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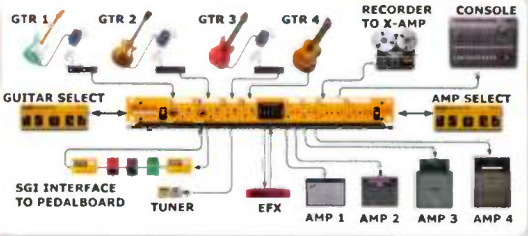

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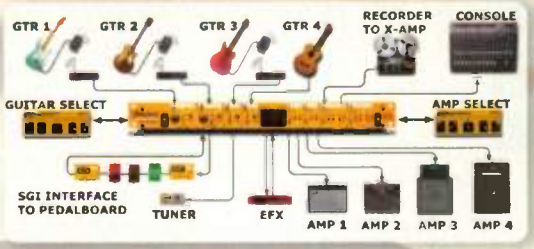

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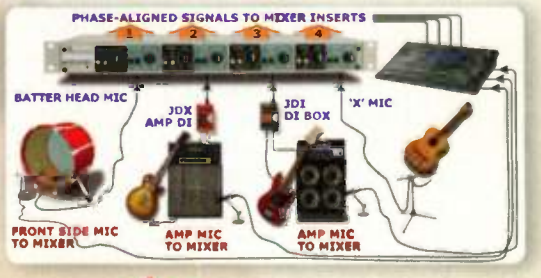

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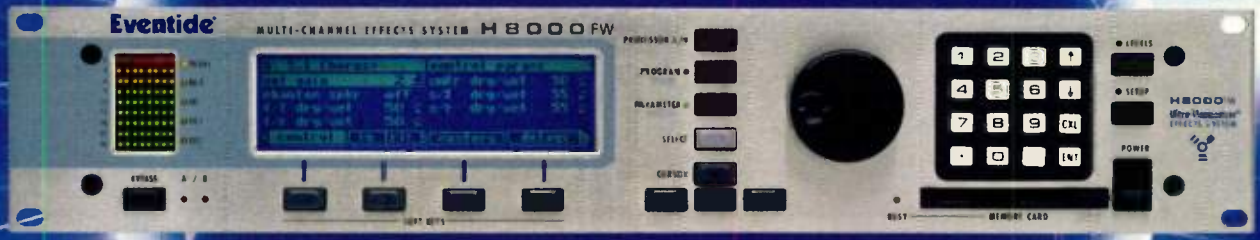

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LIVING IN A VIRAL WORLD

People dream of grandiose gestures and big moves. But while it's nice to contemplate your "next big thing," don't let the little details slip by. Some of them can, over time, lead to just as big an end result.

And with the Internet, this is truer than ever—for both good and bad. That hasty, malicious post you did when you were angry? Too bad your potential employer googled your name, and found it. But you could just as easily post a song, and one person downloads it who likes it . . . who then sends the link to a friend, who then sends the link to two other friends, and they send the link to two of their friends. . . .

I saw this phenomenon in action when I posted a thread in my forum about a 72-hour trip to Tokyo. When I signed off at night, it had about 100 page views. The next morning when I signed on, there were thousands! That was definitely not the norm, so I did a post and asked what the heck happened. It turned out that just *one* person in South Korea found the thread, and posted the URL in a music forum . . . and the thread just took off from there.

I'm a great believer in what's called "viral marketing," but I just call it "every single person is important." If you're booked for a gig and only four people show up, you still need to play as if you were playing to a standing room only crowd in Madison Square Garden. If you're good, not only will those four people say you were good, they'll give you some extra mojo because you were good when you could have just as easily blown off the gig as "being for only four people."

But being "good" is key: In a viral world reactions are split-second, and you can rise and fall in a matter of days. So, while some people just "throw stuff out there" because they can, give people a reason to come back to what you're doing. There's *no* margin for error, because something else is just a click away. Pay attention to *every* detail of how you present yourself to the world, because both the good and the bad can be multiplied a hundred times over.

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SOUNDING BOARD

THE GREAT BIG DAW ROUNDUP

Thanks for your excellent overview "The Great Big DAW Roundup" (05/09), that only a person with Craig Anderton's extensive experience could provide.

I first used Performer in 1989 and now use DP6. But I've had a number of crashes lately, and am concerned that the crashes are related to virtual instruments. Under "Limitations," you commented that pre-rendering doesn't work with soft samplers. I dont really understand—can you elaborate?

Steve Hickman

Executive Editor Craig Anderton responds:

Keyboard magazine editor Steve Fortner explained this issue really well in their DP6 review: "Another place you'd disable [pre-rendering] is with a soft sampler—[because] the sampler loads instruments into RAM, and DP pre-gens audio into RAM, the sampler may try to unload and reload samples as you open and close its window, and I experienced crashes with NI Kontakt. This isn't necessarily DP's fault; it's more that pre-gen is such a new concept that developers have yet to work out these issues. Disabling it made Kontakt work fine [you can disable pre-rendering on a per plug-in basis], and I had no issues with soft synths that didn't load samples into RAM."

YOU LIED . . . BUT THAT'S OKAY

I'm always eager to receive the next *EQ* and read through Sounding Board. In the 03/09 issue, reader "Sorcererj" writes about the Roundup features and asked about one on DAWs, to which Craig responded: "As to a DAW Roundup, that's unlikely . . . they are so feature-laden that to cover the needs of every possible user and to relate them to individual DAWs would be a daunting task, if it's even possible." *Then,* you go and do one—which is excellent, by the way—and covers enough similarities and differences among them, along with "what it does best" vs. "main limitations" to give a prospective buyer a very good overview. Well done and thanks, Craig. I bet you thought we didn't notice!

H Bomb, Pro Audio Tracks

YES, EVEN *MORE* DAW COMMENTS

It was very interesting the way [Craig] summed up the history of each DAW in the DAW roundup [05/09], but I have two comments: I think a very important limitation for Sonar that wasn't listed is its notation editing—you can't even do triplets correctly, much less other tuplets. My other comment is actually a question. Was Ensoniq involved with Logic? You talk about Emagic in subsequent paragraphs, so is Ensoniq a typo or did they actually distribute it at some point?

Vintage Vibes (via forums)

Executive Editor Craig Anderton responds:

Ensoniq did distribute Emagic's Logic for a while—this is precisely the kind of trivial knowledge that can make you a *huge* hit at parties!

DYNAMICS: A QUESTION OF SOUL

I love this magazine, but regarding "From a Whisper to a Scream" (05/09 Mixing), dynamics arises from the hearts and souls of the players, and cannot be obtained from the printed page or the selective use of technology. While I admire Nirvana as groundbreakers in their genre, I do not find their "whisper to scream" modality all that dynamic. Anyone can go from zero to sixty—it's what you do in between that's a challenge. What clearly suffers in music today (particularly in the realm of dynamics) is the human element.

It's also important to draw the distinction that the listening audience does *not* have the attention span of a gnat, and being *treated* as if they have the attention span of a gnat. Show them some respect and you'll get it in return, tenfold.

Joel Cage, www.joelcage.com

RULES? WELL, LIVE PERFORMANCE RULES!

Regarding the 06/09 Talkbox ("Rules? What Rules?")—well said, sir.

One point that's not stressed enough these days is live performance; the best way to "make it" is to have a great live show. Having polished musicians and great singers with personal chemistry is being overlooked these days, yet that is the easiest and surest way to succeed.

I've seen where a band has a great-sounding CD, yet the show does not translate and thus success becomes elusive. On the other hand I've seen acts with decent CDs, yet the live show had magic and the act developed a fanatical following. And that fanatical following made sure that the rest of the world knew about their "little gem" in ways that a single artist or band never could.

If you want to get lost in the shuffle, spend your time and energy pushing your music over the Internet. But if you want respect and adoration, go perform, and make sure you sound a cut above the rest.

Is there anything better than a live gig that hits on all cylinders? I think not.

Jeff Sherman

MORE RULES TO LIVE BY

Speaking of rules, Mr. Anderton, did you miss this one: "The medium is the message." From personal experience, I can safely state that broadcasting (in any way, shape, or form) *sucks!* Thank you.

Gene Gordon (KSAN-FM, 1970–73)

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 post missives via Twitter and Facebook for possible inclusion in the Sounding Board.

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PUNCH IN

RULES OF ENGAGEMENT

Omar Rodriguez-Lopez Lays Down the Law on **The Mars Volta's** *Octahedron*

BY BILL MURPHY

"For me, the conceptual approach is always the same," says Omar Rodriguez-Lopez. "The idea is to do whatever you can to make the next project completely different from the one before it. For a while now, I had been wanting to make a record that was based mostly in an acoustic inspiration—which means I thought a lot about people like Syd Barrett and Leonard Cohen, and Nick Drake. That was the starting point."

Of course, as any fan of The Mars Volta's sprawling acid-rock epics will attest, where you start isn't necessarily where you end up. The eight songs

MICHAEL G. RIZZI

Omar Rodriguez-Lopez (far left), prosperity cat, and Cedric Bixler-Zavala are ready for a change.

that make up *Octahedron* [Warner Brothers] don't surf the same unrelenting waves of amplified aggression as 2007's *The Bedlam in Goliath*, but they aren't entirely unplugged, either. What's clear is that Rodriguez-Lopez found direction in the limitations he imposed on himself and lead singer Cedric Bixler-Zavala.

"I came up with a list of ground rules to push us to create something different," he explains. "An obvious one was to ask Cedric to sing in the middle and lower registers, because he's known for singing way up high, and to use only three extreme vocal effects [*such as the distorted Leslie cabinet that drives the closing track "Luciforms"*]. I allowed myself only one instrumental section on the whole album, and I stayed away from writing horn sections or anything elaborate. All this was a big key in developing a different sound."

There were restrictions on the actual recording sessions, too, which took place over the course of three weeks last summer at his E-Clat Studio in Brooklyn (since relocated to Mexico, where he now lives). Everything was tracked digitally to 48 tracks on Pro Tools—a real limitation, considering most Mars Volta albums have taken up in excess of 100 tracks, usually recorded raw to 2-inch tape, and then dumped to Pro Tools for editing and mixing. In a sense, Rodriguez-Lopez was turning back the clock to the way he and Bixler-Zavala made music with At the Drive-In, their first band together, and a cult punk fixture to this day.

"This time, we still mixed down to tape, and we mastered from tape, as we usually do," he clarifies. "But again, making *Octahedron* was about making decisions up front that we would have to be stuck with. I loved the sound of the room I had at E-Clat, so I wanted that to be present, with the bleed and everything. We turned all our gear up to 10, for lack of a better term, and let it be a little furry in places, knowing that recording digitally can be so pristine."

When tracking Thomas Pridgen's drums, for example, that furriness sometimes meant overloading the room mics—usually a combination of Royer R-121s, a Royer SF-12, and a Neumann U 67—and recording "really hot" through a bank of Neve 1073 mic premps and Urei 1176 compressors. Also, a TASCAM 4-track 1/2-inch tape machine would often be running, to be mixed later into the overall sound. It's a technique that gets an added twist on the hauntingly funky "Teflon," where Pridgen's drums and Juan Alderete's muscular bass lines are chased by dreamlike echoes—via a Maestro RM-1B Ring Modulator—of the programmed beats Rodriguez-Lopez laid to 4-track back in 2001, when he first conceived of the song.

Octahedron brims with moments like these, the sound hovering at times between the contemplative spaces of early King Crimson and early Pink Floyd. "Since We've Been Wrong" quietly builds toward a Mellotron-fueled climax that offers a plaintive counterpoint to Bixler-Zavala's midrange vocals. On "With Twilight as My Guide," Rodriguez-Lopez strokes his Telecaster into erotic slides of abandon, recording through a phalanx of vintage Roland RE-101 and RE-201 Space Echoes, and a Supro combo amp close-miked with an SM57 and a Neumann U 67 from across the room. The track pivots on John Frusciante's double-tracked acoustic guitar tracks that are hard-panned right and left.

The album's arguable turning point is the single "Cotopaxi," which finds the core members of the band locking into one of their trademark hyper-syncopated grooves. Rodriguez-Lopez takes pleasure in explaining how it signifies where he and his mates are as a symbiotic unit.

"I usually like giving the band their parts right before they're going to record, without any time to practice, so they have to fight for their lives at that moment," he says. "This one was different because I taught it to the band during a soundcheck in Poland, so we got to play it a few times. Don't ask me why, but I thought a lot about Cream for some reason, and the fact that before they all went their separate ways, they were a tight-knit group, and had a real psychic connection between them. So this was the one song that I did play with everyone in the room. I did it as if we were a band, and we were all aware of what was coming, and where it was going. I think it really shows how far we've come, not just as band members, but as family members."

BRAVE NEW WORLD

Revolution Blends Traditional Cuban and Modern Dancefloor Sounds

BY LILY MOAYERI

Cuba, however steadfast its grasp has been on the ideology of Communism, is slowly relinquishing its hold. Case in point is *Revolution* [Rapster], a collaboration of Cuban musicians with producers Norman Cook (a.k.a. Fatboy Slim), Cameron McVey (Massive Attack), Rich File (of UNKLE), Guy Sigsworth (Madonna), Marius DeVries (Björk), and Poet Name Life (Black Eyed Peas).

The project came together three years ago when the producers flew out to Havana over a ten-day period. There, they were given the run of the place in terms of talent and studios. The only direction given was to avoid getting so authentic with the Cuban sound that the tracks sounded dated.

Armed with a drive of programmed ideas, DeVries and engineer Jason Bushoff set up at Egrem Studios, one of the older recording spaces in Havana where Buena Vista Social Club recorded. Egrem has a Pro Tools rig, but all the other gear was antique, with plenty of crackles and fuzz.

Poet and his engineer AGDM had a similar experience in Abdala Studios, where there's also a Pro Tools rig, but everything else is "dusty, but dusty cool," Poet says. The guys showed up with basic skeletons of ideas laden with percussion and brass, using a combination of Pro Tools, Live, and Reason.

On "Dark House Love," Notion music-notation software played a part in the preproduction process. The software uses a sample library recorded by the London Symphony Orchestra at Abbey Road, but a Cuban orchestra gave the material a more local vibe.

"Once all the string parts were lined up, I soloed tracks, chopped out, cut, pasted, and layered in Pro Tools," Poet says. "At the same time, I went through crazy outboard Eventide effects and blended them with a lot of my synthesizer sounds. The musicians added the organic feel."

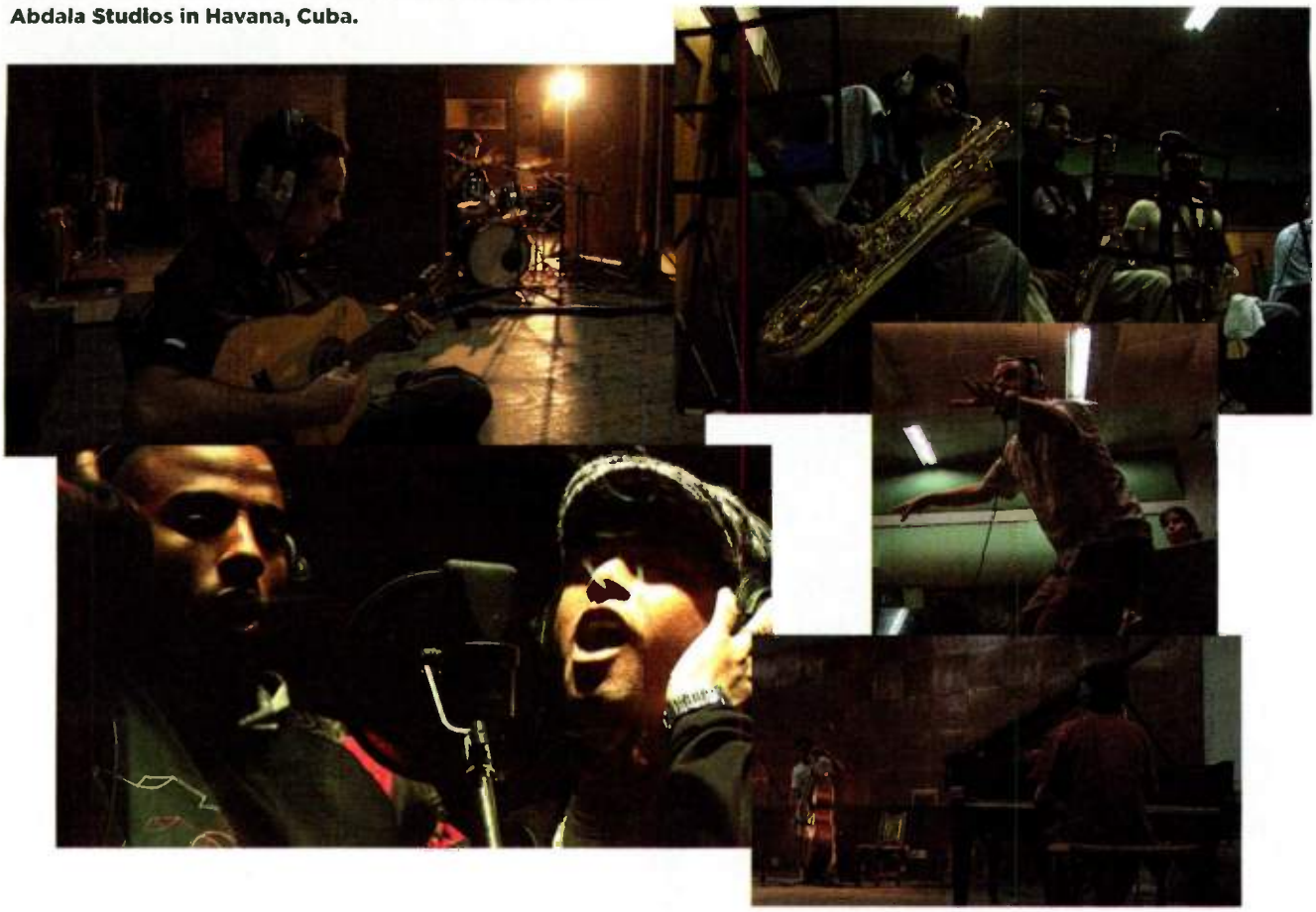
"We wanted to use a significant amount of the sonic vocabulary generated in Cuba by Cuban musicians to give it that texture," adds DeVries. Even though the production techniques and programming have that contemporary feel, what it's made out of has that old world-y, otherworld-y vintage Cuban flavor that gives them a particular spin."

