

OCTOBER 2010



ELECTRONIC MUSICIAN

**Tips and Tricks for
Working With Loops**

|||||

**5 Crucial Techniques
in Pro Tools LE 8**

|||||

**Slice It, Sample It,
Make It Groove**

SERJ OF CREATIVITY

**Inside the recording of Serj Tankian's
*Imperfect Harmonies***

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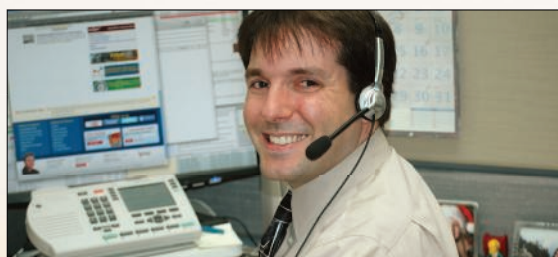
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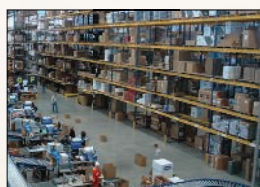
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FEATURES

This and cover photo by Mitch Tobias



COVER STORY

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Serj Tankian has recorded two solo studio albums since System of a Down went on indefinite hiatus in 2006. The latest, *Imperfect Harmonies*, artfully mixes rock, electronic, and orchestral influences into an original-sounding blend. Tankian recorded most of the nonorchestral tracks in his well-appointed home studio, and he talks here about the musical and technical challenges of this ambitious project.

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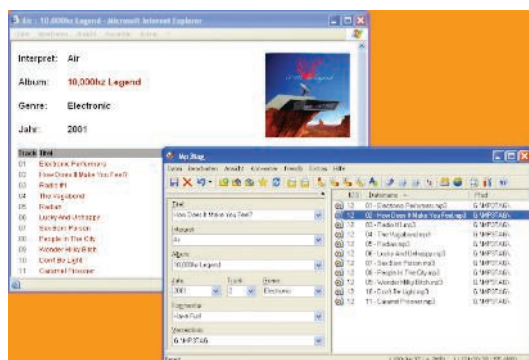
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FIRST TAKE

The Personal Studio Comes of Age

The interviews in this issue with Serj Tankian (p. 30) and Alan Evans (p. 22) both serve to reinforce how much personal studios have become integrated into today's music industry. Although commercial facilities still play a major role in the production of recorded music—especially in the pop and country realms—it's now almost a given that recording musicians will have home studios of some variety and will use them to some extent in their productions.

These studios run the gamut from the high-end facilities such as those owned by Tankian and other big-name artists—setups on par with commercial studios—to the other extreme, which can be as modest as a DAW-equipped computer rig in a bedroom with a couple of inexpensive mics. The common thread, though, is that



these studios are being used to produce recordings that end up on albums, EPs, TV or movie cues, and videogames.

Yes, if you want that huge live-drum sound or you want a vocal chain with a vintage AKG C 12, Universal Audio LA-2A, and Neve mic pre—and you have a budget for studio time—you'll probably want to use a commercial studio. But the point is that you don't have to do that anymore. You have choices.

With a decent mic and pre, you can record good-sounding vocals or acoustic instruments into your DAW. If you have some engineering chops, you can get respectable drum sounds in your basement. (And there's always the option of using drum-replacer software later to beef up those sounds.)

If you're doing electronic-based music, you may never need to go to a big studio. It seems that most of today's electronic artists work out of their own setups primarily. But even in projects that do end up in major studios, often there are tracks from the artists' home studios that get brought in and used on the finals.

Obviously, this emphasis on home production has changed the way music is made. There are fewer live sessions with multiple players; a much more decentralized studio scene; and more overdubbing, layering, and programming going on. And that has caused not only changes in musical style, but the loss of livelihood for many session players, which is one of the unfortunate side effects of the home studio revolution. Ironically, while we now have more opportunities to get our music heard because of our studios and the promotional power of the Internet, it's become a lot harder to make a living as a musician—and it was never easy. But I'm getting off subject here.

My overall point is that home recording has never been as ubiquitous as it is now. And what was once an ironclad distinction between doing demos at home and final tracks in a big studio has eroded greatly. Of course, I'm not quoting empirical statistics, just anecdotal observations, but during the course of the numerous artist interviews that I've done, it's never seemed more clear that the home studio has become an integral part of the workflow of today's recorded music.



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FRONT PANEL

DOWNLOAD OF THE MONTH



EXPERT SLEEPERS SPECTRAL CONQUEST

By Len Sasso

In his latest plug-in, Spectral Conquest (Mac/Win, \$29, download), Andrew Ostler of the U.K. software collective Expert Sleepers (expert-sleepers.co.uk) uses FFT analysis and resynthesis to create a flexible multiband plug-in whose settings affect the signal in the frequency domain that is between analysis and resynthesis. The results vary from precise multiband filter sculpting to radical, band-independent frequency shifting. The plug-in supports MIDI, OSC, and spectral-processing scripts, written in the LUA scripting language (lua.org), for manipulating the bands in real time. Whether or not you choose to get that far under the

hood, you can dial in effects as diverse as ultraprecise 512-band EQ and reverse-band frequency shifting (see **Web Clip 1**).

The major part of Spectral Conquest's GUI is devoted to the band analysis-and-resynthesis graphic. The upper half graphs the input and output signals, with solid bars indicating the incoming band levels and brighter lines indicate the output levels. The lower half is where you draw in the resynthesized-band levels, ranging from absolute zero (no signal is resynthesized for the band) to the original level. Five buttons across the top let you quickly minimize (All Zero), reset (All One), suppress odd or even

bands (Zero Odd or Even), and invert the current band setup.

Scripting adds real-time control of the bands, and several useful script presets are included. For example, the Shift preset assigns the Param 1 knob to shift all the bands up and down in frequency, and because that's taking place before resynthesis, the effect is akin to frequency shifting (as opposed to simply shifting the bands of a graphic equalizer). Other scripts implement highpass, lowpass, and bandpass filtering; band-based threshold gating; and reversing the bands. Download the fully functional free version, which times out after 15 minutes, to hear for yourself. *



OPTION-CLICK



FIG. 1: Serafine FX Tron (sonicreality.com; \$995) is the sound effects library you play like an instrument.

PLAYING FOR SPECIAL EFFECT

Play in a new way.

One popular way to add realism to electronic instruments is to mix in the real-world squeaks, clicks, and buzzes their acoustic counterparts produce. Some producers even add crowd noise or room

tone for depth. (As Xbox *Halo* composer Marty O'Donnell quips, "Sound makes it real; music makes you feel.")

But sound effects have huge emotional power of their own. Renowned

THIS MONTH'S SOUNDTRACK

By Mike Levine

THIS MONTH ON
EMUSICIAN.COM

Here are some of the more interesting albums that crossed my desk in the past 30 days. There aren't a lot of common musical threads, but all of them do share creativity, a willingness to mix styles, originality, and excellence.



THE RAGA BOP TRIO: *RAGA BOP TRIO* (ABSTRACT LOGIX)

Featuring the dynamic drumming of Steve Smith, the stellar sax playing of George Brooks, and the amazing and original guitar stylings of Prasanna, this album features a unique blend of jazz with elements of Indian classical music.



Photo by Minga

PAUL MANOUSOS: *C'MON C'MON* (SHOCK AND FALL)

Excellent songwriting and sparse, evocative production highlight the latest effort from singer/songwriter Manousos. His distinctive voice provides the glue.



CLOUD CULT: *LIGHT CHASERS* (EARTHOLOGY)

The eighth album for the Minnesota-based indie group contains 16 songs that combine electronic, acoustic, and rock elements. Strong material throughout.



BISHOP MOROCCO: *BISHOP MOROCCO* (HAND DRAWN DRACULA)

This Toronto duo weaves dark and reverberant songs that combine influences from Brit pop to indie rock to electronica to Roy Orbison. Very unusual and very good.

SPOEK MATHAMBO: *MSHINI WAM* (BBE RECORDS)

A mix of electronic and hip-hop with a strong South African influence on this album from Mathambo, who was born in Soweto. Check out the unusual synth work on many of the tracks.



Hollywood sound designer Frank Serafine played backward monkey screams, pitch-bent and flanged, to add menace to the killer Frisbees in *Tron*. He also pioneered the technique of performing sound effects rather than simply pasting them in. "When I play it on a keyboard, it's like music. It feels right," he

told *EM* (bit.ly/fxtron).

Another favorite Serafine technique is transposing sounds to harmonize with the music. His new virtual instrument, Serafine FX Tron (see **Fig. 1**, and "Quick Pick" review on p. 60), makes that easy. —DAVID BATTINO, BATMOSPHERE.COM

ACOUSTICS 101

FURTHER YOUR UNDERSTANDING OF STUDIO ACOUSTICS WITH PRO INSIDER TIPS AND TECHNIQUES

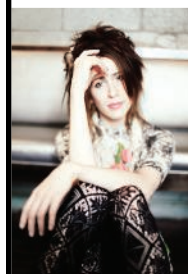


ALL NEW// MIX AND EMBOOKS

The all-new *Mix*- and *EM*Books give you in-depth tutorial tips and techniques for any recording project. Now available: *Live Sound*, *Microphones*, *Mixing: Basic*, and *Mixing: Advanced* at mixbooks.com.

BLOG// THE 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.



EM CAST// IMOGEN HEAP

On her recent *Ellipse* World Tour, Imogen Heap improvised and recorded a piece of music each night, based on audience-

provided criteria, and sold it online to raise money for charity. She talks here about how she did it.

Photo by Jeremy Cowart

VIDEO// IZOTOPE ALLOY

Watch examples of Alloy in action from *EM*'s review (p. 50) of this versatile processing plug-in.



WHAT'S NEW

By George Petersen



AVID

HD OMNI

NEW OPTIONS, NEW CHOICES

Avid (avid.com) has released a new series of recording interfaces for its Pro Tools HD studio production software. The most affordable of the line, the 4-in/8-out HD Omni (\$2,995) integrates several functions into a single unit. Features include state-of-the-art conversion, two world-class mic preamps, headphone outputs, a full-featured surround monitor section, and a 14x26 channel mixer that functions even when the computer is off—letting users listen to CDs, MP3 players, keyboards, and drum machines without the need for an additional mixer. Requires Pro Tools HD version 8.1 software.



AUDIO DAMAGE
AXON

**COOL AND WILD
PATTERN GENERATION**

Axon (\$59) from Audio Damage (audiodamage.com) is an FM plug-in instrument that can trigger seven percussion-tuned FM voices from its Neuron Sequencer. Loosely based on the Artificial Neural Networks concept, Axon creates *outré* music rhythms and patterns from its seven Neurons, which can be interconnected in limitless ways to trigger each other, the internal voices, and external synth/samplers. It also offers onboard effects/mixing and full MIDI I/O capabilities (in the VSTi version). Supported platforms include Windows 32-/64-bit VSTi, and 32-bit OS X VSTi and AU Instrument.



BOSS

BR-800

TRACKING TO GO-GO

The battery-powered BR-800 digital recorder (\$449) from Boss (bossus.com) offers simultaneous 4-track recording/8-track playback to and from SD card media, with an additional stereo track dedicated to the onboard rhythm generator. The unit has four XLR mic inputs (one with phantom powering), two built-in condenser mics for quick, on-the-go tracking, and a DR-880-quality rhythm generator for adding drum and percussion tracks to songs. Effects include vocal models from the VE-20, COSM guitar/bass effects, and modeled acoustic-guitar body effects. Connected to a PC, the unit will function as a USB audio interface that lets you record to your computer with the BR-800's internal effects. The BR-800 can also act as a control surface for DAW software. Included are a copy of Cakewalk SONAR 8.5 LE software, audio loops, and backing tracks.

ZILDJIAN

GEN16

STATUS CYMBALS

Zildjian (zildjian.com) digs into its vast collection with the Gen16 Digital Vault (\$179), a two-DVD set with 24-bit samples of its rarest, most coveted reference cymbal holdings, meticulously recorded by sampling guru John Emrich and presented in a custom version of FXpansion's BFD Eco (Mac/PC) sample playback engine. Also included in the Digital Vault are libraries of drum and percussion groove tracks (in audio and General MIDI formats) from in-demand drummers.



ROYER LABS

R-101

BIDIRECTIONAL BARGAIN

Royer Labs (royerlabs.com) unveils its most affordable ribbon microphone. Like all Royer ribbon mics, the new R-101 (\$895) has a bidirectional figure-8 pickup pattern. It features a 2.5-micron aluminum ribbon motor based on Royer's popular R-121 model, but in a 1.5-inch diameter cylindrical body with no protruding pole pieces. The price includes a shockmount and carry case.



NATIVE INSTRUMENTS

KOMPLETE 7

KOMPLETLY KOOL

Native Instruments' (native-instruments.com) Komplete 7 (\$499) combines 24 instruments and effects and five entirely new products with more than 10,000 sounds and 90GB of samples. It includes Absynth 5, Battery 3.1, FM8, Guitar Rig 4.1, Kontakt 4.1, and Massive. Also included is Reaktor 5.5, which adds modal and additive synthesis, the Lazerbass synth, and many enhancements. Also new is the Reflektor studio convolution reverb; the Reaktor Prism modal synth; the Traktor 12 performance effects suite; and new Vintange Organs.



UNIVERSAL AUDIO

UAD2 ANALOG CLASSICS

THE BONUS BUNDLE

Universal Audio (uaudio.com) sweetens the deal for buyers of its UAD-2 Solo (from \$399), Solo/Laptop (from \$499), Duo (from \$899), and Quad (from \$1,499) DSP accelerator packages, now offered with the new Analog Classics software bundle at no additional cost. The collection includes emulations of UA's LA-2A, 1176LN, and 1176SE compressors; the RealVerb reverb; and Pultec's EQP-1A program equalizer. VST, AU, and RTAS are supported on Mac and Windows.

MOTU

MICROBOOK

POUCH-SIZED POWERHOUSE

The MicroBook (\$269) from MOTU (motu.com) is a 4x2 audio USB bus-powered interface offering balanced I/O, a single phantom-powered mic preamp, 10-bus digital mixer, and modeled analog EQ and compression. It handles up to four simultaneous inputs and four pairs of outputs: balanced TRS main outs, stereo line outs, S/PDIF digital out, and headphone mini-jack. The 1/8-inch analog input can be used to connect an iPod or other stereo line-level signal to be mixed with other inputs and routed to any output pair. Users can connect powered studio monitors to the main outs or stereo mini output jack.



IKEY-AUDIO

M-V2 SERIES

POWERED PUNCH

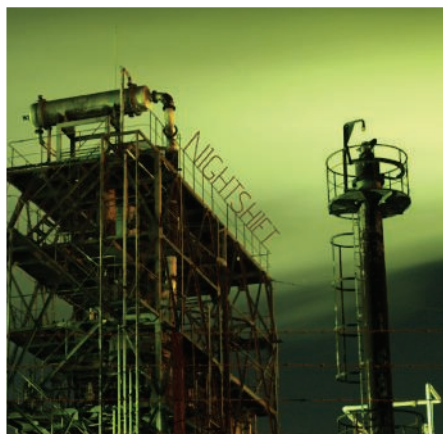
IKey-Audio's (ikey-audio.com) new M-v2 models feature front-firing bass ports, soft-dome tweeters, and glass-aramid composite woofers. Now available are the M-505v2 (5-inch woofer, 50W/25W bi-amped, \$129 each); M-606v2 (6-inch, 65W/25W, \$149 each); M-808v2 (8-inch, 100W/25W, \$199 each); and 175W M-10Sv2 (10-inch subwoofer, \$249). All have high-frequency or crossover adjustment and a rear-panel volume control.





PUREMAGNETIK ARTIFACT

Puremagnetik's (puremagnetik.com) Artifact Micropak (\$12 or by subscription, download) delivers all manner of computer anomalies and malfunctions to your sonic palette. Think aliasing; poor quantization; clock noise; and digital *thwacks*, *boings*, and *clunks*, and you'll have a pretty good sense of where this 300MB library starts. The sounds are organized into six drum kits and formatted as Ableton Live 8 Instrument Racks, Native Instruments Kontakt 3 or later instruments, and Apple Logic Pro 8 or later channel strips. You'll also find a variety of Apple Loops (AIFF) and Live tracks with MIDI clips to demonstrate each kit. In addition, the sampler instruments are programmed with a complement of effects including reverb, feedback delay, and all sorts of sample munging. The kits conform roughly to the GM standard and are equally useful as replacement kits or for layering (see **Web Clip 1**).



HEAVYOCITY EVOLVE 1.5

If you're a Heavyocity (heavyocity.com) Evolve user, the upgrade to version 1.5 (\$29.95, download) is a no-brainer. If you don't yet own Evolve, it might be the time to have a look, especially with its reduced \$299 price. Evolve 1.5 is a paid upgrade for new and existing users, and half the proceeds go to cancer research through the Memorial Sloan-Kettering Cancer Center's Fred's Team program (mskcc.convio.net). Evolve 1.5 features an improved user interface (similar to Evolve Mutations 2) and adds three new master effects: Screamer, LoFi, and Cabinet. Best of all, its new Trigger FX feature adds 12 more effects for most instrument types. These effects are toggled on and off in real time using MIDI notes C6 through B6. They take Evolve's extensive library of Rhythmic Suites, Percussive Kits, Stings and Transitions, and Tonality and FX kits into whole new territory (see **Web Clip 2**).

NEW ATLANTIS AUDIO NIGHTSHIFT

The folks at New Atlantis Audio (newatlantisaudio.com) strapped on their night-vision goggles and set out for nights of abandoned-cityscape recording to create their latest release. Nightshift (\$49, download) has 251 24-bit/44.1kHz AIFF recordings ranging in length from a few seconds to nearly three minutes. Cavernous spaces figure prominently as do all manner of industrial sounds, and extensive processing takes it all to the

next level. Nothing is easily identifiable, which is the charm of this library, but you'll swear you hear voices, machines, swamp noises, and distressed creatures. Some of the sounds loop, others fade in and out, and a number have a wide stereo field that invites you to pair channels from different loops. The library includes a Reason ReFill with 13 sampler-based Combinators loaded with effects and configured for easy automation (see **Web Clip 3**).



