» REVIEWS: STEINBERG CUBASE 5 | ROLAND V-PIANO | KORG MICROKORG XL AND MORE

SEPTEMBER 2009

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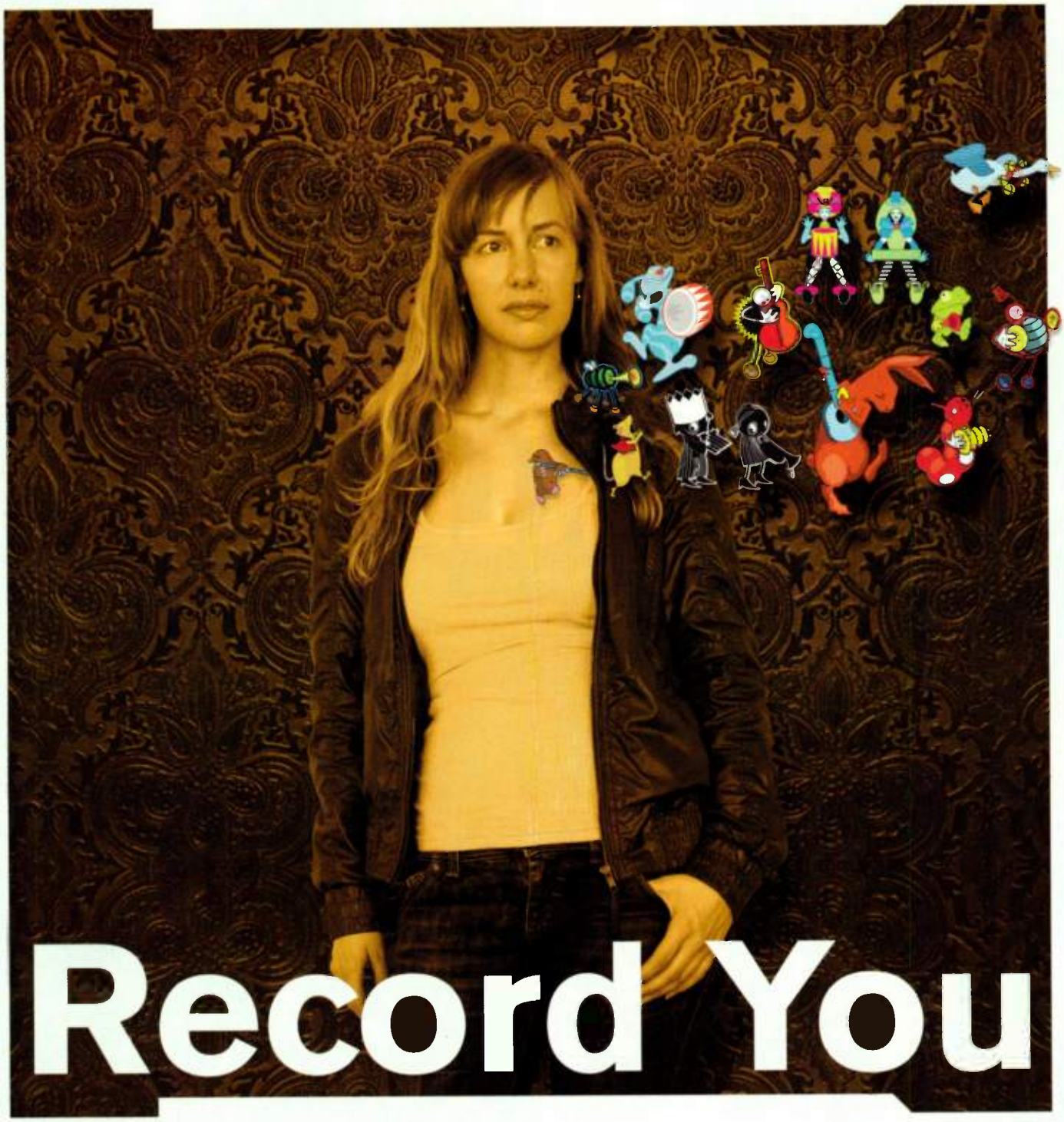

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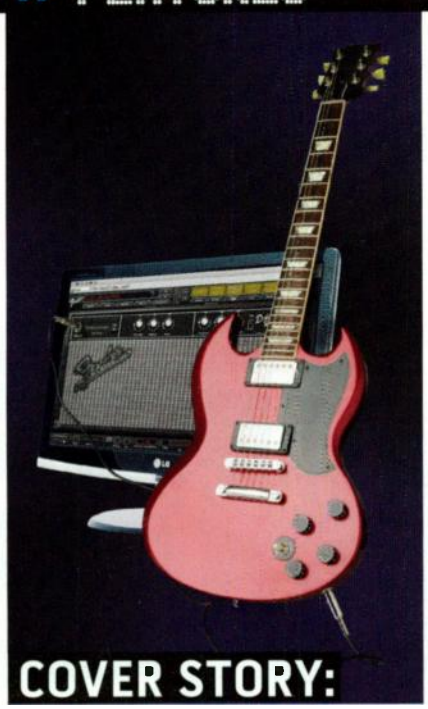
>> FEATURES



COVER STORY:

28 SHREDDING IN THE BOX

BY MICHAEL COOPER

Ready to replace your guitar amp and stompboxes with software? *EM* surveys the latest amp-simulation plug-ins to help you choose which is best for you. Get the scoop on IK Multimedia AmpliTube Fender, Line 6 POD Farm Platinum, Native Instruments Guitar Rig 3, Overloud TH1, Peavey ReValver MKIII and Waves GT3.

22 GEEKING OUT WITH INFECTED MUSHROOM BY MIKE LEVINE

Psy-trance stalwarts Infected Mushroom are set to release their latest album, *Legend of the Black Shawarma*. EM talked to co-producer and keyboardist Erez Eisen about the band's production techniques and their well-equipped home studio.

34 HAPPY SINGERS, HAPPY TRACKS BY STEVE SKINNER

Read a producer's advice for making your vocal sessions as productive as possible. From dialing in a good headphone mix to managing a singer's psyche during the session to making sure that you have coffee and food available, you'll find the bases covered here.

>> REVIEWS

>> COLUMNS

>> DEPARTMENTS

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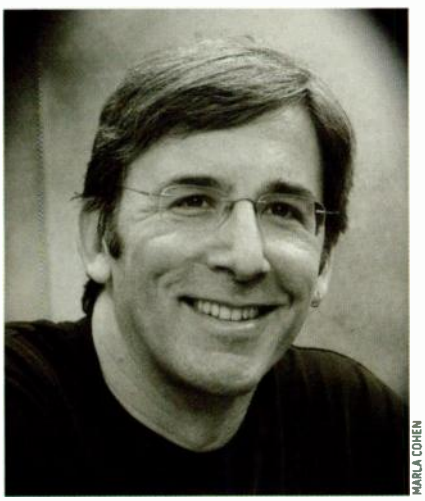
TASCAM

This Year's Modelers

Those of us who record electric guitars in our studios must choose whether to mike an amp or use hardware or software that models amp sounds instead. That choice used to be obvious: If you wanted realistic, fat amp sounds, then you needed to mike a good amp, preferably of the tube variety.

Nowadays, amp-modeling software has become so sophisticated and powerful that the choice is not always so cut and dry. Modeling offers a lot of enticing advantages. For one thing, it's much quieter. You don't need to crank an amp to get a good tone, and you can monitor strictly on headphones. More importantly, modeling provides you with a lot more flexibility because you can change amp sounds at will after the guitarist has finished laying down his/her tracks. And unless you have a large vintage-amp collection (such as the one Brian Tarquin has in his studio; see this month's "Pro/File" column), using a modeling plug-in gives you a much wider palette of amp sounds than would otherwise be possible. Of course, this wouldn't mean a whole lot if the amp tones produced by the software weren't realistic-sounding, but with the current crop of amp modelers, they typically are.



MARLA COHEN

If you recall the feature story "Showdown at the Clubhouse" in the February 2009 issue (available at www.emusician.com), you might remember that we conducted a blind listening test with a panel of producers and engineers with a ton of guitar recording experience. We asked them to try to pick out the real amp from the amp modelers, and in a majority of the cases, most of them weren't able to.

After that article was published, I heard from a graduate student who wanted to use the example tracks from that test in his own research project. I said sure, and he recently told me that only about 25 percent of his 50-person listening panel were able to pick out the real amps in his testing.

Clearly, amp modelers can be very effective studio tools. Do they replace real guitar amps completely? Of course not. But they are a viable option in many circumstances. As you've seen from the front of this month's issue, we're devoting our cover story ("Shredding In the Box") to Michael Cooper's examination of six cross-platform, AU/VST amp-modeling software packages. Michael is an experienced engineer and guitarist, and puts the various modelers rigorously though their paces. I think you'll find it a very informative story.

As we were preparing to go to press with this issue, Apple released Logic Pro 9, a major update of its flagship DAW software. I bring this up in connection with amp modeling because Apple has done a major upgrade of Logic's own capabilities in that area, with its new Amp Designer and Pedalboard plug-ins. Look for coverage of those plug-ins, as well as the rest of Logic 9's many new features, very soon in these pages.

While on the subject of modeling, I should point out that our lead review this issue is of the Roland V-Piano, the first physically modeled digital piano. The V-Piano created quite a stir when it was introduced back in January 2009 at the NAMM show, and now that it's shipping, senior editor Geary Yelton took it out for a spin (actually, quite a few spins) to answer, among other things, the question of whether it sounds and feels like a real acoustic grand.

Finally, a correction: In the story "Make Mine Modular" in the August issue, it was incorrectly stated that MOTU's innovative new synth-control plug-in Volta was cross-platform and supported VST. In fact, it's currently only for the Mac and supports AU and MAS, but not VST.

Mike Levine
Executive Editor

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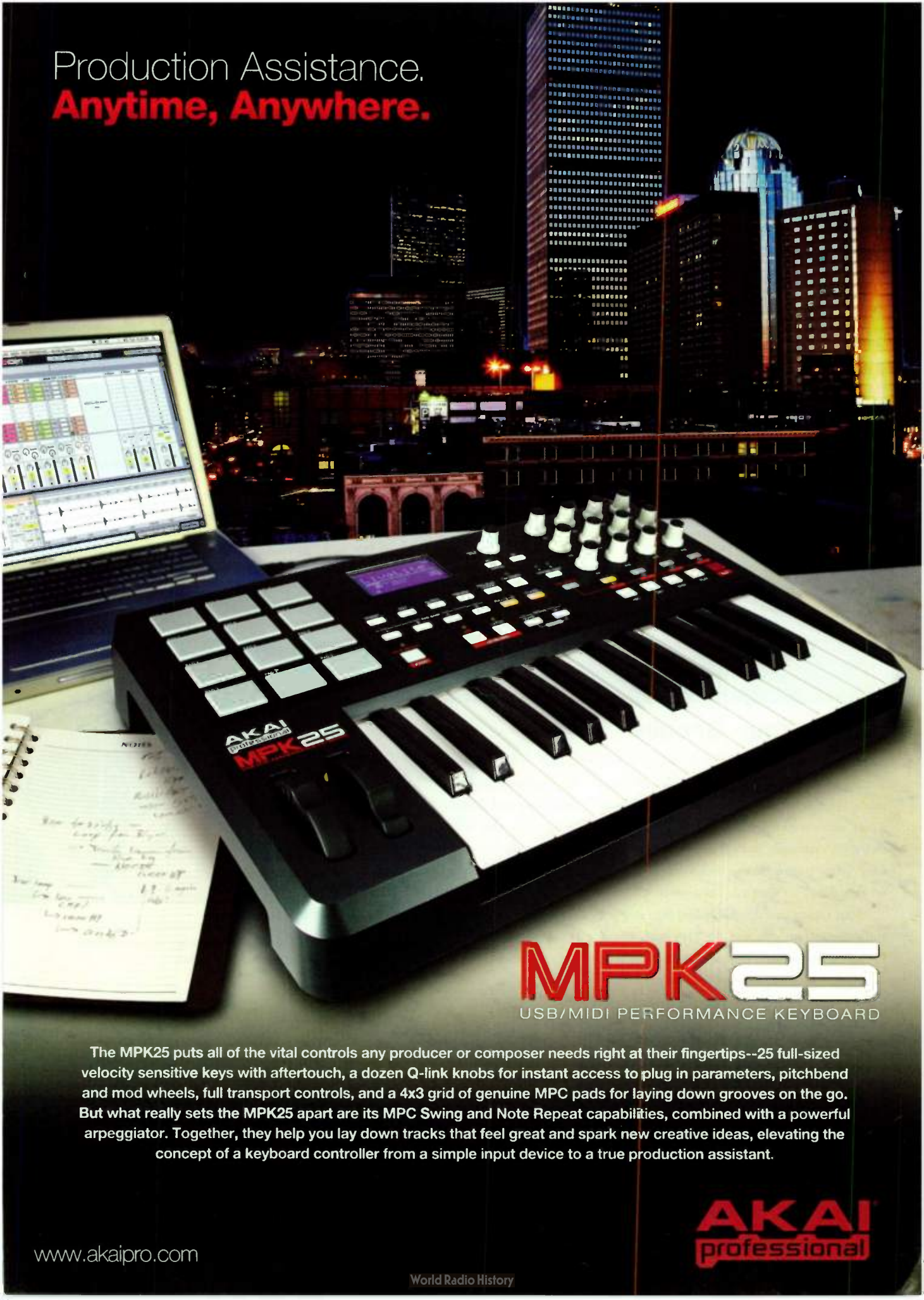


FRONTPANEL

Download of the Month

BIAS Peak Express 6 (Mac) By Len Sasso

If you've been hoping for a Peak experience, BIAS (bias-inc.com) has just made it easier with the release of Peak Express 6 (Mac, $39.95). Previously available only as an OEM edition, Peak Express has been significantly enhanced for this release. It now offers Mac users a broad complement of core sample-editing features. It is designed for easy audio editing, cleanup, restoration and 24-bit/48kHz recording; audio-file conversion including importing cassettes and vinyl recordings; and basic sound design for iLife projects. Peak Express also offers complete WiFi integration with BIAS' iPhone and iPod touch recording software, iProRecorder.

Peak Express will open and save most popular standard and compressed audio-file formats, including AIFF, WAV, SDII, MP3, QuickTime, AAC and FLAC. For DSP you get gain processing, mixing with audio from the clipboard, sampling rate conversion and reverse playback. You can apply and bounce BIAS built in (EQ, reverb, compression and delay), Audio Units and VST effects plug-ins, and you can send files to iTunes and let either Peak Express or iTunes convert them to your favored compressed format. Sample-accurate pencil-tool editing and loop creation are also featured.

Needless to say, there are some things Express won't do. For recording directly through plug-ins, full Red Book CD mastering and burning, non-destructive playlist editing, cross-fades, additional plug-ins, QuickTime movie sync and more advanced DSP, you'll need to upgrade to Peak LE ($89). For advanced looping tools, batch processing, full-featured dithering, Vbox effects management and even more DSP, you'll need to move up to Peak Pro ($499). But for a bread-and-butter sample editor, Express is a real bargain.

OPTION-CLICK By David Battino

Watch Your Groove

Discover unexpected features in popular hardware and software

Tempo-synched delay is one of the coolest effects in music. Quarter- or 8th-note echoes can really fill out a part, whereas dotted 8th-note echoes can make it swing. Unfortunately, many digital delays don't have a tap-tempo button. Here's a trick to calculate quarter-note delays with just a digital stopwatch.

Start timing on a downbeat, and then stop the timer the instant you hear the 11th beat. You've just calculated the duration of 10 beats. Now read the number of seconds, tenths and hundredths off the display and shift the decimal point two places to the right. That will be your quarter-note delay time in milliseconds. For example, 10 beats at 120 bpm last five seconds, so you should see a number close to 5.00. Shift that to get 500 ms. Halve that for 8ths (250 ms). Halve again and multiply by three for dotted 8ths (375 ms). —*David Battino, Batmosphere.com*

No tap-tempo button? Use the digital stopwatch on your wristwatch or phone to calculate echo times.

This Month on Emusician.com

VIDEO BLOG: IN THE STUDIO WITH MING
A New York producer gives you inside access to his studio and his production techniques.

SHREDDING IN THE BOX
Listen to audio examples from all of the amp simulators tested in this month's cover story.

THIS MONTH'S SOUNDTRACK

By Mike Levine

These releases encompass a variety of musical styles and production methods. A common thread across many of these CDs is combining diverse influences.

EVA VERMANDEL

THE HERBALISER BAND: *SESSION 2* **(!K7 RECORDS)**
The latest release from this British experimental hip-hop collective is made up of tracks recorded during the past 12 years. The music combines jazz, hip-hop and even cinematic textures to concoct a tasty instrumental stew, replete with horns, turntables and funky drumming.

LEO CARMENO

BOMBA ESTEREO: *BLOW UP* **(NACIONAL RECORDS)**
This Columbian group mixes electronica, hip-hop and dub with Columbian *Cumbia and Champeta* styles into a compelling and very accessible dance-music blend. Lead singer Liliana "Li" Saumet is electrifying.

SEASICK STEVE: *DOG HOUSE MUSIC* **(BRONZERAT)**
The music from this unusual bluesman features his solid voice and authentic finger-style slide-guitar playing (played on a guitar with only three strings). *Dog House Music* was released in 2006 in the UK (where Steve is quite well known), but is only now available in the U.S.

TORTOISE: *BEACONS OF ANCESTORSHIP* **(THRILL JOCKEY RECORDS)**
This veteran outfit, considered a pioneer of the "post-rock" movement, plays instrumental rock that incorporates many varied musical influences, including rock, jazz, dub, Krautrock, electronica and more. This is the band's first album of new material in five years.

JIM NEWBERRY

HUUN HUUR TU AND CARMEN RIZZO: *ETERNAL* **(GROOVE HOUSE RECORDS)**
Combining traditional Tuvan music with electronica might sound like an odd idea, but Rizzo and film composer Mark Governor pull it off with stunning results, adding an ambient component to the gorgeous and haunting tracks from Huun Huur Tu, a Tuvan traditional quartet.

ARI GOLDSTEIN

Hear song excerpts from these artists and download free tracks from Bomba Estereo and The Herbaliser Band in the "Online Bonus Material" at emusician.com.

ONLINE BONUS MATERIAL

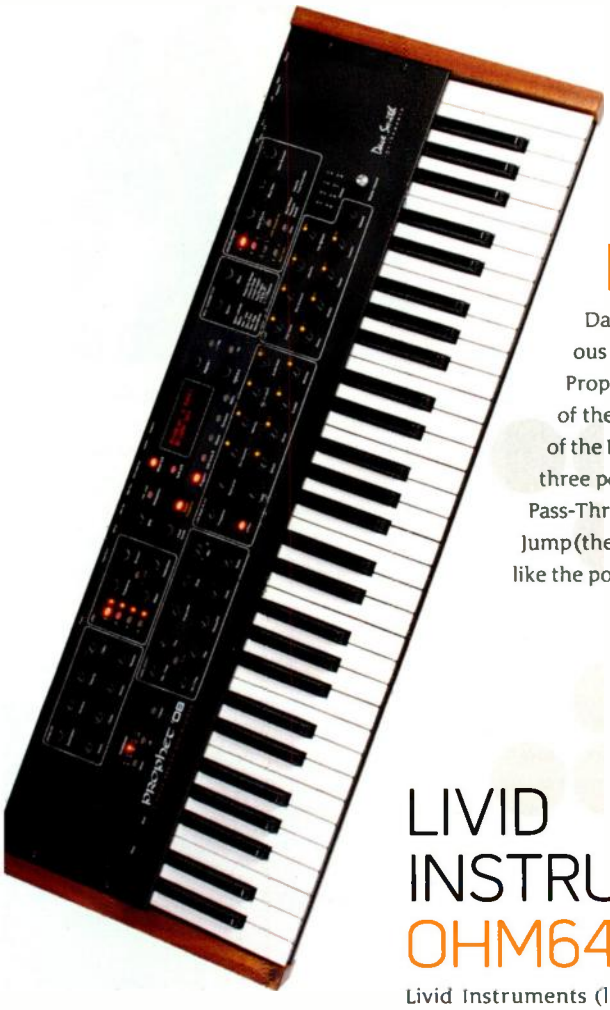
EM CAST:

Alan Evans of Soulive talks about the band's latest CD, *Up Here*, which was recorded at Evans' Playonbrother Studios.

