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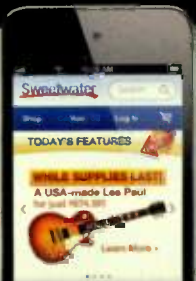
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COVER FEATURE

44 **2013 Editors' Choice Awards** It's a tough job, but we love doing it: Each year, the *Electronic Musician* editors look back at the greatest technology debuts of the past 12 months, and then tackle the incredibly difficult task of narrowing the hot list down to 30 favorites. This month, we honor the year's best new production tools for musicians.



LISTEN

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02.2013

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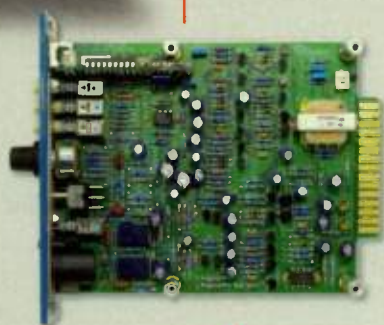
After a year, I'm still impressed... and occasionally startled.

~ Andy Hong, *TapeOp*

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MIX

~ Kevin Becka,
Mix magazine

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~ Paul Vnuk Jr.,
Recording magazine

"I would call the PowerPre full, solid and clean with a classic vintage sound. If you think of the sound of deep rich vintage radio announcers, you will be in the ballpark. This is a stellar and unique sounding preamp"



~ Andy Hong,
TapeOp magazine

"The PowerPre celebrates its own individuality by offering a carefully conceived set of controls that let you extract an expansive range of character. In practice, I found it to be very quiet at all settings. It should be on your short list."



~ George Shilling,
Resolution magazine

"Vox Control is used for tonal shaping: when linear, the PowerPre has plenty of detail and nothing harsh or unpleasant. Breath adds air and clarity, punch boosts the low end. Very usable and quick to audition."



~ Craig Anderton,
Electronic Musician

"The PowerPre is a fine example of a well designed, low-noise mic preamp that can give a bit of 'meat' or 'air' to a signal thanks to the transformer output and Vox voicing EQ. It may well be your preamp of choice."

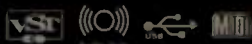
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- Remixbox software & RMX-1000Plugin VST/AU plug-in software included



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COMMUNITY

insight

Choosing the Choicest

WE'RE LIVING the gear geek's dream over here at *Electronic Musician*: Hundreds of amazing new music production products debut each year, and most of them end up crossing our desks at some point for us to check out. So when it comes to selecting the best of the best for our annual Editors' Choice Awards, we have our work cut out for us. (Cue the world's tiniest violin. . .)

We know that musicians recording at home have to make tough choices with limited dollars, so when we evaluate gear, we are looking for true innovation, whether that means bringing functionality or fidelity to a new price point, or turning a creative process upside down. So to that end, we do awards a little bit differently. Rather than imposing strict rules and rigid categories on our selection process, we seek out the shining stars first, and then create awards that acknowledge whatever makes that gear truly

unique—from an app that makes you rethink an iPad's DAW capabilities, to a guitar that offers endless automatic tuning options, to a pair of earplugs that just might save your career. Ultimately, though, we celebrate them because they are all designed to help you make better music.

We know that awards are subjective, so we'd love to hear your take. Do you agree with our picks? What are your favorite new tools? Email us at ElectronicMusician@musicplayer.com.



SARAH JONES
EDITOR
sjones@musicplayer.com

“EDM TODAY IS MORE ARTIST-DRIVEN, ABOUT THE PRODUCER AND THE ARTIST, AS OPPOSED TO THE GUY WHO CAN JUST STRING SOME TUNES TOGETHER—IT'S NO LONGER A TECHNOLOGICAL FEAT TO HAVE THE KNOW-HOW TO PLAY A SONG AT THE SAME SPEED AS ANOTHER SONG.”

Deadmau5, a.k.a. Joel Zimmerman, speaking at the *Billboard FutureSound Conference* in San Francisco, November 15, 2012

The *Electronic Musician* Poll

IF YOU COULD GET ONE FREE STUDIO UPGRADE, WHICH WOULD YOU CHOOSE?

- BETTER MICROPHONES 19%
- BETTER SPEAKERS 16%
- BETTER ACOUSTIC TREATMENT 25%
- BETTER STUDIO FURNITURE 5%
- BETTER COMPUTERS 23%
- BETTER INSTRUMENTS 11%



What Do Engineers Get Paid?

In November, Berklee College of Music released *Music Careers in Dollars and Cents*, a comprehensive study detailing pay ranges for a variety of positions in the music industry. Below is a sampling of audio technology careers and their salary ranges. For more information, visit www.berklee.edu/pdf/pdf/studentlife/Music_Salary_Guide.pdf.

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ask!

IT'S TIME FOR A NEW COMPUTER, AND I KEEP HEARING THAT THUNDERBOLT IS THE "WAVE OF THE FUTURE." BUT IT SEEMS THAT THE SELECTION OF COMPUTERS WITH THUNDERBOLT IS LIMITED. SHOULD I WAIT, OR JUMP ON IT NOW SO I'LL HAVE A FUTURE-PROOF SETUP?

JERRY STRICKLAND
OMAHA, NE
VIA EMAIL

Hi Jerry, you didn't specify Windows/Mac or desktop/laptop, which may affect your decision.

So, here's an overview. Thunderbolt is in its infancy regarding support, but the advantages are compelling—ultra-fast transfer speeds, and backward compatibility

with FireWire, HDMI, DVI, Gigabit Ethernet, and even PCI cards. It's likely to become the pro video/audio interface of the future, but it's not there yet; also, it's more expensive than existing solutions. Even the cables are expensive, because they're active.

Several Apple laptops include Thunderbolt, and now Windows laptops are also appearing with Thunderbolt. Laptops are a great fit for Thunderbolt, as

they can work with powerful peripherals to compensate for lesser power in the laptops themselves. For mobile audio/video work, Thunderbolt has incredible potential, but even now, many solutions are available and Thunderbolt can also take full advantage of solid-state drive speeds for transferring large amounts of data.

Universal Audio's Apollo audio interface was the first pro audio product to support Thunderbolt.

Windows desktops with Thunderbolt ports are becoming available, but in most cases, you won't be able to retrofit older machines with Thunderbolt—only motherboards with Thunderbolt-friendly chip sets are eligible. Mac Pro towers currently don't include Thunderbolt (or for that matter, USB 3.0).

