to proper mixing, however, you should be a little careful with those compressors, because some tend to impart a popping sound at aggressive settings."**

START PEDALING

"You can spend a small amount of money on a bundle that'll give you one or two cool plug-ins, but you can also look for cheap guitar pedals. Just run a couple of channels outside of your sequencer, and go into some chorus, flange, and/or delay stompboxes that will add character to the mix." —*Richard Thomas*

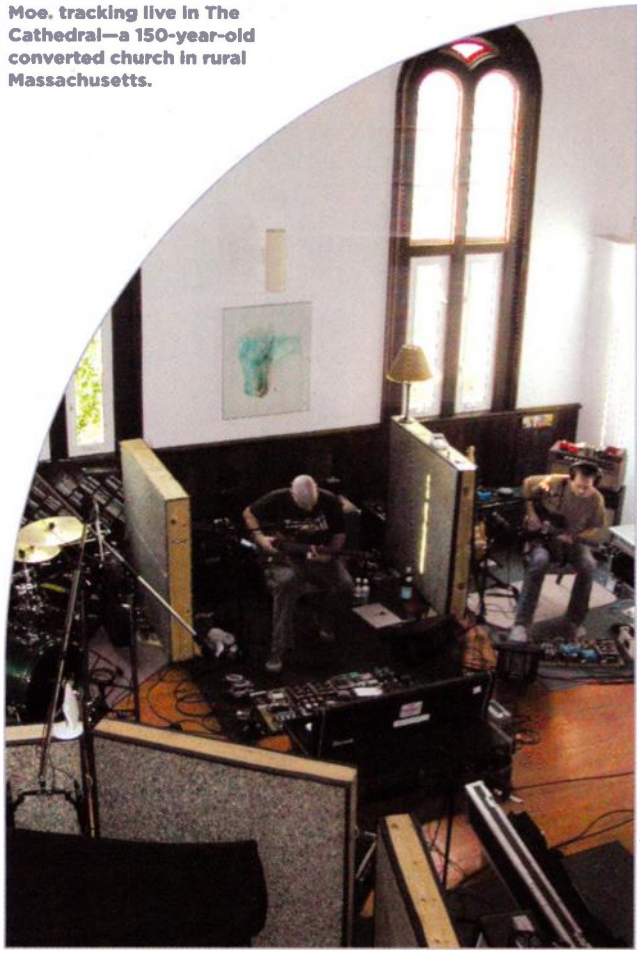
WARTS AND ALL

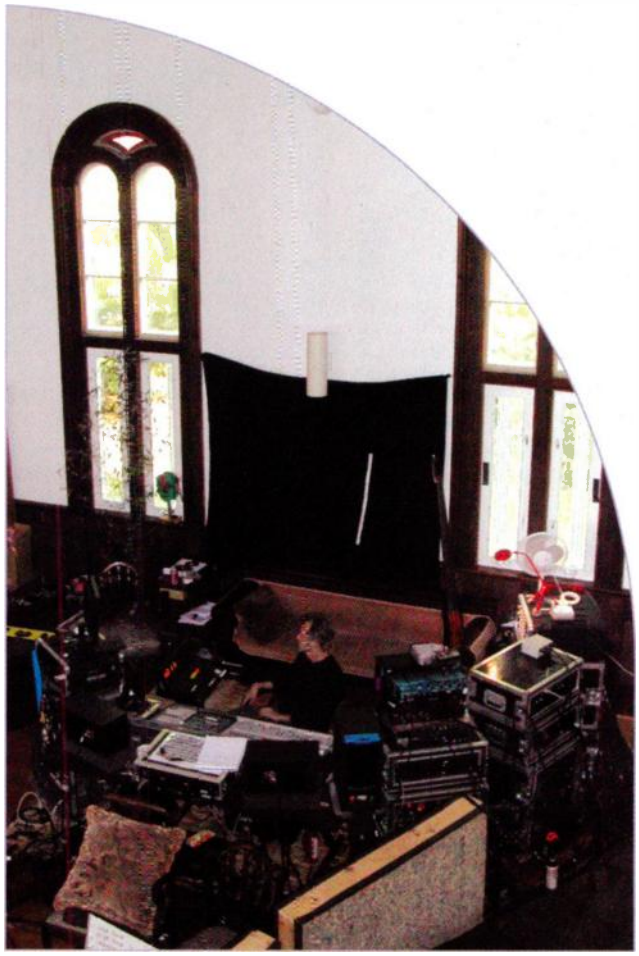
Moe. Takes the Show from the Road to the Studio for *Sticks and Stones.*

by Ken Micallef

John Siket listening intently to the playback of Moe.'s last jam (opposite).

Moe. tracking live in The Cathedral—a 150-year-old converted church in rural Massachusetts.





Often described by mainstream press as the quintessential jam band, the upstate New York quintet Moe. has never adhered to that scene with the ambition displayed by peers such as Gov't Mule, Umphrey's McGee, Medeski, Martin and Wood, or String Cheese Incident. Sure, the band appeals to the same fan base—and the members are known to indulge in the type of improvisational excess favored by the "chops to burn" players that fill out the ranks of celebrated jam acts—but it's glaringly obvious that Moe. is made up of much more than tireless tour hounds striving to fill the empty holes left in the absence of the Grateful Dead or Phish. Dig deep into any Moe. album—from 1993's *Headseed* to 1998's breakthrough *Tin Cans and Car Tires* to the latest release, *Sticks and Stones* [Fat Boy]—and you'll hear a band that's obviously as in love with the song as the jam that may propel it. But while the standard Moe. track is rife with intricate harmonies, hummable melodies, and strong vocal hooks, the group's preference for recording live (and then bringing the tracks into the studio for editing and overdubs) versus making conventional studio albums has made it easy for some to lump the act into the jam-band category.

For *Sticks and Stones*, however, Moe. men Rob Derhak (bass), Al Schnier (guitar/keyboards), Chuck Garvey (guitar), Jim Loughlin (percussion), and Vinnie Amico (drums)—along with producer John Siket—decided to write and record new material in the studio, as opposed to playing and refining songs for months on the road. The band members still embraced a live approach, setting up their instruments—as well as a Sony DMXR100 console and an IZ Radar V hard-disk system—in a 30-foot circle in a converted church amid the bucolic Massachusetts countryside, and facing off in real time.

"We wanted to get fresh ideas, and be really excited about them," says Derhak. "When we've been playing the music for a long time on tour, and then we release an album of those

WARTS AND ALL

[Clockwise] Jim Loughlin showing off his percussive flair during the *Sticks and Stones* sessions. Al Schnier pulling double duty between keys and guitar. The band reviews their last take before deciding to move forward.

songs, it's not quite as exciting. You get kind of sick of the material after a while. The way we did it this time, we were actually recording as we were writing."

"We were also trying to keep the recording as close to the band's feel as possible, and to get the most natural sounds we could," adds Schnier, elaborating on the band's decision to track at The Cathedral—a 150-year-old church, complete with 30-foot vaulted ceilings, tongue-and-groove wood floors, and a central open space. "It was approached as if we were tracking to an analog reel-to-reel deck, even though we didn't really go in that direction."

Why did you alter your recording approach for *Sticks and Stones*?

Schnier: We recorded our last two albums in concert, and then went back to the studio where we tweaked, edited, and rearranged the music. We pushed the envelope in terms of capturing the essence of what Moe. does live, but, because we tour all the time, some songs end up being played live for as long as two years before we record them. So we felt we had maximized the potential of that method, and, for this album, we wanted to create a new set of variables—to see if some new parameters would be conducive to producing some creative music. We work really well in that situation. Otherwise, the project can wander too much because there's no direction. We envisioned something that would be more song oriented, and less about flexing our arena and prog rock muscles with big, 20-minute explorations and long guitar solos. We wanted to make our *Sticky Fingers* or *Workingman's Dead*.

And you thought that recording at The Cathedral studios would help you achieve that feel?

Schnier: Yes. We were looking for a large, comfortable space that was conducive to us being able to work around the clock. The bonus was that The Cathedral has huge vaulted ceilings, and the acoustics were just perfect for killer drum sounds.

What were the challenges to recording in an open church space?

Derhak: Isolation issues. We recorded all of the basics together as a band, so the sound of the other instruments would bleed into the drum overheads. The whole goal was to get as much of a live band sound as we could at The Cathedral, and then do overdubs at The Magic Shop in New York. We wanted to isolate the guitars with gobos, and record them in one take, but certain sounds required going back and playing different guitars at lower volumes through different amps. We're not a loud band in the studio, and we're not loud onstage, either. Vinnie hits pretty quietly, and that allows us to play at a decent volume. We couldn't have done this if we were cranking, because the church was a quarter of a mile away from the police station in a small town. They would have shut us down.

Besides the overall performance, what do you feel is the most important element for a recording engineer or producer to capture?

Siket: For me, it's about getting a good vocal sound. If the listener doesn't like the way a vocal sounds, nothing else has a chance. The record buying public listens to vocals. I always use this analogy: When you are driving on a long trip, and you flip between radio stations, the first thing you notice is the vocal. If the vocal sound is good, the person running the dial will stop and listen for at least a minute.

How do you go about getting a vocal sound that's radio ready?

Siket: You know, you can call these guys a jam band, but we spent a lot of time auditioning microphones for this record. We took way more time dialing in vocal sounds than we did for guitars, drums, bass, and keyboards combined. For basic vocal tracking, we used good dynamic mics, such as the Shure SM7—which is one of my go-to mics, especially in a live situation. It has a good frequency response, a good amount of rejection, and a built-in pop filter. We actually ended up using one live vocal, with Al singing through the SM7 on 'Raise A Glass.' Al's voice also worked well with the Telefunken U47 reissue. Rob liked the Violet Amethyst—it sounded very natural with his voice.

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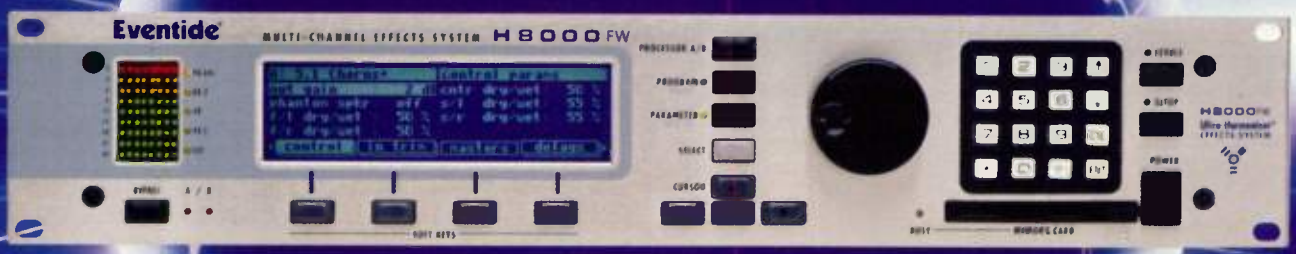

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WARTS AND ALL

Rob Derhak (left) and Chuck Garvey (right) tracking bass and guitar side by side.

A sampling of some of Garvey's gear goodies.

Garvey (background) and Schnier's (foreground) dueling solos.

We initially did an exhaustive side-by-side mic comparison. I thought the Telefunken would be the outright winner, and it sounded great to me, but it always comes down to the singer. Even when we were in the overdub process, I put everything up in the monitors to make sure. I'm not one of these people who thinks the Telefunken U47 is the ultimate vocal mic, for example, and just puts it up without auditioning it critically. On a couple of songs, we used the Telefunken 251 for Rob and Chuck's vocals, but we used the Violet Amethyst quite a bit, as well. You get a nice bass boost when you get close to the U47, and Al's voice benefited from that. The 251 didn't have the same proximity effect, and I had to position a pop filter within six or eight inches of the mic to smooth out the highs and cut down on sibilance.

Did you have a favorite mic preamp for the sessions?

Siket: I love the Daking 52270 for both vocals and acoustic guitars, and API 212s were used on everything else. Most of the vocals were recorded in the studio, but Rob recorded a couple of songs at home, and here and there, a background vocal by one of the other guys was done at home, as well. As everybody owned Daking 52270s, that's what I used for 80 percent of the album, because I wanted to work with uniform vocal sounds.

What guitars and amps were used on the album?

Schnier: I played a 2005 Fender Custom Shop Telecaster, a 1961 Gibson SG, and a 2004 Gibson SG Junior. For amps, I used these amazing hand-built, bomber amps by Oldfield—a Marquis 30 and an HT Deluxe—as well as a '54 Fender Deluxe and '64 Fender Super Reverb. The Oldfield Marquis 30 is a combo amp with two 12-inch Hemptone Tone Tubby speakers that roll off some of the grit when you hit higher frequencies. The Marquis 30 is like a supercharged Vox AC 30.

Was there a rule of thumb when miking the guitar amps?

Siket: I always position dynamic mics very close up on the amps to minimize signal bleed from the other instruments. I used a Sennheiser MD409 on Al's Marquis 30. Because of how the band set up, there wasn't a lot of room to fit in a mic stand, so I just draped mics over the fronts of the amps, right up on the grille cloths. We also tracked the guitars with some light compression from a pair of Universal Audio 2-1176s.

You're not a fan of recording guitars direct to combat leakage?

Siket: No—I want the amp sound. That said, sometimes I couldn't get a good miked sound with all the guys cranked up, so on Al's mandolin, we used a Fishman pickup and ran direct. But even for recording acoustic guitar—where I was having similar leakage problems with my Neumann KM54—I preferred to place a gobo in front of the performer to shield the mic.

Rob, how did you get your bass sound?

Derhak: I use a Pedulla MVP JJ with Bartolini pickups, a vintage Gibson EB2, a Ritter Classic 4-String, a 1977 Musicman Stingray B00, a '72 Rickenbacker 4002, and a NS Design WAV upright. Generally, I cut a lot of midrange around 800Hz, and I add a little treble. I used an old Ampeg Portaflex amp with one 15-inch driver miked with a Neumann U 47 FET, and I also ran direct. I aim for a fat tone without it exploding. I usually run the volume on the bass all the way up. I tend to favor the bridge pickup, and I blend in the neck pickup for the low end.

Was it difficult recording some of the softer percussion instruments given the live approach to tracking the album?

Siket: We initially used a Heil dynamic mic on the xylophone


A good ol' fashioned mic shootout.

to minimize bleed during the live tracking, but we did have to go back and overdub it. During the overdubs, we switched to a Royer Stereo SF 12 ribbon, positioned about six feet back from the instrument to get a more ambient sound. For the vibraphone, I placed a pair of Violet Design Finger mics in an XY configuration about 12 inches over the middle of the instrument.

Did you have to save the accordion tracks for the overdubbing sessions as well?

Siket: Yes. We used a Violet Amethyst for the accordion, placed about a foot away from the soundhole. We wanted to pick up the sound of the air entering and exiting the instrument.

How much punching in was done during the sessions?

Siket: The strings were punched in here and there. In some cases, we did up to six string takes, and then Al and I picked the best parts. I put together what he wanted from different tracks, and we assembled a performance. We also punched in a few guitar parts. I've gotten away from the technique of assembling a super-tight drum track. I worked with Steve Lillywhite back in the mid '90s with the Dave Matthews Band, and I learned to gather as much info as you possibly can, and don't microscope out the drums so much. No one is going to be listening to just the drums at home! So I would rather do edits based on *band* performances, rather than just drum performances. I just want everybody playing well together, and if I have to punch in a couple of guitar or bass things later, so be it. The recording process was all very natural for the band, and they could also do their own headphone mixes—which meant each player was hearing exactly what he wanted to hear, and was comfortable enough to get their performance where it needed to be.