FEATURED VIDEOS

Tour the studios of Infected Mushroom, Alan Evans and Brian Tarquin.

By Len Sasso



DAVE SMITH INSTRUMENTS PROPHET '08 PE

GONE TO POT

Dave Smith Instruments (davesmithinstruments.com) honors numerous user requests for a Prophet with that old-school feel by releasing the Prophet '08 Pot Edition ($2,099; $299 factory conversion). The functionality of the pot and non-pot versions are identical, but the Pot Edition replaces 38 of the Prophet's 52 rotary encoders with 270-degree pots. You choose between three pot modes: Relative (the pot picks up from the current parameter value), Pass-Thru (nothing happens until the pot passes through the current value) and Jump (the parameter immediately jumps to the pot's value). There's nothing quite like the positive feedback of a pot.

LIVID INSTRUMENTS OHM64

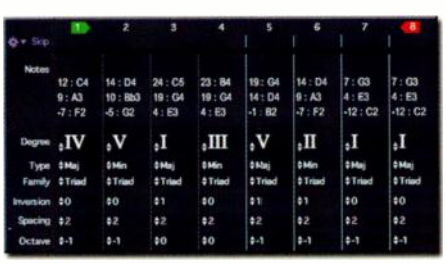
BUTTON UP

Livid Instruments (lividinstruments.com) has released the second generation of its Ohm64 ($599) MIDI control surface. Its backlit 64-button clip bank, eight faders with mute/solo buttons, 16 rotary encoders and DJ-style crossfader are all custom programmable to send and, in the case of backlit controls, to receive MIDI. Livid provides editing software to make setup easy and supports open-source software tools with a growing library of custom Max/MSP patches. The unit is USB-powered and class-compliant, and it sports MIDI I/O for controlling external hardware devices.

FIVE12 NUMEROLOGY 2.1

DO THE MATH

Five12 (five12.com) releases Numerology 2.1 (Mac, $119), a significant update to its modular, multitrack step-sequencing software. The big news is the new chord sequencer, which lets you specify chords by type, scale degree and inversion. Other improvements include support for Audio Units plug-ins in ReWire slave mode and real-time step-sequence recording from a MIDI keyboard. Numerology sports modules optimized for leads, drums, arpeggiation, and the display and processing CV (control voltage) signals for use within Numerology or for conversion to MIDI.



DOEPFER DARK ENERGY

German modular-synth manufacturer Doepfer (doepfer.de) released a stand-alone version of its A111-5 Mini-Synthesizer Voice module. Dark Energy ($399) boasts fully analog audio and control circuitry, along with a digital USB and MIDI interface to communicate with the outside world. Daisy-chain several of them for polyphonic operation. You get a voltage-controlled oscillator (VCO), filter (VCF) and amplifier (VCA), an ADSR envelope generator and two bi-waveform LFOs. Use the VCF as a pitch-tracking sine-wave oscillator and modulate it with the VCO to create playable FM sounds.

PLUG AND PLAY

BLUE CAT AUDIO DYNAMICS

Blue Cat Audio (bluecataudio.com) Dynamics (Win and Macs running Leopard, $159) is a multipurpose AU, VST and DXi plug-in offering compression, limiting, gating, expansion and wave-shaping distortion. Its two-thresholds system, VCA/opto and peak/RMS controls, and output-stage brick-wall limiter give you total control. Advanced stereo options include mid/side conversion, stereo linking and single-channel processing. Use the plug-in as a real-time sidechain compressor or use its MIDI CC and automation output to trigger other plug-ins.

ON SILENT CAT'S FEET

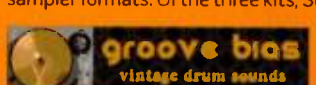
Sound Advice

Big Fish Audio's *BollyHood Beats*

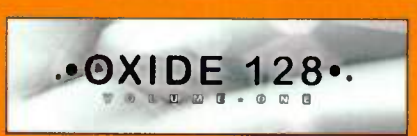
BollyHood Beats ($99.95) takes up where other ethnic loop and sampler libraries leave off by featuring authentic Indian instruments performed in contemporary Western styles—in this case, hip-hop, R&B and pop. The featured instruments are duff (bass drum), dholak (tom-like), manjira (finger cymbal), shaker and tabla. Construction kits range in tempo from 57 to 110 bpm, and include individual instrument loops along with partial and full mixes. The loops were performed by noted Indian percussionist Sanket Athale. They are provided in ACIDized WAV, REX/RMX and Apple Loops formats. Audition and purchase the library from the Big Fish Audio Website (bigfishaudio.com).

Impact Soundworks' *Groove Bias*

In creating *Groove Bias* ($99), Impact Soundworks aspired to deliver the "funkiest, phattest acoustic drum library around." Inspired by classic records of the '50s, '60s and '70s, the company sampled three vintage kits and a set of percussion instruments using beat-up mics, analog gear and tape machines. The resulting 4GB library—edited in Pro Tools at 24-bit, 96kHz resolution—is available in Native Instruments Kontakt 2 and 3, Apple Logic EXS-24, Steinberg Halion and Propellerhead NN-XT sampler formats. Of the three kits, Superfreak is



a '60s Ludwig Silver Comet kit, Tape is a hybrid kit starting with a '30s Ludwig Pioneer Black Beauty snare, and Herodotus, by John Gump, mimics Cream drummer Ginger Baker's kit. Listen and buy at impactsoundworks.com.



Bitword's *Oxide 128*

Bitword's *Oxide 128* ($59) is a collection of 128 bpm construction kits designed to have a corrosive impact on your music. The 24-bit, 44.1kHz library comes in Apple Loops, ACIDized WAV and REX-2 formats, as well as kits for Native Instruments Kontakt 2 and Battery 3, FXpansion Guru and Ableton Live Drum Racks. The 423 loops in the library are ideal for house, IDM and electronica, and will comfortably stretch up or down 20 bpm. The loops are augmented by 895 individual hits, making it easy to build custom kits to meet your needs. *Oxide 128* is also available as a ReFill for Propellerhead Reason ($59; $10 crossgrade). Buy or check out the audio examples at bitword.com.

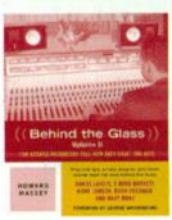
Get Smart

Routledge Music's *Handmade Electronic Music*

In *Handmade Electronic Music: The Art of Hardware Hacking Second Edition* ($34.95), Nicolas Collins takes circuit-bending and hardware construction from the beginning. Starting with the tools and materials you'll need and general hacking tips, the book's 30 chapters cover everything from how to solder and Ohm's Law for dummies to how to build mixers and power amps on a budget. Copious illustrative videos (87) and audio examples (20) from more than 100 hackers and composers populate the accompanying DVD. The author is professor of sound at The School of the Art Institute of Chicago and has worked with many masters of modern music, including John Cage, Alvin Lucier and David Tudor.

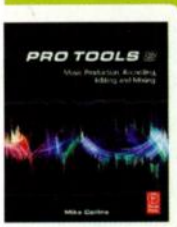
Backbeat Books' *Behind the Glass Volume II*

In this sequel, *Behind the Glass Volume II* ($24.99) from Backbeat Books (backbeatbooks.com), veteran journalist, engineer and producer Howard Massey comes up with 40 exclusive in-the-trenches interviews with top producers and engineers from control rooms around the world. These free-ranging interviews cover day-to-day minutia, philosophical concepts and best practices from forefathers such as Bruce Swedien, Daniel Lanois and T Bone Burnett to up-and-coming hit-makers like Mark Ronson, Darryl Swann and Patrick Stump. You'll find their thoughts on such topics as the state of the music industry, what constitutes the perfect amount of low end and how to coax the right vocal inflections from a lead singer.



Focal Press' *Pro Tools 8*

Pro Tools 8: Music Production, Recording, Editing and Mixing ($44.95) by Mike Collins aims to be the definitive guide to Pro Tools for both professionals and new users. It takes a real-world approach to building the Pro Tools system that meets your needs and then delivers a host of tips and tricks to speed your workflow. Chapters detail working with time, tempo and key signature; MIDI in Pro Tools; recording; editing; and mixing. Essential knowledge is augmented with tutorials and real-world examples. Find the book at your local retailer or order it directly from Focal Press at focalpress.com.



GOT LEGS?

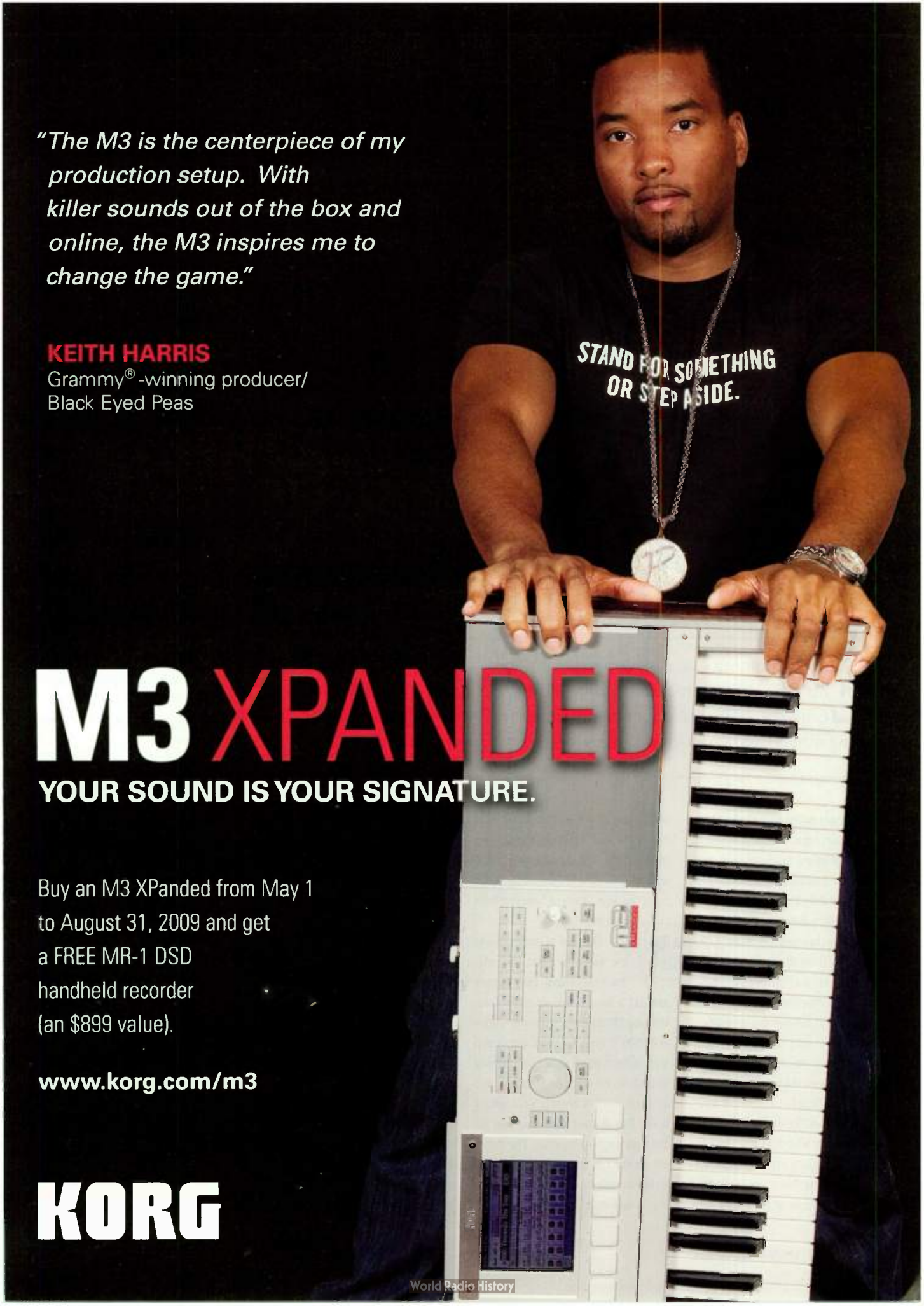
LINE 6 MICRO SPIDER

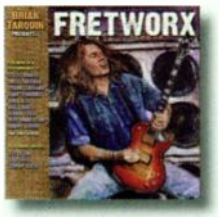
Opt in or out of family outings this summer with the seven-pound, 6-watt, battery-powered Line 6 (line6.com) Micro Spider ($149) portable guitar amp. With five amp models—Clean, Crunch, Metal, Insane and Acoustic—full EQ and two effects chosen from phaser, chorus/flange, tremolo, sweep echo, tape echo and reverb, you can hide out in your headphones or make your presence obvious. The Micro Spider includes a chromatic tuner with note-name display, AC adaptor and carrying strap.

ROB PAPEN SUBBOOMBASS

Synth designer Rob Papen (robpapen.com) is at it again with his latest Audio Units, VST and RTAS virtual instrument plug-in, SubBoomBass (Mac/Win, $119). SubBoomBass uses Papen's phat-sounding synth engine combined with tuned-percussion samples to put the feet on your music. A built-in groove sequencer and two effects slots let you create complete parts directly within the instrument. With more than 800 factory presets, SubBoomBass is equally at home in hip-hop, dub-step, house, garage and grime. em

FOOT SOLDIER





Home Base: New York

Primary multitrack: Ampex MM1200 2-inch 24-track; Digidesign Pro Tools

Favored guitars: Gibson Les Pauls

Website: www.bohemianproductions.net

RICKY RESTIANO

Tunes From the Jungle Room

Brian Tarquin collaborates with top players on his latest CD

Emmy-winning guitarist, composer and producer Brian Tarquin divides his time between making music for the screen (his credits include *All My Children*, MTV's *Road Rules* and the Keanu Reeves feature *The Watcher*, among others) and producing albums for his label, BHP Music Inc.

By Emile Menasché

Over a career dating back to the 1980s, he's had success with both solo albums and compilations featuring such masters of the fretboard as Jeff Beck, Zakk Wylde, and Billy Sheehan. On Tarquin's latest project, *Fretworx* (BHP, 2009), he teamed up with guest musicians Steve Morse, Frank Gambale, Sheehan, Chuck Loeb, Max Middleton and others. The release combines the diversity of a compilation with the personal statement of a solo album. "I always wanted to work with all the cats that were on the record," Tarquin says. "I had a certain guy in mind for each song."

When it was feasible, Tarquin brought musicians into his home studio, The Jungle Room, located about 30 minutes north of New York City. Middleton, Morse and Gambale were not in the area, so Tarquin sent them tracks. "They sent me back their solos, which I flew in with [Digidesign] Pro Tools," he says. "I mixed from Pro Tools to ½-inch tape."

ONLINE BONUS MATERIAL

That use of Pro Tools was the exception, not the rule. "I'm a real analog guy," Tarquin admits. "I have a Trident mixer from the late 1970s/early '80s; an Ampex MM1200 2-inch 24-track [equipped with Dolby A noise reduction]; a Sony 5003 ½-inch 2-track for mixdown; and an Otari MPR 10 ¼-inch for slapback echo. The Trident desk has two Tri consoles patched together. The stereo bus section has been modified with old Neve Marinair transformers."

A self-described "Les Paul guy," Tarquin designed his studio to provide quick access to a wide range of amp tones. "This is a real guitar studio," he says. "Ampeg amp switchers allow me to switch eight amp heads to eight speakers or cabinets. I can plug into a [Marshall] JTM-45 through a 2x12 Marshall or a Legacy Cabinet; or I can run my Seymour Duncan Convertible though a Fender or Marshall cabinet. I used a different amp on every song."

Tarquin miked the cabs with a beyerdynamic M-160 ribbon (close and slightly off-axis), often with a Neumann M 149 positioned about five feet away for ambience. In some cases, he paired a Sennheiser MD-421 with the M-160. He sometimes used two different amps, panned hard-left and -right, to create a bigger sound. "I always print everything dry," he says. "I try not to compress when going to tape; the guitar compresses itself anyway. When I come back to mix, I add the effects. I don't want to be married to anything."

As for splitting his time between the roles of producer, engineer, mixer and guitarist, Tarquin prefers to concentrate on one at a time. "I don't want to go play guitar after the whole session is over," he says. "I leave it for a day or two, come back fresh and then start laying down my parts. Generally, by the time the guest players came in, all my guitar melodies and solos were done."

Part of *Fretworx*'s appeal is the sense of spontaneity in the performances—a quality that's increasingly rare in an era of hundreds of virtual tracks and note-by-note comps. "I believe in the first two takes," Tarquin says. "After that, it gets worse and worse, and I've seen guys take a hundred takes—and they go back to the first two or three."

Watch a video tour of Tarquin's studio at emusician.com. em

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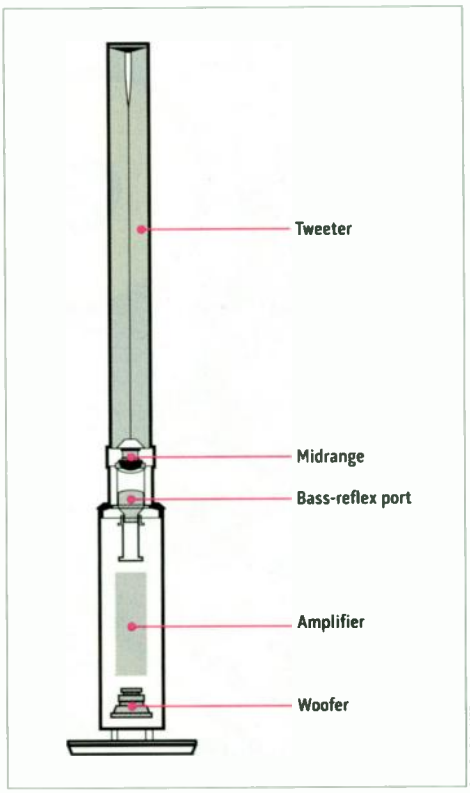


The Sony Sountina stands about six feet tall, the top half of which is the Vertical Drive glass-tube tweeter. The midrange and woofer drivers are in the base, along with an internal power amp. All three transducers radiate sound in a 360-degree pattern.

Cylindrical Sound

A new tweeter technology from Sony | By Scott Wilkinson

Speaker technology has changed very little in the past few decades. An electrical audio signal passes through a coil of wire called the voice coil, which generates an oscillating magnetic field. The coil is placed near a permanent magnet that pushes and pulls it according to the alternating polarity of its magnetic field. The end of the voice coil is attached to a cone or dome diaphragm, which vibrates along with the coil and thus radiates sound waves into the surrounding air.

During the past few years, Sony (sony.net) has developed a new type of speaker transducer with some interesting properties. Called Vertical Drive Technology, it's a tube of glass that radiates sound in a 360-degree cylindrical pattern. This glass-tube tweeter is part of a tall, slender speaker called the Sountina, which also includes a conventional 5-inch woofer and 2.75-inch midrange cone, along with an internal power amp (see the figure above).

The tube is driven by actuators at its base, which vibrate in a direction parallel to the tube's axis, sending compression waves along its length. Amazingly, this launches sound waves from the entire length of the tube perpendicular to its axis in a cylindrical pattern. The woofer and midrange drivers are mounted vertically—woofer pointing down near the bottom of the speaker and midrange pointing down just below the glass tube, with openings for both—so their sound emanates in a 360-degree pattern, as well.

The Sountina provides a stereo pair of analog inputs, as well as co-ax and optical S/PDIF digital audio inputs that support two channels of 24-bit/96kHz PCM. But wait—how can a single speaker reproduce a stereo signal? The low and midrange frequencies are mixed to mono, but there are multiple actuators at the base of the glass-tube tweeter, and they respond to the two channels independently, vibrating different parts of the tube accordingly.