HOLLYWOOD EDGE POP ROCK GROOVES

Canadian producer Robb Hutzal teamed with Hollywood Edge (hollywoodedge.com) to produce Pop Rock Grooves (\$99, DVD), a 1.15GB library of loops aimed at pop-rock musicians, DJs, and producers of all stripes. The collection of 333 loops and associated drum hits is organized into 30 construction kits ranging in tempo from 60bpm to 125bpm in a variety of major and minor keys. Kits of similar tempo in the same key mix and match well, and you'll find plenty of individual drum hits to add variety to the drum loops (see **Web Clip 4**). All the loops are supplied in WAV, Apple Loops (AIFF), and REX2 format. The drum hits come in WAV format, and they are also organized into Kontakt instruments. You'll find plenty of material here for song starters, as well as for adding spice to productions of all types. *

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"Wow!" "I am blown away! The jazz/swing RealTracks stuff

heaven" "You won't regret it (and if you **guarantee**."

"I never thought I'd see the said before, but you guys are **world on fire!**" "I'm so stoked about stand it." "This is just killer." "Amazing, awesome sounding. Good work!"

cease to **amaze** me. You got it." "Wow and **RealDrums** sound awesome."

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Eventide H910 users quickly discovered new ways of making its internal effects interact to produce previously unheard soundscapes.

Eventide H910 Harmonizer

The first pro-audio harmony processor and pitch shifter

In 1974, two years after Lexicon introduced the Varispeech—a pitch shifter designed for processing speech, not music—Eventide (eventide.com) announced its first Harmonizer, the Model H910. It began shipping the next year with a street price of about \$1,300, and studios everywhere added it to their racks almost immediately. According to Eventide engineer Tony Agnello, who invented the Harmonizer and is now the company's CTO, the H910's name pays homage to The Beatles' song "One After 909."

The H910 was a rackmount device that accepted an audio signal and generated a pitch-shifted version of that signal in real time. The output could be any interval within an octave higher or lower than the original. By singing into a microphone connected to the device, you could harmonize with yourself. With multiple Harmonizers, you could create an entire chorus of voices. The H910 also had a pair of built-in digital delays, each offering a maximum 112.5ms of delay time, as well as a Feedback knob for regenerating the delayed signal.

The Pitch Ratio Readout showed the ratio between the original pitch and the transposed pitch rather than actual pitch

names. To dial in the pitch you wanted, you either referred to a chart or memorized the ratios for musical relationships. An optional, proprietary keyboard allowed you to control pitch by playing it in real time, and a polyphonic keyboard could control multiple Harmonizers to create chords from a single monophonic sound source.



Thicken sounds by simultaneously detuning them sharp and flat.

SHIFTING GEARS

The ability to turn a note into a chord is a real timesaver, but combined with other digital processing, Harmonizers exploit audio effects that would otherwise be impossible. In addition to producing semitone intervals, you could apply small amounts of shift to correct a previously recorded, out-of-tune instrument. You could use a pair of H910s to thicken sounds by simultaneously detuning them sharp and flat. By applying feedback to a pitch-shifted signal, each repetition could be pitched at an interval of the previous repetition, producing scales with the delay

setting determining the length of time between tones.

Users included producer Tony Visconti, who relied heavily on the H910 for David Bowie's albums *Young Americans*, *Low*, and *Lodger*. The unit contributed to hits by Steve Winwood, Hall & Oates, and other '80s chart-toppers. Frank Zappa, Eddie Van Halen,

and Jimmy Page famously made the H910 part of their signature guitar sounds.

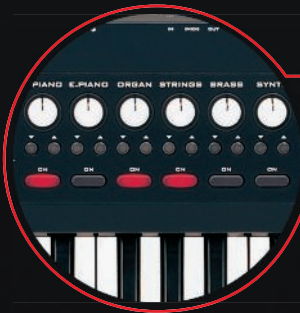
Eventide's subsequent Harmonizers offer longer delay times, more simultaneous harmonies, better fidelity, and other improvements. Today you'll find plenty of plug-ins that do everything you could with an H910 and then some, but with greater fidelity and flexibility. Eventide's H910 plug-in, part of the *Anthology II* TDM plug-in bundle, now comes closest to capturing its character. *

Former EM senior editor Geary Yelton lives in Asheville, N.C., surrounded by beautiful mountains and wonderful toys.

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Photo by Cybele Malinowski

Midnight Juggernauts, from left: Daniel Stricker (drums), Andrew Szekeres (bass/guitar/keys), and Vincent Vendetta (lead vocals/keys/guitar/bass)

Mysterious Forces

The Midnight Juggernauts use unconventional techniques to create musical hybrids

The amorphous music of Australian trio Midnight Juggernauts—Vincent Vendetta, Andrew Szekeres, and Daniel Stricker—compares with the synth-rock of French electronic-music duo Justice, as well as hip indie-rock. Reviews of the band's two albums, *Dystopia* (2007) and this year's *The Crystal Axis* (both released on the group's own Siberia imprint), have labeled their music as "space disco," "stadium disco metal," "dirty organ rock," and "prog rock"—all of which they say are appropriate.

The music stems from Vendetta and Szekeres' individual rough sketches. Both have home studios with Avid Pro Tools, Ableton Live, a few guitars, and a plethora of vintage synthesizers, such as the Yamaha SS30; Roland VP-330 Vocoder Plus, JX-3P, RS-202, and SH-1; and Wurlitzer 200A. Onstage, Vendetta focuses on keyboards and Szekeres on guitars, but when writing, both tend to use synthesizers.

Because the Juggernauts spent a lot of time on the road following the release of *Dystopia*, they recorded *The Crystal Axis* with a live perspective, which made for

a warmer, more organic sound. Where *Dystopia* revolves around sidechain compression and kicks that give it a driving sound, *The Crystal Axis* is less about compression and more about openness. And yet, there are songs on *The Crystal Axis* that are composed of up to 120 tracks.

"What sounds like one or two main parts is [actually] 15 synthesizers; then there are drums and different percussion layers, then the guitar layers," Szekeres says. "The vocals are heavily multitracked. [In] a song with a five- or six-part harmony, where each vocal is double-tracked and there are [also] five backing 'oohs' and 'aahs' that are doubled each time, that's already 25 to 30 tracks of vocals."

At one point, all of the band's equipment was set up at Sing Sing Recording Studios (Melbourne, Australia). There, they re-recorded some songs through Roland RE-201 Space Echo delay units, creating duplicate tracks with lots of effects for a giant wall of sound. For "Vital Signs" (see **Web Clip 1**), they re-recorded the guitar through a Space Echo, which was Sing Sing engineer Chris Moore's idea. In addition to multitracking the guitars and

creating backward guitar, they reversed those elements when recording into a Neve VR60 console and then lined them up to create the melody on the song.

To obtain dead-sounding drum tracks, Stricker was confined to a makeshift room made of sound baffles. He also hit anything in the studio that produced a hollow or dense metal sound—such as seats and walls—on top of a variety of shakers and tambourines.

"Wind of Fortune" (see **Web Clip 2**) is stripped back in the verses for a '70s AM radio pop sound. For this effect, the band created ambient layers with drones—using an ARP 2600 and a Moog modular—and placed them subtly underneath the song, which gives it an instant science-fiction tone. The Juggernauts also credit the ARP Solina String Synthesizer, which is a hybrid of an ARP Solina String Ensemble and ARP Explorer, for this sound. "It has this filter and a built-in monophonic analog synth," Szekeres says. "You can get the strangest, spacey sound. It is the arpeggiated sound on the chorus of 'Dynasty' and on the intro to the album." *

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Format and Function

Releasing music used to be simple: You'd make a CD and hand it to someone. But today, thanks to the Internet, music has been reduced to digital files. Choosing the right formats, settings, and fields can have some surprising benefits if you do it right. It can win you more fans, bring more people out to shows, let you find out who is playing your music, and even get you more income from Performance Rights Organizations (PROs).

When it comes to the format, most musicians make just one version of each song, but it's better to make two. One should be an MP3 because it's still the most popular format for music fans and it plays on more devices than WMV, AAC, or OGG. Make sure you encode your MP3s at decent quality settings (192kbps or better, with variable bit rate), but keep in mind that even with such settings, the data compression of the MP3 format will compromise quality somewhat.

Because of this, it's a good idea to make a second file for each song in a lossless format. Although most musicians use uncompressed WAV or AIFF files, consider using a lossless codec like

FLAC. Not only is FLAC a perfect reproduction of the music, it produces a much smaller file than does WAV or AIFF. FLAC also allows you to embed information into the file itself so it can be displayed by a music player. For instance, you can add artist, album, song, and international standard recording code (ISRC) information, which is not possible in most WAV formats.

Before you distribute any music, make sure the ID3 tags in your files are completely filled out because they are used by more than just MP3 players. For example, once you sign up for a free account on Eventful (eventful.com) and add your shows to its calendar, fans that use the site's Artist Tracker feature and who have your songs in their iTunes or Last.FM collections (assuming you've properly tagged them) will be automatically notified when you're playing in their area. Or perhaps you want to know who your fans are and when they are listening to your music. The popular music service Last.FM uses the ID3 tags to record the song plays of each of its users, and it can show you who your fans are and what songs of yours they're listening to.

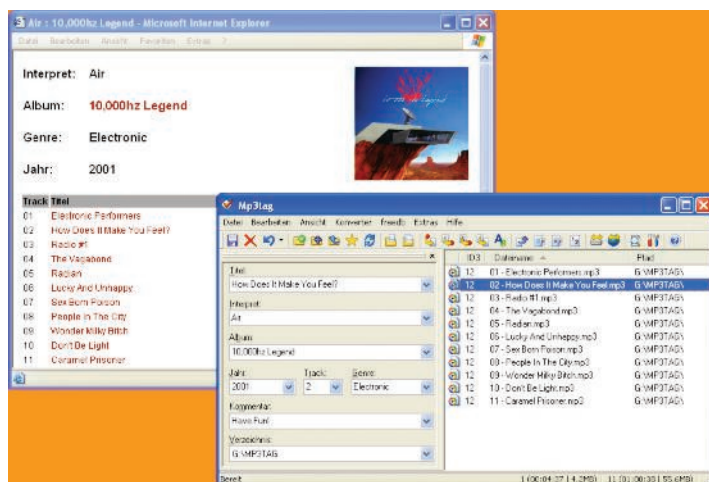
You can use players such as iTunes or WinAmp to fill out ID3 information. When you do, make sure at a minimum to fill in the artist, album, copyright, genre, and lyrics, and add a blurb to visit your website in the comments section. Don't forget to also embed album art in the tag information, as most players now make listening to music a visual experience. The more fields you fill out, the better connection you provide to your listeners.

Possibly the least known, but most advantageous, ID3 field is the ISRC tag, which performance rights organizations like ASCAP or BMI use to more easily find out where you are being played. This could result in earning you performance royalties. You can't add the ISRC tag with regular MP3 players; you often will need to use dedicated tagging software such as Tag and Rename, MP3Tag, or ID3Renamer—some of which are free. These programs also make it easier for you to keep the tags consistent across all of the music you distribute. Most of these programs will allow you to also tag other formats such as FLAC.

If you do this right, your own music will act as a promotional tool—keeping your name front and center with your fans, and even earning you more performance income. And when your fans want more music, they'll know where to find you. *

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

Dedicated tagging software such as MP3Tag (Win) let you keep your ID3 tags consistent across your whole catalog in many formats.



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Soulive, left to right: Neal Evans, Eric Krasno, Alan Evans

Photo by Arthur Shim

Funking Up the Beatles

How Soulive recorded instrumental versions of 11 Fab Four classics

Covering material as firmly entrenched in the public consciousness as The Beatles' repertoire can be risky. Play it too close to the original, and you'll be thought of as copycats; deviate too far, and you might alienate the people you're trying to reach. The funky trio Soulive managed to tread that line successfully on *Rubber Soulive* (Royal Family Records), the band's 13th studio effort. They were able to stay true to the spirit of 11 Beatles classics while imbuing them with a stamp all their own. The song list includes "Drive My Car," "Taxman," "In My Life," "Eleanor Rigby," "I Want You (She's So Heavy)," "Come Together," "Something," "Revolution," "Help!," "Day Tripper," and "While My Guitar Gently Weeps."

Soulive's instrumental renditions of these songs are funky, often-jazzy (but not smooth-jazzy), and have a slightly rough-edged feel. Alan Evans' drums are solid and grooving throughout, and Eric Krasno (guitar) and Neal Evans (organ) split the melodies and soloing duties.

Rubber Soulive was recorded and mixed by the band at Playonbrother Studios, the Western Massachusetts project studio that belong to Evans (see a video tour of the studio at emusician.com). I recently spoke to him about the project.

How did you guys decide to do a Beatles cover album?

Well, Eric recorded a Beatles tune on his solo album—he did "Get Back"—but we didn't play on it; some other cats that he plays with were on it. But we'd always kicked around the idea about doing some Beatles tunes live, but we never did. So after Kraz did that tune, it kind of got the conversation going again. I guess we were just kind of at a point where it was time to record another album, and it seemed like the timing was right. It kind of helped because that was right when all of The Beatles' remastered albums came out. It was just all around us at that point so

it seemed kind of obvious; the timing was right.

Was it at all intimidating to be doing material that's so universally revered?

Not really. Honestly, the funny thing about the whole process was that before we started, we all had ideas of what tunes we'd want to do. And then when we got into the studio, between all of us, we had all of the new remasters. So we basically listened to every Beatles tune that anybody could possibly hear in the public.

One thing I've found about The Beatles' material is that the chord changes sound simple, but they're incredibly brilliantly put together and subtle.

Oh, yeah. That's really the genius of it. Right there, that's just the perfect example of perfect songwriting. These cats just wrote stuff that's like, "Oh, yeah, that's cool; that's good pop music and it's easy to digest right off the bat," so you pull a lot of people in quickly. If you



Rubber Soulive is the band's 13th studio album since 1999.

really start to examine the tunes, it's really crazy. I mean, it's really brilliant stuff. Obviously, as everyone knows, [Beatles producer] George Martin had a big hand in a lot of that. You know what really amazed me? We were in Santa Cruz [Calif.] right when we started talking about this, and we walked into some guitar shop, and they had *The Beatles: Complete Scores*.

The one with all the parts written out?

Yeah, so we open up this book and we start checking it out, and I think there might be one picture in the book—I think [laughs]. I mean this thing—there's no filler. They're just all tunes. I mean, tunes, tunes, tunes. We were just completely blown away.

So you picked out the songs and then you had to arrange them. That's got to be the hardest part of this kind of process: "How do we make it interesting and stay somewhat faithful to the original, but also put our own sound into it?"

We just approached that like we view our own tunes when we're in the studio. It's like, "Hey, what makes sense? Who wants a solo? Which instrument makes sense to carry the melody?" We just kind of worked through it until we got something we liked.

You definitely put your own stamp on it. For instance, "Revolution" was a

shuffle in the original version, and you changed it to a funky 16th-note straight-four feel (see Web Clip 1). But it worked great. And you took a few liberties with the chord changes in "Help." Were you worried that people were going to respond badly to those kinds of things, or were you pretty sure they would be cool with it?

To be honest, I don't think we really cared. Over all the years we've been together, one of the things that we've learned is that you can't please everyone. So the thing is, if we come out with something that we really enjoy and that we can listen to and that we're really feeling, then we would hope that the people who listened to us over the years are going to dig it because they dug other things that we've done. And hopefully some new people will appreciate what we're trying to do. The thing is, on top of that, what's the point of recording a tune exactly the way they did it?

Talk about recording it. I've seen your studio. I'm guessing that you recorded it live, but you and the guys were in the main room and then the amps were in those side rooms.

Yeah, exactly.

Did you do anything different in terms of how you miked up your drum kit to sound more Beatle-like? It doesn't sound like you did.

No. The only thing I did differently for most of the album is I might have changed the kick drum. Most of the sessions I do in the studio here, most things I do, I use a 22-inch kick drum. And for whatever reason, I changed it to a 20. I have no idea why; I was just like, "Oh, well, whatever." I didn't do anything different at all, really, in terms of my miking. The only thing Neal did, which was different, is that he just used the organ. Neal usually uses his key bass and clav and all that kind of stuff, and this one was straight organ.

And he was doing all the bass with his left hand?

Yeah, exactly.

For your approach drumming, were you thinking Ringo in any parts? It didn't sound like it, but I'm just wondering. You guys play so differently.

No, no. The only tune that I was actually really thinking of another drummer was "While My Guitar Gently Weeps" [see Web Clip 2]. It's kind of funny; all of us approached it as if we were The Police. I was just doing straight Stewart Copeland on that [laughs].

Did you mix the whole thing in your studio?

Yeah. The funny thing about that is that I guess we were listening to all the remasters and everything, and I got my ear kind of in tune on that stuff. So I did a couple mixes and I sent them to Eric and Neal, and they were definitely on the hi-fi side of things. And they were like, "Yeah, man, they sound cool. Maybe could you approach it more like old school? Make it sound more along the lines of the *Up Here* [Soulive's 2009] album; make it sound like it's not a new album."