Getting a good computer with Thunderbolt means you'll have a good computer regardless of what the future brings, and you can put it to use now with Thunderbolt peripherals. But if widespread adoption or lowering of prices is important, you may want to wait.

THE EDITORS



Got a question about recording, gigging, or technology? Ask us! Send it to ElectronicMusician@musicplayer.com.

MIDI: The *Next* 30 Years

It's been a most excellent adventure so far, but there's a lot more to come

BY CRAIG ANDERTON

Thirty years ago, at the 1983 Winter NAMM show, a Sequential Circuits Prophet-600 talked to a Roland JX-3P, and MIDI went mainstream. Since then, MIDI has become embedded in the DNA of virtually every pop music production (yes, I stole that line from Alan Parsons, but I don't think he'll mind)—and it's all because our industry was forward-looking enough, and generous enough, to put their competitive differences aside and create a spec for the common good of all musicians.

But to consider MIDI a museum piece that, against all odds, has remained relevant over the decades ignores the reality that—thanks to the MIDI Manufacturers Association (MMA)—MIDI continues to evolve. Aspects we enjoy today, such as General MIDI, computer and smart phone support of MIDI technology, MIDI over USB and FireWire that eliminated MIDI speed issues, and the show-control aspects that run Broadway plays and theme parks, are extensions that no one anticipated when MIDI was proposed. What's more, the MMA fulfills the crucial role of avoiding marketplace confusion by making sure that the term “MIDI” is used *only* when applied to a very specific set of technologies.

Tom White has headed the MMA for the past two decades, and it's not an overstatement to say that he's the glue that has helped the association grow the MIDI spec during that time. Currently, he and the MMA membership are reaching out to the world of consumer electronics and other areas where MIDI is establishing itself anew. Although the MMA has policy not to discuss future projects until they've been approved, here's a peek into the future—and what it means to MIDI. If you thought the past 30 years were cool...

MIDI API for HTML5 (Liaison with W3C) Making MIDI an integral part of the web experience has implications that extend far beyond having MIDI playback as you watch videos, or creating exceptionally useful online music lessons. With MIDI for HTML5, any browser app could be controlled with a MIDI controller—which opens up numerous possibilities for interactivity—or talk to any MIDI device.

“High Definition” (HD) Protocol This “next generation” MIDI-like technology would offer higher data resolution, more channels and controllers, support discovery of devices, and most importantly, be compatible with existing MIDI gear.

MIDI Payload Format for Ethernet-AVB The IEEE Ethernet AVB standard could replace most proprietary audio/video networking solutions, and enable interoperability of products from different manufacturers. The MMA is working to incorporate MIDI (and any future MMA data protocols) as part of the spec to complement the audio/visual elements.

Inter-Application Communication Protocol for OMAC (iOS-MIDI) This establishes MIDI messages that enable two iOS apps to identify and enumerate each other, making it much easier to run, for example, a synth app and controller app for it at the same time. The Open Music App Collaboration group on Google has defined some ways for iOS MIDI apps to work together, and the MMA has agreed to assign a Universal System Exclusive ID for OMAC apps to request/respond regarding specific features such as number of voices supported, which controller numbers they respond to, and the like.

MIDI Home Control Protocol This is very “blue sky” at the moment, but it sounds good: Currently, control devices for the home (lighting, shades, audio, etc.) generally use proprietary technology, so products from different manufacturers often can't interoperate (sound familiar?). But a company in Argentina has developed a “translation protocol” using MIDI, defined a set of home control messages in SysEx, and provides converters (software and hardware) between other control protocols. The MMA is looking into the feasibility of making their protocol part of the official MMA spec.

So, not only is MIDI alive and well, but advancements like these will keep it relevant and on technology's cutting edge. Stay tuned...

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JIMMY CLIFF: MIDNIGHT SPECIAL

AUSTIN, TX
MARCH 15, 2012

Late one hot spring night at last year's SXSW festival, reggae legend Jimmy Cliff took the Hype Hotel stage for a spiritual, soulful set that mesmerized the generations of fans who had been waiting all night to hear their hero. Cliff's performance coincided with the release of *Sacred Fire*, a vital, contemporary album that hearkens back to his classic sound and overflows with the pointed social consciousness and humanity that put him on the map more than four decades ago. "It's me," he says simply. "I don't sit there and say, 'I want to send this message.' It's just what I'm sensitive to. I just write what I feel. I'm at the center of my music, but at the same time, I'm tuned into the echoes of the people."

PHOTOGRAPH BY ALYSSE GAFKJEN





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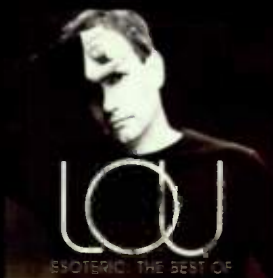




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ALBION



LISTEN

Modeling for Mayhem

The Deftones refine idea sparks—and make a lot of noise in the process—in the *Koi No Yokan* studio sessions.

BY KEN MICALLEF

AFTER THE 2008 car accident that sidelined Deftones bassist Chi Cheng, the Sacramento-based metal-cum-experimental quartet released *Diamond Eyes*, a head-on collision of attitudinal fury and bombastic physicality that was anything but pretty. But it was necessary, a purging brew that expressed all the collective pain of a pack of wounded wolves. Known equally for their head-butting jams and intense intra-band squabbles, The Deftones finally found a way to put the past to rest.

"*Diamond Eyes* was the record they needed to make to reunify the band," producer Nick Ruscionez explains. "It was a record of heavy riffs. This new record was a less about the riff, per se, and more about getting back to this futuristic, progressive sound that defines what The Deftones have become."

On *Koi No Yokan*, The Deftones find artistic fulfillment in an evolutionary album of cerebral moods and psychedelic sounds coupled to the most propulsive rhythm section grooves the band has ever recorded. It's Deftones 2.0. Or is that 3.0? "The songs are very different from each other—not heavier or slower, but more dynamic, going toward several directions; it's heavy, but beautiful," said vocalist Chino Moreno.



Tracked at Paramount Recording Studios (Studio C, Hollywood), Ameraycan Recording Studios (North Hollywood) and the now-defunct The Pass, *Koi No Yokan* was largely enabled by some fairly freakish guitar and bass processing, allowing The Deftones to create songs from sounds and tones rather than riffs. Moreno howled his trademark nauseating spew, guitarist Stephen Carpenter played his Signature ESP SC608 LTD Baritone 8 (and seven) String Electric Guitars, bassist Sergio Vega followed suit with his Fender Jaguar bass, keyboardist/turntablist Frank Delgado worked in Ableton, drummer Abe Cunningham produced the brightest beats of his life. But regarding the recording process, the real game changer was Fractal Audio Systems Axe-FX II Preamp FX Processor.

