ALGORITHMIC REVERB ROUNDUP: SIX PLUG-INS PUT TO THE TEST

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ELECTRONIC MUSICIAN

FEBRUARY 2011

Melodyne Master Class

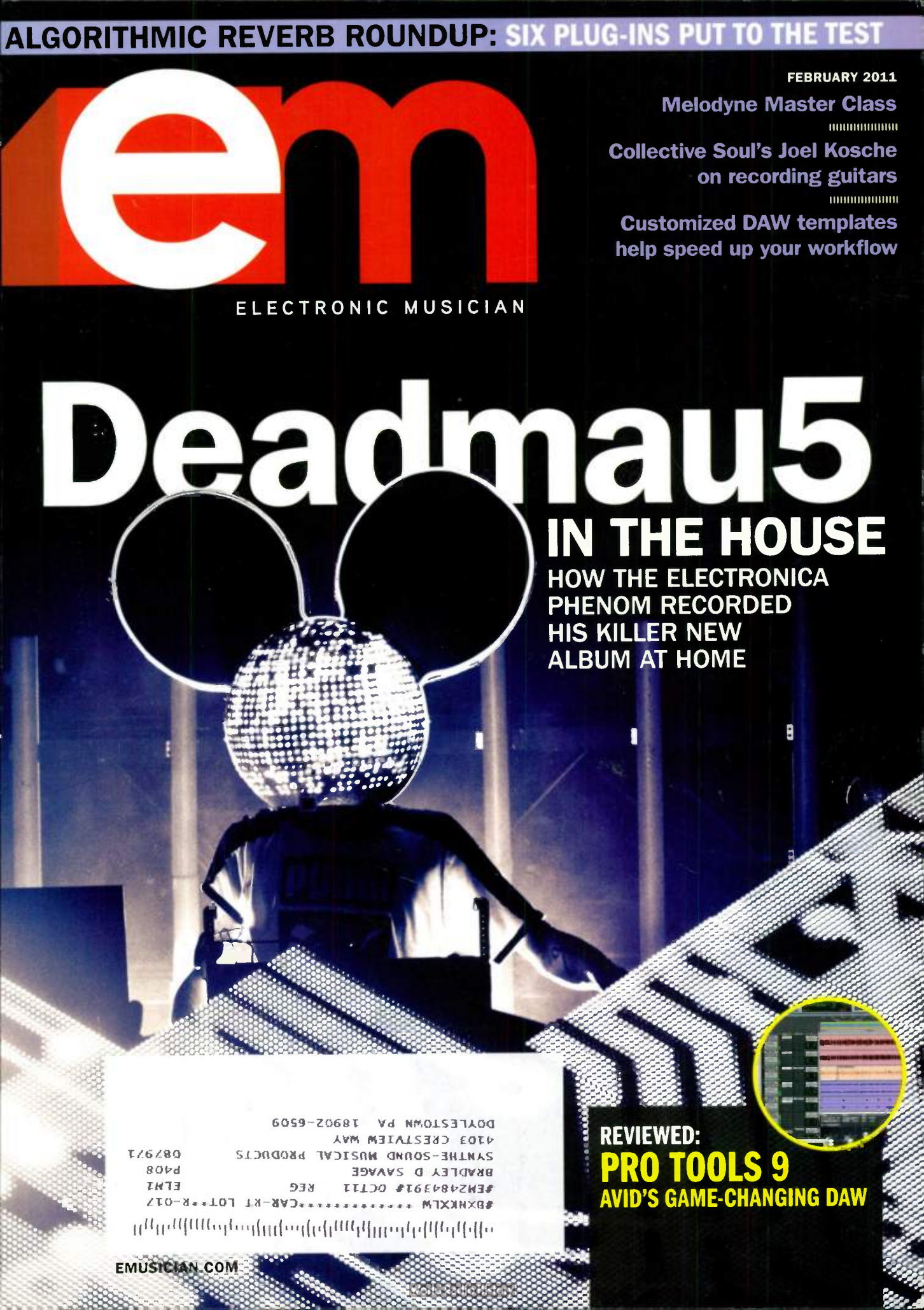
Collective Soul's Joel Kosche on recording guitars

Customized DAW templates help speed up your workflow

Deadmau5

IN THE HOUSE

HOW THE ELECTRONICA PHENOM RECORDED HIS KILLER NEW ALBUM AT HOME



REVIEWED:
PRO TOOLS 9
AVID'S GAME-CHANGING DAW

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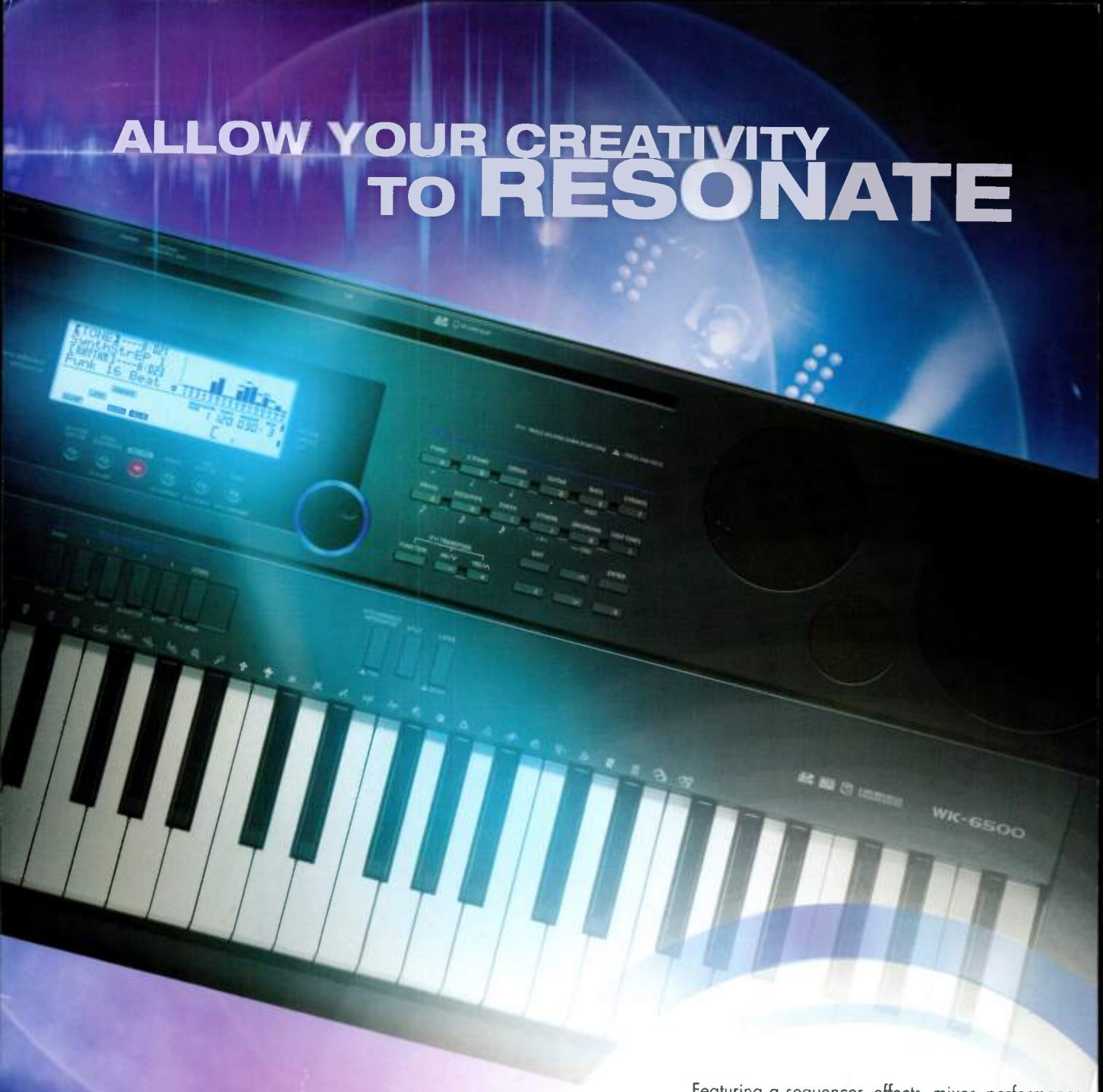
ALLOW YOUR CREATIVITY TO RESONATE



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ELECTRONIC MUSICIAN

FEBRUARY 2011 VOL. 27, NO. 2

FEATURES

Cover photo by Drew Ressler/Rukes.com

COLUMNS

DEPARTMENTS

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FIRST TAKE

Flying Solo

Current recording technology allows us to be totally self-contained in our studios. Properly equipped, we can record fully arranged songs, using real and/or virtual instruments—even a full virtual orchestra—without interacting with another human being. With enough musical and technical chops, we can produce, mix, and even master our music—all by ourselves.

The rise to prominence of electronica, and the technologically influenced nature of today's pop, hip-hop, and R&B music, is due in large part to the ability of individuals to create music, at least in part, on their own. Deadmau5, the subject of this month's cover story (see p. 30) is a case in point.

Even though I do a lot of solitary productions myself, I would argue that there is a downside: We're not collaborating as much as we used to. Working alone is a different process than working with other musicians. By combining the musical input of a group of people, or at least more than one person, you get different perspectives, fresh ideas, and a different outcome than what you'd get producing by yourself.

I'm not saying this is always preferable or practical; there are more logistical issues involved in working with others. You have to schedule things in advance, and there is always the possibility of personality conflicts (one of the biggest problems in band situations). Then there are disagreements on how loud to mix the vocals or that guitar solo, or whether to use an electric or acoustic piano patch, and so forth.

Still, if you're one of those recording musicians who work solo all the time, you might find that occasionally bringing in another musician gives you a breath of fresh air, creatively. One great way to do this is through barter. These days, virtually every musician has some sort of studio, and so your colleagues and you can trade off being session players for each other. Don't charge each other—unless you're working on a project with a budget, then by all means a session fee should be paid—but do work out a payment deal in advance in case the project ends up getting licensed or making money in some other way.

Although it's better to record together in the same studio, you can easily work remotely, if need be. Send reference tracks to each other (all starting at bar 1, beat 1) with instructions on what you want, and send finished files to each other via FTP. There are also online music-collaboration services that provide you with facilities to work together remotely, and even make it easy to find people to work with all over the world. Sites such as ejamming.com, digitalmusician.net, indabamusic.com, and esession.com are just a few examples.

My overall point: Mix it up. Don't always work by yourself. You just might find some cool new directions for your productions by incorporating other players' musical input.

Photo by Marla Cohen

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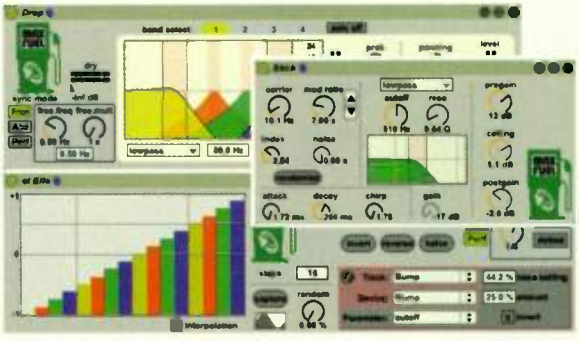
FRONT PANEL

DOWNLOAD OF THE MONTH *

PUREMAGNETIK MAX FUEL, THE FIRST

By Len Sasso



When Ableton and Cycling '74 delivered on their promise to integrate the Max/MSP programming environment into Live 8 as Max for Live (MFL), a lot of Live users jumped on the bandwagon and then began scratching their heads wondering what to do with it. The included Pluggo plug-ins from Cycling '74, along with the newly minted Step Sequencer, Buffer Shuffler, and Loop Shifter, tantalizingly reveal the possibilities, and there are some tools to get you started, but there is hard work ahead if you want to do more than create basic utilities. Puremagnetik (puremagnetik.com) released a teaser of things to come with the MFL freebie Spectral Mixer. Max Fuel, the First ($38) by David Linnenbank is the real deal.

Max Fuel is a suite of 10 MFL plug-ins: two instruments, five audio effects, and three control devices. The instruments, Stick and Bump, are, respectively, an FM- and noise-based drum synth and a monophonic lead synth with a powerful multimode-filter/feedback-delay section, which is replicated as the audio effect Jumble. Other audio effects include Marx (Spectral Mixer rebranded), Yell and Drop (multiband distortion and selection), and Veer (pitch shifter). The control devices el Effo, Side Chainer, and Multiplex (an LFO, envelope-detector, and one-knob splitter, respectively) let you route control data to any parameter of any device inserted on any Live track.

Aside from their versatility, the nice thing about the Max Fuel devices is that their interfaces are consistent, clearly labeled, and easy to grasp. Each device comes with a complement of presets and some clips to illustrate its use (see **Web Clip 1**). If you own MFL, buying Max Fuel, the First is a no-brainer—I'm looking forward to the Second, the Third, and beyond. If you haven't added MFL, Max Fuel might be a reason to take a second look. *

OPTION-CLICK

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CAN A 62-CENT TRANSPOSITION ADD SOUL?

RA Music Throws a Low Pitch

Composer/sound designer Alan Howarth (alanhowarth.com) is a master of emotional audio. Who can forget the little girl's disembodied voice in *Poltergeist* or the perfectly frightening music from the Halloween series? His latest venture, RA Music, seeks to harmonize music with fundamental resonances

HEAR AN EXAMPLE OF MAX FUEL, THE FIRST IN ACTION * EMUSICIAN.COM/BONUS_MATERIAL

THIS MONTH'S SOUNDTRACK

By Mike Levine

There's no clear theme to this month's batch of releases. In fact, there's a pretty wide range of styles on display.


THE BRIDGE: *NATIONAL BOHEMIAN* (WOODBERRY RECORDS/THIRTY TIGERS)
Produced by Los Lobos' Steve Berlin, this album mixes Southern rock, New Orleans grooves, funk, blues, and more into a roots-rock feast. Mandolin and human beatbox supplement the standard guitar, bass, drums, and keyboard lineup.


BOBBY LONG: *A WINTER TALE* (ATO RECORDS)
Long, a British singer/songwriter/guitarist, serves up his studio-recorded debut, an impressive assortment of 11 folk- and rock-influenced tunes. The album was recorded on analog tape at Grammy-winner Liam Watson's Toe Rag Studios, with sonically lush results.

DELICATE STEVE: *WONDERVISIONS* (LUAKA BOP)
Trippy, quirky, and thoroughly original instrumentals from the studio of this multi-instrumentalist whose real name is Steve Marion. Acoustic and electronic instrumentation are mixed together with a gumbo of musical genres from rock to Afro Beat.


MACEO PLEX: *LIFE INDEX* (CROSSTOWN REBELS)
Maceo Plex (aka Eric Estornel) offers up plenty of cool electronic instrumentation and textures in this 12-track set of house music.


KOTCHY: *TWO* (DONE RIGHT RECORDINGS)
"Experimental hip-hop" is Kotchy's description for his music, which melds a number of influences and features imaginative sound design. Kotchy produced the entire album and played all the instruments.


in nature. After analyzing sounds such as whalesong and the reverb of Mayan pyramids, Howarth concluded that the A-440 pitch standard was too high. A-424, a drop of 62.5 cents, felt better. At RAMusic.com, you can upload audio files and hear them transposed. I'm not sure which version I preferred, nor why a global pitch shift should add the emotional impact claimed on the site, but I did appreciate the new perspective. Howarth says that transposing his synths before playing put him in a special creative zone, and that's worth exploring.
—DAVID BATTINO, BATMOSPHERE.COM

DOWNLOAD TRACKS OR LISTEN TO EXCERPTS FROM MANY OF THESE ARTISTS * EMUSICIAN.COM/BONUS_MATERIAL

THIS MONTH ON EMUSICIAN.COM

ALL NEW// EMBOOKS
The all-new *EMBooks* give you in-depth tutorial tips and techniques for any recording project. Now available: ***Synth Programming*** and ***Laptop Production*** at mixbooks.com.

BLOG// ROBAIR REPORT
Our intrepid former editor blogs about all issues relating to music technology and offers periodic updates as he rebuilds his studio from the ground up.


Photo by Drew Ressler/Rukes.com

EMCAST//DEADMAU5
Hear more of *EM*'s interview with the talented and colorful electronic artist/producer.

LISTEN// MELODYNE MASTER CLASS
Check out examples of double-tracking from Celemony's Melodyne Editor plug-in.

LISTEN// SIX DEGREES OF REVERBERATION
Hear examples of the reviewed reverbs in action.

WHAT'S NEW

By George Petersen

CELEMONY

MELODYNE ESSENTIAL

AFFORDABLE PERFORMANCE CONTROL

Celemony (celemony.com) is now shipping Melodyne Essential, an entry-level version of the company's flagship Melodyne Editor pitch/timing editor, but at an affordable $99 price. As with its sibling, Melodyne Essential divides recordings of lead vocals, monophonic instruments, or drums and percussion into notes where the pitch, position in time, and note duration can be intuitively modified on a piano-roll graphic display; Melodyne macros for pitch and timing correction also can be employed. Notes can be moved and copied at will, which allows adding additional voices and chords to melodic material or breaks to rhythmic material. This Mac/PC app can run in stand-alone mode or as a VST, AU, or RTAS plug-in on a compatible DAW host.

MACKIE

MRMK2 REFERENCE

SMALL PRICE, BIG MONITOR SOUND

Unveiled at NAMM and shipping next month are the Mackie (mackie.com) MRmk2 Reference studio monitors. Both the 5.25-inch woofer MR5mk2 ($199 pair) and 8-inch MR8mk2 ($329 pair) are powered two-way designs with a 1-inch, soft-dome, neodymium tweeter on a custom wide-dispersion waveguide. Inside the rear-ported cabinets is an A/B amplifier section with XLR, TRS, and RCA inputs, and user-adjustable controls for acoustical correction.

FOCUSRITE

MIDNIGHT SUITE

EQ AND COMPRESSOR PLUG-INS

The Focusrite (focusrite.com) Midnight ($99 street) plug-in suite offers models of the ISA110 EQ and ISA130 compressor from its legacy Forté console. The plug-ins are compatible across VST, AU, and RTAS formats, and feature attractive and easy-to-read GUIs. The EQ features variable highpass and lowpass filters, sweepable high- and low-shelving bands (±16dB), and fully parametric high- and low-mid bands. The compressor offers the expected threshold, ratio, attack, release, and makeup gain controls, plus a variable wet/dry control for parallel compression effects.

RAIN COMPUTERS

NIMBUS

POWERFUL PC

High-performance PC supplier Rain Computers (rainrecording.com) debuts its next-generation Nimbus Multimedia Workstation designed for professional production applications. Rain Computers states it has tested and certified Nimbus for optimum performance and stability with software (such as Steinberg Cubase, Adobe CS5, and Sony Vegas) and hardware. The sleek, all-aluminum enclosure features swing-out front doors that protect access to the optical drive, media panel, and optional removable drives. Priced from $1,799, Nimbus is built around AMD's recently released 6-core processor architecture, and memory and storage can be expanded to 16GB and 8TB, respectively. The system is controlled by a version of Windows 7 Pro 64-bit that is specially tuned by Rain for audio and video production.

NATIVE INSTRUMENTS

ABBEY ROAD MODERN DRUMS

ON A BEER BUDGET

Native Instruments' (native-instruments.com) Abbey Road Modern Drums is a new Kontakt-based instrument featuring two expertly engineered drum kits for contemporary music production. Both kits were recorded at Abbey Road's Studio Two and Studio Three, taking full advantage of the acoustic properties of these famous recording rooms and using high-

end gear such as Brauner and Neumann mics; SSL, REDD, and EMI TG preamps; the legendary Fairchild 660 compressor; and the acclaimed Empirical Labs Distressor. Additional specialties include a range of "splash on snare" sounds and kicks recorded through a rewired monitor speaker for additional punch, for more than 40,000 overall samples. It's $119 via download or DVD.