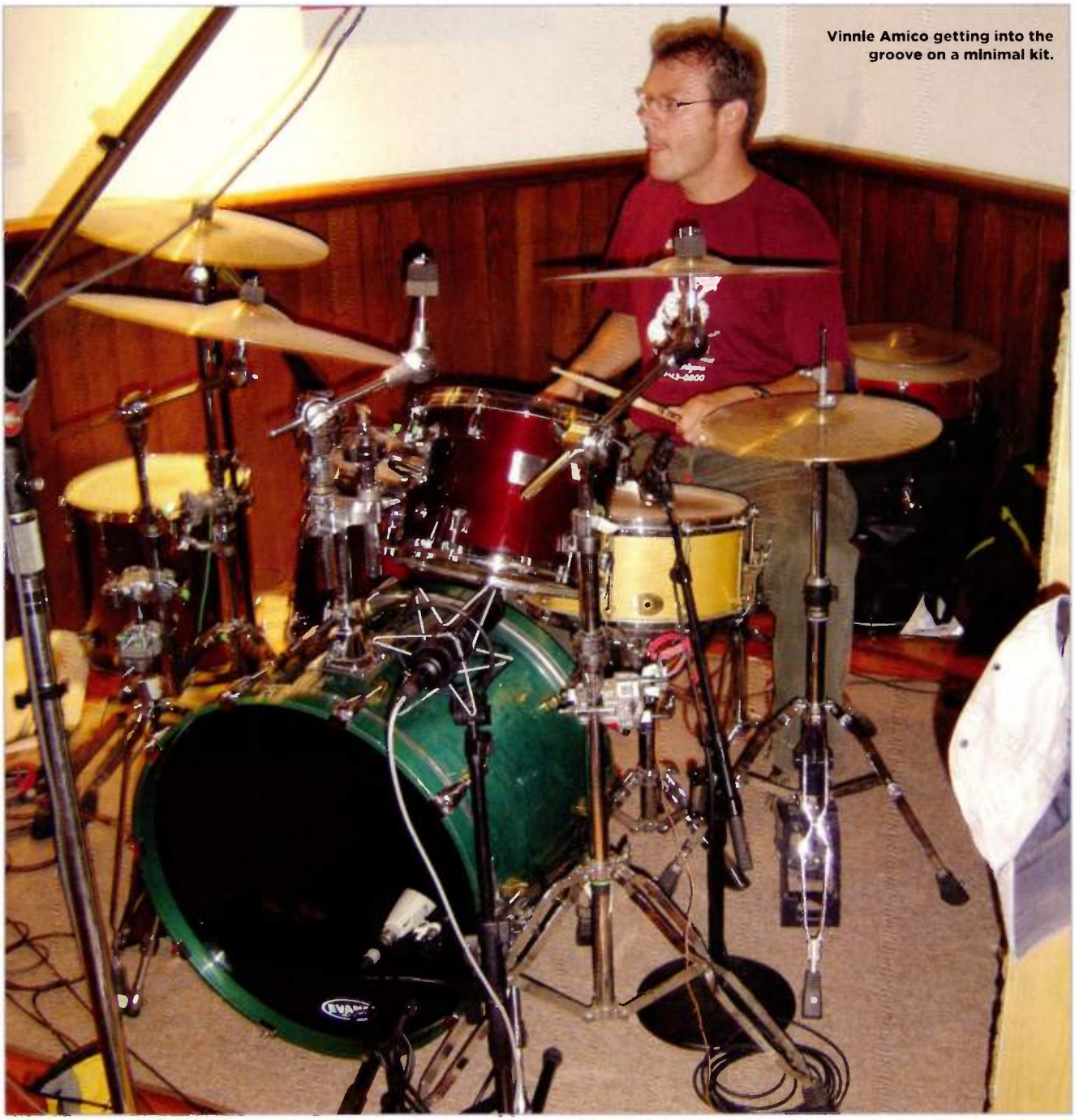
What about recording the synths—especially the ones you hear in "September"?

Siket: That's an ARP Solina. They also used a Moog Voyager and an Optigan Music Maker, which Al preferred to run live through his Oldfield amps. I also ran a direct line for a clean version, and then combined the amp and direct signal. The Optigan was so old and wheezy that I felt like it *had* to be direct. It was vintage sounding to say the least! For the amp sound, I draped a Sennheiser MD409 over the cab.

For all amp miking, I use a technique taken from an *EQ* article on how Brian May miked up his Voc AC30. When I place a mic, I will listen on headphones for any hiss coming back from the amp. I will sweep the mic around until that hiss gets very bright and very fine. I don't listen to the actual sound—I listen to the white noise that is coming out of the amp when it's idling. Then, I move the mic around until it becomes its most present—that's the spot where the microphone is most on axis. You'll get the most rearward rejection, as well as the brightest sound. For me, this is the most efficient way to work. If I feel the sound is too bright, I will have the player decrease the treble on the amp, but I will generally leave the mic in the same spot.

"Cathedral" features a pretty impressive string section.

Siket: For that song, I fed the band potential string ideas, and then I wrote a string part in Propellerhead Reason. We bought in two violin players, and played them the Reason track. The first violinist, Allie Kral, mimicked the Reason parts, and overdubbed them acoustically. I placed a Telefunken U47 two feet away from her. The first violinist laid down a bass part, and then a harmony part, and so on until we built up the string section artificially via



Vinnie Amico getting into the groove on a minimal kit.

overdubbing. We also overdubbed viola. When you do a string section, it is best to have sheet music, but we weren't operating at that level. At the last minute, the song needed an uplifting violin part so the second player, Emilio China, added a couple of tracks, and embellished the initial tracks, recording them direct. I didn't record the two players together—it was all multitracked.

How were the drums recorded?

Siket: In keeping with the minimal spirit of this record, we only had a rack tom and a floor tom on the drum kit. We just wanted high and low sounds. I also went conservative with the drum mics, because we wanted a simplified sound. In the initial ten-day period we spent just getting sounds, I went through a lot of different bass-drum mics. I tried the Sennheiser MD421, and an Audio Technica AE2500, which has a dual dynamic and condenser element. I had high hopes for that, but, in the end, I went back to my old standby, the AKG D12E. I felt that was the right sound, and it took the least amount of EQing to get a workable sound. It just fit the other mics on the set. I placed the D12E inside the shell about half way in, and pointed it at the beater. For the snare, I placed a Heil PR20, angled about 45 degrees, and pointing towards the rim to get some of the ring of the drum.

I also experimented with detuning the bass drum as low as it would go without sounding ridiculous. You get a lot of slap and bottom end if you tune it toward the low end of the

spectrum. It's a quick and dirty way to get a good rock sound. I used two ambient mics on the kit—an AKG C12A condenser as an overhead, and a Royer R-121 ribbon as a room mic. I didn't close mic the hi-hat, or any of the toms. I couldn't go too crazy with room mics, because when I started turning those up in the control, there was a lot of bass and guitar leakage.

Does your minimal approach extend to effects processing, as well?

Siket: I shy away from drum reverb in general—it tends to sound dated to my ears. I use natural ambience on the drums—although I couldn't use it as much as I would have liked, because everybody was playing in the same room. As far as outboard reverbs, Allaire has a nice EMT plate that I used. I was raised on plates. I actually like the sound. In front of the send to the plate, I will generally use an analog delay to set up a pre delay, but I try not to go to many discrete reverbs, because I want everyone to sound like they are in the same space. Having said that, I'll print echoes and other effects if I think they'll suit the song. I don't like waiting until the end to create all that—it's too big of a job.

You decided to mix the album at Allaire Studios, going from a Neve Air Montserrat console to an Ampeg ATR 102, 1/2-inch analog tape machine. Which track was the most challenging to mix?

Siket: "Cathedral" had the most processing going on. I set up several types of delays to get all those different effects going on with the vocals. I also used an EMT plate on the vocals, the strings, and a little bit of guitar. Allaire has an electronic reproduction of a Watkins Copycat—which is an old tape delay, like an Echoplex—and I used that on the lead vocal. In the beginning of the song, there are some long repeating delays, and those are Roland SDE 3000s. Al's Roland Dimension D analog chorus was used on the strings and background vocals.

Which final track was the most untouched?

Siket: "Queen of Everything." That was a live jam without any real lyrics. The band tried to re-track it, thinking they could tighten it up, but Rob said, "This is the reason we came to record like this. I don't think we should change it. We should use the original one." So we did—even with a dropped tambourine, and people petering out at the end. It's very unadulterated and pure.

In hindsight, how did the end product benefit from being recorded in such a guerilla fashion?

Derhak: We were able to envision the entire song before taking it to a live situation. Before, the music went through the live process, and then it was recorded. But, this time, we could make decisions about specific instruments, and we were able to control the sound of the recording more. In other words, we were able to write for the recording, and not just write for the live show, and then come back and figure out how it would work out in the studio. There was no more, "Oh, you have been playing *that* for last year? It clashes with what I'm doing." Everyone

WARTS AND ALL

Amico brings big beats to the studio for *Sticks and Stones*.

Loughlin laying down xylophone tracks behind a wall of gobos.

was filling up the space better, but trying not to overlap, and have the whole thing turn into a sonic clusterf**k.

Schnier: We were in a space unconfined by the limitations you would normally have in a studio. No clock. No schedule. We were on our own time—free to record whenever we wanted—so we could experiment. When Siket played back the music, we knew what we were hearing was an accurate representation. The room at The Cathedral was conducive to making a very rootsy, organic album.

Derhak: Creatively, it's a great outlet to do it this way. You get to make an album documenting where you are at, and not where you were. EQ

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MUSIC'S NEW MESSIAHS: YOU!

HOW TO GET YOUR MUSIC OUT IN THE DIGITAL WORLD

By Gary J. Mraz

The platinum towers of music industry temples have trembled in Biblical proportions. Former titans of music retailing like Tower Records have folded, and major labels have been hit hard by file-sharing. With dramatic changes in traditional music retail and distribution, how do artists find the Way, the Truth, and the Light? End times bring forth new revelations. We the artists have become the authors of a new testament in the future of digital media, and can flourish by taking advantage of this newly-level playing field.

Modern, successful music companies think differently. There are electronic distribution labels (digital only) that do not manufacture standard CDs. INgrooves (www.ingrooves.com) claims to be the world's largest digital record company and a leader in digital entertainment. Their paradigm is to let fans burn the physical media while providing them with the professional content, graphics, music and text. Warner's "e-label" will release clusters of songs online; the artists will retain ownership of their masters and copyrights while signed to the label. EMI Music CEO Alain Levy declared the CD almost entirely dead and buried. (Levy was axed several weeks after making that pronouncement.) Paul McCartney's new album *Memory Almost Full* was released through Starbucks' Hear Music label and sold over 160,000 copies the first week—33% more than McCartney's previous release on EMI, his long-time label. As CD sales wane, many labels are rethinking the album format altogether, requesting acts to release two songs every quarter.

In an effort to re-ignite disc sales, Warner Music has introduced MVI (Music Video Interactive), a format that combines album and DVD content; it spins in anything that supports DVD playback. The typical MVI includes hi-resolution audio and 5.1 surround sound audio, MP3 files, behind-the-scenes material concerning the album, and a ring tone program that allows making a ring tone from any song on the album. *Snakes And Arrows*, Rush's 18th studio album, is one of the first to be released in the new format.

In October 2007, Radiohead rocked the industry by making their new album *In Rainbows* available online as a free download. But, people could also decide how much *they* wanted to pay for it. Record industry executives predicted that the experiment would be a financial flop, but 48% of U.K. downloaders paid for the album, averaging $5 per download. 40% of U.S. downloaders paid for the album, but they paid a higher average of $8 per download. The experiment had an intangible value by making fans more loyal to the band, and more likely to recommend the album to their friends and attend concerts.

Either way, Radiohead's gambit may have been shrewder than the numbers would at first indicate. Some years ago, William Fisher of Stanford University published some interesting data on the CD's cost structure. According to his figures, the retailer's slice of the CD is 38%, while distributors take 8% and marketing another 8%. The artist, in contrast, typically gets only 12% and the music publisher 4%. So the maximum Radiohead would get from a conventionally-marketed CD priced at $16.49 is actually $2.63 which, coincidentally, is almost exactly what Comscore stated they received from their online experiment.

In late 2006, Barenaked Ladies grossed $978,127.99 in revenue from intellectual property in the first week of music sales from their new album. Understanding this

MUSIC'S NEW MESSIAHS: YOU!

Fig. 1: Snocap makes it easy for you to sell digital downloads from within your own website.

Fig. 2: CD Baby remains one of the most popular ways for independent bands to sell CDs.

sales figure requires looking beyond the numbers on the charts, according to Terry McBride, band manager and CEO of Nettwerk Music. McBride notes BNL released their album on their own artist-run label, Desperation Records, in multiple formats—from physical CDs to digital albums, deluxe editions, USB flash drives, ring tones, multi-tracks for remixing, streams, etc. Not only do all these outlets generate revenue, but also the percentage the band actually sees is significantly higher since they own their intellectual property. BNL actually hit as the #4 digital seller in the U.S. and #3 in Canada. *Barenaked Ladies Are Me*, the first original album in three years from BNL, charted at #17 in the U.S. with only 36,811 albums sold and #7 in Canada with only 8,008 albums sold.

Corporate giants spend billions in aggregate acquisitions (*i.e.*, purchases that combine content companies, technology, and software). These corporations sponsor, acquire, and morph companies like YouTube and MySpace to beguile the eyeballs of today's youth. The Ozzfest is a perfect example of a new corporate music model. People were frustrated with overpriced CDs so they got it free online. Concert tickets were also becoming overpriced, so last year Ozzfest was free—one helluva good distribution method. Corporations sponsor these "tastemakers" (influential musicians and blogsters that set trends and styles) who can drive traffic to their sites. They exchange free concert tickets for personal contact information from that desired demographic.

A recent Content Delivery & Storage Association summit (CDSA) featured keynote speaker Mick Fleetwood. As founder and manager of Fleetwood Mac, his stellar music career spans a 40-year evolution of music and delivery formats—8-track tapes, vinyl records, cassettes, reel-to-reel, Digital Audio Tape (DAT), LaserDisc, CD, DVD, and downloading. He reminded us that with every transition, naysayers prophesized the demise of the music industry when actually, the changes had a revitalizing effect. He stated that every "transition moment" offers new guerrilla marketing opportunities and also, "quality and integrity creates longevity"; with a "long tail" marketing mentality, quality content can be morphed into a variety of iterations. (Coined by Chris Anderson, the Long Tail concept enables potential distribution and sales channel opportunities created by the Internet that enable businesses to develop and extend that market successfully.)

THE WAY, THE TRUTH, AND THE LIGHT

I. Digital Distribution. Snocap's digital distribution model allows musicians to sell downloads directly from their own site rather than relying on other sites. You upload your songs to Snocap (Figure 1), then grab the bit of code they provide and plug it into your site. This creates a "store" on your site where people can hear 30 seconds of a tune, then purchase it for download. Snocap makes your songs available on MySpace or your own website, and accepts anyone (which iTunes doesn't). You don't even need to have a physical CD. www.snocap.com

II. Physical Distribution. CD Baby (Figure 2) has re-defined the independent model of physical CD sales and distribution. It took them four years to hit the $1,000,000 payout mark; now that can happen within a single week! CD Baby has also forged

Fig. 3: Live 365 is all about Internet radio stations; you can even set up your own.

digital distribution agreements with iTunes, DigiPie, iSound, Tasty Audio, Naros, Flip and more. www.cdbaby.com

III. Electronic Press Kit. Sonicbids is an online service that allows musicians to create an electronic press kit (EPK) and connect with people who book, license, and promote music worldwide. In June 2007, over 300 musicians who submitted EPKs online had been selected to perform in festivals, conferences, contests, film, and TV. Bottom line is that it gets your music into the hands of people who you might not otherwise be able to access. www.sonicbids.com

IV. Ring Tones. Cell phone ring tones have become the newest mass music distribution method. In fact, many artists make more money on ring tones as they sell for two to three times more than a digital download. Imagine playing live and having a banner up during the show advertising that you can download your album right now on your iPhone—with this strategy, fans don't even need cash or credit cards, as they just pay with their iTunes account at the show. Creating ring tones of your own music is pretty cool; you can do that at www.myxertones.com/default/.

V. Internet Radio. Broadcasting your music 24/7 on your own Internet radio station is another great way to find another audience. Live365 (Figure 3) allows users to create their own stylistically unique format, upload original material, and find new markets. I am astounded at how many times a week users listen to my radio station Voodoo Radio. live365.com/stations/kozmraz?play&site=

MUSIC'S NEW MESSIAHS: YOU!

Fig. 4: Cafepress is a source for branded, custom merchandising.

VI. Market Branding. Content sites like Cafepress and Zazzle.com can Manufacture On Demand (MOD) an entire merchandise catalog of branded t-shirts, coffee mugs, mouse pads, posters, etc. you can sell at shows. Major recording artists use these services; it doesn't cost you a cent, yet expands your merchandising possibilities. www.cafepress.com, www.zazzle.com

VII. Social Networks. MySpace, Friendster, Facebook, Second Life, etc. have been a successful tool for live performers who use the online community to build "friends lists" for touring and new release information. It's a good idea to form co-operative alliances that help everyone; for example, an East Coast hardcore band and a West Coast band can put each other on their top eight list; promoting each other's MySpace pages expands both audiences. Or, check out Ernie Halter—his fans place his live show banner in their MySpace page. He can update that banner image by simply revising the image while keeping the same URL, which updates all the MySpace images carrying the banner at once. If you don't have a blog on blogspot, get one and keep it going. You will be ranked in days if you do. Use Pingomatic (basically a "ping engine"); every time you update your website, blog, or MySpace page (or anything to do with your band), you submit it to Pingomatic and they notify the search engines. You can also post to all of the social sites with a service like www.socialposter.com. www.myspace.com/erniehalter

VIII. Electronic Journalism. Writers can find more opportunities than ever to get articles published online. This lets you promote your music by simply providing your website address at the end of an article, while establishing you as an expert in your field and enhancing your reputation. Right now Pop Matters has an open call for feature essays on any aspect of pop culture, past or present. www.popmatters.com

IX. Functional Website. With so much "static" on the Web, small companies like www.bandspecial.com are a one-stop shop for everything from logos to pimping out your MySpace. At the D.I.Y. conference, I bumped into Emily Arin who has a brilliant idea of a subscription-based website that serves several purposes. For $12, subscribers receive a song monthly for a year. This not only pleases subscribers, it motivates Emily to maintain deadlines and builds her repertoire for live shows. Her subscriptions have exploded, and people enjoy the surprise of a new song at their home every month. www.emilyarin.com

X. New Opportunities. Be alert for a changing landscape, and be a pioneer. If a system is set up for format A and format B is coming, independent artists can take transitional risks, and if it actually works, they're ahead of the game. I personally experienced this with my Studio Voodoo DVD-Audio release. Packaged in a "Super Jewel Case," it was larger than a CD jewel case so retailers ended up putting it in its own special, uniquely visible section. Or, consider a company like TuneCore, which for a modest fee, will "broker" your music to multiple digital music retailers, with you keeping all the revenue. Models like this simply weren't possible five years ago. www.tunecore.com

XI. Play Live. If you're not an established artist who releases and sells new music regularly online, nobody knows you and you have to get known. Playing live is the litmus test of your true artistic caliber: If your talents inspire a passionate response, it's infectious. Your music, message, and artistic viewpoint will spread "virally" (marketing techniques that use social networks through a self-replication process) on the Web, and fans will buy your products. Build a physical fan base, then build an online community.