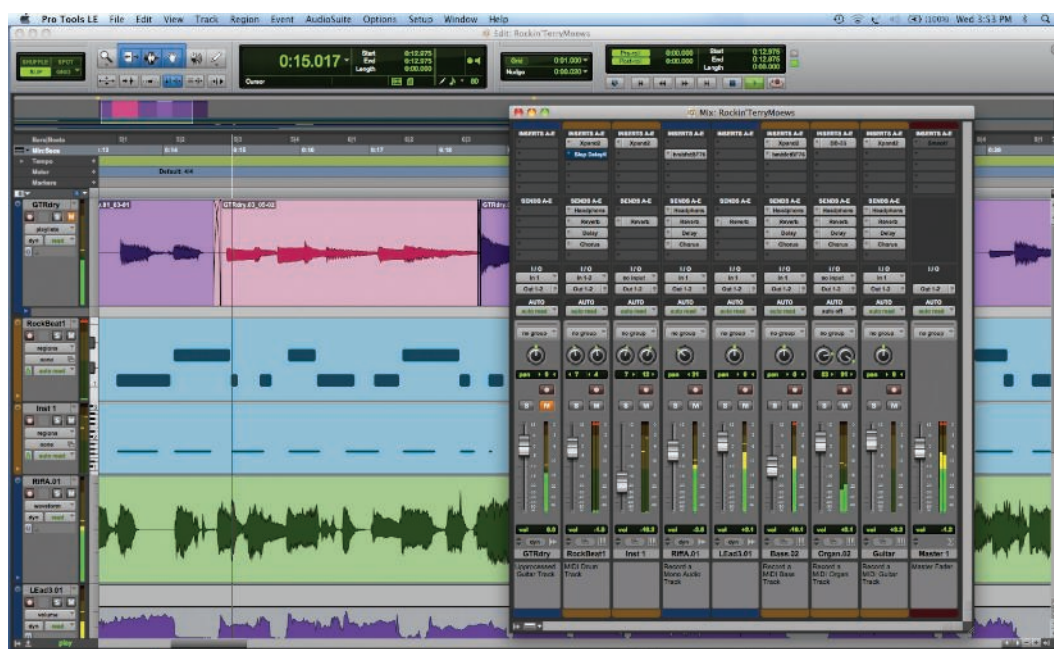
When you say "on the high side," you're talking frequency-wise?

Well, yeah, kind of frequency-wise, and just like the placement of things. There was more of a stereo, wider—more depth to it. We just put some dirt on it.

What were some of the things you did to achieve the more "old-school" sound?

It's just things you do in mixing. Certain pieces of gear or plug-ins. A lot of it just has to do with combinations of filtering and certain compressors. I've found a way to get that sound, which has become our thing as of late. *

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



Pro Tools LE 8 Power Tips

Speed up your workflow with these five essential techniques

By Gino Robair

Despite a Reference Guide that stretches beyond 1,000 pages, as well as a handful of additional guides and manuals, there is so much you can do with Pro Tools LE that it can be overwhelming to approach the documentation directly. (Though, to Avid's credit, the guides are easy to navigate.) For those who just won't RTFM but want to get things done now, this article offers five techniques that every Pro Tools LE user should know, but which are often overlooked.

One of the things that sets Pro Tools apart from the competition is its elegant routing system, yet it's the simplest application of the sends and buses that often intimidate Pro Tools users. I'll explain a couple of ways the pros use them to get the most creative mileage, with a fun technique at the end for fans of old-school, tape-speed effects.

Throughout the article, I'll offer keyboard shortcuts whenever possible. Command/Control indicates that on the Mac you use

Command, while on the PC you use Control as part of the key sequence.

PRINTING EFFECTS

Unlike in an analog mixer, the insert section in Pro Tools is post-fader. This means that even though you may have effects plug-ins on your track while you record, you're not recording—or printing, as we say—those effects to disk. That's a good thing when all you want to do is give singers some reverb around their voices. On the other hand, if you want to keep that awesome sound you're getting from your amp-modeling plug-in, you'll need to use an aux track to host the plug-in and then route its output, using a bus, to an audio track to capture the processed signal.

Begin by creating an aux track that will serve as your main audio input (Track > New, or Command/Control+Shift+N). If you're playing guitar, a mono track will do, but if your input is stereo, create a stereo aux track. The

aux track serves as the effects conduit that will feed other tracks. So if you're recording a lead guitar part, this is the track in which you will load your favorite amp-modeling plug-in.

Notice that the aux track doesn't have a Record Enable button like audio tracks do. You need to create a destination, so hit Command/Control+Shift+N to open the track dialog box again and create the number of destinations tracks you want. (Typically, I'll create the aux and audio tracks at the same time, but for the sake of clarity, I'm doing them separately here.)

To feed audio to your destination track, use a bus in the I/O section rather than one in the Sends area because you don't want to hear the unprocessed track while you play. (If you were to use a send in the aux track, and kept its output tile set to Out 1-2, you'd hear both parts—processed and unprocessed—at the outputs, which gets annoying when you're playing.) Therefore, select an unused bus for your aux track's output—let's say bus 7 for



FIG. 1: The aux track (left) hosts my plug-in and routes it to the middle track. The right track records the unprocessed signal, which I've noted in the comments field at the bottom.

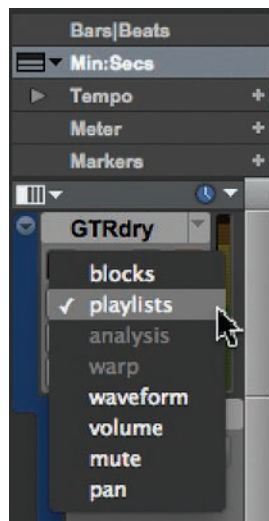


FIG. 2: Select Playlists in the Track View tile to see all of the alternate playlist lanes when you're done loop recording.

now—and then select the same bus number as your input for your destination track. Hit the Record Enable button to see if you're getting signal when you play (see **Fig. 1**).

Remember that your input gain setting should be set at the interface. In the case of an electric guitar, plug into the DI input, push the DI button to set the initial gain level, and then set the input trim control on the interface itself so that your signal is not overloading.

In the Mixer window, the amount of signal you send to your destination track will be determined by the aux track's fader level. To get the best signal-to-noise ratio and use the most bits possible, make sure your input signal is hovering in the 75-percent range of the aux input's meter—mostly in the yellow zone and rarely (if ever) hitting the red.

At this point, you should be able to hear your processed guitar from your destination track. You can set the fader level of the destination track to whatever is comfortable because it doesn't affect the signal while you record—it's for monitoring only. Set it to a listening level that inspires your playing. (Unfortunately, it doesn't go to 11.)

While you're tracking that killer guitar tone from your modeling plug-in, it's also a good idea to record an unprocessed version of your part just in case you want an alternative tone later on. To get that, create a new audio track with the same input that is going to your

aux track, hit Record Enable, lower the fader to zero (so you don't hear the dry guitar part), and hit Record.

A good habit to get into is naming the tracks (by double-clicking on the name tile) in a way that will make it easy during mixdown to see what's there. And be sure to add notes in the Comments section (View > Mix Window View > Comments) below each track when you record multiple tracks in this way. Comments provide a good way to remember a patch setting, show a collaborator what you did to get that sound, or tell the mixer how to treat the track. **Fig. 1** shows my annotations for this particular set of tracks.

LOOP RECORDING, COMPING

A common practice in the studio is to create the perfect vocal or instrumental track from several alternate takes by cutting and pasting the best sections together. This is called *comping* (short for *compositing*). You can set up Pro Tools so that it repeats the section and automatically records and names take after take. This process is called *loop recording*.

Pro Tools will automatically create a new playlist on the same track for each alternate take. Think of each alternate take, or playlist, as a virtual track below the main playlist (the top track that plays back). Although you could manually create a new playlist and then record each take individually, using the loop-record

function lets you stay in the groove by not interrupting your creative flow. (It also works best if you've chosen beginning and end points for the loop that aren't too distracting.)

A bit of setup is required to make this process run smoothly. Begin by going to the Record section of the Operation page under Preferences (Setup > Preferences > Operation). Check the box next to Automatically Create New Playlists When Loop Recording, and then click the OK button.

If you want to see all of the alternate-take playlists automatically fan out below your main playlist when you stop recording, change the Track View tile from Waveform to Playlists (see **Fig. 2**).

You can also set an amount of pre-roll time before you begin loop recording, so select something that makes sense musically to get you into the section. However, you will only hear the pre-roll material once before you begin loop recording. If you want to give yourself a bit of pre- and post-roll on either side of the part you're tracking, select loop points that give you the extra beats or bars before and after the section.

To set Pro Tools into Loop Record mode, select Loop Record from the Options menu (or simply right-click on the Record button in the Transport window until the circular arrow appears on it). Also be sure that you've selected Link Timeline and Edit Selection in the Options menu.

In the Edit window, use the Selector tool to click and drag over the area in the audio track where you want to record. If the beginning or end of the area needs to be adjusted, hold down Shift and drag near either side until the edges of the selection are in the correct place.

Record Enable your track, and then hit the Record button followed by Play to begin recording (Command/Control+Spacebar). If you've set a pre-roll amount, Pro Tools will begin playing the session, but it won't actually start recording until the cursor enters the selected region (loop zone). But once recording begins, it will loop the selection until you hit the spacebar to stop the session.

Now it's time to create your composite track. To do this, you'll want to see all of the alternate takes you recorded. If you set the Track View tile to Playlists before loop record-

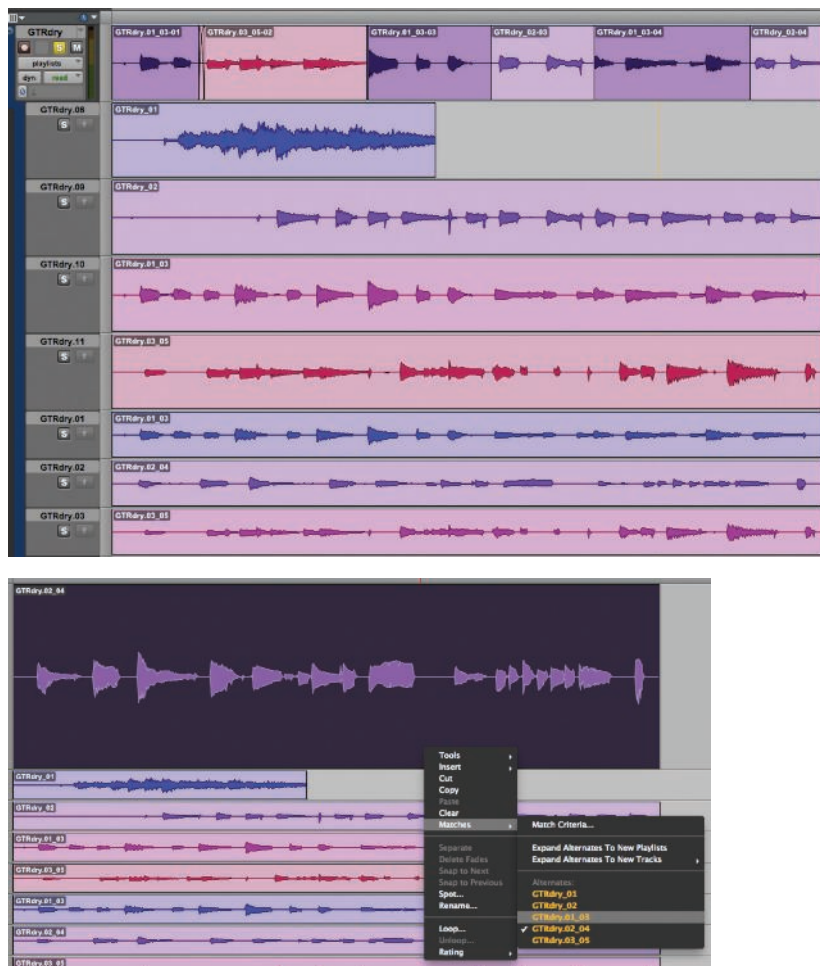


FIG. 4: Move an alternate playlist into the main position by right-clicking and selecting it under Matches.

ing, you'll already see each take in its own playlist lane once you stop loop recording. If you only see one playlist, select the region you just recorded and right-click to get the popup menu. Then select Matches > Expand Alternates to New Playlists to view all of the playlist lanes.

Let's say you have eight takes of a solo, each with its own playlist. Choose the best parts of each alternate take and automatically paste them to the top position (the main playlist). To listen to an alternate playlist lane, use its Solo button. Then select the portion you want to move to the top, right-click on the region, and then select Copy Selection to Main Playlist (Edit > Copy Selection To > Main Playlist). The shortcut is Option/Control+V to paste the selected region into the main playlist (see Fig. 3).

The most efficient way to create a comp is to begin with the take that includes the most material that you'll keep, and then paste the corrective sections from the other takes into it. If the better of the takes isn't the main playlist, select the current main playlist, right-click to get the menu, and under Matches pick the take you want to be on top (see Fig. 4).

Once you've created your perfect take, you can hide the playlist lanes by right-clicking on one of the name tiles for a playlist and selecting Filter Lanes > Hide All Lanes. To create a single audio file of the comped regions, select the entire solo and choose Consolidate under the Edit menu (or use Option/Control+Shift+3).

BEYOND THE BOUNCE

The Bounce to Disk feature is the primary way that beginner and intermediate Pro Tools

FIG. 3: The main playlist contains my comped guitar solo, built from the playlists below. I added a crossfade between the first two regions to smooth out the transition.

users create and export a mix. However, when you bounce a mix, you are locked out of making changes to your session as it plays back in real time. In addition, many experienced Pro Tools users say that the audio results aren't as high as what you'd get when you do a layback—in essence, re-record your entire mix as a stereo track back into Pro Tools. Once you've done that, you can drag the resulting stereo file out of the Audio Files folder as a pair of mono left-and-right files, or export it as a stereo interleaved file using the Export Regions as Files command. Remember, the file you layback will be at the same resolution as your session: You cannot create a 16-bit, 44.1kHz file from a 24-bit, 96kHz session using this method. If you need to do that, use Bounce to Disk.

You can also use a layback to create submixes and stems—any situation where you want to create a mono or stereo file from a number of tracks—either because you've got more tracks or voices than you can play back or because a client has asked for them. In this example, I will focus on creating a final mix from a simple multitrack session that includes audio and instrument (virtual instruments controlled by MIDI) tracks.

Although doing a layback is simple, a couple of conditions have to be met. First, you have to make sure you haven't exceeded the number of voices you can work with in your Pro Tools session. (This is not a problem in this example session, with seven audio and three aux tracks.) Second, under the Options pulldown menu, select Link Timeline and Edit Selection and deselect Loop Record and Loop Playback.

Next, create a stereo audio track that will be the destination and name it something useful. (I've called it *Layback* in this example.) To easily locate it in the Mix and Edit windows, I've also dragged it to the right of the Master Fader in the Mix window. (It'll also appear below the Master Fader track in the Edit window.)

Leave the layback track's output set at Out 1-2, but change the input to an unused pair of



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FIG. 5: I've routed all of the track outputs to Bus 9-10 and matched the input for the destination track.



FIG. 6: You can print effects during a layback by using an aux track before the destination track.

buses. (I've selected Bus 9-10.) Next, change the output for every track you want to include in the layback to match the bus tracks used as the input for the layback track (see **Fig. 5**).

Click the Record Enable button on the layback destination track, hit Return to start at the beginning of the session (or select the amount of the song you want to record in the Edit window), and then hit Play. You should see the meters moving in the destination track and the Master Fader.

Before you begin recording, play the track through once to make sure that none of the sections in your mix cause the meters in the layback track to go into the red. If they do, figure out which tracks are the culprit and adjust the fader levels to correct the problem. Then hit Record and Play (Command/

Control+Spacebar) to initiate recording and create your mix. When it's done, hit Save.

At this point, you may be wondering how to use insert effects on the master bus—reverb, compression, limiting—and have them print onto your layback files. To do that, you'll use a similar technique that you used in the previous section of this article: You add an aux track with the effects before the layback destination track (see **Fig. 6**).

Create a stereo aux track, assign the input to an unused stereo bus, and then assign the outputs of the playback tracks to the same bus. Next, assign the aux output tile to another unused stereo bus and match it to the input of the layback track.

Finally, assign the insert effects you want to use on the aux track, Record Enable the layback track, and you're ready to record with effects. Again, play the track once through before you record to make sure that the effects are not causing any overs or changing the music in a negative way.

HOW HIGH THE MOON

As a reward for getting this far, let's finish with something fun: half-speed record mode. Yes, it works just like it does with a tape deck: As you record, the session plays back at half-speed while your instrument sounds at the correct pitch. When you're done recording, play the session back at regular speed, and the part you just recorded will sound twice as fast and an octave higher, just like it did when Les Paul

and Frank Zappa used this technique to fill out their orchestrations.

The technique in Pro Tools is simple. Prepare your audio track to record as you normally would, and then put it in Record Enable mode. As you simultaneously hit the Record and Play buttons in the Transport window, hold down Shift (or use Command/Control+Shift+Spacebar), and the session will begin recording at half speed.

If you want to play your session back at half-time for transcription or lick-learning, Shift+Spacebar does the trick. Although you can't record the slowed-down session using the layback technique discussed earlier, the RTAS/AudioSuite plug-in Flashback (\$199, or \$19.90 for 31 days) from Synaptricity (synaptricity.com) can do it. Because Flashback records in the background as you work, it will capture half-speed playback faithfully, as well as anything you do with the Scrubber tool. The plug-in opens up a new world of sound-design possibilities in Pro Tools, and I highly recommend it. *

Gino Robair is editorial director for Gearwire.com and a former editor of EM. Special thanks to Brian Smithers.



SUGGESTED READING

There is a never-ending stream of how-to books for this ubiquitous DAW. Here are five recommendations for casual to intermediate recordists, beyond the Reference Guide that comes free with Pro Tools.