JZ MICROPHONES

JZ DMK1

DRUM MIC KIT

Latvian mic specialists JZ Microphones (jzmic.com) announce the JZ DMK1 ($1,000), the company's first drum kit package. The set comprises three JZ BT201 small-diaphragm condenser microphones: a matched pair with open cardioid capsules for overheads and a single mic with -20dB open cardioid capsule for kick drum. The kit also includes custom JZ mic clips for all three mics and a rigid, protective carry case for safe transport.

XILS-LAB

POLYKB II

VINTAGE POLYPHONIC VIRTUAL SYNTH

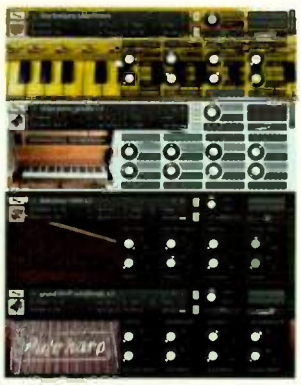
New from XILS lab (xils-lab.com), PolyKB II ($199) captures the sound of the legendary 1980s RSF PolyKobol analog synth, including its continuous morphing oscillator, which can be fully modulated by many sources. The PolyKB II is a polyphonic subtractive virtual synth based on two waveform-morphing, aliasing-free oscillators and a self-oscillating, 4-pole lowpass filter. It's available for Mac and PC, supporting VST, AU, and RTAS hosts (Pro Tools 7 and later). A free demo is available from the company website.

SOUND ADVICE

By Len Sasso

SOUNDDUST
SAMPLE LIBRARIES

British composer and sound designer Pendle Poucher confesses to being a lover of funny noises, and the six Sounddust sample libraries deliver both funny noises and eminently playable instruments (see **Web Clip 1**). Each of the download libraries is priced at £15 (roughly $23), and most are available in multiple formats: Native Instruments Kontakt, Apple EXS, Ableton Live Sampler, Reason NN-XT, SFZ, and Soundfont.



The sound sets feature vintage and hybrid instruments, along with prepared percussion. Dulcitone 1884 and Ships Piano are sampled keyboards from the mid-1800s. The woody-sounding Dulcitone uses felt hammers to strike metal tines—like a Rhodes piano without the electronics. Ships Piano, from the same period, is a 5-octave keyboard that sits on a table top. Its shortened stature delivers a muffled piano sound that gets flabbier in the lower registers. Pendleonium is a hybrid instrument layering amped and processed baritone and standard guitars along with a viola. Grand Thrift Auto(harp) layers a plucked grand piano with an autoharp. Tiny Binaural Harpsichord samples a modern Arnold Dolmetsch portable harpsichord. It comes in straight and prepared piano flavors. Steel Drum Percussion Room samples acoustic and steel drums with preparations that deliver an array of percussive funny noises. You'll find demos and more info on the Sounddust website (dulcitone1884.virb.com).

PRODUCER LOOPS
LIQUID DRUM & BASS VOL. 3

Producer Loops (producerloops.com) augments its drum 'n' bass offerings with Liquid Drum & Bass Vol. 3. The full library of five construction kits (roughly $33.10) is offered in three configurations—WAV, MIDI, and REX; Apple Loops, MIDI, and REX; and Reason ReFill—and weighs in at 1.7GB. You can also buy individual kits for about $10.50 apiece.

All the kits are at 177 bpm, with three Eb and two in Bb, and all include MIDI files for most of the instrumental parts. This lets you swap your own synth and sampler presets for the loops in the kit, and makes it easy to match parts from kits in different keys. The kits are quite large, typically holding 70 or more loops, along with one-shots from the drum parts and tails for many of the loops. Most loops are provided in dry and wet versions. You'll find plenty of vocals, leads, keyboards, guitars, pads, and grooves to get your drum 'n' bass juices flowing (see **Web Clip 2**).

UEBERSCHALL
NIGHTSHIFT

Nightshift ($99) is a collection of 18 construction kits for Ueberschall's (ueberschall.com) free Elastik Player (Mac/Win, stand-alone and plug-in), which is included on the DVD. The 2.9GB library comprises 950 loops in a variety of keys (mostly minor) and ranging in tempo from 59 bpm to 91 bpm. Parts include vocals, acoustic and electric guitars, keyboards, pads, drums, and sound effects. Each kit comes in Intro, Main, and Outro versions, and each version offers full mixes, submixes, and individual parts. Nightshift is the creation of producer and remix artist Marc Steinmeier, whose credits include LL Cool J, Alicia Keys, George Clinton, and Eminem. It is intended for smooth jazz, lounge, commercials, and film cues. The chill is on (see **Web Clip 3**).

VIR2 INSTRUMENTS
Q

With the release of Q ($299.95), VIR2 Instruments (vir2.com) has laid down its marker in the field of broad-spectrum, cinematic scoring libraries. Q, as in Cue, delivers 16GB of sampler instruments for Native Instruments Kontakt 4 and Kontakt 4 Player (included) spread across 23 categories. It is available as a download or on DVD, which also includes many of the sound effects as 24-bit WAV files. Much effort has gone into sample mapping and Kontakt scripting to make Q easy to use. For example, the FX tab on each instrument features buttons to toggle each effect (reverb, filter, delay, limiting, chorus, and so on) and to open a clear, uncluttered control panel for tweaking.

Q's sound categories cover standard and ethnic percussion, atmospheres and soundscapes, and a variety of single, layered, and morphed instruments. Beyond that, you'll find 39 construction kits offered in three variations: each loop on a different key, one loop mapped across the keyboard for transposing, and individual loop slices mapped across the keyboard. In all cases, Kontakt's Time Machine or Beat Machine mode is used to sync loops to tempo. The material is well-organized and clearly labeled, although original tempo and pitch labels, where appropriate, would be useful. ✱

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By Geary Yelton

Popular with audio professionals, the Revox A77 may have been the bestselling 2-track reel-to-reel tape recorder of all time.

Revox A77

A tape recorder that blurred enthusiast and pro

Before digital recording took hold, magnetic tape was the popular choice for recording audio, and it still has its followers. For more than a half-century, tape recorders made by Studer were sold to studios all over the world. Founded in 1948 by Willi Studer, the Swiss manufacturer was renowned for its groundbreaking mixing consoles and high-performance tape machines, including the Studer 27 (1951), considered the first professional 2-track recorder; the J37 (1964), the 4-track recorder The Beatles famously used to record *Sgt. Pepper's Lonely Hearts Club Band*; and the A800 (1978), a popular 24-track recorder that was the first microprocessor-controlled multitrack. But the bestselling model the company ever built was the Revox A77.

Beginning in 1955, Studer produced a line of what the company considered recorders for enthusiasts rather than professional studios, under the brand name Revox. Revox high-fidelity open-reel tape decks were handmade and designed for audiophiles. The A77 was built to such exacting standards and with so many options, however, that it crossed over from enthusiast to pro and was embraced by broadcast and recording engineers. Like pro-level Studers, the Revox A77 was known for its precision engineering, rugged build quality, and accurate sound reproduction.

PICK AND CHOOSE

Studer introduced the Revox A77 in 1967. By the time it was discontinued in 1975, more than 400,000 had been sold worldwide. At times, Studer was barely able to keep up with orders and even had to cut back on marketing to control demand. During the years, six models were sold in dozens of configurations intended for different applications.

The A77 handled both 7- and 10.5-inch reels. Quarter-track models let you record two tracks, flip the reel over, and record two more. Full-track models recorded in mono. Half-track models recorded two tracks in one direction only and were popular as mixdown decks.

The A77's direct-drive tape transport had separate motors for the feed reel, take-up reel, and capstan. The machine also had separate erase, record, and playback heads so you could monitor the sound either pre- or post-tape and overdub using sound-on-sound. All A77s had solid-state amplifiers and ¼-inch connections, and the pro models added balanced XLRs. Although most let you change their tape speed from 7.5 inches per second (ips) to 3.75 or 15 ips (depending on the model), a Super-Low Speed model ran at 1-7/8 and 15/16 ips for extra-long record times with limited frequency response.

Like all Studers, the Revox A77 was built like a Soviet-era tank. Not surprisingly, thousands are still in good operating order and available for sale online. If you'd rather stick with your DAW, Universal Audio offers Studer A800, a UAD plug-in that emulates the audio characteristics of a multichannel tape recorder. ✱

Former senior editor Geary Yelton has reviewed synthesizers for EM *since its very first issue in 1985. He lives in the heart of the Blue Ridge Mountains in Asheville, N.C.*

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By Diane Gershuny

Home base: San Francisco
Primary software: Avid Pro Tools 8, Propellerhead Reason, Spectrasonics Stylus RMX
"Must-have" piece of gear: sideman Jordan Katz and his trumpet
Website: davidberkeley.com

Photo by Matthew Washburn

Isle of Magic

David Berkeley goes abroad and finds sonic inspiration

The fodder for David Berkeley's latest indie-folk offering, *Some Kind of Cure*, resulted from spending a year on the small Mediterranean island of Corsica, where he accompanied his wife while she conducted research for a Ph.D. in cultural anthropology. Berkeley's music is known for vocally rich, lyrically layered arrangements that blend acoustic and electric elements; in Corsica, his songs took on a greater sophistication, becoming more haunting than his previous work. "There is magic on that island," Berkeley says, "and without sounding too voodoo, I think that magic hovered over these recordings."

While in Corsica, Berkeley made field recordings in a little village church, recording bells, a choir, and children's voices using a Zoom H2 pocket-sized digital recorder. "It was hard to direct the Corsicans to sing in the keys I needed, both because my French sucks and because Corsicans are pretty hard to direct," Berkeley says. "But those recordings sounded great; the church had an amazing natural reverb."

Berkeley then worked at producer/engineer Will Robertson's studio near Atlanta. Although many song arrangements became quite elaborate, Berkeley says he wanted his performance to be at the core of every song. "On my voice we used an SE Gemini II [dual-tube mic] into an FMR RNP8380 [mic preamp]," he adds. "I played guitar while singing on most songs. Will would back the mic off my vocal a little bit and stick an AKG 451 as close to the guitar but as far away from my voice [as possible] to avoid phase problems. Additionally, he recorded a piano part or a bass part while I was performing. This allowed me to be musical; plus, we had many of the basics done all at once."

Robertson miked additional instruments using a pair of mics placed near and far from each source. Robertson's go-to models included AKG C 414s and AKG C 451s, which he usually ran through a Focusrite ISA428 mic pre. To record violinist Sarah Zaslaw for "Soldier's Song" (see **Web Clip 1**), Robertson set up a stereo pair of AKG C 414s in an X/Y configuration. The mics were positioned about five feet off the floor, pointing down diagonally at four chairs that were set up in a semicircle. "I'd record four passes of each violin line," Robertson explains, "with our violinist sitting in a different seat, creating different 'personalities' for each pass. Since each pass hit the mics a little differently, it really sounded like a section, and we avoided the phase issues that can be problematic when doubling or tripling violin lines."

Drum tracks were recorded in Chicago at Clava Studios into Pro Tools 5.1 using an Avid 888 I/O interface and a Mac PowerPC 9600. "I wanted Kevin O'Donnell to be our drummer on the record, and he's based in Chicago," Berkeley says. "I also wanted Neil [Strauch of Engine Studios in Chicago] to mix the record and thought it would be cool to have him engineer the drum recordings so he could have the songs in his head."

Berkeley blended his field recordings from Corsica into several songs, including the album's title track (**see Web Clip 2**). "We played with placing the audio in various parts of the song, layering it in such a way that created a sort of old-world, ethereal backdrop," he says. "There was also a happy accident where the reverb on the soloist's 's' happened to hit at the same time as the 's' in the second chorus' 'dangerous.' I liked that so much that Will printed it to its own track and asked Neil [Strauch] to keep it in." *

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Tool, Queens of the Stone Age, Bad Religion, The Melvins

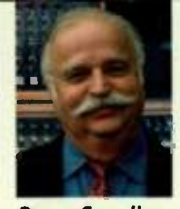
Dave Bottrill
Silverchair, Tool, Godsmack, Staind

Peter Wade
Jennifer Lopez, LL Cool J, Santana, Taylor Dayne

Nate Kunkel
John Mayer, Lyle Lovett, Lifehouse, Neil Diamond

Bil VornDick
Alison Krauss, Bela Fleck, Jerry Douglas, Doc Watson

Paul Boutin
Babyface, Mariah Carey, Madonna, Celine Dion



Bruce Swedien
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Ryan Hewitt
Red Hot Chili Peppers, Tom Petty, Blink 182

Frank Filipetti
James Taylor, Foreigner, Korn, George Michael

Elliot Scheiner
The Eagles, Steely Dan, Sting, Fleetwood Mac

By Sarah Benzuly

Spot-on Music for TV

Rob Page adds an indie label to his repertoire

When you grow up in a musical family, it's next to impossible to not get sucked into that world. For composer Rob Page, picking up a "legit" instrument fell under his father's "my house, my rules." "So I was a reluctant oboe player right up until my dad gave me a beautiful Martin D-35 and I discovered James Taylor, Cat Stevens, and Crosby, Stills & Nash," he says. "Goodbye oboe, hello girls! I spent a decade or so writing songs without a lot of luck. One day, I submitted some of them to BMI and won a scholarship to the UCLA Extension Film Scoring program. I ate it up—actual musicians; no sequencers, just pencils, score paper, and click books. Then the best thing that could have possibly happened to me happened: I got laid off from my day job." Now, Page can be seen behind his Mac and PC scoring mostly for television spots under the guise of his Woolly Mammoth production company.

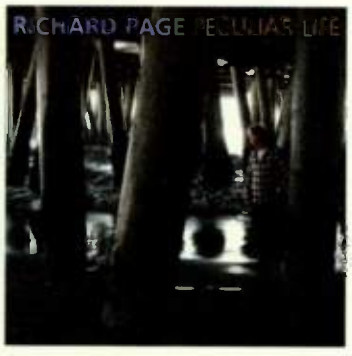
How does your approach to composing music change based on the media?

For me, it's less about the media and more about the client. I had an instructor at UCLA who used to have each of us conduct our pieces while he played the role of "the idiot client"—his words, not mine. So after you'd run through it, he'd say, "Hmmm, I think it needs to be sadder. Or faster. Or murkier." Or whatever arbitrary adjective he could come up with. He literally said to me once, "It needs to be more yellow." He was teaching us to think on our feet and let go of our "precious darlings."

What the music should be usually jumps right out at me as soon as I see the film; the hard part is figuring out and delivering what the client thinks he needs.

Tell me about your studio.

I work out of a converted guest room in our home in Culver City [Calif.]. I never set out to have a formal recording studio per se, but more a writing space. For years, we tracked most everything at either The Village or The Complex in West



Rob Page (left) and brother Richard Page recently started Little Dume Recordings, featuring *Peculiar Life*.

L.A., and I guess I just got kind of used to going to "the facility." Of course, the economics of the industry have changed radically, and you simply can't be in business as a composer without being able to crank out stellar-sounding tracks in your own room, and I can certainly do that here.

But what's more interesting is the gear I've *been* through over the years. When I was a kid, I bought one of the first drum machines ever, an Oberheim DX, and tracked by bouncing back and forth between two ¼-inch reel-to-reels while playing another part in real time. I had an original Deltalab Effectron, tracked my guitars through a Rockman. I went through racks of gear: PortaStudios, DA-88s, Mackie 2408s, 1604s, 1202s. Countless Macs.

Today I have a G5 Mac, Digital Performer, a MOTU 828, a couple of Cinema Displays, a Universal Audio UAD-1 card. I have a PC with Acid, Giga, and Kontakt, and the entire Native Instruments collection. I use the EastWest Gold bundle for orchestra and a few other libraries. Omnisphere is pretty great. Drums are either loops from Stylus RMX or BFD, or I track them myself at a buddy's studio. I use BLUE mics and a matched pair of Røde NT5s for tracking my Martin D-35. Something about those mics and that guitar just kills. I have a Line 6 Variax and PODxt Live, though sometimes I use a Strat and NI Guitar Rig. I don't even use a board anymore.

You also provide music for stock library collections.

The library work started with my eighth-grader, Sam, who is in a band. I became friends with one of the other band dads, John DeFaria, who has friends at Megatrax and Scorekeepers Music. He recommended me to Scorekeepers, I sent some stuff, they liked it. I was in. Megatrax was completely different. I went to a mixer they were hosting. John introduced me to Ron Mendelsohn, and he graciously said to go ahead and send him a demo. I sent him some cues from a score I'd just done on spec and he liked a couple of them. Licensed them on the spot.

Let's focus on a recent project. Take me through your creative process.

I just finished writing the theme for a television pilot called *Stars & Strikes*. It's a campy celebrity bowling show. The producer used to hire me to fill in writing cues for *America's Funniest Videos* when Dan Slider wasn't available. It was fun because they wanted a big, bombastic, late-night thing. It's just piles of horns, drums, rhythm guitars, B-3. It's the opposite of the trailer I scored recently called *A Woman, a Gun and a Noodle Shop* for Sony Pictures Classics. The editor liked something from my library disk, but it didn't fit her cut very well so her company paid me extra to pull up the session and modify it. They saved money not having to get a from-the-ground-up score, but it ultimately became exactly what they wanted. And because of the expediency of FTP, I was able to work directly with the editor and provide a "stock" track that matched her cut better than she could have done within the audio limitations of her Avid.

But the most exciting thing I've got going right now has me doing almost everything *but* the music it seems. My brother, Richard, and I recently started a small indie label called Little Dume Recordings. Richard was the singer in a band called Mr. Mister. I'm really into the concept of direct-to-fan marketing, so he is giving me the opportunity to put it to the test. We've just released a previously unreleased fourth Mr. Mister album called *Pull* with Sony Music and a new solo album from Richard titled *Peculiar Life*. We just finished our first release, *5 Songs for Christmas* EP, that was, with one exception, performed entirely by Richard and produced and mixed in-house by us at Little Dume.

> What the music should be usually jumps right out at me as soon as I see the film; the hard part is figuring out and delivering what the client thinks he needs.

What is the most challenging aspect of your work?

Finding it. After that, figuring out what the client thinks he needs. I always say, John Williams has got it easy: He only has to please one guy, Spielberg, and *he's* a visionary! Williams' work is without peer, of course, but if he was a spot guy, the true genius would be keeping a straight face in the meeting when everyone has finally signed off on the track and that one junior producer down at the end of the table tells him his triple-forte Wagnerian horn section isn't quite right. ✱

By Jason Feehan and Randy Chertkow


Feehan


Chertkow

Publicize Yourself

One of the most dreaded tasks for musicians to tackle is generating publicity. Fortunately, it's simpler than you may think. Start by understanding the three types of media, and then tailor your approach to get coverage. You can start out small and build on each success. Each mention you get helps you get more coverage, bigger publications, and more buzz on your social networks.

THE OLD

Traditional media is usually the only type that people think of, and it includes TV, radio, newspapers, and magazines. Unfortunately, people with money and access have the best chance of getting coverage. Also, these outlets have been downsized. They have fewer journalists to research and write stories at a time when there are more press releases and news demanding attention.

To get covered in the traditional media, send a press release at least three months ahead of the event you want covered so the publication or broadcast outlet has time to schedule the story. To really stand out, send a link to a video to improve your chances of getting covered. However, unless you have some real money, media contacts you can already use, or a publicist, expect to need prior stories or coverage about your act to get traditional media coverage. If you don't have any, don't worry: Use the new media to build up a history first.

THE NEW

New media includes blogs, podcasts, vidcasts (video podcasts), and websites. These outlets vary in audience size, subject, and professionalism, especially because most are run by people who are passionate about the topics they cover. New media is a great place to begin getting coverage for your music if you are just starting out because quotes from blogs can help you to establish credibility for larger outlets, and eventually traditional media, which will do a search on you when they haven't heard of you. Any new media coverage that you've had can help establish your history.

There are no set rules for working with new media—it's best if you just start with an email, not a press release. Another advantage is because new media is web-based; they often link directly to your website giving you new visitors and a way to track the effectiveness of the coverage.

THE SOCIAL

Social media sites such as Facebook and Twitter are the newest development in getting publicity. They also have the fewest number of rules. The primary advantage of these sites is how they amplify word of mouth. In some ways, each of your fans has an audience that you can reach: their friends. The posts that you share can be shared by others with a few clicks, getting your music and message out to a large audience in an entirely new way.