For "Guantanamero," DeVries recorded vocals with Oktava mics through an AMEK Mozart console. Horns, percussion, guitars, and tres were recorded with Neumann U 89 i and Sennheiser MD 441 U microphones.

"We put the musicians in a crescent shape at the other end of the room, grouping the specific horns together in pairs, and slightly facing each other because we were limited to what we had," Bushoff remembers. "There was the raucousness of having them all play together, as well. As much as we tried to tell them what to do, someone was always doing something slightly different."

DeVries and Bushoff were also asked by the house engineer not to change any of the routine switches on the desk, as they would be too difficult to reset. Because of this, they added lots of inputs in Pro Tools, which meant an enormous amount of audio to deal with. On top of that, the musicians were so eager to show what they could do, it was hard to get

Various *Revolution* contributors recording at Egrem and Abdala Studios in Havana, Cuba.



comes in. You've got a visual reference onscreen, and you're listening to where things fit in the groove and you start shifting audio forward or backward in time so that it starts to lock within what was done."

In contrast, Poet was not quite so limited—specifically in his choice of live rooms. There was the above mentioned wood room and another that was all mirrors, which he used to record the horns. He miked the mirrors and also miked the players at a 90-degree angle to the mirrors, which he says gave him added ambience without resorting to a plug-in.

"There is one part where we made a tent for our kick drum, because I love to experiment with miking techniques," Poet says. "We used chairs to connect this long tube, and we miked the end of the tube, which created an 808-type sound. Then, we played an actual Roland TR-808 and made the drummer play on top of that. They're so ninja, they knocked it out in one take." EQ

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TIM MCCREADY / SABINE DE MOERLOOSE

Richard Terfry (left) and Joëlle Phuong Minh Lê have never met in person. Right, Minh Lê as a child with one of her prized music boxes.

WAVES OF CHANGE

Bike For Three!'s Joëlle Phuong Minh Lê on Maintaining the Element of Surprise

BY KYLEE SWENSON

Bike For Three! is a long-distance love affair bound by a natural musical chemistry. But where most long-distance relationships are punctuated by occasional euphoric visits, this duo has never met—and may not ever.

Belgian producer Joëlle Phuong Minh Lê (a.k.a. Greetings From Tuskan) and Canadian rapper Richard Terfry (a.k.a. Buck 65) originally paired up over e-mail to do one track for a mixtape, but the collaboration bloomed into a full-on project, resulting in Bike For Three!'s *More Heart Than Brains* [Anticon].

With titles such as "All There Is to Say About Love," "First Embrace," and "Let's Never Meet," *More Heart Than Brains* sounds as though it could be a concept album about a brewing love between the producer and rapper. Whether part fact or total fiction, the way the album's music and vocals interact adds an alluring air to the story.

Over the course of 15 tracks, Lê's productions reveal stuttering vocals, motion-making arpeggios, pulsing atmospheric pads, and moments of intricate filigree. Nothing stays the same for long. Lê is conscientious in keeping each track moving, automating sounds up, down, in, out, and around.

"It is this combination of me not wanting to be bored with the sound and trying to shift attention of certain elements," Lê says from her native Brussels. "At one point in a track, I like to bring up something to give it a little shine. I play a lot with the volume, or by opening a filter. It is funny to think of the sound doing his little solo and then disappearing in the crowd."

Lê—who studied music theory, plays cello and piano, and produces her own electronic music—has plenty of musical experience under her belt. But one thing she wasn't prepared for with Bike For Three! was working with a vocalist.

"A vocal takes a lot of attention away from little details," Lê says. "That was something I had to get used to. Some tracks were so crowded with sounds and melodies, but I never removed them. I always tried to fix that mix-wise and give all the sounds their place around Buck's voice. I sometimes made his voice sink in the mix—rather than float above the track—by adding a little bit of chorus or a very short delay to it."

Lê records with a PC running Steinberg Nuendo and using VSTi synths such as Native Instruments Pro-53. "You can feel that NI really tried to emulate the synth and not make something with a thousand settings to get lost in," she says.

On "MC Space," for example, Lê took an '80s-style bass sound and tweaked it to fit the mood. "I added a bit of noise to it and opened the filter quite a lot," she says. "After that I cut a lot of mid to make it sound more bright, but keeping the lows."

Lê also uses a late-'70s Korg keyboard that "doesn't even have a name and smells like old wood," she says. But her real secret weapon is her collection of music boxes—some she has kept from childhood, and others being recent flea-market purchases. She samples those boxes and then uses NI Kontakt to trigger sequences.

"Some parts have different versions, each with different parts looped," Lê says. "I'll start playing around while playing a beat, and little melodies come from there. Kontakt is great for that. The modulation possibilities are endless, and it really pays off to explore that and play around with your sounds."

Lê records acoustic instruments with "crappy mics," memo recorders, and a Shure SM57. There's often background noise to contend with, but sometimes that's a good thing.

"I noticed that all these recording flaws bring up little surprises when I start to transform the recordings. In the end, it does not matter if a xylophone was recorded clean and proper or primitively and dirty."

Such is the case on "First Embrace," which begins with a low, legato cello part and contrasting high-plinking notes from a music-box. Sounds that she thought were flaws of the music-box samples turned out to be something more.

"I was separating all the notes in Sony Sound Forge and removing the wind-up sounds and the sounds of the lid rattling," Lê says. "I found out that the song was much more fun with these sounds left in, so I made separate samples of those, too. It was quite long work to not make it sound like a mistake, though. I EQ'd the rattling parts separately from the actual notes and only left the high frequencies of those sounds to make them merge with the notes."

As for the cello on "First Embrace," Lê cut up separate notes and drew a volume curve so that each note would get louder right after the attack. "That really gives a funny kind of late attack on the sound," Lê says. "And EQ-wise, using the Waves REQ plug-in, I cut off all highs and boosted the mids, mostly to bring up the bow stroke."

But one of Lê's favorite sounds is the vibrato synth on "No Idea How."

"It is a simple pulse with a super fast LFO on it," she says. "It has a very slow portamento, which makes it really weird when playing very high notes. I just let it run and adjusted the vibrato using the mod wheel. When the note was jumping up, the combination of the portamento making it go to that high note and the full vibrato made it almost disappear into this squeaky sound."

Lê also has some fun with Terfry's vocals, as on "All There Is To Say About Love."

"I added this vocoder line over him rapping, fading it in and out," she says. "It's like some robot is doing ad-libs. [*Laughs.*] I did that on the 'Oh my God' part. I cut the last word, stretched it, and added distortion after to hide that nasty time-stretching effect. It's funny because he is doing that part live, actually, imitating the time stretch—studio tricks coming alive!" EQ

PUNCH IN

GYPSY KINGS

Major Lazer's Diplo and Switch Trek From Studio to Studio, Making Dancehall for the Dancefloor

Diplo and Switch with Major Lazer.

SHANE MCCAULEY / DRAWING BY FERRY GOUW

BY TONY WARE

You hear the name Major Lazer and imagine pinpoint accuracy, but for Diplo and Switch—the semi-transient producers behind Major Lazer's *Guns Don't Kill People . . . Lazers Do* [Downtown]—putting together their album of digital dancehall collaborations was an exercise in straying off-course to find fresh tones.

Major Lazer began two years ago while Diplo was in Jamaica doing rough tracking for a funk project. Switch, who was nominated alongside Diplo for a Grammy for their 2007 collaboration on M.I.A.'s "Paper Planes," came onboard shortly after, bringing with him a command of Logic 8 native plug-ins to complement Diplo's love of Ableton Live 7 loops.

The shadowy entity known as Major Lazer then set sights on bringing together 19 vocalists for a lighthearted militaristic take on dancehall music. Diplo and Switch took their laptops and Apogee Duets on the road, working between studios in Philadelphia, Los Angeles, London, New York, and Jamaica.

Initial content was tracked in Tuff Gong Studios in Jamaica, where in-house engineers tracked session players and vocalists on a Sony MXP 3000 36-channel console and a Pro Tools|HD2 rig. Vocalists (Mr. Lexx, Vybz Kartel, and Ms. Thing, among others) were asked to do the same verse in two different styles, later to be tuned and treated in two different keys.

While on the island, the Major Lazer duo also went to the backyard-shed studios of various vocalists, armed with a Røde NT2 mic.

"The NT2 is the best mic in its price range that you can carry, and you won't be scared if it breaks, as it's not the-end-of-the-world expensive," Switch says. "Plus, I quite like that it is a little bottom heavy. I'd rather record with that in, and take it out later, than compensate for a thinner sound with EQ and compression."

Bringing the sessions back to the former mausoleum in North Philly where his Mad Decent record label has its offices and studios, Diplo sat down in front of his Mac G5, Korg Kaossilator, Mackie Big Knob, and ADAM S3A monitors and tried to think outside the box while working *in* the box (using synths such as reFX Vanguard, Native Instruments Massive, and Rob Papen Predator and Albino 3).

Then, Switch reworked and remixed Diplo's rough tracks in his similarly set up studio in Los Angeles. He used his secret weapon—an Avalon Vt-747sp Opto-Compressor-EQ—to make tracks sound less pristine.

"I didn't want the album to sound like it came out of the box," Switch says. "I wanted a slightly freer sound—especially for the vocals. And I love the fact that you have the option to add EQ pre- or post-compression."

Later, more vocals were recorded in New York's Downtown Music Studios. According to staff engineer Zach Hancock, artists with known vocal qualities were captured based on their strengths, such as Santigold with a Neumann M 149 Tube for punkish midrange, or Amanda Blank with the Manley Gold Reference for a "shiny, glossy, and glamorous" top end.

All the mics were routed through the Chandler LTD-1 EQ/preamp and Tube-Tech CL 1B compressor, into an Apogee AD-16/Pro Tools|HD setup. Hancock applauds the LTD-1's stepped attenuator and rolled trim for dialing in a nice color that "sounds like a record immediately," while the CL 1B reduces dynamic variation without sounding compressed, giving Digidesign's fixed point environment more bit depth.

What impressed Hancock most about the Major Lazer project was how Diplo and Switch used the stock tools of Logic (Space Designer, for example) to maintain space and weight at the relative volume needed for such energetic music. Handling all manipulation and mixing duties in their DAWs, the duo would drag the X/Y of the Kaossilator all over a track such as "Pon De Floor," or scuff up vocals with iZotope Trash and IK Multimedia AmpliTube, then shave bass frequencies off the distorted vocals, and mesh those sounds in with the beat. And they made more room for the vocals when needed.

"Many of the tracks are so beat-driven, with instruments taking up the frequency the vocal needs, so we did sidechaining on the vocals," Switch reveals. "I'd have the drums in a bus, the music on another bus, and the vocals on another, but we'd run those two through a service bus with compression on that, and the music was sidechained to the vocal so that the vocal and music get recompressed and mixed in with the beats, gelling it together."

Though *Guns Don't Kill People . . . Lazers Do* is done and out the door, Diplo and Switch don't consider the project complete. This first collection showed what they could do digitally, but they hope to revisit the material—and Jamaica—to work on dub versions, seeing what simple, custom boards and realtime frequency massage can bring to the mix. For Major Lazer, there's always another mission. EQ

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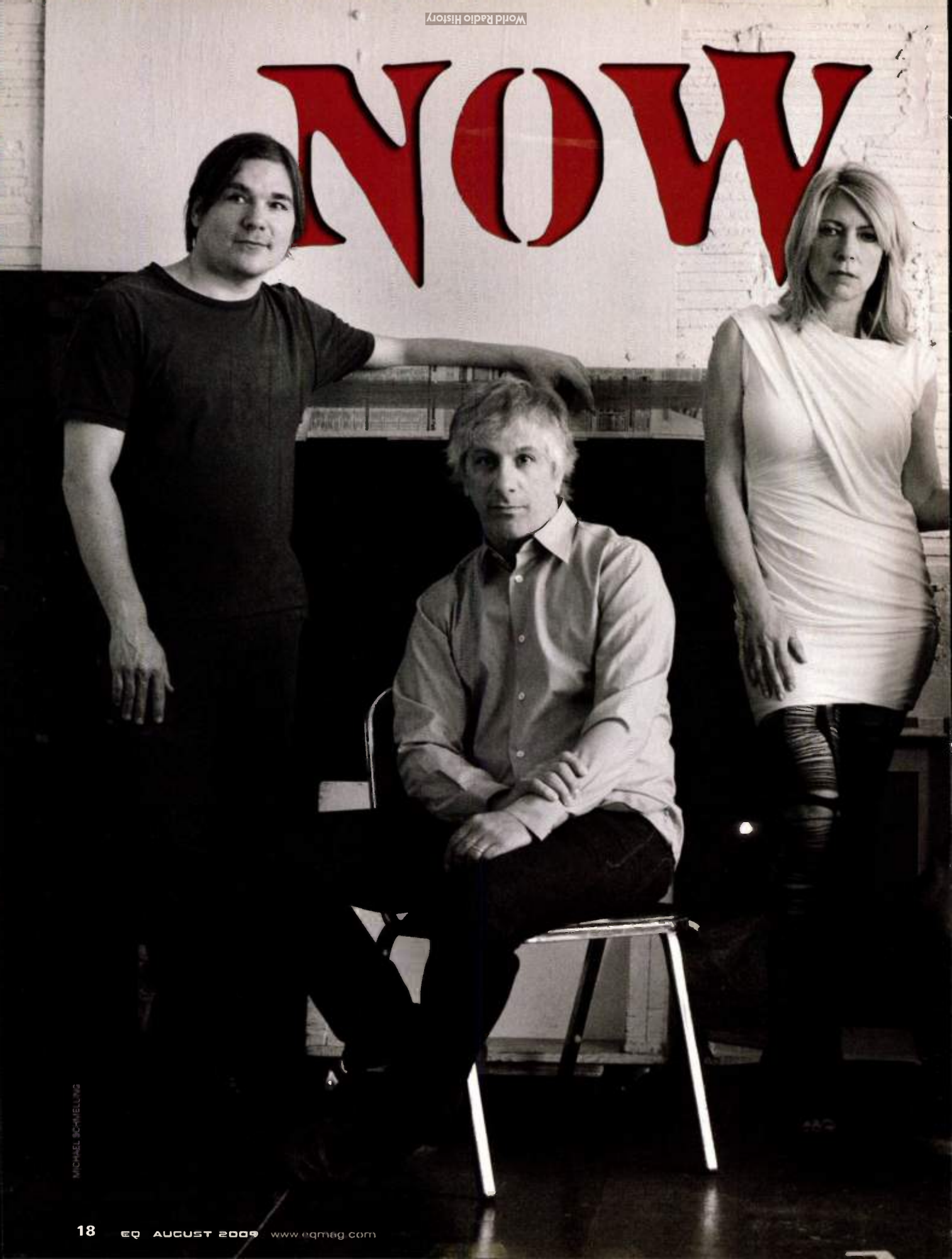

MICHAEL SCHMELLING

Sonic Youth Sharpens Its Focus on Songwriting

by Ken Micallef

"If you asked us, 'What chord is that?' we would never be able to tell you," says Lee Ranaldo. "When we first got Sonic Youth together, we'd just put our fingers down on the guitar strings, and it sounded cool. We're not trained musicians, so if Thurston [Moore] comes up with a new tuning, I just tweak around until I find something that sounds good against it, rather than tuning to the same thing as he does. Then, we build weird chord shapes. On one level, we don't know what the hell we're doing."

Lee Ranaldo and Thurston Moore's approach to guitar wizardry and songwriting is among the most successfully radical in rock—deconstructing and expanding traditional song forms long before the era of DAW wizardry. Such landmark albums as 1986's *EVOL* ("The aural equivalent of a toxic waste dump," wrote *People* magazine), 1988's *Daydream Nation*, and 1994's *Experimental Jet Set, Trash and No Star* established Sonic Youth as the noisiest band to ever crack the *Billboard* charts.

Playing guitars with drumsticks and screwdrivers, and applying alternate tunings, Moore and Ranaldo meld experimentation to increasingly accessible songwriting. With former bassist Kim Gordon now playing guitar, and joined by ex-Pavement bassist Mark Ibold and longtime drummer Steve Shelley, Sonic Youth is 16 albums into their career, but remain youthful, inventive, and adventurous on the aptly titled, *The Eternal* [Matador].

"We've proven ourselves to be very interested in experimenting with rock music," Moore says from Northampton, Massachusetts. "That's still there, but, on the last two records, we've really focused on the power of the song. We came out of a milieu in New York where everyone was doing weirdo experimental things. If you were doing something more *traditional*, you were being different. We started doing experimental music in a traditional setup with two guitars, bass, and drums. *That* was our way of being radical. It was like Hendrix taking drugs to be normal."

While Sonic Youth's recording methods are fairly traditional, the band's music continues to evolve. Tracking *The Eternal* at the band's Echo Canyon West studio in Hoboken, New Jersey, with producer John Agnello and longtime engineer Aaron Mullan, Sonic Youth recorded on a custom Neve 5106 mixing console to a Studer A800 2-inch with 16-track heads, busing snare and bass drum to tape for compression and warmth. Their Pro Tools HD system with 192 I/O was locked to the Studer via SMPTE. No plug-ins were allowed. The band still splices tape when comping takes, and guitar solos were cut live during basic tracking. Meanwhile, Gordon's vocals were recorded at J Mascis' Bisquiteen studio in Amherst, Massachusetts, and Agnello mixed at Hoboken's Water Music Recorders with a Neve 8108 console, Pro Tools HD system, Ampex ATR-102 1/2-inch setup.