Can a single speaker reproduce a stereo signal?

Another fascinating aspect of the Sountina is how the intensity of the speaker's sound behaves at different distances. For a conventional point-source driver, such as a cone or dome, moving twice as far away causes the sound pressure level (SPL) to drop 6 dB in open air. But the SPL from a line-source driver, such as the Sountina's glass-tube tweeter, falls by only 3 dB at twice the distance. Thus, at different distances, the balance between the tweeter and midrange/woofer cones changes.

I'm quite curious about how it would sound to feed the left and right channels of a stereo source separately to two Sountinas or, even better, multichannel audio to five or seven of them. Sony says that can be done if each channel is split and fed to both inputs on each speaker. Would the 360-degree radiation pattern be more enveloping than conventional speakers, or would reflections from the walls turn the sound to mush? I suspect the latter, but it sure would be fun to find out.

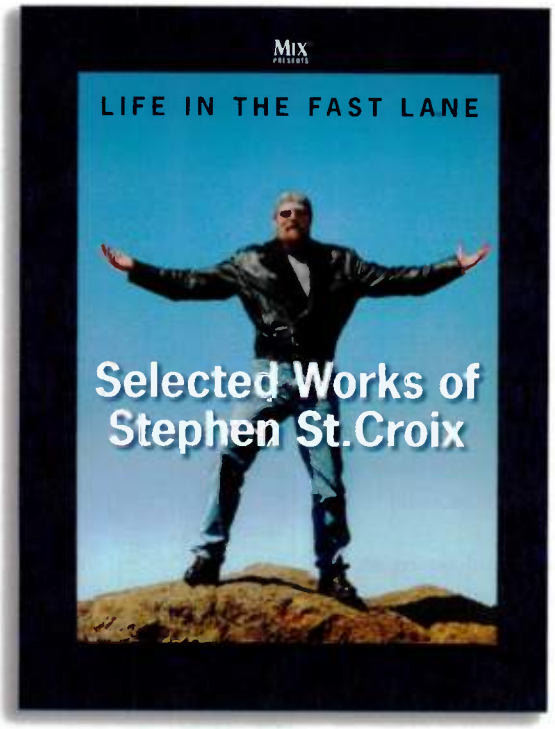
The Sountina is clearly intended to provide ambient sound for the consumer market. It's currently available in Japan, Europe, Russia, the United Arab Emirates, Taiwan, Brazil, Panama and Chile, but not the U.S. The price tag is 1,050,000 yen, which converts to just more than $11,000 as of this writing—and that's for a single speaker. Will Vertical Drive Technology find its way into professional or home studios? I don't know, but it's certainly a fascinating concept, and I look forward to following its development.

NEW FROM MIXBOOKS

Life in the Fast Lane

Selected Works of Stephen St.Croix

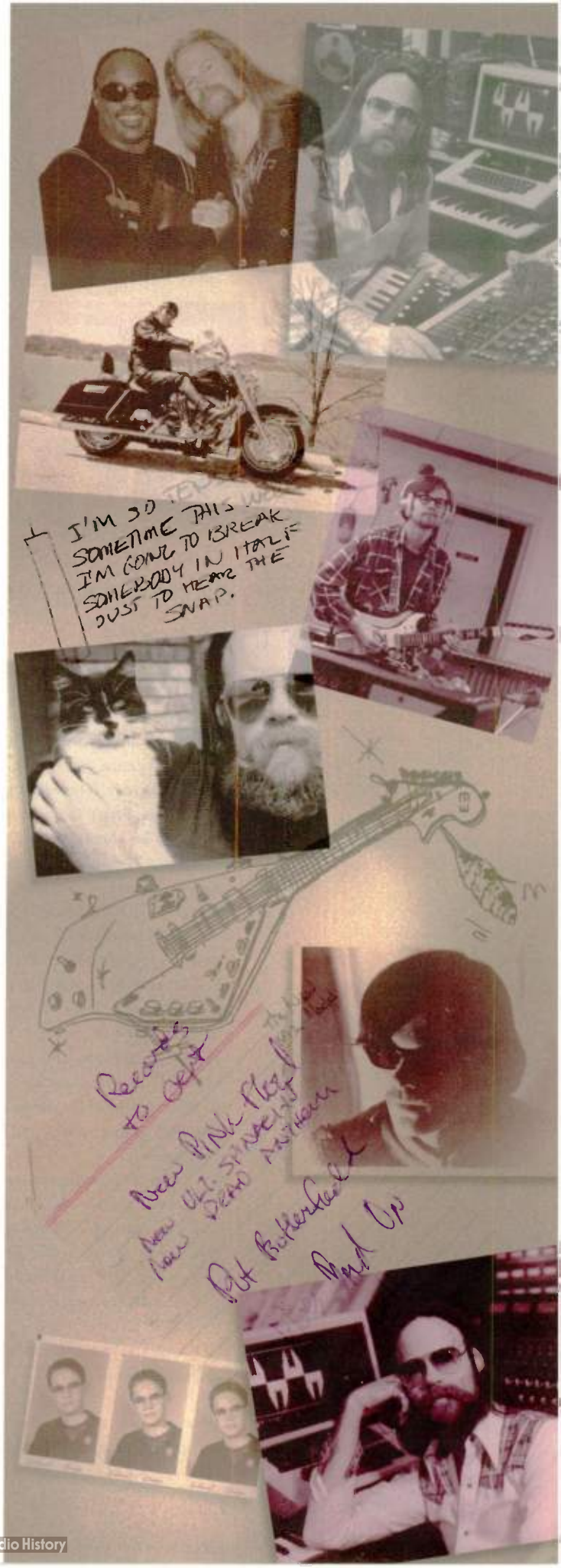
Stephen St.Croix inspired, provoked and educated *Mix* magazine's readers for 18 years in his one-of-a-kind column, "The Fast Lane." As an inventor, musician and engineer, St.Croix offered his audience a wealth of



knowledge and vision, as well as a Harley-riding rock-star attitude. Now, two years after his death, the editors of *Mix* have selected the best of St.Croix's columns, presented with never-before-seen photos, notes and drawings from his personal files. This book takes "The Fast Lane" beyond the pages of *Mix* and lends new insight into the life and mind of Stephen St.Croix.

To order your copy, go to www.mixbooks.com

MIXBOOKS

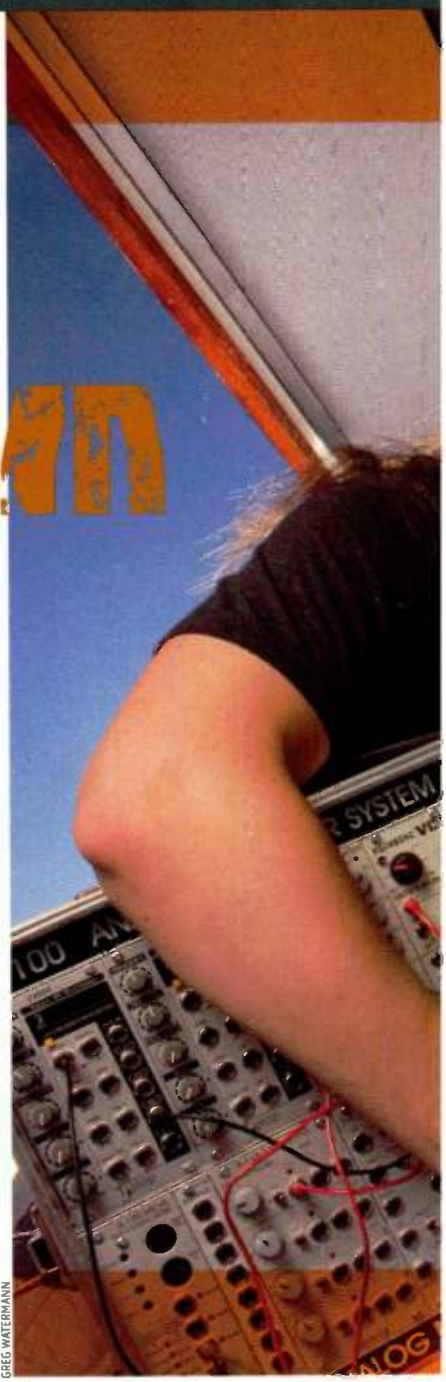


Geeking Out With

INFECTED MUSHROOM

Inside the duo's slick home studio and the production of their new CD

By Mike Levine


GREG WATERMANN

They are considered innovators in the electronica subgenre psy-trance, but Erez Eisen and Amit "Duvdev" Duvedevani, better known as Infected Mushroom, aren't so quick to agree with that classification. "To be honest, we don't see ourselves too much as psy-trance," Eisen says. "I think you can call it electronic rock or something like that. We don't think about these things too much anyway."

The band's new album, due out in mid-September, is called *Legend of the Black Shawarma* (Perfecto, 2009). Eisen and Duvedevani produced it in their studio—located in a custom-built structure behind Eisen's house—in L.A.'s Studio City. Of the new CD, Eisen says, "I think it's a little bit more aggressive, and I kind of compare it to our last album [*Vicious Delicious*, Reincarnate Music, 2007] because it's diverse. A lot of the tracks are different. It's more aggressive and has more songs, and even the songs are more like heavy-metal."

Infected Mushroom was formed in Israel by Duvedevani and Eisen in the late '90s. The band moved to the Los Angeles area four years ago. *Legend of the Black Shawarma* will be their eighth album together, and it clearly shows off their impressive production talents. Eisen, who got into music production originally through his interest in computers, took time off recently from his busy touring and production schedule to talk to *EM*.

Although you use a full band for touring, when you record it's just you and Duvdev, right?
Yeah, it's only us.

What are each of your roles in the production process?
It's basically the same. We both know how to do everything. I like to play more with sound and stuff like

Erez Eisen (left) and Amit "Duvdev" Duvedevani

that. Duvdev brings the vocals and the lyrics to the studio. He does the singing. I like to tweak, build sounds and stuff like that.

Tell me about the origins of the band. You are both from Israel originally?

Yeah. We were both in the Haifa area.

What was the music scene like back there.

When we started, when we were pretty young, we were listening to a lot of heavy-metal stuff, and the scene was mainly rock—heavy-metal. My partner used to go to Goa parties and things like that. He was really into listening to the music, and I was more into computers in the beginning. So I was thinking, 'How could I make music just with the computer?' I didn't have the budget to invest in a studio; I just had a computer. So I started on a really weird program called Impulse Tracker, it's very old.

Was it a sequencer?

It was a sequencer/sampler that you basically just play WAV files with—very limited. But I did two albums on this software. And I met with my partner, and we said, "Lets invest some money and build a decent studio." We brought

COREY LASHEVER

In their control room, Duvdev typically sits at the Yamaha Motif (left) and Erez at the Nord G2.

a really horrible Gemini DJ mixer, and we had the first Nord [G1]. And [we used Steinberg] Cubase XT, I don't remember which number.

How did the band get its break?

The first album, nobody was interested in. But still one guy listened to it, and he thought it was cool and he gave us a chance. And then the second album, that was the break [*Classical Mushroom*, YoYo Records, 2000]. It was very commercial, a lot of classical influences, which were not so common in techno music at the time because the music was very monophonic. We said it was boring for us because we'd both learned classical music. So we just put some scales in and stuff like that, so we did more classical scales and more melodic [lines]. Everybody hated that in the beginning, but it was a big hit for us. It was our best-selling CD. We got a Gold record at the time, and we didn't expect that.

How long ago was that?

It was eight years ago, I think.

How did you get your production skills?

Just sort of trial and error. We didn't have too many people in our area to teach us so we did it ourselves. We bought some kind of gear, like the first Nord, and we just played with it and we learned.

Tell me about your studio.

It's next to my house. We built it in the backyard.

So it's a freestanding building.

Yes.

It has a live room and a control room?

Exactly. We built it for our needs. We had so many studios before, so basically we designed it and we did everything so that we would be very comfortable in it. We had no mixing desk whatsoever. We have Apogee 32-in, 32-out, with RME AES-32s [sound cards]. And basically, this is our desk for routing and [sending signals] to external gear. We have Moogs; if we want to send to a ring [modulator] or whatever, we just have a send in Cubase. It works like a plug-in for external gear coming back. It's so easy for us to record this way.

So you use Cubase as your DAW?

Yeah. Cubase 5. We know it really, really well. We started with it.

Are you running it on a PC or a Mac?

PC.

That's unusual. It seems like the majority of established recording artists are using Macs.

Especially in the States.

In Israel, do most people use PCs?

Everyone there is using PCs.

There are guitar parts on this album. Did you bring in guitar players?

We did the guitars ourselves. We have guitars going through a Zoom effects machine.

So you're playing the guitars.

We record them, but we are really, really bad players. So what we do is basically record it kind of note by note and we then glue it [together] in Cubase. For us, it sounds different than bringing in a guitar player. We do that as well, but rarely. On this album, we only brought in a guitar player on one song.

Was that "Herbert the Pervert"?

Exactly. But only for a few parts. We like it to sound extra precise so you're not sure if it's a real guitar or not.

One of the songs had what sounded like an acoustic guitar at the beginning, but it didn't totally sound like one. That was a sample?

That's also "Herbert the Pervert." I think it was the new Yamaha Motif. And the riff afterward is

also not a guitar, it's a synth.

Are most of your synths software-based or hardware, or do you use both?

We use mainly external [hardware] synths. It used to be only software. I think the Nord G2 is one of the best out there. I really like the quality of it, so we use it a lot and I don't know many VSTs that can compare to this kind of—I can't say "analog quality" because it's not, but, like something different. After going through some good preamps, it makes a big difference.

What are you using for preamps?

We have the Avalons and we have the [Neve] 1073, we have API and SSL. We have also some stuff that I don't think you know about—it's an Israeli company, and it's really, really amazing. It's called Lev Solutions.

And you have a preamp from them?

We have a preamp that sounds really, really amazing. Equal to all the other stuff that we have. And they have an amazing, amazing compressor. You have to check it out.

So you do a lot of outboard processing?

Yeah, a lot. We have the Eventide [H8000]. We have the Lexicon 960. We're putting stuff through the Sonic Core Scope [DSP platform]. Scope has plug-ins called Modular III and the Adern [FleXor]. It's a modular, but it sounds amazing. The processors are just really unique and they sound amazing. And we're putting stuff through there.

The cover art of the *Legend of the Black Shawarma*. The CD has more metal influence than previous Infected Mushroom CDs.

In the song "End of the Road," there was a synth sound playing a distorted riff. Do you remember what that was?

The riff is the [Roland] V-Synth XT going through the Eventide. So the distortion is from the Eventide and the basic sound is from the V-Synth.

You also have a Doepfer modular synth.

It's a custom system. Do you know Analogue Haven? We are friends with them, and they designed a custom system for us. There's very weird stuff in it that we love.

What's weird about it?

They're not the typical oscillators that come with Doepfer. They said it's a rare kind that they only have a few of. I can't explain by words, you have to hear it.

There were some really cool effects on the song "Franks." There was one point where the whole mix is filtered out and then comes back in. Do you remember what you were using for that?

I'm not sure. I think, if I'm not wrong, it was the Nord G2. We went through it and we make our own presets.

So you plug the audio through the Nord and used it as a processor.

Yeah.

Do you do that kind of thing a lot?

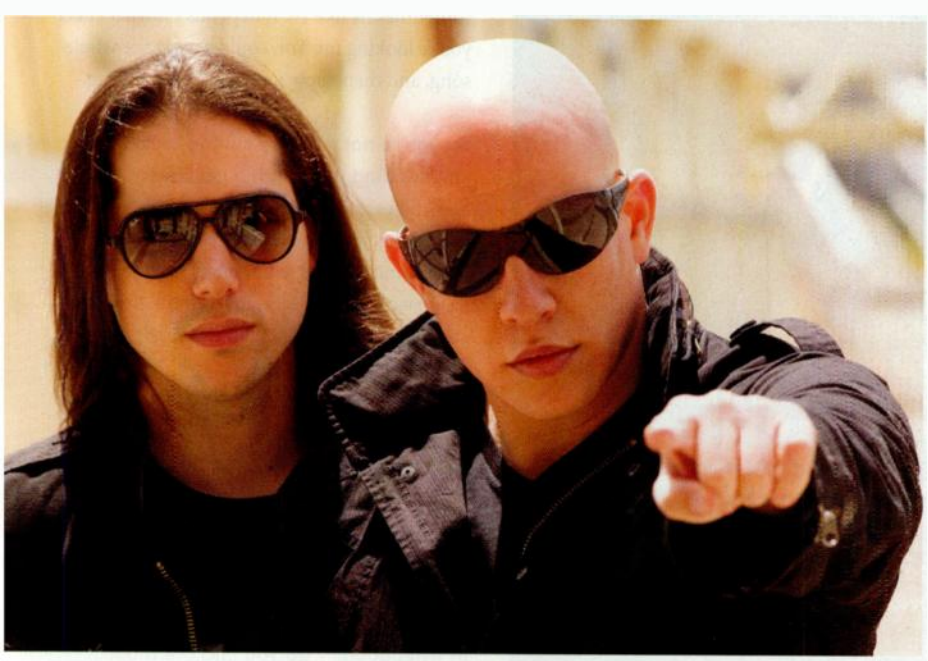
Yeah, a lot, to use some really great filters.

So you're using the synth as a processor.

Yes.

What other effects do you use?

We're using a lot of [Universal Audio] UAD. We have almost all of their effects. Lately,



GREG WATERMANN

In the studio, both Eisen and Duvdev (right) produce and play virtually all of the instruments. Duvdev provides the band's vocals.

we've been using the Moog Filter, the lowpass. I think it sounds amazing. We have also the real thing.

Do you use some of UAD's vintage-processor emulations?

Yeah, they're all amazing. I compared the real LA-2A to the plug-in, and it's so hard to tell the difference. The only real way to tell the difference is if you really push the gain to the max and the peak reduction to the max. Then you can hear the difference. Then the analog sounds a little bit better, but who uses presets like that? If you use it like a normal person does, I don't think I can hear the difference.

Do you also do the mixing?

Yes. [We have] a lot of arguments on mixing.

Do you enjoy mixing?

Yes, but sometimes we get too crazy about details.

Do you mix totally in the box?

It's a weird way we're doing it. We have the RME AES-32, and it has its own 48-bit mixer inside, basically kind of a digital mixer. We record only in 32-bit, 96kHz. And then we record analog to the Prism Sound converter to convert it to 16-bit, 44.1kHz.

And it gets recorded back into the computer.

Actually, it gets recorded into another computer; we do the mastering over there.

I noticed on the album you do a lot of stutter-editing stuff, where the whole mix kind of stutters a little. How do you achieve that?

It's pretty easy. There are many ways you can do it. But I guess the easiest way is to export the part that you want to apply the effect to. Let's say we exported a whole track, two channels, and it's kind of a gate effect; it's a MIDI gate.

What note values do you use? Thirty-second notes?

It depends on the part. Many times it's 32 and sometimes its like 16. It depends on what effect you're looking for. You could export the whole song, and then apply it on top of everything.

So you're not actually cutting it up, you're just sending it through a processor.

Sometimes now, in Cubase 5, it's easier just to cut everything. Just Alt-click and it cuts everything by the time [setting] you wanted, and then we just make each beat shorter. Draw the envelope and then everything is cut more precisely.

What's up next? I assume you're going to tour a lot to push the new CD?

Actually, we are already touring. Because we have kids and stuff, we're trying to have a kind of sane life, so we try to tour only on weekends. So we do like two or three gigs at the end of the week, and then the rest of the week we're home.

In what country do you find the most appreciative audiences?

Mexico was always really, really good to us. I

must say that in the States, the last two years it's really, really taking off, it's amazing. I think here, this kind of music is more fresh, people are just discovering it. So it's more exciting for them, they're finding a new thing. I think today I like to play the most in the U.S.

When you're playing live, I guess you probably use hardware rather than software synths?
For live, I use only the Yamaha Motif XS rack, with a controller of the Roland R-800. I really like its keyboard.

When you play live, you use a live drummer and guitarist, right?
Yeah, so I'm playing the keys. We have a guitar player, and he's playing through the Zoom G9.