With these three media in mind, how can you organize a publicity campaign around all of them? Get that initial coverage in the blogs or podcasts that are within your reach. Start with anyone you know with a blog or a media outlet. Then talk about the coverage through your social media so your followers can get the message to new fans. Next, use that first bit of coverage to reach up to media with larger audiences, showing them that you have some buzz and momentum. Before long, you'll have a media quote page that can be used to show that you have some substance.

And then, just keep building from there. *

Randy Chertkow and Jason Feehan are the authors of The Indie Band Survival Guide *(IndieGuide.com).*

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FIG. 1: 2CAudio's Aether has a sleek, futuristic interface and boasts a staggering number of editable parameters and innovative features.

Six Degrees of Reverberation

Great sound, innovative features, and diverse interfaces create a windfall of algorithmic reverbs for recordists on a budget

By Jon Chappell

In recent years, a new kind of electronic reverberation technology has emerged, known as *convolution*. The term refers to reverb that uses an actual recording—a digital sample—of an acoustic space that's fed with a short burst of sound known as an *impulse response*. The qualities of the reaction of the space, minus the impulse response that fed it, are then mathematically *convolved* into the entire reverb sound.

Convolution reverbs are very realistic, but involve heavy calculations that can load down an unaided processor. Using a convolution reverb in a DAW, running natively, can be problematic because even a single instance of a convolution reverb plug-in can bog down a project enough to prevent other plug-ins from operating.

By contrast, the more traditional (non-convolution) forms of digital reverb are referred to as *algorithmic* because their sounds are derived from algorithms that only synthesize the properties of a reverberated signal. Algorithmic reverb doesn't start with or use an existing sound. (For some helpful tips on differentiating the properties of convolution and algorithmic reverb, see the sidebar "Practical Differences Between Convolution and Algorithmic Reverb.") Algorithmic reverbs have a much lower CPU load and other desirable attributes.

It's those very "algorithmic attributes" that have inspired this plug-in roundup. Our criteria were straightforward: All of our entrants had to come in at less than $300 and had to work on the three major plug-in protocols (VST, AU, and RTAS); had to be low-impact (in terms of CPU load); and, of course, had to use algorithmic technology. Two of our prospective candidates didn't meet all of these requirements: D16 Group's Toraverb doesn't run on RTAS, except through a wrapper, and VirSyn's Reflect uses impulse responses for some of its sounds. Yet we allowed these two to participate as they fit in nicely with respect to features, price, and sound quality.

Because the six contenders are algorithmic, run natively (no hardware accelerator required), and won't break the bank, any of the models profiled here would be an excellent choice for mobile recordists or musicians who don't have access to a screaming machine to record. Here are six worthy offerings for adding algorithmic reverb to your recordings.

2C AUDIO AETHER 1.5.1

2Caudio.com

$249.95

When you launch it, Aether (see **Fig. 1**) presents you with a high-tech, smoothly rounded,

Wii-controller-like interface that puts you right in the mood to start dialing up and tweaking 3-D sounds. The main screen is divided into three sections—Early Reflections, Late Reflections, and In/Master—and shows two images on either side of the screen: one of a photo-realistic rendering of the acoustic space you're working in and the other of a shaded EQ curve. Not to be left out, the middle section sports an active, circular-axis L/R phase meter.

On the left side of the screen are the space controls: Size, Position, Shape, Pre-Delay, Absorb, Color, HF Soft, Cascade, and four Early Reflection parameters. The center section has the Time parameters, the right side has the EQ-related controls, and the bottom of the window shows the signal I/O controls. The separation of the regions works quite well, with so many controls and so much real estate devoted to ER parameters. The EQ section is deep and complex, but offers incredible opportunities for tone-shaping, and the graph does a good job of showing several parameters simultaneously by superimposing different colored slope lines and shaded backgrounds.

Switching tabs in Aether converts the screen into an intuitive browser. Though comprehensive, it's straightforward and easy to use, and offers perhaps the best way to access Aether's astonishing number of presets: Search for a sound that's close to what you want and tweak to taste. As a bonus, six Easy Mode parameters (each lockable to preserve a setting as you audition separate programs) and the stereo meter are shown along the bottom, facilitating more meaningful browsing. Neat!

FIG. 2: Overloud's Breverb offers a DAW-controller-like interface with assignable and automatable faders.

My favorite programs alternated between the classic and experimental, testifying to Aether's strength and depth in both arenas. Stellar categories included Classics, Halls and Space Types, which I relied on for normal workday reverb tasks. But Mystical (see **Web Clip 1**), Thematic, and Modulation FX were inspirational and invited deep exploration with Aether's 75 parameters. These reverbs, whether emulating a classic space or introducing an otherworldly environment, all sound organic and fully realized.

FIG. 3: IK Multimedia's Classik Studio Reverb resembles the front panel of an outboard reverb unit and provides two complementary editing modes, Easy and Advanced.

Aether is quite complex and targeted when you want it to be—it includes features such as oversampling, band-limited interpolation, spectral modulation, and a discrete early reflections engine—and will satisfy technophiles who want to tweak at the frequency-specific level. At the same time, the browser takes over the whole screen when you switch tabs, offering an intuitive way to find reverbs that are close to—or often exactly—what you want. If you like tweaking your reverb, you will love and learn a lot from Aether.

OVERLOUD BREVERB 1.5.12

breverb.com

$279

Designed by veteran DSP engineer Thomas Serafini, Breverb's interface (see **Fig. 2**) has a highly evolved and modern look—the most state-of-the-art in our roundup. The photo-realistic elements look much like a hardware DAW controller, with long-throw, mixing board–like faders for adjusting parameters. You can also customize your view of the interface, similar to a DAW, and the parameters and layout are extremely user-friendly and easy on the eyes.

I was pleased to see several unusual things. First, Breverb offers a full EQ section, which allows you to tailor the frequency response with great specificity—not just with damping or other high-cut controls on the tail, but full-spectrum controls over the frequencies of the entire reverberant sound. It also limits itself to just four main algorithms: Hall, Room, Plate, and Inverse. But all sounds are rich, smooth, and, in the case of the first three, ultrarealistic.

Automation at the level Breverb provides is unique and effortlessly integrated using the faders. The six faders are Read/Write-automatable, and long-throw linear-motion action vs. a rotating knob makes automation the Breverb way not only viable but irresistible. The faders offer a handy way to quickly and precisely edit parameters (grabbing knobs with a mouse can be tedious), and they allow you to automate them with a high degree of control. DAWs offer plug-in automation, but it's sometimes limited to input and output; Breverb provides full automation of any parameter from within the plug-in interface itself.

It was inspiring to see the Inverse programs get just as much processing power as their acoustic-space counterparts, so if you have not explored this take on reverbs, Breverb will give you the best possible picture. Try them on vocals and exotic percussion instead of—or in addition to—another instance of Breverb with a normal ambient treatment. My favorite programs included Cathedral and Chamber 1, plus the Hall program called Orchestral Beef-up (see **Web Clip 2**), which especially shined when used with automation engaged and some judicious fader-riding. Automation has never been so much fun—or creative.

Serafini's engineering background is evident in one key aspect: low CPU load, even with numerous multiple instances of Breverb in the same session. I opened 24 insert effects

of Breverb and never got a CPU warning, and the manufacturer reports that 120 instances of Breverb ran simultaneously on a 2.4GHz MacBook Pro Core 2 Duo. While your mileage may vary, you could very well run 24 to 32 stereo returns and be safe knowing that Breverb would not throttle your system while providing stunning realism.

IK MULTIMEDIA CLASSIK STUDIO REVERB 1.1.1

ikmultimedia.com

$99

Classik Studio Reverb (CSR) looks comfortingly like the industrial-strength, black-box classics of yore, with its no-nonsense rotary knobs and red-segmented LED readouts (see **Fig. 3**). The interface's design, along with the parameters it includes—and the whole vibe created by CSR—will put users of Lexicon and other iconic hardware reverb units right at home.

CSR offers four separate plug-ins—Hall, Inverse, Plate, and Room—that must be individually loaded to access the separate algorithms. Programs within each space type are then selected using a pulldown menu in the Preset window. This produces a choice of two submenus: Send or Insert. Choose one directory or the other, and you can quickly route your reverb in a single motion. Slick.

At less than $100, CSR offers a lot more than its price—or main screen—implies. Technically a single-screen interface, CSR displays different parameters depending on whether you select the Easy or Advanced mode switch. Easy mode shows higher-level functions, cherry-picked and based on the type of reverb because sometimes that's all you need in order to marshal a preset into the desired sound. The Advanced mode provides access to all the parameters, including a powerful modulation matrix (including two LFOs and Envelope controls) that control the signal's I/O. Another bonus? Four assignable and nameable faders for various macro functions make it possible to create morphing effects using a single control. My one wish-list item would be the ability to enter digits directly into the numerical display; currently, the only way to achieve a specific value is via knob turns.

FIG. 5: Rob Papen's RP-Verb has a straightforward interface but offers the Distortion and Envelope controls that can act on either the audio or the reverb.

Once selected, a program can be edited in either an A or B bank, using, say, A for your unchanged control and B for your edited version. Selecting the A and B buttons then allows quick comparisons. Each CSR module is loaded with 20 presets from which to choose, but you can save an unlimited amount of your own, easily assigning them to their appropriate Send or Insert category.

CSR would be a top choice for someone who's used to high-quality reverb but doesn't want to learn a complex software-based interface. I especially liked the Room reverbs (see **Web Clip 3**), with the Halls coming in a close second. Because of its arrangement into separate instances for the space type, CSR has a low CPU load. Classik Studio Reverb is blessedly hardware-like, both in its programming and it its high-quality, classic, and musically useful sounds.

FIG. 4: VirSyn's Reflect uses convolution technology for some of its programs, combining up to 200ms of an impulse response with an algorithmic tail.

VIRSYN REFLECT 2.0.1

vlrsyn.de

$220

Reflect is a hybrid of convolution and algorithmic technologies combined in a seamless, clever way, and keeps the price down to boot. It has a straightforward interface (see **Fig. 4**), but its simplicity makes it easy to learn quickly. A fixed column on the left side is dedicated to the well-organized browser. The rest of the screen shows an array of knobs that are physically grouped (and color-coded) by function. The knobs display their exact values when you mouse over them while displaying pointer marks for at-a-glance referencing when you're not actually adjusting them.

Three yellow knobs control Size, Damp, and Stereo (room size, brightness/high-cut, and stereo image width, respectively) for the early reflections; six blue knobs control the tail. I achieved particularly nice results manipulating the Absorb, Diffuse, and Mod controls in the tail. Balancing the two Size controls between the Early Reflection and Tail portions was also fruitful and constructive. It must be said that even though the interface separates the early reflections and the tail—one is convolution-based and the other algorithmic—you hear them as one smooth, unified entity. An EQ section lies underneath, with adjustable high/low-shelving controls, and sweepable low-mid and high-mid bands.

As stated by Reflect designer Harry Gohs, the plug-in's primary aesthetic is to emulate classic algorithmic reverbs as represented by Lexicon, Bricasti, and others. Reflect doesn't produce the wilder effects associated with other models; rather, it focuses on realistic

emulations of rooms and halls. Particularly nice were Brass Hall and Golgumbaz, which both used the convolution and algorithmic aspects to their best purposes (see **Web Clip 4**).

The thrust of Reflect's power is demonstrated in its Early Reflection stage. In the program's first incarnation, Reflect used algorithms to carefully calculate from real or artificial sources. In this version, convolution technology—using an actual impulse response—is employed for the first 200ms. A nice feature is that you can toggle between the Waveform view of the IR and the Timeline, showing the first 200ms of the early reflection. Users can load in their own IRs, too. It's nice to hear how a real audio file can be economically integrated into an algorithmic reverb—whether that impulse response is a real room or the output of a classic hardware reverb.

ROB PAPEN RP-VERB 1.5.0

robpapen.com

$179

Rob Papen is well-known to electronic musicians as a respected designer of software instruments. His reverb plug-in, RP-Verb, includes RP-Delay, a nice companion program for your ambient needs.

RP-Verb's main screen looks like a classic hardware device, with a black background, brushed-chrome knobs, white lettering, and blue-background displays (see **Fig. 5**). The labels may be harder to read at a distance than some other reverbs, but the layout is spacious and logical. The four main sections—Ensemble, Early Reflections, Reverb, and Late Reflections—can be toggled on or off to instantly hear the contribution of a particular stage toward the overall sound. Distortion (a parameter not offered on most reverbs) is also selectable and adjustable. Beneath the main window and ringed by a chrome border are the Envelope and EQ controls. RP-Verb has an intuitive, well-laid-out setup that facilitates fast editing.

RP-Verb's three pulldown menus for browsing seem a little redundant, but they offer a quick way to summon any preset once you learn it. As with Classik (see above), you can't directly enter numerical values for the parameters, but mousing over a knob reveals the precise numerical value—whether in dB, milliseconds, or percent. Grabbing a knob puts a blue glow around it to let you know it's active—another nice touch.

Including Distortion control in a reverb is a hint toward RP-Verb's more adventurous leanings. Papen views this control as a total sound contributor—just as when you mike drums with overhead mics, strap on a compressor, and then gate the results. This approach is well-represented in the Drum Disto programs (see **Web Clip 5**). Also high on my favorites list were the collection of Storm Room programs. In these, the tails are dense and lush, and are—if not ultrarealistic in many cases—a great choice for fattening up instrument sounds. But don't pull up RP-Verb for just the wacky effects with hard-sweeping envelopes. While it can do those well, RP-Verb also excels at straightforward room and hall sounds, with dense, smooth tails that are realistic, musical, and pleasing right out of the box.

D16 GROUP TORAVERB 1.2.1

d16.pl/toraverb

$33

For the price, it's hard to imagine a better reverb deal than Toraverb. True, its one screen is smallish and the labeling is hard to read, but its sounds will delight and inspire, especially if you're looking for more creative applications (see **Fig. 6**). The customizable Browser does

FIG. 6: D16 Group's Toraverb offers great sounds for the price, including ones that favor more experimental efforts.

CONVOLUTION AND ALGORITHMIC REVERB

Some Practical Differences

Convolution and algorithmic reverbs use mathematical operations to achieve realistic reverb results; they just approach the job in different ways using different tools. Rather than study the higher math involved to differentiate between the two processes, it may be helpful to consider a familiar analogy: samplers vs. synthesizers.

The sampling process begins with a digital recording of, say, an actual instrument. Sampling does a great job of capturing the key aspects of the sound—the transient (the initial sputter of a trumpet or bow-scrape of a violin), plus the first milliseconds of the sound, where so much of the information resides that helps listeners distinguish, say, a clarinet from a flute. In a synthesizer, everything from the transient to the pitch-bearing waveform is artificial—synthesized with white noise, wave generators, and envelope controls. This is similar to how algorithmic reverb works and has worked for the entire history of electronic reverb hardware.

Convolution reverbs are excellent for deriving real-world acoustic environments (just as samplers emulate acoustic instruments), yet they're harder to twist into bizarre-sounding and otherworldly effects than their algorithmic counterparts (similar to the way synths can create alien lightsaber bursts with very little effort as compared to a sampler). If you're seeking pristine and realistic reverbs, and money and powerful, tricked-out computers are no object, convolution is the way to go. If you like vintage machines, playing with knobs to get unexpected and creative sounds, and if you're concerned about preserving CPU horsepower, or if you just like the traditional way of deriving recording studio reverb the way it's always been done (through black-box magic), algorithmic reverbs offer tremendous options.

—Jon Chappell

a great job of sorting its presets into Dry/Wet and Wet categories (an intuitive take on Send and Insert), and it offers up as much in the way of experimental sounds as realistic space renderings. That's fine, as some of my favorites included the whooshy, sweeping metallic sounds found in Cristal Cave, Metal Walls, and Mutiny on Bounty (see **Web Clip 6**).

While Spartan, the interface has separate EQ stages for tweaking Early and Late Reflections. For the three parameters that govern Early Reflections (Size, Diffusion, and Attenuation), Toraverb provides the same-named ones, plus Feedback and Bass Cut. An appreciated touch is Late Reflection's Size parameter's real-time display, which reads out tenths of a second—a bonus for sound designers and video scorers who have to watch ring-out times. Controls for crossfading the Early and Late Reflections, and a Modulation control offer some useful tools for experimenting.

Its strength lies in the way it modulates the delay lines in Late Reflections, which lend an almost melodic quality to the tails. The fact that the program is easy to use and provides well-thought-out presets for conventional and original settings is a plus, as is its price.

THE LONG TAIL

The good news is that all six of these reverbs installed easily, worked flawlessly, and ran multiple instances without taxing my CPU. So in that respect, you can't go wrong with any of them. Your choice will ultimately lie with the personality of the sound (and your definition of quality) and with the interface, especially if you're going to spend a lot of time tweaking the presets, in addition to browsing through them to use as is. For those on a budget, Classik Studio Reverb would be the top choice even though it's not the cheapest. Its ease of use and excellent classic emulations will allow traditional recordists—and those used to hearing the quality delivered by outboard hardware—to hit the ground running.

Toward the higher end, the programs diversify more into choices of personal taste. Aether will appeal to those who are technically proficient and who sculpt their reverbs as carefully as they would any other aspect of the music. RP-Verb and Reflect strike a nice balance between affordability, interface design, and great sound, with RP-Verb getting the edge because of its innovative tone-shaping controls. Breverb is the most expensive, but it features a state-of-the-art interface; unparalleled automation; smooth, classic sound; and a level of detail and warmth in its programs that make it a pleasure to use.

Yet even as convolution technology gains popularity, it's clear that algorithmic reverbs are alive and well. And that's a lesson we can all take note of. *

Jon Chappell is the author of The Recording Guitarist: A Guide for Home and Studio *(Hal Leonard),* Digital Home Recording *(Backbeat Books), and* Build Your Own PC Recording Studio *(McGraw-Hill), and has written six books in the* For Dummies *series (Wiley Publishing).*

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Mau5 IN THE HOUSE

DEADMAU5 FINDS TIME IN HIS BUSY TOURING SCHEDULE TO PRODUCE A DAZZLING NEW ALBUM IN HIS HOME STUDIO.