"We sort of know what *not* to do," Moore jokes. "We like to be modest and not spend that much money. We're great enthusiasts of records that are produced for next to nothing—like basement recordings that have as much value to us as anything that millions of dollars were spent on. So we're conscious of not spending a lot on recording."

ECHO CANYON WEST

The Eternal is the first Sonic Youth album to be recorded at Echo Canyon West. (Agnello recorded 2006's *Rather Ripped* at the band's Murray Street studio in Manhattan.) Located in a funky industrial-era building, Echo Canyon West's control room is parallel to a 18x30-foot live room. Two '60s/'70s era Altec Lansing 1202 PA cabinets hang from a wall, and a clutch of amps—including Mark Ibold's Ampeg SVT and B-15 Portaflex, and Thurston Moore's Fender Super Reverb ("It's modified in ways that we don't understand, except that it has two 12-inch speakers instead of four tens," Mullan says)—join grand piano, marimba, vibraphones, and a 1960s Gretsch drum kit. While Sonic Youth eschews plug-ins, there's plenty of hardware to choose from at Echo Canyon, including a Roland RE-201 Space Echo, B&W 805s, Urei 1176LN and LA-4 Compressor/Limiters, and a Neve 33609 Stereo Compressor.

For tracking, the band took a fairly conservative approach.

"The basics were all cut to analog," Mullan explains. "The Neve console has no mic preamps in it, so most of the tracks went from mic to preamp to outboard to tape. The Neve was not in the signal path for the majority of tracks on their way to tape. A few things were summed to buses on the Neve, so they went from mic to preamp to outboard to Neve channel in to Neve output bus to tape. Pro Tools was locked via SMPTE, and used for overdubs. At mix time, the Studer was the master and Pro Tools was SMPTE-locked. So most tracks stayed analog right up to mastering."

"Generally, I don't like hearing effects on records," Moore says. "I like hearing the band and the music. Processing is okay with electronic music where it's *about* the processing. But for bands like us, I want to hear the ideas and the songs. I don't

Sonic Youth engineer Aaron Mullan at Echo Canyon West in Hoboken.

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want it to be complemented by too much pedal lust."

Given Sonic Youth's years of studio experience, Agnello didn't reinvent the wheel for *The Eternal*.

"Sonic Youth doesn't need me to help them with arrangements or writing," Agnello says. "It's more about making the environment creative so they can be focused. For example, the band wanted to sit together in the live room, but they didn't want the amps bleeding. So we put the amps out on the loading dock— and divided by baffles—so they were well isolated. Then, the band could hear themselves really well in their headphone mix, and play together for a live feel. The amp separation helped us record the drums in the live room with more room sound, as well. Often, it's that first playback the band hears that is the most important part of a tracking session. If they come in the control room, and it sounds really good, everybody returns to the live room to track with a 'let's rock' fervor."

BRIT-POP TO MEMORY MAN VOCALS

Agnello used a combination of Neumann U 48, Neumann KMS 104, and Shure SM7 mics with Daking and API preamps for Thurston, Lee, and Kim's vocals.

"Thurston has a couple of different approaches to singing songs," Agnello explains, "like the style on 'Antenna,' which is more Brit-pop, or the growl-y, Lou Reed thing in 'Poison Arrow.' I try to give a singer specific advice, whether that means suggesting they change the length of a phrase, adding a harmony, or changing a rhythm in a vocal line. I usually have a lyric sheet, and I will highlight troublesome words or lines. When they realize I am interacting with them, it makes it easier for them to let go and do it."

Moore and Ranaldo sang through Neumann KMS 104 and U 48 mics routed to a Daking Mic Pre One.

"The Daking One is a monster of a mic preamp and EQ," Agnello says. "Once you patch through it, your signal is larger- and louder-sounding. You don't even have to add EQ. And it's not just volume—it's more soundscape stuff that the Daking creates. I also use it religiously when mixing and recording guitars. And I used an Empirical Labs Distressor on vocals to add a gritty quality. I might have used my LA-2A on Lee. We never even did a mic shootout, because when we first put up the U 48, it sounded really great."

Agnello recorded Kim Gordon's vocals at Bisquiteen, choosing mic and preamp combinations based on convenience and sound. A Shure SM7/API 512B pre was the perfect complement.

"The fairer sex can be a little more sibilant, and I found the SM7 to be an excellent choice to deal with that," Agnello explains. "It has a nice top end—not that sharp, searing top end that can get away from you. I used the API 512Bs on Kim's vocals, and because we were doing remote stuff at Mascis' Bisquiteen studio, I wanted to keep her vocal chain consistent. I knew we would do a fix somewhere, and I wanted the vocal chain to be totally repeatable no matter where I was."

When Sonic Youth entered Echo Canyon, Gordon processed her vocals in real time with an Electro-Harmonix Memory Man.

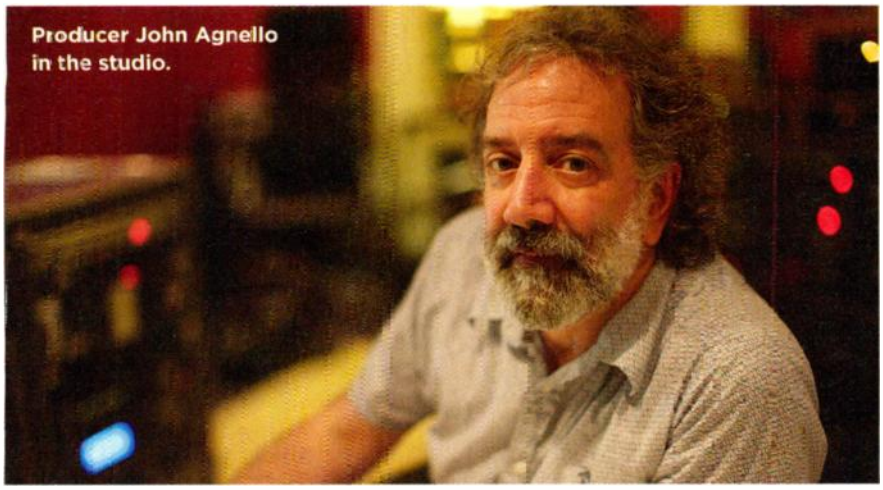
"Kim would twist the knobs as she was going," Mullan recalls. "She would sing with or against the effect—it wasn't added later. When you hear crazy delays on her voice, that's it. She has been singing into a Memory Man and her Fender Twin Reverb in improvised sets for years now."

Agnello also used an API 560B as pre-compressor for Gordon's vocals, helping to brighten the darker characteristics of the SM7.

"The 560 is so versatile that you can pretty much do anything with it," Agnello says. "And that's good,

MICHAEL SCHMELLING

It's eternally happy times for Lee Ranaldo (far left), Mark Ibold, Kim Gordon, Steve Shelley, and Thurston Moore.



Producer John Agnello in the studio.

because the SM7 isn't the most top-end-y mic in the world. I could give a little sweep on top and make Kim sound brighter. Since Lee and Thurston are so comfortable with their U 48s, I didn't have to EQ anything. Generally, I don't remove frequencies, because it sounds hollow and too sculpted. Apart from rolling off 500Hz or 250Hz on a bass drum because they can get woof-y, with other instruments I don't roll off low end, and I don't remove top end. I go natural."

JAZZBLASTERS, SCREWDRIVERS, AND THEFT

Moore and Ranaldo are renowned for their alternate tunings and guitar treatments, such as inserting screwdrivers into strings, or dragging the instruments against anything within body range. But for *The Eternal*, pedals replaced implements. And unlike prior Sonic Youth albums where a different, specifically tuned Fender Jazzmaster (chosen for its long neck, body shape, and ample bridge space) was used for each song, Moore and Ranaldo only played two or three "Jazzblasters" through a variety of pedals this time. Both used heavily modified Fender Super Reverb amps, with Moore depending on Dunlop Jimi Hendrix Octave Fuzz, MXR Phase 90, MXR M103 Blue Box, Mu-tron Vol-Wah, ProCo Turbo RAT, and Electro-Harmonix Big Muff pedals, as he has for years. By contrast, Ranaldo's rig is ever evolving.

"My main pedal—the Ibanez AD-80 Analog Delay—has this creamy delay sound," Ranaldo says. "I crank its Repeat control all the way up for that whoosh-y, spaceship stuff you hear on 'Antenna.' I get a super feedback effect by twisting the delay knob to get it to go higher and lower. I also used an MXR Carbon Copy Analog Delay, a Moog Moogerfooger, an Electro-Harmonix #1 Echo, and a BJF Electronics Honey Bee Overdrive, which emulates the old Supro that Jimmy Page used to love. I also used a Hughes & Kettner Tube Factor—I use its two-second delay for sample-and-hold so I can lock in a loop and play over the top of it."

"Antenna" is a perfect example of Ranaldo's effects ID, his Jazzblaster hissing like a collapsing mushroom cloud one moment, spewing hot geyser gas the next, and clanging intermittently like some dying star.

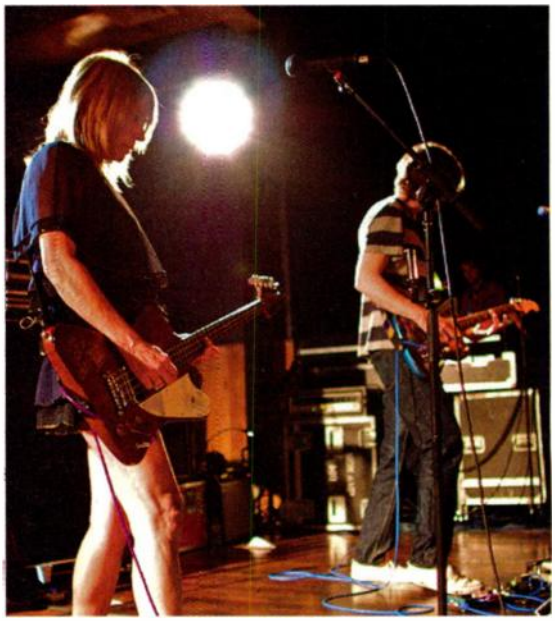
"That's the Ibanez AD-80 Analog Delay pedal with the repeat all the way up, just twisting the delay," he explains. "I usually keep it on the longest setting. You hit a note, and its feedback sounds like helicopter blades spinning. The delay time starts to rise up and get more trippy—it's using the pedal as an instrument. There might be a second delay behind that with the Honey Bee pedal overdriving it. In the lead section, I am hitting the Honey Bee, and letting the repeat control do that swoop-y echo sound, and then playing some lead with a more standard tone."

Agnello used multiple mics and preamps to capture the duo's trademark guitar interplay, with Gordon's guitar adding a new element to the mix. (*The Eternal* guitar balance is Ranaldo in the left channel, Gordon in the center, and Moore in the right channel.)

"I position two mics on the same speaker," Agnello says, "just trying to make one big bad-ass mic sound. For the Super Reverbs, I used the Neumann U 47 as my hi-fi mic. The other mic was a Shure SM57 or a Sennheiser MD 421—I used a Shure SM81 for Ranaldo—for my grit or rock mic sound. I'll bring up the hi-fi mic to make the guitars sound nice, and then add the other mic for depth or hardness. The whole concept is to get the guitars to jump out of the speakers. I place the mics as close as I can get, dead center on the driver, because as I pull them back, I notice a reduction in size of the sound. I used my API 3124M rack for guitars because I was blending two mics at a time, and I didn't have faders on the console to do audio blends. So I had to blend at the API."

Most assume that Sonic Youth are indebted to their vintage Jazzmaster/Jazzblaster collection, which amounts to dozens of guitars. But a 1999 tour changed the band's attitude.

"We didn't have any vintage gear when we began," Ranaldo recalls. "I had a Fender Tele Deluxe, but we had mostly crappy guitars. Then, we had the big gear theft in '99. All our amps—everything we had tweaked over ten years—were stolen out from under us.



That lead us to the discovery that it isn't about the gear, it's really about the players. We had to work with weirdo guitars and pedals we'd never used before, and it still came out sounding like us. It was more about our intention while doing it than it was the gear itself."

DON'T FORGET BASS AND DRUMS

The newest member of Sonic Youth, bassist Ibold, plays a Fender Precision through Ampeg SVT and B15 Portaflex amps. Agnello recorded his cabinets with Shure SM7 mics through a Neve 33609 Stereo Compressor and a Neve 1073 preamp, or recorded his P Bass direct via a Music Valve Electronics DI.

"We specifically used the 33609, because I wanted that Neve warmth on the bass," he explains. "Essentially, Mark's sound is his fingers and his Fender Precision bass coming through the SVT or the Portaflex. It's a very solid sound that you can never make low enough—it's loud or punchy as you make it lower in the mix. Most of Mark's bass parts were live takes. For a couple of songs, he decided to redo his parts, so we moved him into the control room and ran the bass line to the amp in the studio. For that, we used the Radial Studio Guitar Interface, which we also used to run all the guitar lines to amps."

Shelley is a thumping drummer who retains the raw energy of a 12-year-old bashing his first kit. Though his current recorded drum sound is miles beyond the flat, tuneless pitches of say, *Evol*, he retains, as does the band, a raw naiveté. When it comes to recording Shelley's drums, Agnello is casually methodical.

"I listen to the drums, place the mics where I know they sound good, and maybe move them around a little bit," he says. "I put a Sennheiser MD 421 in the hole of the front bass drum head for attack, and a U 47 on the outer area of the front head—placed as close as I can get it—for tone. For cymbals, I love the B&K 4011 because it is very bright and directional. If you put one of those on a cymbal, you won't get much else. And they are good for acoustic guitar and piano.

"The snare is usually miked with a SM57 and a Neumann KM 84 blended, with the same concept as the guitar—tie-wrapped together. The snare mic is usually facing the middle of the head, and instead of pointing it down, I face it across. You get more tone that way. The 57 gives me a lot of grit, and helps give the KM 84 more attitude. Toms are always 421s. They're pretty directional, and I know what I can get out of them. I use Royer ribbons for overheads to give cymbals a little more length and the snare more decay. And I use API mic preamps—the 512B and 3124—to enhance the attack of the drums. They help the snare to have impact. They really work well on transients and hard-hitting sounds. They are the rock-and-roll mic preamp."

EXPERIMENTAL JET SET

Twenty-seven years on from their Neutral Records debut, *Sonic Youth*, Moore, Ranaldo, Gordon, and Shelley continue to reinvent themselves by staying true to their original muse. Is it age or evolution that makes *The Eternal* one of their most listenable albums in recent memory? The noise is there, but so are the songs.

"When we first started making records, there wasn't a lot of stuff like that out there," Ranaldo asserts. "We were putting long, noisy things on records, and it was pretty unique. Come the middle 2000s, and there are lots of bands doing that. It has become a very legitimate form. Maybe there's enough of it out there now that we want to concentrate on song forms. We're in a period where the songwriting is the most fun thing to work on."

"We're old-fashioned, all right," Moore adds. "We're an old-fashioned experimental band! That's the fun thing about this band. We're extremely outside the tenets of traditionalism, but, at the same time, we have a traditional setup. We have always been somewhat of a conservative band, too. We've never been a wild band on the road. We're the straight normal people who make weird music! It's all the weird people who make all the straight music." EQ

Bring it!

Sonic Youth fan? What's *your* edgiest and most experimental recording? Share it with *EQ* readers by posting a link in the forum at www.eqmag.com.

A LITTLE SOMETHING ABOUT SMPTE

Recording mostly to tape for *The Eternal*, engineer Aaron Mullan slaved Pro Tools to a Studer tape machine for overdubs, locking in via SMPTE timecode. In case you're a little fuzzy on the terminology, SMPTE timecode originated with NASA for telemetry applications, and was later adapted by the Society of Motion Picture and Television Engineers to enable engineers to reference specific times in audio—or film or video, as the case may be—to help with editing, synchronization, and auto-location.

There are three main types of SMPTE timecode. VITC (Vertical Internal Time Code) is favored for video work, while audio applications generally use LTC (Longitudinal Time20Code) because unlike VITC, it's a standard audio signal that's easily read at high speeds (*e.g.*, fast forward and rewind). The time-stamped LTC signal is traditionally recorded to an "outside" tape track, like track 24 of a 24-track, to minimize crosstalk/bleedthrough to other tracks.

A third SMPTE type, MTC (MIDI Time Code), allows SMPTE timing information to be carried over MIDI with 1/4 frame accuracy. This is the preferred type of Time Code for synchronizing most modern DAWs.

—Craig Anderton

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WHEN OPPOSITES ATTRACT

Freeland Discovers a Way to Unite His Shoegaze and Dancefloor Worlds

by Kylee Swenson

Sometimes having eclectic taste in music is a burden. That's what Adam Freeland (also known simply as Freeland) discovered upon making his second full-length album, *Cope™*. Freeland got his start as a breakbeat DJ in the mid-'90s, releasing his first mix CD, *Coastal Breaks, Vol. 1*, in 1996. Since then, the dancefloor has been his bread and butter. He continued putting out mix CDs, launched his own label (Marine Parade), and released a debut solo album, *Now & Them*, in 2003. But he never zeroed in on one type of dance music.

"A lot of people, especially in the electronic world, have a very niche direction," Freeland says. "For example, they like minimal house, and that's what they do very specifically. I like too many different kinds of music—quite a lot."

Consequently, when Freeland started writing *Cope™*, it was a tug-o-war of ideas, none of which were quite right—at first.

"I was making a shoegazer drone record, because I thought the whole point of the freedom of having a band was that I wouldn't feel confined to what I need to do for the dancefloor," he says. "But I did a whole record like that and realized that it was really cool, but it wasn't as good as some of the bands that have influenced me. Then I started doing really rocky stuff, and then I flipped the other way and would do super electronic stuff. The revelation was that I was separating a lot of the music I love from home listening use as different from what I play in nightclubs, and I realized that I could combine them both."