XII. Stay Educated. Participate with related organizations, attend conventions and seminars, read trade magazines and publications like this one for relevant information; *EQ* magazine, Berklee, and others offer "webinars" and online classes. I also recommend the film *800 CDs* by Chris Valenti. Wrapped around a seminar by music industry veteran Tim Sweeney, it's an entertaining, insightful, and inspired perspective on how to sell those remaining 800 CDs of yours. The more informed you are, the better your potential of making a living in this new digital marketplace; check out Andrew Dubber's *The 20 Things You Must Know About Music Online*. Best of all, it's free! http://newmusicstrategies.com/ebook/

XIII. Innovation is the New Commodity. You're probably creative in many ways, so utilize those talents to expand your artistic opportunities and do something that differentiates you. For example, my Studio Voodoo releases were created in 5.1 surround sound, and use that medium to maximum effect. Although there are also stereo mixes available, I've promoted the surround sound feature because it's different. If you search for "surround sound" in CD Baby, four Studio Voodoo releases come up in the first seven titles.

LIGHT AT THE END OF THE TUNNEL

You've found the way, selling songs directly from your aggregate website. Your internet radio station broadcasts your music 24/7, and CDs, T-shirts, coffee cups, and mouse pads with your band's branding are available for purchase. YouTube plays your videos, and you take advantage of social networking sites, mailing lists, and blogs, telling everyone about your next projects and gigs. You play live at bookstore chains, clubs, and festivals. Yes, *you* are the new digital Music Messiah. You can make a living with your craft in this new digital Mecca because when you sell 100 units of anything, it's *your* profit. You now have the power to spread your words and music throughout the world.

Ultimately, though, remember it's all for nothing without compelling music. Enduring songs with impassioned lyrics sung by stellar vocalists create a life of their own. It is *you* who must inspire your audience to actually spend their hard-earned money . . . on you! EQ

KAKI KING'S JOYFUL ASCENT TO NATURALISM

by Buddy Saleman

Kaki King is a unique voice in a sea of guitar players. Her overhand, percussive style—rife with finger tapping and hammer-ons—delivers dynamic nuances from gently coaxed notes to explosions of pummeled strings. Starting her commercial career as an acoustic wunderkind, King has evolved into a fiery multi-instrumentalist who performs with a series of Ovation acoustics, a Gretsch Electromatic lap-steel, a Jerry Fessenden pedal-steel, a few electric Guilds, and even a goldtop Les Paul. Documenting the essence of a player with so much dynamic firepower isn't easy, but King and producer Malcolm Burn opted to pretty much let performance alone drive the recording of her latest album, *Dreaming of Revenge* [Velour].

"From an engineering standpoint, nothing was too complicated," admits Burn. "Any sense of complexity is just from Kaki and her craft. My attitude was to let that be the thing people focus on when they hear her record."

Where was the recording made?

Burn: At my home studio in Kingston, New York. Kaki stayed there for the month of July, and part of August [2007]. This allowed us to wake up, go right to work, and then continue into the night. Moments of inspiration could hit us whenever they occurred, and we were there to capture it. In fact, Kaki is so good with Pro Tools that she ended up co-engineering the album with me. We tracked most of the parts in the control room for the intimacy and immediacy factors.

But isn't performing acoustic music in the control room a recipe for signal bleed?

Burn: Absolutely—and, sometimes, we liked that. I tend to sacrifice technical aspects in favor of the performance. We did use the piano room a bit, but Kaki prefers a dead, dry sound, so we mostly stayed in the control room. She didn't even wear headphones when she sang, opting instead to sing in front of the monitors—which turned out to be much better for her intonation.

BEOWULF SHEEHAN

Was there a particular acoustic-guitar sound you were trying to document?

King: I was interested in getting the sound of the guitar as I hear it when I play. So, to capture that perspective, Malcolm placed some mics in front of my guitar, and also positioned a microphone above my head.

How did that work out?

King: This is how I compare the sound of my previous and current albums: *Until We Felt Red* is like a black Ikea table with pen and paper placed just so. There's also a brushed silver lamp, and several beautiful, but simple and shiny, handmade art objects decorating the corners. *Dreaming of Revenge* is like a beat-up workman's table, covered in wood shavings and carving tools, and with an enormous and beautiful sculpture rising out of the middle of it.

Malcolm, how did you envision the production?

Burn: I have an interesting collection of instrumental music from my grandfather that dates back to the '30s. So when I was thinking of doing an instrumental record with Kaki, I thought about doing something a bit different than what people these days commonly expect from an instrumentalist. I decided that strong melodic content is the common thread between those old records, and that's where I envisioned things going with Kaki.

What kinds of records were you using as stylistic benchmarks?

Burn: I wasn't necessarily trying to replicate specific songs from the '30s—that's just the vibe I wanted. But if you want to see where we were heading, think of "Love is Blue" by Paul Mauriat, or "Sleepwalk" by Santo and Johnny. So although Kaki's music can be fairly complex, I asked her to come up with as many relatively hummable melodies as she could for each track. Then, we weaved them in and out.

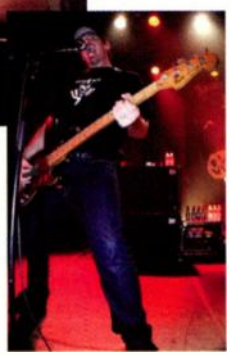
What kind of miking techniques did you use for the acoustic guitars?

Burn: Generally, I've become very conservative. I'll still do things with EQ and plug-ins to get a sound, but I try to keep the sound really open and natural. For the most part, we used two mics for Kaki's acoustic—a Neumann U67 for a front perspective, and a Coles 4104 positioned over her shoulder. The Coles is a warm mic with a fair amount of low end, so that gave Kaki the depth and resonance she was looking for. The Neumann provided much of the sparkle and attack. We also used a direct track. The final blend of the inputs was one-third Neumann, one-third Coles, and one-third DI. The mic preamps were either the onboard ones in my API console, or an Averill Calrec PQ 1061.

King: Malcolm is very interested in recapturing some of the aura that is lost when you record digitally, as opposed to analog. So he makes very interesting miking choices—all of which seem to be part of his scheme in creating a world of happy mistakes. Somehow, he gets instruments to overlay each other so that you can't really tell what is creating a melody. He's not really about fine-tuning mic placement—he's more excited about making music in the moment. **EQ**

HOW PENNYWISE LAYERS ITS PUNK BASS SOUND

RANDY BRADBURY



Above: (left to right) Producer Cameron Webb and Pennywise vocalist Jim Lindberg. Inset: Randy Bradbury.

by Buddy Saleman

Pennywise, the punk rock band that has been thrashing across the world for the last 18 years, continues to annoy the status quo—this time, by releasing its new album as a free download via MySpace Records. Formed in 1988, in Hermosa Beach, California, the seminal punks seem to get more intense with age. Rather than letting the years turn the band into a punk nostalgia act, Pennywise had the energy and fire to headline last year's Vans Warped Tour—which is typically the stomping grounds of young skaters and X-sports zealots. The as-yet-untitled "free" album explodes with the band's furious attack, and Pennywise bassist Randy Bradbury and producer Cameron Webb revealed how they tracked an aggressive bass sound that can cut through raging guitars and speedy tempos to drive the groove.

Randy, what kind of bass rig do you have?

Bradbury: I have a '78 Fender Precision with a rosewood fretboard. I plug into an Ampeg SVT-2PRO head and Ampeg 8x10 cabinet. I like the SVT's tube distortion. I also use Dunlop strings and picks.

What's your typical approach to playing bass?

Bradbury: It's very simple. At some point in my development as a player, I said, "I'm just gonna go with what I know, and make that sound good." I do work on my right-hand technique because we play really fast music, and it's really easy to just strum the strings with long strokes and get out of control. I try to find a place to rest my hand where I can be in control, and hit every note with consistency.

How did you record the bass in the studio?

Webb: Basically, we started with his Fender P-Bass and SVT head, and then we split the signal into three audio chains. The first chain was a Line 6 Bass PODxt Pro. We had no special settings—we just turned the knobs until it felt right. We used the PODxt for a direct signal, but we tweaked it until it sounded more like an amp, and less like a DI. We put an Empirical Labs Distressor at the end of this chain with a 6:1 compression ratio.

For the second audio chain, we miked Randy's cabinet. I positioned a Sony C500 large-diaphram condenser, and an Audio-Technica ATM 25 dynamic very close to the grille near the bottom four speakers. The Sony gets more of the sub-low stuff, and the ATM captures the top-end grit. Then, I bused the two signals together, and sent them to the Distressor with about a 6:1 ratio. I liked the very natural sound and feel produced by this chain.

For the final chain, I set up a little Orange practice amp and a crazy compression pedal made by Little Labs PCP that I found in a pawnshop some years ago. I use it to drive the amp a little harder. The Orange doesn't have a lot of bottom end, but it gives you a lot of growl. When I mix, I sit that track on top of the DI and amp tracks to make the bass sound more tight and present. At the end of the chain, I used a Geoff Daking compressor with a ratio setting of 10:1 to level everything out, and make sure the high end is controlled and focused. If you looked at the waveform, it would be straight across. I don't want a lot of dynamics on the Orange track.

What was the recording gear available at the sessions?

Webb: We recorded at Maple Studios in Orange County, California, and they have an API board and Pro Tools HD. We monitored with Yamaha NS10 and Genelec speakers. People don't realize how important monitoring is. The thing about the NS10s is that you can hear your mistakes. You can hear when the kick and bass are not locked in. The Genelecs tend to mask things like that, as well as make the sound spectrum prettier, so I have a tendency to be a bit lazier mixing with them.

Are there any major challenges producing a fat-sounding bass when the band rhythms are at such a frenetic style of music?

Webb: You must ensure the bottom end is full and even, but you also have to get the top end cutting through. It's a real balancing act trying to find a tone that matches with the kick drum, and doesn't overwhelm it. I scooped out some of the mids on the guitar tracks so the bass could sit right in between them. Then, I ran the tracks through either the Daking, the Distressor, or a McDSP CompressorBank—where I could select the attack and release of specific low-end frequencies. The CompressorBank allowed me to really level off the lows—every note, whether it's an *E* or an *A*, is the same volume—and crank them up louder.

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PUTTING TOGETHER A HOUSE DRUM KIT

by Jake Wood

Trumpet players have it easy. They can waltz in five minutes to downbeat, open up their cases, and start blowing. Drummers, on the other hand, have to schlep, and setting up a kit and getting tones is a lot of work. The ordeal becomes even more of a nightmare if the drummer brings in a cheap or poorly tuned kit. However, lengthy and occasionally grueling setups can be downsized with the addition of a house kit—especially if the kit is already miked and tuned to the room. But before you ink any checks or swipe some plastic for some house drums, here are some features to look for in a sparkling monstrosity of wood, chrome, and brass.

Two entirely different drum configurations can be assembled from a 7-piece kit. Note how the setup on the right is using a floor tom as a kick drum.

The author can swap snare sounds by choosing between four of his favorite snare buddies—one of which is a furry friend.

PICK UP THE PIECES

A standard 5-piece kit is an adequate selection, but a 7-piece will add the versatility needed for various styles. Additional toms (assuming one extra high tom, and one extra floor tom) allow for busy Peart-esque fills, but, more importantly, they let you craft different-sounding kits. For example, if the tom sizes are 8", 10", 12", 14", and 16", building a 4-piece kit with just the 10" rack and the 14" floor offers a very clear, yet powerful sound. Swap them with the 12" and 16", and the kit will sound drastically larger and heavier. A third option is to convert the 16" floor tom to a kick drum that will overhaul the sonic gestalt of the set into a "jungle" kit.

LET FREEDOM RESONATE

Having a plethora of toms to play with is fun, but it's the resonant qualities of the toms that matters most. Mounting brackets play a crucial role in tom resonance. Up until the last eight or nine years, most toms just had sturdy brackets bolted to them. While they certainly serve their purpose well, they also choke the tone, and require additional holes in the drum shell. Thankfully, most of today's higher-end kits have brackets that allow the drum to move around and resonate freely while also preserving the shell. For the vintage kit, a cheap upgrade with the RIMS mounting system can be a sonorous reawakening well worth the money.

THE SNAREHOUSE

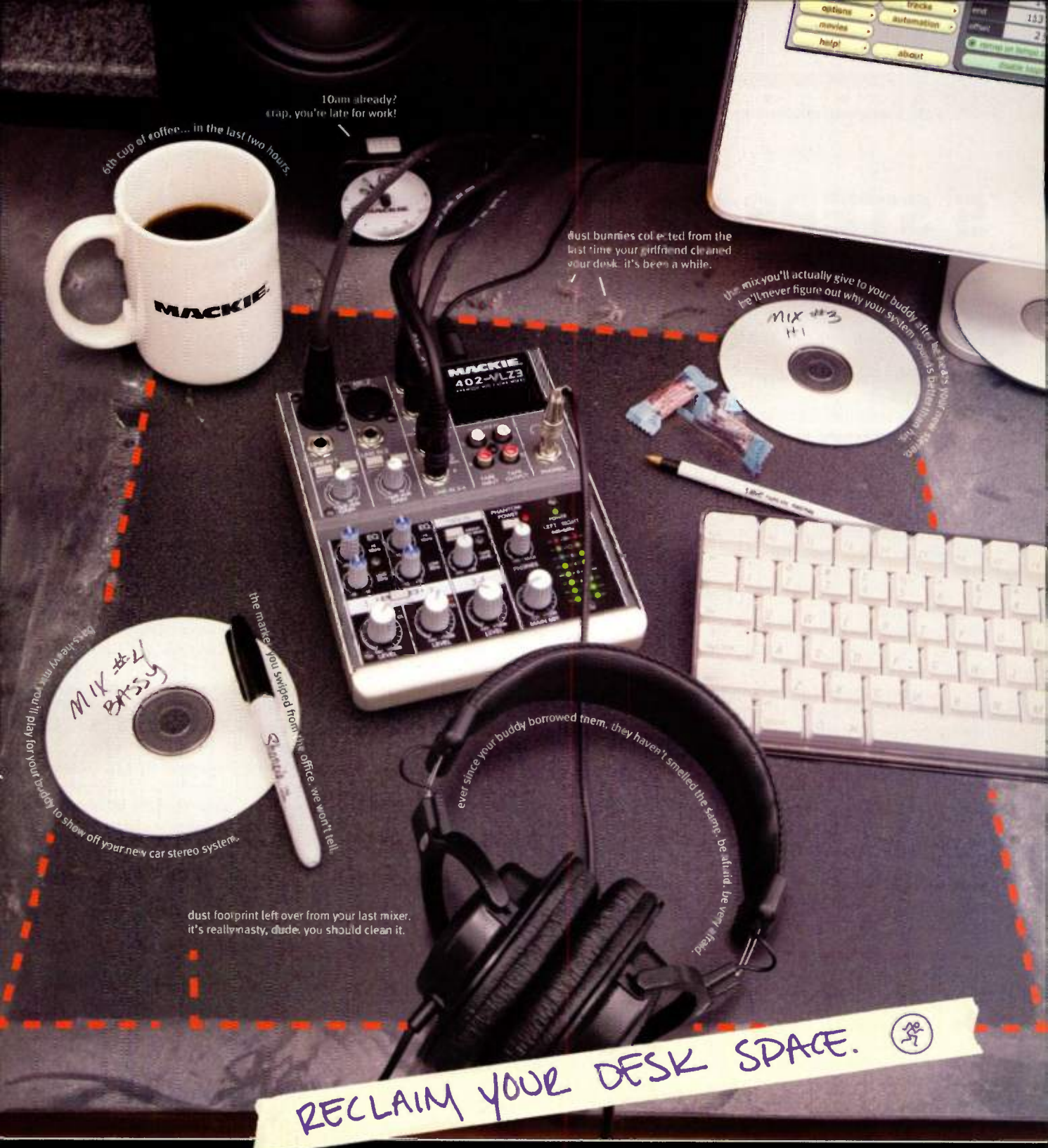
Investing in a small collection of snare drums is a wise method to diversify a drum mix. Having three to five snares ready to go—as well as tuned for timbral variety—bring different sonic characters to the table, save a lot of session headaches, and inspire musical ideas. A comprehensive library would include a standard 5" x 14" snare, one of greater depth (6" to 7"), a heavy brass snare (Ludwig's Black Beauty is the typical warhorse), a piccolo snare, and maybe a few specialty boutique snares. Keep in mind that while no two snare models will sound identical, most snares have the tuning range to cover everything from heavy rock to ska.