By Mike Levine

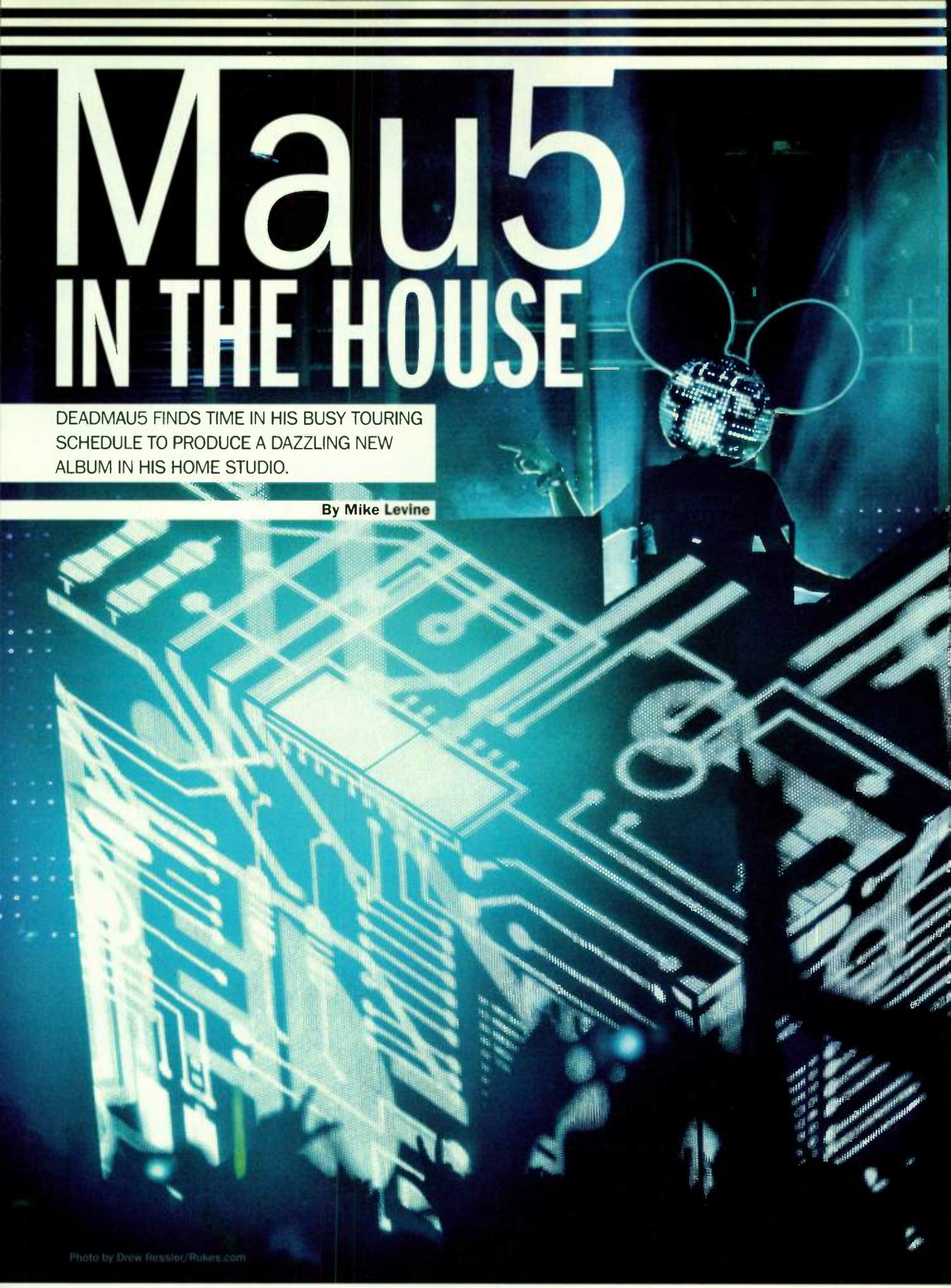


Photo by Drew Ressler/Rukes.com

MULTICOLORED LIGHTS FLASH WILDLY AROUND THE STAGE as Deadmau5 (pronounced "Deadmouse"), wearing his LED mouse-head mask stands atop the "Cube," the massive platform from which he performs, turning knobs and pushing sliders of the processors in his live-performance rig, as his music pours from the massive array of speakers and subwoofers. The crowd is on its feet, shaking its fists and stomping its feet in rhythm to the pulsing beat. The balcony of the old converted movie theater in northern New Jersey is literally shaking. The combination of human and low-frequency energy stresses the ceiling above the orchestra level to the breaking point, and a section of the plaster breaks free and plunges to the floor. Fortunately, no one is seriously injured.

Although his performances don't usually result in infrastructure damage, there's no question that Deadmau5's hard-driving brand of electronica—progressive house, techno, and electro are all terms that have been used to describe it—and his audiences' response to it, are very intense. Under the mouse head, Deadmau5 is Joel Zimmerman, a Toronto-based producer who, not only creates, mixes, and masters his music, but maintains control over virtually every aspect of his burgeoning career, down to the graphic design of his album covers and stage set.

His new album, *4x4=12* (Ultra, 2010), was released in early December and offers up 11 songs and close to 70 minutes of music (a deluxe version contains additional tracks). The songs feature fat, distorted basslines (a signature part of his sound), which are often generated by the synths in his modular rig. His mastery of all aspects of the production process is evident throughout, from in-your-face drum sounds to judicious and clever use of ambience to creative synth programming and sound design. You don't have to be a dance music fan to appreciate Deadmau5's studio chops.

I spoke with the always colorful Zimmerman a few weeks before the album's release to find out more about the production of *4x4=12* and about his home studio.

Excellent album. The production on it is awesome. How long did it take you to do the whole project?

I'm so kind of bummed out about it, because it is again, another compilation of s**t I kind of had going on in between tours. A track here, go on tour, I do another track there, and then it just turned into another compilation, and I've done this with the last two albums.

So wasn't like you had a concept and recorded for three months straight.

I'm waiting for the blessed time off to be able to do something like that.

How much are you on the road these days?

Way too much. [But] my booking agent says not enough.

Let's talk about your studio first. Did you produce the whole thing there?

Yep. I cannot produce outside of my studio. It's my chair. It's my home. It's where I feel comfortable. It's where I can just shut everything else up and do something. I have a lot of gear now.

Describe your studio. I think I saw a picture online; it's not that big of a room, right?

No actually, I'm going to be taking care of that this year, but it's really not that

big. It's about the size of any mastering suite. It's small, and for the right reasons. I don't need a big cavern.

What is your main DAW?

It's the same old usual hodgepodge of everything, because so many things are good at so many things but suck at everything else.

Which ones do you use?

[Steinberg] Cubase, a bit of that. A bit of [Ableton] Live. Some [Image Line] FL Studio, even.

So you're on a PC?

And Mac. Like I said, it's just different platforms, different systems; different software does different things.

Is there a typical production process for you, starting from the song writing part?

The composition usually starts with me whittling, noodling away on a MIDI keyboard. I'll just load up some random-ass patches on some plug-in or on a synth, or wire up the modular and do some goofy sequences. Basically, I try to get the melody and phrase down before I get too heavy into making that duck at just the right amount.

Once you have the melody figured out, do you have a particular method arranging and structuring a song?

All the DAWs, the one thing that they all have in common is that you can see everything. The *4x4=12* thing is kind of a piss take on that because it's really kind of formulaic. You look at a 4-bar-long clip stacked to another one, and then with an 8-bar or 16-bar loop or breakdown—but never a 6-bar one. I wish I could make some kind of algorithm, if I was a talented coder, to analyze these patterns because it looks like there are so many common elements other than the sounds and melodies. But the structure of more or less every song ever played by a DJ is so damn close.

It always has a breakdown in the middle, right?

Oh, of course, you have to. It's just such a DJ-format thing. You can *not* start a track with a melody. You've got to give them a bit of lead-in time to mix.

Do you find that having to work in that structure is constraining?

Of course it is, for that style of music. Luckily for me, I like to explore doing all sorts of different kinds of music, and I don't necessarily follow the rules of "If I was a DJ, I need to make this track work in such a way."

Let's talk about the album. The sounds on it were great. Where do those big, fat nasty bass sounds usually come from?

A lot of it comes from my modular and my Moog stuff.

What kind of modular do you have?

I have a monstrous A100 system, but none of the modules are actually Doepfer, it's just the case, so it's all Eurorack. I'm a big fan of Cwejman modules, MacBeth modules. Dude, it's insane.

So you get your most fat, heavy-duty sounds out your modular?

Well I'm a big fan of the [Thermionic] Culture Vulture [outboard distortion processor]. I have a Weiss DS-1 and all these great compressors. I'm just really finicky about fat. Not to say that you can't do that with a plug-in, and that's not why I have it. It's just that I like tactile feedback.

So you're not keeping everything in the box, obviously.

No, unfortunately. So a lot of ideas get half-finished, and then once they are half-finished and I take too long of a break I can never get that back.

Can't get it back because you don't have the recall?

Yeah, there is no recall on this.

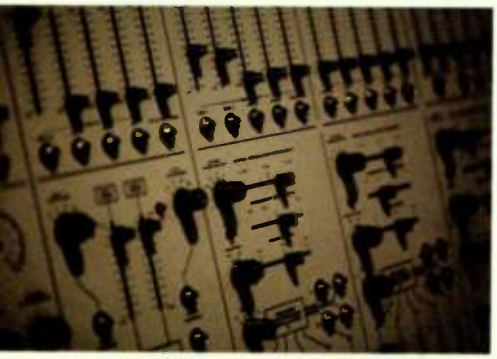
Obviously you can't save patches on a modular.

No.

Do you ever write down where the knobs are?

No, I never went that far. I don't bother.

photos by Joel Zimmerman



A look inside Deadmau5's home studio, where he produces, mixes, and masters all of his projects.

HEAR A PODCAST WITH MORE OF THE DEADMAU5 INTERVIEW. ✱ EMUSICIAN.COM/BONUS_MATERIAL

Do you track stuff in MIDI or is mostly audio, or a combination?
We MIDI out to the gear and then we record it, and then throw them into sampler channels or throw them into Battery, and then they become audio.

So you're dealing with MIDI data before you bounce the parts out to audio.
Yeah. Except for sometimes some modular things you can have trigger themselves. It depends on what it is. Every module in the modular is outputting noise whether it's plugged in or not. That's the nature of a modular synth. All the oscillators are always running. It's not like a computer where this will only happen if you do this.

So you just have to patch in the right sound and go.
Yeah. The beautiful thing about the modular system is that you will never get what you're trying to get. Try as you might, unless it's just eight detuned SAWs, then yes, you can do that. If you want this FM-y, tubey, like a DX7 sound, I swear to God, I could sit in front of the thing for a f**king year and never get anything close.

Do you often find that you accidentally set something a certain way and find a great sound?
That is the purpose of this monster of a modular system. It's the happy-accident machine. If you're wise enough to know that this is obviously going to do this if I do it this way, I'm not just sitting there arbitrarily plugging cables in backward and then praying that thing outputs a noise. There's basic fundamental knowledge behind these things. It's not rocket science at all.

What about your drum parts? Are they mostly samples?
Well, samples that we've produced.

Do you throw them into the grid and manipulate them that way?
Yeah, but it's all one-shots.

So not much in the way of loops?
No. We like to break everything down. If I cannot consolidate anything it's definitely rhythmic things. Anything that's got a rhythm, that's repetitive like a loop would be, like the more parts you can have for it, the better. Then you can take out and reintroduce, or swing certain bits of just a hi-hat without f**king up the whole loop. So I stay away from drag-and-drop and just playing dress-up Barbie with it. That's what it feels like, like those little cut and paste clothes. "Aw, this is good, aw, this is good." It's all going to be f**king good, but it would be even better if you could design it the way you wanted it, kind of taking a look in the mirror with your new outfit on.

Do you do all your own mixing as well?
Yes, and mastering.

I was really impressed with the mix. What I liked so much about this album was nothing was overly wet.
But you could hear it.

You could hear it, but there wasn't too much reverb. It had enough ambience. It had this dryness, too, that gave it a crisp, present feel that you don't always hear.
Especially on tracks like "Bad Selection." Me and [DJ] Aero were really meticulous about the cleanliness of that track. On a lot of tracks, I will throw in dirt vinyl stuff, just to give it a little bit of lift when I come on a release time of a compression. When it comes back up it's got something to lift up instead of just silence. Things like that I do a lot, especially with noise. But that one, we really wanted to stay away, we wanted to give it a more super-tight, super-clean sound, and with minimal effect as possible between notes.

Describe what you were talking about, as far as throwing in the dirt in between when the compressor is hitting.
What I do a lot, I take two SM57s, go up on my roof and just hit record. I've got

Photo by Drew Ressler/Rukes.com

about a 20-minute long file of this that I've been using forever. You bring it down to -18dB, to where I can just start to hear it, and I don't know if I'm going deaf or if my hearing is getting more f**ked up, but every time I go to listen for it, it gets harder and harder to hear.

It's just ambience, just air sound, right?
Yes.

And then what do you do with it? Do you lay it underneath the whole song?
I throw it in a bus that's being heavily compressed or effected, and then that will lift up the quote-unquote noise floor, so it's almost exactly how you would simulate a room with an IR verb, except you are not doing that and it's not a room.

But you're adding a slightly gritty thing that's very subtle.
Yes, you would never hear it in the end, because it might get EQed out way too much. I might high-pass the hell out of it, even.

Do you do a lot of sidechaining?
Oh, copious amounts. I think that's just a term that's gotten thrown around in electronic music production as the thing to do, because I hear it in demos and other people's work. Well not other people that are doing these amazing things, just the guys that want to learn about it and take something the wrong way.

How do you approach sidechaining?
It's something that should be looked at and taken care of when you're doing it, because it is something you can get carried away with, as an effect or as a mixing utility, that's the difference.

But the idea is to make an EQ or compressor or something react rhythmically.
SSL did not make the G series compressor with the external sidechain under the notion that you should take the threshold, bring it down to, f**king, I don't know, -15db with a 10-to-nothing ratio and a 0.1 attack time and a 0.1 release and then crank the makeup gain so that this thing just goes "thup, thup, thup." That's not it. It's an interesting effect, and any audible source is cool if you want to use it in your work, but there are just some things that are more meant to be used as adjustments, not effects.

Absolutely.
It's like Cher f**ked it for everyone for Auto-Tune.

When I talked to you once before, you were talking about wanting to steer clear of any quantizing.
Yes, but again, it's hard to say that when you're doing electronic music [laughs].

I was going to say, how do you do it? Everything is smack on.
It has to be. You're running off other guys' clocks. You could throw a DJ a turd. Something that sounds great, but maybe dip the tempo down or up a BPM for the entire duration of the track. It's not going to stop them from buying it, but it's really going to piss them off. And that's funny too. Jokes have their place.

Sure, but you've got to play to your audience, too.
You've got to play to your audience.

You do your own mastering, but you're now in the position where you could send your stuff to the greatest mastering engineer on earth if you wanted to.
But why?

I'm not saying you should.
I know, but that's my answer to that. I'll tell you why. I wouldn't want to, and I don't mean it in a negative way and I'm not being greedy about it. I like to keep something as much mine as possible. But that's my quirk. I do the same thing with my branding. I won't let my label design a f**king thing.

Really?
I won't. I don't care how good it is. I don't care how awesome it is. I don't care how cool you think it is or how many copies it will sell or whatever. I want to do it. It would be the same as saying would you let someone else's parents take your kid out clothes shopping for their first day of school.

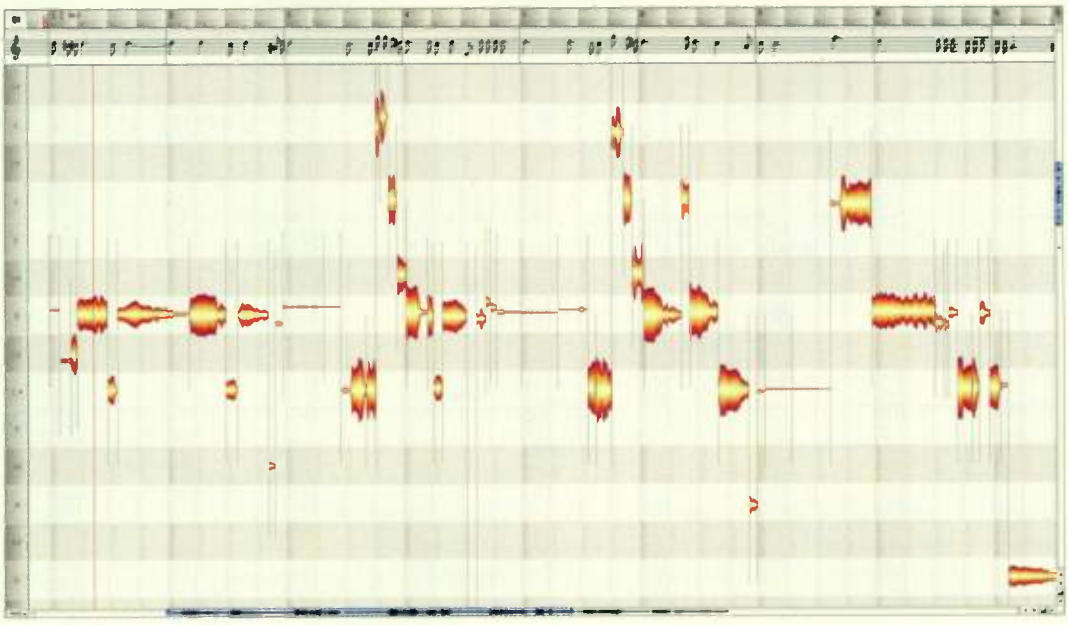
How many days a year do you tour?
[Laughs] All of them, except for Mondays.

Seriously?
That's what it feels like. Like we're doing five shows a week.

Good luck with it. Ride the wave.
You know, I really hate that saying. Or "enjoy it." Because it just makes it sound like I'm going to be not doing anything [eventually].

I didn't mean it that way.
I know you didn't mean it that way. But I really don't like hearing that. It's freaky. It's a little freaky because it's like, just buy all the gear, and then I'll just hang onto it and not sell it, and then hopefully pay my house off, and then my rent will be cheap, and then I'll be okay, and then everyone can hate me [laughs]. ✱

Mike Levine is EM's editor and senior media producer.



Double-Tracking With Melodyne

Harmonizing, doubling, and formant-shifting for the modern age

By Eli Krantzberg

Automatic double-tracking—in which tape-delayed copies are combined with the original to simulate the doubling of voices or instruments—dates back to the days of analog tape recording. The tape delay causes subtle timing and pitch variations, which produce irregular discrepancies like the natural variations occurring when a performer records the same part twice. Nowadays, copying tracks is as simple as cutting and pasting text in a word processor. Chorus plug-ins and manual timing offsets produce the necessary pitch and timing variations.

But these techniques pale in comparison with the creative capabilities of modern pitch-correction software. Here I'll look at several ways to use Celemony Melodyne Editor plug-in and Melodyne Studio for conventional doubling and thickening techniques, as well as cover some unconventional ways to create and combine completely independent parts.

OLD DAYS, NEW WAYS

To transfer audio to Melodyne Editor when it is inserted as a plug-in on a track in your DAW, simply press the Transfer button and play the track. For a classic doubling effect, select either some or all of the *blobs*, right-click to call up the contextual menu, select Copy, and then select Paste. If the pasted duplicates aren't lined up exactly with the original blobs, enable the timing grid, drag them over, and they will snap into place. With the duplicates still selected, use the Edit menu to add random deviations to the pitch and timing. You can use the Inspector or the Amplitude tool to lower the level. Experiment by adding multiple random deviations (see **Web Clip 1**).

This basic method is simple, elegant, and efficient, but it doesn't let you pan or process the doubled part. And once you close the plug-in window, it is virtually impossible to reselect the doubled blobs because of their close proximity to the originals. For greater flexibility, copy your original to one or more new tracks and insert an instance of the Melodyne Editor plug-in on each.

Better still, route some sends from your main track to one or more buses holding instances of Melodyne Editor. Then enable the Transfer button in each instance, and transfer the audio to all instances in one real-time pass. Once you've made the transfer, mute or bypass the sends from the original track. Melodyne Editor will play back the audio stored within the plug-in on each of the bus tracks.

To save CPU resources, process your main

track with plug-ins that you want applied to all of the duplicates. Those could include basic EQ and compression, as well as an instance of Melodyne Editor for basic pitch correction.

Using multiple buses makes it easy to triple or quadruple your original track while adding random or deliberate variations to each instance. You'll also be able to mix and process the bus tracks individually. Furthermore, having separate instances of Melodyne Editor on each bus lets you add formant, pitc-, or time-shifting to any note of any duplicate—no more dealing with multiple tracks in your arrangement (see **Fig. 1** and **Web Clip 2**).

Because each instance of Melodyne contains its own version of the transferred audio, it is easy to edit the blobs to create harmony parts. To do that, enable Scale-Snap and drag the blobs up or down to scale tones that fit the underlying harmony. The timing and phrasing remains in sync with the original, and the duplicates become harmony parts (see **Web Clip 3**).

I GET A KICK OUT OF YOU

Double-tracking isn't just for vocals—try it with a kick drum part, for example. Copy and paste the blobs to create duplicates, and drag the duplicates up or down to change their pitch and, therefore, the character of the sound. Leave the duplicates at their original time positions; small timing deviations don't work well in this context—they just sound like bad phasing.

On the other hand, rhythmically timed offsets can yield interesting results. Try offsetting the entire duplicate part by a musical subdivision that complements the song's rhythm. You can edit the formants and amplitude of the offset part to generate interesting granular-like artifacts, as well as accents and dynamics. For repetitive parts, choose Melodyne's Select Same Beats In Other Bars from the Edit menu to apply the variations consistently and repetitively. Because the notes are all at the same pitch, you can reselect the duplicates simply by clicking in the pitch scale on the left (see **Fig. 2** and **Web Clip 4**).