THE METRIC SYSTEM

Once Freeland loosened up and let the two worlds collide musically, the album flowed. He teamed up with producer Alex Metric, who at first tinkered with the tracks Freeland had been working on. But the process was slow going, so they started over from scratch.

"You can just do stuff to figure out what you don't want to do," Freeland says. "Once you've been sitting on stuff for a while, you overanalyze it, and it's nice just to start again."

Beginning fresh, the guys got to the business of figuring out how best to collaborate. Metric is a synth guy (with many sounds coming from the Arturia Moog Modular V soft synth and Korg MS-20 hardware synth), and Freeland is the sample dude.

Grabbing samples from old records (often found in the dollar section at Amoeba in L.A.), Freeland tends to look for open guitar

chords, strings or pads at the ends of tracks, where there isn't too much going on in the mix, and he has an easier time separating out sounds. He then experiments with the samples in either Apple Logic or Ableton Live.

"I'm very textural," he says. "I don't think of a melody in my head and go in the studio and write it. I'll literally get a really cool, pulsing, throbbing sound going, and then get a motion going from a loop that I've distorted the hell out of and stretched and pitched and resonated."

While the two synth-versus-sample approaches helped the duo crank out ideas, it was a project that came up while working on the album that really provided inspiration. Freeland and Metric were hired to score *Juiced 2*, a driving video game that required some high-energy music.

"We had to write a massive amount of music in a really short amount of time, so we couldn't be too precious about it," Freeland says. The guys cranked out so much material that they ended up re-adapting some of it for *Cope™*.

CELEBRITY LOVEMATCH

More inspiration came from the help of some high-profile musicians, including indie-rock icon/guitarist Joey Santiago from The Pixies, goth-rock bassist Twiggy Ramirez (Marilyn Manson, Nine Inch Nails), multi-instrumentalist Jerry Casale of Devo, singer Brody Dalle and guitarist Tony Bevilacqua of The Distillers and Spinnerette, and Mötley Crüe drummer Tommy Lee.

Working with Ramirez, Freeland gave him a basic structure of synth-bass lines and let him have at it.

"We did crazy 20-minute takes on stuff when we only needed, like, two bars," Freeland says with a laugh.

But while Ramirez recorded a free-form jam, Santiago heard the tracks in advance for "Morning Sun," wrote his part, and came prepared to play it in one take.

"He came in, did it, it was f**king cool, and that was that," Freeland says.

As for Lee, the hardest part was scheduling a time to have him come in.

"Just getting him in a room for an afternoon is a major achievement," he says. "It takes some serious logistics, because he's such an in-demand busy person. On 'Mancry,' which is that one with the big epic drum solo build-up thing, I wanted him to do this big build up and release to nothing. He hadn't heard it before, but just did it straight off, and it was great."

Meanwhile, Bevilacqua spilled out guitar melody after melody with ease.

"Every time he would play, I'd be like, 'That's dope, *that's* dope, *that's* dope!' It's just like too much cool stuff. You have to pretty much close your eyes and go, 'Okay, I'll take that bit.'"

SUPERIOR SOUND

Gearwise, Freeland's ace in the hole is his Universal Audio UAD-1 card and UAD plug-ins.

"They just ended up making everything sound so much more classy than the way we were doing stuff," he says.

Other studio favorites include the Resonator plug-in in Ableton Live, his Alesis 3630 dual-channel compressor, a Roland SRE-555 Chorus Echo, and a Boss SE-70 Super Effects Processor. Then, there is his Lynx Aurora 8 A/D/A converter. People often overlook the importance of a good soundcard, Freeland says: "Your chain is as strong as your weakest link, and if you've got all this really tasty valve outboard gear and you're putting through a $300 soundcard, you're kind of wasting your time."

Left to right—drummer Hayden Scott, singer Kurt Baumann, and DJ/producer Adam Freeland.

MAKING THE TRANSITION

One thing that songwriters often forget—and is left to producers to handle—is a good transition in between sections of a song. Freeland has a few tricks up his sleeve for that. And he usually doesn't have to create new parts to forewarn that a change is coming because the ideas are already at his disposal.

"It's not like, 'Hey, we need something to take us from here to there,'" he says. "It's generally already in the arrangement somewhere. For every part or melody line that's on the record, there's probably ten that didn't get on there, so you've got all this other stuff running, but muted, on other channels. So a lot of times, it's just unmuting something for one bar."

Freeland will also bounce down parts that are already being used, process them differently, and repurpose them for a transition. "So suddenly, it occupies a different sonic space if it's going through a different kind of distortion, reverb, or filtering—like taking all the bottom end out."

And another idea is to decrescendo rather than build up to a chorus change. "You could slowly turn the volume down on sounds throughout an eight-bar progression before a change comes," he suggests. "You notice when sounds come in, but you don't really notice when they disappear if you take them out slowly. So a lot of the time, we just draw in automation on sounds so that things get consistently quieter throughout, and when that transition does happen, suddenly everything goes up a couple dB, and it's exciting again."

And although he mixed *Cope™* in the computer, Freeland didn't want the album to sound totally in-the-box.

"Electronic music can be too clean and brittle and harsh," he admits, "so I'd put tracks through guitar pedals and through the TL Audio M3 Tube-Tracker valve desk and jam the audio through the Chorus Echo so loud that everything is just distorting off of the tape. It's supposed to be an echo/tape delay/reverb thing, but I end up using it as a distortion unit because the way it breaks up sounds really cool."

And that was just the beginning of Freeland's love affair with distortion, not to mention his obsession with compression.

COPING WITH COMPRESSION

Everything Freeland has learned about compression he discovered from blindly turning knobs.

"The guy who I bought some gear from, I was showing him how I was doing it, and he was like, 'Oh, you're not supposed to do it like that, and no one uses that knob for that.' And I was like, 'Well, it sounds good to me!'"

And so Freeland continues to be driven by what sounds good to him. Put five compressors on one channel? Sounds good to him. Such was the case with the shoegaze-y pulsating synth in "Mancry," which, along with the dynamically swelling solo from Lee, recalls the distinct flavor of French band M83. And then there's the synth-pulsing insanity of "Strange Things," featuring Freeland's touring singer, Kurt Baumann.

Freeland started with the UAD compressor on the synth "to get the really, crazy suck-y sound," piled on a few more compressors, and finally added a Logic compressor (with the sidechaining feature), which would make everything in the signal chain pulse.

"I'd create one channel of a kick drum on the one, giving that no output," he explains. "And then on the channel that you're trying to sidechain, I put a compressor on it, and then put the sidechain input set up to the output of that channel—which is technically the invisible channel because you're not hearing it. So the kick drum is triggering the compressor to compress on every beat. You can obviously just play with the threshold and the release and all the other fun things with it. But we just kept putting more compressors on because it kept sounding better, and because we could." [*Laughs.*]

OCEAN OF DISTORTION

Freeland didn't stop at heavily compressing instruments. As drastic as the treatments were to the synths on "Strange Things," so were the vocal treatments. Freeland recorded five layers of Baumann's vocals, with each layer treated differently.

"We would really distort the hell out of one of the layers using Camel Audio CamelPhat or d16 Desimort or Devastor plug-ins and pan one totally to one side, and then do the same with another layer and pan it to the other side, so you have totally different distortions happening on either side on the vocals, and then the main one upfront," Freeland says. "It's really harsh, what we're doing, but we put it really low in the mix so it gives it that fullness and texture."

Along with the compressors, distortions, and a lush-sounding UAD DreamVerb reverb plug-in that were all used on the album, Freeland tends to end every chain (after the Logic sidechain compressor) with a PSP Vintage Tube Warmer.

"I use that a lot because it just brings everything to life," he says. "It just warms stuff up and makes it fuller, and it also acts like a limiter, because, a lot of the time, my channels are so red lined."

Aside from plug-ins, Freeland also has some favorite distortion and delay pedals/units, including the Hughes & Kettner Tube Factor, VHT Valvulator I, and Electro-Harmonix Memory Man.

But one of Freeland's favorite things to do is run harmonic-heavy, distorted guitar parts through Live's Resonator plug-in.

"You can pitch the Resonator to the key of the distorter and then pitch the Resonator to the key of whatever that part is," he says. "As you mess with the pitch and go through the semitone range of the Resonator, it pulls out sevenths and fifths and thirds that are in there, which gives this really fat, wide kind of burning sound to a pad or a chord. The problem is, any mixing engineers you work with might end up putting their heads in their hands because it fills up the whole frequency range. [*Laughs.*] It uses all your bandwidth!"

Your Turn!
Share your mic selection and positioning strategies with the *EQ* community by posting a link in the *EQ* forum at www.eqmag.com.

PICKING THE RIGHT MIC

by Michael Molenda

Okay, if you're looking for some "deus ex machina" solutions that will guarantee you choose the absolutely correct microphone for each-and-every amp and guitar scenario, then I've led you astray. Sorry about that. But, hey, as a committed *EQ* reader you should know by now that the only sacrosanct rule in the studio is that there are no rules. So while, as they used to say about IBM in the early days of computers, you'll never get "fired" (or ridiculed) for plunking a trusty Shure SM57 right in front of a speaker cabinet, that's certainly not the only way to document a raging guitar sound.

In fact, blind servitude to convention will likely compromise your ability to dial in unique—or at least "personal"—sounds. The real, shuddering-right-down-to-your-toes bliss about crafting and documenting sounds in the studio is discovering something wonderful by making a "mistake," doing something blatantly stupid, or being suddenly and unexpectedly inspired by whatever creative muse you worship. So please absorb the following mic-selection options as mere suggestions or foundations from which to go boldly forward in your own quest for truly kick-ass guitar tones.

Dynamic Mics

As mentioned earlier, a Shure SM57 pointed directly at a speaker cone is probably responsible for most of the classic-rock tones you adore. The presence, midrange attack, and sonic impact delivered by the 57 are practically *made* for documenting aggro, overdriven guitar timbres. But the SM57 certainly isn't the only flavor of dynamic mic available that can coax ballsy tones from a raging amp. Many manufacturers have toyed with the basic SM57 DNA, adding their own secret sauces, and, in the process, they have produced mics with more low-end or low-midrange emphasis, or a bit more shimmer in the high mids. Some of my favorite dynamics include the Audix i5 (solid low end with balanced mids), the Sennheiser e609 (great for live-sounding tracks with pronounced mids), and CAD D189 (in the Joe Satriani Mic Pack; focused mids with a bit of air).

In addition, dynamic mics that have been developed for kick drums—such as the Electro-Voice RE20, Audio-Technica ATM250DE, and the AKG D112—are excellent choices for down-tuned metal, 7-string guitars, and standard-tuned 6-stringers who want more chunk in their tone.

One of my approaches—which doesn't have to be one of yours, remember—is to go with a dynamic for an "impact" guitar track. This could be defined as a revved-up Marshall for a rock song, or a clean jazz track where the single-note lines need some articulation or snap. I seldom put the mic right against the speaker (unless I want a dry and very presence roar), opting instead for an off-axis position or placing the mic a foot or so in front of the cabinet in order to incorporate some room tone into the source sound.

Condenser Mics

Condensers usually capture a wider frequency spectrum and slightly more detail than the average dynamic. This makes them a good choice for miking acoustic guitars, but you shouldn't shy away from lobbing them at a cranked amp (that's what those pad switches are for). I've achieved great results with a Neumann U87 (fabulous midrange detail and air), an AKG C414 (shimmering, airy highs and balanced mids), a Shure KSM32 (very transparent and organic), and a Røde NT1 (stout mids with a taut low end), but I've used tons of other models with equally fabulous results.

One option I dig is using condensers to craft "unique" tones through experimentation with mic positioning, or ganging two or three up on an unsuspecting amp, and blending the various timbres together. I may also double a guitar track—panning a take recorded with a dynamic hard left, and a take captured with a condenser hard right—to produce a luscious and punchy stereo spread. And if you really want to increase your tonal options, go for a *tube* condenser.

Ribbons

Ribbon mics typically deliver natural and organic timbres that capture subtle room-ambience clues. I've used a Royer R-122 for years, but very cool affordable models are available from makers such as Nady, Electro-Harmonix, and Samson. If you want to veer away from so-called "conventional" guitar sounds, using a ribbon is a good way to get there, as these groovy mics haven't been, let's say, "over-used" in the home-recording field. You can goof with a ribbon to devise truly demented guitar sounds, or simply embrace the fact they can capture an un-hyped aural image that's near perfect for recording jazz, roots music, classical, folk, and other styles. EQ

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Got a great bass recording tip? Share it with *EQ* readers by posting a link in the forum at www.eqmag.com.

USING OCTAVE DIVIDERS

by Craig Anderton

Octave dividers aren't just for guitar players: They also rock for bass, whether you're getting mega-low sounds from the lower strings, or playing high up on the neck for very cool 8-string bass effects. It's easy to do octave division with amp sims and DAWs, but there are some definite tricks involved.

Split Your Signal

As when adding many other types of effects on bass, it's best to create a second track in parallel with the main bass sound, and dedicate the second track to the octave divider. This lets you mix in the precise amount of octave sound, but more importantly, you may need to condition the bass signal to optimize it for octave division.

Choose Your Divider

Most amp sims include octave dividers. I've successfully used octave dividers on bass with IK Multimedia AmpliTube 2, Waves GTR Solo (Figure 1) and GTR3, Native Instruments Guitar Rig 3 (Figure 2), Line 6 POD Farm, and Peavey ReValver Mk III. There's not a lot of difference among these particular effects; they all do the job. You can also use the other available modules to condition the bass signal.

Pre-Octave Processing

Two main problems can interfere with proper triggering: an inconsistent input signal level, and triggering on a harmonic rather than the fundamental (which causes an "octave-hopping" effect, where the signal jumps back and forth between the fundamental and octave).

A compressor can solve the consistency problem. Set it for a moderate amount of compression (*e.g.*, 4:1 ratio, with a fairly high threshold). Make sure the compressed sound doesn't have a "pop" at the beginning, and the sustain is smooth. Then if needed, patch in an EQ to take off some of the highs—the object is to emphasize the fundamental. This may require compromise; too much filtering will reduce the level from the higher strings to where they might not be able to trigger the octave divider (as well as change the tone), whereas not filtering enough may cause octave-hopping on the lower strings.

What works best for me is cutting highs and boosting the low bass a bit. If the EQ curve isn't sharp enough, you may get better results by patching two EQs in series. I've also found that with Guitar Rig 3, using the Pro Filter module with mode set to LPF (lowpass) and slope to 100% four-pole provides outstanding conditioning, especially when preceded by the Tube Compressor.

Fig. 1. Waves' GTR|Solo is set up for octave division on bass. The Pitcher module provides the octave division; its Mix control is set to divided sound only.

Fig. 2. Guitar Rig's Pro-Filter module is an excellent EQ for conditioning a bass signal before it hits the Oktaver.

The Final Touch

Playing technique also matters. Popping and snapping might confuse the octave divider, as can the transients that occur from playing with a pick. Playing with your fingers or thumb gives the best results, but don't be afraid to experiment; for example, if you do "snap" the string, the sound might mask the divided sound anyway, so it won't matter. Also, remember that octave dividers are monophonic, so make sure only one string vibrates at a time.

Once you have your signal chain tweaked, adjust the parallel, octave-divided signal for the right balance with the main bass signal. You'll probably find yourself playing an octave higher than normal, because the octave divider will supply the low fundamental. But octave division is also a great way to make those low strings create seismic-type lows that throb in a way you can't get with any other technique. EQ

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5 TIPS FOR POWER PIANO TRACKS

by Kent Carmical

If you really want a really powerful piano sound, forget pansy grands, and go butch with an upright. Many uprights—particularly the taller ones with longer string lengths—yield killer recordings, so forget about tip-toeing around that Bösendorfer grand. Here's how to capture upright piano sounds with impact, weight, and almost frightening presence.

Get That Thing In Tune

Sure, you can say that out-of-tune piano is part of your sound, but to the vast majority of creatures with ears, out-of-tune piano is like having your eyebrows plucked with tweezers. Spend a couple of hundred bucks to make sure the thing is in tune and working properly a few days before recording.

Location. Location. Location.

Experiment with moving the instrument around the room to find the best sounding spot. Because uprights are designed to be up against a wall, my experience has taught me that it is the best place to record them—especially for a real up-front and present sound.

Tear That Sucker Down

The main problem with uprights is the cramped size of their cases. The small, resonant body of the piano is a nightmare of complex acoustic reflections, and just sticking a mic inside the top probably won't cut it. You need to open the piano up so it can breathe!

While it varies from instrument to instrument, most upright pianos come apart the same way. Open the hinged lid on the top. Once the lid is open, you will probably see a pair of hinged pegs holding the front face of the piano together. Unlock the pegs and pull the front off. This exposes the hammers and strings, allowing for a greater degree of mic placement. If you really want to go hog wild, remove the plate that covers the bottom part of the strings (right in front of the player's knees). This will increase the piano's projection, and make the sound much clearer.

Mic It Up

Now you are ready to explore some mic techniques. As we're going for power, we'll ditch any notion of ambient mics, and get real up close and personal. After rigorous experimentation, I discovered the most powerful sound came from the back of the piano. You'd think this would provide a muffled sound, but with the extraneous body panels removed, the sound really cranks out the backside. The percussive sound from the hammers is still heard, and the exposed soundboard adds some depth, so our power is enhanced with tone. Miking from the back also diminishes noise from pedals, creaky benches, and the player (grunts, sighs, sing-alongs, etc.).