HEADONISM

Drum heads are the cheapest link in the drummer's signal chain, and yet they account for a majority of a drum's tone. There are two basic kinds—thick and thin. Remo Pinstripes and Evans EC2s are the ideal choices for heavier players, as their thickness allows for great attack and tone at high and medium volumes. For lighter, more acoustic settings, Remo's coated Ambassador heads have been the choice for ages, and they're also a great way to achieve a vintage tone. Bass drum heads come with a variety of dampening options, but a few that always sound good are the Remo Powerstroke and various models by Evans.

THE GENIUS OF FAMILIARITY

If the engineer knows the room, the mics, and the drum kit, dialing in a good sound can take far less time than a typical day of getting tones. The additional options of suggesting different snares, tom configurations, or heads might create the variety needed to bring the rhythm section to a new level. Purchase wisely, eliminate those headache-inducing bad-tone sessions, and start saving money on that unneeded aspirin. EQ



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5 STEPS TO RECORDING REMOTE VOCALS

by Cliff Goldmacher

Sure, you can load your DAW software onto a laptop, grab a mic and a few cables, and take your show on the road. However, even the best gear takes a back seat to ingenuity and good engineering sense. As a veteran of many a remote-recording session, here are some tips I've learned regarding the acoustic space, mic selection, the signal path, and monitoring.

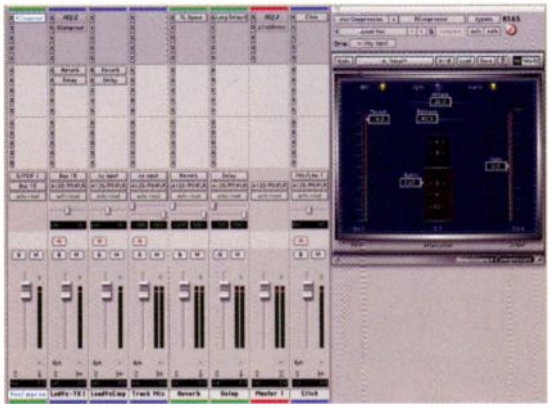

Fig. 1. Leave the hardware at home, and use a software solution to compress vocals.

PREPARATION

We'll assume you've already recorded the instrument tracks, and now need to go to a singer who can't come to you. Make a submix of your tracks (including any desired plug-ins) so that you're not taxing the laptop's CPU while recording. This also provides "CPU headroom" for a quality reverb plug-in if your vocalist wants to track with one. Mute (or mix way down) instruments with "unstable" pitch references, such as slide guitars, violins, cellos, acoustic bass, and so on. These tracks can distract your vocalist, and make it tough to stay on-pitch. Preparation also means checking out the space *before* the session. For example, you may find that certain times of the day are more conducive to recording than others.

THE ACOUSTIC SPACE

Given that you'll likely be working in someone's living space or garage, don't expect acoustic treatment. Remember that it's far easier to add reverb or delay to a dry track, than to remove unwanted ambience from a track recorded in a "too live" environment. Find a space you can deaden to get the cleanest, driest vocal possible.

Believe it or not, closets make great vocal booths. The more clothes, shoes, pillows, blankets, and towels in there, the better! If the space is still too live, drape a few blankets from ceiling to floor. It's crucial that the singer not face a hard, flat surface. Avoid creating reflections that the mic will pick up. Also, deaden the ceiling directly above the singer. A blanket and a few thumbtacks can be highly effective.

The space should be relatively small to create a cozy vibe for the singer, as well as cut down on unnecessary reflections. You'll need enough room to fit the singer, a mic stand, and, possibly, a music stand. Ideally, you'll be able to run a mic cable and headphone extension cord under the closet door, and set up your recording gear right outside.

CHOOSING A MIC

You'll want a mic that minimizes any unevenness in the recording environment. I've had very good luck with the Shure SM7. Originally designed as a broadcast mic, the SM7 allows the singer to get right up on the pop screen while still delivering a clean, warm vocal sound. You'll want this proximity for the same reason you deadened the space—to minimize any stray room sound in the recording.

Condenser mics are tricky because they can sometimes be *too* sensitive. However, a great compromise is a condenser mic designed for both live and studio applications. For example, because the Shure KSM9 was engineered for noisy, live situations, it does an excellent job of avoiding almost all off-axis reflections, while delivering a clear, detailed vocal recording. To keep your remote recording gear to a minimum, take the time to find a mic or two that deliver consistently.

SIGNAL PATH

If you want to compress the vocal signal on its way into your DAW, here's a software workaround so you can leave the hardware at home. Bring the vocal signal into an auxiliary track with a compression plug-in. Set the attack and release to medium, the ratio at about 3:1, and then adjust the threshold to take around 3dB off of the hottest signal on the way in. Then, bus this track to an audio track that captures the compressed audio (Figure 1).

MONITORING

Portability is key, so bring in-ear monitors instead of bulky headphones. While not inexpensive, a good set of in-ear monitors provides accurate, detailed audio information, and blocks out distracting external sounds. Unlike most over-the-ear headphones, in-ear monitors virtually eliminate headphone bleed, as well. As most portable audio interfaces offer only one headphone jack, you'll probably need a headphone splitter (with separate volume controls for each set of phones) to send the signal to your singer and you.

BRING IT ON HOME

My favorite expression about recorded data is "If it doesn't exist in two places, it doesn't exist." Before leaving, burn a DVD, or copy your audio to the client's hard drive as a backup. Who knows what can happen to a laptop on the way back to your studio?

Remote recording, given the proper preparation, gear, and flexible attitude, is often great fun. It's a nice break in the routine to get out of the studio and capture sounds in a new environment. And, who knows, it might even be a way of generating additional income. EQ

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USING CASSETTE DECKS AS ANALOG PROCESSORS FOR YOUR DAW

by Rocco Fortunato

It happens to the best of us—no matter how hard we try, our tracks just aren't quite there. They don't have that fullness, that width, that charm that infused our recordings when we used to cut to analog tape. We romanticize those sounds of old so much that we dive headfirst into our DAW armed with plug-ins that range from some pretty good tape-saturation emulators to a bunch of junk we thought looked promising because it had "phat" in the title somewhere. But no matter what we do in the box, it's never quite right. It never delivers the same kind of ear candy we would get when we gently pushed tracks into the plus region of a VU meter while recording to tape.

Well, there's a way to fix this that doesn't require buying an old Studer deck. The answer is *cassette decks*. Companies such as TASCAM made decent-quality 2-track recorders and multitrack units with three heads that are way cheap on the current used market.

For a quick tape routing and procedures discussion, read the 12/07 issue of *EQ* ["Kissing the Sky"], and calm down. You need not risk creative-flow inertia when doing all the required patching and procedures. With a three-head tape recorder, you can record a DAW track to the record head, pull the signal from the playback head after it's been processed by the tape, then send the processed signal back to your DAW. This is pretty close to a realtime process, except for the delay caused by recording at one head and playing back via a head that's positioned later in the tape path (don't worry, we'll get to fixing that shortly). Wiring the output directly to a dedicated stereo I/O on your digital interface can give a "processed-by-tape" effect that's almost as convenient as a plug-in.

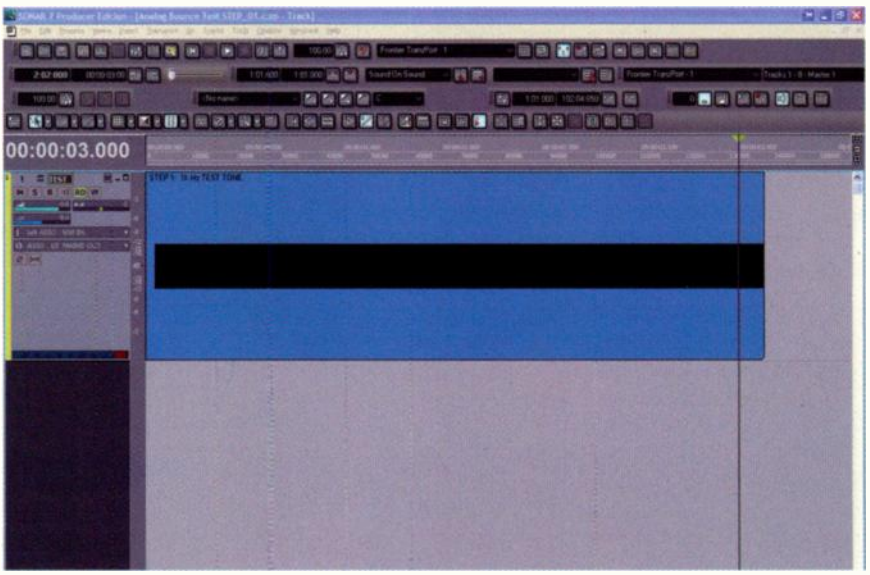

Fig. 1. A short test tone is imported or recorded. A 1kHz waveform happens to align with milliseconds, but any waveform produces a continuous line we can cut to measure.

SAY WHAT?

Because of the time it takes for the tape to travel from the record head to the playback head, we'll end up with an out-of-sync track when we bring it back to the DAW. Recording drum hits or click references would allow us to slide-adjust the tracks to each other—but setting that up takes time, and you want it *now*. So, here's another sync approach that you need to set up just once, and then you'll know how much to compensate for the delay in future projects. We just need to find the precise delay your tape recorder generates. To do this:

1. On an empty DAW track, record or copy a three- or four-second sine-wave test tone at roughly –12dB. I used a 1kHz tone from a cable checker (Figure 1), but most digital audio editors can generate sine waves for testing. Label this new track "Test."

2. Zoom way in to the sample level. Split the track right on the zero crossing that begins the upward journey of the first complete waveform. Delete everything to the left of the split. What should remain is a signal that begins with a zero crossing directly at the left edge (beginning) of the clip.

3. Send your "Test" track through separate (not main) stereo outputs on your DAW interface directly to the stereo inputs of your tape recorder. Return your tape outputs to stereo inputs on your DAW.

4. Set the tape recorder to monitor from the playback head, load a blank cassette, put the recorder into record mode, and start running tape. Leave it running.

5. Play the "Test" track through the tape recorder back to the DAW, and record this on a new DAW track. Label this new track "Delay." Then, visually compare the offset between the start of the "Test" and "Delay" signals to count the milliseconds of delay (Figure 2).

WAIT A MILLISECOND . . .

I get frustrated when I try to count milliseconds. So I use Sonar, which provides an easy time-adjuster called Nudge (look

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Fig. 2. When you record through the tape recorder to a new track, you can easily see the delay introduced if you zoom in. Here, the original tone is intentionally started at 100ms on the timeline so the delay can be easily counted on the time display.

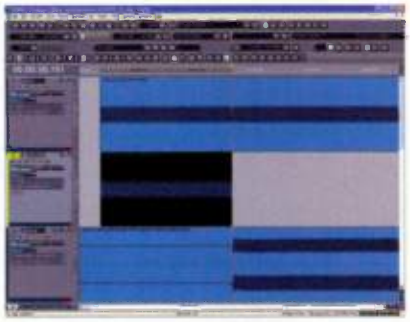

Fig. 3. Use the vertical Now Time cursor as a reference to the "Delay" track signal onset (zoom in for sample accuracy). Split the "Adjuster" track at the cursor, and delete the right side. The remaining clip is now an accurate measure of the delay.

under the Process menu for "Nudge"). But I still have to know the count before using the tool. So if your DAW won't easily let you grab a count, create a very small reusable "measuring stick" instead by making a new track clip trimmed to equal the space between the onset of the "Test" and "Delay" tracks.

1. Duplicate the "Test" track with its tone, and insert it between the original "Test" track and the "Delay" track, making sure the duplicate stays exactly in sync with the original "Test" track.
2. Re-label the duplicate track "Adjuster."
3. Zoom in and place your vertical Now Time cursor at the onset of the "Delay" track—right on the zero-crossing sample that begins the waveform.
4. Split the "Adjuster" track at the cursor. Delete everything on the "Adjuster" track to the right of the split. You now have a tiny template clip you can use to visually show the delay between the tape heads (Figure 3).

Still want to know how many milliseconds of offset exists between the original track and the one coming back from the cassette tape? Don't do the math—just slide your handy template all the way to the left, to zero on the time line (the start of the project). The right edge of the clip now lines up with the correct number on the time ruler (set to milliseconds, of course). Zoom in to get sample accurate. Afterwards, you can discard the "Test" and

"Delay" tracks, and save your "Adjuster" template track for future use. Consider renaming it to identify the machine it calibrates, as different machines have slightly different delays. The delay will be the same every time you use that machine.

Before you save, note that Sonar has a right-click command called "Trim" that permanently saves the clip to its new size. Other DAWS will have something similar. Until you trim, the right and left edges of the clip can be accidentally slip-edited out of place, and your careful calibration will be lost. After you apply trim—even if you slip-edit the edges—the waveform graphic will still show the calibrated edit points (Figure 4).

Fig. 4. After applying trimming, the left and right edges of the clip can be extended without losing the location references the sine-wave graphic shows us.

Fig. 5. Slide the delayed track to meet the head of the "Adjuster." Here, the signal-peak indicators in Sonar happen to show us a verification that the tracks are aligned. They are directly in line.

TIME FOR CORRECTION

With delayed tracks, it's simple. All you have to do is follow these directions and you will be good to go.

1. Insert a copy of the "Adjuster" measuring clip track just above or below the track to be adjusted.

2. Slide the "Adjuster" clip to line up the tail of its waveform graphic with the head (signal onset) of the delayed track. You can zoom in and use the vertical cursor to help get it sample accurate.

3. Now, slide the delayed track to line up with the head of the measuring clip (Figure 5).

There, that didn't hurt, did it? Kind of makes you want to reach for the tape option more often. You can even make an "adjuster" track for any outboard device that introduces a fixed delay. Try it. You'll be glad you did.

CHEAT SHEET

DSP FUNCTIONS

by Craig Anderton

Cheat Sheet delivers concise, explicit information on how to do specific recording/audio-related tasks. This installment describes the types of DSP you'll find in typical waveform editors and DAWs.

GAIN/VOLUME

Allows reducing or increasing the file's overall level. There may also be options that determine what to do if you set a level that would cause clipping, such as adding limiting or allowing soft clipping (saturation).

MIX OR ADD

Takes audio that's in the clipboard and mixes it in at the selection point in a file. Usually you can adjust the level of the signal being mixed in.

PEAK NORMALIZE

Lets you specify a maximum level that a file's highest peak will attain. Typically this is 100% of maximum level, but most normalize functions let you normalize to any arbitrary level. For example, normalizing cuts intended for CD to -0.01dB of full scale will make sure that no signal hits 0, which would likely be interpreted by the CD duplication facility as being distortion.

AVERAGE (RMS) NORMALIZE

This is similar to peak normalization, but lets you specify a particular maximum *average* level. This is sometimes applied to multiple cuts so they all have the same average perceived level prior to creating a CD. However, you still need to use your ears as the final judge of whether an operation like this accomplishes what you want.

FIND PEAK

This may be part of the Peak Normalize function, or a separate function. It finds the highest level in the file and inserts some type of marker, or places the cursor at this point.

TIME/DURATION STRETCH

Displays the current duration, and allows you to enter a new duration referenced to time and possibly tempo. You may have a choice of algorithms to improve the quality of the stretching, *e.g.*, optimized for voice, optimized for beats, etc. Try all of them when stretching to determine which sounds best.

CHANGE PITCH

There are usually two ways to change pitch, one that doesn't preserve duration (*i.e.*, transposing up shortens the duration, and transposing down lengthens it) and one that does. The latter is more likely to add artifacts to the sound, particularly with relatively significant pitch changes. As with changing duration, you may have a choice of algorithms to optimize the final sound quality.

REVERSE

Flips the signal so that the file starts playback at what was the end, and ends playback at what used to be the beginning.

INVERT

Flips the signal's polarity. In other words, the positive peaks become negative peaks, and the negative peaks become positive peaks.