Into an amp?
No, no amp. I don't like the sound of amps, especially not onstage.

Do you each have individual monitor mixes?
Yeah, we have in-ears by Shure.

So you're able to keep the volume in the mixes reasonable.
Some of us do, some of us are deaf. [Laughs.] I work at a low level, and each of us has our own mix in the headphones. We have a great setup onstage. We've got a Yamaha [01V] digital mixer. We just plug in the mixer, load in the presets—one button—and the mix is 99-percent done.

So there are presets for each song. What about the drums? Does your drummer have a regular kit that's miked up?
We used to do that. But again, we had difficulties making it sound as good as we wanted and as clean as we wanted. So we went to the Roland V-Drums. It sounded immediately much better than real drums onstage—in most cases. Because so many times, if you play in a club and you need to use at least four or five mics [on the kit], you need to start EQ'ing, removing some frequencies to avoid feedback. And in the end, instead of trying to make the best-sounding kit, you're just trying to fight the feedback.

Having the V-Drums means that you keep the stage sound way down, too.
Of course.

So basically you're all going direct onstage, except the vocals.
Yeah.

That probably means that it sounds (to the band) almost the same everywhere you play.
Almost the same. I'm so happy that we found this system. We soundcheck in a half-an-hour and we're done.

See the Online Bonus Material for a video tour of Infected Mushroom's studios. EM

Mike Levine is EM's executive editor and senior media producer. He hosts the monthly Podcast, EM Cast (www.emusician.com/podcasts).

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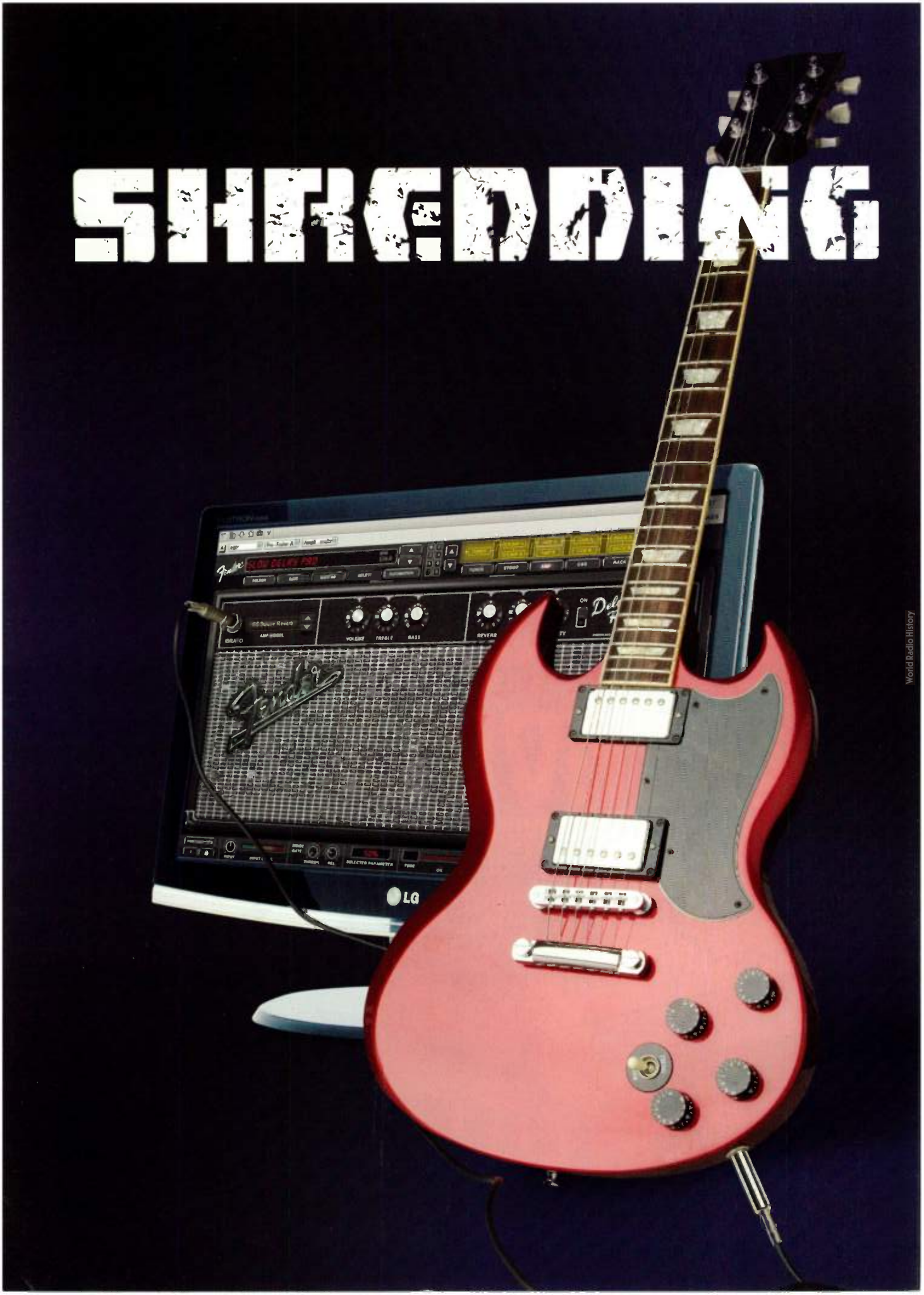

IN THE BOX

Six guitar-amp simulators go toe-to-toe

By Michael Cooper

Software that emulates guitar amps and cabinets has become dramatically more realistic sounding during the past couple of years. Add digital clones of classic stompboxes and outboard effects, and throw in amenities like in-the-box tuners and signal splitters, and it's tempting to leave the real amps and mics in the closet. But can all those 1s and 0s truly replace vintage amps and Neumanns? And of all the guitar-processing software now vying for your wallet, which offers the best sound, easiest operation and greatest versatility?

For this article, I tested six of the latest guitar-amp-simulation plug-ins (all of which also operate in stand-alone mode). To keep my report to a manageable size, I limited the field of players to just one product per manufacturer and included only cross-platform Native plug-ins compatible with both Audio Units and VST formats. If a company offered several such products, then I chose the newest release. Software that required accessory hardware such as pedals or USB interfaces, as well as products that didn't include virtual amplifiers and effects, were excluded from this report. That said, a few manufacturers offer optional hardware, so be sure to check their Websites.

All of the products I tested included such effects as noise gate, compressor, flange, chorus, phaser, pitch-shifter, wah-wah, delay, reverb and various types of distortion. I'll note any additional effects offered by each plug-in when I discuss them.

I tested all of the plug-ins in MOTU Digital Performer 5.13 on an 8-core 2.8GHz Mac Pro running OS 10.5.4. I routed my '62 Strat to my Mac via a Demeter Tube direct DI box, Millennia HV-3D preamp, Apogee Rosetta A/D and MOTU 2408mk3 I/O box (digital input). This signal path produced minimal pickup loading, and pristine gain and A/D conversion. For the best playability with inaudible latency, I set Digital Performer's buffer size to 64 samples during my tests. Let's shred!

IK Multimedia AmpliTube Fender

Developed with Fender, AmpliTube Fender ($199.99, ikmultimedia.com) includes dynamically modeled versions of 12 vintage and modern Fender amps (including three bass amps) and their original matching cabinets (see Fig. 1). Turn off the Match switch to use a different amp/cab combination than the historical configuration. Emulations of nine mics, six stompboxes and six rack effects join a tuner to sweeten the deal. You can position the mics on- or off-axis, and either far away from or close to the cabinet, and then dial in the amount of room ambience you desire.

Four-hundred presets get you started. You can chain two complete guitar rigs (each comprising stompboxes, amp, cab, mic and rack effects) in any of eight serial and parallel configurations. Slap on as many as 20 simultaneous effects (12 stomp- and eight rack-based), sync them to your DAW host's tempo and automate their parameters in your DAW. AmpliTube Fender doesn't currently support MIDI control of parameters. Stompboxes and effects include a volume pedal and a stunning re-creation of a 1963 spring reverb. A noise gate and tuner are always at your fingertips, no matter which setup you recall or create from scratch.

The system is expandable using AmpliTube X-Gear, a software shell that hosts both stand-alone and plug-in versions of any Powered by AmpliTube product. AmpliTube Fender comes bundled with SpeedTrainer and Sonoma Wireworks RiffWorks T4 recording software. SpeedTrainer is a practice utility that lets you import an audio file, loop it, change its tempo and pitch, and play along with it (with or without a metronome click). RiffWorks T4 is a 16-bit loop recorder for guitar that also facilitates online song collaboration.

AmpliTube Fender Version 1.0.1 sounded terrific. I really felt like I was blowin' out of a real Fender tube amp with vintage spring reverb (see Web Clip 1). Sound-design capabilities are also quite extensive within the constraints of the plug-in's mission: presenting realistic models of Fender gear. That said, you can't drag effects

to a different position in the signal chain after inserting them somewhere else. Even with all high-resolution optimizations activated in the software's preferences, only about half of my CPU resources were ever used. Documentation is superb.

Line 6 POD Farm Platinum

With POD Farm Platinum ($299.99, line6.com), you can construct two different signal paths in parallel configuration (see Fig. 2). Each path (called a Tone) can include models of an amp (or preamp), cabinet, mic and effects. Each Tone also has its own pan, volume and mute controls.

A cornucopia of 78 guitar and 28 bass amps, six preamps (including vintage mic preamps) and 97 effects is available. Each amp can be paired with any one of 46 cabinets (24 guitar and 22 bass cabs). Drag the cabinet around a virtual room with your mouse to adjust the level of early reflections captured by one of four mic setups (a setup being the mic model and its position relative to the cab).

FIG. 1: IK Multimedia AmpliTube Fender's GUI displays the tuner, stomp effects, amp, cabinet/mic combination and rack effects in turn.

Effects include an octaver, vocal de-essers, tremolo, ring modulator, rotary drum and EQ. The position of effects can be toggled so they sit either before or after the amp (in the latter case, near the end of the signal chain). Alternatively, you can drag effects with your mouse to change their position in the chain, but with some limitations. I often found I could add a particular effect only by replacing one already in the chain.

Set effects parameters to sync to your DAW host, to a fixed value or by using tap-tempo. In a DAW, you can automate 77 parameters for each Tone (154 total); MIDI control is not supported. A whopping 765 presets are organized into different banks; searching and sorting functions help you find the one you want quickly.

FIG. 2: Drag models from Line 6 POD Farm Platinum's Gear pane into the signal paths of a parallel setup.

POD Farm Platinum V. 1.1 offers an incredibly wide variety of preset tones, from clean to high gain and from dry to extremely processed (see Web Clip 2). Preset management is sophisticated, and operation is intuitive. Unlike the stand-alone version, the plug-in does not have a tuner.

Native Instruments Guitar Rig 3

The software edition of Guitar Rig 3 ($299, native-instruments.com) includes emulations of 12 amps, 24 cabinets (18 for guitar and six for bass), four rotary speakers, nine mics and 44 effects (see Fig. 3). Select the default matched cabinet for use with a given amp or roll your own cab. You can play through as many virtual cabs at once as you wish, choosing a mic for each and tweaking its position (on- or off-axis, far-away, etc.).

Effects include tremolo, octave shifters, equalizers, limiter, ring modulator and a volume pedal. Effects can be chained in any order—in both serial and parallel configurations—and synched to your DAW host. Insert a crossover so that only high frequencies are sent to one side of a signal split and lows to the other side for superwide imaging.

Hundreds of presets are included. Organize your custom presets into banks tagged with keywords (for example, "bass amps") for expedited search and recall. A new Live View magnifies all mission-critical components for live performance so you can see them from across a stage. In addition, two Tapedecks let you practice to a loop of backing tracks, overdub new parts and slow down guitar solos to make it easier to learn them. Utilities include a tuner and metronome.

A MIDI Learn function expedites mapping MIDI controllers to Guitar Rig's parameters. Save snapshots of different parameter setups for your song's intro, verse, chorus and so on, and use MIDI to recall them in turn.

Despite its somewhat flawed operating manual, Guitar Rig 3 was easy to use. Although I found some great-sounding presets, many sounded glassy or buzzy (see Web Clip 3). The bass amps also sounded somewhat thin and cold. But on the plus side, Guitar Rig offers several dozen fantastic synth-like and "FX" presets for the guitarist who's looking for something really fresh (see Web Clip 4).

The depth and nuance is palpable, *and the feature set is* Grand Canyon–deep.

Overloud TH1

The GUI for TH1 ($279, overloud.com) won't get in your way during fast-paced sessions. TH1's tuner, gate, reverb, delay and filters are always available with whatever patch you recall (see Fig. 4). You get 999 factory and 999 user bank slots, each containing up to 13 sounds, and each sound can have eight variations, all just a few mouse-clicks away.

Digital emulations include 18 mics, 10 amps, 21 cabinet models, several dozen convolved cabinet impulse responses and 61 effects. Of special note: Reverbs are based on Overloud's Breverb. EQs, octaver, tremolo and vibrato are also offered.

Changing the order and series- or parallel-chaining of stompboxes, expression pedals, amps, cabinets and rack effects in the signal chain is unrestricted and a snap. A signal splitter can adjust the levels and filters for signals on either side of a parallel chain. A mixer module offers independent control over the phase, delay, stereo width, pan and level of the signals on each side and outputs the whole enchilada in mono or stereo.

You can gang together related module parameters (such as all distortion shapers and amp channel settings) for simultaneous adjustments by up to eight master knobs and switches. Then automate them in your DAW or control them with MIDI commands to morph complex changes to your tone. Amp modules also each have their own fader that morphs between two different amplifiers (see Web Clip 5).

FIG. 4: Overloud TH1's resizable and well organized GUI makes navigating the plug-in's deep feature set a snap.

Choose a cabinet, then select two mics and change their positions (the distance from and the vertical and horizontal angles to the cab) and phase. The Cabinet IR module allows you to load convolution-based presets or import your own impulse responses. Time-based effects can be synched to a DAW host or set using tap-tempo or typed-in values.

TH1 V. 1.1.1 sounds phenomenal. The depth and nuance produced on clean tones—always the acid test with such software—is palpable (see Web Clip 6), and the feature set is Grand Canyon–deep.

FIG. 3: In Native Instruments' Guitar Rig 3, you drag components from the GUI's upper-left to any positions in the rack on the right to establish their order in the signal chain.

Peavey ReValver MKIII

ReValver ($249.99, peavey.com) gives you an insane amount of control of your sound, right down to the component level. Begin by chaining—in any order, and in both serial and parallel paths—19 stompboxes, 15 amp models, 12 preamps, nine power amps, more than 150 speaker simulations and 11 effects (see Fig. 5). Then add Tone Stacks (sets of tone controls), swap or add additional tubes (17 tube types are offered) and even modify component designs such as grid resistors and plate load. Drag modules with your mouse to change their order in the signal chain. Save the result as an impulse response and load it into a speaker-simulation module. ReValver offers both convolution-based and modeled speaker emulations.

Stompboxes and effects include tremolo, octaver, convolution reverbs, equalizers, stereo widening, limiter and a built-in VST wrapper. The latter lets you use third-party VST plug-ins as modules inside ReValver. Utilities include strobe tuners, a signal splitter and a frequency analyzer. You can automate 32 parameters in a DAW and control all knobs, faders and buttons by MIDI. Clicking on two Learn buttons in turn automatically sets I/O levels for the plug-in to prevent harsh digital clipping.

ReValver is much more demanding of CPU resources than the other plug-ins here, but it provides a lower-resolution mode to lessen the load. Even set thus, some patches with convolution reverb nearly maxed out my CPU.

ReValver MKIII sounds really terrific. However, factory-preset programming overwhelmingly favors tones with distortion,

leaving me wanting more clean offerings (see Web Clip 7). Effects can't sync to a host DAW, but that functionality is planned for an upcoming release. The plug-in is easy to use, though its GUI is not quite as streamlined as that for some other plugs. ReValver's performance was a bit buggy in Digital Performer 5.13; it often grabbed control of the DAW and made it temporarily unresponsive.

Waves GTR3

GTR3 ($180, Native; waves.com) essentially comprises four different types of plug-ins. GTR Amp features amps, cabinets and mics; GTR Stomp provides a virtual pedalboard of effects; and GTR Tuner is a chromatic tuner. GTR ToolRack is a plug-in that rolls the other three plugs into one intuitive interface, with each component in a separate window view accessed in turn by a single mouse-click (see Fig. 6). GTR ToolRack also affords stand-alone operation.

GTR Amp offers 32 modeled amplifiers, 25 for guitar and seven for bass. Each amp has drive and tone controls, and can drive two cabinets. Choose from 27 modeled cabinets, then select a single mic for each cabinet and place it on- or off-axis to the cabinet. Guitar cabs offer a selection of seven different mics, while bass cabs have six mics in their menu. Tweak the volume, phase, pan and delay of each cabinet/mic combination independently of the other. Bass amps let you control the mix of direct and processed sounds—a great feature.

FIG. 6: Waves GTR ToolRack puts stomp effects, amp/cab/mic combinations, a tuner and a presets directory only one mouse-click away.

GTR Stomp features a pedalboard replete with 26 stompbox effects, including vibrato, tremolo, EQ, octaver, doubler, panner and volume pedal. Effects can be placed both before and after the combined amp and cabinet, chained in serial and parallel configurations, and synched to a host DAW's tempo or set using tap-tempo. You can automate 96 ToolRack parameters in a DAW or control them in real time by MIDI.

Built-in WaveSystem preset management provides 32 undo and redo levels each, something I wish other guitar-processing plug-ins also provided. You can also switch between two different setups for A/B comparisons.

GTR3 V. 3.5 offers much more than 300 presets, most of which sound stunningly realistic and are of practical use (see Web Clip 8). The presets' programming is at once deft and very adventurous, with bizarre-sounding presets joining more traditional fare. An eminently wide range of clean to high-gain amps and a bumper crop of quality effects make GTR 3.5 especially versatile. The documentation is excellent, but you won't need to read it; GTR 3.5 is one of the most intuitive programs reviewed here.

FIG. 5: The GUI for Peavey ReValver MKIII stacks modules from top to bottom in the order of signal flow.

Which Is Right for You?

For the widest variety of high-quality preset tones, GTR3 and POD Farm Platinum get the nod. POD Farm Platinum offers more than 300 presets that re-create guitar tones used in hit songs (identified by the name of the song), making it a great choice for guitarists in cover bands.

GTR3 was the easiest plug-in to use, while TH1 and ReValver had deeper feature sets. AmpliTube Fender is a must-have for Fender aficionados. For high-quality bass sounds, the best plug-ins were GTR3, POD Farm Platinum and AmpliTube Fender. Considering its rock-bottom price and competitive performance, GTR3 offers the best value. Guitar Rig 3's synth and FX presets are great for guitarists looking to transform their sound in unusual and flattering ways.

All of the plug-ins except ReValver MKIII consistently allowed a buffer setting of 64 samples in Digital Performer with plenty of CPU headroom to spare. Depending on how powerful your computer is and your DAW's buffer setting, your mileage may vary. But one thing's for sure: Guitar-amp-simulation software—in terms of tone and playability—has truly arrived. EM

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Happy Singers

Advice for making your vocal sessions as productive as possible

By Steve Skinner

In the studio, singers give their best performances when they're comfortable, confident and contented. As the producer, it's your job to make them feel that way. This article will delve into a number of key subjects related to vocal producing, and offer tips to help make your sessions go as smoothly as possible. I'll look at session preparation, choosing the right gear for your vocal chain, getting a great headphone mix, compressing on input, understanding when to press on with more takes and when not to, critiquing constructively, dealing with pitch problems and more.