You can apply Melodyne's Direct Note Access and pitch- and time-deviation algorithms to polyphonic material (think rhythm guitar or choral parts) to create a chorus effect with control over individual notes. Use the technique previously described to transfer some processed guitar on a send bus hosting Melodyne. Remember to mute the original because the bus track will play back the transferred processed audio.

Melodyne does a pretty good job of analyzing polyphonic parts, but you may need to use the Note Assignment tool and Monitoring Synthesizer to tweak the note detection, particularly the note separations. Once done, use the Edit menu's random-deviation commands for pitch and time to create a chorus effect. You can double-click individual blobs with the Amplitude tool to mute selected notes and exclude them from being chorused (see **Fig. 3** and **Web Clip 5**).

TWO APPS ARE BETTER THAN ONE

Melodyne Editor is handy and efficient, but Melodyne Studio provides a full-fledged multitrack environment where you can see, edit, and mix multiple Melodyne tracks simultaneously. Melodyne Studio can open audio files directly, but transferring them from your DAW, although a bit more work, places the transferred audio correctly on Melodyne's time line. And you can transfer multiple tracks with different start positions simultaneously.

To do that, instantiate Melodyne Bridge in the first DAW insert-effects slot of each of the tracks to be transferred. If Melodyne Studio is not already launched, it will do so automatically. Make sure to save a newly created empty arrangement in Melodyne Studio before you begin the transfer and verify that it is the document selected in each of the Melodyne Bridge plug-in windows. Set them all to Transfer mode and point each to one of Melodyne Studio's eight active tracks. Now playing your DAW will transfer all the assigned tracks at once. Melodyne Studio will then follow your DAW's transport.

After transferring the audio using Melodyne Bridge, you'll get better two-way communication by using Melodyne Studio as a ReWire client. To do that, quit Melodyne Studio and delete the Melodyne Bridge plug-ins in your DAW. Launch Melodyne Studio again and, when prompted, choose ReWire as the method to connect to your DAW. Playback from either application will now control the other's transport. Assign the track outputs in Melodyne's Mixer window to the ReWire channels set up in your DAW. Because the ReWire tracks will be playing back through your DAW, don't forget to mute the original DAW tracks to avoid unwanted phasing.

Double-tracking in Melodyne Studio really shines when its tracks are used for multiple variations of a single part. The visual overview in the Arrangement window is great for setting up harmonies, delays, and echoes because you can easily see the relationship between each of the parts.

FIG. 1: The pitch-corrected vocal is sent to three buses, each with an instance of Melodyne Editor with different pitch and timing deviations. The channel strips have separate panning and EQ.

ECHOES AND VARIATIONS

In Melodyne Studio's Arrangement window, click a track's Control panel to select its contents and then use the Paste Special>Copy And Paste Selection To Parallel Track command (Command-Shift C) to instantly double the part to a new track. Use Edit>Edit Pitch>Add Random Offset To Pitch Center and Edit>Edit Notes Time>Add Random Offset To Time Course Edit menu commands to introduce subtle intonation and timing variations. That produces a more natural-sounding doubling effect. You can create a harmonized part quickly by Alt-Shift-dragging (Option-Shift-dragging on the Mac) some or all of a track's blobs in the Edit window. The newly copied part will be put on a new Arrangement window track, and random pitch and time deviations will be added automatically.

Where there is some empty space in the arrangement, Alt-Shift-drag some sustainedblobsdowntoanew track in the Arrangement window to create multitrack echoes. Double-click to open the blobs in the Editor. With the grid enabled, use the Move Notes tool to offset the duplicated blobs by musical subdivisions. Alter the note length, amplitude, or formants for some colorful echo variations. Finally, add some panning in Melodyne's mixer. You can route the whole thing to a single pair of ReWire tracks in your host, or you can change the

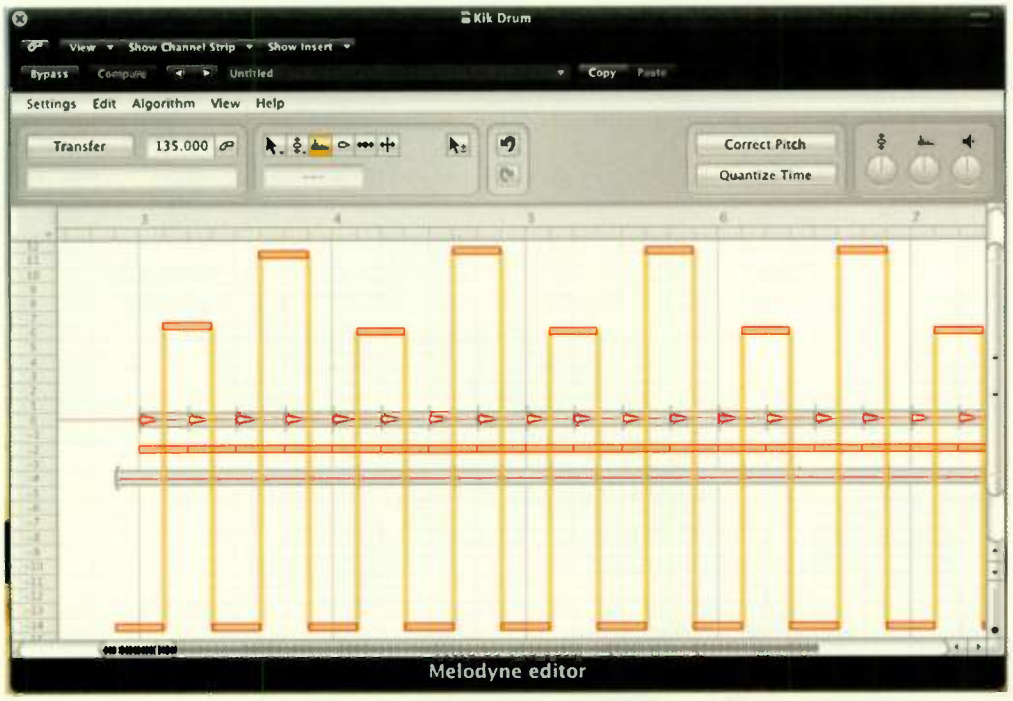


FIG. 2: This kick drum part has been duplicated, shifted by an eighth note, and lowered in pitch. The formants are edited using the Select Same Beats In Other Bars command to generate consistent variations.

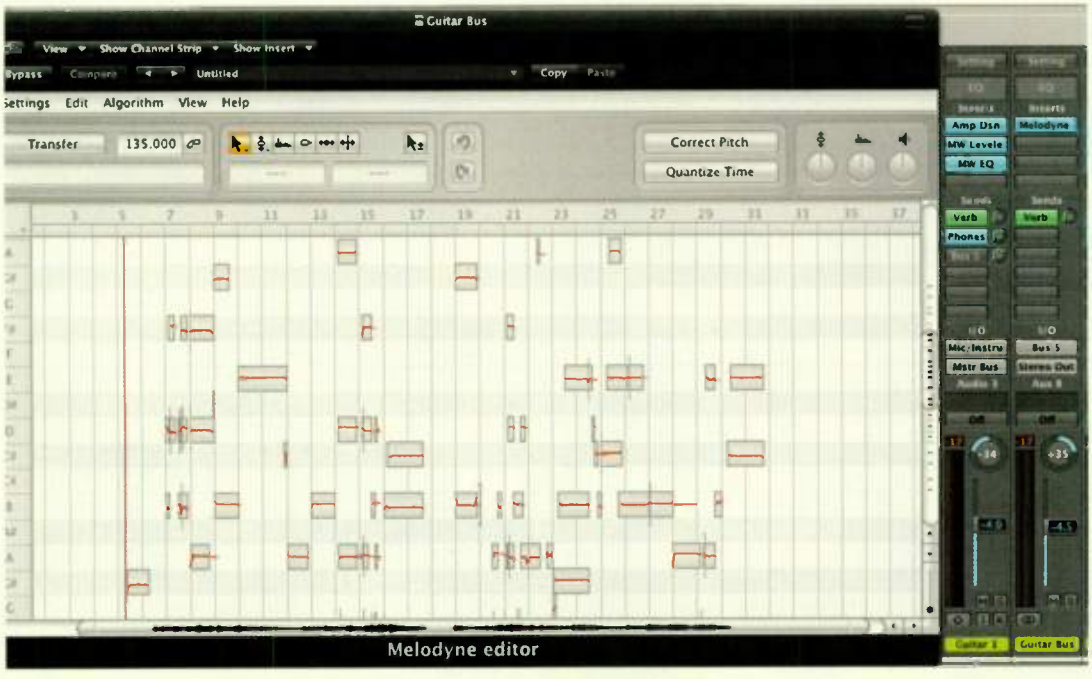


FIG. 3: A polyphonic guitar part is double-tracked on a bus with pitch and time deviation applied to create a chorus effect. Double-clicking with the Amplitude tool mutes individual notes.

outputs in the Mixer window to bring them back in on multiple tracks. That allows further processing in your DAW (see **Fig. 4** and **Web Clip 6**).

For some creative arranging, try copying some short melodic phrases to the clipboard, select the sustained echoes, and then use the Replace Keeping Target Pitches command from the Paste Special menu. The notes will be pasted in at the same pitch as the original sustained note and stretched as needed to fill the same length of time. You might combine this with some of the original sustained-note delays for a nice interplay of melody and rhythm (see **Web Clip 7**).

MIDI DETECTIVE

Melodyne Studio will help you extract a MIDI part from recorded audio, which gives you options beyond simple doubling. For example, you can use a virtual instrument (sampled or synthesized) to double the part.

You'll find several ways to tweak its audio-to-MIDI detection parameters. The three default algorithms work fairly well, but you can customize them on the Detection page of Preferences if need be. Choose Add from the dropdown Options menu, and a new window will open with a variety of detection parameters. Limiting the pitch range and sensitivity settings helps guard against misinterpreted harmonics. The Separation buttons determine how notes with portamento or slide are divided. If necessary, you can force re-analysis of a file using a different algorithm from the Definition menu.

For detailed manual tweaking of individual notes, use Correct Detection mode on the Definition menu. In this mode, you use the context-sensitive Pointer tool and the available detection parameters to search for alternative pitch or note-separation choices. The changes are stored in the accompanying .mdd file so that they are available the next time you open the file. Tweak heads can open the MDD Editor itself (on the Definition menu) for complete control.

Enable Show Audio-To-MIDI Parameters on the View menu for real-time audio-to-MIDI triggering. Here you can shape the velocity curve, establish pitch-bend parameters, and adjust the attack envelope. Most importantly, this is where you select a physical MIDI port and channel or a virtual-instrument plug-in hosted by Melodyne Studio.

TRAVEL PLANS

To double-track with MIDI within your DAW, use the File menu's Save Audio-to-MIDI function to export a MIDI file. Choose As Specified in Tracks from the dropdown format menu to continue working with the file in your DAW. Next set the range and choose the tracks to export. Hit the Save As button and set the name and location for the exported MIDI file. Finally, bring the newly created MIDI file into your DAW. Depending on how you set the range when you exported, you may need to line the MIDI clip up manually. Now play it back with one or more virtual instruments (see **Web Clip 8**).

This is not your grandfather's 4-track tape-based double-tracking. Whether using Melodyne as a plug-in inside your favorite DAW or Melodyne Studio connected by ReWire, you're limited only by your imagination. The possibilities will carry the creative and adventurous into the next century. *

Check out Eli Krantzberg's Melodyne Explained *video series at groove3.com. Special thanks to Nancy Lane and John Acer for the vocal and guitar parts.*

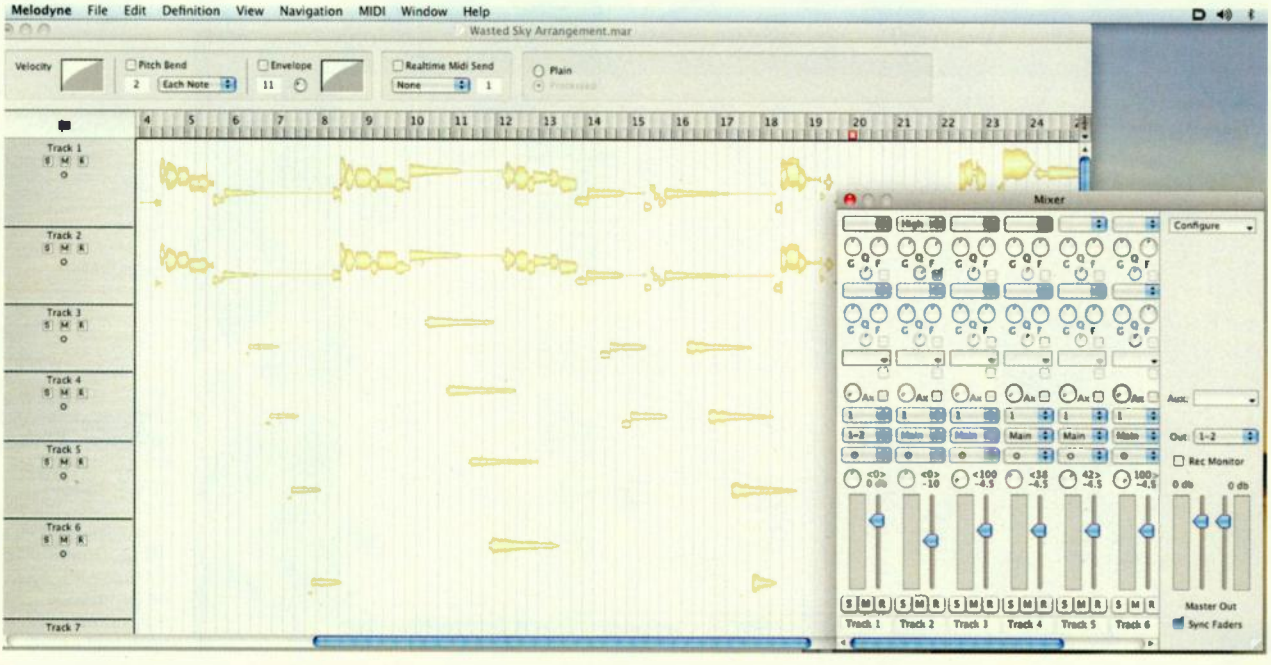
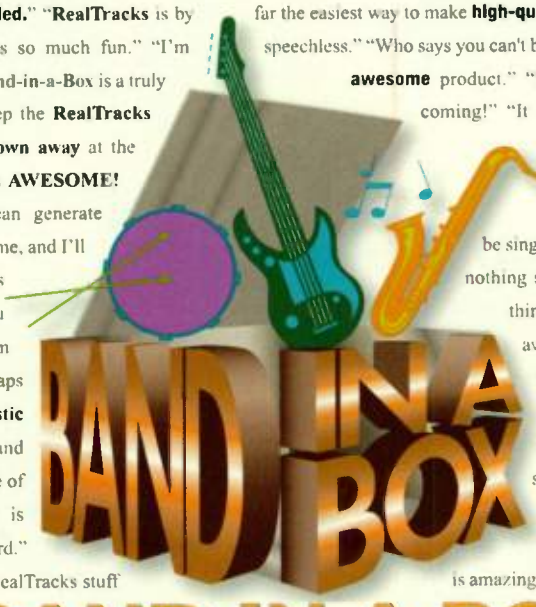


FIG. 4: Blobs are duplicated by Alt-Shift-dragging in the Arrangement window. With the grid enabled, use the Move Notes tool in the Editor window to establish the timing offsets. Alter length, amplitude, and formants to taste.

Can a music program create professional, real-sounding arrangements and solos for your songs from only a chord progression?

"Are you sure it is legal to have this much fun?" "I'm looking for those **perfect band mates** and I just discovered they live in a box." "The soloist sounds amazingly like **real people** improvising!" "The program **sounds so much better** with **RealTracks**... A thousand times, Thank You!" "Band-in-a-Box is some of the **most fun** you can have with a computer." "I can load my **MP3** in and see the chords play on the screen." "My buddy and I sat around last Sunday night just jammin' away..." "As an old BE-BOPPER circa late 40s, most of the cats I played with are dead and gone." "Band-in-a-Box has made me a **much better player.**" "Can't say enough good about your products. You obviously understand our needs exactly." "BB makes it so easy to quickly build an arrangement for composing." "Thanks to BB I can still swing with the help of the **fabulous cats** living inside BB." "Band-in-a-Box was the solution to an old fustration: being a musician. Now I am a musician." "The ease and quickness in producing **quality** backing tracks is **unparalleled.**" "**RealTracks** is by far the easiest way to make **high-quality** background tracks." "**Band-in-a-Box** is the **holy grail** for accompaniment software." "This is so much fun." "I'm speechless." "Who says you can't buy happiness." "This is absolutely a must-have item." "I will be telling my **Mac friends** to get it." "**Band-in-a-Box** is a truly **awesome** product." "**Band-in-a-Box** is now on a whole other level of sophistication." "A giant leap forward" "Keep the **RealTracks** coming!" "It blows my mind." "**RealTracks** add a whole new dimension of realism." "I was absolutely **blown away** at the quality of **Band-in-a-Box**." "Your **Band-in-a-Box** program is **extraordinary!**" "Your product is **AWESOME!** **THANKS**" "A fantastic leap forward." "Un. Believable" "I can't believe how fast I can generate **RealTracks** and renders with the new version." "They've **outdone themselves** this time, and I'll be singing the praises of **Band-in-a-Box** every chance I get." "This new musical concept you have created is nothing short of evolutionary. If it were a living creature, it would be a whole new species." "Just when you think **Band-in-a-Box** is as cools as it can be, you guys take it to a new level." **"Brilliant!"** "I'm awestruck." "All of the new instruments are just **smashing.**" "I must say, the pedal steel is perhaps the greatest accomplishment in the history of this brilliant program." "The RealTracks are **fantastic** and provide **great inspiration** for creativity." "This is a great gift to jazz musicians, educators, and singers." "Oh, wow. **This changes everything.**" "It's **stunning.**" "Thanks for a superbly useful piece of software." "I tried with many audio files and the chord detection is **amazingly accurate!**" "This is absolutely a must-have item." "Wow, I'm learning tunes fast with help of your Audio Chord Wizard." "It finds the exact chords to the song... perfectly." "Wow!" **"I am blown away!** The jazz/swing RealTracks stuff is amazing." "**Awesome.**" "Is this cool or what?" "I'm in seventh heaven" "You won't regret it (and if you do, there's the **30 day money back guarantee**)." "I never thought I'd see the day this was possible." "I said before, but you guys are **incredible**." "This is **world on fire!**" "I'm so stoked about **gonna set the** stand it." "This is just killer." "Amazing, how good everything sounds I can hardly awesome sounding. Good work!" simply amazing." "[RealDrums] is really cease to **amaze** me. You got it." **"Wow** "Many kudos all around." "You never and **RealDrums** sound awesome." **and Double Wow."** "The **RealTracks** "I am frankly amazed at most of the "Long live PG Music!" "Mind bending." this new BIAB 2009 for Mac. ***Kudos*** to styles." "I am absolutely delighted with song with **Band-in-a-Box**, **I couldn't** you and your team!" "First time I did a also in creating music in my studio. It is **believe it!**" "I use it in the classroom and own. I am greatly impressed." "I use a fantastic piece of music software to improved my musical talents by far and **Band-in-a-Box** regularly. It has have helped make this program so I enjoy it very much. Thanks to all who your fantasic ***improvisational*** program." **fantastic!!!**" "I am very impressed with the most powerful, cost effective, user "It's a great ***educational tool.***" "This is friendly music software I have seen." "BIAB is my best **learning tool.**" "J'ai la premiere version de **Band-in-a-Box** et ***j'aime beaucoup.***" "A truly **great product!**" "It's just incredible! I am a practicing jazz musician and was **absolutely dazzled** by your soloist feature." "Band-in-a-Box is an **awesome** tool for getting projects done NOW!" "The soloist feature is **phenomenal!**" "Excellent quality is a PG Music standard." "I use your program with my saxophone students. They love to play with a "real" band in the back!" "Who knew what Coltrane would sound like soloing over country music—**LOVE IT!!!**" **"Awesome software at a fantastic price!" "Band-in-a-Box, well, it's just a great program!"**



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2011 for Windows® & Macintosh® with RealTracks

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Our Customers Think So.