Pro Tools 101 Official Courseware, Version 8 (Course Technology PTR, 2009)

Gina Fant-Saez: *Pro Tools for Musicians and Songwriters* (Peachpit Press, 2006)

David Franz: *Producing in the Home Studio With Pro Tools* (Berklee Press, 2008)

Andrew Lee Hegerman: *Pro Tools LE 8 Ignite!* (Course Technology PTR 2010)

Brian Smithers: *Mixing in Pro Tools: Skill Pack* (Course Technology PTR, 2009)

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SERJ OF CREATIVITY

**Synthetic, orchestral, and rock elements are fused
in Serj Tankian's *Imperfect Harmonies*** By Mike Levine

Although Serj Tankian came to prominence as System of a Down's lead singer, he makes it pretty clear that rock music is only part of his musical repertoire. "I don't just write rock," he says. "I have about 400 or 500 unreleased pieces and songs, some of which I utilized for the musical I'm doing. I use some for videogames, I use some for films. I do a lot of different types of music, from electronic to jazz to classical to rock to metal to punk to hip-hop to whatever."

The multitasking Tankian has been busy since System went on indefinite hiatus in 2006. His first solo album, *Elect the Dead* (Warner Bros., 2007), was a rock record, but he followed it up with a live-recorded orchestral reinterpretation of that release with the Auckland Philharmonia Orchestra, which he put out in March of this year as a CD/DVD called *Elect the Dead Symphony* (Warner Bros.).

His new album, *Imperfect Harmonies* (Warner Bros.)—much of which was recorded in his 1,000-square-foot L.A.-area home studio—brings together his musical influences by blending rock, orchestral, and electronic music into a cohesive collection of songs centered around his unmistakable vocal stylings.

Paralleling the stylistic mélange, Tankian used a wide assortment of software during production, including Avid

Pro Tools, Apple Logic Pro, Propellerhead Reason, and Sony ACID Pro.

Talk about the new album, musically.

There were two major influences that I wanted to fuse. One was the electronic side and the other one was the orchestral—one was synthetic, the other was organic—and in a normal sense, they don't really belong together in the same kind of sound palette. They just don't jibe well together. So there were a lot of challenges in trying to make everything really flow as one thing.

How much of this album did you record in your studio?

Most of it except for the live orchestra. Everything I recorded in my studio—I engineered it, I produced it. I wrote the arrangements for the live strings, with 25-piece strings and seven-piece brass that were recorded live. Besides that, there's a lot of sampled instrumentation on strings, brass, woodwinds, and percussion. Then you have the live drums, bass, live guitars, acoustic guitars, pianos, synths, samples, beats—like nine, 10 types of beats per song sometimes. [There were] anywhere from 150 to 200 tracks per Pro Tools session going. It was more like scoring a film than making a rock album, as far as the process.

When did you start working with orchestras?

About a year-and-a-half, two years ago, I did this live show with The Auckland Philharmonia Orchestra. And to make that show happen, I had to rearrange all my songs from my first solo record, *Elect the Dead*, into full orchestral arrangements for a 70-piece orchestra—without the band, you know. No drums, no guitars, no bass, et cetera. So from that, we ended up with a live CD/DVD that we put out about three months ago on Warner, and we sent that out as kind of like a calling card to different orchestras around the world. I'm now in Atlanta finishing a tour with different orchestras. We played with the Czech National Symphony Orchestra in Prague and Berlin; we played with the Bruckner Orchestra in Linz in Austria; we played with the Globalis Orchestra in Moscow—a 70-piece orchestra in front of a 6,000-person sold-out crowd. It's been fun.

What material were you doing with those orchestras?

Mostly the stuff from the *Elect the Dead Symphony*.

Which were originally rock songs?

Yes. All the songs from my first solo record, which was a rock record.

Photo by Mitch Tobias





With the exception of the live orchestral sessions, Tankian played most of the instruments and recorded most of the tracks on *Imperfect Harmonies*.

I know sometimes when the classical world and the pop world or rock world meet, it isn't always the smoothest thing. How has it been working with the classical musicians?

It's been amazing. The kind of reverence between rock and classical [musicians] and some of the parallels are amazing, actually. I rehearse the orchestras, but I mostly deal with the conductor as far as classical players, but the response from the actual orchestras has been amazing because they've never gotten a response from an audience as much as they've gotten from our audiences that we've played for, so they're blown away. And they're really into the music. I think it's well-retrofitted for orchestra from the rock songs. It's done in a way that it accomplishes everything. In other words, the guitars and the different vocal harmonies and everything are replaced by horns and brass and woodwinds. So everything is composed correctly, arranged correctly for orchestra; that's why it works. If you don't do it that way, if you don't do it right for orchestra, then it won't work. Or if you just use the orchestra as a backup and you're still playing with your band in front, it doesn't work as well in some ways.

Talk about the recording process for *Imperfect Harmonies*. Did you start with demos?

I started out all the songs on primarily just piano or acoustic guitar and vocals. So I start them out in a very classic tradition. Just like I did with

my first solo record, just like I did with songs I'd written for System. And then I start adding layers. For *Elect the Dead*, I would start with guitars or drums. Mostly I'd do the

drums, and then I'd add electric guitars—two, three different variations of melodies—and then bass and whatnot. And in this case, after piano or acoustic guitar with vocals, I would add the orchestra—I would do all my orchestral arrangements—and then I would do all the electronic beats. And then I would do all the rock instrumentation.

How much of the instruments did you play on this album?

Other than live orchestra, about 85, 90 percent, I guess.

So you also played the drum parts?

No, I didn't do the live drums. I programmed all the beats and then had a live drummer, the guy that plays with me on tour. I've done all the pianos, most of the guitars—although my friend Dan Monti, who plays with me on tour, did a couple of the guitars on a few of the songs. But I did most of the guitars. I did all the sampled stuff, all the beats; I wrote all the orchestral arrangements and recorded the orchestra. I then had my drummer and bassist play on top on most of the songs. They didn't all have drums and bass—most of them do. And I had a few vocalist friends—an opera singer, female opera singer, and another friend of mine, Shana Halligan, who's like this beautiful jazz vocalist. She sang on some of the songs with me.

Initially when you were arranging the orchestral parts, did you use samples?

I used sampled strings, sampled brass, and I used MIDI so I could write everything and then quantize it, throw it into Sibelius, print out scores, and fix them so that live ensembles can play them.

What were you using for sounds when you were writing the stuff? Do you have an orchestral library that you like?

I have a number of them. I have a bunch of stuff from the Vienna Symphonic Library. I've got EastWest Play, Quantum Leap Symphonic Orchestra Platinum Complete; I love the brass from Sonic Implants. There's a bunch of different ones.

Do you have classical training in terms of being able to write out the parts?

I've never studied music; I've never studied singing; I've never studied anything.

That's impressive. Classical arranging isn't something that's easy to pick up.

Thanks. Everything I've done musically and artistically has been groping in the dark and eventually gets there and somehow works for me.

Do you have an orchestrator or arranger that you work with?

I did with the *Elect the Dead Symphony*; I had an orchestrator. So with that one, that was my first experience in writing for orchestra. And with that one I just wrote, you know like cello, viola, violin 1 and 2, and then a few brass melodies, and then had an orchestrator retrofit it to a 70-piece orchestra. So he wrote all the percussion parts and stuff like that, and then added more layers and melodies to compensate for lacking guitars and vocal melodies and stuff. But for this record, I kind of did a lot of the ensemble arrangements myself and then had someone basically double-check my work.

It must be pretty mind-blowing when you hear your arrangements being played by an orchestra.

It is absolutely mind-blowing, dude. To me, it's the biggest compliment in the world when you have that many professional musicians playing your work successfully. It just blows you away. The first time it happened in New Zealand with the Auckland Philharmonia Orchestra, when



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Tankian at the keyboard in his home studio.

Photo by Mitch Tobias

I was rehearsing them a couple of years ago, I walked into rehearsal, and I'm like, "Hey, how's it going everybody?" and met everyone. And I said, "Okay, well, you guys play first, you know. I won't perform with you until we make sure everyone's playing everything correctly." So I sat down and they just started playing, and I forgot about listening to the music because I was just so blown away. The vibe, I was just taken back. Now I'm kind of used to it.

Let's talk about your studio a bit. How long have you had your own studio?

I've had my own studio in one form or another since I've been playing music. So for a long time. My current studio next to my house, which is like a 1,000-square-foot full pro studio, I've had since—it was built late-February 2002.

You have both an Apple Logic and Avid Pro Tools setup in there.

Yeah. I'm kind of learning Logic more as I go along. I use Pro Tools more than anything else, but I've used Logic for some songs. I use a lot of different programs. I use [Propellerhead] Reason for some beats. I've got a dedicated PC just to run [Sony Creative Software] ACID to do loop stuff. I use a lot of different programs. I'm missing a bunch, too.

Did you use the PC with ACID on it when you were doing the beat stuff for the new album?

I think I did for one song, "Beat Us." I've used it on my previous records for a few songs. It's an easy way to kind of put stuff together. Until I figured out how to do it in Pro Tools, I was just using ACID to kind of put together beats, but now I can easily do it in Pro Tools with Elastic Time stretching and stuff.

Right. What about synth sounds? For the electronic stuff, did you use mostly software synths on this album?

A combination. I've got a lot of hardware and I've got a lot of software, so I used a combination of stuff.

What are some of your favorites?

As far as hardware synths, I've got a little Moog [Little] Phatty. I used that. I've got a Moog Voyager. I used a Rhodes, a mid-'70s Rhodes—Mark II, I want to say, without looking. Live piano on most of the songs. For some of the piano parts, I used [Synthogy] Ivory—it sounds better—and some standup pianos. I've got one standup piano in New Zealand that actually sounds better than Ivory because it's got a dark vibe, but the one in my studio in L.A. doesn't. I used a lot of soft synths as well, stuff from different programs. Stuff from Reason and Native Instruments, and IK Multimedia and Arturia. I use it all, man. I typically go through and see what sound I need and look for it, and then dial it in and alter it until it's what I want, and play it and record it, et cetera.

So you do a lot of altering of the sounds rather than just using stock sounds?

A combination. I do some altering of sounds and also just bring up patches and use whatever works.

I think the idea that one can never use a preset sound is overrated. If you're layering it in among a bunch of other sounds, how are they going to know?

Exactly. I'm not one of those guys that spends three days getting the perfect beat or finding the perfect f***ing envelope or filter on a synth. I can't do that; I'll lose the muse, you know? I've got to record it while it's hot in my head. So I'll go find something and do it, and then I'll change it if I need to.

Do you do all your own engineering or do you have someone that helps you?

I did most of my own engineering this time around. The only time I didn't was when we recorded the orchestra; I got an orchestral engineer for the big room at EastWest to record 25-piece string, seven-piece brass.

So did you mix this yourself, too?

No, I had Rich Costey do the mixing.

Did you do it at your studio or at his own place?

We did it at another studio, Record One.

Were the songs on the new album challenging to mix?

This record was a really hard one to mix because there were so many disparate elements to it, so many diverse dynamics. You've got the full live orchestra, you've got rock instruments, you've got f***ing jazz horn solos, and you've got full electronic stuff happening with samples and synths. There's just so much going on, so it was very important to find the right balance of instruments, of sounds. And sometimes the mixer will present it the way they see it, like let's say more electronic than you want it, and you want to balance the orchestral with the electronic, and you're like, "No, it needs more orchestra," or whatever. Because I'm producing and ultimately I'm the artist, it's my call, and I wanted to make a record—it was easy to go the direction of rock and edgy and make the electronics and the drum and bass louder, and make the orchestra just there kind of interlacing everything. I didn't want that; I wanted it to be a fair balance of orchestra and all the other instruments. That's what I was shooting for; I think that's what makes this record different.

With the orchestral instruments, you said you were combining the live players with the sampled ones. Were the samples just in there to make it bigger, to make it sound like a larger orchestra?

Yeah. It wasn't just to make it bigger, but the sampled orchestra is always at a different frequency and a sound than a live orchestra. A live orchestra will always sound better, of course. We also had woodwinds and orchestral percussion, and a lot of bass in our sampled orchestra that we didn't have in our live recordings. So it was kind of [a matter of] bringing those elements out, as well.

With so many tracks going, did you find that when you got to the mixing phase, all of a sudden, you were like, "You know what? We don't need this many instruments; we can start cutting stuff back"?

Sure. There's so much at certain points that as a producer, you've got to listen to it, and go, "Woah, woah, okay, look." I threw a lot against the wall this time. I usually don't do that; I usually build up based on what I need. This time, I did the opposite, where I threw all these colors at the wall and then looked at the picture, and then I was like, "Okay, the middle eight section doesn't need to have everything in it. Let's just break it down to orchestra so mute all the other stuff." This is before mixing, for me to have an idea of what I want the song to sound like.

Besides all your touring, what else do you have new coming up?

I've got to jump in December, early December, to work on my musical. I've got a musical opening in March of next year.

Where is it going to open?

It opens at the American Repertory Theater at Harvard. It's with Steven Sater, the guy who did *Spring Awakening*; he's the playwright. And it's based on *Prometheus Bound*, the first Greek play. We've been working on it for like a year-and-a-half doing workshops and stuff.

I take it you're really pleased with the way *Imperfect Harmonies* came out?

Yeah, I'm very happy with it. It's a whole different sound for me, and I enjoyed making it. I like to experiment with what I do. That's why I do different things. After System, my first record was different than System, but it was still rock. It was, in retrospect, the type of record that I've always wanted to make with System, so I ended up making *Elect the Dead* that way. And then I did a whole thing with an orchestra without a band, completely symphonic. And now I'm doing something that mixes electronic, orchestral, rock, and jazz all on one record. Doing a musical, and writing my first symphony. I'm doing a bunch of different things.

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

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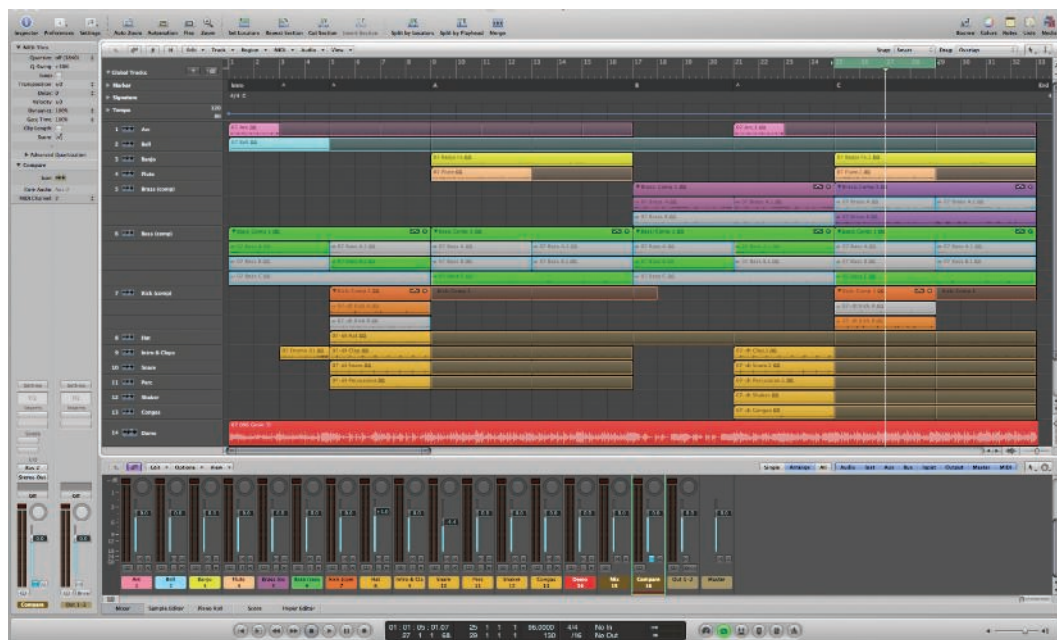


FIG. 1: In this Apple Logic Pro 9 reconstruction of kit 7 from Big Fish Audio Hip Hop Exotica 2, comp tracks are used for the brass, bass, and kick parts.

Under Construction

Getting creative with loop libraries and construction kits

By Len Sasso

Writing *EM*'s "Sound Advice" column for the past several years has loaded my hard drive with commercial sound libraries. My collection contains hundreds of thousands of audio files. Is that a blessing or a curse? I won't weigh in on that controversy, but in creating Web Clips for the column, I have learned a few things about what does and doesn't work. Here are some ways to get things started, keep them rolling, and speed up the most tedious parts.

By *sound library* I mean a collection of loops and phrases for use in creating or augmenting songs (not a sampled-instrument library). Although sound libraries take many forms, they are usually organized by tempo and, for pitched material, by key. Often they are also grouped as construction kits containing compatible elements that you can use as a song starter. I'll begin there.

RECONSTRUCT THE DEMO

Many construction kits include a short demo song. One of the best ways to learn how the author intends the library to be used is to reconstruct one of the demos. Depending on the complexity of the kit and the length of the demo, the process should take less than an

hour, and it's well worth doing at least once. I do this every few months, and it always sharpens my ear and my ability to analyze a mix. It's also a good way to convince yourself that the demos actually can be made from the parts provided in the kit (or not).

The details of reconstructing the demo depend on the features of your DAW, but here are the essentials: You'll need a way to easily switch back and forth between auditioning the demo and the reconstruction so assign the track holding the demo to its own bus, route a submix of all the construction-kit tracks to a different bus, and set up a button or fader on your MIDI controller to alternately mute one or the other of the buses. Don't configure the fader to adjust the bus volumes in opposite directions because you'll want to adjust them individually for a more accurate comparison.

Use a separate track for each loop and one-shot in the construction kit or devote a track to each instrument (bass, piano, vocal, drum kit-piece, and so on) and then sequence all clips for that instrument on the same track. With the latter method, ensure you have separate tracks for instruments that overlap—for example, use separate tracks for rhythm and lead guitar,

acoustic and electric piano, and lead and background vocals. If your DAW supports comping from different takes, as do Apple Logic Pro and Propellerhead Record, you might prefer to use comp tracks for instruments with multiple clips and then use different comps to fly in the right clip. Ableton Live users will find it easiest to insert the clips in Session view slots and then launch clips to create the arrangement.