CONVERT SAMPLE RATE

This changes the sample rate without changing the pitch or duration. For example, if you've mixed to a 96kHz file, you'd convert the file's sample rate to 44.1kHz before trying to create a CD. Note that not all sample rate conversion algorithms are created equal, and some algorithms sound better to some people.

FADE IN/FADE OUT

This fades the signal in or out over a selected region. You will probably have a choice of curves, or a way to draw a specific curve shape for the fade.

CHANNEL CONVERSION

This lets you convert a stereo signal to mono, or mono to stereo. When converting to mono, you'll usually able to specify whether you want an equal mix of left and right changes, or a different balance. Converting mono to stereo generally places the mono signal at equal levels in the left and right channels, but again, you may be able to change their relative levels.

SWAP CHANNELS

Places the right channel in the left channel, and vice-versa.

REMOVE DC OFFSET

Invoke this to make sure that the zero-crossing point of a waveform is actually at 0 instead of some other value.

STRIP SILENCE

You can think of this as being similar to a noise gate. If you specify a particular threshold, audio that falls below this threshold may be converted to silence (no signal at all), reduced by a certain amount, or deleted, depending on how the editor implements this function.

INSERT SILENCE

Inserts an arbitrary amount of silence at the insertion point in a file. The length may be based on a time you enter (*e.g.*, 1 second), or on a region you defined. If you define a region, that region will be converted to silence, and the audio to the right of the selected region will be "pushed" further to the right to make room for the silence.

DRAW ENVELOPE

Allows superimposing an amplitude envelope on the file. Usually this is a line where you can add "nodes," then drag the nodes around to create the desired envelope shape.

CROP OR TRIM

Sections of the file that occur before or after a selected region will be discarded, leaving only the selected region.

LOOP

Sets a loop start and loop end point within the file. Upon reaching the loop end point during playback, playback continues from the loop start point, plays through to the loop end point, then returns to the loop start point, *ad infinitum*.

FORWARD-BACKWARD LOOP

This is like looping, but upon reaching the loop end point during playback, playback reverses and plays backward until reaching the loop start point. Playback then reverses again toward the loop end point; the looping continues back and forth indefinitely.

CROSSFADE LOOPING

A portion of the file immediately after the loop end is mixed in just after the loop start and faded out, or a portion of the file prior to the loop start is mixed/faded in just prior to the loop end, or both, depending on how crossfading is implemented. This creates a more seamless loop as there's no abrupt transition between the start and end points of the loop. You will generally have the option to determine the duration of the pre- and post-loop material that's mixed in.

CONVOLUTION

This multiplies the spectrum of one piece of audio with another—typically what's in the clipboard with the file having the focus. The resulting sound therefore has elements of both sounds, but doesn't sound like either one. EQ

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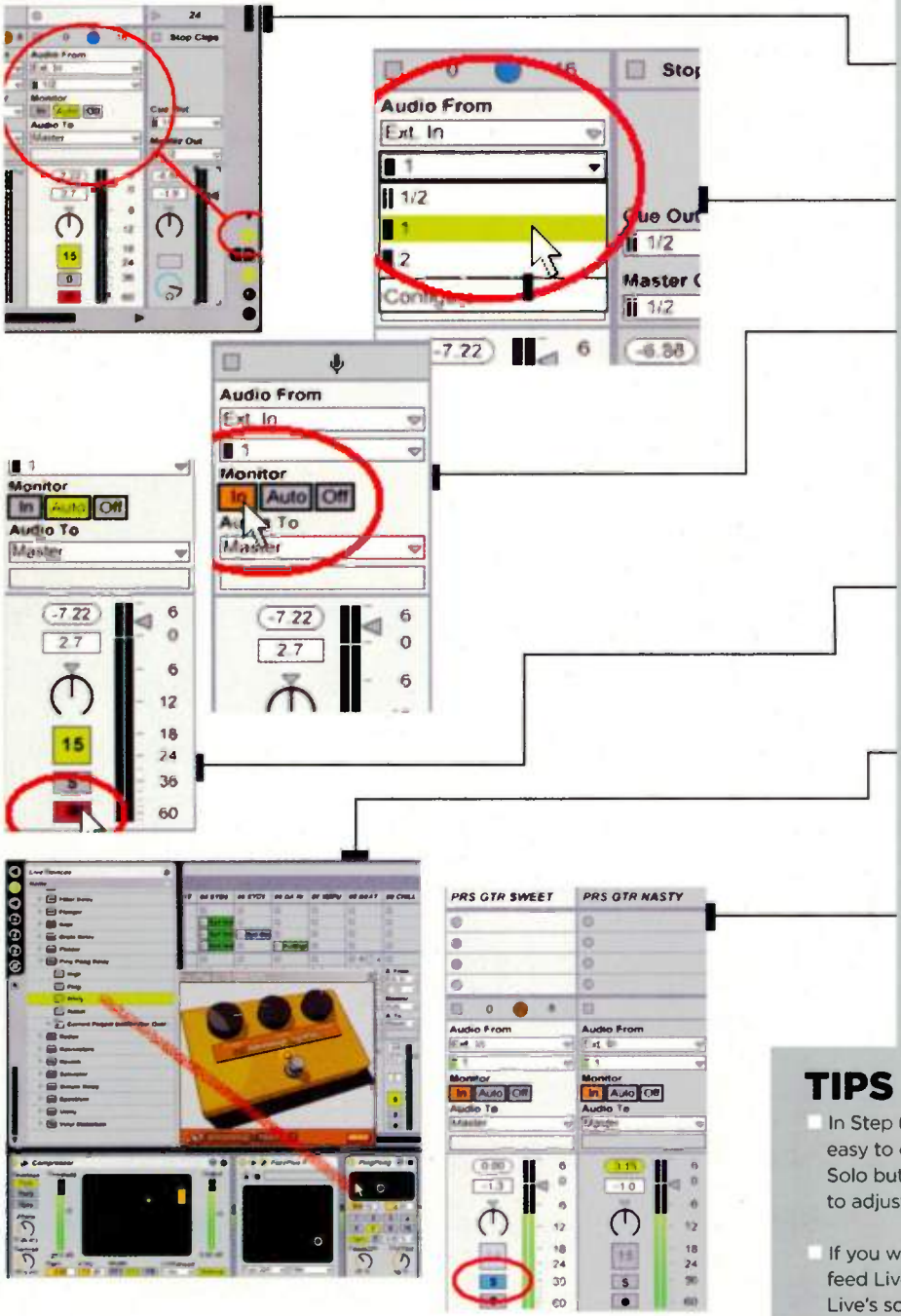
BY CRAIG ANDERTON

ABLETON LIVE 7

Turn Live into a signal processing rig

OBJECTIVE: Although Live can serve as both an instrument and a DAW, it also makes a fine host for signal processors, whether in the studio or live.

BACKGROUND: You can feed realtime audio into a Live track, so a low-latency system lets you process the signal with Live's built-in effects (or any VST effects). What's more, it's easy to set up parallel processing chains. We'll assume you have an audio interface and have patched an instrument like guitar, voice, hardware synth, etc. (and if needed, a preamp) into a spare audio interface input.



STEPS

1. If the I/O section isn't currently visible, click on the I/O button toward the right-hand side of the Arrangement view or Session view.

2. In the Audio From field for the selected track, choose Ext In. In the field below that, choose the audio interface input to which the signal connects.

3. Under Monitor, as the main goal here is to do realtime processing, select In; a small mic symbol appears above the Audio From field to indicate that Live is listening exclusively to the input. If you also plan to record a signal feeding this input, Auto is usually best so you hear the audio input while recording, and the track out on playback.

4. If you set Monitor to In, you'll hear the input regardless of the record/playback status. But if you selected Auto for the monitor function, click on the track's Record button to hear the audio.

5. Drag the effects for your "rig" from the browser to the Track View Selector for the track doing the processing.

6. To create additional chains of effects, repeat steps 2–5 for different tracks and set them all to the same input. To select one effects setup at any given time, click on the Solo button for the associated track.

TIPS

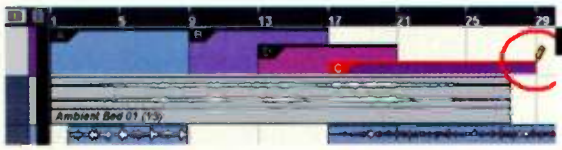
- In Step 6, if you've created several tracks of effects, it's easy to do parallel processing. Simply ctrl-click on the Solo button for multiple tracks, and use the track faders to adjust the balance of each parallel chain.
- If you want tempo sync but there's no timing signal to feed Live, use the Tap Tempo button in the upper left of Live's screen.

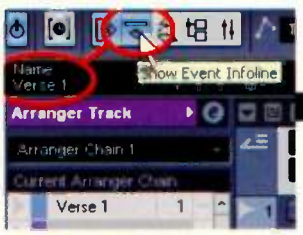
BY CRAIG ANDERTON

STEINBERG CUBASE 4

Try out different arrangements for a project

OBJECTIVE: After creating a project, experiment with the order of different parts of the project to create new arrangements.
BACKGROUND: Cubase allows creating an Arrangement Track, which lets you define particular parts of the project (*e.g.*, verse, chorus, fill, etc.). You can then assemble these parts into a Playlist, and play the parts back in a different order. For example, you might want to insert an additional fill, or change where a verse occurs.





STEPS

1. As you'll likely be marking off parts of the song with measure boundaries, select Grid for the Snap parameter, and set the value to a Bar.

2. Go *Project > Add Track > Arranger*.

3. The Arranger Track appears; move it above the other tracks if desired.

4. Click on the pencil tool, then click and drag in the Arranger Track to mark off song segments. These can overlap (in this example, the D part includes the last four bars of the B part and the first four bars from the C part).

5. To create the Playlist, choose the Arrow tool, then double-click on the segments in the desired order.

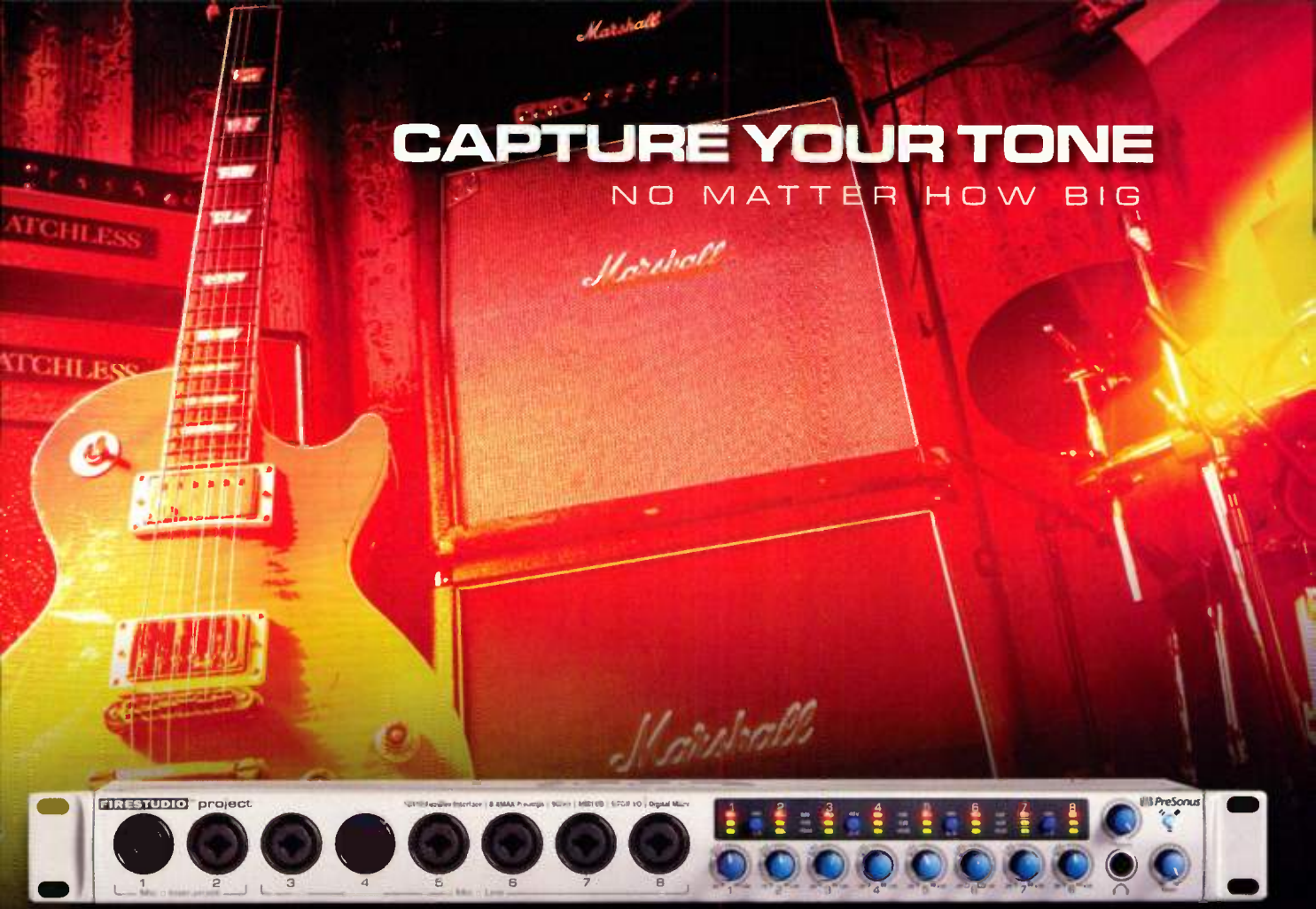
6. To rename a segment, click on the Show Event Infoline button if the Infoline is not already showing. Then click on the segment to select it, and rename it under the Infoline's Name field.

7. To alter the arrangement, click on the Open Arranger Editor button; the Arranger Editor window appears. Click on a part in the Current Arranger Chain, and move it up or down in the chain.

8. To play back the arrangement, click on the Activate Arranger Mode button, then click on Play.

TIPS

- In Step 1, set a grid with finer resolution if you need sections that are smaller than a measure (*e.g.*, part of a fill).
- You can change the length of an Arrangement part, as well as move it, by using the Arrow tool and applying standard resizing/moving techniques.
- The Arranger Editor has many powerful features, such as setting the number of repeats for a part. Check the Cubase Operation Manual for details.



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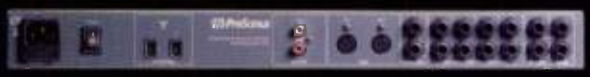

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JZ BLACK HOLE

A Multi-Patterned Condenser for the Rest of Us

The JZ Black Hole.

by Cliff Goldmacher

Having cut my teeth in Nashville, I've recorded a lot of acoustic stringed instruments as well as a full complement of vocalists. To cover most contingencies, I've set myself up with a couple of great mic preamps (the Manley Vox Box for vocals and the Avalon VT 737sp for instruments) through which I run almost every track I record. But while I've settled on a couple favorite pres, I switch out mics a lot—and I'm always open to trying something new. This time it's a new mic called the Black Hole from a Latvian company named JZ Microphones.

OVERVIEW

No one can accuse JZ of making a product that lacks a distinctive look. From the beautifully designed wooden box to the one-of-a-kind shock mount and, of course, the mic itself, in terms of aesthetics the Black Hole brings something new to the table. But as we all know, looks don't always correlate to sound quality.

My unit came *sans* owner's manual, which made assembling the shock mount a bit challenging. Thanks to a rudimentary knowledge of geometry and an iron will, I was able to get it all together. After that little hurdle, there wasn't much to figure out. There's a simple switch just on the inside of the rectangular hole of the mic, which allows you to toggle the pickup pattern from omni, to cardioid, to figure 8. Instead of regurgitating the specs, we'll discuss how I used it, and how it sounded; for specific details about the design, surf on over to www.jzmic.com.

IN USE

My first test was on acoustic guitar. My default mic for acoustic guitars is the Røde NT-2—I like its clarity and presence. Generally, I tend to stay to the side of the sound hole when miking this instrument, pointing the mic diagonally toward where the neck meets the body. I employed a similar approach with the Black Hole and, simply put, the sound was extraordinary. The omni setting was a bit too boomy, and in figure 8 the sound was slightly less focused; but in cardioid, the sound of my acoustic was clear, present, and focused with the addition of really nice air at the top end of the sound. I could hear the warmth of the wood and the brightness of the strings. Home run.

Next up were a couple of vocal sources. My main vocal mic is the Lawson L47-MP, which I like because it tends to be balanced, warm, and clear. I thought it a fair test against the Black Hole as they both sit at a similar price point. On male vocals, the Black Hole wasn't my first choice—it lacked the low mid warmth of the L47-MP. That said, it handled the vocalist's natural 2–3kHz peak well, and it imparted a nice breathy, airy quality on the top end, though it veered dangerously close to brittle. My instinct is that a male singer with a slightly darker tone would shine on this mic. The vocalist I was working with? Not so much.