By Len Sasso

FIG. 1: Korg iMS-20 songs and patterns bounced from your iPad appear in the iTunes file-sharing area. You can copy them to your hard drive for use in your DAW.

iPad to DAW

Porting your musical iApplication creations to your computer

iPad, iPhone, and iPod touch music applications are becoming increasingly sophisticated, and many offer sound-design processes that aren't easily replicated on a desktop or laptop computer. After you've logged hours on the couch or on the go creating these nuggets, you'll often want to combine and expand on the results in your DAW (see **Web Clip 1**). That entails moving audio files from your device to your computer, a process that some apps accommodate more easily than others. Here are the more common approaches and some of the potential pitfalls.

The most obvious method, direct audio transfer, is often the best solution. If you are working with your iOS device in the studio, you're probably already piping it through a DAW audio track to use your studio monitors, so you might as well use that setup for recording—it's always available and works for every iOS app. The downside is that the audio leaves the digital domain via the device's DACs, which are often adequate but less than ideal.

If you're working in a pattern-based application such as Akai SynthStation, Propellerhead ReBirth, or Korg iMS-20, set your DAW's tempo to match the project. Even though you can't tempo-sync the apps, it will make the requisite trimming and possible timing adjustments easier. You'll also save yourself a lot of headaches by recording stems rather than (or in addition to) the full mix. You can do that by soloing each part, but in pattern-based programs, I find it easier to create a new song that strings the patterns you want to use end-to-end with enough bars of silence between them to allow for effects tails.

Before bouncing tracks, I prefer to remove effects such as reverb, compression, and EQ, and to maximize the level of each part. That allows more flexibility in mixing in your DAW, and it provides the best audio quality. On the other hand, keeping the original effects and levels makes it faster to reproduce your original mix.

Many apps provide ways to render and export audio directly from your iOS device. The best method is iTunes file sharing, but iMS-20 (which runs on the iPad only) is one of the few apps I've found that support that. It lets you record in real time or bounce any pattern or song as a WAV file. When the iPad is connected to your computer and is selected in the iTunes Devices browser, the iTunes Apps tab reveals all of the bounced files in the File Sharing window at the bottom (see **Fig. 1**). From there you can save them to your hard drive and you can delete them from the iPad. IMS-20 will also link to your SoundCloud account for audio and song-data sharing.

A more common method is via Wi-Fi transfer. Jordan Rudess' MorphWiz lets you save and load recordings as WAV files, e-mail them directly from the program, and erase them in the MorphWiz browser. SoundStation and Sonosaurus ThumbJam present you with an HTTP address to which you can log on while the application is running on your device. From there, you can download and delete the rendered files. ReBirth renders the current loop as an MP3 file, posts it to the company's server, and provides a link for emailing or posting. Chris Wolf's Jasuto Pro presents its memory as an FTP site that you can access with an FTP client such as Fetch.

All these methods stay within the digital domain and, with the exception of ReBirth's MP3 rendering, provide better audio quality. Use your DAW or sample editor to trim and possibly more tightly tempo-sync individual stems, and you're ready to rock. ✱

Len Sasso is a freelance writer and frequent EM *contributor. For an earful, visit his website, swiftkick.com.*

LISTEN TO AN EXAMPLE OF APP TRANSFERRING ✱ EMUSICIAN.COM/BONUS_MATERIAL

By Aaron "Ming" Albano

Save Time With Templates

As a professional music producer, it's critical for me to be able to complete projects quickly. One technique that helps me greatly increase studio efficiency is to use custom DAW templates, preconfigured to suit my workflow and gear setup.

Creating such templates not only provides me with the tools I'll use within each project, but also forces me to visualize what needs I may have during the production and mixing process. Just as you would load a bank of your favorite sounds for programming a drum track into your drum machine, I use templates filled with the input channels, aux channels, effect sends, output sends, instruments, and channel routing that I typically use.

> I like to have tracks set up for live bass and guitar because I often write on those instruments.

In this column, I'll describe how I put my templates together to give you some ideas on how to construct your own. I use Apple Logic, but any major DAW allows you to save session templates.

THE STANDARD TEMPLATE

Most of the templates I use are based on a standard model that I created after analyzing the DAW elements that are similar across many of my productions. A good place to start this analysis is your DAW's output section, which is defined by your desired mixing process. For mixing, I have two modes: in-the-box (bouncing to disk) or analog summed. For the latter, I use a Dangerous Music 2-Bus summing mixer and an Apogee DA-16X converter.

It takes less time to switch the outputs of my DAW channels, auxes, and master to one stereo pair for in-the-box mixing than to create the eight different stereo outputs I use for the 2-Bus. As a result, all of my templates are configured for my summing setup, which requires stereo pairs to the 2-Bus, with the 2-Bus returning one stereo pair through channels 15 and 16 on the Apogee, and back into Logic through a stereo return.

The output from the 2-Bus creates the stereo master for my session, so I have mastering channel effects, EQ, and a limiter on the return channel it's routed to in case I need to do some premastering. Obviously, if you create your mixes by bouncing to disk, your template's output section will simply comprise a master fader with any bus effects you regularly use.

None of the tracks are panned in my templates. I prefer to create the stereo field during the tracking process. I color-code my input sets and aux channels so that it's easy to keep track of the different input and output groups. By including color-coding in your template, it helps you be consistent in how you apply colors to tracks, which makes it a lot easier to keep your sessions organized.

If I am working off of one of my templates and I'm not going to be using a particular set of tracks, I use Logic's Hide Tracks feature to free up screen real estate. (Most DAWs implement one form or another of track hiding.) If I need the tracks later, I can just un-hide them.

GOING IN

Next, think about input. I like to have tracks set up for live bass and guitar because I often write on those instruments, even if I'm going to replace those tracks with programmed versions later. I have two mono inputs for live bass because I'm either recording into the DAW through a preamp or my Line 6 Bass PODxt Pro. One channel is set to the input of my preamp and the other to the Bass PODxt Pro's input. That way, I can start with either and not have to do any input switching. I bus these to a bass aux with a compressor, EQ, and limiter on the aux channel.

For guitar, I have three input groups, with three channels in each group, providing me with a total of nine guitar inputs. The inputs are assigned to my Guitar PODxt Pro. I don't always use the POD for recording, but it's good for quickly tracking ideas.

I prefer to decide during a session whether I'm going to use external amps or software amp emulations. Each of the guitar groups gets bused to its own aux channel,

FIG 1: A session opened up using the author's standard template. On the right are preconfigured aux channels for the lead and background vocals, with plug-ins pre-assigned.

creating Guitar Aux 1, Guitar Aux 2, and Guitar Aux 3. The guitar aux channels each have a reverb send, and the guitar reverb is on its own aux channel. I like to include a stereo output channel just for effects. The outputs of the three guitar aux channels all go to one output channel for the DAW. I can change this later if I have unused output channels to the 2-Bus.

I have three sets of inputs for vocals, labeled Lead, Background, and Chorus, respectively. I create six channels per set, and each set is bused to its own aux channel (lead aux, background aux, and chorus aux). The vocal aux channels have a compressor, EQ, de-esser, and limiter inserted (see **Fig. 1**). I also have effect sends on the aux channels for reverb and slap delay. The vocal aux channels are sent to their own stereo output pairs for a total of six channels because I like to have lots of headroom on the vocal buses.

The final aspect of my standard template is two aux inputs for ReWired instruments such as Propellerhead Reason/Record, Ableton Live, or Native Instruments Komplete.

GETTING SPECIFIC

After configuring my standard template, I used it as a foundation for making a series of additional templates, specially designed for specific genres and recording situations.

My Electronic template has a number of elements that I use to get tracks rolling quickly. I have drum machines loaded with my favorite soundbanks, with channels for kick, snare, hi-hats, and reverse hi-hats. There are a couple of channels with synths for creating baselines or melody lines, and a dedicated sidechain channel with a sampler using kick drums to output eighth notes to be used for sidechain compressors. I also included a sampler set up with white-noise samples for sidechaining and a couple of tracks containing white-noise audio that have been prepped for sidechaining with EQ and filter sweeps. The Marker pane has 8-bar and 16-bar sections noted.

My Live Drums template has basic input channels for kick, snare top, snare bottom, tom 1, tom 2, hi-hat, overhead left, and overhead right. The full kit is bused to its own drum aux that has compression, EQ, and overdrive inserts on it.

For commercials or scoring work, I have a Scoring template that has the Movie and Marker windows active.

My Song template has instruments set up and preconfigured for bass synth, Rhodes, and strings. The Marker window has a basic song format (V1, Pre-Chorus, Chorus, V2 Pre-Chorus, Chorus, Bridge, Chorus). And I have the Notes pane set up for typing in lyrics or other production notes.

Constructing thorough DAW templates takes some doing, but they will make your sessions more efficient and save you lots of time in the long run. ✱

Ming (mingsmusic.com) is a New York City-based artist, producer, and DJ. He owns Hood Famous Music and co-owns Habitat Music (habitatmusic.com).

REVIEWS

Fig. 1: Pro Tools 9 will run on any Core Audio– or ASIO-compatible interface.

PRODUCT SUMMARY

DAW SOFTWARE

PRICES: $599; crossgrade from PT LE, $249 (Digi 001 and original Mbox systems not eligible); from M-Powered, $349.

PROS: Supports Core Audio– and ASIO-compatible interfaces. Includes automatic delay compensation. Many formely optional features are now standard. Track, bus, and instrument counts expanded considerably from LE.

CONS: No surround support without optional Complete Production Toolkit. No offline bouncing.

FEATURES:	1	2	3	**4**	5
EASE OF USE:	1	2	**3**	4	5
DOCUMENTATION:	1	2	**3**	4	5
VALUE:	1	2	3	4	**5**

AVID.COM

GUIDE TO EM METERS

5 Amazing; as good as it gets with current technology
4 Clearly above average; very desirable
3 Good; meets expectations
2 Somewhat disappointing but usable
1 Unacceptably flawed

Avid Pro Tools 9

MAC/WIN

At last, a fully native version of this industry-standard DAW

By Mike Levine

During the past year, Avid has made a concerted effort to change its image from an aloof corporate entity to one that's responsive to its customers' needs and concerns. The first hint that something was afoot was a little more than a year ago when Avid cooperated with Mackie in allowing Pro Tools M-Powered drivers to be distributed for Mackie's Onyx-i mixers. That was the first time a modern version of Pro Tools would run on an interface other than one made by Avid.

Then, during the past six months or so, as Avid has been rolling out a series of new products (interfaces, keyboard controllers, Pro Tools HD Native, and more), it has been stressing in press briefings how it is taking its users' requests in mind as it designs new products and sets strategies. The product roll-out culminated in the stunning announcement of Pro Tools 9 (see **Fig. 1**) on the eve of the AES show in November. (At the same press conference, Avid announced Pro Tools HD9, but this review focuses on the native version.)

CHANGING TIMES

While Pro Tools has long been a dominant force in the pro audio world, its offerings for those not able to shell out $12,000 and up for an HD system have been slimmer. Pro Tools LE and M-Powered lack many of HD's key features and capabilities. If the strategy had once been to entice people

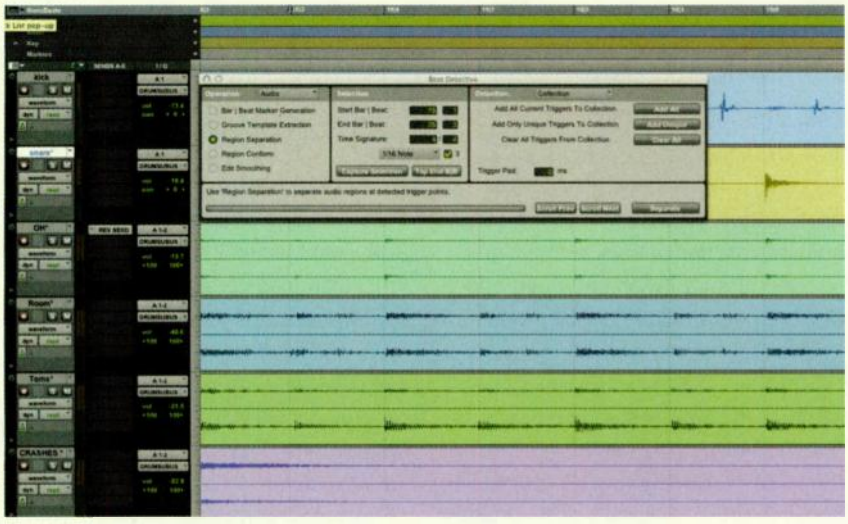


Fig. 2: One of the big additions to Pro Tools 9 is the multitrack version of Beat Detective.

to move up to HD by withholding important attributes such as automatic delay compensation from lower versions, it doesn't appear to have been a rousing success. With native DAWs such as Logic, Cubase, Live, SONAR, Digital Performer, and even newcomers like PreSonus' Studio One offering better performance for their open native systems, it was harder for LE and M-Powered to compete.

Pro Tools 9, which runs natively under Core Audio (Mac) and ASIO (Windows), is indeed an answer to the wishes of many. It offers the long-wished-for automatic delay compensation and provides many of the features that were once only available through expensive "toolkit" options. From the DV Toolkit, you get video features such as timecode readout and OMF, AAF, and MXF file exchange. From the Music Production toolkit, you get multitrack Beat Detective (see **Fig. 2**) and MP3 export.

Because PT 9 is fully native, you're no longer limited to using an Avid interface, which opens up a whole world of options. Of course, Avid makes excellent interfaces so you might choose to go in that direction, but you're no longer compelled to in order to run Pro Tools. If you've invested in an Apogee, RME, MOTU, or any other interface, you can now use it with PT 9. What's more, unlike LE, you're not tethered to an Avid interface as a dongle, which means that you can run PT 9 on a laptop with the only additional hardware being your iLok key because PT 9 will also run on your computer's built-in audio system. (For Windows systems, an ASIO-compliant audio card is required.)

If you own a Digidesign or Avid interface, you can crossgrade to PT 9 for $249 and download drivers from Avid to make your interface compatible with PT 9. (It's kind of ironic that you now need drivers to run PT 9 on Avid hardware but not on third-party hardware.) The only Pro Tools LE interfaces that are not compatible for PT 9 use or eligible for crossgrades are the Digi 001 and the original Mbox.

SPEC IT OUT

Pro Tools 9 is a powerhouse compared to LE, which it officially replaces. (M-Powered will remain as a less-expensive option.) As well as the aforementioned delay compensation and toolkit features, you get twice as many tracks, simultaneously recordable tracks, and instrument tracks. Pro Tools 9 offers eight times as many buses and 32 additional aux tracks (see "Pro Tools Systems: Selected Features Comparison" chart at emusician.com) as LE.

With all that, PT 9 still doesn't have all of HD's features or track count, but you can get it pretty close by purchasing the Complete Production Toolkit 2 for $1,995. It gives you surround mixing—which you don't get in PT 9—enhanced track and bus counts, VCA mixing, and some additional advanced features. If you're a DV Toolkit owner, you can upgrade to the Complete Production Toolkit 2 for $299; Music Production Toolkit owners can upgrade for $1,599. The Complete Production Toolkit 2 is definitely a pricey upgrade, but when you consider that you're getting most of the functionality of HD at a fraction of the price, it doesn't seem as expensive.

PLUG AND PLAY

Pro Tools 9 offers a plug-in collection identical to Pro Tools 8. As with 8 (reviewed in the May 2009 issue of *EM*, available at emusician.com), you get a nice selection of processing plug-ins and instruments. Despite the changeover to native processing, the plug-ins remain under Avid's proprietary RTAS/AudioSuite formats. Because nearly all major plug-ins run under those formats, this isn't an issue. Concurrent with the PT 9 announcement, Universal Audio announced that its Powered Plug-Ins now have RTAS versions, and you can use UAD plugs with Pro Tools without the need for a VST wrapper.

Thanks to the inclusion of the DV Toolkit in PT 9's standard feature set, the program is now much better suited to working with video. Beyond just SMPTE readouts, you also get a Feet and Frames readout, the ability to redefine a timecode position by entering a new position at an insertion point, pullup and pulldown commands, and subframe support.

The multitrack Beat Detective capability, which was once only the province of HD or LE with the Music Production Toolkit, is another key addition to PT 9. Previously, LE's Beat Detective only worked on a single track, which left you in the cold for correcting a multitrack drum kit, which is probably the most common application for Beat Detective. The new MP3 Export feature is thoroughly implemented. You can choose quality level (from 16kbps to 320kbps), encoding speed, and even add

After native compatibility, automatic delay compensation is definitely the star of the show in Pro Tools 9.

ID3 tags for the exported file.

WHAT'S THE DELAY?

After native compatibility, automatic delay compensation is definitely the star of the show in PT 9. When you first launch the program, delay compensation is turned off, but you can activate it easily by way of a pulldown menu in the Playback Engine window. Once turned on and configured, it's basically "set and forget."

You can choose between two delay compensation options: Short provides 2,047 samples of delay per channel, and Long offers 8,191. Long is more CPU-intensive and is recommended for sessions that have large track counts. I found that I could get away with using Short on smaller projects, except when using certain plug-ins. For instance, WaveMachine Labs' Drumagog 5 didn't sync up correctly on the Short setting but worked fine on Long. You'll just have to experiment. Overall, the delay compensation worked great; my wrapped UAD plugs-ins, which required tedious manual delay compensation in PT LE, ran perfectly in sync.

MORE NEW STUFF

PT 9 includes support for the EUCON controller protocol. I did not have a EUCON controller to try it with, but my colleague Kevin Becka from sister magazine *Mix* tested out an MC Control V2 controller and the response was excellent. He did encounter a couple of small bugs in the EUCON implementation but was impressed overall. Another new feature is variable pan depth. I'm not sure if I would ever have an occasion to use it, but it allows you to match pan-depth standards for certain types of consoles (for instance, British analog consoles have a different setting) and for full mono compatibility. A few additional minor features have also been added, including creating tracks from within a bus or track output.

One feature I wish had been added to PT 9 is an offline bouncing option. I work on a lot of long-form projects, and I find having to bounce in real time is a monumental time-waster. In other DAWs, I can bounce a 25-minute project in about a minute. According to Avid, that's one of the features it's looking at for a future release. (Avid says that it's keeping track of customer feature requests and plans to try to regularly implement the most popular ones. Kudos to them for that!)

FIRE IT UP

Installation is easy. Everything you need, other than an iLok key (included with the full boxed version) is on one DVD. Once you download the license to your iLok account and install the software, you're ready to rock. I installed it on my Mac Pro and my MacBook. One thing I noticed right away was that some of my older plug-ins needed upgrading to run on PT 9. For instance, I had to upgrade to V. 7 of my Waves plug-ins, although the older version I had, 5.9.7, ran fine on all my other DAWs.

I also had some CPU overload issues at first on my Mac Pro. Avid's tech support told me that this can happen occasionally when you don't opt for the "clean install" option, which requires that you reinstall all your plug-ins, among other things, and instead install on top of a previous version of LE, which gets automatically erased by the installer. They also said it might have to do with whether I did a clean install of Snow Leopard or installed it on top of 10.5, which I did. (You need at least 10.6.2 or higher to run PT 9 on a Mac or Windows 7 on a PC.)

At the suggestion of Avid, I uninstalled Pro Tools, deleted the old Digi preferences, and ran Apple's combo system updater, but my problems remained. At that point, I was getting better performance on my 3-year-old MacBook than my 8-core Mac Pro. I then tried updating to OS X 10.6.5, and suddenly everything ran fine.

Who knows if this was anomalous to my particular system, but if you can, do a clean install of PT 9 onto cleanly installed system software; this should preclude any such problems. To test that out, I wiped an external hard drive, installed 10.6.5 onto it, then Pro Tools 9, and it ran flawlessly. I didn't have the opportunity to test PT 9 out on Windows, so I don't know if these sorts of issues exist on that platform. Once I got the installation issues on my Mac Pro resolved, everything worked great. Although I can only provide an anecdotal comparison, PT 9 seems to be on par with my other native DAWs in terms of its abilities to handle large track and plug-in counts. It was also comparable in terms of latency. It allows for a minimum buffer setting of 64 samples.