"The Deftones have always had a futuristic element to their sound, but it's not as prevalent on the last record," Rascalinecz says. "[This time] we started with brand-new sounds from Fractal Audio, which was a big sonic shift for the band. It's the first record where Stephen hasn't used the same amp and cab as on every record before. That alone lent itself to creating a fresh take on the music. Fractal opened up a whole new world of sonic elements that we didn't have on the last record and it really took Stephen and Sergio out of the box."

"We put a lot of energy into our tones," Vega explains. "Both Stephen and I used Fractal Audio Systems Axe-Fx II. It's like an amp modeler, but not really. It's in that vein, with different effects and MIDI control that lets you link to various outboard pedals. The Fractal gave us a means to express ideas that would be harder to execute using standard equipment. It's compact, so we're able to take tones and work in a way that we couldn't with traditional gear. We used [Native Instruments] Guitar Rig on *Diamond Eyes* in conjunction with amps. Then we heard that Chris Traynor from Bush had been using Fractal. He explained Fractal to us and we quickly fell in love with it."

"We can bring Fractal into hotel rooms and run it into software and record ideas and flesh them out later," he adds. "You're literally listening to the same unit you bring to the stage, the same unit you bring to the studio, the same unit that you have at home. It's compact, and it works in all these different environments. It makes the most out of those moments of inspiration. It's not so much a



"I don't make Tom Petty records. There's never four or five dudes playing in the room together. It's more of a systematic approach" —Producer Nick Rascalinecz

scratch pad; everything is working toward the final track. It's great to have that consistency."

At Paramount and The Pass, engineer Matt Hyde set up multiple amp and miking scenarios; Vega and Carpenter recorded with all amps running, then dumped the sounds into Fractal. Guitar amps included Bogner Ueberschall Series 120W, Diezel Herbert, Marshall JCM8000, and Engl Special Edition E 670 100W, with various 4x12 cabinets. For miking duties, whether on bass or guitar amps, Hyde used a Beyer M160 or a Shure SM 57, or a 57 with a Sennheiser MD 421 through various Neve preamp. "Maybe I will put a room mic up," Hyde explains, "on axis, off axis, or combine the two; it depends on what you're trying to get out

of the cabinet. And you don't want to use the same speaker size and mic over and over again; it will repeat that sound later on."

Vega's Jaguar Bass ran into a Marshall 9200/Marshall 4x12 stack, as well as an Ampeg SVT/Ampeg 8x10 cab. The bass signal was also shadowed into a Palmer Audio tube DI, and a standard DI for reamping.

Hyde explains the Fractal Audio process: "It performs a frequency analysis of the sound. You mock up a sound similar to the [guitar or bass] with a similar gain using the Fractal, but it won't sound anything like the sound you are recording. You record eight bars of a sound through a Diezel or an Ueberschall then record eight bars of the same exact part into the Fractal, then you hit 'match' and suddenly the two sounds becomes one. It's bizarre, like a tone-modeling thing. It has a comprehensive foot-switching feature and looping device and effects."

"It's not so much that Fractal gives you sounds you wouldn't have gotten otherwise," Vega comments, "but it gives you sounds that you would have needed a lot of different outboard amps and pedals to achieve otherwise. So with this one unit, we had a wide series of amp models and effects and mics, and we built these really cool presets. If you're using traditional pedals, you'll have these long chains. Using Fractal allowed us to do more manipulation more efficiently. It allowed us to route things to a particular switch and do something more drastic. It helped us create different tones, which were at the core of the writing process. It's the inspiration the sounds gave us that created the parts."

But the Fractal inserts only occurred after an organic immersion into live tracking. This isn't the programmed electronic terrain of Skrillex, after all, but the dark, dragging-the-river-for-corpses sound of The Deftones. Rascalinecz details the process: "We tracked guitar, bass, and vocal to a click, then recorded the drums to that, then replaced the bass, guitar and vocals. I don't make Tom Petty records. There's never four or five dudes playing in the room together. It's more of a systematic approach; we get a rough guide, then focus on each instrument for tuning and timing. I usually record drums, then guitar, then bass, then vocal and other overdubs. I like to tailor the sound based off the instrument's individual characteristics and how they work together."

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“Everything was organic,” Vega confirms. “We had fun playing around with gear and making different tones. Usually something will catch and we’ll start jamming on it. We spend a lot of time refining a spark. We don’t give ourselves too many parameters other than that. We just show up and experiment with tones and building parts. We’d all start noodling and someone’s riff would congeal and we’d all fall in line with that. All the while we’re recording into Pro Tools or Ableton, then we’ll edit the results to work on it. We’ll work on ideas, listen to the progression then build on that. The main thing was all the tones we created.”

Paramount’s Hollywood Studios were built in the 1970s based on a Westlake Audio design. Rasculinecz describes it as a “cool, ’70s kind of vibe. It’s dry sounding. It added to the overall punch of the record. It’s not too big of a room so nothing was washed out. It’s a big, live room that was actually really dead sounding.”

When possible everything was recorded at 24/96 even though there were downsides, something not often mentioned when discussing the digital frontier of super hi-res recording.

“24/96 is a whole other odyssey, and requires a different approach,” Hyde explains. “You have to cut the drums and assign them to one drive, then once done with drums, you do everything else on a second drive, otherwise it all gets too bogged down. 24/96 is better, if it can be done, budget-wise. The resolution is higher, and there is more information. When it comes to depth, it makes a huge difference. The upside is sound quality, but the more tracks involved, 96k halves your processing power and you have half as many plug-ins. It makes mixing more difficult and as you continue, it’s more

taxing on the system. It’s smoother to run at 24/48, but 24/96 sounds fantastic. If it’s critical with less overdubs, I won’t have as many tracks anyway, and I won’t need as much processing. But with a lot of processing and when you go to mix I want all my tools available.”