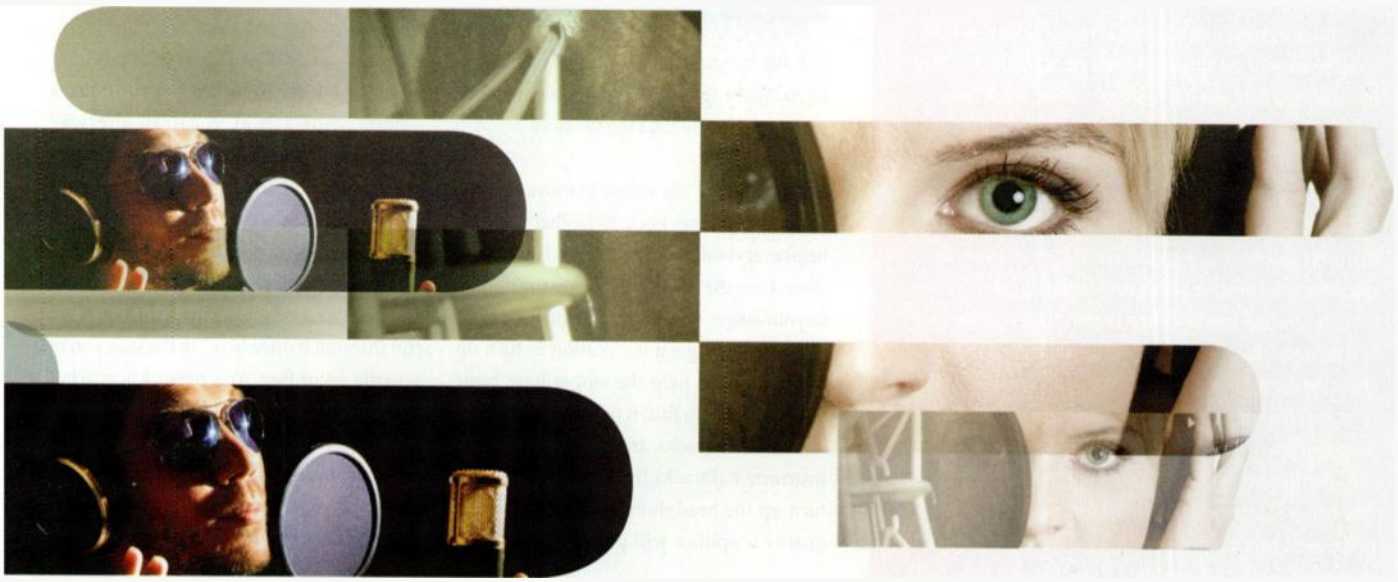
First Things

The late Arif Mardin was an expert at making singers feel at ease and at recording great performances. When a singer arrived for a session, Mardin would go out in the hallway to greet this person at the elevator and show him/her back to the studio. He was always gracious, positive, relaxed and funny. He would make the artist feel like a star and a co-creator.

When singers come to my suburban studio, I also greet them at the door. I make sure that the coffee is made or whatever tea they like is ready for them. I have water for them in the studio. I make sure the studio and bathrooms are clean. I try to make them feel welcome without fawning. I make lunch for them. Good sandwiches make good records.

It's important to set up as much as possible *before* the singer gets there. Create as many vocal tracks as you may need in your DAW, both leads and backups. Set up a good vocal reverb on an aux track and send a moderate amount of each vocal track to that reverb (see Fig. 1). Make sure the instruments are turned down lower than normal so that the vocal can be louder without overloading your master bus.

Happy Tracks



Singer-Friendly Gear

You can skimp in some areas gear-wise, but not when it comes to your vocal chain. Invest in at least one good mic and mic pre. Pick mics and pre's that barely color the sound. Added harmonics are technically distortion and cannot be removed later. The brightness of tubes can be exciting, but can also make a vocal sound small and pinched in a mix. I would recommend against using both a tube mic and a tube mic pre at the same time.

If you own more than one good vocal mic and you haven't worked with the singer before, set up all your mics and record the same song section on separate tracks with each mic. Listen to each track and—this may sound a little weird—let your heart, not your ears, decide which mic is better for that singer.

You can help keep levels under control by lightly compressing the signal on input. I wouldn't recommend more than a 3:1 ratio, with 3dB gain reduction at most (see Fig. 2). Keep your eye on the compressor as the session goes along; a singer can get louder as he/she warms up.

I also put a brickwall limiter in line that I've set to kick in just before digital distortion occurs in case I've failed to keep the level down otherwise.

Cue Me In

A good cue mix is critical. When I was a session player, I would sometimes get so distracted by a bad, distorted mix in the cans that I could barely play. As a producer, I always listen to the same mix the performers are hearing, and I try to put myself in their shoes in terms of what they need to hear. The vocal level, in particular, should be about 6 to 10 dB hotter than it would be in a final mix. I also use a good-quality, 100-watt amplifier just to drive the headphones. Most mixer or DAW headphone outputs don't have the power to drive even one set of headphones cleanly at recording levels.

Dos and Don'ts
(From the Singer's Perspective)

I asked a number of singers about the techniques that vocal producers have used with them to bring out their best performances. I also asked them to tell me about the factors that kept them from performing at their best. I spoke with session singers, recording artists and some who do both. From their comments, I put together this list.

Do have a positive attitude, always. Arif Mardin would say, "That was fabulous; let's try it again." You may bring up something that bothers you, but say it in an affirming, positive way. "That was great, but there were a few notes that were a little sharp, let's try it again," works better than, "Your pitch is terrible!"

Do be as specific as possible in your criticisms so that it will be easy for the singer to correct the problem. Tell him/her whether a note was flat or sharp, not just out of tune.

Do follow your intuition when making comments to the singer. If after one or two takes you have nothing to say, then say nothing.

Do have the mic(s) set up, turned on and plugged in. Have headphones plugged in and tested, and a music stand for lyrics in place before the session.

Do your homework. Listen to that singer's recordings (most singers have something up on the Web). Picture that singer's voice on the song, and make sure the song is right for him/her. Don't count on singers to change their sound for you.

Don't be heavy-handed. One singer put it this way, "I've had producers who use scare tactics and intimidation in the vocal booth, and perhaps they've managed to get some good vocals that way, but I think that way sucks and is the antithesis of what making music should be about." Another singer, who does a lot of studio work, said, "I've walked into sessions where the tension was so high you could walk a tight rope on it. And no matter how ready I was to sing or how great the sound was, it was just no fun or I couldn't get the performance I wanted."

Don't spend time fiddling with gear or the computer during the vocal session. This can break a singer's creative flow.

Don't expect singers to do well with a track that's in a bad key for them or that's in a style that they do not sing well. It's not hard to determine the best key for a singer. While listening to a previous recording of his/her voice, find the highest good note, the lowest good note and one or two really strong notes in the middle. Then determine the high, low and really important notes in the song. Match them up and you've got the right key. If you can't decide between two keys, have both of them ready for the singer.

FIG. 1: Vocal, comp and background vocal tracks set up in Digidesign Pro Tools before a session begins. Note the reverb sends are already in place and turned up.

Encourage the singer to move one ear of the headphones back off his/her ear. This helps everybody sing in tune. And once that's done, keep the vocals panned up the middle so your singer will hear everything.

There is a great temptation to turn up the mic pre to help the singer hear him/herself. Don't do this; it often results in distorted vocal tracks. Instead, lower all the instrumental tracks the same amount and turn up the headphone volume. (A good-quality amplifier will give you the headroom to do that.)

Use pro headphones: Consumer models can't handle the volume peaks of a vocal session. They also leak sound more than pro phones, causing bleed on your tracks.

Singers appreciate it when a producer is skilled at producing and arranging backup vocals. I keep a keyboard plugged in and turned on, routed through an aux channel, to help me find notes, and give reference notes to the singer, when necessary.

Takes and Tracks

I like to record five to 10 takes of a lead vocal all the way through. I find that most singers are best able to capture the emotional arc of a song when they sing it from beginning to end. Record each take on a separate track or playlist. Record everything and keep everything! When you say, "Let's run through it once first," make sure you're actually recording. You never know what you'll get in unguarded moments.

Most of the time, the first two or three takes will not sound great. At this point, it's best to just move on to the next take without much comment. By the third or fourth

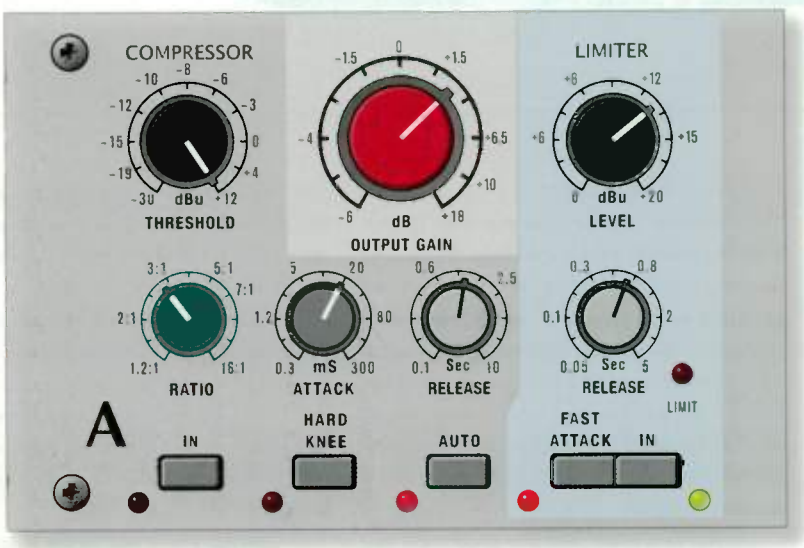


FIG. 2: The typical setting for vocal sessions on the author's Amek 9098 compressor/limiter features a 3:1 ratio and the soft-knee setting.

take, the singer usually hits his/her stride and starts sounding good.

This is a good time to make comments or perhaps listen back to the last take. I don't recommend listening to inferior takes while you're recording. The singer will just get discouraged. Generally, around the sixth or seventh take, you'll hear the singer's voice start to get tired. When the performance starts deteriorating with each successive take, it's time to stop.

There are exceptions to this arc of takes. Some singers will nail it on the first or second try, then over-think the takes after that. Others will need more than three or four takes to peak. And some will have to come back another day to really nail it. This is all okay, and it's important to let the singer know that.

Some singers, particularly session singers, prefer to concentrate on one section until it's right and then move on to the next. As long as the singer is warmed up, this method can work well as an alternative to going through the entire song on each take. This way, the singer can perfect the verse while his/her voice is still fresh, and then go to the chorus, where the higher notes are more of a strain.

Then it's time to assemble your takes into one composite performance, or comp. You can do this with the singer in the room or by yourself. I recommend using vocal pieces that are as long as possible in your comp to maximize the emotional flow. If there is a note you don't like, you can either get it from another track or digitally tune it. Don't ignore the earlier warm-up tracks. You might find some gems in there.

The Heart Of It

A vocal performance has to communicate the meaning and emotion of the lyrics. If, after a few takes, I'm not feeling that from the singer, I'll ask the him/her to think about the meaning of the lyrics as he/she is singing. Sometimes I will ask the singer to picture someone that they are singing the lyrics to. We will sometimes stop and talk about what the song means—what the writer intended and what it means to the singer.

If, on the other hand, the performance is over-emotional, I will ask the singer to try a take with absolutely no feeling or expression, just as an experiment. As very few people can actually sing with no feeling, this will sometimes yield a nicely understated performance. In any case, it provides a good baseline to start adding emotion back in.

If the singer is not locked into the beat, I will encourage him/her to concentrate more on the track than on the vocal itself. Focusing on the backbeat is particularly helpful. When a singer is having pitch problems, there are three basic options: You can try to get the best performance in terms of feel and emotion and then fix pitch problems later with Antares Auto-Tune (or the equivalent). You can work with the singer on his/her pitch and repeat problem spots until they are right. Or, if there are enough notes that are in tune, you can put together a comp track of in-tune notes. I find that a combination of these three techniques generally works best.

If I were to sum up vocal producing in a single phrase, it would be "know your stuff and be nice."

Steve Skinner (steveskinnermusic.com) has worked as a record and demo producer for 25 years, recording and engineering thousands of vocal tracks. He is also an arranger/programmer.

Put Your Tracks on Ice

Lighten up on your CPU with Ableton Live 8's improved freeze features | By Len Sasso

Before Live 8, Ableton's robust implementation of track freezing had one major drawback: It couldn't be applied to multichannel virtual instruments (VIs), where it is often most needed. With popular multichannel VIs like Spectrasonics Stylus RMX and Omnisphere, or Native Instruments Kontakt, your only choice when you wanted to reduce your CPU load by track freezing was to create a new instance of the VI plug-in and thereby forgo the advantages of using its multichannel capabilities. The new External Instrument device in Live 8 changes all that. Here I'll show how to set up a multichannel VI for track freezing and offer some tips to get the most out of the process.

Out and Back

Start by setting up your multichannel VI with enough MIDI inputs and audio outputs to let you route MIDI to and audio from each individual channel you plan to use. Some instruments, such as the aforementioned Spectrasonics VIs, have a fixed number of audio outputs but let you freely assign them to their eight built-in mixer channels. Others, like Kontakt, let you configure your own audio output structure and then assign those outputs per Kontakt instrument. I find eight stereo outputs to be a good compromise between flexibility and ease of use, and I assign the first eight MIDI channels to play the instruments on the corresponding audio channels (see Fig. 1).

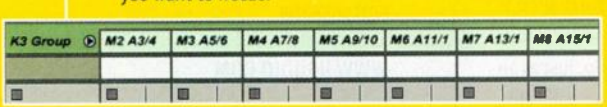
To freeze individual channels of a multichannel VI plug-in, you need a MIDI track to hold the plug-in and an ancillary MIDI track for each channel you want to freeze (see "Step-by-Step Instructions" below). Insert a Live External Instrument device on each of the ancillary tracks. On each External Instrument, set the top MIDI To box to point to the track holding the VI plug-in, set the bottom MIDI To box to the appropriate MIDI input of the VI plug-in and set the Audio From box to the corresponding audio channel. You can now play any channel in real time or from a MIDI clip on its External Instrument track.

Once you've assigned External Instruments to link to the VI plug-in, you cannot freeze the VI plug-in track, but you

STEP-BY-STEP INSTRUCTIONS

STEP 1: Insert a multichannel virtual instrument plug-in on a MIDI track.

STEP 2: Create a group of MIDI tracks for the sub-instruments (channels) you want to freeze.



STEP 3: Insert an External Instrument on each sub-instrument track and route it to the virtual instrument plug-in.

can freeze any of the External Instrument tracks. Most VIs do not present their primary audio output as a source for the External Instrument's audio input; so if, for example, the VI is configured for eight stereo channels, then only the last seven will be available for freezing. I create a group from the ancillary tracks for those seven channels and save the group along with the plug-in track (outside of the group) as a template in Live's library (see **Web Clip 1**). The group, counting the group track itself, comprises eight mixer channels, and that's handy for use with control surfaces such as the Akai APC40 that operate on 8-track banks.

Deep-Freeze

You freeze tracks by selecting one or more of them in either Session or Arrangement view and choosing Freeze Track from the Edit menu or from the track's Context menu (right-click). All the clips in both views are frozen, and the backgrounds of frozen assets (clips, plug-in effects, plug-in automation, etc.) turn icicle-blue. You can change and automate Live mixer parameters (including effects sends), trigger clips and set Follow Actions in Session view, and you can move frozen clips around, including between Session and Arrangement view either manually or by recording.

You'll find the audio files generated by freezing in the project's Samples folder. Their names begin with "Freeze," followed by the track name and a serial number when necessary, and they are not deleted when the track is unfrozen. If you move or copy a frozen clip to a Live audio track or flatten a frozen track, the resulting audio clips refer to the same Freeze files.

Freeze files are always 32-bit, but you can easily convert them to the bit-depth chosen in Live's Record preferences by using the Consolidate command (Command + J) in the Arrangement view. There's no reason to convert them for use in Live, but it may be necessary if you want to use them in another application.

Freezing is a great way to take advantage of the randomized operations featured in many plug-ins. For example, you can lock-in variations created with Stylus RMX's Chaos Designer. First, copy the clip playing the RMX part to several clip slots on the same track. Then freeze and unfreeze the track, audition the frozen clips in Live's browser, delete the rejects (that's the reason for unfreezing the track) and rename or move the keepers to a new folder. Repeat the process until you have as many keepers as you need. EM

FIG. 1: This 8-stereo-channel Kontakt 3 Multi and companion mixer configuration is a convenient setup for track freezing.

Len Sasso is an associate editor of EM. *For an earful, visit his Website, swiftkick.com.*

STEP 4: Create scenes or an arrangement.

STEP 5: Freeze the MIDI sub-instrument tracks to reduce CPU load or preserve random elements.

STEP 6: Consolidate audio freeze files in Arrangement view to convert the bit-depth to the settings in Live's preferences.

This Battery 3 prepared-guitar kit's pads are color-coded to match their effects plug-in routing.

Twang, Rattle and Thunk

Electronic instrument preparations in the spirit of John Cage | By Len Sasso

Although John Cage was not the first person to alter the timbre of an acoustic instrument with foreign objects (nuts, bolts, rubber wedges, etc.), he was the composer who, in the mid-20th century, famously applied the technique to a grand piano and wrote music especially for it. The *preparation* turns the piano into a percussion instrument with some pitched sounds, along with a variety of rattles, thunks and twangs. In 2004, Big Fish Audio (bigfishaudio.com) released an authorized and meticulously sampled prepared-piano library for $99.95 (see Web Clip 1). You'll also find a prepared Fender Rhodes library ($19.99) at the Website of French sound designer Les Productions Zvon, lesproductionszvon.com.

With a little attention to detail, you can create your own reasonably authentic preparations of acoustic instruments using a multi-output drum sampler and a few well-chosen effects plug-ins. For my examples, I'll use a sampled guitar, Native Instruments' Battery 3 and five common effects.

Got Pads?

The primary advantage of a multi-output drum sampler is that pads have individual output routings, letting you easily choose and change the effect applied to each pad. Pads typically have controls such as volume, pitch and filter envelopes that are useful for sculpting the sound before effects processing. But most sampled instruments don't come in drum sampler format so you'll probably need to start by capturing slices from a conventional sampler.

Because you're radically altering the original sound to create a percussion instrument, you don't need multiple velocity layers, and grabbing two or three octaves is usually enough. Load up a sampler with the instrument you want to process and create a MIDI clip of consecutive whole-notes for the pitches you want to capture—for example, a few octaves of the chromatic scale. Adjust the tempo until each sample plays for its full length and then render the MIDI clip to audio. Slice the audio file to separate the notes and then load the slices into your drum machine's pads. I started with a sampled guitar offering 33 notes (E1 to C4) and used Iced Audio AudioFinder (icedaudio.com) to slice it up.

Next, insert the drum machine on a DAW track and route several of the drum machine's auxiliary outputs to their own mixer channels or to other DAW audio tracks to let you apply effects plug-ins; the exact method depends on how your DAW handles multi-output virtual instruments. The effect (or effects chain) that gets applied to each note is determined by the drum-machine pad routing (see the figure above). Once you've developed a good set of preparation effects, you can get added mileage out of them by re-routing your drum pads, and output routings are usually saved as part of the drum kit.

Plunk and Twang

For my prepared guitar I used five common effects: resonator, moving comb filters, granular processing, distortion and a physical-modeled pipe effect. I avoided obviously electronic sounds and effects with a tail such as reverb and delay because they're not true to the spirit of acoustic preparations. I used Battery 3's main output for unprocessed notes. You'll hear all 33 notes in Web Clip 2—the first note is unprocessed, and the next five illustrate each of the effects in the order listed.

One thing you'll notice in prepared pianos is that the preparations often damp the notes quickly. The effects mentioned don't do that, but shortening the decay (with no sustain) on the pad's volume envelope accomplishes the same thing. Applying a small amount of pitch bend with a short pitch envelope is another effective pre-effects trick. Use the pad's lowpass, bandpass or highpass filter to place the sound where you want it in the mix. Because all these adjustments affect individual pads, you can use them to vary preparations routed to the same effect.