TOOLING UP

The release of PT 9 is likely to make a lot of people happy—with the exception of other DAW manufacturers. Pro Tools has morphed from a closed system to an open one, and not only do users have freedom of choice for which interface they use, interface manufacturers are no longer shut out from Pro Tools. With the addition of delay compensation, multitrack Beat Detective, and the new video features, PT 9 has become a formidable force in the world of native DAWs. This is a breakthrough release for Avid and should open up Pro Tools to a much larger segment of the market. With PT 9, Avid has shown that it has become responsive to its customer base, and that's a win-win for everyone. *

Mike Levine is EM's editor and senior media producer.

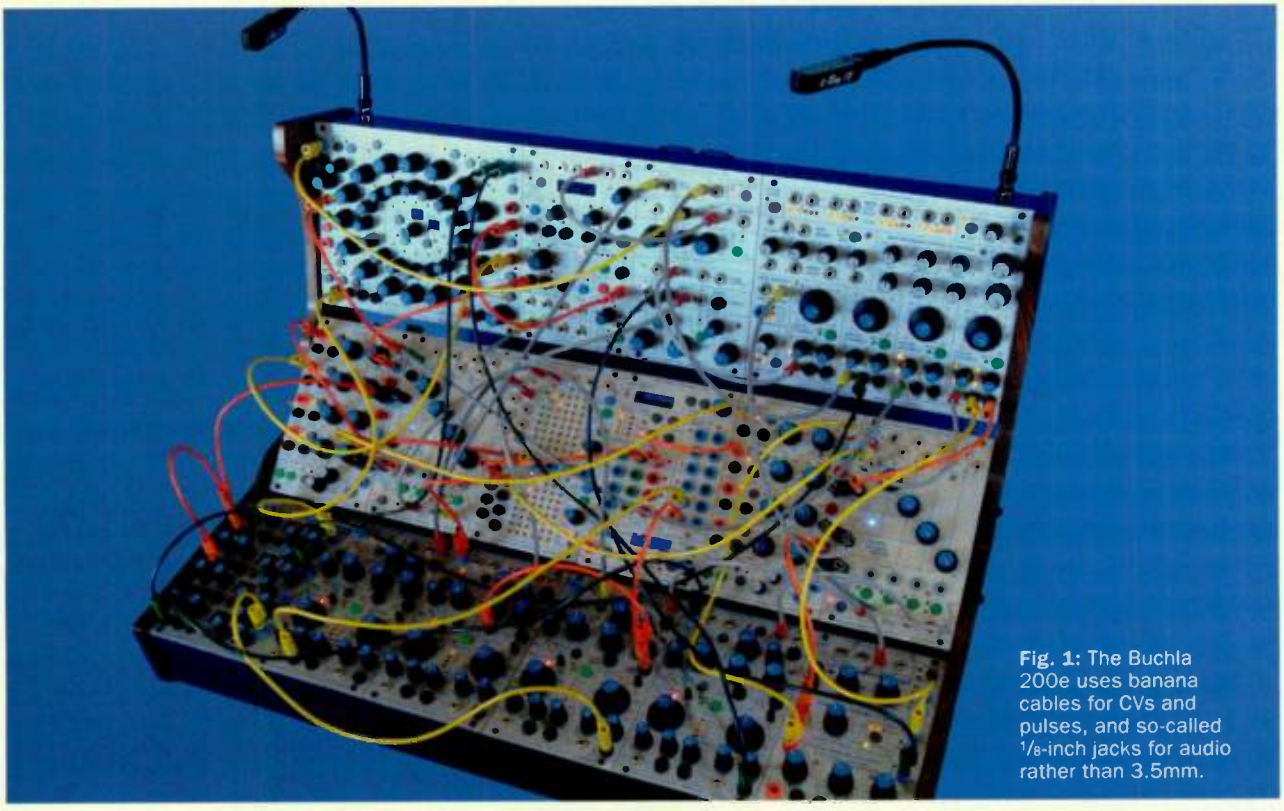


Fig. 1: The Buchla 200e uses banana cables for CVs and pulses, and so-called 1/8-inch jacks for audio rather than 3.5mm.

Buchla & Associates Series 200e Synth

An Electronic Music Box for the 21st century

By Gino Robair

PRODUCT SUMMARY

HARDWARE MODULAR SYNTH

PRICE: Variable, depending on components

PROS: Unique sound. Unusual features. High functional density per module. Stores and recalls presets. Banana jacks allow for stacking.

CONS: Non-standard audio connectors. Non-standard CV pitch levels. Pricey.

FEATURES:	1	2	3	4	5
EASE OF USE:	1	2	3	4	5
SOUND QUALITY:	1	2	3	4	5
VALUE:	1	2	3	4	5

buchla.com

It's been five years since Buchla & Associates re-entered the synth market with the 200e, a modular system inspired by the classic 200 Series Electric Music Box. Surpassing other hardware modulars in functionality and price, this instrument is in a class all its own, offering a rich environment for musicians who want hands-on control over a patchable synth that offers more than the VCO/VCF/VCA norm.

For this review, I tested a system containing the latest modules. But rather than describe each one, I'll give my overall impression of what it's like to use the 200e as a system (see **Fig. 1**). For a closer look at the modules, including the new 223e Tactile Input Port, visit emusician.com where you'll find video and audio clips.

21ST CENTURY MUSIC BOX

The 200e was controversial when it launched in 2005 because many analog-synth fans hoped for a clone of the original '70s-era system. Clearly, it was not.

Although there is a similarity in name and function between the 200 and 200e modules, the latter uses a hybrid of digital and analog technology. The surface-level patching is analog but digitized internally to facilitate preset storage and retrieval. However, the sound generators—259e Twisted Waveform Generator and 261e Complex Waveform Generator ($1,600 each)—employ digital techniques to create the waveforms. Buchla wanted the 200e to offer the experience of an analog modular but with modern features. In that regard, the 200e is a success.

To begin with, the powered cases ($300 to $2,500, depending on module capacity) offer internal data busing, which routes and distributes incoming MIDI messages that are translated into analog pulses and CVs by the 225e MIDI/USB Decoder Module ($1,400). That alone lets you control oscillators, envelopes, and dynamics without patch cables, as you would with a semimodular synth. With four

buses dedicated to MIDI input (one MIDI channel per bus), you can configure the 200e as a 4-voice polyphonic or multitimbral synth, depending on your module count. (The 225e also offers three note-based CV outputs per bus—pitch, velocity, and note on—and six pairs of CV outputs dedicated to MIDI control messages.)

More importantly, the lower portion of the 225e is an independent preset manager (also available as a portion of the 206e Mixer/Preset Manager, $1,050) that allows you to store and recall knob and button settings for each module, adding modern convenience to a classic interface. Of course, the sound you hear depends on what you've patched up. Changing the cables while using a pulse to scroll through presets gave me unexpected sounds that were very satisfying.

FEATURE RICH

Each module is multifunctional, making the 200e deeply rewarding to use. It also explains why Buchla modules seem expensive compared to other systems. But when you compare the density of features per 200e module to other brands, the playing field looks more even.

A good example is the 291e Triple Morphing Filter ($1,750), which offers three independent filters that can be used in parallel, with individual control over the bandwidth, frequency, and amplitude of each. You can store eight parameter settings per filter, then cycle through them in various ways, morphing between the "snapshots" you've saved. It's a powerful and enjoyable module with which to work.

Even more exciting is the new 296e Spectral Processor ($4,600), which offers 16 bandpass filters (each with 18dB/octave cut-off slopes) and VCAs meant for vocoding and complex timbre processing (see **Fig. 2**). In addition to being able to transfer the spectra of one signal to another, you can morph between two EQ curves using CVs, or split it into two 8-band filters for stereo effects. Each frequency band has an envelope follower with CV output and VCA with CV input. The LED array on each band is touch-sensitive; just drag your finger vertically to set output levels (see **Web Clip 1**). There's nothing else like the 296e in a hardware synth.

Fig. 2: The 296e Spectral Processor's LED arrays are touch-sensitive for setting levels.

GETTING THAT SOUND

Modulation is as important as filtering on the 200e. Consequently, the signal generators and many processors offer audio-rate modulation inputs to increase the spectral content of a signal. The frequency range of the 259e and 261e tops out at 7kHz, but you can use FM to create upper partials. And because both modules have built-in modulation oscillators and CV waveshaping, it's easy to create rich, complex timbres.

Two essential 200e modules are the 281e Quad Function Generator ($800) and 292e Quad Dynamics Manager ($900). Designed to sit next to each other so you can connect them with shorting bars, they fill the role of EG and filter/gate, respectively, and both are on the system's MIDI bus. The 281e, a classic Buchla module, offers four sections, each of which can be used as a 2-stage EG or LFO. Best of all, the sections can be linked to create complex envelopes.

The 4-channel 292e brings out a woody, plucked timbre that is characteristically Buchla. Each channel can work discretely as a gate, lowpass filter, or combined lowpass gate. It's one of my all-time favorite modules.

Although you can take signals directly from any audio output, the 227e System Interface ($1,950) is a must. In addition to the array of I/O (rear-panel ¼-inch outputs, an XLR input with preamp, and a 4-channel submixer), it offers voltage-controllable quadraphonic panning of four discrete inputs. The panner alone makes every patch come alive, even when working in stereo.

EXTENSIBLE TOOLKIT

The 200e was designed to be an open-ended sonic tool kit, much like Cycling '74 Max/MSP or Clavia Nord Modular. It surpasses other hardware modulars in terms of flexibility, particularly if you use its MIDI bus and preset manager. And no one else makes a sequencing module as sophisticated as the 250e Dual Arbitrary Function Generator ($1,700; see **Web Clip 2**).

Although one could argue that soft synths offer similar patching and processing functionality (and more of it for less money), a computer app with a generic hardware controller doesn't come close to the hands-on experience that the 200e provides. More importantly, if the build quality of the original 200 Series is any indication (I have a '70s system that I still use), the 200e will serve you decades longer than any PC-and-software system currently available. ✱

Gino Robair is the former editor of EM.

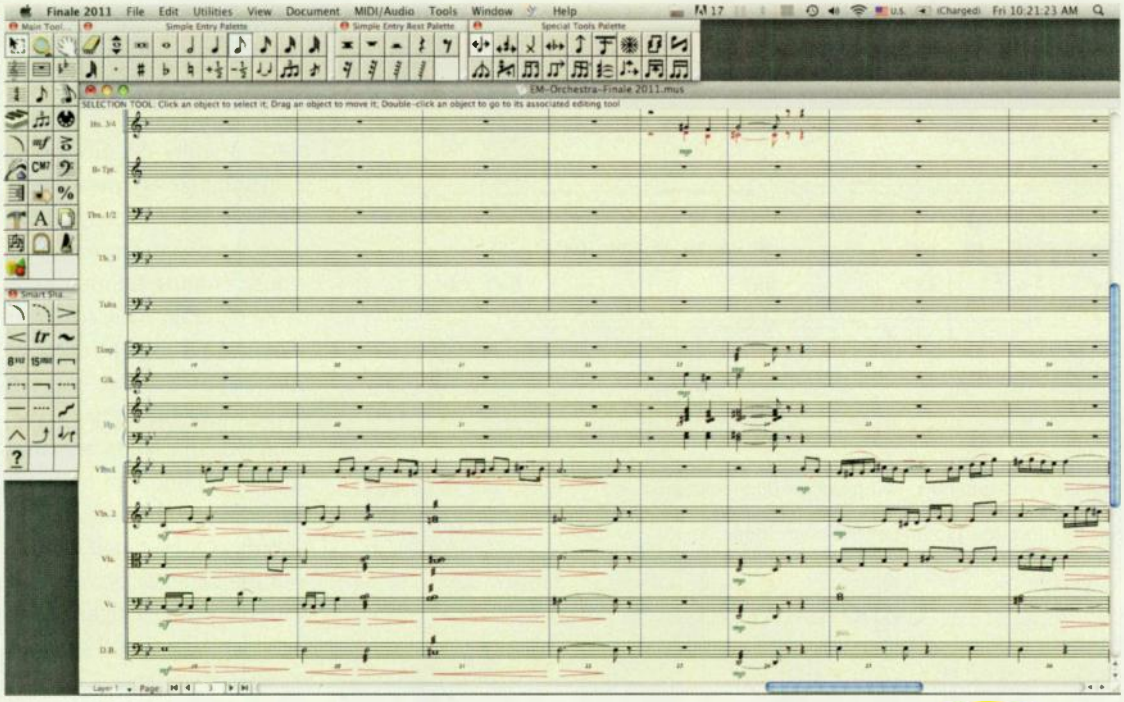


Fig. 1: Finale 2011 offers users a comprehensive set of notation and playback tools.

MakeMusic Finale 2011

MAC/WIN

The perennial notation giant revs up its feature set once again

By Rob Shrock

PRODUCT SUMMARY

NOTATION SOFTWARE

PRICES: $449; Academic edition, $249

PROS: Extensive feature set for all notation applications at all levels. Redesigned Staff, Chord, and Lyric tools provide significant advancements in ease of use. Excellent and interpretive soundset included for audio playback of scores. Numerous educational worksheets included.

CONS: Tools and menu are organized in a confusing and nonintuitive manner.

FEATURES:	1	2	3	4	5
EASE OF USE:	1	2	3	4	5
DOCUMENTATION:	1	2	3	4	5
VALUE:	1	2	3	4	5

makemusic.com

Finale has long been the top dog of software notation programs, but it's no longer the only serious contender for professional music copying. Other products, such as Avid Sibelius and even Apple Logic Pro (through its Notation section), are quite capable of creating fully professional charts and scores. This has led to a leapfrogging contest between Finale and, in particular, Sibelius for the inclusion of more subtle and esoteric capabilities while still improving the interface for the more commonly used features.

Has Finale gotten richer in features while becoming easier to use? To a large degree, yes. However, I will come back to that question later after discussing what's new in Finale 2011 (see **Fig. 1**). Finale has been covered several times in *EM* (see emusician.com for previous reviews), so we will stick to the new features and major changes. I upgraded to Finale 2011 from Finale 2008, so some improvements I'll cover here were first implemented last year in Finale 2010, including the way percussion and chords are handled.

WORDS OF WISDOM

The most significant improvement in Finale 2011 is Lyric entry and spacing. While functional in the past, entering lyrics could be cumbersome, and getting the layout to look right could be downright tedious. The handling of lyrics has been mostly revamped, and it now works really well. All of those annoying extra spaces at the beginning of notes with large syllables, melismas, or punctuations are gone. The new Lyrics Window allows you to work effortlessly back and forth with typing directly into the score, and it automatically updates in both locations. Hyphens and word extensions now automatically and perfectly lay out and wrap to the next staff system and maintain proper placement if the score or part changes in size.

Lyrics in Finale 2011 always look correct, are engraver-ready, and you see

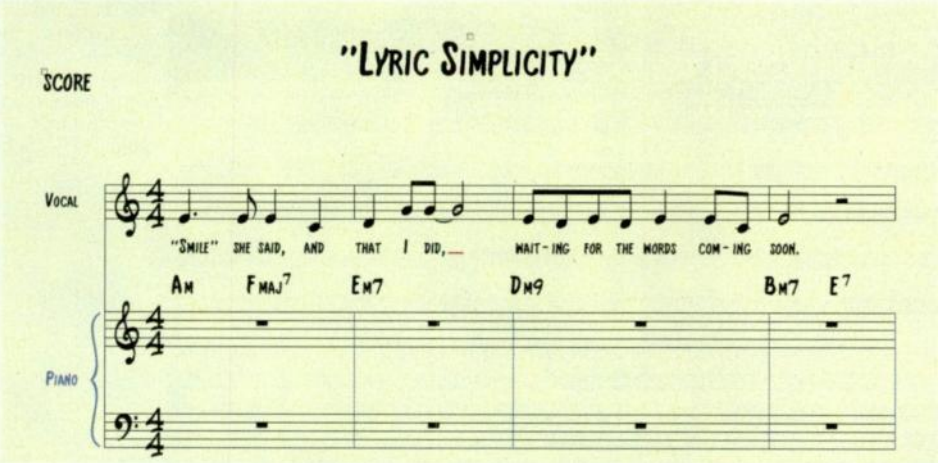


Fig. 2: The newly refined Lyric tool now maintains perfect-looking lyrics all the time with little to no effort. This example was created in about two minutes with no editing other than to adjust the chord position.

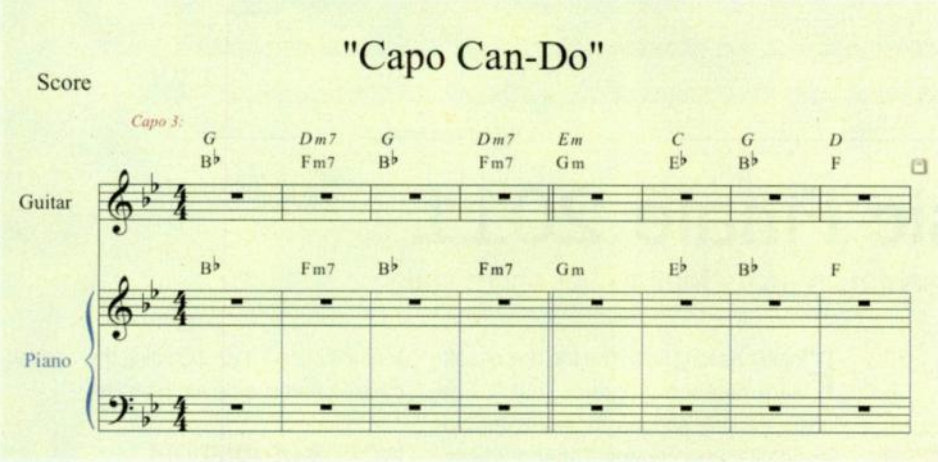


Fig. 3: Adding capo chords to a guitar part is a single-click operation once you define the number of frets required.

them exactly as they're going to print. For those of us who do a lot of lead sheets and scores with vocals, it is worth the upgrade for this aspect alone (see **Fig. 2**).

STAFF REDUCTIONS

The need to optimize staff systems is now largely a thing of the past. Scores and parts are always optimized and appear as they will in print, so you don't need to spend as much time in the Page Layout tool. The way staves are handled has been completely redesigned under the hood, and it's now much easier to move and reorder staves without causing a mess.

When dragging a staff, you now get a numeric value for more precise placement—unfortunately, this number doesn't also display when using the keyboard to nudge—and all staves under a staff can be made to move together when making adjustments. Managing brackets and groups is also much easier now. Hiding and showing staves has also been simplified with contextual menus, making it much simpler to manage a large score with large sections of rests in multiple instruments. Hidden staves are displayed onscreen as a soft, dotted line.

One of the welcome features for me is the simplified entry of chord symbols. You can now enter a chord without having to first create and attach it to a note or rest (and possibly then hiding it) in the staff. Chords can be placed automatically on any beat, even within a blank measure; if there are notes already on the staff, the chord can easily be repositioned to another note by simply dragging it. A handle shows which note the chord is attached to. If a note is deleted below or the musical line changed, the chord remains unaffected and can be reassigned to a new note at will. Chords can be typed directly into the score or played by a MIDI keyboard simultaneously without having to change input methods in the menu.

Another useful feature is easily adding capo chords to a chart. This came in handy for me because I am working with a new pop-country artist. After your chords are in the chart, you just tell Finale which fret you want to capo and—voìla—instant capo chords (see **Fig. 3**).

HEARING IN CONTEXT

One of the most exciting aspects is its ability to provide somewhat authentic audio playback of a score. For several versions now, Finale has included a Garritan soundset, and there are several new instruments included for it in Finale 2011: Flute Section, Bass Trombone, Children's Choir Aahs, Steel Drums, and a couple of new synth sounds. The Aria playback engine has replaced the former Kontakt player, and it is elegant and simple to use (see **Fig. 4**).