On a female source with a significantly less aggressive tone, the mic did a good job of picking up the air and breath in her voice without sounding annoyingly bright. I wished for more low-mid roundness in her vocals, but the Black Hole did well on her voice. This served as a confirmation that, at least to my ears, the Black Hole is better suited to singers with "darker" or less aggressive approaches.

Just for fun, I decided to put the Black Hole up on an unlikely source: the flugelhorn. Yes, you read that right. As the mic supposedly handles up to 135dB, I placed it about a foot away from the horn's bell. It sounded pretty good; the lack of a pad switch didn't prove to be a problem at all. While miking a flugelhorn may not be the most practical application, it rounded out the tests, and spotlighted the Black Hole's versatility.

CONCLUSIONS

The Black Hole is truly stunning on acoustic instruments. In fact, in cardioid mode, it produced perhaps the best acoustic guitar sound I've ever squeezed out of a mic. If I were looking to purchase one mic that handled a variety of sources well instead of a slew of mics that only deliver on specific instruments, I'd definitely put this one high on the list. eq

PRODUCT TYPE: Multi-pattern condenser microphone.
TARGET MARKET: Serious recording enthusiasts looking for a versatile, pre-level mic.
STRENGTHS: Innovative design approach. Holds its own with other high-end mics. Truly stunning on acoustic instruments. Five-year warranty.
LIMITATIONS: Lacks a bit of "warmth and forgiveness" for naturally bright vocals.
LIST PRICE: $2,295
CONTACT: www.jzmic.com

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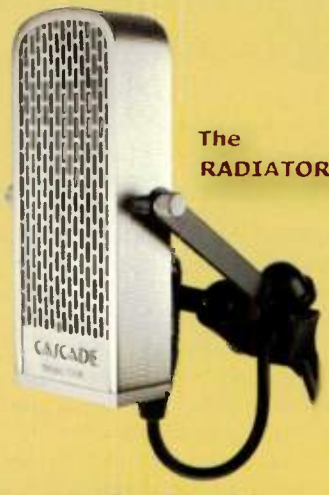

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DANGEROUS MUSIC 2-BUS

The Key to Analog Sound in a Digital World?

The Dangerous Music 2-Bus.

by Jeff Anderson

More people are mixing "in the box" (exclusively within a computer host, using its software mixer) than ever before, but some feel this approach causes the resulting sound to lack some of the "charm" of analog mixing. Dangerous Music's 2-Bus, which allows mixing digital signals in the analog domain, has been getting a lot of attention from some pretty high profile users. But is this whole analog summing thing just a holding action until digital sound quality catches up, or is it the next step in bringing together the modern and classic ways of working? Analog summing can be a controversial subject—so let's throw some fuel on the fire.

OVERVIEW

Basically, the 2-Bus is a 16 input x 2 output summing device intended to be used in conjunction with your DAW to supposedly add an analog sound quality to your two track mixes. The front panel sports two rows of eight buttons. Each section (button pairing) controls a pair of inputs (each of the input channels on the back are fixed in left-to-right stereo groupings): The Mono function puts the inputs in the center of the mix, while the +6 button boosts each pair by 6dB. On the back, the 2-Bus provides stereo, main, and monitor outs, which are controlled by a step-attenuated output knob with 10dB of overall range. If you need more inputs, the 2-Bus can link to additional 2-Buses, the 2-Bus LT, and the Dangerous Mixer.

IN USE

My studio is pretty much 50/50 in its analog-to-digital gear ratio, making the 2-Bus a logical addition. Still, I wasn't sure if I wanted to wire it into my patch bay (I didn't know if I wanted to buy it after the review loan period was up) or just hardwire it to the outs on my Pro Tools rig. I went with the former and I'm glad that I did, as doing so allowed me to use all my prized analog outboard gear along with the 2-Bus. For example, I could assign my main vocal and bass tracks to mono outputs 15 and 16 in Pro Tools, then insert a mono outboard compressor on the vocal, an EQ on the bass, and finally run into the 2-Bus, engaging the Mono function to put these tracks up the middle of the mix. Also, I could patch the main outputs of the 2-Bus into a stereo compressor and then back into Pro Tools (or a 1/2" deck).

I decided to put the 2-Bus to the test on a project for which I had already created a bunch of stems. I ran the stems from my DDA console into the 2-Bus, but also left the signal on the console so I could A/B the outputs of each.

My first impression was that the 2-Bus was a lot quieter and that the stereo image was wider than that of my console. There was tons of headroom as well—about double what I would get from my console.

However, as a lot of you aren't working on large format consoles, I decided to listen for differences between the 2-Bus and what I'd hear when just assigning Pro Tools tracks to stereo pairs. First, I mixed down one pass of a song with every out assigned to channels one and two on Pro Tools, and then took these outs and put them directly onto an Alesis MasterLink. Then, I made 8 stereo stem mixes—drums, bass, guitars (3), piano, vocals, and backing vocals—and patched each of these outs into the 2-Bus, using the step-attenuated output knob to set the level before sending the mix to the MasterLink.

Bottom line: The 2-Bus really showed its power. It didn't color the sound, but it added a huge amount of width. This improvement in imaging made the mix sound not only bigger, but more "professional."

CONCLUSIONS

I don't feel that the 2-Bus colors the sound—so don't run to this unit because you feel your mix needs to be warmed up. However, the difference in the stereo image of my mixes post-2-Bus (and the lower amount of noise generated compared to my console) is pretty staggering. Furthermore, comparing the end result of coming from only a stereo output of Pro Tools to routing my signals through the 2-Bus showed a marked difference in overall sound quality. Given that, I'd recommend giving the 2-Bus a spin if you're an "in-the-box" mixer and think your digital mixes could use a little extra something. The 2-Bus isn't a magic bullet—nothing is—but it sure helps. EQ

PRODUCT TYPE: 16 x 2 analog summing mixer.
TARGET MARKET: Digitally-based studios that want to add an analog flavor to their digital mixes.
STRENGTHS: Adds incredible width to mixes. Quiet and transparent. Step-attenuated output gain control is very handy.
LIMITATIONS: Nothing significant.
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UNIVERSAL AUDIO UAD-NEVANA X2

Smells Like Team Spirit

Fig. 1: The Neve 1081 equalizer plug-in.

by Garrett Haines

Let's cut right to the chase—the new UAD-Nevana X2 bundle includes two PCIe UAD-1e DSP Cards, authorization for the base set of UA plug-ins (*a.k.a.* UA Mix Essentials), and all seven of UA's authorized Neve titles: the 1073/SE, 1081/SE, 33609/SE, 88RS (I know, there are really only four Neve emulations in the pack, but three titles have a "light CPU load" SE version, making it seven different items). There is also a $200 bonus voucher redeemable towards any plug-in title from their online store. Want more information about compatibility and such? Go over to www.uaudio.com and read for yourself. We got some testing to do here.

OVERVIEW

Included in this bundle are two different channel strip equalizers, a mastering/bus compressor, and full channel from the Neve 88R console.

To start, UA's emulation of the Neve 1073 channel offers the same three-band EQ and high-pass filter as the original. The 1073 EQ consists of a fixed, 12kHz high shelving EQ, six-frequency parametric EQ, four-frequency low shelving EQ, and four-frequency high pass filter. Other features include a 30dB range of gain control, phase reverse, and EQ bypass.

The other channel module is the 1081 (Figure 1)—a four-band EQ with both high and low cut filters. The two midrange bands are parametric, with "Hi-Q" selections for sharper boosts or cuts. Both the high and low shelf filters have selectable frequencies and may be switched to bell filters. The Neve 1081 EQ is a five-frequency high shelf/bell EQ, a ten-frequency hi-mid parametric EQ with two Q types, a ten-frequency low-mid parametric EQ with two Q types, a five-frequency low shelf/bell EQ, a five-frequency high pass filter, and

Fig. 2: Each channel of the Neve 33609 has a separate compression and limiting section.

Fig. 3: The Neve 88RS Channel Strip offers filtering and dynamics control.

five-frequency low pass filter. Other features include a -20 to +10dB input gain control, phase reverse, and EQ bypass.

The 33609 stereo bus compressor/limiter (Figure 2), like the hardware it was modeled after, has stepped controls. Each channel has a separate compression and limiting section, with separate threshold and recovery controls. Two of the recovery selections for each section are dedicated to a program dependent auto release. The compressor section also offers five ratio selections and 20dB make-up gain, while the limiter offers a fast or slow attack. The UAD version of the Neve 33609 adds some bells and whistles not found on the hardware, most notably a link switch allowing ganged left/right control of all parameters, output control, and a headroom switch, which permits today's high resolution DAWs to exploit the full range of 33609 gain coloration.

The Neve 88RS Channel Strip (Figure 3) includes high and low cut filters, a four-band EQ plus limiting, compression, gate, and expansion. The middle EQ bands are fully parametric. The high and low bands have two fixed-Q types, and also offer the ability to choose a shelving EQ.

The VCA-type Limit/Comp provides a wide range of release times, along with an Auto option. The ratio is variable with a fixed fast or slow attack time. The Gate/Exp provides 0.01 to 3s release times, fast or slow attack times, and Threshold, Range, and Hysteresis to tweak the gate or expansion according to need.

If you need to swap the signal order, the P-DYN button routes the signal so that the EQ comes first—a very good idea, as some situations work better with EQ before dynamics and some with EQ after. There is also a side chain enabled by the SC-EQ button (this is great for ducking, de-essing, or doing special effects).

IN USE

These plug-ins are similar to the real units in both sound and use—they are musical, and it's easy to coax decent sounds out of them. Take the 1073, for example. The fixed frequency points let you adjust areas that commonly have build-up or thinness.

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The relatively gentle Q slopes also keep most users from dialing up extreme settings that could become nasty. That's not to say they are without fault. Like a real 1073, while you can impart a wonderful top-end sheen on many sources, it's possible to use too much and cause your source to 'ring' almost like an effects unit.

One of my favorite things to do with the 1073 is to just instantiate it as the first thing on a track and move on. Maybe I'll use a little of the high pass filter, but that's it. This is because Universal Audio modeled the *entire* unit, which includes the transformers. And much of the 'warm' sound attributed to the 1073 came from the transformers Mr. Rupert Neve chose.

If you need more sculpting power, I suggest the 1081, which not only sports more bands but also allows for sharper Q settings. Basically, if your source requires gentle tweaking, reach for the 1073; if you want to dig in with your EQ, try the 1081. For example, if you start a mix with three elements—kick, snare, and bass guitar—and use the 1073 and/or 1081 to give each its own sonic space, the rest of your mix can feel like it just drops into place.

With guitars I like to feed a 1073 into a 1081, giving each a smaller piece of the EQ duty. Instead of doing all the midrange adjustments with one, I'll grab some 1.6kHz with the 1073 and follow up with some 1.5kHz and 1.8kHz with the 1081.

On the right vocalist, a 1073 can pull away some nasal sounds, or the 1081 can add just the right amount of upper mids that allow the singer to float in the spot between the monitors. My only concern with the module units is you cannot type a control value directly into the GUI. Yes, you can open the parameter box and type in the control that way, but it gets unwieldy, especially on the 1081.

At the other end of the instant gratification scale is the 33609, which is not a beginner's compressor. In fact, users should plan on spending some time with this application to learn the many nuances of the design—the better you know it, the more likely you'll get exactly the results you want.

The other caution with the 33609 is that you can only use one instance at 44.1kHz; there's not quite enough DSP power to run a second instance, although there is enough DSP to run other plugs at 44.1kHz. With all that griping, don't think that I don't like this plug-in; not true. The 33609 is one of those tools that once you set it right, get ready for bliss. Many of us talk about the mix trick of using two drum stems—a regular version and a compressed version. By blending the two you can get a monster drum sound that is both impactful (yes, I know that's not a word) and delicate. What people don't tell you is if you do that with the 33609, you won't want to use another compressor for that task ever again. To take the opposite usage, try using the 1.5:1 ratio, and a high threshold—the 33609 can be set to skim the top of a vocal or string bus and gently polish the track in a truly pro-quality manner.

The 88RS is the only title of the bunch that doesn't have an optimized version.

However, if you bypass the functions you aren't using, you draw less DSP, so there is some allocation for efficiency. In use, the 88RS is probably my favorite of the UA Neve emulations.

Like the 33609, I recommend going through the presets to get a feel for the depth of this plug-in. And like the 1073, sometimes I like to instantiate the 88RS just to use whatever Neve-transformer magic they have going on in this model. It makes you realize that anyone with the blessing and privilege to work with a full-sized Neve console should give extra thanks before hitting the pillow at night. While the immediate temptation is to use the 88RS as a bus plug-in—and it certainly shines there—I suggest pulling it out on key elements in a mix and applying it as such. For example, drum overheads can be filtered and compressed to focus on the best parts of the room and kit sound, while de-emphasizing HVAC or reflection noise.

The 88RS can be a one-stop shop for lead vocals, too. The de-esser, while not as obliterating as some choices, can be sidechained with the EQ to do a less noticeable job taming harshness.

I've also had good success with acoustic guitar and jazz bass guitar (where the player is doing more "walking around" on the higher frets). Here, the EQ can be flipped to come before the compression, which allows nice tone shaping before any dynamics control. And finally, this full-channel strip makes a good choice on any master fader or bus. With the limiter and program dependent compression release, the 88RS really can be a type of glue that helps to hold a mix together.

PRODUCT TYPE: Signal processing hardware/software combination with two PCIe DSP cards and emulations of Neve plug-in.
TARGET MARKET: Home recordists looking to get that classic Neve sound while working in the box.
STRENGTHS: Accurate sonic representations of Neve hardware. SE versions retain most of the sound with low CPU power. $200 voucher for online plug-in store included.
LIMITATIONS: Can't type in control values directly in some of GUIs. Can be hard to read values on some GUIs. One instance of full 33609 compressor takes up a little over half of the card's DSP at 44.1kHz.
LIST PRICE: $1,499
CONTACT: www.uaudio.com

CONCLUSIONS

If you've been considering the UAD line, the Nevana X2 could be your reason to purchase. With two cards, there is plenty of DSP power to do some serious mixing, and with authorized Neve plug-ins, you'll have the tools you need. Add in the base UA Mix Essential titles and the $200 voucher and you're in business. If you already have a UAD card or two, adding this bundle will arm you for bear. Word is bond. EQ

NATIVE INSTRUMENTS GUITAR RIG 3

Third Time's a Charm

by Brian Murphy

Guitar Rig 3—a modeling software program of amps, pedals, effects, cabinets, and more—makes recording guitar a lot more interesting, fun, and easy. It can serve as a plug-in for recording, or work standalone for live performance.

Furthermore, GR3 is available with the Rig Kontrol, a 24-bit/192kHz audio USB 2.0 interface with pedalboard that includes the same converters as NI's Audio Kontrol interface. There are two 1/4" inputs with line/ instrument switch and gain knob; the 1/4" outputs have a high and low setting. There's also a headphone out with volume control, MIDI In/Out, and two pedal inputs.

Fig. 1: Create your dream rig by dragging and dropping modules from the left to the "rack" on the right.

BANKS/ PRESETS

Most players will recognize the look and names of amps, cabinets, and effects. The category menu is great because it is arranged by amp type, signature sounds and style. Some of the presets are designed for certain pickups and positions (SC, HB, SC Bridge, and so on). There are also presets for drums, keys/synth, vocal, and fx.

To give some examples of the 12 amp and 28 cabinet types, "Clean (SC)" uses the White Hot amp for a great, bright single coil tone for funk and blues. The "Clean (SC Neck)" is a lot warmer as it uses a Plex with a matched cabinet. The "Fender Twang" was somewhere in the middle. Warm drive sounds include "Crunch Lite," "Stevies Rhythm," and "Texas Crunch." The "Ultrasonic Crunch" is one of my favorites—single notes had a little bit of bite, while chords were dirty.

The Lead 800 category brings us into the heavy drive, distortion sounds. You really hear the tone of the 4x12 cabinet with the 800 in the Classical Rock bank. For a brighter sound, try the "Foo Monkeys." The Metal, Modern Rock, and Ultrasonic categories give more aggressive tones. The "Scooped" could use a deeper scooper; "Modern Metal" was more to my liking, with more bass and less highs. "Late 80s Metallic" was another good distortion sound. "Heavy Lead" made notes sing. I really liked the "Modern Lead," and the "Modern Scoop"(using the "Gratifier") worked well; but with the gain turned up to 11, "Modern Lead" needed the noise reduction component added to it between the cabinet and effects. The "Matched Cabinet" feature makes it easy to get going with an amp as it's automatically linked to a suitable cabinet (which of course, you can change). Interestingly, rolling off your guitar volume affects the amps just as it would with a real tube amp.