Using separate MIDI clips for the notes feeding each effect or for patterns of different length or meter is more flexible than using a single MIDI clip to play all the pads (see Web Clip 3). You might also sequence parts with the drum machine's built-in sequencer, or if it doesn't have one, with an external step sequencer. EM

Len Sasso is an associate editor of EM. *For an earful, visit his Website, swiftkick.com.*

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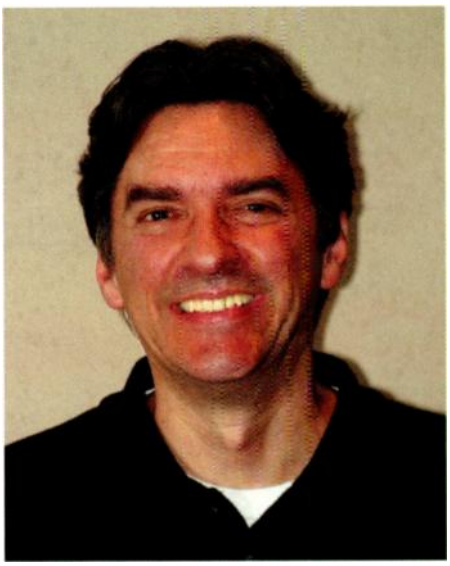

COURTESY PAGE KELLEY

Page Kelley is a partner in the law firm Baker & Kelley.

Q&A: Page Kelley

Co-publishing deals give songwriters more income and control

When you sign a publishing deal, you typically agree to give half of your songwriting royalties (not to mention 100 percent of the copyrights to your songs) to the publisher. So why not promote your songs yourself and keep all that money?

The reason is *reach*. An established publisher has the connections and clout that can make the difference between your songs getting recorded by major artists or used in a movie or on TV, or languishing on a shelf undiscovered. Having a publisher handle all the business, legal and administrative aspects of songwriting also frees you up to devote your time to the creative task of writing songs. Still, many songwriters balk at "giving away" their copyrights and a big chunk of their songwriting royalties to a publisher. For some songwriters, there may be another option available that strikes a happy medium: the co-publishing deal. This type of song-publishing agreement allows songwriters to earn a larger piece of the royalty pie and also retain greater control over the use of their songs.

By Michael Cooper

To find out more about co-publishing deals, I talked with attorney Page Kelley of Baker & Kelly, a Nashville-based law firm that offers legal services to songwriters, artists, producers and independent record labels. The information Kelley provided applies to co-publishing deals in every genre of music and all music centers.

What is a co-publishing deal as opposed to a "full" publishing deal?

In a full publishing deal, your publisher owns 100 percent of the copyright in the song you've written. That 100 percent pertains to copyright ownership [only] and not the income stream. That's an important distinction to make. It doesn't mean that the publisher is keeping 100 percent of the income the songs earn and paying you a pittance. It generally means that 50 percent of that income goes to you. The writer's share is 50 percent of net income even though the writer doesn't own any portion of the song he's written. A co-publishing deal, on the other hand, is any deal in which the writer retains some

ownership interest in the songs he's written. With a co-publishing deal, the writer also owns a piece of the "publishing" [income], so a portion of [what would otherwise be solely] the publisher's share of income is also retained by or paid to the writer.

What's the typical percentage of the publisher's share of income that the writer gets in a co-publishing deal?

I don't think there's a typical percentage. But oftentimes, when people talk about a co-publishing deal, they're talking about a "50/50" co-publishing deal. The publisher and the writer would evenly split ownership of the song(s). For example, if a dollar of income flows in, the writer would retain 75 cents of every dollar [100 percent of the songwriter's 50 cents share, plus 50 percent of the publisher's 50 cents share] and the publisher would retain 25 cents.

Are co-publishing deals common?

They're more likely to be offered to a writer who has some sort of track record with songs he's written in the past or has a successful catalog (of songs) that he himself owns. A "track record" may mean you've had a publishing deal in the past but don't own any portion of the songs you've written. Your publishing deal has been terminated and you're free to pursue something new. Because you've demonstrated that your songs have value, it's more likely the [new] publishing company would be willing to give you something more than they give a brand-new writer. It would likely be a co-publishing interest. Alternatively, you could go to a publisher that already owns some portion of the songs you've written and negotiate down the road something better for new songs. It's very unlikely that a new writer will be offered a co-publishing deal right off the bat, whether it's for a single song or for a group of songs. But even if it's not offered right away, when negotiating a three-year songwriter agreement with a publisher, it can be negotiated that perhaps a co-publishing interest kicks in during the second or third year. Or once you're fully recouped, when you have earned "x" amount of dollars, you get a co-publishing interest in songs you write after that point. It can be done on a song-by-song basis, where you get a co-publishing interest in a particular song once it has been exploited on an album on a major label.

Some unpublished songwriters will take on the expense of producing their own high-quality song demos and then approach a publisher with a co-publishing proposal. The leverage here is that publishers don't risk their own money producing demos—they're ready to pitch. Is that tactic often successful?

That may work with smaller publishers. But with larger, more established publishers, while a well-produced demo may bring your songs to their attention, the costs associated with the demos are going to be relatively small compared to the costs they're looking to incur to market and promote your songs. For example, here in Nashville, typical demo costs run somewhere between $500 and $1,000 per song. Depending on the publisher, their decision on whether to give you a co-publishing deal won't be based on whether you can come to the table with five demos done or not.

Assuming you have the requisite track record, is there any downside to getting a co-publishing deal instead of a full publishing deal?

It may be a disincentive to the publisher to [pitch your song] as opposed to another writer's song or to continue on with you as opposed to with someone else who they're paying less money to for basically the same services, if those services are equal.

I see. The publisher has a bunch of staff writers with full publishing deals that they're paying stipends to, which they would like to recoup. The publisher earns 50 percent of the net income from songs written by them. A song written by a writer with a co-publishing deal, on the other hand, might only earn that publisher half as much money in percentage terms. That's got to influence them.

To the extent that there's some question about how well your songs are doing and whether your contract is going to be renewed for an additional year, it may be easier for a publisher to say "no" if their share of any net income [from your songs] is smaller.

Is there anything you should have in the contract to protect your interests should you be let go in the future?

It's very important that you have co-administration rights kick in after your contract term ends. [These rights allow you to, among other things, license the songs.] Generally, while you're signed as a writer, your publisher is the person who licenses your songs. You're not going out separately and competing with your publisher to find licensing opportunities. But after you're no longer signed to them, if your publisher retains 100 percent of administration rights and you leave with only a co-publishing interest, you're relying on your former publisher to continue to exploit your songs. You won't have any control over whether your songs are exploited or not. You want to have the right to seek out licensing opportunities for that song—including movies, television shows or people to record that song—and to enter into those licenses. Co-administration rights are also a major benefit to you if you ever try to sell your song catalog.

What's far more important is to find a publisher who believes in you as a writer and in your songs.

Is there anything else you want to add?

When we're talking with writers about deals, obviously we're going to do everything we can to negotiate a co-publishing deal for them. But I really think what's far more important is to find a publisher who believes in you as a writer and in your songs. If so, you're going to be successful, they're going to be successful, and very soon down the road the co-publishing arrangement can work itself out. You may be able to strike a co-publishing deal with a small publisher, but if they don't have good songpluggers in place [see *EM*'s interview with songplugger Sherrill Blackman in the June 2009 issue, available at emusician.com], if they're not good at marketing and promoting your songs, you may end up with a co-publishing interest in a song that is never exploited by anyone and never makes any money. You have to be sure the publisher has the ability to exploit your songs. If so, that's great. If they don't, you're better off not signing a deal at all. EM

Songwriter and publisher Michael Cooper recently had a song cut on Dave Russell's new project, produced by Jerry Cupit for Cupit Records.

Roland

V-Piano

The ultimate in physical modeling?

>>PRODUCT SUMMARY

digital piano
$5,995

PROS: Realistic sound. Responsive touch. Timbral versatility.

CONS: Expensive. Parameters could be better documented.

FEATURES	1	2	3	4	5
EASE OF USE	1	2	3	4	5
QUALITY OF SOUNDS	1	2	3	4	5
VALUE	1	2	3	4	5

rolandus.com

ONLINE BONUS MATERIAL

By Geary Yelton

Until fairly recently, the only practical way to virtualize an acoustic piano was to sample each note at numerous velocities and then format the resulting data for a sample player. That technique has been the basis of every digital piano since Kurzweil introduced the K250 in 1984. Then, in 2006, an upstart software developer called Modartt introduced Pianoteq, which successfully reproduced the sound of a grand piano using physical modeling. Until then, attempts at piano modeling were relatively crude and unconvincing. Since the late '90s, Roland has been independently pursuing the dream of creating a completely convincing modeled piano through its own R&D efforts.

Fast-forward to NAMM 2009: Touting the V-Piano as the pinnacle of its V Series—which includes the V-Guitar, V-Drums and V-Accordion, among other products—Roland hosted a major press conference with some dynamite performances (see Web Clip 1). The assembled members of the press saw video clips demonstrating the V-Piano's core concepts; you can watch the same clips on Roland's dedicated V-Piano site (roland.com/V-Piano).

The V-Piano is an 84-pound, 88-note keyboard instrument that re-creates the sound and experience of playing a fine acoustic piano (see Fig. 1). Physical modeling emulates components such as the strings, frame, soundboard and damper. The V-Piano lets you specify all the parameters that make up a piano's components and then change them at will. You can build a virtual piano from scratch, defining characteristics such as the number, tuning and resonance of the strings. You can change those parameters in real time using a front panel dial or an expression pedal, or call up an entirely new piano by simply changing programs.

The Whole Package

The V-Piano was delivered in two very large boxes: one containing the piano itself and the other containing the impressively hefty KS-V8 stand. I spent most of my setup time assembling the stand, which has four adjustable feet and channels that attach to the legs for hiding cables.

FIG. 1: The V-Piano uses physical modeling to emulate every component of an acoustic piano. It lets you modify its virtual components in unprecedented ways, and it offers a touch-sensitivity that's impossible on sampled pianos.

The piano attaches to the stand with four knob bolts, which should make tear-down and setup a snap as long as you have at least two people to handle the weight. Once assembled, the stand is absolutely rock-solid, without the least bit of wiggle. It doesn't collapse without disassembly, though, so you'll need plenty of room to transport it if you're in a hurry.

The generous monochrome LCD on the V-Piano's sloped control panel has four assignable function buttons below and a large Value dial to its right, with Write and Exit buttons below that. (see the Online Bonus Material, "The Grand Tour") On the left are knobs for volume and ambience (reverb depth) and buttons that enable Roland's V-Link and instant transposition. Another button accesses the 4-band parametric equalizer (you can switch the high and low bands from peaking to shelving). Four more buttons summon any four presets, called Tones, that you indicate. On the far-left, a USB jack accommodates a memory stick or CD player. A ¼-inch headphone jack is conveniently located on the piano's front-left corner, with a nearby hook for hanging your headphones mounted on the piano's underside.

The V-Piano comes with a very nice pedal housing containing three pedals for sustain, sostenuto and soft-pedal functions; the latter two are reassignable. A single cable with a DIN plug connects the pedals to the piano's jam-packed rear panel. Also on the back, three ¼-inch connections let you connect an additional footswitch and two expression pedals or footswitches, all of which can control various parameters in real time. Real-time control of parameters such as hammer hardness and string resonance opens up new dimensions that other pianos can only dream of.

In addition to a coaxial S/PDIF output, you get four balanced ¼-inch outputs and four balanced XLR outputs. The concise manual suggests a four-speaker setup, with two speakers positioned near the performer carrying the dry stereo signal and two spaced farther away carrying the ambient signal. Other rear panel connections include Type-A and -B USB jacks; a pair of ¼-inch inputs that let you route a line-level stereo signal (from an iPod or synthesizer, for instance) through the V-Piano's outputs; and MIDI In, Out and Thru ports. One minor complaint is that there's no way to control the input's level except at the source.

Play Me, Please

The fully weighted, 88-note keyboard comes as close to a real piano keyboard as any I've played. Roland's PHA-III (for Progressive Hammer Action) keyboard is designed for quick repetition and emulates a real piano action as closely as possible. The black keys look and feel like real ebony, and the white keys appear to be the slightly off-white synthetic ivory used for fine piano keyboards in recent years. The keyboard's dynamic response is excellent. When I closed my eyes while wearing headphones, I could easily imagine I was playing a miked grand piano in the studio.

However, the action of the individual keys is much more even than I'd expect from an acoustic piano, and I can't predict how much that would change after weeks or years of playing. Considering that my review instrument is brand-new, though, it's likely the action will loosen up considerably over time, as it does with most electric pianos.

Key Parameters

In a real piano, pressing a key moves the damper away from the strings so they can vibrate freely,

FIG. 3: All of the parameters that affect a Tone are available on the V-Piano Editor's Advanced Tone Edit screen, grouped by category.

and then a hammer bounces off one or more of them. Vibrating strings cause every other part of the piano to resonate, and those resonances largely determine why one acoustic piano sounds different from another. The V-Piano emulates the physical characteristics that determine how a particular piano sounds by modeling all of its parts.

Nearly half of the V-Piano's parameters let you control the various resonances within a virtual piano. User parameters determine String Resonance, Damper Resonance, Soundboard Resonance, Key-Off Resonance and Cross Resonance. String and Damper Resonance affect the sympathetic vibrations of other strings when you play a note, including strings that are already sounding. Increasing Soundboard Resonance emphasizes the soundboard's contribution to piano tone, and its effect was very obvious to me.

Cross Resonance has the greatest effect on a tone's harmonics, and hence its waveform; the higher the Cross Resonance, the brighter and more metallic the sound. When you change Resonance in the V-Piano's display, you're changing Cross Resonance.

Pianos have one, two or three strings per note. If a note has more than one string, the Unison Tune parameter detunes them relative to one another. When you change tuning in the display, you're changing Unison Tune because it has a profound effect on the overall sound. Stretch Tune, on the other hand, affects an entire range of pitch; normally, it deviates from equal temperament to more closely simulate how real pianos are tuned. Raising the Sound Lift parameter increases the amplitude of playing softly and reduces the overall dynamic range.

One aspect of the V-Piano's physical modeling didn't meet my expectations. My impression from presentations I'd seen at NAMM and online led me to believe you could define the materials from which the virtual strings were made—copper, silver or steel, for example. In reality, Cross Resonance had the greatest influence on my perception of the strings' metallic nature. Like most V-Piano parameters, Cross Resonance offers a continuous range from -100 to +100 rather than letting you select from a list of virtual metals. Hence, when Roland says that a preset Tone's strings are wound in silver or copper, that's a purely subjective impression.

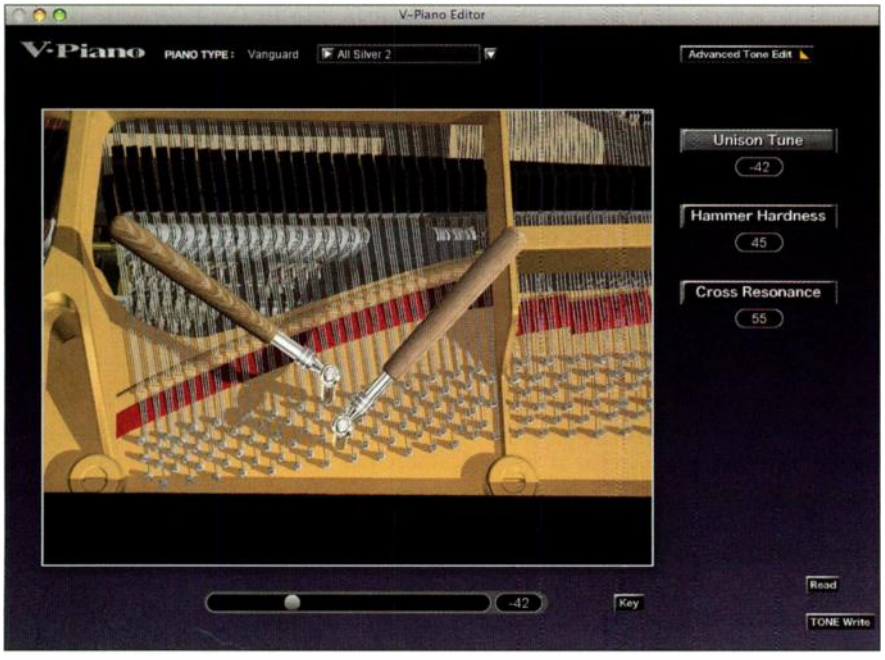

FIG. 2: The Mac- and Windows-based V-Piano Editor simplifies the process of designing and modifying virtual pianos. The Unison Tuning screen lets you detune all strings played by a single key, relative to one another.

The Softer Side of Modeling

Making major changes to presets, as well as creating virtual pianos from scratch, is considerably easier when you use the included V-Piano Editor (Mac/Win). The software offers numerous views, some providing clever uses of animation. When you move the value slider in the Unison Tune screen, for example, you see a 3-D representation of wood-handled tuning levers adjusting the onscreen piano's tuning pins (see Fig. 2). The Hammer Hardness screen shows the felt changing in size and thickness. You get similar views in the Basic Tone Edit and Cross Resonance screens.

The Advanced Tone Edit screen displays most parameters in a single window. It presents all of the variables that make up a Tone in an easy-to-grasp format (see Fig. 3). Most sections allow individual settings for each string, and each has a button to access a graphical note map. For example, the Tuning page lets you graphically tune individual strings. You can specify exotic or even microtonal tunings and save them within user presets. Most parameters can be graphically adjusted on a per-string basis, making it possible to program a custom piano in which every note is completely different from all the others.

As Real As It Gets

What Roland has accomplished with the V-Piano is simply stunning. Never before have you been able to control so many aspects of a virtual piano's sound—from string tuning and overtones to the hardness of individual

hammers. Because you can push the V-Piano beyond the boundaries of physical reality, it doesn't have to sound like a conventional piano unless you want it to.

Programming your own piano sounds is not so different from programming synthesizer sounds. If you intend to design your own Tones on the V-Piano, it will help to thoroughly understand the physics behind them; that means not only understanding pianos, but understanding all the V-Piano's parameters. The manual doesn't go into enough detail on that score, so you'll be on your own.

The V-Piano sounds more like an acoustic piano than any non-acoustic instrument I've heard, but it has limitations. For example, an acoustic piano has no maximum velocity threshold; if you strike a key really hard and then strike it even harder, you'll hear a difference between those sounds. An electronic instrument, however, has a maximum velocity level; after a point, striking a key harder has no effect. In addition, the harmonic complexity of long, sustained notes didn't always vary enough to fool my brain completely. But I could hear such artifacts only when I listened very carefully and critically; they would be completely lost in the context of a musical performance.

The V-Piano plays beautifully, with an action that comes as close to a real grand as any digital piano I've laid my hands on. Although it may lack the organic quality of hammers bouncing off physical strings that a real piano has, I'm afraid that technology will never completely convince any player who's experienced enough to know the difference.

Nonetheless, the Roland V-Piano easily delivers the most realistic playing experience of any digital piano I've played. It sounds absolutely wonderful, and it's the only one that lets you design your own piano from the ground up. Its price will put it out of reach for most musicians, but I'm hoping it will be the first of a new generation that will include less-pricey models. It's still much less expensive than any acoustic grand and many times more versatile.

EM senior editor Geary Yelton has always loved pianos (and not just because they're big complex machines). He currently lives on the edge of Charlotte, N.C.