In addition to the Garritan sounds, Finale 2011 also includes soundsets from Tapspace Virtual Drumline, Row-Loff Marching Percussion, and Jose Cortijo's Latin Percussion. You can also use any of your own soft synths or samples when

Fig. 4: The new Garritan Aria Player is elegant and simple to use. All of the included audio content can be loaded into Aria, and you can add your own audio plug-in effects on top. You still have the option of using your own plug-in players in combination with Aria, as well.

playing back your score. The various Human Playback styles help the virtual instruments respond in a musical way to the sterility of notation symbols. Even though I am a bit old school and don't necessarily need to hear my score played back with appropriately matched sounds, it is a very useful tool for education purposes. And, I admit, it is seductively fun to hear your score played back with the intended timbres (see **Web Clips 1a** through **1c** to view and hear one of my orchestral scores using the Garritan sounds for playback).

MORE IMPROVEMENTS

Finale 2011 has also made improvements to its handling of percussion. When entering drum parts, for example, scrolling the mouse over notes automatically displays the instrument name for each line or space. Using the keyboard to scroll up and down acts the same. In addition, Finale has added two new music fonts: Finale Percussion and Finale Mallets.

More than 800 worksheets, flash cards, and exercises designed for ear-training and improvisation are included and are just a click away, and any of them can be customized and printed. Whether you teach publicly or privately, this wealth of educational aids show MakeMusic's noble dedication to education and music students.

Finale 2011 now ships with a 35-page Quick Start booklet that is useful for both experienced and novice users, and also includes the two-page cheat sheet. The fully detailed documentation is always a click away, and the Help feature is handy for finding a specific tool.

ON THE OTHER HAND

Despite all the useful additions, the program still has some annoying aspects. For one, I wish there was a way to choose all audio plug-ins to deactivate and then select the handful you want to load. I have more than 200 AU plug-ins, and I barely need any of them when working in Finale. I want them deactivated to speed up application start time and to avoid any potential conflicts, yet Finale requires you to deactivate each one individually, which is slow and tedious.

I love the new categories within the Expression Tool; however, when opening older files, every single expression must be recategorized by hand to take full advantage of them. Even though I have customized my Expression collection during the years, many are simply standard expressions that Finale should know how to recategorize automatically. As a result, I still don't use what could be a handy feature because I haven't found the time to move them all by hand.

I would also like the ability to easily hide and display a layer within a staff. Sometimes when working on a two-line part, such as French Horns, I'd like to temporarily hide one line.

FINALE THOUGHTS

My main beef with Finale at this point is its user interface. Even though the improvements noted above significantly enhance workflow, the UI still feels dated and somewhat convoluted. Tools are spread out all over the place and not always logically grouped. I have to hunt and peck for a specific tool more than I should. And each revision makes incremental changes to the interface that disturb old working habits, anyway; I make a plea to MakeMusic to concentrate on a significant restructuring of the entire interface.

MakeMusic could take a page out of Apple's approach to its professional application bundle wherein the user interfaces were drastically improved for better workflow while retaining (and even expanding) the rich feature set. I work with a number of professional copyists who feel the same about the interface.

In my opinion, Finale still wins hands down when it comes to features. The interface is the sole reason many notation users I know have gravitated to competing products. My colleagues and I have to frequently crank out notation under heavy deadline pressure, and we would all welcome a more comprehensive interface overhaul in the future. Finale's UI is the biggest challenge to working more quickly and effectively in the program. Although I love its capabilities, I am knocking off an additional evaluation point in the "Ease of Use" category as a challenge to MakeMusic to take my point seriously. ✱

Composer/producer Rob Shrock is the longtime music director for Burt Bacharach and keyboardist/arranger for Dionne Warwick. Check out his '70s classic rock band, AM/FM, at amfmrockshow.com.

QUICK PICKS

MOJAVE AUDIO * MA-101FET CONDENSER MICROPHONE

By Eli Crews

The fourth installment in Mojave Audio's product line is the solid-state MA-101fet small-diaphragm condenser microphone ($595). Mojave Audio was started in 2005 by David Royer, of ribbon mic fame, as an outlet for his condenser mic designs. Having reviewed the three previous models, I was certainly interested in checking out the new addition.

The MA-101fet condenser mic uses two of the same capsules as found in the MA-100.

The MA-101fet shares the same capsule—rather, pair of capsules—as its tube kin, the MA-100. The all-black MA-101 ships with interchangeable screw-on cardioid and omni capsules, a small flight case, a foam windscreen, and a slightly oversized rubber clip. The clip is larger than you might expect, as the mic's body south of the capsule tapers out to become wider than your average pencil condenser. This extra girth is necessary to accommodate the Jensen transformer Royer chose to use for the MA-101, and it gives the mic a solid heft not usually found in small-capsule condensers.

DRUMS, ETC.

One of my favorite applications for the MA-100s is close-miking drums, both toms and snare, so it didn't take long for me to try the MA-101fet in these capacities, with excellent results. For such scenarios, there's an internal switch to engage a -15dB pad for the mic's electronics, which is easily (if oddly) accessed by unscrewing the housing around the main shaft of the mic body. I didn't hear any overloading when I didn't engage the pad, but employing it did give me the flexibility to use my preamps that don't have pads and not clip the recording devices' inputs. Toms were full, round, yet percussive, and snare was crisp and snappy, but still deep. Next to a Neumann KM184 on an open, ringy snare drum, the mic yielded a lot more definition and depth. The Neumann mic sounded hazy by comparison.

As drum overheads, I compared the MA-101s to the tube MA-100s and to the large-diaphragm tube MA-200s, which are arguably my favorite overhead mics. Next to the small-capsule tube 100s, the 101s had an upper-midrange presence that the drummer really liked, although I would happily use either pair for the mix. Next to the MA-200s, the 101s sounded a little hyped at the top of the midrange, especially as the 200s sound so natural to my ears. For some quiet brush work, the 101s brought out the detail in the snare and cymbals beautifully, but when the drummer kicked it up a few notches, I preferred the realism that the larger 200s imparted on the set; the 101s sounded almost like spot mics on the cymbals by comparison.

I used the MA-101fet mics with the cardioid capsules on everything from upright bass to piano to alto sax to banjo, and was impressed with the mics' versatility and overall quality. On upright and electric bass, I felt that the MA-101s provided definition and had less low-mid buildup as compared to the reference mics. On banjo, I really felt like the depth of field between the skin and strings came through, whereas my reference mic sounded flat and slightly boomy in comparison. On saxophone, the MA-101 sounded slightly thin on its own, but when paired with a Coles 4038, it added a sparkling presence that the ribbon mic didn't have alone.

OMNI PRESENT

I also used the mics' omni capsules on a number of sources, and although I didn't find them quite as useful and versatile as the cardioid ones, it was definitely nice to have the omni option at no extra charge. I got some great drum room sounds out of them and really liked the way they sounded in stereo on a group of six vocalists singing on the chorus of a '60s-influenced pop song. Another handy application was as a room mic for an electric guitar. [Note: The first set of omni capsules shipped with the MA-101s had an unpleasant upper-midrange bump. When I reported the problem to Mojave Audio, they sent me a much-improved pair and have since corrected the problems that caused a few early capsules to have such issues.]

Even if the MA-101s came with only the cardioid capsule, they would still be great mics at a really fair price. Overall, they certainly live up to the quality and value I've come to expect from Mojave Audio over the years. They give more-expensive tube and solid-state mics a run for their money at a price that project and home studios can easily afford. *

Overall rating (1 through 5): 4

mojaveaudio.com

ZPLANE DEVELOPMENT * ELASTIQUE PITCH (MAC/WIN)

By Michael Cooper

Elastique Pitch is a pitch-shifting plug-in suitable for processing speech, an individual music track, or a complete mix. Delivered in VST, AU, and RTAS formats, it uses the Zplane Elastique Pro pitch-shifting engine to process as many as eight audio channels synchronously and in real time. In other words, offline pre-analysis is not required, and phase coherence between all input channels is maintained. You can choose to preserve a track's formants (leaving its timbre unchanged) while shifting its pitch. You can also shift formants independently of pitch, which is useful for gender-bending voice-over processing and other applications. I tested Version 1.1 of Elastique Pitch in Digital Performer 7.21 (DP), using an 8-core Mac Pro running Mac OS X 10.5.8.

Clicking on Elastique's Pitch Input button produces a menu of frequency-region presets used to preserve quality when shifting formants.

STRETCH MARKS

Elastique Pitch's GUI is sparse. You can resize it and choose between a light or dark skin. Two sliders adjust the pitch and timbre (formants), respectively, of the audio input signal and can be linked for simultaneous adjustment. Associated displays for each control show the extent of your adjustments in either percentage or semitone-and-cents change from the input signal. You can adjust both pitch and timbre up or down as much as 12 semitones, or from 50 to 200 percent.

To optimize the quality of timbre-shifting operations, click on the Input button and select the dominant frequency region for the input signal. The menu's presets are notated somewhat cryptically. Use trial and error to find the preset that sounds the best. The wrong setting will produce an obvious change of timbre or possibly even artifacts. The Input setting only has an effect when the timbre and pitch parameter values are not exactly the same.

If the Link button is disabled, you can simultaneously adjust pitch and timbre by dragging a small circular handle around an X/Y plane. You can also use MIDI Notes and pitch bend to control pitch. Inputting MIDI Note 60 (C3) creates no pitch change. Playing notes above or below C3 will shift the plug-in's audio by an equivalent number of semitones. Using the pitch-bend controller on your MIDI keyboard, you can make Elastique Pitch shift the pitch up or down by as much as two semitones.

Sound designers and re-recording mixers for film and TV will appreciate the plug-in's factory presets, which implement standard pull-up/down frame-rate conversions. The plug-in's interface and internal math can operate at all sampling rates between 32 and 192kHz.

HERE COMES THE PITCH

Elastique Pitch's processing was more transparent when shifting pitch up than when shifting down by the same amount. By disabling the Link button and setting the timbre slider to its middle position (100 percent or ±0 semitones), I could preserve a lead vocal's formants while shifting its pitch up two semitones using the pitch slider. This prevented the Mickey Mouse effect. I heard mild and slightly unnatural-sounding modulation of formants when shifting lead vocals or voice-over (VO) tracks up three semitones or down even slightly. The trade-off was sometimes worth it. Lowering my voice-over track's pitch 1.5 semitones and timbre 0.38 semitone made my voice sound deeper than any EQ ever could. It sounded like I'd gained 30 pounds (see **Web Clips 1** and **2**)!

Some instruments gave me greater processing latitude than voice. I got good results pitching pedal-steel and electric guitars up three or four semitones or down two. Even distorted guitar chords were processed quite transparently (see **Web Clip 3**). When pitching down, slightly nudging up the timbre control helped reverse mild alterations of formants. I got surprisingly good results when shifting an entire mix up as much as three semitones or down one. Although there was a significant loss of depth, the sound quality was still acceptable for critical demo purposes (such as when presenting songs for publishing).

HOME STRETCH

Unfortunately, I found that merely opening and closing the presets menu (without making a selection) nulled my pitch and timbre settings. Clicking anywhere in Elastique Pitch's GUI or adjusting any of its controls robbed control of DP's transport using keyboard shortcuts. I've seen this issue occasionally in DP with other third-party plug-ins. You must click anywhere on DP's turf to restore keyboard control.

But I love Elastique Pitch despite this inconvenience. Although it's not always completely artifact-free, Elastique Pitch is currently the highest-quality pitch-shifting plug-in I've heard in AU format. At $179, it's a must-have for music, voice-over, and multimedia work. *

Overall Rating (1 through 5): 4

zplane.de

LISTEN TO ELASTIQUE PITCH APPLIED TO A VOICE-OVER TRACK * EMUSICIAN.COM/BONUS_MATERIAL

Getting a great vocal, drum, or instrument sound in a top-end studio can be a challenge. Move into a lesser facility, and the task becomes that much more difficult. With that in mind, Primacoustic debuts IsoTools, an affordable line of acoustical accessories that can give you an edge in difficult environments. The range includes VoxGuard, TriPad, CrashGuard, KickStand, and TelePad. The latter—a mic stand-mount for Apple's iPhone 4—has nothing to do with acoustics, but it is a slick little $35 gadget that puts chord charts, lyrics, or a guitar tuner/remote-control/recording app right at your fingers and can swivel 360 degrees for portrait or landscape display.

VOXGUARD

An "ambient noise attenuator," VoxGuard is a mini-gobo that surrounds the mic to reduce the possibility of unwanted sounds from entering the mic while minimizing room reflections for a neutral sound. It comprises a lightweight, high-impact ABS outer shell lined with open-cell acoustical foam. Mounting your mic is fairly easy, although the process is a lot simpler with a second person, especially when dealing with larger mic/shockmount combos. Primacoustic says that VoxGuard works fine with round base stands, but I'd definitely stick with tripod stands, which offer more stability. A cable-exit cut-out at the rear of the unit makes setups easier, especially with front-address mics.

In the studio, VoxGuard definitely did the trick—both for overdubs and laying down vocals at the same time as rhythm tracks, where every bit of added isolation helps when you don't have the luxury of working with an iso booth. I also found this a great help with a single mic (or stereo bar-mounted) pair of condensers used on a tall boom to capture distance ambience that focused on the room sound with less ceiling reflections. Nice! As with all products of this type, trying to read narration, lyrics, or music is an issue, but that's just the nature of the beast. But at an affordable $99 street, VoxGuard is a must-have accessory for the pro or project studio.

CRASHGUARD

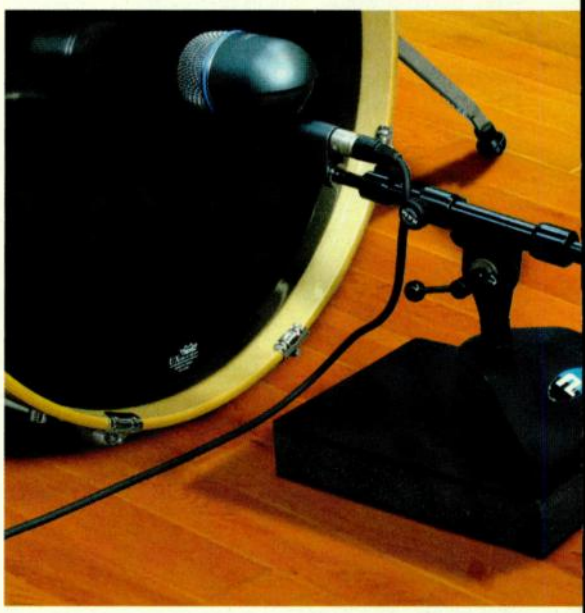
Another ABS outer-shell/acoustical foam-lined design, CrashGuard ($40) is intended to shield a drum mic from the sound of nearby cymbals. It easily mounts onto the boom arm of any mic stand and has a rear cut-out for cable exit, as well as allowing swiveling for a downward angle on snares or toms. I liked CrashGuard from the start; it really does what it claims and is useful on drums and hi-hat mics. In some cases, the housing is just too large for snare placement, depending on the drummer and the kit. It works great with most drum dynamics (SM57 and Audix i5) and pencil condensers such as Neumann KM84/184 or AKG C 451, although it's too short for an E-V RE20—one of my floor toms mics of choice. I also experimented using CrashGuards with a pair of Royer SF-1 figure-8 ribbon mics to impede rear sounds from entering the mics. This created a semi-cardioid effect so I could use the SF-1s for drum overheads in places with poor room acoustics.

TRIPAD

TriPad is a set of $20 foam booties that slip over tripod legs to prevent stage or floor vibrations from entering the mic. By decoupling the stand from the floor, these mic-stand isolators can reduce unwanted resonances created by drums, bass, or footfalls, but I was less impressed with these than the other IsoTools. In such instances, a touch of highpass filtering usually clears up the picture. Also, on critical mics such as overheads, I typically use shockmounts anyway, but TriPads could be helpful in live stereo recording situations where avoiding EQ is the goal and stage rumble is problematic.

KICKSTAND

My fave in the line, KickStand ($75) is a bass-drum boom-stand isolator using a weighty metal base on a high-density foam isolation pad to keep stage, drum riser, and studio floor resonances from entering the mic. Based on the company's Recoil Stabilizer used for studio near-fields, KickStand uses the same principle to decouple the kick mic. When miking kick drums (live or studio), EQ'ing the bottom end to eliminate resonances isn't always the best plan and here's where KickStand really shines. Also, while unwanted LF resonance is a major problem on stages or drum risers, the problem also occurs in studios, especially with wood floor over joist construction (it's hardly an issue with cement floors), particularly when tracking/performing live. With KickStand, the difference was clear and audible, resulting in a tighter, punchier kick sound. But it's not just for kick drums—it's equally suited for miking other LF sources such as acoustic bass or bass amps. *



KickStand is based on Primacoustic's Recoil Stabilizer, using the same principle to decouple the kick mic.

Overall rating (1 through 5): 4
primacoustic.com

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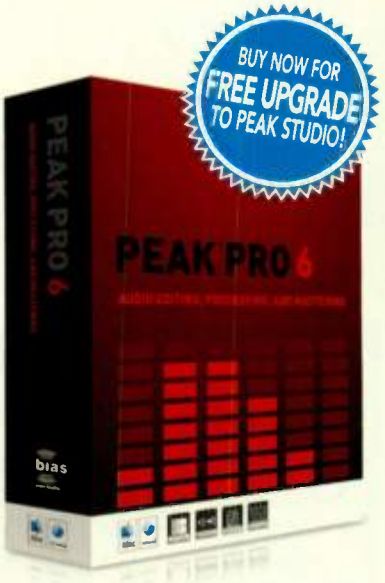

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By Mike Levine

Q&A: Joel Kosche

Collective Soul's guitarist on recording guitars for his solo album

Collective Soul guitarist Joel Kosche [pronounced "ko-shuh"] recently talked to *EM* about the production of his first solo album, *Fight Years* (Infinite Repeat Records).

How does *Fight Years* differ musically from Collective Soul?

Musically, it's more guitar heavy. I'm a guitar player. No keyboards; it's all just guitar-driven stuff. And I do all the vocals.

Did you produce it yourself?

Yeah, it's all self-produced. The majority of it was recorded at my house; my little home studio (see **Web Clips 1a** and **1b**). And if not here, over at [Collective Soul drummer] Ryan Hoyle's home studio. Some of the drums and a string quartet part were recorded at Real to Reel studios in Jonesboro, Georgia. We did some of the mixing at Tree Studios in Atlanta.

Did you mic amps, use software modeling, or both?

I generally demo using PODs or amp-modeling software because it's just easier. But then you get demoitis. You know you're in bad shape when you're trying to match the sound of your POD setting with your amp [laughs]. Like, "This is wrong, it's supposed to be the other way around." In the end, I resisted using modeled tracks. I always set up the amps, and I usually used this amp that I built myself. It's like a hot-rodded AC30-meets-a-Marshall thing (see **Web Clip 2**).

How did you mike it?

I started out with the [Shure] SM57/[Sennheiser] 421 classic combination. I remember I did a lot of experimenting with that, and I started chasing my tail after awhile. It got so bad I had to have [engineer] Sean Grove help me. We did a little mic shootout. I had a Heil, I think it was a PR30, and the 421 and the 57, and there might have been another. But after it was all said and done, I was like, "Alright, what's that combination?" He said, "That's just the 57." I said, "Damn it. I'm making this too hard. Let's just go with it."

The album has a lot of big distorted rhythm guitars. How many guitars did you usually layer to get that sound?

I usually just double everything. Some of the songs had my amp on both sides with just different guitars. And then about halfway through, I started doing my amp on one side and my Splawn amp on the other side. They just start sounding a little too mono if you don't mix things up a little bit. Sometimes, when the chorus comes in, I'll bring in some other guitars.

How do you usually pan them?

I split them hard left and right.

When you double a part, do you try to precisely duplicate the original?

That's the problem with recording into computers: They make you want to do that. Back when I was recording on tape, I'd double something, and I'd go, "That's dead on," but it wasn't. But you thought it sounded great. Now it's like, you're sitting there looking at a computer screen, saying, "Yeah, it's a little bit behind right there. I'm going to nudge that a little; I don't want it to flam too much." Next thing you know, it sounds like one guitar. But anyway, I try to get them tight, but here and there I try to let things slide.

What's going on with Collective Soul? Are you guys working on a new album now?

We're sort of in the very preliminary thing. Technically, we have a little time off now, but that doesn't really stop anyone from writing. I think we'll probably get down to business in January or February. ✱

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