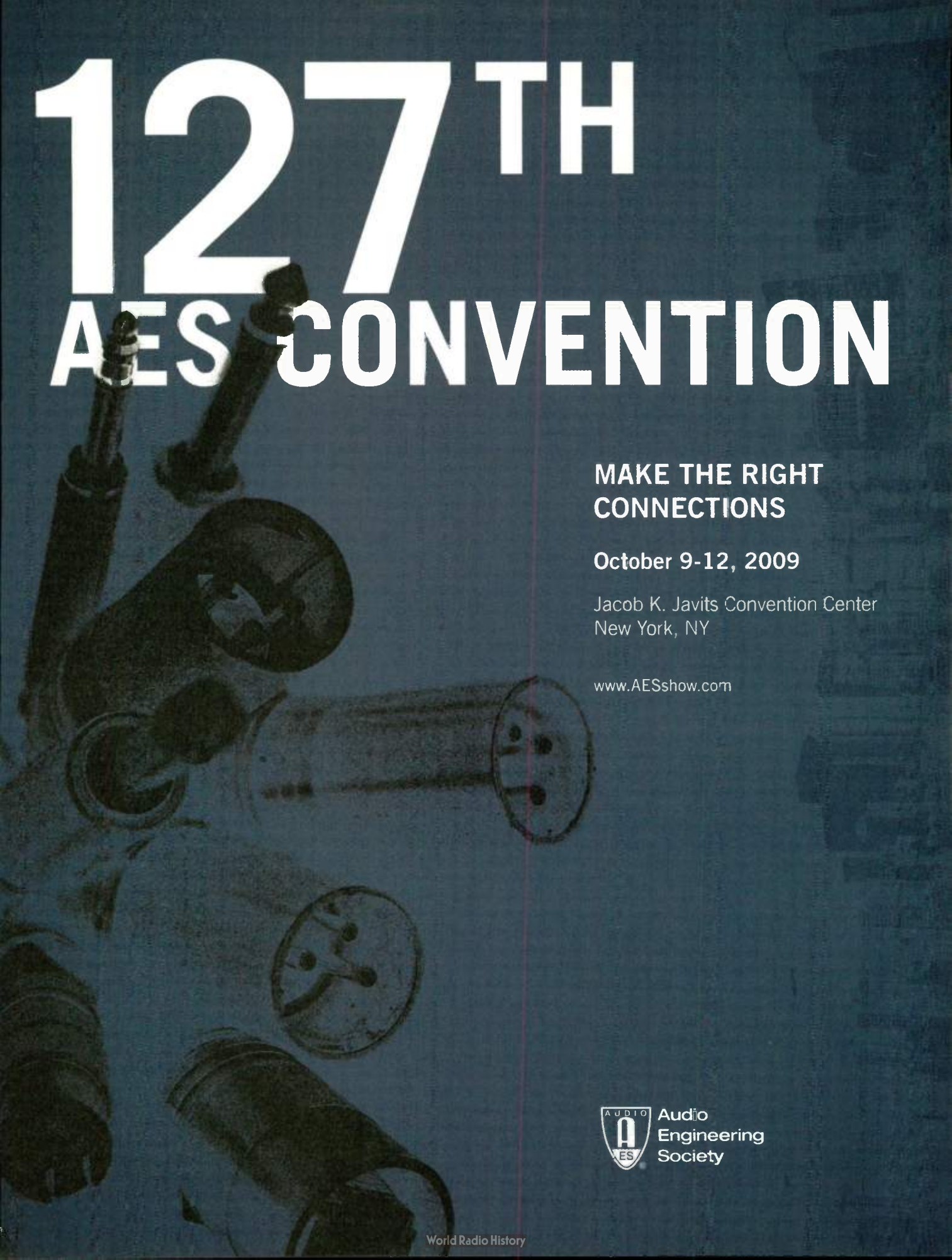
I recommend using two mics on the backside, positioned to capture a balance between the high and low strings. Placing the mics does take some experimentation. I got the best results using two AKG C1000 small-diaphragm condensers, but any small-diaphragm condenser will do a great job. Each mic was placed about two or three inches from the exposed soundboard, and pointing at the bass or treble strings. It is possible to have phase-coherency issues with two mics, so if things start sounding weird or thin or muddy, simply move the mics around until everything sounds full and wonderful. If you need more isolation, put a blanket on the wall behind the piano, but I liked the natural reverberation the bare wall provided.

For my final hot-setup mic technique, I placed an Audio-Technica AT4033 large-diaphragm condenser on a boom, and positioned it to be the same height as my ears, so I could record a track that was essentially the same sound I was hearing from in front of the piano while I was playing. This track is great for blending with the rear mics to construct a truly mammoth and articulate sound.

Hit It!

If you want a big piano sound, you'd better be prepared to bash the bejesus out of the keys. Sorry, this is old school, so there's no MIDI information you can edit to make the audio loud if your ladyfingers aren't up to the task. Listen to the Beatles' "Lady Madonna." Do you think Paul was tickling the ivories, or hitting it like each key had a picture of John Lennon scrimshawed into the ivory?

As for tracking, piano puts out mucho harmonic content, and there are peaks that meters just don't see, but can slaughter your DAW with evil distortion. Use your ears to listen carefully for any overload the VU meters might be missing. If you need to tame the beast, Universal Audio's LA-2 plug-in works wonders to stop the overloading, and it also can add additional punch to what should already be a piano sound that will detach your retinas if you're not careful. EQ



ENERGIZE YOUR SONGS WITH EASY PERCUSSION TRACKS

by Michael Molenda

If you feel the tracking process is done once the drums, bass, guitars, keyboards, and vocals are down, then you may be missing out on a lot of fun. Percussion tracks can be a huge—and hugely entertaining—part of the "sweetening" phase of your recordings, and, no, I'm not talking about simply adding a tambourine to every snare hit (that is, unless you're planning to overdub a platoon of tambourines to rival anything Phil Spector did during his pre-jailbird days as the creator of the Wall of Sound). After all, even basic sample libraries offer a fair amount of exotic percussion instruments, and you shouldn't just leave these fabulous sounds to waste away due to neglect. Furthermore, you can score non-virtual percussion instruments relatively inexpensively by raiding toy stores, or go the distance by purchasing professional percussion tools from your local music store (or online). Whether you sequence or trigger samples, or actually put hand or stick to wood, metal, or drum skin, exploring the sonic and rhythmic attributes of percussion can add new layers of excitement to a track you thought was totally cooked. Here are three percussion options from a recent acoustic production of mine.

Stealing Time

Okay, there's not much "new" in today's music world, but that doesn't mean you can't borrow a cool idea from a different discipline and make it part of your own thing. For example, Cheryl Munoz, background singer and percussionist for the Ol' Cheeky Bastards, also studies flamenco dancing. When she saw and heard a cajon being played at a flamenco dance concert, she decided to purchase one and incorporate it into the Bastards mix of folky, punky, Celtic music. The cajon's unique hand-slapped snare, tom, kick drum, and wood block sounds now appear as the main percussion treats on OCB's *Working Class Heroes and Truths* [Rotten Eggs]. We attached an Audix F-90 clip-on mic to the side of the port on the back of the cajon, which allowed us to record the cajon performances with Munoz sitting in the control room, and listening via the monitor speakers, rather than headphones. This situation meant she could play as if she were performing live—a "comfort" plus as she was still a newbie cajon player—and there was virtually no signal bleed from song tracks into the microphone.

Shaker "Hi-Hat"

Hi-hat cymbals are supposed to be aggressive and bright, and they do a marvelous job driving everything from funk to metal. But what if you're dealing with some gently strummed acoustic guitars and the hi-hits are just obliterating them? This was kind of a big problem, because I had programmed a hi-hat groove and all the instruments were tracked to the offending cymbal sear. Ultimately, I decided to replace the hi-hats with a shaker egg that exhibited a sweeter, less-sizzling sound, and the mild sh-sh-sh-sh fit in beautifully with the acoustics, kicking the groove while simultaneously not pilfering all the tonal attention. I dug the effect so much that I doubled the shaker track—one with a red egg and one with a black egg (somehow, I fooled myself into thinking the color actually made some kind of timbral difference)—and panned them hard right and hard left.

Bongo Time in India & North Africa

For a more rockin' acoustic track, I channeled my inner beatnik and laid down a sixteenth-note onslaught on some bongos, one finger hitting the "high" bongo, and another finger swatting the "low" bongo in an approximation of a rock hi-hat part. (And, yes, I was replacing the hi-hat cymbals again—which, at this point, were rapidly being demoted to click tracks.) The Audix F-90 came in handy once more, as it could be affixed to one of the tuning rings. Just for the sake of doing something idiotic (see how much fun percussion sessions can be?), I decided to double the bongo groove with sampled tablas. Then, I *tripled* the same rhythm part by playing a dumbek I had bought on a whim. The rhythmic layer was spooky, spicy, and driving, and I panned the bongos in the middle, with the dumbek mixed slightly lower in volume on the right, and the tabla samples sitting a bit under the dumbek volume on the left. What a blast! EQ

Your Turn!
Love to bang things? Tell us about some of your recent percussive adventures in the forum at www.eqmag.com.

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Your Turn!
What are your favorite tips for tracking in-your-face vocals? Post them in the forums at www.eqmag.com.

6 SECRETS OF IN-YOUR-FACE VOCALS

by Kent Carmical

Do your recordings suffer from vocal tracks that don't cut it? Are your fans under the false impression that you are an instrumental band? Do paranormal investigators claim the vocals on your CD are actually recordings from the spirit world? Well, read on, because I'm going to give you six ways to put those pathetic whispers you've been recording upfront and in-your-face.

Use a Good Preamp

When it comes to recording vocals, beg, borrow, or steal a nice preamp. A high-end box will impart a punchy vibe that you have to experience to believe. You don't think professional engineers and producers plop down several grand on a great mic preamp just to stroke their egos, do ya?

Pity the Fool Who Doesn't Get a Good Level

Recording your voice too soft will result in noise and hum when you boost it to in-your-face levels at mixdown. Record it too hot, however, and you are sure to get distortion. So, if you're recording a sensitive, chanteuse-type singer, position the mic four to six inches from their mouth. Put your average rock screamer about one foot away. Also, tell singers to back off the mic a few inches when they get loud, and move in a few inches closer for quiet parts. Beware of pops, plosives, and sibilance. Use a pop filter at all times, and have boomy types sing a bit to the side of the mic.

Go Dynamic

You don't need an expensive condenser mic to get killer vocals. Inexpensive dynamic mics are tough enough to track screamers, and they can deliver excellent sounds. Superproducer Bruce Sweden used a $350 (street price) Shure SM7B to record Michael Jackson's vocals on *Thriller*, the best-selling album of all time, so suck on that. However, if a condenser *is* best for a singer's voice, choose a model with a -10dB or -20dB pad switch, and when the screamin' gets too loud and crazy, click it!

Compress for Success

Vocalists are generally a squirrely bunch with little or no self-control. Even though you've set the levels with obsessive-compulsive attention to detail, I guarantee you a vocalist will somehow find a way to cock up your well-laid plans by singing louder or softer than when you were setting things up. A compressor is a great way to mitigate such disasters. A mild ratio of 2:1 with a -10dB threshold is a great place to start. Then, adjust everything to taste until whatever comes out of the singer's mouth is put down nice and consistent.

EQ to the Rescue

The decent mic/killer preamp approach should take you a long way towards achieving an in-your-face attitude rivaling the girls on *Charm School*. However, you still may need a bit of help, and this is where EQ can save you. I typically boost a little between 125Hz and 250Hz to capture a bit of meatiness, and then boost between 2kHz and 4kHz to dial in presence and articulation. I also roll off a good deal of the bottom end so the compressor doesn't bring up any low-end rumble.

Faux Doubling

The all-time Hail Mary play for adding thickness and power to vocals is having the vocalist double a line by singing along with the original take. But let's get real here. Your chance of getting a *single* great take that hasn't been comped from 30 other takes is pretty nil in these days of lowered expectations. So here's a quick and dirty way to achieve the same thing without giving your vocalist a nervous breakdown.

- Make a copy of the vocal track you want to thicken.
- Use a pitch-shift plug-in on the newly created vocal copy and try these settings:
- Pitch Shift = -20 to -30 cents
- Dry Mix = 0
- Wet Mix = 100 (because you want only the pitch-shifted sound)
- Now, carefully fade up the doubled and pitch-shifted vocal track until it adds density and harmonic interest to the original lead vocal track.
- Pan both tracks to the center, and you should have a vocal track that sounds thicker than snot and more aggressive than a pissed-off rhino. EQ

The John Lennon

SONGWRITING CONTEST

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Your Turn!
Have you recorded an amazing string sound in your home studio? Share it with *EQ* readers by posting a link in the forum at www.eqmag.com.

RECORDING STRINGS IN THE HOME STUDIO

by Buddy Saleman

Many people think that recording violins, cellos, or for that matter any non-fretted string instrument requires special handling. They think that one must have the correct room with the exact dimensions to cull the natural flavor out of the instrument.

Well, this is not so. It is actually a vicious rumor spread by engineers who specialize in classical recordings, because they need a good reason to justify all of the money they spent on gear and how much they charge per hour. Okay, I admit I am exaggerating here—and I apologize to any wonderful classical-music engineers I may have offended—but I'm simply trying to get home-studio musicians to stop fearing the practice of recording acoustic instruments. Trust me, you can get a great string sound in the comforts of your home studio.

General Guidelines

Find the sweetest sound. There is no replacement for what the instrument and room in combination have to offer, and finding the "sweet spot" to set up mics is a process of discovery that one needs to embark upon with an earnest approach. What does the instrument sound like from two feet away, three feet away, and so on? Move around the room, and find the sweet spots as the players play, and then set your mics in those positions. The distances given here are a rough approximation of where to start this process.

Go easy on the outboard gear. I am not going to discuss specific EQ or compression formulas with any of these techniques, because there are no real formulas set in stone. Every sound varies from player to player, and from instrument to instrument. As a rule of thumb, I keep my mic-preamp input levels at about halfway to 60 percent so I won't blow anything out, and I also want to keep the sound as pristine and authentic as possible with no preamp artifacts. I always adjust the mic position before I go near any outboard gear, because EQ and compression can compromise the integrity of the organic signal.

Everything needs to breathe. I have said it before, and I will continue to espouse the concept of "air as your friend." Generally speaking, natural ambience makes all things warm and gooey. If you take it air away, the instruments can sound odd, and you can't *really* duplicate a natural sound with reverb processors. It's best to document the "air in the room," or the distance between the sound source and the microphone, by, once again, experimenting with mic positioning. If there's too much distance from the source sound, the signal will sound mushy. Too little distance, and it will sound harsh. But a blend that's just right delivers a magnificent aural experience.

Specific Instrument Tips

Upright bass. Of all the string instruments, you would think this one requires the most room to breathe, but this is not necessarily so. I have found that using a two-mic method works best for this instrument. I start by using a great low-end microphone such as an Electro-Voice RE20 or an AKG D112. I place it about bridge height, somewhere in between the f-hole and the bridge at a distance of about 12 inches. Of course, always be careful not to get in the way of the bow. Then, I use a large-diaphragm condenser mic—such as an AKG C414 or a Neumann TLM 173—set to a cardioid pattern, and positioned about five feet high and about five feet away from the instrument to capture some room flavor.

Cello. The cello typically produces a very warm and intimate sound, so I normally use a single large-diaphragm condenser mic, such as a Neumann TLM 103 or an Audio-Technica AT4050. Whichever one I choose—based upon listening critically to determine the mic that delivers the sweetest sound—will be set to its cardioid pattern with no low-end roll off. In regards to placement, I recommend getting down on all

fours, and listening to how the sound rolls out of the cello. Generally speaking, a good place to start is to place the mic about two to four feet away from the cello, and raised a little bit above the bridge.

Viola and violin. I approach both of these instruments similarly, because they are very close in shape and size, and the manner in which they are played. Not surprisingly, both instruments benefit from tremendous amounts of air. I like to use a small-diaphragm condenser to capture their timbres—typically choosing a Shoeps CMC with an MK4 capsule, an AKG C 451 or a Neumann TLM 184. I typically place the mic about four feet over the bridge, and set to its cardioid pattern to provide a sharper image of the room. Then, I take a large-diaphragm condenser, and raise it a few feet above the first mic, and about three feet in either direction of the instrument. I set the large-diaphragm condenser to its omni pattern to further provide a lush room sound.

The string quartet. So now that we have miked all of these instruments separately, let's take a whack at a quartet. A quartet usually consists of two violins, a viola, and a cello, and the players almost always sit in a half-moon position facing the "audience." The sound of a quartet is best when heard from a distance, because you want to give all the instruments a chance to blend in with the ambience of the room. Armed with this knowledge, I often put up a pair of matched large-diaphragm condensers, set up in an X/Y pattern, and about seven to ten feet away at a height of about eight feet. This is my starting point. Then, I close mic the individual instruments with small-diaphragm condensers to offer some discreet volume control should one player not come on as strong as another. I typically end up going to disk with four solo tracks for each instrument, and left and right tracks of the stereo blend in the room. The fun comes in when you decide how to balance all of your tracks. Try to go with something natural and organic, but if the quartet is meant to be a pad under, say, a rock track, then the sky is the limit.

The room. Working a room with mic positioning to find its hidden sonic treasures is a beautiful thing. I am always surprised by the "good" and "bad" ambient sounds I find in the process of moving mics around. It's truly a treasure hunt finding the optimum balance between source sound (the instrument) and room sound (the environment), but if you find the right sweet spot, your home-recorded strings can definitely sound almost as wonderful as anything tracked in a large studio. EQ

Your Turn!
Have any GarageBand mixing tips of your own? Want to challenge mine? Post your comments in the *EQ* forum at www.eqmag.com.

Neatness counts—Arranging tracks in groups keeps your mind in the mix, not searching for that missing trombone solo.