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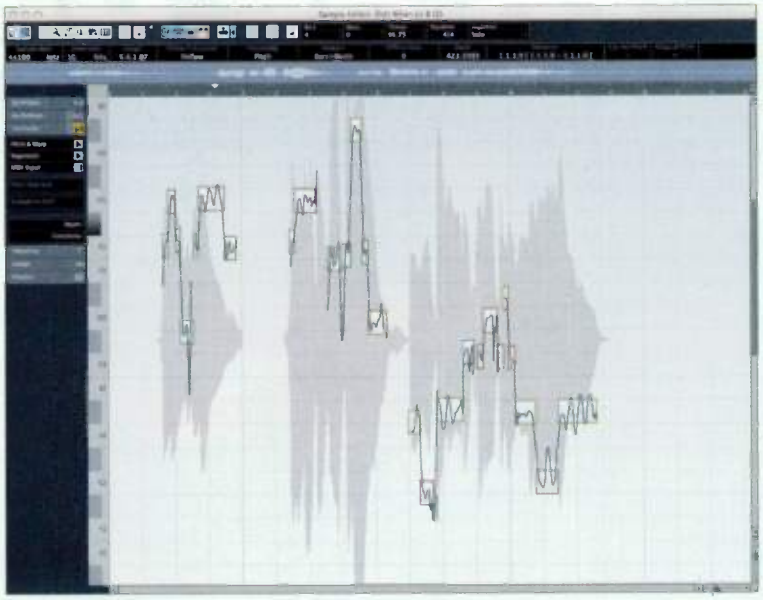

FIG. 1: The VariAudio window in Cubase 5 analyzes audio tracks, letting you adjust an audio segment's pitch and time.

Steinberg

Cubase 5.01 (Mac/Win)

This revamped sequencer has rhythm and then some

By Marty Cutler

PRODUCT SUMMARY

digital audio sequencer
$599.99 MSRP

PROS: Creative new rhythm instruments. Ridiculously simple and creative pitch-correction tools. VST Expression simplifies hyper-realistic sample playback. Very high-quality instrument sounds.

CONS: Requires Syncrosoft dongle.

FEATURES	1	2	3	4	5
EASE OF USE	1	2	3	4	5
QUALITY OF SOUNDS	1	2	3	4	5
VALUE	1	2	3	4	5

steinberg.net

ONLINE BONUS MATERIAL

Cubase 4 contained several stunning-sounding new synthesizers, two of which ventured far afield of the typical analog-modeling and sample-playback fare. Subsequent updates brought sidechaining for VST plug-ins and improvements to the MediaBay. Cubase 5 brings several rhythm and looping tools to the table, two new pitch-correction features, a very nice convolution reverb, a clever VST-expression feature (see the **Online Bonus Material** at emusician.com/bonus_material) and more.

I had no issues with the dongle-based Syncrosoft licensing software, and installation and authorization were relatively quick. I tested Cubase on two Macintosh systems: an Intel dual 2.8GHz quad-core Xeon with 6 GB of RAM and a MOTU 896 audio interface, and a MacBook Pro 2.93GHz Core 2 Duo with 4GB RAM and an M-Audio Ozonic audio interface. Both machines were running Leopard OS 10.5.7.

Make Your Pitch

Anyone familiar with the basic operating concepts of Celemony Melodyne should be comfortable with Cubase 5's new VariAudio feature. VariAudio parses the audio from a monophonic track into discrete but connected events (segments, in Cubase-speak) in a grid, as if it were a MIDI piano roll. Once that is done, you move segments vertically to change pitch, or horizontally to alter timing and duration (see **Fig. 1**). A handy scissor tool lets you work on smaller segments. You can also glue together unconnected segments and alter the pitches so they rise and fall. I particularly like the sliders for straightening pitch, which can ease off or emphasize vibrato. All those moves produce a very natural-sounding result.

VariAudio is not a plug-in; it is directly accessible from any audio track. It is also considerably more than a vocal processor, providing analysis algorithms for percussion, plucked instruments, pads and other sounds. I got useful (often excellent) results from a variety of material.

MIDI data integrates beautifully with VariAudio. Choose a segment and use your keyboard controller to move the segment to a desired pitch. Select Extract MIDI from the Inspector menu to generate MIDI note data with or without pitch bend. Selecting continuous pitch-bend data will bring up a suggested pitch-bend range for your target synth. Despite my misgivings about audio-to-MIDI conversion, VariAudio did an excellent job on a difficult, melismatic phrase that I warped even further (see Web Clips 1a, 1b and 1c).

The PitchCorrect VST-3 plug-in bestows real-time, on-the-fly pitch correction, and its uses extend beyond simple adjustments in intonation. You can change gender, change the pitch of formants, use MIDI input to conform audio to scales and much more. What's more is how absurdly easy these plug-ins are to work with. The manuals—online and hard-copy versions—are clear and focused. Moreover, the installation disc holds plenty of helpful videos that accompany Cubase tutorial exercises.

IR-Reverence

Steinberg's new convolution reverb, Reverence, is simple to use, even sporting a graphic area to illustrate the origin of the impulse response (IR). Click on the Equalizer tab, and the graphic is replaced by an EQ for high, low and midrange frequencies. A button lets you fire a short noise burst to audition the impulse you have loaded.

Steinberg supplies a great-sounding starter set of IR files. You can, of course, import and store any that you have gathered, and virtually any audio file is fodder for an IR. The upper-right-hand corner of the plug-in has 36 slots to hold impulses and settings—a very convenient way to winnow a choice of settings without constantly navigating to the MediaBay browser. I imported everything from microphone models to cat meows with fascinating sonic results. The meow was too long, but I was able to adjust the onset and length of the IR.

Bangers 'n' Mash

If you want to assemble killer grooves from loops and drum machines, Cubase 5 has some new treats in store. LoopMash is a unique loop-slicing and -sequencing plug-in (see Fig. 2). You layer loop tracks and assign one as a master track. Subsequent layers will then conform to the rhythm of the master track but randomly replace its slices on playback. You can tune each track in semitone increments in case you find a useful loop in a different key. You can create up to 12 scenes, each of which comprises as many as eight layered tracks.

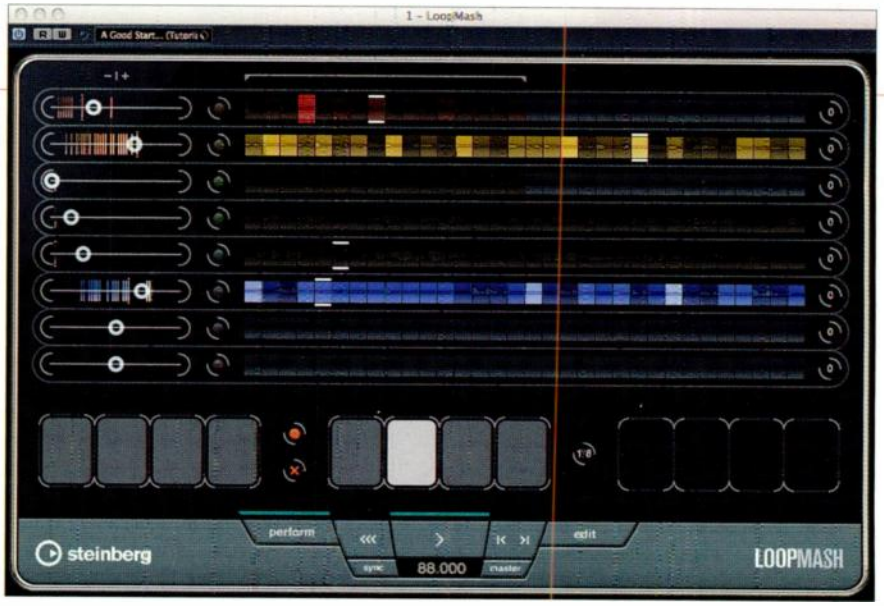

FIG. 2: LoopMash provides tracks for dragging and dropping loops whose slices can be triggered at random by the master loop.

Similarity sliders control the incidence of a loop's occurrence during playback. LoopMash can take on a fascinating, improvisational character (albeit with somewhat of a sound-collage quality) with elements of each loop popping in and out of the overall groove. The constant recombination of different loops brings about plenty of pleasant surprises. There's a healthy breadth of styles in supply, ranging from the funky, Cantaloupe Island–style groove of *A Good Start* to intense drum 'n' bass grooves to fusion and funk. And mixing up styles is the point of the instrument (see Web Clip 2).

Design of the Times

For more deterministic rhythm programming, it's hard to beat a step-input, pattern-based sequencer. Cubase 5's new Beat Designer is a MIDI-processing plug-in for hardware or software drum modules. If you are already at home with sequencer drum editors, your learning curve will be minimal. You paint notes in a grid that corresponds to an axis of time and kit pieces mapped to pitches and then assemble patterns in the context of a loop, which will sync to the rest of the tracks.

Beat Designer is easy to operate and allows for plenty of on-the fly editing. You control velocity for each hit based on your cursor's vertical position in the grid. If you don't quite nail the velocity, click and drag on the grid's vertical axis; the color-coded grid will display velocity values, and the cell will change from dark brown through red to an incandescent yellow as you drag upward. Plenty of other amenities, including sliders for swing and per-instrument grid offsets, let you tweak your groove to perfection.

Groove Agent One is an excellent companion piece to Beat Designer. It's a versatile, 32-pad drum module. From the MediaBay, the Sample Editor or directly from a sliced track, drag up to eight samples onto each pad for layers or velocity crossfading. That provides a healthy amount of expressive capability. Groove Agent One is compatible with WAV, AIFF and MPC-format files. Furthermore, Cubase will automatically distribute sliced grooves from an audio track across the instrument's pads for customized beat creation. Dragging a sliced groove is particularly handy because Groove Agent One can generate a MIDI file based on the slices, letting you tweak the groove even further.

Steinberg has updated and streamlined its work flow in many more ways than I have space to cover. For instance, discrete time signature and tempo tracks are accessible and clearly visible from the Project window alongside MIDI and audio tracks, thereby placing dynamic meter and tempo changes in a visual context.

Cubase has grown into a pliable, professional DAW, equal parts uncompromising recording workstation and composer's musical playground. I had lots of fun putting Cubase 5 through its paces. Can you think of a better recommendation than that?

Marty Cutler is working with Kenny Kosek and other cohorts on an eerie blend of Appalachian music and electronica—stay tuned!

Similar to Blue's higher-priced Bottle mic, the Bottle Rocket comes with a single capsule you can replace with any of eight other Bottle Caps (available separately). Pictured: the Stage One.

Blue Microphones

Bottle Rocket Stage One/Stage Two

Two microphone bodies, many capsules

By Myles Boisen

>> PRODUCT SUMMARY

condenser microphones
Stage One: $699.99 MSRP
Stage Two: $1,595.99 MSRP

PROS: High output, low noise. Modular capsule system. Stage One's wood cases for mic body and capsule. Stage Two's lavish case and features.

CONS: Shockmount is not completely satisfactory. B8 capsule is a bit bright.

Stage One

	1	2	3	4	5
AUDIO QUALITY:				4	
FEATURES:			3		
VALUE:				4	

Stage Two

	1	2	3	4	5
AUDIO QUALITY:				4	
FEATURES:				4	
VALUE:				4	

bluemic.com

Blue Microphones has been cranking out innovative microphone designs for years, along with clever names for transducers derived from its top-of-the-line Bottle microphone. The new Bottle Rocket mics use the same detachable capsule set developed for the original Bottle. The Stage One microphone body is a Class-A solid-state and the Stage Two is a tube (ECC83) amplifier design.

Though they differ in their amplifier sets and related features, the Stage One and the Stage Two have physical and functional similarities. Their cylindrical bodies are the same size, measuring 7 inches long and 5.5 inches around—roughly the same size as Blue's Baby Bottle and very similar to the Neumann CMV 563.

The CMV 563 was one of the first microphones to use a switchable bayonet-mount capsule (see Fig. 1). Anyone owning one of these vintage pieces will be happy to find out that its capsules are fully interchangeable with those in the Blue nine-capsule set (see the **Online Bonus Material**, "Blue Bottle Caps," at emusician.com/bonus_material.")

The Stage One and the Stage Two come with the all-purpose cardioid B8 capsule, housing a large diaphragm with a presence boost optimized for modern vocal sounds. Other capsules are available separately, but you can't substitute any of them for the B8 when you purchase a Bottle Rocket kit. The B8 (and all the Bottle Caps) fits over the mounting stem at the top of the mic. Once on the stem, a slight twist locks the capsule in place. Unlike on the original Bottle, the bayonet-mount stems on the Bottle Rockets are fixed and can't be swiveled toward or away from the source.

A shockmount with familiar European styling comes with each mic body. The mount has two fabric-lined bands that latch around the middle of the cylindrical microphone body, as well as sturdy elastic bands that suspend the inner cage assembly and a 180-degree swivel mount attached to the outer ring. An eight-page manual is included, and the Bottle Rockets feature a three-year warranty.

Stage One: Prepare for Takeoff

A lustrous blue powder-coat finish adorns the solid-state Stage One microphone, with distinctive art-deco caps at both ends. Blue's logo stands out in chrome, indicating the mic's address side when a capsule is attached. The body and B8 capsule are stored in separate wood boxes with snug-fitting foam inserts. Though not as elegant as Blue's earlier cases, they're a step up from the cardboard and plastic boxes supplied by most mic manufacturers. This set is delivered in a cardboard shipping box, with the microphone case, capsule case and shockmount nestled securely inside.

Stage Two: We Have Ignition

The Stage Two tube microphone is physically similar to the Stage One body, but with a glossy deep-blue sparkle finish. This kit has a decidedly upscale presentation, with a lavish ATA flight case sporting heavy-duty metal hardware. When opened, the case practically glows with regal-looking blue velvet. Cutouts are provided for the mic body, three capsules and the tube electronics' power supply. A blue-velvet door lifts to reveal a five-conductor mic cable, shockmount and power cable.

The power supply is a simple-looking affair, built into the same retro-futuristic oval housing as Blue's Robbie mic pre. The front panel light glows red while the unit is warming up, and then glows green when it's ready for lift-off. All other features—the five-conductor mic in, balanced XLR out, power switch, IEC connector and 110/220-volt switching—are on the rear panel.

Blue Skies Ahead

Lisa Mezzacappa is a golden-eared musician who's very attentive to her acoustic bass tone. She likes the Neumann TLM 103 large-diaphragm condenser on her bass, but while she was in my studio I tried out the Bottle Rockets and their various capsule configurations.

I positioned the Bottle Rockets alongside the TLM 103 with their capsules almost touching. Blue Kiwi mic cables connected the mics to Grace Design 101 preamps, and I recorded the results to Pro Tools at 24-bit/96kHz resolution. I was impressed that the Stage One had self-noise and output level similar to the TLM 103. The Stage Two had similar high output and slightly higher self-noise, but only when listening at dangerously loud playback levels.

With the B8 capsule, the Blue Stage One mic picked up more room sound and highs than the TLM 103, with a bright response that emphasized string noise and upper midrange. The B3 capsule on the Stage One was not as bright as the 103, though its tonality was much closer to the Neumann's throughout the frequency spectrum. I still noticed a greater proportion of accurate room sound through the Blue transducer.

The Stage Two paired with the B3 yielded more depth and liveliness, and it improved high-end transparency without excess brightness. With the B8 capsule, though, the Stage Two emphasized some rattling and clacking on the bass track.

Ultimately, I preferred the sound of the Stage Two/B3 combination, although Mezzacappa's impression was that it made her sound as if she were playing harder than she actually was, with more edge on the attack of the notes. Although the TLM 103 did grant a more intimate and drier sound to the bass, the Stage Two contributed superior transient response, room tone, and overall openness and accuracy to the sound of this challenging instrument.

On a session for singer/songwriter couple Mia & Jonah, I had a chance to try out the Stage Two with a B6 capsule. On vocals, this configuration had the same familiar warmth and definition I expect from the Bottle/B6 combination that I've relied on for years. The Stage Two and B6 pairing was also great on harmonica, delivering thick and full tonality without any harshness. Although a direct comparison with the Bottle was not possible on this session, based on what I heard I would use the Stage Two alongside the Bottle without hesitation. (For more, see the **Online Bonus Material**, "Hearing Is Believing?")

One complaint concerning the Blue shockmount is that the inner rings, though very well padded, don't grip the mic securely once the latches are closed. With its glossy finish, the Stage Two is particularly prone to slipping down in the mount until it comes to rest on the raised logo or one of the end caps. Although there's no danger of the mic body falling out or getting damaged, this is a design flaw that goes against Blue's reputation for aesthetics and precision.

FIG. 1: The Bottle Rocket (this shows the Stage Two, right) and the Neumann CMV 563 are not only physically similar, but their mic capsules are interchangeable.

Flying High

Toward the end of the review process, I was a little shocked to find out how affordable these mics are. I assumed that both Bottle Rocket kits would be about double their prices. The Stage One set costs about as much as buying a B8 capsule and shockmount separately, making the microphone body basically free.

Neither the Stage One nor the Stage Two compromise on the sound quality and excellent specs for which Blue is known. For anyone who already owns a Blue Bottle, a Bottle Rocket is a great opportunity to diversify your mic closet and get more use from your capsules. A Bottle Rocket and assortment of capsules also offers versatility for the small-studio recordist who is concerned with quality and timbral range, but doesn't need a lot of mics.

Myles Boisen is head engineer at Guerrilla Recording in Oakland, Calif. Find out more at www.mylesboisen.com.

FIG. 1: The Liquid preamp channels use dynamic convolution to emulate the sound of 10 sought-after mic preamps. A "flat" setting bypasses the convolution processing (see list on right).

Preset Name	Hardware Emulated
Flat	no emulation
TRANY 1 H	API 3124+ (high-gain setting)
SILVER 2	Avalon VT-737SP
FF RED1 H	Focusrite Red 1 (high-gain setting)
SAVILLEROW	Helios Console
DUNK	Manley SLAM
CLASS A 2A	Neve 1073 (high-impedance setting)
OLD TUBE	Pultec MB1
DEUTSCH 72	Telefunken V72
STELLAR 1B	Universal Audio 610 (low-impedance setting)
NEW AGE 1	Millennia HV-3D

Focusrite

Liquid Saffire 56 Audio Interface (Mac/Win)

Classic preamps modeled in a full-featured FireWire interface

By Brian Smithers

PRODUCT SUMMARY

Focusrite Liquid Saffire 56
audio interface
$999

PROS: Eight good-sounding Focusrite mic preamps. Emulations of 10 classic mic pre's on two Liquid channels. Flexible DSP mixer. Plenty of I/O. 192kHz sampling rate.

CONS: Preamps don't sound quite as open as their hardware equivalents.

	1	2	3	4	5
FEATURES				4	
AUDIO QUALITY				4	
VALUE				4	
DOCUMENTATION				4	

focusrite.com

ONLINE BONUS MATERIAL

Focusrite's Liquid Channel caused quite a stir when it was introduced in 2003 by offering compelling emulations of dozens of coveted mic preamplifiers and compressors. Compared to a collection of vintage mic preamps, it was an incredible bargain, but at $3,000 for a single channel, it was beyond reach for many of us. Now that same technology has found its way into a reasonably priced, multichannel FireWire audio interface, the Liquid Saffire 56.

In and Out

The Liquid Saffire 56 offers two channels of Liquid preamps capable of emulating 10 different high-end and classic units (see Fig. 1)—all using the same dynamic convolution process as the Liquid Channel. Six more channels of Focusrite preamps are included, as well as S/PDIF and two ADAT Lightpipe ports. All eight analog inputs can also be used as line inputs, and two of them can accommodate the front panel instrument inputs. Focusrite claims a total of 28 input channels, but two of them are loop-back signals from the onboard mixer. While this is a useful feature, including these two in the count risks confusing potential buyers. To be clear, 26 independent external signals can be routed into your DAW via the Saffire (see Fig. 2).

There are actually 28 independent output streams, however, comprising 10 analog TRS outputs, plus the outputs of the aforementioned digital connections. The first two output channels have anti-thump circuits to save your monitors, something I wish other manufacturers would emulate. Two headphone outs with independent volume controls are available, one doubling outputs 7 and 8 and the other doubling 9 and 10.

The Liquid Saffire 56 supports sampling rates up to 192 kHz, with the expected reduction in Lightpipe channel counts at higher sampling rates. At 96 kHz, it's an 18-in/20-out interface; at 192 kHz, it's a 14-in/16-out interface. The two mixer loop-back channels are available at any sampling rate.

All Good Things

The unit exudes professional quality, from its clean design to its solid construction. Each mic input has 48-volt phantom power and a highpass filter. Both Liquid pre's and the remaining odd-numbered pre's have polarity (phase) reversal, and channels 3 and 4 have a -9dB pad. Word clock I/O provides flexibility in clocking to other digital devices. MIDI I/O is also conveniently included. The mic pre's offer 73 dB of gain—plenty for the four modern condenser mics I used.