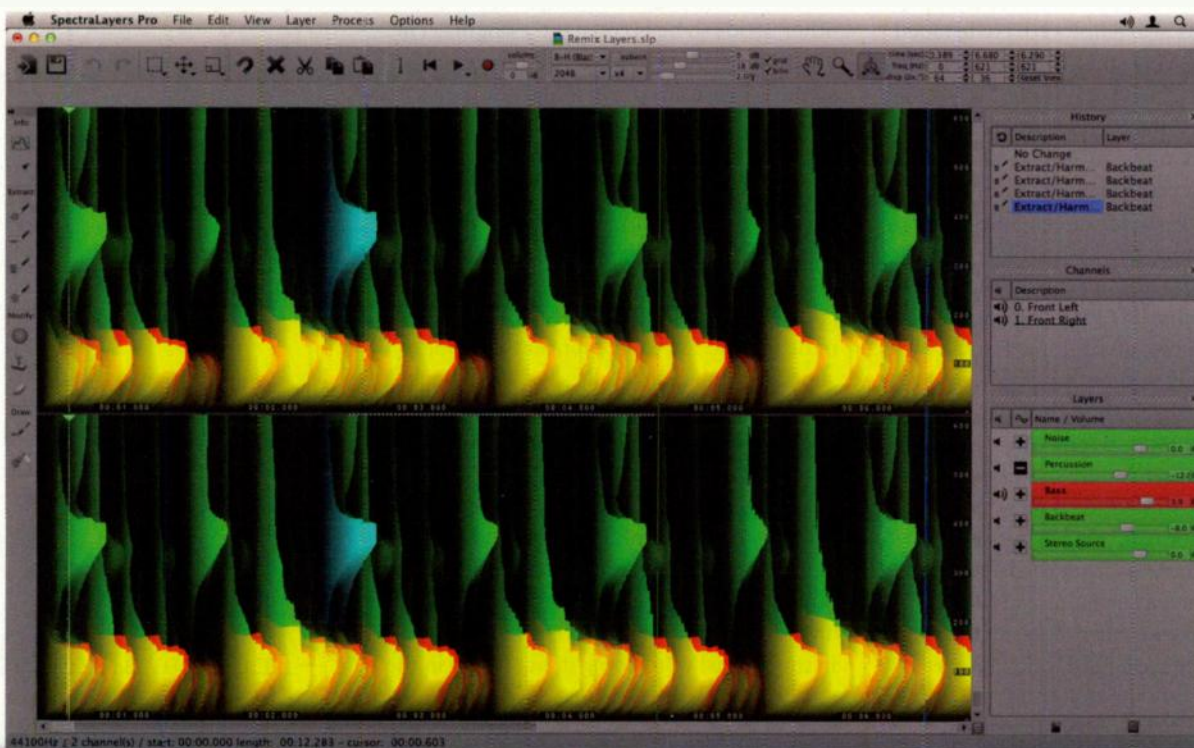
In addition to Paramount’s SSL consoles, Hyde brought in Neve preamps of every description, including a Neve sidecar with 1065s, 1055s, 1073s, and 1081s, and a “whole bunch of API and Helios stuff.” The sum total is a big, roomy sound that particularly benefitted Abe Cunningham’s drums. Hyde also pulled some old school techniques out of his trick bag.

“Paramount’s room sounds great, and I also did a lot of work with the room tracks using Valley People Dyna-Mite to key the room mics,” Hyde says. “I’ll key far room mics with an expander off the snare drum mic. When the snare is struck those open up and a kind of distorted room sound mixes in with the other room sounds. The signal passes through continuously, but it’s ducked down by about 6dB, then when the snare hits, it opens up to the full amount and is somewhat distorted. I’ll have several room mics up and blend in some larger, more distorted room mics so they only enter during the snare and kick hits and that adds to the liveness of the room tracks. Ultimately the recorded room sound is very dynamic and pulsates with the drum sound.”

The drum sound on *Koi No Yokan* is massive, owing to Cunningham’s kinetic rumble, the room’s characteristics, and Hyde’s extensive miking approach. “The first thing I do when miking drums is listen,” Hyde explains. “We make sure to listen in different places in the room and then place the mics

based on that. For room mics I used RCA 44-BX ribbon mics about six to eight feet out and to the left and right, they happened to sound great. The RCA ribbon mics mostly picked up snare and kick. So I moved them more to the middle and they became these center mono ribbon mics. Deeper out in the room, we used a pair of Coles facing down at the floor, low to the floor; I don’t want to pick up a lot of cymbals. That’s one way to get smooth room sound without a lot of cymbals. Then we added some condenser mics: Neumann U47s and U67s, far out in the room. We used a really beautiful pair of Bock Audio 241s as overheads. In this case I did the whole 3-to-1 ratio left and right over the cymbals, one off to the ride, one off to the hi-hat and snare mic. I placed them until I got a good stereo image without phase cancellation, no weird figure-8; I went for the old, typical left-and-right placement. Then a mono Shure SM 57 behind the drums, and I messed around with gating that too. I gated the condensers with that distorted idea again.

“Another trick mic I use a lot is a Shure 520DX Green Bullet Harmonica mic right behind the drummer’s head,” Hyde adds, always ready to reveal secrets gained from years of experience recording everyone from Monster Magnet, No Doubt, Slayer, and Staind to Sum 41 and Pornos for Pyros. “It sounds like hell, but I do a whole thing with it where I will use some kind of compression and make it sound very trashy and midrangey and mix it into the overall kit sound to give the snare some attack and midrange. But you have to be careful ’cause it can sound like sh*t when the cymbals are up. For that, I usually use a Urei 1176 with all buttons in.”



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Though room mics played a large role in the album's expansive drum sound, of course close miking was also employed. Hyde taped together Shure SM57 and KM84 mics for the top snare head, with a Sennheiser MD 441 on the bottom snare and Sennheiser 602 clip-on mics for the rack toms. AKG 414EBs covered the floor toms, a pair of matched Bock Audio 251s for direct overheads, and a Shure KM 84 over ride cymbal and hi-hat. Three mics picked up the bass drum: a Sennheiser 602 in the kick, Neumann U47 FET on the outside, Yamaha NS10 subwoofer for low frequencies. Last, but certainly without placing least, Moreno's stomach-churning vocals got the full Rascalinecz and Hyde treatment.

"We really focused more on the songs and vocal melodies," Rascalinecz says. "I pushed Chino to sing more and get beyond any boundaries or confines from the last record. He just needs encouragement and honesty and a mic. He has so many ideas, and like any singer he might have a hard time in a certain

spot so he looks to me for an honest evaluation. He's made a lot of records and works with other bands so he is constantly singing. The big thing on this record is just how great he sounds. These are some of his best vocals ever."