10 WAYS TO MORE PROFESSIONAL GARAGEBAND MIXES

by Michael Molenda

Although I'm an unrepentant punk rocker who digs making any kind of less-than-high-quality studio gear work for just about any kind of project, I'll be the first to admit that Apple's GarageBand is not exactly a professional DAW. However, I decided to use GarageBand to record and mix *all* the tracks for the Ol' Cheeky Bastards upcoming acoustic split CD (with Lewis the Swan) on Rotten Eggs Records in my home office, using just an iMac, an M-Audio FireWire 410, M-Audio monitors, a Shure SM58 dynamic mic, and an M-Audio Luna condenser. When it got to the mix sessions, here is how I tried to keep the tracks sounding as professional and outright slammin' as possible.

Embrace Limitations

I didn't have a great room, audiophile preamps, or expensive mics, and, quite frankly, none of that worried me. I just got to work and made sure everything I recorded—vocals, acoustic guitars, cajon, Irish whistle, bohdran, bass, bagpipes, etc.—was clean and quiet. *EQ* publishes tons of data on how to record great tracks in home-studio environments, so do your homework and put your shoulder to the wheel. Why am I talking about tracking in an article on mixing? Well, just make this your mantra, and you'll understand: "Crap in, crap out."

Everything In Its Place

Arranging your GarageBand tracks in some kind of natural flow helps keep your focus intact. I label everything explicitly ("2nd chorus gtr," "Main lead vox," "Vox fix verse 1," etc.), and arrange rhythm tracks, guitars, lead vocals, background vocals, and so on all together in their "family" groups. I hate searching for tracks during a mix.

Fix Before the Mix

Plan a few "fix" sessions where all tracks are scrupulously scrubbed and edited before you sit down for the final mix. When you mix, your sole attention should be on arranging all the *final* tracks into a cohesive and kick-ass whole.

Mix As You Go

I like to start crafting the final mix from the first session. The more the

tracks sound like a record, the more energized your overdubs will be, and the mix session will be far less angst-filled because you're already close to done.

No Go Solo

Avoid soloing individual tracks when tweaking sounds. In the end, everything must co-exist together, so isolating tracks too much may put you on the road to ruin.

Optimize Monitoring

Ensure you're hearing everything as accurately as possible—despite the sonic idiosyncrasies of your room—by sitting right between your two monitors at a distance of no more than a yard. Avoid putting papers, books, and whiskey glasses in front of the speakers.

Don't Go Crazy

GarageBand has some very useable effects, but if you use them too much, or make everything too wet, your mixes will sound as amateurish as a crap ventriloquist on *America's Got Talent*. Pick your spots—you don't have to bathe *every* track in reverb, chorus, delay, and compression.

And Speaking of Compression . . .

If your tracks are to be mastered elsewhere you want to leave some dynamic range for the mastering engineer to process. In other words, don't compress the crap out of every track so that the mix sounds as if it was squashed down to mulch. And listen for any pumping and breathing that betrays bad compression technique.

Watch Levels

GarageBand isn't very tolerant of slamming the meters. If you hit the red, back down the master volume or your mixes may end up with unwanted audio artifacts.

You Are the World

As you can easily switch between iTunes and GarageBand, you have an excellent way of referencing your GarageBand mix to your favorite songs. Listen critically, and assess the sound of your mix against the pros. Is your mix muddy or too thin? Is the vocal too loud or too soft? Don't mix in a vacuum like some know-it-all schmuck—pit your sonic spectrum against the big boys and girls, and take note of its strengths and weaknesses.

Do Test Mixes

If you mix from GarageBand to iTunes, you may discover some track relationships changing during the conversion process. Vocals may be louder than you thought, for example. A few test passes—and the resulting adjustments to the GarageBand tracks—will ensure your masters sound the way you want them to. EQ

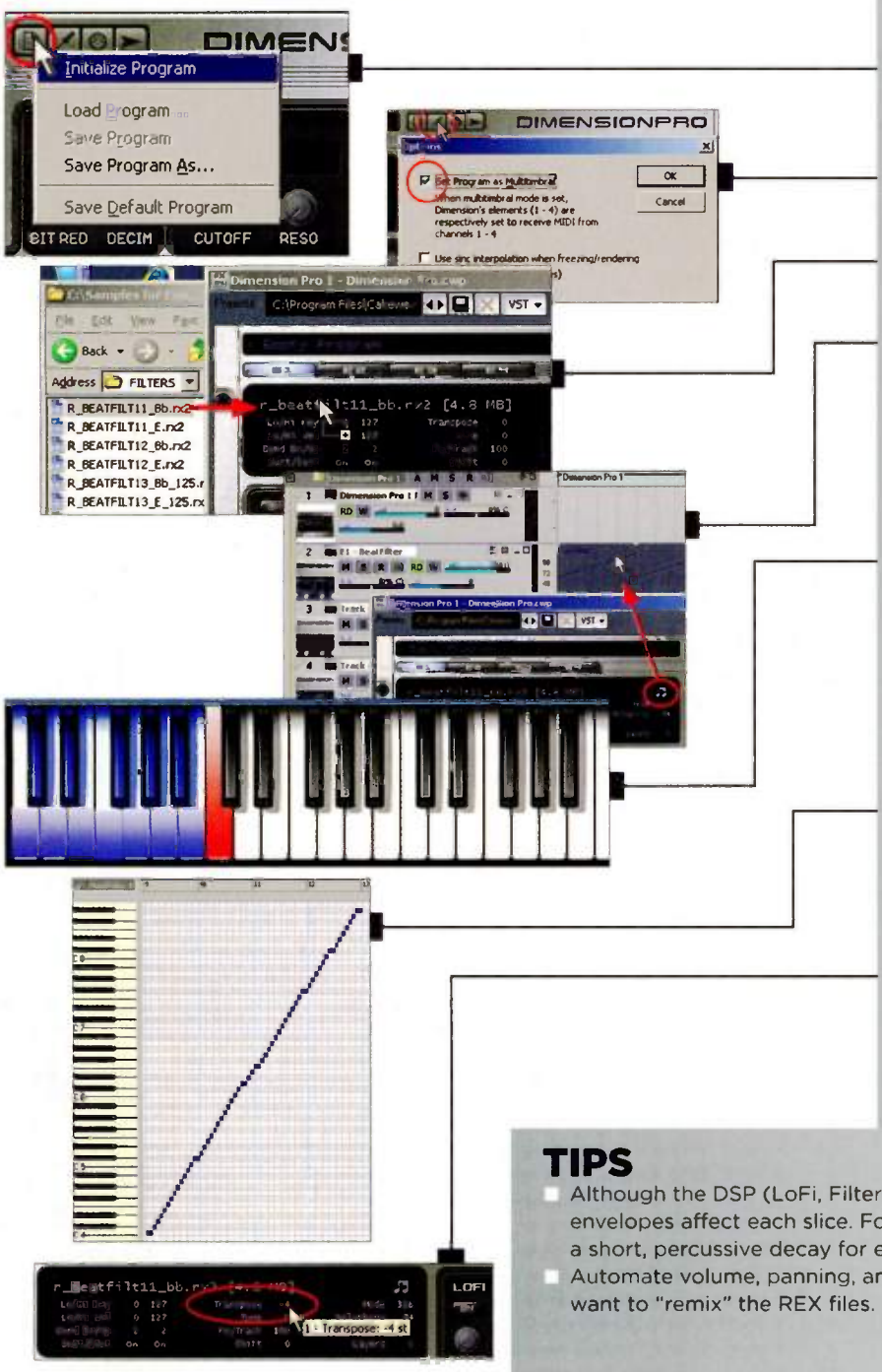
BY CRAIG ANDERTON

CAKEWALK SONAR 8

Use Sonar 8's Dimension Pro soft synth to create a rhythm section out of REX files

OBJECTIVE: Run multiple REX files inside one instrument.

BACKGROUND: Although many people think of Dimension Pro as a sample playback instrument, it also handles REX files very well—you can load up to four REX files (*e.g.*, drums, percussion, bass, rhythm guitar), then trigger them from MIDI tracks.



STEPS

1. To start fresh, click on the Program Handling button and select "Initialize Program."

2. Click on the Options button and select "Set Program as Multitimbral."

3. Select an Element, then drag a REX file into the Element's "Load Multisample" window.

4. A Note symbol (eighth note tied with 16th note) appears toward the right of the load multisample window. Drag this into a MIDI track driving Dim Pro to trigger slices of the REX file, and optionally, turn this into a MIDI Groove Clip so you can "roll out" as many iterations as you want.

5. On your keyboard, C3 (colored red) plays back the entire REX file. If you lift your finger off the key, the file stops playing; if you hold your finger on the key, the file plays through to the end but does not loop. To transpose the file pitch (yet retain a constant tempo), play over the range of C2 to B3 (colored blue).

6. Starting upward from C4, the keyboard keys play individual REX slices. In Sonar, you can edit the MIDI Groove Clip's note pitches, start times, and durations to change how the REX file plays back.

7. If needed, transpose the REX file's root note using Dim Pro's "Transpose" parameter.

8. Repeat Steps 3 and 4 to load other Elements with REX files.

TIPS

- Although the DSP (LoFi, Filter, Drive, EQ, etc.) and FX affect the entire file, envelopes affect each slice. For example, use the Amplitude envelope to set a short, percussive decay for each slice.
- Automate volume, panning, and other parameters with Dimension Pro if you want to "remix" the REX files.

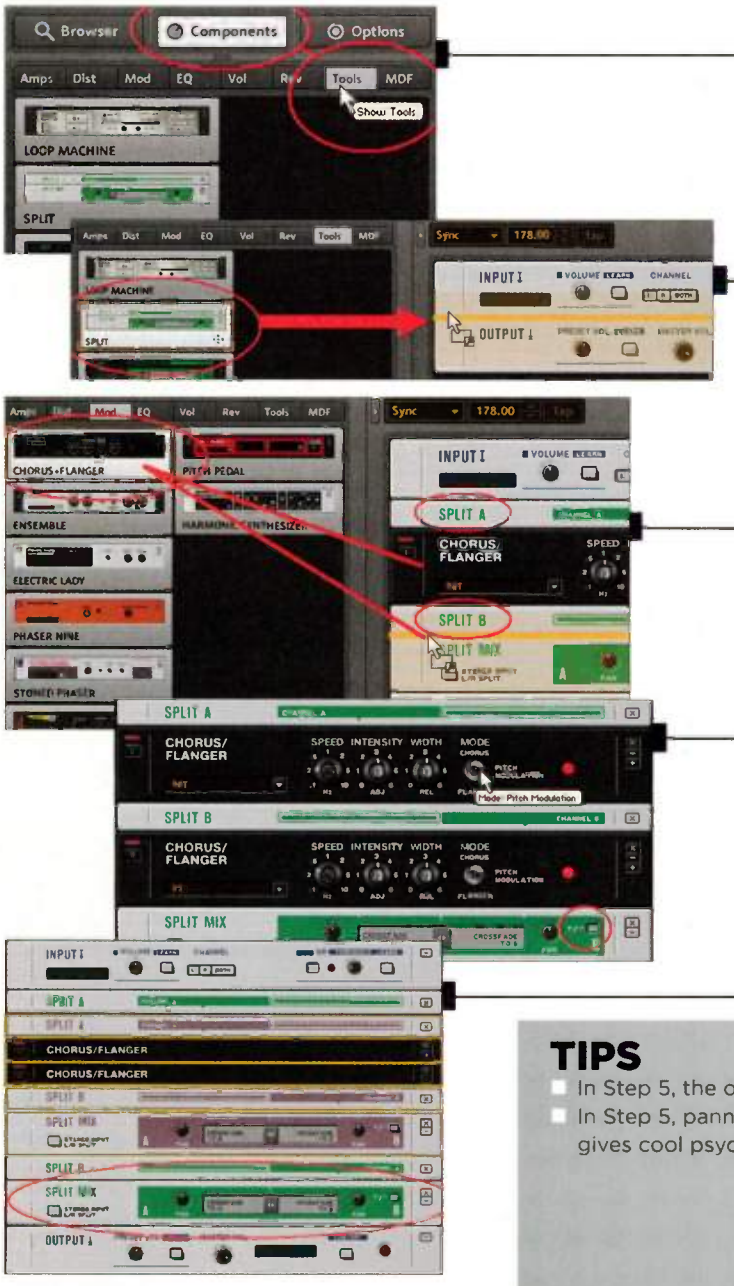
BY CRAIG ANDERTON

NATIVE INSTRUMENTS GUITAR RIG 3

It's not just about guitars—get vintage tape flanging with any signal

OBJECTIVE: Create "through-zero" flanging sounds, like the famous tape effect from the '60s.

BACKGROUND: Tape-based flanging is sometimes called "through-zero" flanging because the delay could go down to 0 seconds, unlike most of today's digital gear (there's always going to be some latency). However, there's a way to simulate this with plug-ins.



STEPS

1. With Guitar Rig inserted in the channel you want to process, click on the Components button, then the Tools tab.

2. Drag the Split module between the Input and Output.

3. Click on the Mod tab. Drag the Chorus+Flanger after Split A, and another Chorus+Flanger after Split B.

4. Chorus+Flanger control settings for both modules: Pitch Modulation Mode; Intensity and Width controls up halfway. Choose 0.2Hz Speed for one Chorus+Flanger, and between 0.1 and 0.5Hz (but not 0.2Hz) for the other one. At the Split Mix module, set the Crossfader halfway, and both pans to center. For negative flanging, click on the Phase Reverse button (circled).

5. Drag another Split module into the "rack" (as in Step 2), click on the original Split (with its Chorus+Flangers; its outline turns yellow), then drag it into Split A of the new split. There's no need for a Split B. Adjust the Crossfader in the second Split Mix (circled) for the desired amount of Flanged and Dry sound.

TIPS

- In Step 5, the older Split changes color to light purple.
- In Step 5, panning each Split in the second Split Mix somewhat oppositely gives cool psycho-acoustic effects.

What's Your Take?
Post your own reviews—or challenge ours—in the forum at www.egmag.com. And if you have some cool amp-simulator tips, share them!

GUITAR RECORDING ROUNDUP

Max your Axe with these Timely Tips and Rockin' Reviews

by Craig Anderton

It's amazing what you can do with guitar recording these days. It's not just about sticking a mic in front of an amp, but about plug-ins, pedals that think they're shrunken rack units, affordable ribbon mics, small amps that sound huge, mobile laptop recording, hex outputs, and much more.

In fact, if we changed the name of the mag to "Guitar Recording," we'd have enough material to fill up at least a year's worth of issues. But for now, we've squeezed as much as we can into this month's roundup.

In addition to reviews of five hot new products, we've also solicited the brainiacs at my Sound, Studio, and Stage forum to reveal their secrets on guitar recording—and they came through with some pretty amazing info (once you try Mike Shelton's Mid/Side recording technique, you may never record guitars the same way again). So tune up your guitar—or if you have a Gibson Robot Guitar, have it tune itself—plug in some cables, grab your pick of choice, and enjoy the latest scoop on the art of recording guitars. (Note: All prices are suggested list prices.)

TIP: Instead of doing *my* perspective of how the recording should be done, I ask the musician to get *his* sound. Then I start setting up the mics—Shure SM57 next to the amp, off-axis, for the "bite" of the sound then 20 inches away, a large condenser mic (M-Audio Solaris and Groove Tubes GT 67) for the added body. Love that Groove Tubes! I may add a third mic as well, and I record all of them. Then, I send a straight DI to the computer and try some plug-ins to beef up the sound—Sans Amp (Pro Tools) as a preamp, iZotope Trash for fine EQ/Compression settings and some distortion, then Eleven (Pro Tools).

On bass, it's pretty much only a DI and plug-ins, with a compressor between the bass and the audio interface to control the peaks if that's part of the sound. —Gus Lozada

IK Multimedia StealthPedal Deluxe

($449.99 Deluxe, $269.99 Standard)

IK Multimedia got an early start with amp sims, and now has a very complete product line for guitarists with multiple "powered by AmpliTube" stand-alone/plug-in software programs, as well as hardware (like the outstanding I/O Stomp foot controller). StealthPedal, a Mac/Windows USB interface built into an extremely sturdy, all-metal expression pedal, is the latest addition to the roster.

INTERFACING

Two hi-Z/line audio inputs accommodate stereo instruments like Chapman Stick, or a guitar and (mono) drum machine output. However, stereo isn't preserved through AmpliTube's mono signal chain, so this feature is most relevant with host software, or for switching between two instruments onstage. There's a 1/4" input jack for an additional expression pedal, and another jack for connecting up to two footswitches. Although StealthPedal is designed to control the bundled software from IK, there's a useful general-purpose MIDI controller application that can assign the pedal/footswitch and remote switches/additional expression pedal to different MIDI channels, controllers, ranges, etc. This takes StealthPedal beyond being an "IK-only" product.

Audio outs consist of stereo balanced/unbalanced outs and headphone output (all audio connections are 1/4" jacks, except the 1/8" headphone jack). There's also a USB connection, and three status LEDs (status and with AmpliTube, Level, and Tuner). Resolution is 24-bit, up to 48kHz.

THE SOFTWARE

The Deluxe version includes AmpliTube 2 and Ampeg SVX; given their cost and the pedal price, that's a good deal. The standard version includes AmpliTube 2 Live and Ampeg SVX Uno ("lite" versions with an upgrade path). Both versions include Riffworks' T4 recording software and AmpliTube X-Gear—a "shell" for IK products that lets you mix and match modules from the various AmpliTube-based programs (*e.g.*, use an amp from AmpliTube Jimi Hendrix, with a cab from AmpliTube Fender).

IN USE

After installing the Windows drivers (the Mac doesn't need drivers), I was up and running. The audio quality is on the same level as the pedal's excellent build quality. Tested as an audio interface for Ableton Live, the round-trip latency for reliable operation was around 15ms (most programs measure only input latency, and would report it as being 7ms).

Tying the pedal to parameters is easy, as X-Gear incorporates a window where you can assign the pedal and footswitch, as well as the external footswitches/pedal, to particular parameters (as well as set ranges). You can control different parameters in different presets, but you can't control two parameters at the same time from the pedal unless you use StealthPedal as a MIDI pedal, and set up control via X-Gear's MIDI Control option.