NEW EFFECTS

Guitar Rig 3 includes 44 effects, including six new ones and five modifiers. In addition to the usual effects (chorus, flanger, phaser, EQ, wah, delay and reverb), the new Tape Echo has spacey delays with added movement and speed. A fine option to a driven amp is the Sledge Hammer, which delivers great tube-like drive sounds. Delay Man provides nice delays with a bit of optional modulation (chorus/vibrato). Real Wah models a high-end wah (which just saved me over $200). Custom EQ is a warm equalizer with a bass/treble filter and a tweakable midrange scoop. Besides the "robotic" type of sound the Ring Modulator delivers, it possesses superb vibrato and tremolo presets.

EDITING

Editing GR3 involves dragging "components" displayed on the left into a virtual rack on the right (Figure 1). You have choices of amps, distortions, modulations (chorus, flanger, tremolo, etc.), EQs, volume (compressor, gates, and more), and reverbs. Under Tools you get a "looper" machine, split (ideal for making parallel effects paths), and two-band crossover. Modifiers include a low frequency oscillator, envelope, two types of sequencer effects, and input level.

If you *really* want to get into deep editing with a tube amp, you can "unfold" a module to reveal the "expert" controls. Here you can control parameters including (for amps) voltage—power supply, Variac, supply sag, response (bias)—just like modifying an actual amp, but without the solder fumes. On the Fender Twang you can edit the amp's reverb, which is great because I always felt the reverb was too deep on the "real thing." Even the effects have expert controls; I love the idea of editing a wah and coming up with a different sound.

I also love the "learn" function, which makes it easy to set levels: Play hard, and the cabinet's learn button for volume automatically sets the output level to avoid clipping. Nice! The noise reduction and noise gate have learn functions as well.

You can spend hours with the Modifier components. The Input Level component lets you control a parameter by how hard

you pick/strum. I set up a chorus and controlled the speed and intensity with the input level. When I strummed softly it was slow, and sped up as I dug in. These types of features can add a more live or random aspect to recording a guitar track.

Effects presets can be saved within the individual component. For example if you come up with a favorite chorus configuration, you can name it and save as a chorus preset, then recall it any time you have the chorus in a "rig."

PLUG IT IN

One advantage of GR is the true stereo operation. If you set up a sound with the split component, you can pan two separate tones left and right. You could use a basic guitar sound, clean or dirty, with any of the modifiers: Pan the guitar sound left and the modifier part right, then record the track. You can get feedback through your speakers also—you have to place the speaker close to the guitar to initiate the feedback, but it is doable.

"LOOK MA, NO HANDS"

You can automate any parameter in GR through your sequencer. So if you want to automate a filter, delay time, or maybe the split mix panning between two signal chains, let your imagination run wild. Uses of Rig Kontrol for recording are the obvious wah and whammy/pitch pedal. One really cool feature is that you can assign the Rig Kontrol pedal to a parameter in your preset, then use that to record automation to get more of a live feel. Most of the modulation and delay effects can sync to tempo for rhythmic effects.

A LITTLE MORE . . .

A "Hi Quality Mode" button allows for more detailed sounds at the expense of taxing your CPU (and it's worth the CPU hit); and don't worry if you have presets from previous versions, as GR3 can import them. Finally, the manual offers many tips on achieving better guitar tones (distortion, EQ tips, and more). There are also other features that are geared towards a non-recording environment.

CONCLUSIONS

GR3 is very guitarist-friendly by being simple on the surface, but gives serious depth for those who want to build and edit their own custom "racks" of sounds. Whether you use one sound or a ton of diverse sounds (or want to come up with new, futuristic sounds no one has heard before), GR 3 could be the ultimate guitar rack without the price tag (or weight!). For the price of a mid-range combo amp, you get 300 presets that not only cover all styles—vintage, classic, and modern—but sound surprisingly close to what's being modeled. **eg**

PRODUCT TYPE: Guitar amp/effects modeling software.
TARGET MARKET: Recording guitarists, particularly those who have acoustics issues with loud amps, as well as live performance.
STRENGTHS: Simple but deep. Quality tones. Easy editing. Versatile sound palette. Helpful manual.
LIMITATIONS: No XLR input. No volume output control on interface.
LIST PRICE: $559 (with Rig Kontrol), $339 software only, $119 software upgrade. $289 interface/floor board.
CONTACT: www.native-instruments.com

nudge or mouse. Usage tip: I found that it was good to use it to experiment (versus nudging and undoing). Only after finding the right amount of time-shifting would I actually nudge the wave and pull the Precision from the track. This "effect" is useful for phase correction and effect generation, and turned out to be one of those the-more-you-use-it the-more-you-wonder-how-you-got-by-without-it things.

Omnipressor: This is Eventide's main dynamics processor, and by far one of my favorite titles in the bundle. Honestly, this thing is one of the best plug-in vocal compressors I've used in a long time—it actually reminds me of an Empirical Labs Distressor in that application. A really cool feature is the VU-esque display. It acts as an output VU meter when the signal is below the threshold, but instantly switches to show gain reduction once compression starts. An LED shows which task the VU is serving. Used on a drum bus, the Omnipressor can create sustain, distortion, or pumping expansion effects—whatever you want. Good stuff.

SPECIAL EFFECTS

Yes, this is what Eventide is known for: effects, effects, and more effects. They didn't let us down, either. Wrapped up nicely in this package are the following.

Octavox: Pulled directly from the best Eventide processor, it delivers up to eight voices of diatonic Harmonizer pitch shifting—and each voice has its own delay adjustment and pan control. Composers and notation-literate engineers will be hot on the built-in Notation Grid, which allows note placement via a musical staff. Dope.

Quadravox: This is a less resource-intensive version of the Octavox. It's just like its big brother, but is limited to four voices of pitch-shifting. On vocals, it's important to have an on-pitch singer as your source; pitch-shifting a pitch-corrected voice can result in some artifacts . . . but you can't fault the plug-in for that. Both Octa and Quadravox work wonders with guitar or keys for traditional or even experimental settings.

Instant Phaser: This simulates a single-function analog processor featuring a sweeping filter bank. The sound is straight out of a classic rock LP. Think Jimmy Page and Kashmir and you're on the money. Simple, and real effective.

Instant Flanger: A re-creation of one of the first hardware products to faithfully simulate tape flanging, this plug-in provides

the ability to choose or combine modulation sources, including the LFO, input signal (envelope follower), or manual sweep (which can be controlled by MIDI, if you're so inclined). For guitars, look no further—this is as easy to set up as a stomp box, but with much higher fidelity.

H910 & H949: For you true old-school processing geeks, this recreates the very first Harmonizer-brand effects processor. While you won't be using this on every track, it's outstanding in weird, out things like beat breaks, magic carpet vocals, or wild guitar solos. For more control, there's the H949, which took pitch changing even further by introducing the world's first intelligent de-glitching algorithm. With controls for inserting pitch-shifting into the feedback loop of a delay, radical new effects became possible. Keep away from those on hallucinogens. Or don't.

H3000 Band Delays: Derived from the H3000 Band Delay algorithm, this plug-in also has one of the coolest visual graphics of the bunch. The 3D band display moves back and forth depending on settings, creating a hypnotic pulse that can transform the most learned of recording aficionados into cats watching a ball of yarn. This plug-in features eight voices of tempo-based filtered delays with pan and volume controls. All eight filters are fully parametric with configurable low/band/high pass or shelving choices and a bandwidth control. Band Delays deploys an extensive Function Generator for modulation offering 19 wave shapes, as well as MIDI control, and includes all of the original Band Delay presets found in the H3000. Badass.

H3000 Factory: Based on the well-known hardware unit of the same name, this is almost an entire bundle all by itself. The H3000 (Figure 2) gives you the power to route any combination of 18 effects blocks, including delays, amplitude modulators, envelope followers, pitch-shifters, filters, and low frequency oscillators. Get ready for sleepless nights when you start tweaking this monster (think of it like Propellerhead's Reason in this regard). The Function Generator features 19 wave shapes, a white noise generator, MIDI control, and a side chain input. All delays and LFOs can be locked to system tempo. Each delay can be looped and offers a low pass filter. The filters are selectable band pass, high pass, and low pass with variable Q, and can be swept and modulated without audible artifacts.

Reverb: Contained within are halls, plates, rooms, chambers, and ambience from Eventide's H8000 unit. As many reverb algorithms require tweaking to fit a particular project, Eventide has included two user-adjustable EQs (one before and one after the reverberator), a compressor (which can be placed either before or after the reverberator), twin delays, and a crud-making bit reducer. The tails are smooth and decay nicely; I really liked some of the rooms and halls for electric guitar and other instruments where a subtle "space" effect was needed. Since digital reverb algorithms are often development-intensive, each vendor tends to have a sound or flavor to their products. Eventide's Reverb provides a nice alternative to the Lexicon or T.C. Electronic products commonly used in many studios.

CONCLUSIONS

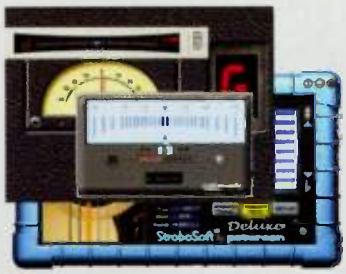
If your budget allows for only one processing bundle, Anthology II should be on your short list. While it is a touch less broad in terms of compression and equalization—and even that point can be debated—it simply blows most of the competition out of the water when it comes to effects processing. My only request is that we get these plugs outside of the Pro Tools realm. I know it's the standard and all, but lots of us out there are using other DAWs these days. I'll keep my fingers crossed! EQ

PRODUCT TYPE: Effects plug-in bundle including EQs, dynamic processors, and channel strips.
TARGET MARKET: Pro Tools TDM users looking for a comprehensive plug-in bundle without spending an arm and a leg.
STRENGTHS: Great sounding effects. Flexible internal routing in Ultra-Channel and Reverb make them very versatile. Lighter versions of Octavox and Ultra-Channel are greatly appreciated. Comparatively low price point. Available as upgrade for existing Anthology or Massive Pack owners.
LIMITATIONS: TDM only. Somewhat steep learning curve on some plugs.
LIST PRICE: $1,195
CONTACT: www.eventide.com

TIME TO GET IN TUNE

by Craig Anderton

Guitarists, how many hours have *you* lost while recording as you tuned your guitar for the umpteenth time? This month's theme is tuning, so let's look at three very different ways to get in tune in the studio.



Software Tuners

(free to $79.99; www.strobosoft.com)

A lot of programs include tuners, such as Sonar 7's guitar tuner, the tuner in Line 6's Gearbox software, and the tuners in guitar amp simulators from IK Multimedia, Native Instruments, and Waves. For many situations, one of these is all you need as they'll let you get your guitar tuned in short order. Some instruments, like Native Instruments' Kontakt, even have "pitch pipe" functions. While intended in this case to fine-tune samples, it works for tuning guitar and bass as well.

But if you want the ultimate software tuner, your best bet is Peterson's cross-platform StroboSoft, a virtualized version of a typical Peterson strobe tuner (there was a full StroboSoft review in the 01/07 *EQ*). The Standard version ($49.99) offers chromatic tuning, while the Deluxe version ($79.99) adds an outstanding instrument tuning mode. There are multiple presets for "sweetening" the tuning in different ways (including a preset for Buzz Feiten tuning guitars), as well as tunings for 7-string guitars, 5-string bass, dobro, violin, open tunings, alternate tunings, cello, and more—and you can create custom presets. Accuracy is within 0.1 cent, and there's a noise filter in case you're tuning an instrument through a mic instead of a direct connection. As a bonus, it's very easy to adjust intonation, and the program works at sample rates up to 96kHz.

Planet Waves Full-Function Tuner and Metronome

($99.99, www.planetwaves.com)

This is my favorite "traditional" tuner for the studio. It offers strobe and sweep (moving LEDs) tuning with a big, readable display, and a "virtual pitch pipe" that emits a tone (at decent volume levels, even). I/O consists of 1/4" input and output jacks, as well as a built-in condenser mic. It also has a headphone out jack, and a jack for a 6V AC adapter (not included).

You can set any pitch reference from 415 to 466Hz, but there's also a Copy Pitch function for when you're playing along with an instrument that's in tune with itself, but not set to concert pitch. Play a note on the instrument, and recalibrate the tuner to that pitch.

The unit also includes a metronome with 22 beats-per-measure options, from the usual 1–9, to combination patterns; and, there's a tap tempo option—very convenient when you have a loop (or are doing a cover song) and need to know the original tempo.

But what clinches the "studio" aspect for me are two timer functions: a 99-minute countdown timer which upon timing out, flashes the display and causes the tuner to beep (this can happen in the background while using the metronome), and a minutes/seconds stopwatch (up to 99 minutes), which I use a lot to get timings on songs. As a tuner, this unit definitely does the job; but what really makes it studio-worthy are the metronome and timer functions.

Gibson Robot Guitar

($2,495, www.gibson.com)

A guitar review in a recording magazine? Well, this Les Paul with a built-in Tronical automatic tuning system is a real time-saver in the studio. The technology uses a servo motor for each tuning head; it compares the string pitch to a built-in reference, and automatically adjusts the tuning pegs until the pitch is correct. The tuning process is simple—you pull up on a knob, strum the strings, then watch six tuning pegs rotate until the strings are in tune.

Even if you have a great ear and a tuner, you can tune only one string at a time but the Robot Guitar tunes all six simultaneously. I've found this particularly handy when recording licks for sample CDs, as the pitch has to be *perfect*. I normally tune after every take; the Robot Guitar sure simplifies the process.

Furthermore, it can store six different alternate tunings. And, two little-known features are that you can set an arbitrary reference, then have the guitar tune to that (for example, if you need to tune an eighth-step low in order to match a piano that's slightly flat), as well as do a "stretch" kind of tuning—if you like to tune your *G* string slightly sharp, just tell the Robot Guitar that's how you want your *G* tuned.

I thought the Robot Guitar was overkill at first, but have found it's a real time-saver during intense recording sessions where every second counts.

DIGITAL SOUND WORKS DRAMATIC PERCUSSION

Hosted by TASCAM's GVI player, *Dramatic Percussion* features unusual percussion sounds, often played in unusual ways (like thumb rolls on a concert bass drum).

Some serious effort went into using mod wheel, key switching, and sustain pedal to add useful variations on the sounds; the library as a whole takes advantage of GVI features like round-robin triggering and randomizing. Add that to great recording quality, and *Dramatic Percussion* doesn't feel like a bunch of static samples, but a playable *instrument*. The only hitch was a problem running under ASIO in stand-alone mode—a problem I've encountered with other GVI instruments, which in the past has been fixed by updates. It worked fine as a plug-in.

A potential problem is the sheer scope of the options, but an audition preset helps give an overview. You'll hear boo bams, surdos, split bamboo, crotales, gongs, cassas, concert toms, and much more; what I appreciate most is that the treatments are not only creative, but blend finesse and strength.

For evocative, dramatic, extremely playable percussion sounds and effects, this library is great—check out the audio example at www.eqmag.com, which I put together in under five minutes. With a bit more effort, I could easily score an "on-the-edge-of-your-seat" chase scene with only these sounds. Thumbs way up. *—Craig Anderton*

CONTACT: Digital Sound Works, www.digitalsoundworks.com
FORMAT: Two DVD-ROMs with 6.58GB of content, hosted by TASCAM's GVI player
LIST PRICE: $199

SONY SIX-STRING ORCHESTRA

Riffs, riffs, and more electric guitar rock riffs: Tele, Les Paul, Strat, wa, clean, distorted, chords, single notes . . . your biggest issue will be auditioning them all. These riffs are also quite inspiring; if you're looking for hooks on which you can hang a song, look no further. The recording quality and Acidization is up to Sony's usual standards, which is excellent indeed.

But the big deal here is that this is part of Sony's Artist Integrated series, with other CDs in the series from Tony Franklin (bass), Matt Fink (keyboards), and Siggi Baldurson (drums). They're all designed to work as stand-alone sample CDs, but also, to function together as a "virtual band." The demo songs included on *Six-String Orchestra* feature loops from all four titles, put together into full compositions. The idea seems to be that if you need to create music with a full band sound, rather than having to hunt around various libraries in the hopes of finding things that work well together, you can simply draw from these sets. While the result may not have the organic quality of four musicians working in a room together, the results do flow better than taking material from multiple unrelated libraries.

Even without the integration feature, though, these are hot, useful licks on their own. Listen to some, then try not to write a song. *—Craig Anderton*

CONTACT: Sony Creative Software, www.sonycreativesoftware.com
FORMAT: Two CD-ROMs with 1.2GB/699 files of loops; 182MB of demo songs; 24-bit/44.1kHz
LIST PRICE: $69.95

SERAFINE COLLECTION SCI-FI II

If you stay until the end of movies, you've seen Frank Serafine credited as the sound designer on numerous films. *Sci-Fi II* isn't about stereotyped sci-fi soundscapes, but an eclectic sound effects collection—some easily identifiable (like jet sounds, bells, phone rings, doors, harp glisses, and chimes), and others that are abstract yet retain an organic quality. Overall, I'd say these work for horror/fantasy genres too, not just the space operas implied by the title.