IT'S A BROWSE

You'll speed things up considerably by setting markers to delineate parts of the song and to mark places within those parts where you notice changes. Looping these smaller sections is the easiest way to build your tracks. Point your DAW's browser to the construction kit and audition its files for parts that stand out in the demo. When you find a match, drag it to the appropriate track (see **Fig. 1** and **Web Clip 1**). If your DAW's browser is not well-suited to that task, you might consider a third-party file-browsing utility such as Iced Audio AudioFinder (see sidebar "Tools of the Trade").

When you've reconstructed a section of the song, loop the song up to that point and

spend several passes comparing your version to the demo. You'll undoubtedly hear something you missed or a part that doesn't match exactly, and by the time you finish the song, you'll have most of those errors and omissions fixed. If you find parts in the kit that aren't used, that's often a tip-off that you've missed something. Listen to the part by itself and then listen for it in the demo.

Often the parts in the construction kit match the levels and panning in the demo mix so you can keep them centered and at 0dB, and adjust the two output buses to match levels. If a part does jump out in contrast to the demo, fix it, but don't waste time obsessing over the mix.

ONE FROM COLUMN A

A fast and effective way to generate variations on a song you've created or reconstructed from a construction-kit demo is to generate stems from your tracks and then slice them up and reorder the slices. Try to make all the slices the same length—typically, one or two bars as suits the music—but make exceptions when a cut interrupts a musical phrase. You may want to work on individual choruses in longer pieces.

Most DAWs will export stems from a project. In Live, either consolidate each track or use the Render function to export stems for all tracks in one go. In Logic, the File menu offers Export All Tracks as Audio Files, which creates stems the full length of the Logic project so you'll want to set Logic's end marker to the true end of the song. Record's implementation is particularly robust. After choosing File > Bounce Mixer Channels, you can select which channels to include, bounce the channels pre- or post-mixer, set the file type, and choose to bounce the whole song or only the current loop.

Many DAWs, samplers, and sample editors have tools to cut audio files at regular intervals or into a fixed number of slices of the same length. I use AudioFinder's Sample Tool window to create equal-length slices based on the number of bars and the note division I provide. I use the Sample Tool's Set Sound Length option, which pads or trims the stem to the right length based on tempo and bar count. (Logic's renderings occasionally come up a few beats short, and checking the stem lengths is not a bad idea no matter how they're generated.)



TOOLS OF THE TRADE

Each of these software tools could save you hours of hard labor. Also check out "Essential Utilities" in the December 2008 issue of *EM*, available at emusician.com.

Antares Auto-Tune Evo (Mac/Win, \$199, antarestech.com)

Thanks in part to the "Cher Effect"—and its more recent incarnation, the "T-Pain Effect"—the name *Auto-Tune* has become synonymous with pitch correction. The latest incarnation presents monophonic parts as note and transition lines in a piano-roll-style display, lets you change pitches by dragging, and includes many of the formant-munging and throat-modeling tools from Antares AVOX Evo.

Celemony Melodyne Editor (Mac/Win, \$299, celemony.com)

Melodyne offers pitch correction similar to that of Auto-Tune, but it lacks the latter's throat-modeling features. What Melodyne adds is the ability to peer inside polyphonic material and shift individual notes. That process is time-consuming and not quite perfect, but in many cases it will do, and it is indeed revolutionary. Also, it's a handy tool for analyzing chords even when you don't want to mess with them.

Iced Audio AudioFinder (Mac, \$69.95, icedaudio.com)

If your computer is a Mac and you have a large audio library, AudioFinder is a must for browsing. When you point it to a folder or a Scan Set of disparate folders, its browser will display all audio files of all types nested within. You can then include or exclude files matching search terms in their filename, folder name, or metadata; step through the list sequentially or at random flagging favorites; and copy, move, or alias any selection of files to any location. In addition, AudioFinder is bristling with tools for audio processing (including AU plug-ins), file slicing, and automatic format conversion.

Propellerhead ReCycle (Mac/Win, \$199, propellerheads.se)

If you want to convert audio files to REX2 format, ReCycle is the only game in town. While many DAWs, samplers, and loop-oriented applications have their own sliced-loop format, most also support REX2 files.

Seventh String Software Transcribe (Mac/Win, \$50, seventhstring.com)

When you need to analyze polyphonic material to sort out the notes in a chord, Transcribe can do the heavy lifting. It identifies the prominent harmonics on a keyboard graphic and suggests possible chord names. When you can't quite decode some elusive inner voicing, Transcribe will provide the necessary nudge. It also offers credible time-stretching for easier transcription of blisteringly fast lines. *

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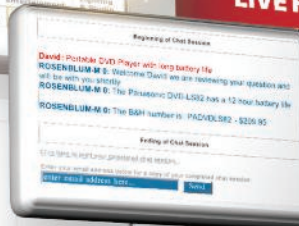
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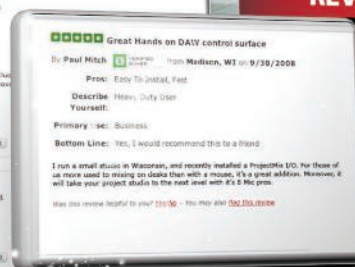
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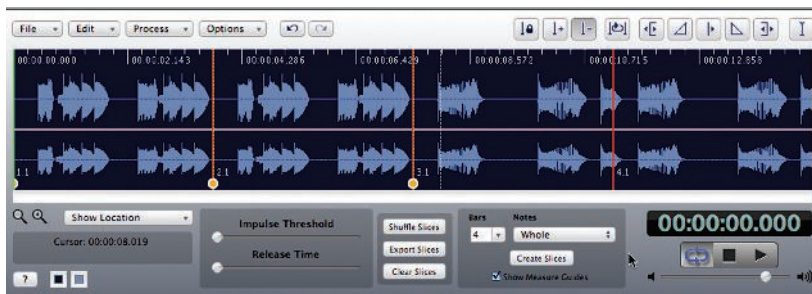


FIG. 2: I've used AudioFinder's Sample Tool to slice an 8-bar bass stem into 2-bar slices. The red gridlines are at 2-bar intervals, and the yellow-handled markers indicate the slice points. The slice marker at 4.1 was deleted to preserve the 4-bar phrase.

If you want slices longer than one bar, you'll need to fool many applications—including AudioFinder—by lying about the number of bars and then making 1-bar slices: Divide the number of bars by two for 2-bar slices, by three for 3-bar slices, and so on. Once you've specified the grid and the application has inserted slice markers, eliminate any slice markers that interrupt a musical phrase (see **Fig. 2**). Next, export the slices as separate audio files.

IN YOUR DAW

Live's Session view is ideally suited for looping, triggering, and rearranging slices. Create a track for each stem and load the slices from the stem into consecutive Clip Slots. Launching a Live Scene loops a single slice from each stem, and launching individual clips substitutes different slices from the corresponding stem. When you have a variation you like, use Capture and Insert

in ReCycle's Bars count, configure your ReCycle slices, and save the file to a new folder named after the stem. When you're finished, you'll have a folder of REX2 files for each stem. Move them all to a new folder and drag that folder to the Spectrasonics SAGE Converter utility window.

The next time you open the RMX browser, you'll find a folder with your project's name in User Libraries, and in that folder you'll find folders holding the slices for each of your stems (see **Fig. 4**). Use a separate RMX part in Groove Menu mode for each of these folders. Consecutive MIDI notes starting at C3 (C2 or C1 if you have a huge number of slices) on the part's MIDI channel will trigger the individual REX2 files. The REX2 slices within those files are available for all of RMX's creative processing, including tempo matching,

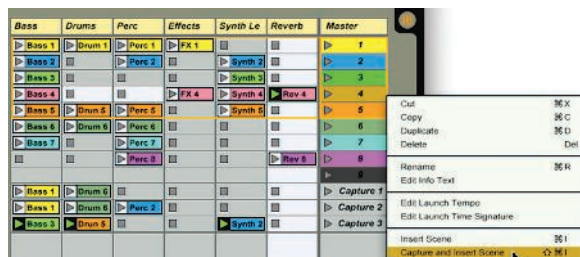


FIG. 3: Slices from a 6-part arrangement in Ableton Live occupy Session view Clip slots (top). Three Scenes are captured at the bottom, and the Rev 4 clip is playing along with the third captured Scene.

Scene from the Create menu to insert a new Scene from that variation (see **Fig. 3**). Finally, click the Global Record button to sequence an arrangement from your captured Scenes.

Spectrasonics Stylus RMX in Groove Menu mode is another excellent tool if you have Propellerhead ReCycle to turn your stem slices into REX2 files. For some stem slices, ReCycle may ask to move the left or right end locator; answer No because you've already trimmed the slices. Enter the stem length

Edit Groups, insert and send effects, and Time and Chaos Designers.

IN YOUR SAMPLER

Many samplers will slice and key-map the stems for you. In Native Instruments Kontakt, import the stem into a Kontakt instrument, select it in the Mapping editor, and click the Wave Editor tab. Turn on the Wave Editor's Grid section, choose Fix mode (the default), select the maximum

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FIG. 4: In Groove Menu mode, Spectrasonics Stylus RMX assigns separate notes on MIDI channels 1 through 8 to trigger the grooves in RMX's eight parts.

width (1/1—a whole note), and set the Grid BPM to the real tempo divided by the desired number of bars per slice. For example, for 2-bar slices, divide the tempo in half. Next select the Sync/Slice tab (but don't turn it on), click the first slice in the waveform display, and Shift-click the last slice—this selects all of the slices. Finally, click-and-drag the slices to the Mapping Editor window to map them to the keys you want to use as triggers. As long as you leave playback (Mapping Editor Source) in DFD or Sampler mode, the slices will play at their true tempo.

For a more hands-on approach, Native Instruments Maschine is hard to beat. Use its sample editor's Slice tab to slice your stem. In addition to grid and transient slicing, you'll find a convenient Split mode that lets you create four, eight, 16, or 32 equally spaced slices. Once you've set up slicing, clicking the Apply button

MAKE IT YOUR OWN

You'll get only so far with the loops and one-shots provided in a construction kit. To generate something truly your own, mix and match material from different sources, process and modify loops, and layer in some of your own material. Mixing and matching material from different sources—other construction kits or bonus samples in the same library, as well as material from other libraries—is much easier with a good browser. Some DAWs and samplers make that process fast, easy, and nearly transparent, but if yours is not among them, a full-featured third-party browser will save you lots of time and frustration.

Once you find material you want to use, you'll confront three issues: pitch, tempo, and groove. Fortunately, full-featured DAWs include tools to handle all three, but the results will vary depending on the source material.

If you do a lot of pitch manipulation on monophonic audio parts, consider investing in a tool designed specifically for that such as Celemony Melodyne or Antares Auto-Tune. For tempo and groove manipulation of audio, you'll sometimes get better results by first slicing (on beats or transients, depending on the material) and then manipulating the slices and the generated MIDI files that play them. Having said that, recent advances like Logic's Flex Time Editing, Live's upgraded Warping Engine, and Propellerhead Record's Tempo Scaling and ReGroove mixer deliver excellent results without the need for manual slicing.

The viability of playing or sequencing your own parts depends on your chops and the instruments at your disposal, but the more the better. Processing and modifying the material at hand is an intermediate option, and here are some ways to start.

INSIDE THE LOOP

If you're using MIDI drum loops (and many libraries include at least some MIDI parts), two easy options are swapping kit pieces and moving some hits from one kit-piece to another. You might try something as radical as replac-

ing an entire acoustic kit with an electronic kit, or vice versa. That's a great way to set off one part of a song from another. On the less-is-more side, add a second kick drum to your kit and move some of the original kick hits to it, or layer a crash cymbal with a sound effect.

For an audio drum loop, the first step is to slice it up into individual hits, many of which will include several kit pieces. You can use a utility like ReCycle, but your DAW or sampler most likely has tools for this. Whatever tool you use, it's important to audition the resulting slices one by one to ensure that you didn't accidentally cut into the beginning of the next sound, as indicated by a click at the end. Fixing that is as simple as adjusting the slice's endpoint, but the beginning of the next sound's slice may also need adjusting if its onset is severely clipped; the MIDI note that triggers that slice will then need to be moved accordingly. If there are many such problems, it's easier to manually adjust the slice markers and re-slice.

Once you have a sliced audio loop, observe which slices have similar sounds—kick alone, kick and snare, closed or open hi-hat, and so on. Moving some MIDI trigger notes vertically to swap similar sounds is a subtle way to vary a loop from one pass to the next. For more radical surgery, swap dissimilar sounds. You might also replace or layer some sounds with new samples. An easy way to do that is to copy the MIDI trigger clip, delete all but the wanted triggers, and use the new clip (adjusting the note pitches but not the note positions) to play a sampler or drum synth (see [Web Clips 2 and 3](#)).

BASSMENT REMODEL

Slide swapping is also an effective tool with bass loops. Reason 5's Dr.OctoRex makes fast work of that while letting you simultaneously switch loops as the song evolves. Load a Dr.OctoRex with one or more bass loops. Select a loop slot, click the Programmer's Slice Edit mode button, and click the word *Alt* in the loop display. That reveals a bar-chart overlaying slices—click and drag in the bar chart to assign any slice to one



FIG. 5: Use Reason 5's Dr.OctoRex loop player to switch between eight REX2 loops. The Alt function is used to shuffle like-sounding slices, as seen in the third pass (bottom).

generates a Pattern that steps through the slices. You can then generate your own Patterns for as many as 16 sliced sound files within the Group.

The Maschine hardware's pads trigger slices for their full length, which makes it easy to record and edit Patterns on the fly. Select a sound, record trigger notes, select another sound, record more trigger notes, and so on until you've built up a Pattern you like. Load different Groups with alternative sounds and install Patterns in Maschine Scenes to create songs. You can do everything from the hardware.

of four Alt groups. When you play the loop or send a pattern to a sequencer track, slices from the same Alt group will be randomly swapped (see Fig. 5 and Web Clip 4). Keep in mind that you can load the same REX2 file into several Dr.OctoRex slots to use different Alt configurations (including no Alt assignments).

Random swapping of similar slices is a quick way to create variations, but some will work better than others so select the best and trash the rest. Swapping slices manually by dragging notes vertically in a piano-roll note editor gives you complete control. In order of decreasing subtlety, try swapping slices with the same pitch and articulation, the same pitch but different articulations, pitched an octave apart, and pitched a perfect-fifth apart.

TOPPING OFF

Slice swapping is less useful for leads and polyphonic parts because you usually don't want to mess with the melody or chord changes.

(But don't overlook it as a way to take things a bit outside.) Slicing is useful for melodic and polyphonic material for time manipulations—tempo changes and groove matching—and for part doubling.

One way to double or replace a monophonic lead part (vocal, horn, lead guitar, and so on) is to play and record a MIDI version of the part as close to the original timing as you can, then groove-quantize the new part to the original. Slicing the original is the easiest way to capture its groove (although most DAWs will groove-quantize from an audio part by analyzing its transients). Once you've sliced the original part, you also have the more tedious alternative of adapting the resulting MIDI file (the one used to play the slices) to play the doubling instrument by moving the MIDI file's notes to the desired pitches. Of course, you're not limited to doubling; you can create harmony tracks and different leads.

Several software tools automate that process. Antares Auto-Tune and Celemony Melodyne make quick work of monophonic part doubling and pitch manipulation. Harmonizers like Antares Harmony Engine and Zplane Vielklang create multipart harmony on the fly. Melodyne Editor will (up to a point) let you analyze and manipulate the individual voices of polyphonic parts.

Beyond the topics covered here, consider adding effects processors—especially the more exotic ones—for creating new sounds from old, using the arsenal of sound-design tools in your DAW and sampler, and manipulating the tempo. One thing I've learned is that the song is never finished. When you think you've hit the wall, put the project aside but not in the trash. Some new idea or sound will come along to take it in a different direction. *

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FIG. 1: Maschine Groups are set up to step-sequence Reason Kong, Redrum, and Dr.OctoRex modules via Advanced MIDI routing in Reason's Hardware Interface.

In Step With Maschine

Using Maschine's step sequencer with real and virtual instruments

When I first got my hands on Native Instruments Maschine, I headed straight for the step sequencer. I've always been a fan of MPC-style drum sequencing, and Maschine didn't disappoint. Once I learned my way around step-sequencing the sounds in Maschine's extensive library, I wanted to get outside the box and use Maschine with other virtual instruments. That turned out to be incredibly easy.

I'll start with the setup for working with Propellerhead Reason 5 and the standalone version of Maschine. The process is similar for standalone virtual instruments, DAW plug-ins, and external MIDI hardware.

THE HOOKUP

Launch both Reason and Maschine and then open Reason's Preferences. Go to the Advanced Control tab and assign one of the buses to Maschine Virtual Output. Now use Reason's Hardware Interface module to route Maschine to devices in Reason's rack (see **Fig. 1**). That allows you to step-sequence 16 Reason devices—one device per MIDI channel.

You can sync Reason's tempo and clock (but not song position) to Maschine using MIDI Clock, but that's

not necessary for step-sequencing Reason instruments. If you do want to sync them, enable Send MIDI Clock from Maschine's File menu, point MIDI Clock Sync in Reason's Advanced Control preferences to Maschine Virtual Output, and set Sync to MIDI Clock from Reason's Options menu.

Any Reason instrument is eligible for step sequencing, but the resemblance of the new Kong Drum Designer to a classic drum machine makes it an obvious first choice. The easiest setup is to devote a Maschine Group to Kong. Set each of the Group's 16 sounds as a MIDI Out source on the MIDI channel selected for Kong in Reason's Hardware Interface module, and set the 16 pads' Base Keys to C1 through D#2 to match Kong's default pad assignments. Press Maschine's Step button to enter step-sequencer mode and start Maschine. Select a sound using Maschine's Pad Mode button (audible) or Select button (silent), and then use the pads to activate notes at different time positions. Renaming the Group's sounds to match Kong's makes selecting sounds easier.