The onboard DSP monitor mixer lets you route any 18 signals to any combination of 16 output channels (see Fig. 3). Aside from zero-latency input monitoring, there are any number of useful applications for this mixer. For remote recording, it can be used to route a mix of all inputs to another recorder for a safety copy. The loop-back can print a real-time mix to a DAW track to create an instant reference mix. Certain live inputs can also be passed on to the P.A. as necessary, and independent headphone mixes can be set up in the studio. Several included presets cover typical scenarios, such as tracking or surround mixing. User presets can be saved to the computer, and a user preset can be loaded to the hardware as a default setting.

The Saffire is an attractive option for my remote rig. It's light (I can easily hold it in one hand), only two rackspaces tall and nine inches deep, makes no noise and generates very little heat. Even without the Liquid preamps, eight channels of good-sounding mic inputs make it very convenient.

The interface worked perfectly with both Logic and SONAR, although I couldn't get by with as small a buffer (and therefore latency) on my 3-year-old Windows XP notebook as I can with my usual interface. Installation and configuration were brainless. The package even includes a suite of Focusrite plug-ins (dynamics, EQ, and reverb) in VST and AU formats.

Holding Water

In addition to convolving the input signal with a set of impulse responses painstakingly derived from the source preamps, the Liquid preamps also alter their input characteristics to emulate the source devices. In this way, the interaction between the mic and pre is re-created to get the sound as close as possible to the original. Furthermore, to emulate the variety of sounds that different models of a classic preamp create, a Harmonics setting introduces progressively higher amounts of second, third and fifth-order harmonics.

At Studio C at Full Sail University, my colleagues Atom Troy and Ryan Summers helped me do a rigorous shoot-out. We set up a matched pair of Berliner CM33 mics and a matched pair of SE Electronics 4400a mics in as coincident of an array as we could manage. We ran one of each into a Liquid preamp and the others into hardware preamps. In this way, we were able to make direct comparisons of the Focusrite Red 1 and Universal Audio 610 with their Liquid alter-egos.

Summers sang and I played baritone sax, trying very hard to play from exactly the same position and with exactly the same phrasing each time. We matched levels as closely as we could and compared the pre's at Harmonics settings of 0, 8 and 15 (full). We also tracked a couple of clips with the Liquid pre's set to Flat and New Age 1, the Millennia HV-3D emulation.

FIG. 3: A software-controlled, DSP-based mixer on the Saffire allows any 18 channels to be routed to any of 16 output channels with zero latency. It can also fold two channels back to the DAW.

FIG. 2: The Liquid Saffire 56 provides 26 hardware inputs and 28 hardware outputs, including mic, line, instrument, S/PDIF and Lightpipe I/O. It also offers word clock and MIDI I/O.

Judgment Day

The test clearly revealed the differences between the models. Each emulation discernibly sounded more like its hardware equivalent than anything else, although neither matched perfectly at any Harmonics setting. Still, the family resemblance was palpable. Both hardware preamps had a more open high end than the Liquid pre's, although on the 610 this went too far and sounded downright harsh on the baritone sax.

The Flat setting actually sounded quite good, but the New Age 1 setting sounded terrific on the bari—open, clear and lifelike. It also sounded great on Summers' vocals. I don't know how closely it matches the Millennia pre, but I know I'd like to have it in my personal toolkit. Audio clips and additional observations from this shoot-out are available at www.emusician.com.

In the final analysis, if you look at the Liquid Saffire 56 for perfectly authentic emulations, you'll probably be a skeptic until you do your own shoot-out. If, however, you view it as a full-featured, reasonably priced interface with the bonus of two channels of extraordinarily varied sounds, you just might find it difficult to resist. em

Brian Smithers is a musician, writer and educator based in central Florida. Thanks to Atom, Ryan, Eric, Darren and Andrew of Full Sail University for their assistance in the shoot-out.

KORG

microKORG XL

By David Battino

When I reviewed the original microKORG in the Novmeber 2003 issue (see emusician.com), I raved about its sound and portability but groused about its keyboard and controls. Korg followed up with the R3, featuring full-sized keys, an informative display, a better mic and an even richer sound derived from the Korg Radias. The R3 was bulkier, though, and couldn't run on batteries.

With the microKORG XL ($499), Korg aims to blend portability and power. It offers almost all of the R3's synthesis and vocoding features in a battery-powered box with better mini-keys, mic and display than the older microKORG (see **Web Clip 1**); it also gains a USB port. Six years have produced enough design refinements to make it feel like a fresh instrument.

The microKORG XL combines the sound of Korg's R3 and the portability of the original microKORG with amazingly playable new mini-keys.

XL HEALING

At just 4.4 pounds (without batteries), the XL is even lighter than its predecessor. Its textured plastic case has a peculiar flange that makes it look like a melted Fender Rhodes, but it's sturdy; the keyboard survived a flight that shattered some wooden items in my suitcase. I wish the case had pegs for a guitar strap, though.

The back panel offers left and right line outputs, a headphone output and a monophonic line input—all ¼-inch. As on the original microKORG, the input can feed the vocoder (see **Web Clip 2**) or substitute for one oscillator. The XL comes with an R3-quality mic, and a switch toggles the input to an XLR jack on top. Rounding out the panel are jacks for MIDI In and Out, USB (for MIDI only, not audio) and a wall-wart power supply, but no sustain pedal jack. The XL can run about four hours on six AA batteries, though it can't be powered by USB.

ONLINE BONUS MATERIAL

Dominating the front panel are two detented knobs for selecting from eight genres (vintage synth, rock/pop, R&B, fusion, etc.) and eight subcategories (poly synth, bass, lead, arpeggio, pad, keyboard, sound effect and vocoder). A switch calls up a second memory bank, for a total of 128 program locations. You can store any kind of sound in any slot, but being able to quickly flip through 16 basses, 16 leads and so on is efficient. Unlike the original, the XL shows names for each program and the current tempo on its backlit LCD.

I was glad to see a dedicated Tempo knob for controlling the arpeggiator and tempo-synched LFOs and effects. It's hard to dial in a precise value, but if you hold the Shift button and flick the octave-shift lever left or right, it will change the tempo by 1 bpm. That undocumented trick works in Edit mode, too, which is really fiddly otherwise because the XL gives you three non-detented knobs to control the discrete settings for page, parameter and value. You can edit much faster with the included Mac- and Windows-based editor because this is a deep synth. The three knobs are handy for performance gestures, though, and the presets map them to useful and surprising parameters (see **Web Clip 3**).

The biggest surprise was how playable the new Natural Touch keys are. They're still tiny, but they have a welcome snap and a pleasing velocity response (with eight velocity curves). The black keys, whose stiffness drove me nuts on the original microKORG, are dramatically improved. Playing fast chromatic runs was no problem.

XL DEEPLY

The XL synth engine features two oscillators and a noise source routed to two multimode filters, a waveshaper (for unique distortion) and a VCA. This block, which Korg calls a Synth, then feeds a 2-band EQ, becoming a Timbre. Two Timbres—individually controllable over MIDI—feed two effects processors derived from Korg's KAOSS pads (no reverb, alas). The oscillators play a variety of sampled, analog-modeled and synthesized waveforms, and can modulate each other in numerous ways. The downloadable manual has details, along with an unusual number of tips for exploring sounds. The bottom line is that the XL can produce far more sounds than are suggested by its presets and shape them expressively.

So is the microKORG XL the ideal blend of R3 and original microKORG? It's really another tempting choice in the continuum: Korg will continue to sell all three. The original microKORG holds down the affordable end, the XL adds synthesis power and better controls, and the R3 offers the biggest engine and keys. Korg product specialist James Sajeva described it as a "good, better, best" lineup, but for those who crave sound *and* portability, I think the XL will be huge.

Overall rating (1 through 5): 4

Korg

korg.com

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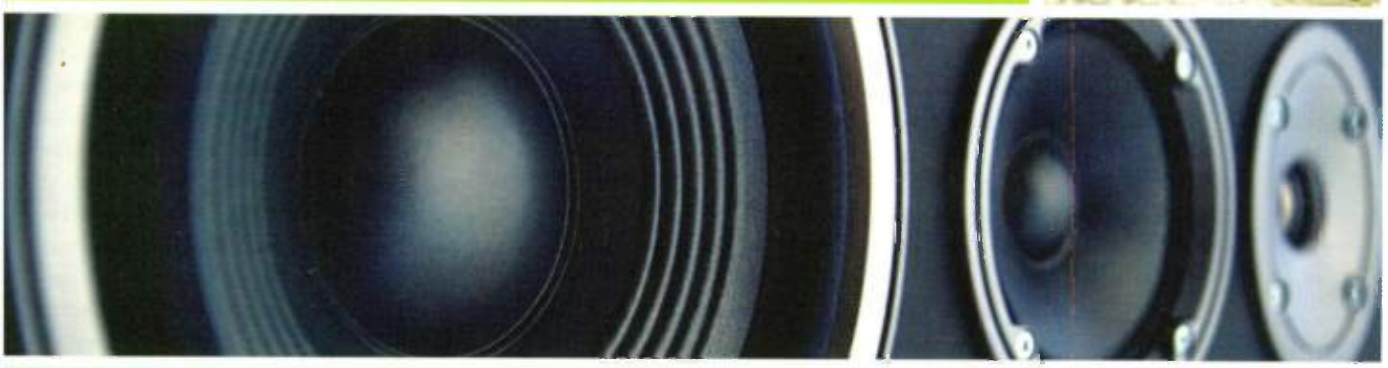

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APPLIED ACOUSTICS SYSTEMS

Strum Electric GS-1 (Mac/Win)

By Marty Cutler

Soon after *EM* reviewed Applied Acoustics Systems (AAS) Strum Acoustic GS-1 in the March 2009 issue, we learned that an electric version was waiting in the wings. Strum Acoustic sounded utterly convincing in ensemble and rhythm settings, and even upfront as accompaniment or solo when voiced and played like a guitar. The plug-in nimbly reassigned incoming MIDI notes to authentic guitar voicings, provided up-and-down strumming with alternate articulations and could play MIDI files recreating guitar performances. Finally, keyboardists could create solid, authentic-sounding acoustic guitar tracks sans guitar. Unlike some worthy contenders, AAS delivers its sounds using physical modeling rather than as a sample library, which would need to be huge to deliver the same depth and realism.

Strum Electric ($229, MSRP; $379 bundled with Strum Acoustic GS-1) follows a similar path, offering the same set of strumming and damping keys and the ability to perform hammer-on and pull-off techniques. Because electric guitar is very different from acoustic guitar, AAS supplies a distinct set of sound-shaping tools. These range from emulated pickup configurations to amp modeling and effects. The software comes in stand-alone, as well as Audio Units, VST and RTAS plug-in formats.

1 STRING THE BODY ELECTRIC

Strum Electric's main page provides overall adjustments for pick, strings, amp, various playing techniques and pickup choices—it doesn't simply translate MIDI input into guitar chords. The remapped notes are assigned to individual strings, and clicking on any string exposes its discrete settings, much like the individual string variations of any electric guitar. You can dial in two types of hard picks, along with a simulation of a soft pick or finger pluck. Pulling back the Edge dial produces a convincing, meat-of-the-thumb attack. Having individual string adjustments makes it possible to simulate a pick in the bass with fingers plucking the other strings.

Other adjustments include several controls to simulate the vibrational modes of each string and the way they interact. You produce buzzing and beating effects with the Coupling parameter, and you have plenty of latitude to create interesting and useful synthetic tones (see Web Clip 1).

A QUICK PICKUP

You select and edit the guitar's pickup type from within the individual string settings. A toggle switch provides a choice of single- or double-coil pickups with parameters for neck and bridge placements (distance from those points, harmonic content and resonance). The controls are quite realistic and offer plenty of tonal variety. Still, I would love to see more complex pickup arrays, such as a three-pickup instrument or a single-coil pickup at the bridge with a humbucker in the neck position.

ONLINE BONUS MATERIAL

You could probably get interesting results by choosing a different pickup for each string, but changes made to the pickup parameters affect all strings. It would be nice to be able to change each string's distance relative to neck or bridge to emulate guitars with pickups mounted at an angle. You switch between neck, bridge or both types of pickups on the main page of the instrument, and Strum can learn a MIDI message to switch between pickups in real time (see Web Clip 2).

TAKE A CAB

Strum Electric's guitar amp provides two channels. On the first channel, the drive knob ranges from clean to a nicely overdriven tone, whereas the second channel delivers more aggressive distortion. You get low, high and midrange knobs; a master volume; a dial to adjust spring reverb; and a toggle switch for open or closed-rear cabinet. Open gives a subtle boost to the high end. You can defeat the cabinet to create a direct-injected tone, and you'll find some DI presets in the browser.

Applied Acoustic Systems' Strum Electric GS-1 provides a versatile array of electric guitar sounds and delivers tools for authentic performances.

Despite my wish list for future expansions, Strum Electric offers keyboardists a versatile array of guitars and the right performance tools. As with its acoustic counterpart, it can work well embedded in a rhythm track or exposed in solos. Its intelligent mapping of guitar chords from keyboards makes it a godsend when a guitar (or guitarist) isn't within reach. By all means, download the demo and the manual and check it out. I highly recommend it. *EM*

Overall rating (1 through 5): 4

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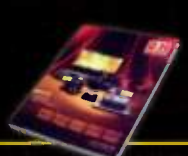

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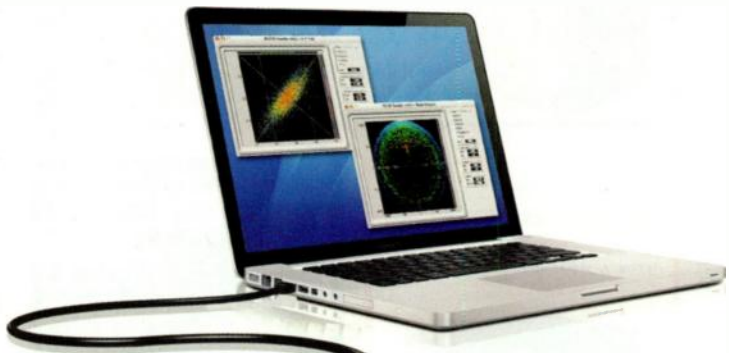
The Apple 15" MacBook Pro Core 2 Duo 2.66GHz represents Apple's finest effort in engineering, style, and performance. The new all-aluminum unibody enclosure makes it thinner, lighter, and stronger. No LCD here! The innovative LED display (with two graphics cards) is simply beautiful to look at. Use FireWire 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

www.sweetwater.com MOTU

Apple LED Cinema Display

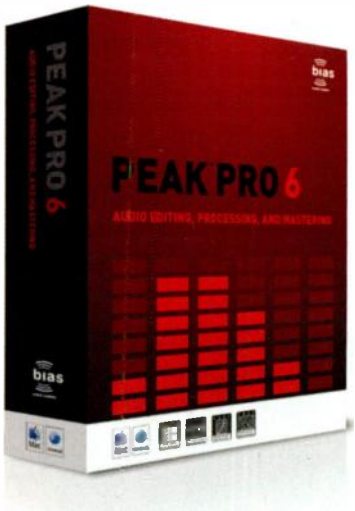
Expand your MacBook's display for the studio

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

BIAS Peak Pro 6

Evolution of an award-winning standard

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



Antelope Isochrone OCX

Premier reference master clock based on aerospace technology

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

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Louder, But Softer

By Nathaniel Kunkel

Have you ever noticed how much more fun it is to turn up old recordings than new ones? I know we all talk about the level wars that the CD medium ushered in, and it seems most people who voice an opinion about the subject are in opposition to excessive levels. Me? I'm on the fence. In truth, I must admit that there are aspects of squashed recordings that I really like. I can get rock tracks to grind with bus compression in a way that makes the mix a lot more powerful. It also affects the bottom end in a very cool way. Conversely, there are times when squashing a mix does not work. It gets hard-sounding and two-dimensional. Both approaches have their place, but it is choosing when to apply each one that's the tough part.

When I know an album needs to be loud, I make it loud in the mix. The idea that you can mix an album with big dynamics and then let the mastering engineer bring the level up is flawed. When you mix for dynamics and then squash all the peaks, the drums disappear, the vocals get thick and the guitars get dark. Extremely high-level recordings need to be mixed differently so that the intended balances translate.

Additionally, loud-level CDs almost always have superaggressive midrange to compensate for the closing up of the mix that results from drastic peak-limiting. When you turn it up loud, it hurts. Not like an old Fleetwood Mac record, which just gets better when you turn it up. So what does that mean? Well for me, it means that if a CD is mixed or mastered too loud, it's less enjoyable to turn it up on a stereo. One could even say that the louder a CD is mixed, the quieter the listener might listen. So if the intention is to provide a robust and loud listening experience, perhaps the best bet is a low-level CD.

I think it's also important to mention that the analog electronics in the players we use don't always like dealing with such high-level signals. They often are prone to clipping, and when they do it's not pleasant.

So when does a loud CD translate better? A restaurant is one example, and perhaps also a shopping mall. If we plan our music to be audio wallpaper, we should make it loud. In addition, if you are mixing a type of music that is supposed to be loud and squashed-sounding, then by all means make it loud. Would a superdynamic Slipknot album really be better?

But if your target is radio or iTunes, you really needn't worry about smashing it unless you want that sound. Both of those formats will competitively level your song for you. Radio uses broadcast compression to do it, and iTunes has the Sound Check feature. You can make it loud if you want to, but I'm not sure of the benefit.

Neither approach is right or wrong. They are just different. The only dilemma that comes up for me sometimes is that it's not always easy to tell at the beginning of a mix which approach is the correct one for that particular song. Sometimes either method can produce good results.

Is it better to provide a positive experience for a passive audience that puts no effort into hearing your music, or for the people who actually go out and buy your record? Will they still buy it if they don't have a good passive experience first? Should I use an approach purely because its result is the one my client is most used to? Will they reject my mix if it's not louder than dude mixer X's? Is it better to be safe or evolve? Should I just do what I think sounds best?

I know these seem like stupid questions, but as George Massenburg used to say to me, "The only stupid question is the one you don't ask." EM

Nathaniel Kunkel (studiowithoutwalls.com) is a Grammy- and Emmy Award–winning producer, engineer and mixer who has worked with Sting, James Taylor, B.B. King, Insane Clown Posse, Lyle Lovett, 1-Nine and comedian Robin Williams.

"I Got a $ix-Figure Indie Label Deal Because I Joined TAXI"

Jenna Drey – TAXI Member – www.jennadrey.com

My name is Jenna Drey. That's me sitting next to TAXI president, Michael Laskow.

For as long as I can remember, I've wanted to be a recording artist. I've studied music my whole life. I've read all the books. I've been to the seminars. In short, I've done all the same things you're probably doing.

Who Hears Your Music?

I'll bet you've also noticed that no matter how much preparation you've done, it doesn't mean anything if you can't get your music heard by people who can sign on the dotted line.

I found out about TAXI a few years ago, and have kept an eye on it ever since. The longer I watched, the more I became convinced it was the vehicle I needed for my music. When my demos were done, I joined. And guess what – it worked!

A Record Deal With Lots of Zeros!

Seven months after joining, TAXI connected me with a great Indie label that's distributed by Universal. The president of the label heard my song, "Just Like That," and just *like* that, I was offered a record deal, and that song became my first single.

Madonna, Bowie, Jagger, and me!

The icing on the cake? The label hired legendary producer, Nile Rodgers (Madonna, David Bowie, Mick Jagger, and the B-52s) to produce it! All these amazing things happened to me because I saw an ad like this and joined TAXI.

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It seems like all the serious artists and writers are hooking up with TAXI. Where else could you find more than 1,200 high-level opportunities for your music every year?

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TAXI doesn't take a percentage of anything, and it will probably cost you a lot less than the last guitar or keyboard you bought. Think of TAXI as the most important piece of gear you'll ever need. It's the one that can get you signed.

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