Chino vocal's chain was a dual affair: the Bock Audio 251 into a Martech MSS-10 preamp into a DBX 160, sans EQ. For "harder, heavier vocals" (according to Hyde), a Shure SM 7 was inserted into the same chain, and they "turned the mic pre up a couple clicks."

"The Martech has a massive amount of headroom to provide for that amazing, super-smooth mic," Hyde says. "The Bock Audio (now Sound Deluxe) 251 is a beautiful mic. They consistently beat out most vintage 251s. We used it pretty pure with a little compression for Chino. But in Pro Tools, he wants to hear a lot of distortion and delays, depending on the part he's laying down. It's all done in the box as he's doing it. So we dial up a vocal sound similar to what we want to hear in the mix as we're doing it, but it's all in the

"24/96 is a whole other odyssey, and requires a different approach... The resolution is higher, and there is more information. The upside is sound quality, but the more tracks involved, 96k halves your processing power and you have half as many plug-ins."

—Engineer Matt Hyde

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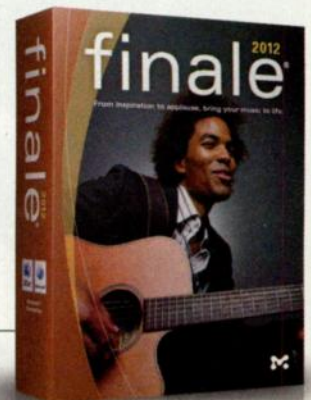
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profile

monitor; it's not always recorded that way. In the past, I used an old 1950s RCA P.A. head into a Palmer speaker simulator and got my vocal distortion that way."

A collective effort that mirrors a communal soul dredging itself up from some personal hell with slamming rhythms, neck-snapping yet slinky beats, ethereal moods, and space rock sounds, *Koi No Yokan* is The Deftones advancing their art. From off-kilter pounder "Swerve City" to the ominous, blood-letting riot "Leathers" to the atmospheric "Tempest" to The Police-worthy allusions of "What Happened to You?" it's an album of calculations and permutations. The Deftones have never sounded so concise, so purposeful, so ready to destroy the box of expectation. They've retained their heavy metal pummel crunch and crash, yet upped the game with something that almost escapes definition. Futuristic? Progressive? Poetic? And to think they did it by taking advantage of all technology has to offer. While many embrace

old-school technologies, The Deftones refuse to be haltered to the yoke of fashion.

"It's funny," Frank Delgado says. "Stephen always wanted the biggest amps, but now he's into the Fractal. But even with no amps, it's still loud as hell and we're still a rock band. There's nothing pretentious, we bang it out and we fight, but we have a good time. All the technical stuff aside, it's each of us in our own little worlds on our separate workstations trying to make it as easy as possible when we do get together. It's all about the songs; the technical stuff and the gear is in the back of our minds. We're just trying to make cool sounds." ■

Ken Micallef has covered music for all the usual suspects, including DownBeat, the Grammys, and Rolling Stone. His first book, Classic Rock Drummers (Hal Leonard), is currently in reprint status while he manages his family's cotton farm down south and ponders the future/past of the vinyl LP and tube amplification.



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CHAZ BUNDICK grew up in humidity. Born and raised in the Southern college town of Columbia, S.C., he came of age in an environment of sticky summers, of months on end when you live and work through an ever-present film of sweat. It's a city where even the frosty beverages that promise momentary relief drip with perspiration, like they're longing for night to fall and the mugginess to drop from oppressive to merely stifling. The air is heavy, to say the least.

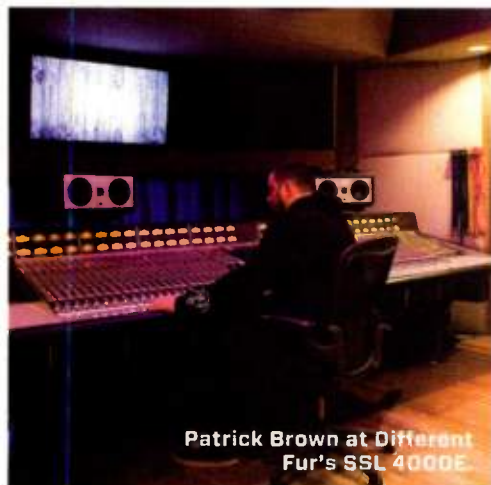
Recording as Toro Y Moi, a project that has grown from its sample-based bedroom studio origins to include a touring band and live-room tracking sessions, Bundick has never shied from similarly abundant saturation. Having now released *Anything in Return*, his third Toro Y Moi full-length, Bundick has entered a more upbeat, modern pop-influenced phase of his production career through expertly permeating his work with immersive wooziness even as he explores balmier swatches.

Hanging out at Columbia coffee shops populated by skaters and art students, Bundick found his initial moments of overdriven lucidity. "When I first heard Weezer, I knew immediately I had a love for distortion, which was reinforced by At The Drive-In, and Sonic Youth," he recalls. "Pretty soon, though, I realized what I really was drawn to was the ability to affect space while keeping some original signal intact. I really liked thickness, but with clarity."

Balancing out every Pixies or My Bloody Valentine album with Michael Jackson, A Tribe Called Quest, or Daft Punk, Bundick headed to the University of South Carolina with a laptop, Fruity Loops, and a growing interest in audio production. Pursuing a degree in graphic design while making music on the side, Bundick moved



MOLLY DECOUDREAUX PHOTOGRAPHY



Patrick Brown at Different Fur's SSL 4000E

MOLLY DECOUDREAUX PHOTOGRAPHY

Chaz Bundick, a.k.a. Toro Y Moi, strives to achieve new depth in "commercial quality" production without losing his sonic identity

BY TONY WARE

his workflow into Reason (Version 4 at the time) and toyed with ways to combine his innate musicality with creative production techniques gleaned from online forums. Bundick started piano lessons at age 8, followed that by teaching himself guitar at 12, and was fronting an indie band and 4-tracking by 15.

The resulting experiments in lo-fi funk and sidechain hiccups caught the ear of Carpark Records, which released Toro Y Moi's debut full-length, *Causers of This*, in early 2010. Unapologetically referencing shoegaze and synthpop equally, aggressively filtered through house music-style compression, Toro Y Moi's music was quickly lauded while being pinned with the term "chillwave" (as well as the even more ludicrous "glo-fi"), the latest in a long line of lazy catchalls for self-produced, dance-influenced electro-acoustic composition (such as "folktronica" a decade previous).