Finally, in case you're not familiar with AmpliTube itself, I'm a big fan of how it sounds. Every amp sim is different, but AmpliTube has the "clean transition to overdrive" thing down, allowing it to get subtly crunchy tones as well as clean sounds and full-out distortion.

CONCLUSIONS

StealthPedal seems intended for live performance (just add a laptop), but also provides a high-quality interface for guitar in the studio—the icing on the cake is MIDI control possibilities for non-IK devices. I really didn't know quite what to expect when this showed up for review, but I'm definitely impressed.

Strengths: Built like a tank. Integrates smoothly with AmpliTube X-Gear. Stereo I/O for studio applications. Excellent sound quality. Accommodates additional pedals and footswitches.

Limitations: No mic input for studio use. Pedal can only control one parameter at a time in X-Gear unless used as a MIDI pedal.

I try to get as many feeds as I can—direct from the guitar, direct from the effects pedals (stereo if possible), close-miked amp, and distance-miked amp. Who knows—the sound you want might just be one of them, or all of them. And use new strings for a bright, clean sound. —John Sayers

For fat power chords or rich distorted sounds with an open-back cab, mic both the front and rear of the cone, record two tracks, and reverse phase on one of them. Pan them oppositely for broadness (good on rhythm parts) or centered for a focused thickness (better for solos).

I'm currently using a DSP amp emulator I designed for my Sonic Core SCOPE system [*Alfonso designed Adern's Mojo amp sim —Ed.*]. With amp sims, monitor the processed sound while you record the dry guitar sound. Apply the amp emulation on the recorded sound, because as the song progresses, you might want to tweak the amp sound differently. —Alfonso D'Amora

If you get a great sound coming from a nice tube amp, you can almost throw an SM57 randomly a foot in front of the amp and end up with an extremely good sound. If you are going for something other than traditional guitar sounds, that's another matter.

Also, people often overlook the creative power of a few pedals. A modest collection of pedals that you can tweak and re-sequence often provides a wider palette of cool sounds than some of the more advanced DSP options. —Ronan Chris Murphy

Native Instruments Guitar Rig Mobile ($119)

With more musicians recording on laptops, several companies have introduced mobile-oriented products—including Native Instruments, a veteran of guitar-oriented software and hardware. Guitar Rig Mobile follows up NI's Guitar Rig Session, which is about twice the price and includes more I/O (for my review of Session, check out www.harmony-central.com/articles/reviews/ni_guitar_rig_session/).

INTERFACING

The Mobile interface box is *tiny*—about the size of a pack of cigarettes—weighs only 3.2 ounces, and would fit in any laptop bag. Despite the low price, the package is complete: software, USB cable, Quick Start guide, and a one-pager on getting up and running with Windows XP/Vista or Mac OS X. It doesn't get much simpler than that.

I/O includes a 1/4" input jack, 1/4" stereo output jack (for headphones or driving a mixer, active monitors, etc.), USB connector, and side level controls for input level and output level. Two LEDs indicate input signal present and USB connected. Done!

THE SOFTWARE

You get drivers, and Guitar Rig 3 LE (VST, RTAS, AU). As a confirmed Guitar Rig 3 user, LE is limiting compared to the full version; it's kind of like going into a gourmet restaurant and only having the soup. Sure, the soup is good, but the *entrée* is something else altogether.

That said, you get two guitar amps (a "Marshall" and a "Twin Reverb"), bass amp, and 12 effects: reverb, delay, chorus/flanger, phaser, two distortion boxes, auto filter, wah, graphic EQ, volume adjustment pedal, noise gate, and compressor. Two digital recorder modules can feed signals into Guitar Rig 3 LE or record your playing; for example, when tweaking a preset, you can record a riff and play it back while you tweak, and it's easy to grab an idea when inspiration strikes. As expected, there's also a metronome and tuner.

IN USE

The converters offer resolution up to 24-bit/192kHz. As someone who feels 96kHz sample rates really do make a difference with amp sims, I'm glad to see that option—especially because a modern laptop running a stand-alone app can handle 96kHz without problems. As to 192kHz, I could care less but as the Cirrus Logic converters (also used in the Rig Kontrol 3) run at that rate, I'm sure NI saw no downside to making that option available.

Installation is the usual deal of installing Windows drivers (props for accommodating 64-bit Vista), or just plugging into a Mac. You do need to go through NI's Service Center to register Guitar Rig 3 LE; this may seem inconvenient, but

I've come to appreciate how it informs me of updates and allows easy authorization management.

CONCLUSIONS

Guitar Rig Mobile works for studio or stage. Some people even run Guitar Rig on a netbook, which sure beats carrying around a pedalboard and amp—just plug the Mobile I/O output into a mixer or PA system.

It's likely you'll tire of Guitar Rig LE 3 after a while; although you can upgrade to the full version for $289, the price-conscious may find upgrading to Guitar Rig 3 XE attractive—the $59 upgrade fee gets you six amps and 21 effects (interestingly, the ones I tend to use the most often). It's a really good deal.

Overall, NI hits the target with Guitar Rig Mobile. For under a hundred bucks street you get convenience, sound quality, and enough software to get you started (and for some, it will be all they need). That's a tough price/performance ratio to beat.

Strengths: Super-portable. Quality audio. Goes up to 192kHz sampling rate. Includes useful software, with upgrade path.
Limitations: Plastic case, not metal.

A lot of classic guitar recordings were done on analog tape—and the preamp matters a lot too, especially with an SM57, and even more especially if the amp is loud—the pres need enough headroom to take the higher levels. Imagination doesn't hurt, either: Keith Richards recorded a couple of tracks on *Sticky Fingers* with a Fender Champ stuck inside a toilet. Muscle Shoals studio was remodeling their restroom, and the old toilet was sitting outside the door. Keith was getting frustrated moving his amp and mics around and still not getting the sound he wanted, so he stuck it in the toilet and that worked.

I've certainly done the "stick an SM57 in front of a great tube amp and let it roll" thing enough times, but I can't say I always get the best possible sound that way. My preferred technique is to use a dynamic mic just off the speaker, and at a slight angle, whether it's the SM57 or a Beyer M88 or a Heil PR30 (these days it's usually one of the last two). Then I place a second mic, usually a large diaphragm condenser mic, between 1 and 3 feet off the amp. Move 'em around till they sound good. —Lee Flier

Use a looper pedal, re-amp box, or Line 6 BackTrack to play a pre-recorded guitar loop through the amp while you move the mic. —Fabian Smith

When recording guitar amps, I use what I call "Split M/S," basically a modified M/S (Mid/Side) setup. I place a cardioid mic close on the grill doing the typical voodoo—edge of cone vs. voice coil, angled vs. straight on, etc.—whatever it takes. Then, I use a Figure-8 mic a few feet back in the room, with the null pointed at the amp. Treat the two mics as an M/S pair, and decode to stereo. The distance imparts a bit of "pre-delay" that allows the direct sound to hit first, which makes the room sound seem even bigger.

I've placed the Figure-8 mic as far away as 7–10 feet in a few great-sounding big rooms. Sometimes I use the same mics (AKG 414s work nicely, Royer 121s can be really warm), other times I've used different mics.

When double-tracking with this technique, move the Figure-8 mic around in the room to get different reflections. Or, move the whole setup around in the room. For the rougher Keith-y type parts, move the Figure-8 mic closer and don't use as much in the track.

For some variations, try placing the amp a few feet from a wall, firing along the wall. Say you're looking at the amp and the wall is on the right: Set up the Figure-8 mic so the null faces the amp, and one side faces the wall a few feet away. That's your "Right" track. Next, move the setup so there's a wall on the left, and there's your "Left" track. Now put up the stereo tracks for a real stereo vibe. Also, for some fun textures try compressing the Figure-8 or cardioid mic differently before decoding: Squash the close mic/expand the side, expand the close/squash the side, etc. These techniques work really well when re-amping, and also with bass that has a lot of high frequency info like slap bass. Just roll up the HPF on the side mic to about 600–800Hz so you don't mess with the bottom end's phase integrity. —Mike Shelton

I use two mics, one bright (like a condenser—Neumann U67, Shure KSM44, Røde NTK) and one dull/soft—like a ribbon (AEA R84 or R92, Royer 121, etc.). Make sure the *diaphragms*, not just the front of the mics, are the same distance from the source. Blend to taste with a room mike as well. More tips:

- Use two amps.
- Do double and triple takes with the same or different EQ on the amp. Turn off the reverb for this.
- Try different picks—they sound different.
- When overdubbing, listen to the sound you're recording way down in the mix to make sure it works with the other sounds that are already present. —Halljams

I like smaller, lower-wattage amps. They saturate earlier, allowing you to get "that" sound at lower volumes, without "over-exciting" the room and creating unwanted resonances/rattles (or upsetting the neighbors). I frequently place a dynamic cardioid mic up close (the Heil PR30 is my new favorite mic for this), and a large-diaphragm condenser several feet away as the distance mic (*e.g.*, Lawson L251).

Because I record in a room that sounds terrible, I surround the distance mic with RealTraps MiniTraps acoustic treatment panels, which take a lot of the poor-sounding reflections out of the mic while allowing me to record far away from the amp. With these panels, I can record with the distance mic in omni for a gorgeous, full sound. This also works with acoustic guitar; with the panels, I can record the acoustic guitar about 2 or 3 feet back in omni, and it sounds beautiful. I'll typically aim the Lawson L251 at where the body meets the guitar's neck.

Regarding bass, several years ago I was going to record a bass player who always got a fantastic tone both live and in the studio, so I was curious to see what he was using. He walked in with a Fender P-bass and a tiny Roland Bass Cube 30. That was it. I used an Audio-Technica AT4060 through a Peavey VMP-2 tube mic preamp, and it sounded gorgeous and warm. Sometimes small amps can be shockingly good for bass.

One last tip: Aim your amp into odd-sounding places, such as floor heaters, showers, staircases, open dryers, metal trash cans, etc. Place the mic inside the odd place (in the floor heater looking up, inside the shower, down at the bottom of the stairs of a staircase, inside the open dryer, etc.). No plug-in or effect can touch this. —Ken Lee

There are alternatives to the standard SM57; I've gotten better results from the Audix i5 and Sennheiser MD 421. Also, it's worth mentioning that most DAWs have a "loop recording" function that lets you loop a section of a song and then record multiple takes without needing to hit record again. This is a great feature for recording another player, it helps keep them focused because you can minimize distractions from the recording process. —Mike 064 Freeman

Line 6 POD Farm (from free to $299; see text)

Line 6's GearBox software was released shortly after the fall of the Roman Empire, when Europe was in chaos and guitar amps were hard to find. Well not quite, but it's a testimony to Line 6 that their GearBox software has stood the test of time so well.

POD Farm has a great many similarities to GearBox, as well as significant differences. There are two versions, POD Farm (similar to the GearBox Silver bundle) and POD Farm Platinum, which has every model Line 6 can throw at it, including the model packs. Also, you can choose to authorize via iLok, or use Line 6 hardware as a dongle. If you already have model packs, they'll port over to POD Farm when you upgrade.

But first, if you have any Line 6 gear, run the Line 6 Monkey to see if you're eligible for a free POD Farm license. For some other Line 6 products, you can get an update for $49; the iLok version (which doesn't work in stand-alone mode—VST/AU/RTAS plug-ins only) runs $99 for POD Farm and $299 for the Platinum version, but you can get a 15-day free trial. Visit the Line 6 website for details.

THE INTER-FACELIFT

Operationally, there are three main differences compared to GearBox.

- The interface looks much cooler, with a Rolodex-type flip chooser at the top if you select "Gear" mode. You can also select from menus, or both—*e.g.*, click on the Delays menu, and the chooser will flip to the selection of delays, where you can then flip through the options.
- You now build chains via drag-and-drop into the lower half of the screen.
- Best of all, you can now assemble two parallel chains. Before, I had to create a parallel track and insert another plug-in; this is a lot more convenient.

What hasn't changed is relatively inflexible routing of effects—you can't freely place any effect wherever you want it. Most situations are covered, though; you can put up to six effects before an amp (providing the first one is the Noise Gate, otherwise you're limited to five). To help sort this out, when you drag-and-drop a device into the chain, little arrows show where the effect can go. If the arrows appear on an existing effect, then dragging the effect replaces the effect already in that position. For most applications, the routing issues won't be a big deal but for some of my "specialty"

sounds, it's a limitation.

In addition to the Gear view, you can show the selected piece of gear's panel in the window's top half by choosing Panel view. The knobs are nice and big, making them far easier to manipulate onstage compared to GearBox. Similarly, you can choose to view Presets, Tuner, or Mixer. From the latter, you can adjust settings for Line 6 hardware if you're in stand-alone mode—again, more convenient than GearBox.

CONCLUSIONS

GearBox with a new skin? Yes, but that's only part of it. The Dual Tone option is a huge deal, and the flip view can make it easier to find a particular piece of gear. I also appreciate being able to run POD Farm without Line 6 hardware—although I use Line 6 hardware a lot anyway, so I'm equally glad Tone Direct Monitoring didn't go away.

But most importantly, POD Farm can make some absolutely wonderful sounds—and that's the bottom line.

Strengths: Dual Tone option is great. Flip-style browser is more than just eye candy. Preserves existing GearBox presets and model packs. Free update to many Line 6 gear owners. Better value than previous incarnations.
Limitations: Relatively inflexible effects placement. Non-resizeable window. No new effects or amp models compared to what was previously available.

Don't be lazy—don't use the same amp and mic setup for all of your tracks. Try a different amp, and/or use a different mic for the overdubs—or both. Did you wax a heavy, dark crunch rhythm tone, and now you want a bright accent part? Pull down that ribbon mic and stick up a C414 or other "brighter"-sounding mic, and do your sparkly accent part through that. I'm also a fan of small amps. I currently own about eight different amps, all 25W RMS or less. It's not about disturbing neighbors (my studio has great isolation) but we're not trying to fill a large club; we're trying to wax cool tones. A smaller amp will be less likely to saturate the room and drive it into acoustic compression, and you can crank it to the point where those power amp tubes work hard—without deafening everyone. Also, bleed among players in a multi-player tracking situation is less of an issue.

With mic placement, aiming it on-axis, directly at the center of the speaker's dustcap, generally sounds brighter while moving it out to the edge of the speaker's surround generally gives a fuller, warmer tone. Sometimes I like to have the mic a couple inches from the speaker's edge, but at about a 45 degree angle so it's aimed more towards the dustcap; this gives a fairly balanced sound.

Distance from the source can give distance on the recording. Don't be afraid to move one or more of your mics back a foot, or even several feet from the amp.

For stereo, I often run two different-sounding amps (*e.g.*, a Vox and Fender) in two different rooms, with each having different types of mics . . . *e.g.*, C414 on one, Beyer M160 on the other. Of course, watch for phase cancellation, but feed a bit of stereo effects into a rig like that and the sound really blossoms. And with a dual amp setup, you can switch from one sound to another without having to go out and rearrange the setups—just select the one you want to use for a particular part. Toss in an EQ pedal (the very inexpensive Danelectro Fish and Chips and the Catalinbread Varioboost are personal favorites), a compressor, and a few nice overdrive/distortion/fuzz pedals, and you can get a lot of different sounds without leaving the control room.

Two more tips: Work those guitar knobs! Many amps, and even dirt pedals, will respond differently with just a simple twist of the tone and volume knobs. Also, cocked-and-locked wah pedals are fantastic tools. Kick the wah on, sweep it until it's emphasizing a frequency that you find complementary, then leave it alone and play. —Phil O'Keefe

Peavey Windsor Studio ($499.99)

There are a zillion small guitar amps out there, so why is Peavey getting the nod for this roundup? Simple: The Windsor Studio was not only designed with studio applications in mind (gee, ya think the name gives it away?), but includes several desirable features that make it unique among amps for recording guitarists.

TUBES: THE ULTIMATE "TUBE SOUND PLUG-IN"

The single-channel amp architecture includes a preamp built around two 12AX7s, and a nominal 15-watt RMS power amp based on a single-ended EL34 running in Class A mode, with no negative feedback. However, the Windsor treats the output tube as a "plug-in"—you can replace the EL34 with a 6L6GC, 5881, KT66, KT77, KT88, EL34, 6550, or KT90 (the output varies from 10 to 20 watts depending on which tube you choose). Because the amp was designed from the ground up for swapping tubes rather than having it be a "hack," there's no need for re-biasing. Furthermore, the Windsor Studio Hot Rod Tube Pack ($179.99) is available as an accessory, and contains a collection of output tubes (KT77, 6L6GC, 6CA7/EL34, KT66, and KT88).

If you're a fan of ReValver Mk III (Peavey's software-based amp sim) and messed around with exchanging virtual output tubes, you know what kind of a difference this can make to the sound; being able to translate that into the hardware world is pretty cool. It appears someone at Peavey can't tell the difference between hardware and software . . . and that's a *good* thing.

OTHER STUDIO-SPECIFIC FEATURES

Two other features are extremely helpful when a band is cutting tracks together and you're trying to minimize leakage. The first is a passive XLR direct out (with transformer, which I feel is an important element when trying to get vintage sounds) that taps directly off the speaker out, and includes mic emulation. The other is an output attenuator (Peavey calls it "Power Sponge") that presents a constant impedance to the power amp, so you can crank the power amp up but attenuate the overall level without changing the basic tone. Changing the amp output level doesn't affect the direct out, so you can nail the direct sound first, then work on the miked sound if you favor the direct+mic approach.

In conjunction with the direct out, this means you can get a loud amp sound, dial the volume down to where leakage is minimized, and run a direct signal so that you don't have to mic the amp and pick up other instruments. Obviously, this is also good for doing overdubs in situations where controlling noise levels is a consideration (and on stage, you can use this feed for the PA to avoid miking issues as well as have more control over levels).