In Step mode, each Maschine pad represents a position on the time grid. Use the Grid button to change the grid

size and when the pads don't span the whole pattern, use buttons B7 and B8 above the LCDs to shift the grid. Temporarily enlarge the grid when you want to enter a longer note.

The Solo and Mute buttons let you solo and mute individual sounds and groups (using the Group buttons). When adding a note, if you continue pressing the pad and twist the Swing knob, the note will be offset from the grid, which is a great way to humanize the feel.

Other natural targets for step sequencing are Redrum and Dr.OctoRex. The same Base Keys work for both, and they offer processing designed specifically for samples and REX files. For REX files with more than 16 slices, use several Groups or modify the sounds' Base Keys to focus on your preferred 16 slices.

When you've generated some patterns you like, drag and drop to export them as standard MIDI files. You can drag them directly to MIDI tracks in most DAWs, but with Reason you need to drag them to your hard drive and then import them using Reason's File menu. *

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Beat of a Different Drummer (Part 2)

In part 1 in the last issue, I covered some of the basics of drum programming: volume, quantization, and swing and grace notes. Part 2 will cover some more advanced beat-making techniques, starting with drum-sample loops.

I started chopping loops and samples on early samplers such as the Akai S950 and MPC-60, and the E-mu 4xt. These devices were the predecessors to today's audio workstations, but they lacked the modern beat-slicing software such as Propellerhead ReCycle or the Beat Detective feature in Avid Pro Tools that we've come to depend on. However, these samplers were powerful enough to help create all types of sample-based music, such as hip-hop and electronic dance. The following beat-chopping technique, though somewhat old school, is still a very powerful method for editing samples and programming beats, and you can also apply it to any sampled material such as melodic passages and vocals.

CHOP IT UP

The basic concept behind beat chopping is to have multiple copies of the sample, each with a start point that is later in time relative to the previous copy of that sample. For drums, the time variation is usually placed at the nearest transient. If the drum pattern comprises the tran-

sients kick, hi-hat (hh), snare, hh, and kick, then the start point would be moved to each successive transient (see **Fig. 1**). Once I've chopped it up this way, I'll import the files into a sampler, assign each sample to a different MIDI note, and then play in my part using these pieces. The same can be achieved through software such as Propellerhead ReCycle, which can give you multiple sample start positions within a single sample.

There are two important reasons for chopping up drum breaks (aka breakbeats) in this fashion: First, the chopped audio can be played and sequenced in myriad interesting patterns that would otherwise take a very long time to program if you did them one note at a time. Second, the sample retains its sonic footprint, which is what gives a break its characteristic movement and tone, and is often what makes it a desirable sample in the first place.

Being able to manipulate a break or sample allows me much more freedom when using a loop. Instead of being stuck with the same drum loop or sample playing over and over, I'm able to manipulate the sample—with different parts of the loop accentuated—to create new, interesting moving passages.

A common example of this beat-chopping technique is the reprogramming of the Amen Break (referring to the break in the song "Amen Brother"; see **Web Clips 1** through **3**) for drum 'n' bass or the Apache break in hip-hop.

DNA TESTING

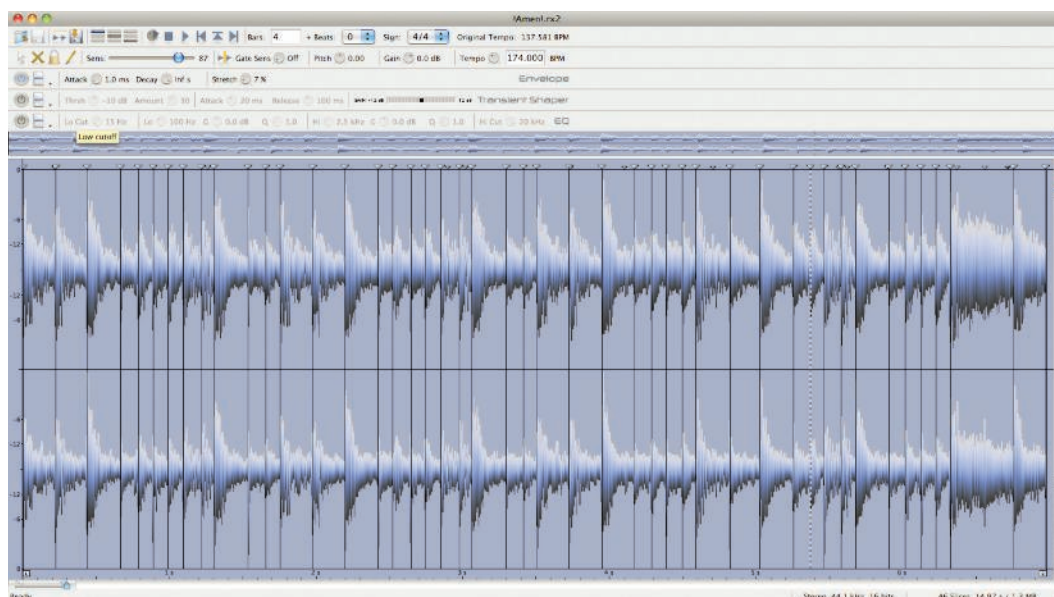
A sample or loop taken from a nonprogrammed source has a feel that I refer to as its *transient DNA* (which is similar to what's contained in a groove template). This refers to the timing of the transients within the sample. The push and pull of time between the transients is what creates movement within a beat. Beats programmed to a grid often lack this push and pull, resulting in a robotic sound. So to put some life back into

programmed music, I often take the feel of a sample that wasn't created on a grid and apply it to the gridded material, or play a live passage and use its transient DNA to do the same.

For example, I like to play a live bass line against programmed drums. I often find that I like how the live-played notes work alongside the programmed beat. If I want the drums to more closely mirror the feel of the baseline, I can either remove the programmed drums from the grid and align key elements such

FIG. 1: Here's an example of beat chopping. The top line shows the order of events in the full sample, and the lines below show what the sample would comprise if each successive transient was cut off.

SAMPLE CHOP 1 (ORIGINAL FULL SAMPLE)	KICK, HH, SNARE, HH, KICK
SAMPLE CHOP 2	HH, SNARE, HH, KICK
SAMPLE CHOP 3	SNARE, HH, KICK
SAMPLE CHOP 4	HH, KICK
SAMPLE CHOP 5	KICK



The Amen Break, chopped up in Propellerhead ReCycle

as kicks and snares with the corresponding notes of the bass physically, or I can copy the transient DNA from the baseline with tools such as ReCycle and apply that groove in Reason's ReGroove mixer, or by creating an audio-to-MIDI groove template in Apple Logic. I can then apply that groove as quantization to the drums or other elements of that sequence.

You can extract not only the timing, but also volume differences from one transient to another within a sample. This is particularly useful when pulling the transient DNA from a live drum progression and applying it to a programmed beat. For instance, if the one in the sampled break is heavier than the three, then the programmed material to which you apply that will follow suit. The accents give a beat bounce, and can be applied to single elements such as the kick, snare, or the whole programmed break.

MAKE IT LIVE

Programming realistic-sounding live drums is difficult and requires care and time. The most important part of this technique is to listen to the nuances of live drums with and without supporting music. Listen to the placement of the snare and hi-hats relative to the vocals, and try to hear the room in which the drums were recorded. Are the drums recorded to a click or do they drift in time? What is the genre? Are the live drums going to be supported with programmed beats or breaks? All of these will affect how I quantize, mix, and EQ the drums, as well as how I re-create the sound of a nice drum room.

My live drum-programming method is to physically play on a keyboard, a scratch pass of the hi-hats, followed by a second pass with the kick and snare. Once I get patterns for the verse, pre-chorus, chorus, and bridge, I'll go back and play each element in separately: kick first, then snare, then hi-hats and ride, cymbals, fills (including toms), and finally ghosts notes on the snare and toms if necessary. I'll quantize the first note of each measure to the downbeat and then soft-quantize the two,

three, and four of the beat, depending on how locked to the grid the drums need to feel. I try not to quantize the hi-hats, and I spend a lot of time varying the volume of each hit. To create excitement before a chorus or during a long verse, I use moving levels of open and closed hats.

For sound sources, I use a number of different multisample layered kits from FXpansion BFD, Apple Logic, or Propellerhead Reason Drums. They all have good volume-dependent multisamples, and some have room and microphone emulation settings.

For mixing, I have a drum sub-mix that often has a multiband EQ, an analog-sounding compressor like the H Series in Waves, and some kind of distortion or overdrive to emulate tape saturation. I use reverb on snares carefully and as sparingly as possible so that I have more freedom with the overhead microphone mix. I create the room by busing a stereo mix of the drums to a separate overhead mix bus with EQ, overdrive, and compression and reverb.

Take your time when programming "live" drums. They're supposed to sound real, so if they don't, keep massaging them until they're golden. *

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: Kurzweil's PC3LE controllers (such as the PC3LE7) are lower-cost, preset-playback versions of the PC3 Series.

Kurzweil PC3LE Series

Performance keyboards that are equally at home onstage or in the studio

By Nick Peck



PRODUCT SUMMARY

PERFORMANCE CONTROLLERS

PRICE: \$2,195 PC3LE8; \$1,795 PC3LE7; \$1,495 PC3LE6

PROS: Solid construction. Same sound engine as PC3 Series. Huge number of excellent sounds. Numerous control inputs.

CONS: Limited choices of assignable sound parameters in any given sound. LCD can be densely populated with UI elements. Some learning curve required.

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

kurzweilmusicsystems.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

Kurzweil's new PC3LE line of performance controller keyboards use the same Dynamic Variable Architecture Synthesis Technology (VAST) sound engine as its PC3 line of controllers, but with a slimmed-down feature set and a markedly lower price point. The PC3LE Series removes user programming from the equation, but offers a whopping 800-plus factory sounds from which to choose, plus a bevy of controller knobs and switches to alter your sound in real time. There are even some goodies absent from the PC3, such as eight touch-sensitive drum pads. The series includes the PC3LE8 (88-key fully weighted keyboard); the PC3LE7 (the 76 semiweighted key version shown in **Fig. 1**); and the PC3LE6 with 61 semiweighted keys.

THE BASICS

As expected with Kurzweil products, the PC3LE is constructed sturdily, with its metal case and thick plastic end blocks ready to absorb the abuse of a busy gigging schedule. All corners are rounded and the controls are low-slung, giving a

sleek, high-tech appearance that also minimizes potential damage. The color scheme is primarily dark blue-gray with lighter gray and blue highlights, which looks elegant and is great for keeping the audience's eyes on the performer. Weighing in at 37.5 pounds, the PC3LE7 is not the lightest or most compact controller out there, but it is manageable.

The I/O on all models includes a 1/4-inch headphone jack, balanced TRS analog audio outs, and an RCA S/PDIF digital output. MIDI In/Out/Thru jacks are standard, as are two USB ports (one for transferring programs using a thumb drive; the other for direct MIDI interfacing to a computer). There are two 1/4-inch footswitch inputs and a 1/4-inch expression pedal input. A removable IEC cable supplies AC power (see **Fig. 2**).

MODES OF OPERATION

The PC3LE is always in one of six modes. Program mode is for selecting/playing a single sound. Setup mode turns the PC3LE into a 16-channel, multitimbral performance instrument



FIG. 2: All models in the PC3LE Series have a digital audio output and two USB ports.

and MIDI controller. You can layer and split the keyboard 16 ways, each with individual channel and control assignments. Arpeggiations and Riffs (mini-sequences generated in the onboard sequencer) can be assigned to Setups, which is good for creating one-man-band-style performances.

Song mode brings up the PC3LE's 16-track sequencer. This perfectly capable device can be used to quickly record ideas while in the moment, or to create more finished instrumental productions. The PC3LE comes loaded with a wide variety of mini-sequences in many different styles, which are perfect for grooving over and developing ideas (see **Web Clip 1**).

A Quick Access mode groups up to 10 programs or setups in a single window. They can be selected by the press of a single button or by using the cursor controls. Quick Access banks can be used to group many sounds of a particular type together for fast auditioning, or to assemble all sounds to be used in a particular song or set in one place. Finally, the Master and Storage modes specify global settings and handle data transfers to a computer or USB drive, respectively.

CONTROLS AND UI

Most information is imparted by way of a 240x64 LCD. Navigation is via six soft buttons below the display, as well as a jog wheel, cursor buttons, and “±” buttons. The PC3LE does have a number of purpose-built buttons to streamline the menu process that a keyboard of this

complexity requires. A bank of 24 category buttons lets users filter hundreds of available sounds down to the particular type that is sought-after. These buttons serve a double duty, allowing for alphanumeric input (see **Fig. 3**).

PC3LE keyboards have the requisite pitch and mod wheels, as well as a series of assignable switches and knobs designed for real-time manipulation of sound and mappable to the parameters provided for each particular sound. I'd like to see far more parameters available for control, but perhaps this limiting of the feature set distinguishes between the PC3LE and PC3. In any case, the five knobs work in concert with a Shift key to quickly switch between 15 different possible controls. The five switches can act as 10 controls the same way.

SOUND QUALITY

Sound is everything, of course, and in this area the PC3LE does not disappoint. The 800-plus factory patches offer something for everyone. The acoustic piano is rich and full, the Rhodes has a juicy bit of grit, and the synth pads are luscious

with great variety. All the expected categories of sound are here, including guitars, electric and synth basses, drums and percussion, orchestral, voices, and mallets. I was delighted to hear quite serviceable Mellotron strings and flutes.

The organ sounds make use of Kurzweil's proprietary KB3 organ-modeling engine, and it is here that the PC3LE's control surface really shines. The drawbars, percussion, chorus/vibrato, key click, and, of course, Leslie rotating speaker speed are all mapped to the control knobs and switches, and can be tweaked in real time.

The PC3LE also employs Kurzweil's virtual analog oscillator (KVA) modeling technology. The modeling really makes a difference, giving girth and authenticity to these old-school-type sounds (see **Web Clip 2**).

ARPEGGIATOR

The PC3LE has a deep arpeggiator, with dozens of patterns and fine user control (see **Web Clip 3**). You can assign note velocity to various patterns or to a controller, and specify duration, beat divisio,



FIG. 3: PC3LE's user controls include a 24-button bank of category controls, eight drum pads, and five user-configurable control knobs.

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play order, and various limits. Each zone in a setup can have its own arpeggiation, so theoretically, you could have 16 separate arpeggiators mapped across the keyboard and triggering at once.

EFFECTS

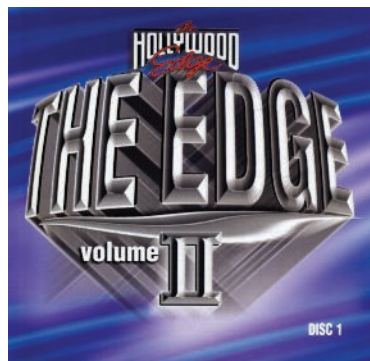
The PC3LE has a powerful effects engine, allowing as many as 10 effects (or less, depending on the complexity of the effects algorithms) at once. These effects are studio quality, and can be distributed between two global effects and up to 10 program insert effects. There are more than 500 different effects, of every conceivable variety. Certain effects presets are chains of multiple effects, while others are single effects. Like the programs, the effects are not editable, but there are so many from which to choose that you won't run out of options any time soon.

PACKING IT UP

Kurzweil has a long history of delivering impressive keyboards, and the PC3LE Series belongs right in that lineage. The Dynamic VAST and KB3 organ engines deliver excellent sound quality, and the sheer number of sounds and features would give any keyboard player plenty of room to explore for some time to come. I'm a big fan of all the real-time controls, as well as the incredibly flexible Setup mode and the built-in arpeggiator and sequencer. Experienced synthesists could quickly find themselves wishing to tweak the sounds more than they can with this keyboard, but that's what the PC3 Series is for. If you are more interested in performance than programming, really like Kurzweil's sounds and user interface, and want to spend quite a bit less than what it costs to buy a PC3, then have a serious look at the PC3LE Series. *

Composer/audio engineer Nick Peck lives in the San Francisco Bay Area and is the audio director of a videogame company. Visit him at underthebigtree.com.

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FIG. 1: Alloy's Macro page provides live-editable access to all of the main elements of a Macro Preset from a single page, and can be customized to create your perfect mixing experience.



MAC/
WIN

iZotope Alloy

A must-have tool for professional mixing

By Asher Fulero

Alloy, the new channel strip plug-in from iZotope, makes it surprisingly easy to get from mixing problem to solution. It can do everything from simple tasks to complex channel customization, and it employs many of the technologies and interface breakthroughs from iZotope's extremely successful Ozone mastering plug-in. Alloy delivers the highest audio fidelity, multiple analog models, tight latency control, a powerful Macro Preset system, and a ridiculously long list of usage and interface options that anticipate the kinds of problems you'll face (see **Fig. 1**).

MODULE FOR MODULE

Alloy has six modules: Equalizer, Dynamics, Exciter, De-Esser, Transient Shaper, and Limiter. Each is packed with extended options and intricately detailed possibilities that go well beyond the norm. Like Ozone, Alloy sports large and brightly colored stereo I/O meters with flexible sensitivity and zoomable range. You'll find a meter on either side of the center window, and each has a Module button to toggle its view between the I/O levels for the currently selected module

and the plug-in as a whole. This is quite helpful for detailed control of the internal gain structure. The Graph window lets you quickly customize the order of modules to create the perfect signal path (see **Fig. 2** and **Web Clip 1**).

Several of the modules offer a Multi-band mode, greatly enhancing their functionality. You set the bands by clicking and dragging the separator bars on each module's spectrum-enabled graph. To save CPU power, right-click inside the graph and choose Remove Band from the dropdown menu for 2-band usage (alternatively, choose Insert Band to return to three bands). From this menu, you can also copy and paste settings between bands.