There are several broad categories, and some may seem over-represented: 185 laser effects, or 65 guitar sounds. But they're all good, and you won't run into situations where you don't have enough variations to put together a convincing background.

Sci-Fi II isn't cheap, but you're paying for A-list sounds done by Someone With a Name, and recording them all must have represented a huge effort (well, unless there's a submarine docked nearby so you can record torpedo whooshes easily). If you're just looking to add some sound effects to a dance mix, other libraries will do the job for less bucks. But if you're doing serious audio-for-video work on a deadline, forking over a grand is going to be less expensive than hiring someone to get these kinds of sounds—assuming they would even be capable of recording, processing, and editing them. *—Craig Anderton*

CONTACT: Serafine Collection, www.serafinecollective.com
FORMAT: DVD-ROM with 842 WAV files (2.35GB); 16-bit/44.1kHz
LIST PRICE: $995

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The #1 World Best-Selling Ear Training Method for 27 Years

They laughed when I said they could have Perfect Pitch

... until I showed them the simple secret —and they heard it for themselves!

David-Lucas Burge

● Name any note or chord – by EAR! ● Sing any desired pitch at will ● You'll hear it for yourself – immediately. ● Copy music straight off a CD ● Play by ear – instead of searching by hand ● Identify keys of songs just by listening ● Perform with confidence ● Compose music in your head ● Enjoy richer, finer music appreciation ● You'll open a new door to new talents...

The true story behind the worldwide #1 best-selling ear training method

by **David-Lucas Burge**

It all started in ninth grade as a sort of teenage rivalry . . .

I'd slave at the piano for five hours daily. Linda practiced far less. Yet somehow she always shined as the star performer at our school. It was frustrating.

What does she have that I don't? I'd wonder.

Linda's best friend, Sheryl, bragged on and on to me, adding more fuel to my fire.

"*You* could never be as good as *Linda*," she would taunt. "*Linda's* got *Perfect Pitch*."

"What's Perfect Pitch?" I asked.

Sheryl gloated about Linda's uncanny abilities: how she could name *exact notes and chords*—all BY EAR; how she could sing any tone—*from memory alone*; how she could play songs—after just *hearing* them; the list went on and on . . .

My heart sank. *Her EAR is the secret to her success* I thought. How could I ever hope to compete with her?

But it bothered me. Did she *really* have Perfect Pitch? How could she know notes and chords just by *hearing* them? It seemed impossible.

Finally I couldn't stand it anymore. So one day I marched right up to Linda and asked her point-blank if she had Perfect Pitch.

"Yes," she nodded aloofly.

But Perfect Pitch was too good to believe. I rudely pressed, "*Can I test you sometime?*"

"OK," she replied.

Now she would eat her words . . .

My plot was ingeniously simple . . .

When Linda least suspected, I walked right up and challenged her to name tones for me—*by ear*.

I made her stand so she could not see the piano keyboard. I made sure other classmates could not help her. I set up everything perfectly so I could expose her Perfect Pitch claims as a ridiculous joke.

With silent apprehension, I selected a tone to play. (She'll *never* guess F♯, I thought.)

I had barely touched the key.

"F♯," she said. I was astonished.

I played another tone.

"C," she announced, not stopping to think.

Frantically, I played more tones, skipping here and there all over the keyboard. But somehow she knew the pitch each time. She was AMAZING.

"Sing an E♭," I demanded, determined to mess her up. She sang a tone. I checked her on the keyboard—and she was right on!

Now I started to boil. I called out more tones, trying hard to make them increasingly difficult. But each note she sang perfectly on pitch.

I was totally boggled. "*How in the world do you do it?*" I blurted.

"I don't know," she sighed. And that was all I could get out of her!

"How in the world do you do it?" I blurted. I was totally boggled. (age 14, 9th grade)

The dazzle of Perfect Pitch hit me like a ton of bricks. I was dizzy with disbelief. Yet from then on, I knew that Perfect Pitch was real.

I couldn't figure it out . . .

"How does she DO it?" I kept asking myself. On the other hand, why can't *everyone* recognize and sing tones by ear?

Then it dawned on me. People call themselves *musicians*, yet they can't tell a C from a C♯? Or A major from F major?! That's as strange as a portrait painter who can't name the colors of paint on his palette. It all seemed so odd and contradictory.

Humiliated and puzzled, I went home to work on this problem. At age 14, this was a hard nut to crack.

You can be sure I tried it out for myself. With a little sweet-talking, I got my three brothers and two sisters to play piano tones for me—so I could try to name them by ear. But it always turned into a messy guessing game I just couldn't win.

Day after day I tried to learn those freaking tones. I would hammer a note *over* and *over* to make it stick in my head. But hours later I would remember it a half step flat. No matter how hard I tried, I couldn't recognize or remember any of the tones by ear. They all sounded the same after awhile; how were you supposed to know which was which—just by *listening?*

I would have done anything to have an ear like Linda. But now I realized it was way beyond my reach. So after weeks of work, I finally gave up.

Then it happened . . .

It was like a miracle . . . a twist of fate . . . like finding the lost Holy Grail . . .

Once I stopped *straining* my ear, I started to listen NATURALLY. Then the simple secret to Perfect Pitch jumped right into my lap.

Curiously, I began to notice faint "colors" within the tones. Not *visual* colors, but colors of *pitch*, colors of

sound. They had always been there. But this was the first time I had ever really "let go"—and *listened*—to discover these subtle differences.

Soon—to my own disbelief—*I too could name the tones by ear!* It was simple. I could hear how F♯ sounds one way, while B♭ has a *totally different sound*—sort of like "hearing" red and blue!

The realization struck me: THIS IS PERFECT PITCH! This is how Bach, Beethoven, and Mozart could mentally envision their masterpieces—and know tones, chords, and keys—all by ear!

It was almost childish—I felt sure that *anyone* could unlock their own Perfect Pitch with this simple secret of "Color Hearing."

Bursting with excitement, I told my best friend, Ann (a flutist).

She *laughed* at me. "You have to be *born* with Perfect Pitch," she asserted. "You can't *develop* it."

"You don't understand how Perfect Pitch works," I countered. I sat her down and showed her how to listen. Timidly, she confessed that she too could hear the pitch colors. With this jump start, Ann soon realized she also had gained Perfect Pitch.

We became instant celebrities. Classmates loved to call out tones for us to magically sing from thin air. They played chords for us to name by ear. They quizzed us on what key a song was in.

Everyone was fascinated with our "supernatural" powers, yet to Ann and me, it was just normal.

Way back then, I never dreamed I would later cause such a stir in the academic world. But when I entered college and started to explain my discoveries, professors *laughed* at me.

"You must be *born* with Perfect Pitch," they'd say. "You can't *develop* it!"

I would listen politely. Then I'd reveal the simple secret—*so they could hear it for themselves.*

You'd be surprised how fast they changed their tune!

In college, my so-called "perfect ear" allowed me to skip over two required music theory courses. Perfect Pitch made everything easier—my ability to perform, compose, arrange, transpose, improvise, and even sight-read (because—without looking at the keyboard—you know you're playing the correct tones).

And because my ears were open, music sounded richer. I learned that music is truly a HEARING art.

Oh, you must be wondering, whatever happened with Linda? Excuse me, I'll have to backtrack . . .

It was now my senior year of high school. I was nearly 18. In these three-and-a-half years with Perfect Pitch, my piano teacher insisted I had made ten years of progress. And I had. But my youthful ambition wasn't satisfied. I needed one more thing: *to beat Linda.* Now was my *final chance.*

The University of Delaware hosts a performing music festival each spring, complete with judges and awards. To my horror, they scheduled me that year as the *grand finale.*

The fated day arrived. Linda gave her usual sterling performance. She would be tough to match, let alone surpass. But my turn finally came, and I went for it.

Slinking to the stage, I sat down and played my heart out with selections from Beethoven, Chopin, and Ravel. The applause was overwhelming.

Afterwards, I scoured the bulletin board for our grades. Linda received an A. This was no surprise.

Then I saw that I had scored an A+.

Sweet victory was music to my ears, mine at last! —D.L.B.

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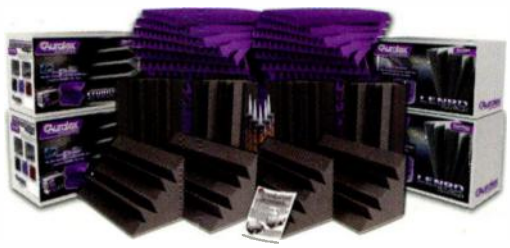

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B&H Pro Audio	800-947-5518	www.bhproaudio.com	31, 51
Bass Player Live! Clinics		live.bassplayer.com	59
Behringer		www.behringer.com	C2
Cakewalk	888-CAKEWALK	www.cakewalk.com	41
Cascade Microphones	360-867-1799	www.cascademicrophones.com	57
Columbia College Chicago	312-344-6300	www.colum.edu/music	35
Conservatory Of Recording Arts & Sciences	888-604-4075	www.audiorecordingschool.com/eq.html	47
DigiTech		www.digitech.com/products/Vocalistlivepro	29
Downloadablesoundz / Sonic Reality		www.downloadablesoundz.com	53
EQTV		www.eqmag.tv	67
Equator Audio Research	888-772-0087	www.equatoraudio.com	3
Eventide	201-641-1200	www.eventide.com	23
Fat Boy Records		www.moe.org, www.myspace.com/moe	62
Genelec		www.genelec.com	11
JZ Microphones		www.jzmic.com	27
Klein + Hummel		www.klein-hummel.com	63
KRK Systems	888-361-5528	www.krksys.com	45
Mackie		www.mackie.com/vlz3	43
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Microtech Gefell	++49 (0)36649 / 882-0	www.microtechgefell.de	53
Mojave Audio	818-847-0222	www.mojaveaudio.com	69
Native Instruments	866-556-6487	www.native-instruments.com	34, C4
Neumann USA		www.neumannusa.com	37
Ocean Way / Sonic Reality		www.oceanwaydrums.com	7
Pot Luck Audio Conference		www.potluckcon.com	68
PreSonus	800-750-0323	www.presonus.com	55
Radial Engineering	604-942-1001	www.radialeng.com	48-49
Royer Ribbons	818-847-0121	www.royerlabs.com	32
SAE Institute		www.sae.edu	39
sE Sound Engineering	617-623-5581	www.sonicus.net	65
Sonic Circus	888-SC4-GEAR	www.soniccircus.com/1608	28
Sonic Reality	800-232-6186	www.studioprofiles.com	33
Sonic Reality / Downloadablesoundz		www.downloadablesoundz.com	53
Sonic Reality / Ocean Way		www.sonicreality.com	7
Sony Creative Software, Inc.	608-256-3133	www.sony.com/soundforge9	1
Sweetwater	800-222-4700	www.sweetwater.com/feedback	15
Sweetwater	800-222-4700	www.sweetwater.com/gearfest08	61
Tascam		www.tascam.com	C3

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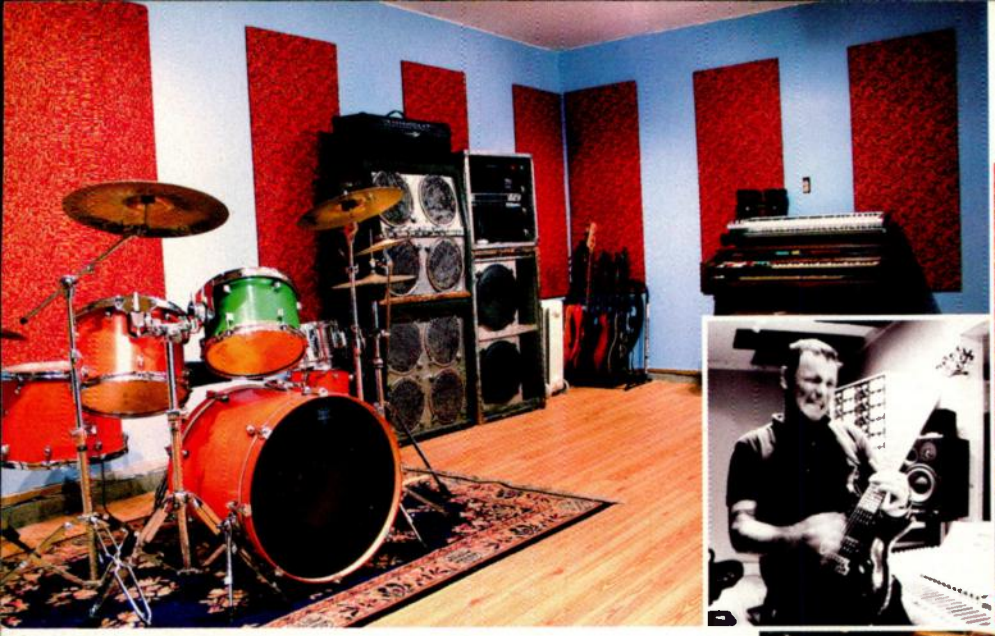

ROOM w/a VU

by Angelina Skowronski

STUDIO NAME: Austin Enterprise
LOCATION: Nashville, TN
CONTACT: www.austinenterprise.com
KEY CREW: Steve Austin
CONSOLE: Trident 24 (36 x 24 x 24) w/ Series 65 I/O modules, Series 75 output buses, and master modded with audiophile grade ICs (integrated circuits)
COMPUTERS: Apple G5 dual 2.0GHz w/ 8GB RAM and 17" flat panel monitors (2), RAID Terabyte, 350GB Western Digital drives (2)
SOFTWARE: Apple Logic 7.1, Waveburner; Wave Machine Labs Drumagog; Waves Platinum Bundle
TAPE MACHINES: Studer A80 2" MkIV w/ A827 capstan modification and custom-made rackmount varispeed control, A810 1/4" (rebuilt to new by Steve Smith)
MONITORING: Auratone 5Cs w/ Bryston 2B amp; Dynaudio BM15A; Sony MDRV700; Tannoy Pbm 8-Ii, Pbmii 6.5-Ii; Westlake 1200PM
MICS: AKG 414EB w/ C12 Capsule, D12, D112 (2); Audio-Technica 37R, 4033, ATM-63; Neumann M147; Røde NTV; Royer R-121 (2), Sennheiser MD421 (3), MD409 (4); Shure Beta 58A, SM57 (2), SM58 (3); Schoeps 221B; STC 4038; Telefunken U47 w/ AC701 (custom made power supply by Tracy Korby) and VF14M tubes
PREAMPS AND DI BOXES: Countryman FET 85 (2); Drawmer 1960; Neve 1066, 1073; TL Audio PA-1 (modded by Coleman Rogers)
OUTBOARD: dbx 166 (modded and re-capped with Panasonic HFS); Drawmer 1960, DI241, Ds404, Mx50; EMT 245; Eventide H969, H3000; Pultec HLF-3C (2); Sontec Drc-202, Mep-250c; Urei 1176LN D (re-capped with Panasonic HFS), 1176LN E (re-capped with Panasonic HFS), LA4 (3)
INSTRUMENTS: Ampeg 2 x 15 cab; Baltimore Drum Company custom kit; Ensoniq EPS sampler; '71 Fender Strat, P-bass; JB Player 12-string, Keller custom drum kit; '69 Marshall 4 x 12 (2); '71 Martin D28 dreadnought; M-Audio Axiom 61; Mesa Boogie Mark III Blue Stripe; PRS Artist Series 20th Anniversary, Custom 24 GTR, Custom 24 Standard, Mark Tremonti Signature, SE Paul Allender GTR, Special GTR; Thomas Organ Californian 241; various percussion

NOTES: Steve Austin—the main man behind the seminal noise rock powerhouse Today is the Day—says he started recording songs before he even enrolled in high school, after his father handed him his very first tape recorder. Many years later, Austin's passion for putting a song to tape remains the same, and that passion has taken physical form in the one and only Austin Enterprises—a studio haven for hardcore, metal, and punk artists.

Going further, Austin (pictured above) says that he built his studio to integrate the best of the analog and digital words. "[I'm] taking the rudiments of the old school 'big console/Studer tape deck' philosophy and blending it with the most advanced digital recording tools available," he says of his 24-track analog/96-track digital recording studio that also doubles as the home base for SuperNova records.

"It's important to me that I collect as much of the vintage pro audio gear that was used to cut classic records as I can," Austin says, gesturing to his most prized vintage acquisition—the two Studer tape machines. "Nothing will ever beat the sound of tape," he claims. "And nothing is more important than a great mic," he says, referencing his STC 4038. "That thing is a sonic time machine. Anything you record on it has that classic sound of the past."

With years of experience under his belt buckle (Austin has recorded some of the scene's most extreme acts including Converge, Lamb of God, Cable, and Deadguy in addition to the Today is the Day releases), Austin maintains that the best advice he can give musicians recording their own material is simple: "Trust your instincts when it comes to sound. If you think something doesn't sound right [to you], then it probably won't to others. If something sounds great, then don't tweak it. Let it rock on its own." EQ

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