There's also an effects loop, but this one isn't just for patching in line-level studio processors (*e.g.*, digital reverb, vintage compressor, etc.) because the loop return's input impedance is 1 Megohm. This makes it compatible with ancient stomp box effects that want to see the high-impedance input typical of a tube amp. Note that you could use this as an auxiliary input that bypasses the preamp stage entirely, but I wouldn't advise it as there's no level control "downstream" from the loop return.

If the single-channel operation is a concern, the Windsor does have high- and low-level inputs, and also a Boost button footswitch that ups the preamp level. However, you won't find any MIDI control over any of the amp parameters; if you want to change settings dynamically throughout a song, you'll need to punch or overdub.

Also note that the cabinet is open back, so you can do the old trick of miking the front and rear of the speaker, and throwing the rear out of phase.

CONCLUSIONS

The studio bells and whistles wouldn't mean as much if this wasn't such a fine-sounding amp that also works for stage use. But the Windsor Studio wears both hats convincingly, and for those who like the characteristics different output tubes impart to a sound, simply use a different "plug-in"—I mean, tube. If you've been looking for a "little amp" to add to your roster of studio tools, you can't do better than this. It packs a helluva punch in a compact package.

Strengths: Gets high volume sound at low levels. Can swap output tubes without re-biasing. Emulated mic out. All-tube amp topology. Effects loop. Switchable speaker impedance. Includes spring reverb.
Limitations: No parameter control via MIDI.

I used to just reach for an SM57. But one day when my (original Oz-made) Røde NT1 was out on its stand (actually, it's always on its stand, socked up, as it's my favorite for my own voice and acoustic guitar), I put the stand over on its side and used the pop screen arm to prop the mic up in front of the amp (about 6 inches out, off axis) on my Fender Blues Jr (a single 12" combo amp). I was very surprised by the definition and sense of air—it probably had more room than I was used to, but it also seemed to capture my tone (as well as the obnoxious Fender self-noise!) better. I'm a clean tone guy and I doubt the NT1 would work for certain distorted sounds, but for what I typically do, it's now my first reach. —TK Major

For acoustic guitars, I move a KM-84 around in front of the guitar until I find the sound I want, which, nearly all the time, is what the guitar sounds like. Keep the mic away from the sound hole because that's where all the bass comes out. While it's not right for every guitar and every sound, a small diaphragm cardioid mic at the player's ear level about a foot out from his head and pointed downward toward his left knee (reverse for a left-handed player) often gets a pretty realistic sound. If it's a contemporary song with drums and electric instruments, use EQ to cut a lot in the 200–500Hz range. —Mike Rivers

Eventide PitchFactor ($579)

In a previous article, I pointed out how amp sim software is a real bargain—for example, the effects in Waves GTR 3 are based on the same algorithms used in their big-bucks bundles. PitchFactor does the same kind of thing for hardware: Although pitched (sorry, couldn't resist!) to guitarists and priced like a high-end pedal, it puts Eventide's Harmonizer technology into a more affordable package that's suitable for more than just guitar.

GOZINDAS AND GOZOUTAS

One look at the back panel, and it's obvious that this is not your typical floor pedal. Ins and outs are stereo (with jacks for each channel, so you can do mono), and there are switches for setting input and/or output levels to line and/or guitar. There's a class-compliant USB port for software updates and MIDI (and maybe someday for treating the PitchFactor as a "hardware plug-in" for DAWs?), and jacks for an optional expression pedal or footswitch you can tie into the patches. Incidentally, I highly recommend using an expression pedal. It not only controls strategic parameters in the factory presets, you can program it to control parameters in your own presets as well.

I was initially disappointed when I saw there are "only" ten algorithms. However, these are like "Eventide's Greatest Hits" with intelligent harmonies (up to four voices), delayed/pitch shifted sequences, arpeggios, unison options for thickening, an extremely groovy "Synth" algorithm, etc. What's more, the 11 controls—I'm assuming that's a coincidence, not a Spinal Tap reference—allow for a *huge* degree of preset customization when saving into the 100 user presets, which can also be classified into banks.

The harmonies have that glitchless "Eventide" quality that sound more like you double-tracked a guitar to create a separate harmony line. I fed it with both clean and highly distorted signals; the latter was a real treat, as it gave the equivalent of polyphonic distortion effects coupled with harmonization. And although Eventide cautions that the harmonies work best with single notes (and they do), if you hit another note accidentally, or even hit a chord, the sound doesn't turn to glitchy garbage but remains relatively clean, even though the harmonies aren't well-defined.

That's a big deal.

For harmonies, you do need to specify a scale and key; this isn't like the DigiTech or TC boxes that "listen" to your instrument and derive harmonies from that. I don't consider this a problem, though, because a "Learn" function can analyze a chord you play, tell you the key you're playing in, and create the appropriate harmony notes.

You should also know this is a *deep* box—far deeper than we have space to explore here. There's extensive MIDI control (via 5-pin DIN connectors or over USB) if you want to automate changes with a sequencer; PitchFactor recognizes pitchbend, continuous controllers, program changes, and MIDI tempo sync, although you can also do tap tempo. The three footswitch buttons also provide functionality beyond bypass in/out, and just a slight turn of one knob can put you in a whole different sonic space. Even the documentation is good, which will be appreciated by anyone who wants to get the most out of this box.

CONCLUSIONS

It was almost a year ago that we ran a roundup on "Studio Meets Stage"—gear that's equally at home in both environments. Had PitchFactor been available at that time, it would have been an ideal candidate. I even tried using it as a DAW external effect for processing existing tracks, and in terms of sound quality, it was definitely up to the task.

Granted, PitchFactor is no match for something like Eventide's Eclipse processor—but the MSRP is about 20% as much. If all you really crave is a roster of Eventide's best Harmonizer-related effects, PitchFactor will save you enough money compared to Eclipse for a decent vacation . . . or at least, a really good sushi dinner for two, every week for a year!

Strengths: Truly cool, innovative sounds. Suitable for a wide variety of signal sources. Eventide sound without the price tag. Extremely deep and flexible for tweakheads—or you can just dial up presets. MIDI control. USB port for software updates and MIDI over USB.

Limitations: Requires key and scale settings to produce accurate harmonies. Audio I/O jacks on back, not side. EQ

I second the idea that "an SM57 isn't everything." A Neumann U67, Sennheiser 409 or 421, and other mics do really well. If you like the *White Album* or old Bowie, you like the U67. —Bill Plummer

LINKS

Here are the links for manufacturers mentioned in this roundup.

Ableton www.ableton.com
AEA www.ribbonmics.com
AKG www.akg.com
Audio-Technica www.audio-technica.com
Audix www.audixusa.com
Beyer Dynamic www.beyerdynamic.com
Cakewalk www.cakewalk.com
Catalinbread www.catalinbread.com
Danelectro www.danelectro.com
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Apple MacBook Pro

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The Apple 15" MacBook Pro Core 2 Duo 2.66GHz represents Apple's finest effort in engineering, style, and performance. The new all-aluminum unibody enclosure makes it thinner, lighter, and stronger. No LCD here! The innovative LED display (with two graphics cards) is simply beautiful to look at. Use FireWire 800 for your MOTU interface, and USB 2.0 or the ExpressCard slot for expanded storage. And you'll love the large, ergonomic Multi-Touch trackpad with integrated button.

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

MOTU Traveler-mk3

Bus-powered portable I/O with FX

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

Euphonix Artist Series

High-end console for your MOTU studio

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

MC Transport

MC Control

MC Mix

MOTU BPM

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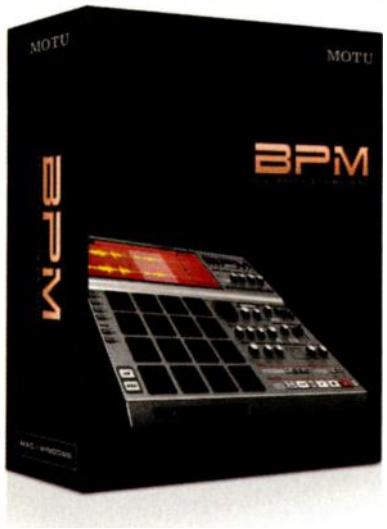
BPM unites drum machine-style operation with advanced virtual instrument technology to give you the ultimate urban rhythm programming experience. Combine drum kits, sequenced patterns, sliced loops, and instrument sounds to realize your rhythmic vision. Dig into BPM's massive library of never-before-released sounds. Run BPM stand alone or as a tempo-synced plug-in for DP6 to turn your computer into a rhythm production powerhouse.



BIAS Peak Pro 6

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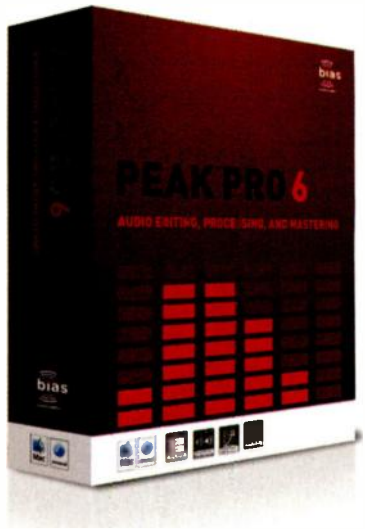
Whether you're a musician, sound designer, audio editor, multimedia producer, or mastering engineer, Peak Pro 6 offers more creative potential than ever before. Used side-by-side or launched directly from within DP6, Peak Pro 6 streamlines your workflow with industry-renowned sonic quality and precision.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



Antelope Isochrone OCX

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

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SOUNDS

BIG FISH AUDIO: FUNKY HOUSE GROOVES 2

You don't have to be gay to like house music—those slippery, elastic grooves are designed to put a smile on your face. This library isn't about construction kits, but a collection of grooves (drums, bass, brass, stabs, guitar, keys, percussion, etc.) as well as one-shots, all designed to stand on their own or complement the original Funky House Grooves library. Loops have folders for 125, 127, and 130 BPM, with different content in each; file names give the keys.

Overall, the quality and musical usefulness is top-notch. A lot of the drum loops have an Afro or Latin vibe that expands your options, and while the world doesn't necessarily need more one-shot drums, these are great for supplementing the loops. The stabs and "filtered one-shots" are imaginative, and can add a lot of variety.

REX/Apple Loop stretching is acceptable, but mixing and matching is problematic, due to the wide variety of keys—for example, I started off with a bass riff in *A* major, but then had only two choices of guitar loops at the same key and tempo. I wish companies in general would stick to a few keys and their relative minors to minimize the need for sound-degrading transposition.

Still, the loops acquit themselves very well, and it's way easy to put together dance floor-ready music quickly—listen to the audio example at www.eqmag.com. *—Craig Anderton*

Contact: Big Fish Audio, www.bigfishaudio.com
Format: DVD-ROM + "audition" audio CD; about 800MB (over 1,200 files) of unique 24-bit/44.1kHz WAV loop/one-shot content, duplicated for Apple Loops/REX/Stylus RMX; also EXS24/Halion/Kontakt/Reason NN-XT presets.
List price: $99.95

ZERO-G: INDIAN DANCE CLASSICS

Before you think this doesn't apply to the kind of music you do, think again: Exotic percussion can add sonic spice to just about any type of music, from ambient to techno. And note that this library isn't just about Bhangra, probably the best-known Indian dance music style; there are 15 categories including folk, Goa, various names I can't pronounce, and a folder of vocal percussion. Tempos range from 70 to 200BPM, with the file name indicating tempo.

The recording quality is very clean, and the Acidization/Apple Loops/REX stretching is far above average—it's easy to mix files of different tempos. I'm less happy with the organization, which groups by style instead of tempo. If you want files from different styles with similar tempos, you'll need to dig through the folders.

With each style having a folder of Rhythms, another of Variations on those rhythms, and a Freestyles folder with additional variations—along with folders for intros, fill, and ends—it's possible to create flowing, realistic parts. (In fact, many of these parts fit well over Western drum parts; listen to the audio example at www.eqmag.com, which layers the Indian loops over a rock beat from a different library.)

Bottom line: Next time you want to take your rhythm track to another (and more exotic) level, this vibrant library more than does the job. *—Craig Anderton*

Contact: EastWest, www.soundsonline.com
Format: DVD-ROM with 1.65GB (774 files) of unique 24-bit/44.1kHz Acidized WAV loops, duplicated for Apple Loops and REX/Stylus RMX; 24-bit/44.1kHz.
List price: $89.95

SONY: WHAT IT IS! '70S ANALOG FUNK

We're not talking jazz funk, metal funk, or other funk derivatives: This is the greasy funk that's the love child of James Brown and Tower of Power, recorded to an Otari 24-track (no kidding) analog tape recorder, then bounced to digital—find out more in the included booklet and excellent documentation. While I'm no analog purist, there is indeed a certain quality to many of the loops that sounds suspiciously like hitting tape pretty hard.

Fifteen construction kits draw from the usual suspects: drums, bass, guitar, percussion, clav, organ, Rhodes, strings, horns, pianos, strings, etc. Phrases are broken down into short segments, typically one to four measures, making it easy to add lots of variations within a single part.

It's difficult to pick standout instruments, as the playing is uniformly good. The only disappointments are the vocal shouts, which don't hold their own against the Godfather of Soul—but then again, what does?

Sony's done their usual fine job of Acidization, so the mix and match aspects are excellent. As a result this set isn't just about construction kits, but also being a collection of general-purpose loops.

I didn't do any audio examples, because you can hear plenty of them at www.sonycreativesoftware.com/whatitis. And a heads-up to whoever is shooting *Undercover Brother II:* I'm ready to do the soundtrack. *—Craig Anderton*

Contact: Sony Creative Software, www.sonycreativesoftware.com
Format: Two CD-ROMs with 1.33GB (769 files) of Acidized WAV files; 24-bit, 44.1kHz.
List price: $69.95

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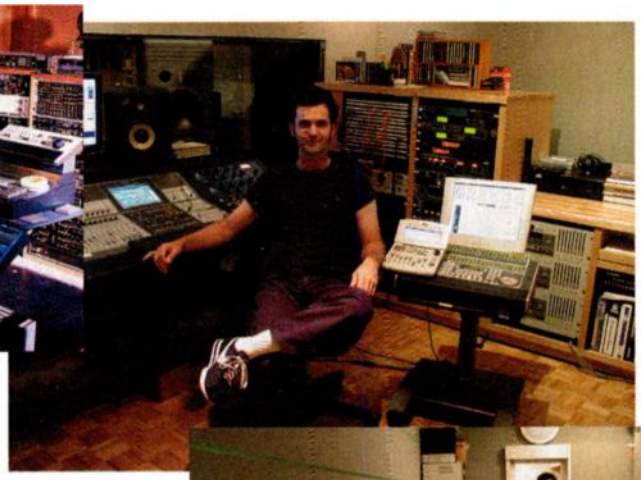
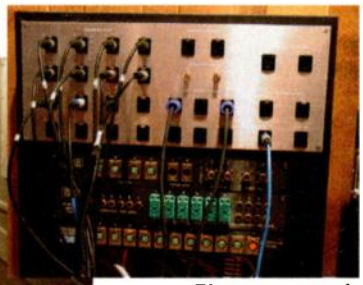
Frank Zappa's Studio Update May 2003

Frank and son.



The machine room.



The new panel.

In 2003, EQ *author Lisa Roy detailed—and photographed—Dweezil Zappa's rebuilding of his dad's Utility Muffin Research Kitchen control room. Here, techs Richard Landers and Art Kelm describe the "then and now" of the Zappa home studio.*

That was then...

The original studio panel had 12 mic inputs, as well as video I/O for cameras and monitors. The center panel contained four stereo headphone cues and a multi-mix system. Frank had mixers custom-built with connectivity to the buses and tape returns so everyone could create their own headphone mix. Remember this dates back to the early '80s. We maintained the integrity of the original system, which goes beyond what anyone could ever imagine!

...This is now

The new panel offers more connectivity including mic inputs and tie lines to patch, stereo cues, video tie lines, and Ethernet. There are speaker tie lines so Dweezil can have his guitar heads in the control room and his cabinets out in the studio. Art designed the panel and Apollo did the engraving for us. Mogami cable was used throughout the new installation.

All Racked Up

The center outboard rack remains from Frank's original control room. We tried to add clever storage space wherever possible so we had our carpenter add drawers to the bottom of the rack and in the back.

The gear consists of three Empirical Labs Distressors, a SPL Kultube, a SPL Tube Vitalizer, some dbx 160A's, a stereo dbx 165A, and three 1970s-vintage blackface 1176s. An original piece of Frank's outboard gear that gets used a lot is the URSA Major Space Station. It's one of the original multi-tap digital delay/reverb processors. A few of the newer pieces of gear include a pair of Neve 1272s, Neve 1073s, some Tube Tech tube compressors, a stereo Class-A Avalon chain, a Lexicon 960, and an Eventide Orville.

The Machine Room

The front of the [routing] tower is easily accessed from the control room, and the rear from the machine room. It is the heart of the studio, because it contains all of the digital recording formats and routing—including a 48-track Euphonix R-1, a 48-track Steinberg Nuendo system, and a MADI/lightpipe converter so we can get Nuendo into the Euphonix studio hub and route it to either the R-1 or the Sony console. It is pretty much a MADI studio right now.

Some of the machines that we inherited from Frank's arsenal include an Ampex ATR-102, an Ampex ATR-104 with various head configurations, and a Studer A80RC 1/4-inch two-track. There's also a Studer A80 multi-track, complete with 24-, 16-, and 8-track headstacks, and two of the original Sony 3324s. All of these formats will be utilized in the archiving of Frank's music catalog. And at the end of the machine room through this skinny door we have the editing room—which is still a work in progress. This is also where the Synclavier DMS and the Sony 1630 live. —*Excerpted from the May 2003 issue of* EQ

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Michael Duff is a singer/songwriter/producer living in Los Angeles and is the former lead singer/songwriter of Chalk FarM
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