FLEXIBLE EQUALIZATION

Equalization is perhaps the most crucial part of a channel strip, and iZotope gave its equalizer lots of attention. It offers eight bands with seven curve types and analog-modeled soft saturation. There is an overlay of a spectrum analyzer, which you can hide to save CPU. You can zoom in and out on the EQ curve independently of the spectrum by clicking the 1x but-



PRODUCT SUMMARY

MULTI-EFFECTS PLUG-IN

PRICE: \$225

PROS: Wide variety of uses. Great Presets. Deeply customizable. High precision and fidelity.

CONS: No sweepable knee in Dynamics module.

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

izotope.com



FIG. 2: The Graph window lets you rearrange the modules however you like, including setting up the two compressors in parallel or in series.

ton. Clicking it toggles forward to 2x, 3x, or 6x; right-clicking toggles backward. The Show/Hide Info button brings up a condensed numerical display for typing in specific values.

There are plentiful keyboard and mouse shortcuts to enhance your workflow. You adjust individual EQ bands with the arrow keys, and you adjust Q and bandwidth by dragging the small handles that appear on either side or by using the mouse wheel (or two-finger swipe on a Mac trackpad). Click and drag inside the graph to select multiple bands for quick, proportional adjustments. Hold Shift while dragging an EQ band inside the graph to lock it either vertically or horizontally. Right-click on a band to bring up the EQ Curve menu, and right-click anywhere else inside the graph to bring up the spectrum options. The useful Alt-Solo feature works like a magnifying glass; hold Alt while clicking around inside the spectrum to audition only the frequencies beneath the cursor. That's an impressively elegant way to locate troublesome frequencies.

TRANSIENT EXCITEMENT

The Exciter module emulates even and odd harmonics for uses as diverse as warming, brightening, and analog distortion. At its center is a unique XY Pad that controls the balance of even and odd (horizontal) and the amount and slope of harmonics added (vertical). As you adjust the XY Pad, a bar display shows the amount of each harmonic being added.

A Width slider controls a Stereo Widening circuit, sweeping from -1 (mono) to +1 (full widening). The Exciter Spectrum at the top uses a spectrum analysis with the area under the curve shaded gray: When the gray turns to red, it represents a frequency affected by the excitation. This system is easy to use, and it's especially helpful for seeing where the spectrum is being altered when the effect is very subtle.

Alloy's multiband-capable Transient module analyzes incoming audio in real time and splits each transient into attack and sustain components, allowing each to be massaged for detailed shaping of percussive elements. In Multiband mode, it's a snap to fine-tune how the kick, snare, and hi-hat sit against each other in a stereo drum-kit mix, but it's also useful in many other ways. The Attack and Sustain sliders control the amount of each effect, whereas the Time setting controls how

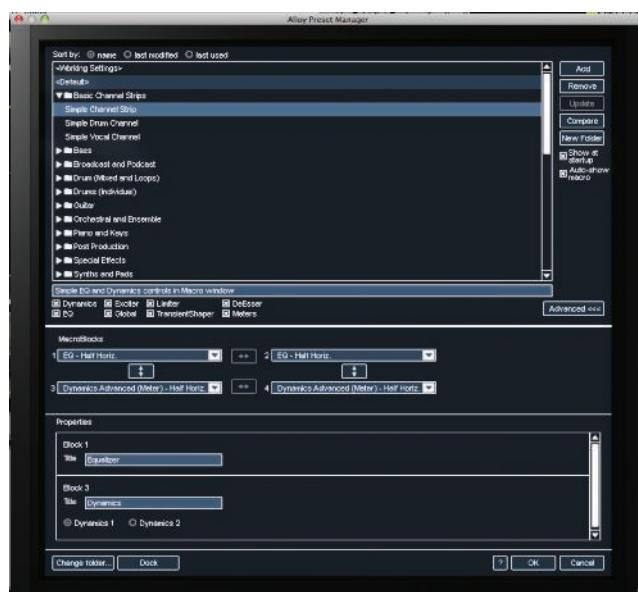
long the effect lasts. Each slider has an Emphasis meter showing how much of each effect is being added or removed in real time (see **Web Clip 2**).

DYNAMIC MANEUVERS

As with the equalizer, iZotope paid careful attention to making the Dynamics module extremely flexible. In fact, you get two identical Dynamics modules. They are placed in series by default, but you can change that to parallel in the Graph window. Each module is capable of simultaneous compression and gating/expansion, allowing dynamic range to be controlled from the top (compression) and the bottom (gating/expansion).

The Dynamics modules feature the same Emphasis meters as the exciter and many of the same helpful shortcuts as the other modules. Both Dynamics modules are multiband-capable (independently, except when in parallel), and each can choose from two distinct compression modes. Digital mode is very precise, whereas Vintage mode emulates the nonlinear characteristics of analog compression. The potential for multilayered dynamic control is staggering. Only a few tiny things are missing (sweepable

FIG. 3: Alloy's Preset Manager offers a wealth of great Macro Presets and the chance to fine-tune them to your heart's content.



knee settings instead of only hard and soft, for example).

The De-Esser is simple but capable of much more than simple vocal de-essing, and it has some time-saving interface features. You can drag, scroll with the mouse wheel, or use a two-finger swipe on a Mac trackpad to increase or decrease the bandwidth. Multiband mode operates as usual, but Broadband mode attenuates the entire track rather than just the selected frequencies when de-essing is triggered. You can solo the de-essing band to quickly zero in on the correct location.

The Limiter module offers soft and brickwall limiting, along with a helpful loudness histogram, phase rotation and inversion controls, and DC-offset filtering. Though some of these features are best left to mastering plug-ins like Ozone, there are times when individual tracks

need this kind of special attention—it can really save the day in certain situations. The limiter sounds nicely transparent unless you really push it, and being able to manually find the right phase setting for each track can help everything fit together.

MACRO CONTROL FOR EVERYONE

The Macro page displays patch-relevant information and a few MacroFaders for controlling multiple destinations within Alloy (see **Fig. 3** and **Web Clip 3**). There are 150 included presets covering individual instruments, mixes, post-production, utility work, and more. Each preset offers slider titles, visual layouts, and text hints describing its intended use. You can use the Macro page to keep an eye on key information from several modules, and it's really easy to create

your own highly detailed patches, which is great for the hardcore mixing maestro. For more detailed work, you can separate the Presets window from the plug-in and expand it. Also, the Options window provides access to many more features such as spectrum and metering options, and delay compensation.

Alloy impressed me with its diversity of features, extremely high precision and fidelity, and myriad time-saving shortcuts. Alloy should be on the list of go-to plug-ins for any professional mixer, producer, or composer with a busy workflow. Check out the 10-day free trial available from the iZotope website. *

Asher Fulero is a pianist/keyboardist and tech-savvy electronic music producer with a long résumé, endorsements from Moog and Nord, and three new releases in 2010. Visit asherfulero.com for more.



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The advertisement features a large, stylized logo for 'BFD eco' in white and blue. Below it, the text 'ACOUSTIC DRUM SOFTWARE' is written in bold, black, sans-serif capital letters. Underneath that, the phrase '.Streamlined. Fun. Affordable.' is displayed in a large, bold, black font. At the bottom of the text section, the website 'www.bfd-eco.com' is listed in a bold, blue font. The background of the advertisement is a close-up photograph of a blue acoustic drum with silver hardware. A small black label with 'BFD' in white is visible on the drum's head.



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FIG. 1: The DTX-Multi 12 offers 12 percussion pads and an array of sounds, I/O, and functionality.

Yamaha DTX-Multi 12

A lot more than just a percussion pad

By Mike Levine



PRODUCT SUMMARY

ELECTRONIC PERCUSSION PAD

PRICE: \$699

PROS: Pads make expressive playing easy. Versatile functionality. Adjustable pad sensitivity. Cubase remote feature. Cubase AI 5 included. Finger settings allow for stick-like subtlety.

CONS: Complex user interface. Not enough drum kit samples.

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

yamahaproaudio.com

Yamaha's new DTX-Multi 12 is an extremely versatile piece of hardware. Though its primary function is as a drum-and-percussion pad with built-in sounds, it also acts as a MIDI controller, a Cubase transport control, and a multitimbral sound module. The unit has plenty of uses, including as an expansion to an acoustic drum kit for live playing and as a drum programmer/controller pad in the studio. If you get the optional hi-hat and kick-drum trigger pedals, you could also use the DTX-Multi 12 as a stand-alone electronic kit.

This review is centered mainly around the DTX's studio uses. I am not a drummer, but I have long searched for a good way to play drum and percussion parts with more precision than can be done from a keyboard. The DTX-Multi 12 makes that possible.

PADDING INTO DRUMVILLE

Before getting too much into functionality, I'll start with the unit's physical features and ports (see **Fig. 1**). It measures 13.6x 12.6 x 3.8 inches (WxHxD), and is visually dominated by the 12 rubber pads on its top panel. Of these, six are large and roughly square (4 x 4.25 inches) and six are thin and long (1 x 4.25 inches). The former are meant for being hit with the stick tip (or the hands or fingers) and the latter, which have a lot less give, with the shank of the stick.

The pads can be adjusted to respond to sticks (with several dynamic range presets) hands or fingers. Because I don't play drums, I asked a drummer I know to try out the pads using sticks. He liked the feel, especially with the dynamic range set to narrow. On the wider dynamic range settings, you really have to whack the pads to get a signifi-

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FIG. 2: Rear panel I/O includes MIDI In/Out, five inputs for control pedals and external pads, a 1/4-inch aux input, a pair of 1/4-inch outs and a headphone output.

cant sound. The sensitivity settings can be customized beyond the factory presets and saved.

As a non-drummer, I found the finger and hand settings, especially the former, to be incredibly useful because they allowed me to play with more realism and subtlety than I ever could from a keyboard or from the small trigger pads

an Aux In jack, foot switch and hi-hat control inputs, and inputs for connecting up to five external triggers, including one of Yamaha's three-zone trigger pads. There's also a gain knob for the Aux In, MIDI In and Out jacks, a 12V power input, and an on/off switch.

On the left-hand side, if you're facing the unit, you'll find USB-to-Host and

two-key sequences that you must press before you start scrolling.

To be fair, this is a very deep unit, and there's a lot of territory to cover in terms of parameters and preferences, and despite its multiple layers, the navigation system is consistent once you get the hang of it. Still, I expect it's going to take some time to become a power user. The paper manual (which is also available as a PDF) is decent, though not comprehensive. Until you memorize the function keys and the overall navigation scheme, you'll need to keep it handy.



I also found the DTX-Multi 12 really useful for programming MIDI drums.

you get on some keyboard controllers or on dedicated pad units. The DTX's smaller pads are not too easy to play with using hands or fingers. They're fine for triggering crashes or effects, but they don't feel as good for drum sounds like toms or snares.

The DTX-Multi 12's angled front panel is where you do all of your adjustments and editing. It has a volume knob, a small 2-by-16-character LCD (about 2.5 x 0.5 inches), pad status lights, and a configuration of 16 light-up buttons of various shapes and sizes.

The rear panel I/O (see **Fig. 2**) includes an array of 1/4-inch jacks including L&R audio outputs, a stereo headphone out (with its own volume control),

USB-to-Device ports. The former is for connecting to a computer for MIDI and the latter for connecting USB memory devices like flash drives to import audio into the unit for triggering and to export data.

GETTING AROUND

Maybe it's because I've been using mostly software instruments lately, but I found the DTX-Multi 12's user interface to be rather cumbersome. It is menu-based, and due in part to the small size of the LCD, it requires that you often must scroll through numerous layers to get to what you want. Accessing menus is not just a matter of scrolling through a list, either. For some functions, there are

SOUNDS OF DTX

Like the DTXtreme electronic drum kit from which it's derived, the DTX-Multi 12 has 50 preset sampled kits in it, many of which are specialty and world-percussion kits. The sounds range from decent to quite good, and include Indian, Brazilian, Cuban, and Japanese kits; a selection of electronic kits (not as contemporary as I would have liked); a marching band kit; and an excellent tympani kit, to name just a few. Overall, you get a nice percussion toolbox and you can customize the kits to mix and match sounds.

I would have liked Yamaha to have included more acoustic drum kits. There are only three, plus sampled kits of Yamaha's Cocktail and Hipgig portable drum kits. (I'm not sure why these were included as they're both undersized

travel kits that compromise tone for portability.) There are some additional individual acoustic drum sounds that can be accessed through the Voice section, but there isn't enough variety. That being said, you can import samples from a USB memory device so you can expand the sound set. Each pad can house up to four layers of velocity-switched samples.

In addition to the drum, percussion, and pitched percussion sounds, there's also a complete multitimbral, GM sound set in the unit. It's not very clear from the manual that it's even included, and it's a little tricky to access it if you don't know how. You get to it through one of the submenus controlled by the Voice button. I discovered it when I was sending MIDI to the unit and all of a sudden I heard a piano sound.

Included are a collection of looping patterns, some of which are set up to be triggered from specific pads in the pre-set kit collection. For getting ideas and inspiration, these loops are quite useful. You can also record your own patterns or import standard MIDI files. The onboard sequencer's feature set includes a user-adjustable countoff, a metronome, the ability to set how many measures to record and whether your recording will be looped or not, and adjustable quantization.

SOFTWARE COMPONENT

Included with the DTX-Multi 12 is a copy of Steinberg Cubase AI 5, which gives you a lot of Cubase's functionality minus some of the high-ticket features like Groove Agent, Loop Mash, Vari-Audio, and pitch correction. Still, it's a pretty solid DAW, and the sound engine is the same as on the flagship version.

One of the cooler features on the DTX-Multi 12 is that you can use it to control Cubase AI 5 or Cubase 5.1 or later. This remote-control feature gives you a host of control functions including stop, start, rewind and fast-forward, punch-in and -out, click-on and -off, and more. I found that it worked flawlessly.

IN THE STUDIO

I used the DTX-Multi 12 in a number of different ways. First, I connected its audio outputs directly into my audio interface and recorded drum parts using the unit's internal sounds. This was straightforward and easy. Because I like to start my drum parts with kick and snare, I panned each one to a separate output and recorded them to their own tracks in my DAW. I then went back and recorded the cymbals to a stereo track (see **Web Clip 1**).

I also found the DTX-Multi 12 really useful for programming MIDI drums.



For getting ideas and inspiration, these loops are quite useful.

Paired with FXpansion's superb-sounding BFD2, I was able to program some great-sounding parts (see **Web Clip 2**). I also activated the Local Off switch on the DTX-Multi 12 and played MIDI parts into my DAW while triggering the DTX's sounds.

TRIGGERING THE RESULTS

Despite a user interface that's not particularly intuitive, the DTX-Multi 12 offers a great deal of functionality. Drummers looking for a portable electronic-percussion source will find it extremely useful, and non-drummers like myself who just want a way to produce more authentic-sounding drum and percussion parts in their studio will appreciate its features, especially the pads. Overall, it's a solid product with a lot to offer. *

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

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The Doves	Marty Stuart	Travis Tritt
Dwight Yoakam	Melissa Etheridge	U2
The Eagles	Merle Haggard	Van Halen
Emmylou Harris	Metallica	Weezer
Eric Clapton	Michael Bolton	White Stripes
Evanescence	Nelly Furtado	The Who
50 Cent		
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* This list is a sampling of artists and sound companies that currently use or have used Radial products.

QUICK PICKS

ABBEEY ROAD STUDIOS * RS124 (MAC/WIN)

By Eli Crews

Abbey Road Studios' RS124 compressor plug-in is an emulation of the tube compressor designed by EMI engineers in 1960 and based on the Altec 436B. The main compressor used at Abbey Road for more than a decade, the RS124 was used on many Beatles sessions done at that studio.

THREE OF A KIND

The plug-in version of the RS124 (\$560 TDM, \$335 RTAS/VST/AU) is actually three different compressors, each modeled after a specific hardware unit. You access the one you want by clicking on the serial number and selecting one of the models (60050A, 61010B, or 60070B). This process was one of a number of GUI features that I found nonintuitive and discovered only after reading the manual. Each model has the same set of controls represented by slightly different graphics, and each has a distinct frequency response, compression curve, and attack and release times.

The RS124's Input control is both the input gain and the threshold level for the compressor. The Output Attenuator can only drop your signal in 5dB or 10dB steps. The Recovery/Hold knob selects one of six release times, but also has red dots between each value, which are the Hold settings. These positions essentially disable the release of the compressor. This was useful on the original RS124s for both preventing the rise in volume that happens at the decay of a note under heavy compression, and for priming the compressor so that you wouldn't hear the (relatively slow) attack of the RS124 clamping down on the first note of a song or phrase. Once

the release is held, the Balance control eases up on the gain-reduction amount for as long as you hold it in. The final control is the software-only SuperFuse, which gives you a much faster release time. Enabling SuperFuse disables the Recovery control (which also isn't clear without some manual perusing), allowing for more aggressive compression.

THE GAMUT

I tested both the RTAS and TDM formats on a Mac Pro running an Avid Pro Tools HD2 Accel system. My first tests of the RS124 were with drums. In normal mode, the release times were generally too slow for my liking, although I found a good snare sound with the faster 60070B model. In SuperFuse mode, I could really hear the release of the compressor working, and got some fantastic ambience out of close and room mics (see **Web Clips 1** and **2**). On the drum bus, each model really brought out a different part of the kit.

The RS124 sounded dreamy on bass, with SuperFuse out, and roughly 15dB to 20dB of gain reduction—way more than I usually want to see. Again, each model had a sound, and I kept choosing 60050A because it had the warmth of the others but a little more definition.

On electric guitar, for softer strummed parts or single lines, I really liked the way the RS124 sounded, especially the



The RS124 plug-in offers several similar-looking faceplates, each with its own sonic signature modeled on an actual unit.

60050A model. For louder, more aggressive chord-playing, none of the settings on the RS124 gave me a fast enough attack; I heard loud pops and thumps at the beginning of each phrase before the compressor kicked in. The solution was to automate the input control on the attacks. I really liked the way the 60050A model (Input at 7, Recovery at 3) brought out presence and immediacy to a quietly sung female vocal (see **Web Clips 3** and **4**). That same model was also my choice for a loud male lead vocal, but with the Recovery at 1.