"I was a fresh-out-of-college kid just making songs that a label happened to like, and in a way I'm embarrassed that entire album was done solely in the computer, but at the time it was fitting and gave it the characteristics people appreciate it for now," reflects Bundick. "I knew, though, that I didn't want my songs to continually live solely

in a computer file . . . it feels like they end up sounding boxed in more than I'd like."

A little over a year later came Toro Y Moi's sophomore Carpark release, *Underneath the Pine*, where Bundick took his reservations to heart and applied digital wow and flutter to a wider range of organic instrumentation. This collection of psychedelic R&B gave nods to Brian Wilson, Arthur Russell, Lonnie Liston Smith, Boards of Canada, J Dilla, and Elliott Smith, among many others.

"I feel like my age group [Bundick is 26] was the last to experience home recording without computers, and I'm holding on to that a little bit," says Bundick. "So when something sounds good in the laptop, I still wonder how it would sound using some hardware, and I've worked more and more in a direction that incorporates all those options—the NN-XT [one of Reason's samplers], Thor [a Reason polyphonic synth], the Roland JX-3P [vintage analog synthesizer], upright piano, live drums, bass guitar, etc.

"I still work within Reason for most tracks, but I'm not interested in maintaining any specific workflow," continues Bundick. "When I'm writing, I might just put on a click track and work out an entire song—intro, verse, chorus, bridge—on the guitar, then on the drums, the bass, and the keys, or it might all start with a floor tom sample that I'm going to stack. I don't want to get bored of the process, and the only signature I really want is my songwriting."

Now arrives *Anything in Return*, a collection of 13 songs in part precipitated by the transition from one college town (Columbia) to another: Berkeley, CA. Whereas the tightknit Southern scene moved at its own humble drawl, Berkeley provided a more brisk complement, a city of fierce locavore movements and quick-to-critique

"I wanted the level of crunchy, stacked texture of someone like Kanye, but the radio quality and purity of Michael Jackson, where you can hear every hi-hat and it's not all blown out of the water when a kick drum comes in."

—Chaz Bundick

progressive activists. Both, however, have provided Bundick the latitude to let Toro Y Moi's freak flag fly as he sees fit.

Berkeley's atmosphere might not have the same clamminess as Columbia's, but the Bay Area has already managed to be soaked into Bundick's music. For starters, field recordings from the BART (Bay Area Rapid Transit) system pepper *Anything in Return's* opening track "Harm in Change" and its closer "How's It Wrong," and this ambiance represents both Bundick's transcontinental move and his more regimented commuter approach to the album's sessions, which were his first to fully incorporate a professional studio in both tracking and mixing capabilities.

"I wrote and arranged the record at home, on the road, but the goal was to achieve a commercial quality similar to what's on the radio without taking away from the sound's integrity, so I booked sessions at Different Fur Studios [located in San Francisco's Mission district]," says Bundick. "I live a good 40-minute train ride away, so going there was like going to work, in a good way. The excitement would build up on the train ride in, I could reflect and critique mixes on my headphones on the way home, and it was nice to go somewhere other than just across the hall. Working at home, there's no telling when you'll stop, no sleeping, and it's harder to get out of your head and get some perspective. You can really end up overproducing something. Having a schedule, visiting a separate studio gave my ears a rest and just felt like a healthier experience."

To capture his JX-3P, Nord Electro 3, Yamaha DX7s, Moog Voyager, and Roland SP-404SX sampling workstation, as well as lay down guide vocals, bass lines, and other elements, Bundick has compiled a collection of Boss, Line 6, ZVex, Ibanez, and Electro-Harmonix pedals; vintage Akai compression and EQ modules; a Focusrite Saffire PRO interface; and a Shure SM57 mic. This set-up served Bundick well for the self-recorded, critically acclaimed *Underneath the Pine*, but the desire for a top-end signal chain to showcase a tastefully polished appeal brought Bundick to Different Fur. The songs themselves were written with live performance in mind, augmented by a few tricks, such as sampling chords in the SP-404SX and using its playback to stagger delivery on tracks including "Rose Quartz." The sonic treatments, meanwhile, showcase Bundick's increasing arsenal of tuneful embellishments.

"When I did *Underneath the Pine*, I was completely by myself, mixing into this old Yamaha mixer that looked like something from the '80s, with its black body, red knobs, and two meters at the top," says Bundick. "With this album I wanted a sonic quality in line with and maybe even beyond what people are putting out nowadays. Having a DAW at home is great for laying down ideas, but I wanted songs where the high end and low end have much higher status, and I knew I couldn't achieve that on my own."

Working with Different Fur owner Patrick Brown as mixer/first engineer, Bundick set out to make *Anything in Return* into an album that could play as easily next to the drums of Drake and The-Dream as it could sit on a mixtape with Serge Gainsbourg, The Internet, Todd Rundgren, Four Tet, Talking Heads, and Stereolab. "I wanted the level of crunchy, stacked texture of someone like Kanye but the radio quality and purity of Michael Jackson, where you can hear every hi-hat and it's not all blown out of the water when a kick drum comes in," says Bundick.

Bundick and Brown's collaboration can best be described as complex but not complicated. "Chaz would say what needed help, or what he wanted to feel more or less of, and I would just start smashing, squashing, and chipping away till he'd shake his head 'yes' or scrunch up into an



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‘ew, no’ face,” laughs Brown. They used trial-and-error to find some workable templates in order to achieve their desired response outside of the box as well as avoid letting configuring stand in the way of creativity later in the process.

“Chaz is really good at finding and positioning the sounds he wants, but Reason’s audio engine isn’t the most robust . . . things can sound flat and thin and need replacing or thickening,” says Brown.

“I feel like my age group was the last to experience home recording without computers, and I’m holding on to that a little bit.” —Chaz Bundick

“So a lot of what we did was processing, pushing stereo stems through our SSL 4000E [G Series] into my insert and aux sends to set up various chains to apply a variety of interesting space effects but also achieve some consistency from song to song . . . getting some analog on it before Pro Tools for automation and a little additional processing.”

The preliminary sessions, captured appropriately on the song “Day One” (even though they took two days), helped establish the prime combinations for various parts. For example, drums often went through an Empirical Labs EL8-X Distressor, Empirical Labs EL-7 FATS0 Jr., and GML 8200 EQ, “. . . to fatten them up, make them hit harder, make the kick really snap, and to add a little bit of softness and harmonic on the top end so they didn’t sound too brittle out of Reason,” says Brown. Bundick admits to not liking big-sounding drums, preferring them super dead with hardly any room reverb, but he remains a sucker for stacking live and sampled percussion with attacks and decays to create a lot of interesting detail.