As a stereo bus compressor, the RS124 really proved its mettle. If there were strong dynamics in a song, I had to automate the Input control from section to section. Once achieved, though, 20dB of gain reduction sounded like a warm, fuzzy halo around the mix, without making it sound dull. The presence of the vocal and snare increased, even at such high compression amounts. The 60050A had the overall smoothest sound for me, although the other models did interesting things.

SUMMING IT UP

The problems I had with the RS124 mostly regard the user interface. Some

of these stem from Abbey Road's attempt to create too perfect a replica of the original hardware, but some interface issues were just oversights, like not graying out the Recovery control when in SuperFuse mode or not providing mouse scroll-wheel control.

However, there are many aspects of the RS124 plug-in that I absolutely love. The way the plug-in perfectly cements a stereo mix, for example, will be worth the price of admission for many engineers. This is not the easiest compressor to operate, but it really has a distinct char-

acter. You can decide if that character fits your needs by downloading the free 10-day trial version. (iLok dongle and account are necessary.) *

Overall Rating (1 through 5): 3
abbeyroadplugins.com

QUICK PICKS

NEUMANN * TLM 102

By Myles Boisen

Neumann's latest updates a microphone line that spans the history of professional recording. The TLM 102 (\$699) is the company's most affordable large-diaphragm studio mic to date.

The TLM 102 is built around a large-diaphragm cardioid condenser element and transformerless solid-state electronics. For studio recording, the smaller housing offers ease of placement in tight spots such as between a floor tom and cymbal, or inside a piano. The mic is available in a black finish and the traditional Neumann matte-nickel look.

Comparisons with Neumann's popular TLM 103 are inevitable. The two models share a common style in terms of grille shape, overall construction, and mounting around the threaded XLR stem via the supplied all-metal mount. The TLM 103 does have more impressive noise and sensitivity ratings, while the

102 offers a slightly higher SPL tolerance (144dB compared to the 103's 138dB). Contacts at Neumann confirmed that the electronics and capsule design of these two mics are different, dispelling any notion that the 102 might be a Mini-Me 103 mic.

A pair of TLM 102 mics got a thorough

workout on a variety of instruments on composer Dan Plonsey's Daniel Popsicle big-band project. On baritone sax, the Neumann's character was a bit bass-lean at times, but the mic delivered a usable sound. Off-axis bleed was greater than the other dynamic, ribbon, and condenser mics I had up on the session. On the other hand, leakage from the back of the microphone (primarily drums) was uncolored, which is a plus in a multiple-mic situation. In addition, this reed player tended to move around a bit, so a more open pattern had its advantages.

The TLM 102 seemed well suited to higher reeds, and was also used on soprano sax, clarinet, and piccolo during the session. The mic's hint of brightness was ideal for piccolo and soprano sax, and, again, the open cardioid pattern was complementary to the complicated tone production of the soprano.

On floor tom, the Neumann gave a nice balance of low-end punch and transient attack. It also captured clear and sharp transients when used on a variety of percussion sources. On acoustic guitar, the TLM 102 yielded a good balance of lows and highs from about a foot away, and it had enough high-end sparkle to satisfy me.

Engineer Bart Thurber, who shares my Guerilla Recording studio in Oakland, Calif., took the TLM 102 for a spin on some rock recording sessions. Here, the Neumann excelled on close-miked electric guitar amp, yielding an exemplary in-your-face sound. In addition, we liked the 102's low-end response when miking electric bass amps. Thurber also tried

the 102 pair as drum overheads, but he noted that it picked up too much room sound and not enough cymbal definition for his tastes.

On two vocalists—female singer/songwriter Zoe Boekbinder and male rapper Frank Stickemz—the 102 was crisp and detailed. Boekbinder said she felt like she could have used a little more low-end richness from the Neumann mic on her voice, while rapper Stickemz required some additional high-end EQ for his rapid-fire delivery to cut through properly.

During testing, I found the TLM 102 pair to be sufficiently matched for critical use as a stereo pair. However, when tapping on the stands and the mic bodies, I thought that the internal shockmounting of the mic could have been better implemented.

The TLM 102 delivers a neutral and usable sound without too much fussing over placement. In general, I would say that this model has less lower-midrange warmth than a lot of more expensive large-diaphragm mics I use in the studio. This may be due to its near-omnidirectional pattern at low frequencies, which yields less proximity effect than some transducers. But on critical low-end sources such as floor tom and electric bass, the 102 performed admirably. Although Neumann has found ways to make its signature large-diaphragm condenser sound available for less than \$1,000, there's nothing cheap or small about the sound of the TLM 102. *

Overall Rating (1 through 5): 4
neumannusa.com



The TLM102 packs a big microphone sound into a compact body.

Serafine FX Tron (\$995 DVD, \$1,149 installed on a hard drive) is an enormous collection of sound effects from 30-year sound-design and scoring veteran Frank Serafine. As you would expect from someone whose credits include numerous Hollywood films and top videogame productions, the spectrum of sounds in this 19.2GB collection is broad and the quality is top-notch. Furthermore, the library is expandable with a variety of focused add-ons (\$795 each) such as The



Serafine FX Tron delivers more than 10,000 top-quality special effects with a custom-tailored, flexible playback engine.

Foley Collection, The Darwin Chamber Drone Collection, and The Serafine Ambience 5.1 Collection. The Platinum HD edition (\$3,995) includes 10 add-ons (everything except the Ambience 5.1 Collection), which represents a sizable discount.

Sonic Reality (sonicreality.com) distributes FX Tron as part of its Infinite Player Series of instruments for Native Instruments Kontakt 4 or Kontakt 4 Player (included). It comes on six DVDs (a download version is also available) or an external hard drive. Once you've installed FX Tron in your chosen version of Kontakt, you authorize it online with Native Instruments ServiceCenter application—a process that is simple and fast.

INFINITE FLEXIBILITY

Each of FX Tron's 10,775 24-bit, 48kHz samples is housed in its own Kontakt instrument. The Infinite Player template is used for each of the instruments, a system that offers great flexibility while requiring you to learn only one set of controls. Each instrument maps its sample across the entire MIDI key range. In addition to the instruments, you'll find more than 200 Kontakt Multis. Each of those includes a dozen or so sounds on a similar theme, and each sound is mapped to a single key moving upward from C3 (Middle C).

The Infinite Player has four control panels: Mode, Amp, LFO, and FX. By itself, each is quite simple, but taken together they let you craft a surprising variety of sounds. On the Mode panel, you select from four playback modes—Forward, Reverse, Formant, and Time Stretch—the latter two of which use Kontakt's Tone Machine and Time Machine playback engines. Formant mode typically delivers a playable, synthesized sound, and Time Stretch mode lets you adapt the sound effect to different tempos and apply granular processing.

In all modes, the mod wheel controls sample start, and there's a Lock button that locks in the current start position and disables the mod wheel connection. You can detune the sample in semitones and cents, and you can turn keyboard tracking off so that all keys play the same sound. As a nice touch, you can set the sample to trigger on key release and specify a hold time. That makes it easy to set up event pairs, like cocking and firing a gun, and control the time between actions by when you release the key (see **Web Clip 1**).

The Amp panel provides access to volume, pan, and ADSR amplifier envelope parameters. The LFO section offers mixed-waveform LFOs for amplitude, pan, pitch, and filter cutoff. The FX section is where you manage 14 insert effects such as filtering, compression, chorus, flanging, delay, reverb, and so on.

SOUNDS ABOUND

FX Tron's instruments are spread across 16 categories holding anywhere from a couple hundred to a couple thousand sounds. The categories are divided almost evenly among natural sounds (Animals, Human FX, Nature, Water, and Fire), mechanical noises (Doors and Elevators, Vehicles, Industrial Clash, Domestic), and special effects (Science Fiction, Special FX), although many categories hold sounds of each type (Ambient FX, Weapons and Explosions, Electronics). Each of the categories is broken into sub-categories containing the individual Kontakt instruments (.nki files). The Favorites folder, containing 189 instruments, is a good place to start.

All but one of the categories also has Multis. The Musical category is the exception; it features a cross-section of acoustic and electronic instruments with emphasis on percussion. Most of the instruments are multisampled, and you can manipulate them quite a bit with the aforementioned control panels.

For a library this size, finding what you want from Kontakt's Library browser is fairly easy—nothing is nested more than two layers deep. Beyond that, you can use Kontakt's Quick-Load feature to create your own favorites and project-specific collections without having to move any data on your hard drive.

If you've been piecing together sound effects for your projects from disparate collections, you'll really appreciate Serafine FX Tron. You'll find sounds here for almost any project requirement, and you have a lot of tools to customize them to your needs. The quality is consistently high, and owing to the common Kontakt instrument interface, everything fits together easily. It's not a low-cost solution, but if you do much scoring for film, video, or games, the time you save will quickly cover the cost. *

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

Moog is rightfully known for its analog synthesizers, including the Moog modular, the Minimoog, and the Voyager. More recently, Moog brought its modular design to the Moogerfooger Series of effects, which integrate with voltage-controlled synthesizer systems, as well as deliver complex and animated processing for guitar, bass, or practically anything that produces an analog signal. Enter the new MF-105M MIDI MuRF (\$459). Like other Moogerfooger devices, control-voltage (CV) inputs let you regulate a processor with any control-voltage source: for example, pedals, footswitches, another Moogerfooger, and most modular synth gear.

Moog filters are arguably the company's shining stars, and the MIDI MuRF's Multiple Resonance Filter (MuRF) array delivers eight resonant bandpass filters with fixed frequencies. The unit excels at creating rich, rhythmic gating effects. You'll find a review of the original MF-105 MuRF in the April 2005 *EM*, available online at emusician.com.

SURF THE MURF

MIDI MuRF's hardware improvements include the addition of left and right ¼-inch analog outputs. Analog input remains monophonic, but odd and even pattern steps alternate between the left and right outputs. In a sense, MIDI MuRF offers two processors in one: A Freq switch reconfigures the filter array to match the MF-105B with a lowpass filter in its lowest band and bandpass filters for the remaining frequencies. Flick that switch to the right, and the filters cover midrange frequencies, as in the standard MF-105.

Even a passing familiarity with analog-style step sequencers makes it easy to understand MIDI MuRF animation. You get a separate pattern generator for each filter, and even their step-counts (64 max) can differ. A downloadable, free software Pattern Editor lets you set up rhythmic patterns. A built-in low-frequency oscillator (LFO) sweeps the



The MIDI MuRF sports level sliders for its eight filter bands, animation controls for its LFO and step sequencer, and drive and output knobs, along with level LEDs and an on/off footswitch.

bands, and the Rate knob speeds up or slows down the rate of the patterns. With the aid of envelope controls, transitions between pattern steps ranged from spiky, staccato articulations to smooth, sweeping transitions of tone.

Adjusting the Drive knob increases signal at the input stage. Signal strength is indicated by LEDs color-coding from green to yellow to red, as with many level indicators. However, when the signal hits the red zone, it's not necessarily a warning to back off; I was able to add nice overdriven warmth to the creamy-sounding filters.

ELASTIC BANDS

What really distinguishes the MIDI MuRF from its forebears is in its MIDI implementation. A major change is the ability to sync to tempo with MIDI Clock. With the downloadable MIDI firmware update to version 1.8, you can divide MIDI Clock response into musically meaningful subdivisions, including triplets and dotted notes, from MIDI CC messages.

You'll find many other pleasant MIDI surprises. Practically every knob, switch, and pedal function is also available through MIDI Control Change (CC) messages. For example, CC messages can

vary the wet/dry mix. I rigged my MIDI guitar to send MIDI mod-wheel messages (CC1) to vary the envelope controls (see **Web Clip 1**). Most obvious, and incredibly convenient, is the ability to switch patterns with MIDI program changes. You can also use note-on messages to advance a pattern by steps, thereby wringing more rhythmic variety from the patterns.

The MIDI MuRF hardware is not all that conducive to visualizing patterns, but the Pattern Editor software presents a panel with a simple GUI that lets you see and hear what you're doing. (It transmits edits as you make them.) The Pattern Editor bestows other features not present on the unit's hardware. For instance, the hardware envelope control changes only the attack and release values for each step, but hit the letter A on the ASCII keyboard, and a panel appears on the editor, offering niceties such as the ability to scale the envelope strength, which provides lots more sonic variety to the envelope contours.

MURFY'S LAW

There are a few things I'd like to see in the next MIDI MuRF. You must use the menu rather than the industry-standard Command+Q to quit the editor. It's a little difficult to set the LFO rate to the right time division when synced to MIDI clock; a incremental knob would help. A MIDI Thru port would be invaluable for passing along MIDI Clock or other messages.

In the short time I had the unit in my possession, the MF-105M MIDI MuRF provided me with hours of musical enjoyment. There's plenty of sonic flexibility, and it presents the best of both analog and MIDI control options. I highly recommend the MF-105M MIDI MuRF to guitarists, bassists, and anyone looking to add new and exciting animation to their sound. *

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

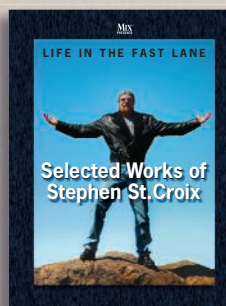
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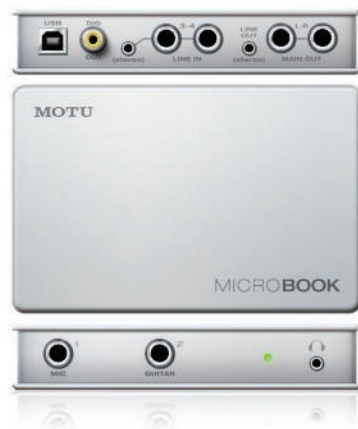
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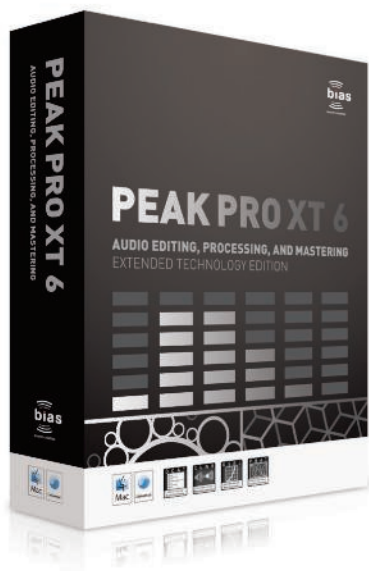
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Everyone's a Critic

If you ask me which musical project I'm involved with that people are most likely to have heard of, it would be Porcupine Tree. Of course, we're still a long way from being a household name, but we have a loyal underground fan base. However, enter the words "Porcupine Tree review" into a popular web search engine, and it will return more than half a million results. That's a lot of reviews, opinions, and critiques written about one relatively off-the-radar rock band.

So I'm asking myself: Are these really reviews or just an endless noise of opinions—and is there a difference?



Great music journalism is an art in its own right.

I've spoken before about how inexpensive technology and online tools have given rise to a wealth of home-grown music production; the flip side is that those same tools have created a blossoming of home-grown music criticism. But could one call this a *renaissance*? Sadly, no. Much of what I read are variations on the heated arguments that used to take place between friends at a bar. Albums are praised one minute as an artist's best, then trashed a minute later by someone else as the worst—both opinions expressed as irrefutable truth. The quality of writing rarely rises above comparisons to other bands and liberally applied superlatives. Only now, these so-called reviews are broadcast the world over, giving influence to their authors no matter how narrow their frame of reference or biased their agenda.

As a musician, it's hard to look away. We artists are a sensitive bunch, so even though we shouldn't care what a 15-year-old Metallica fan writing from his bedroom

in Utah thinks about our music, a lot of us do. It's human nature to care what even one dissenting voice has to say. Yet among music fans, it's often the most shrill and snide writing—not the most thoughtful or insightful—that attracts eyeballs. That doesn't make it proper music journalism, and I worry that really engaging music writing is being lost among all of this garbage.

Great music journalism is an art in its own right. It places music in a historical and cultural context while revealing the passion and personality of the musicians that made it. It reaches out beyond the music to the core of the human condition, just like the music it is about. In the introduction to *Psychotic Reactions and Carburetor Dung*, a compilation of rock critic Lester Bangs' work, Greil Marcus wrote, "What this book demands from a reader is the willingness to accept that the best writer in America could write almost nothing but record reviews." In other words, he considers quality music writing to be on a par with the very highest literary achievements.

There are certainly those that bear this grand claim out—David Fricke, Paul Morley, Nick Kent, and Bangs—who not only wrote (or still write) about music, but lived and toured with their subjects, understanding implicitly the nature of the muse. At its best, their work sent you on voyages of discovery to hunt down the music they wrote about, or find new depths to music you thought you already knew. If you were a music lover, these guys were your teachers.

Recently, many of the old lions who defined music criticism for a generation have left their posts—some by choice, others by necessity. The good news is that there are a decent number of serious and respectable online publications that are more than happy to go on publishing thoughtful and literate music writing (for example, check out Anil Prasad's writing on his Innerviews website, or Tobias Fischer on tokafi.com).

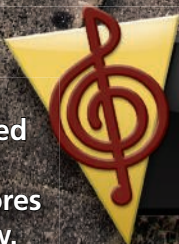
The bad news, though, is that those sites aren't nearly as numerous or popular as those that traffic in gossip, pointless best-of lists, and the "this sucks" / "this rules" approach to reviewing. The celebrated rock journalists acted as curators, with enough expertise, depth of knowledge, and wit to intelligently offer us some kind of insight to help us make up our own minds. You didn't have to take their opinions as gospel, but they sure as hell made it entertaining while they argued their point. And you might even learn something along the way. *

Steven Wilson is the lead vocalist, guitarist, and founding member of the band Porcupine Tree. His most recent solo album, *Insurgentes*, was released in 2008. Go to swhq.co.uk for more info.

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