“A lot of Chaz’s songs are based in fusion, parts funk and R&B, and a lot of hip-hop on this album, so instead of using sidechaining to get the drums people know him for, we would use the board for broad-stroke EQ and compression, push the Distressor and Fatso for thickening, and have the GML for clean up, for subtraction, because it’s more detailed and sweeter than the board,” elaborates Brown. “And I don’t use the actual ratios on the Distressor; we’re just hitting it hard and using the input and output to do the work, though I did use some British mode to get that squashy crispness.”

Balancing compression and distortion harmonics, assisted by a liberal use of Thermionic Culture’s valve-powered Culture Vulture distortion enhancer, would prove to be key to sitting drier percussion resolutely in the mix. “We used that to tuck distortions under certain things, making a heavier, darker low end to help piano float on top or vocals sit in the mid; it’s those harmonics that people are missing when they talk about analog tape or big consoles,” says Brown.

For lead Korg MS3000 synth, detuning arpeggios, slow LFO drones, Rhodes, and upright piano, an additional set of tools was applied. While recording piano, which provided a lot of the acoustic reinforcement on the album, Sennheiser microphones taped to the instrument’s body captured a slightly boxy, perfectly imperfect tone that distorted in the right way. In terms of processing, running effects channels with a ZVex Instant Lo-fi Junky pedal and a homemade square-wave, octave-down fuzz-pedal effect created a low rumble, adding more sub to increase left-right dimension

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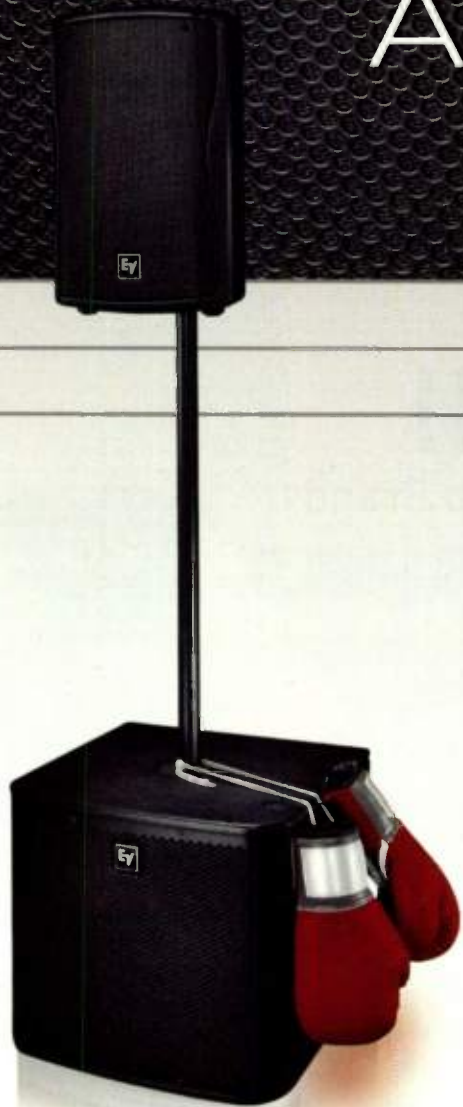
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ZXA1-Sub

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LISTEN

profile

while maintaining signal integrity in the center. Similar effects were occasionally used to put a compressed slap on certain tribal drum patterns, as well as warble on vocals.

While Bundick entered the studio with guide vocals, they were primarily re-recorded, with the originals used only sparingly for background effect. Vocals were tracked using a Shure SM7B into an Avalon AD2022 preamp, a GML 8200 parametric EQ and a Retro Instruments Sta-Level compressor. "Chaz has a pretty smooth voice, but you don't want him to sound too high and young, so we used a lot of comb filtering and compression to maintain smoothness without having him disappear into the mix," says Brown. "We would do a slight slap delay on most everything, and light Auto-Tune throat modifying on certain tracks to make it deeper, then clean it up with some Waves Renaissance EQ. We avoided overusing Auto-Tune, never using it on an entire lead vocal as that's been done to death, but there were times it could be tastefully applied."

Subtle, and not so subtle, use of the Lexicon 480L reverb, Lexicon PCM 42 digital delay,

and Eventide H3000 Factory Harmonizer also helped create the sessions' stacked subgroups. A simple gated reverb off the Eventide was applied underneath several vocals, and helped make piano into "an amazing orchestra," says Bundick. "Also, a lot of the weird pitch-shifting you hear in 'So Many Details' came from that box."

These go-to modules provided that key enriching agent to add without exaggerating. "I don't like using stereo wideners because of how almost mono things can go and how much you can lose with that, but using minor amounts of chorus adds a little bit of buzz and makes the background appear wider while you keep the lead vocal center," says Brown.

After layering analog modules from the gut, Bundick and Brown worked in Pro Tools with SPL Transient Designer, Waves Renaissance Vox, and Waves Renaissance Bass to fine-tune volume, pull back attacks, and tighten bass. Additionally, they applied mild Waves MondoMod Modulation Chorus rotation to the effects channels rather than the dry signal to further the goal of creating shimmer without distraction. "We worked to get

the sound, then the movement," says Bundick. The channel count may have quadrupled on some songs, and the sub bass (especially around 50Hz) increased, but the snap was never muddled. *Anything in Return* remains an appropriately moist and spacious South Carolina-Northern California hybrid.

"Putting together this album in the studio helped me realize new ways to give songs depth and height, how you can mess with reverbs and short delays to give a little extra stereo dimension without resorting to heady-handed panning," says Bundick. "I feel more ready to compete with the way pop is mixed so forward, but without losing my sonic continuity." ■

Growing up in Alabama, Tony Ware understands what it's like to walk around on a day so hot the air sticks to you like white on rice. He now is based out of swampy Washington, D.C., where he still avoids going out during the muggy months, preferring to write, edit, and complain about these damn kids today and their Gangnam style.

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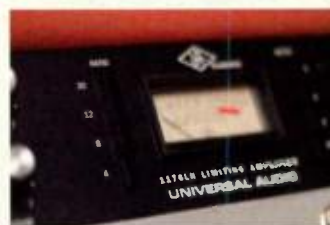
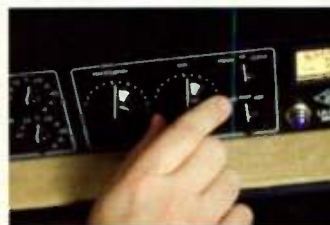
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203

THIS DOORSTEP
MUST REMAIN
CLEAR

FITZ and the TANTRUMS

Moving beyond the bedroom-studio
school of recording

BY LILY MOAYERI

HUFFING AND puffing up the steep, winding street that Michael “Fitz” Fitzpatrick lives on in the artsy Silverlake neighborhood of Los Angeles, you know immediately which house is his: It’s the one with music blasting out of its front room. This front room, which looks like a keyboard graveyard, is where Fitzpatrick and his group the Tantrums recorded their debut album, *Pickin’ Up The Pieces*. This very same room is where its follow-up, *More Than Just A Dream* got its start.

Fitz and the Tantrums caught the public’s attention with *Pieces’* guitar-free, Motown-inspired, brash sound revolving around a rescued-from-the-trash-heap Conn organ, saxophone, piano, and Fitzpatrick and Noelle Scaggs’ dueling vocals. What caused a stir more than the album was Fitz and the Tantrums’ high-energy live show, which catapulted the indie L.A. band to national fame. This winter, with two years of solid touring experience, they returned to recording, vowing not to replicate what they’d already done. They retain the soul factor, but update it a couple of decades for an ‘80s flavored, R&B-tinged sound.

Writing and preproduction were done in Fitzpatrick’s front room, where he feels the most safe being creative. Work was done either on Pro Tools 7 or at a Yamaha upright piano. (Extracted from his parents’ storage, it is the same one Fitzpatrick learned on.) Most of the arrangements are fleshed out here before technology takes over the song idea. The goal for *Dream* was to find a producer that could seamlessly bring together the analog and the digital—and to get out of Fitzpatrick’s front room. To this end, the group enlisted Tony Hoffer (M83, the Kooks, Beck) and headed to Sound Factory in Hollywood.

“It was the first time I got to make a record from start to finish in a formal setting with a producer,” says Fitzpatrick, arranging and rearranging his hat, flashing glimpses of his distinctive skunk-streaked hair. “We wanted someone that would challenge us as songwriters, but also come with solutions. Every day that we worked with [Hoffer], my trust in him multiplied exponentially. I could feel finding the balance between letting our intuition and our opinions marry with his.”

One of the key elements on *Dream* that required a fine touch with both the organic and the synthetic was drums. To create a dryer, tighter feel on the standout album opener “Out

Of My League,” kitchen towels were taped over all the toms and the snares and a tent was created to contain the sounds. Alternatively on the epic album closer “Merry-Go-Round,” treatments were removed to capture arena rock energy. The chorus has a live, almost fractured drum fill (courtesy of drummer John Wicks) that matches its triumphant tone while contrasting with the verses’ sentiments of loneliness.

“It’s live drums, but chopped and filtered,” Fitzpatrick elaborates on the latter’s drum sounds. “Then take off all the filters, percussion, but with a programmed kick and then another set of live drums, big hall ones. You can hear the programmed kick with the one version of live drums but filtered again. On ‘Out Of My League’ it’s all been fused into one drum part so you can’t tell it’s three different parts.”

**The goal for
Dream was to find
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out of Fitzpatrick’s
front room.**

Pianos, vintage synthesizers, and virtual synthesizers are used in tandem, but are not recorded direct; The sound is captured through a combination of guitar amp and reverb (Eventide is a favorite) and room tone.

“When you’re using all these mixed mediums, you push air whenever possible,” says Fitzpatrick. “The further away the mic gets, the more air there is in the room. This helps an instrument that feels a little dry. Even if it’s just a synthesizer, it feels more

organic. This was one of the tricks we used to make the pianos, the Conn organ, and Farfisas merge with the Korg MS-20 and modern synthesizers. We created our own unique path for it so by the time it got into the track, it stood apart as its own unique thing that no one else owned but us.”

Coming up with signature paths is one of Fitzpatrick’s musical characteristics. For his vocals, almost all of which were recorded in his front room late at night, he uses an ancient Neumann CMV-563 microphone going into two TL Audio mic pres and tube compressors into Pro Tools, where he adds Universal Audio’s 1176 virtual compressor and Wave Arts MasterVerb reverb plug-in.

“I wanted crunchy and slightly distorted vocals,” says Fitzpatrick. “I had struggled forever to find the right way to get distortion. I would put guitar amp simulators on there and it would give me that distortion, but it would be harsh and ugly. One day I pulled up one of the plug-ins that’s been on Pro Tools since time began. It has a little distortion and saturation that is perfect and not piercing.”

Fitzpatrick takes this vocal manipulation to a different level on “Out of my League,” layering seven vocal tracks on the last chorus. Opting for a synth bass but not wanting it to sound sterile, bass player Joseph Karnes played the notes, which are then translated into MIDI messages. 50 synth bass sounds were scrolled through to find the perfect one, but the way it plays is organic and natural.

“On each song, there is a different character and personality for the drums, bass, keyboards,” says Fitzpatrick. “It was an interesting way to build these structures while still trying to make the performance aspect come through. We took time sorting out the tempo, which is something [Hoffer] put in our head, and is such a big part of what can make a song come to life. By moving tempos, things were revealed on songs that made us re-orchestrate the way we approached them.

He continues, “There are engineering producers and big-picture creative guys. Then there are those people who can do both, that’s [Hoffer]. I grew up in the bedroom-studio school of music. To have a producer that is also a musician really helped bring my ideas to execution.” ■

Lily Moayeri is a regular contributor to Electronic Musician.



Various Artists

Bastards

ONE LITTLE INDIAN

AS USUAL, Björk gives everyone around her a fit, including probable remixers. Remixing selections from Björk's *Biophilia*, producers Matthew Herbert, Omar Souleyman, and 16bit, among others, perspire to imprint a stamp, but Björk simply overwhelms every sound in her path. The results are outstanding on "Mutual Core," where These New Puritans surround the vocalist's murmurs with a female African choir, and Death Grips' Aphex Twin-meets-Vienna Boys Choir take on "Sacrifice." Björk edited the whole project, "not necessarily [to find] the best ones, but the ones that made the strongest whole," she said. Control is a wonderful thing.

KEN MICALLEF



Matmos

The Marriage of True Minds

THRILL JOCKEY

Drew Daniel and partner M.C. Schmidt's full-length, blanketing neuromelodical resonances—contributed by Dan Deacon, Dirty Projectors' Angel Deradoorian, Dominique Leone, and Wye Oak's Jenn Wasner, among others—produces majestic arrays of braided oscillation. These nine songs reinforce the thing that Matmos does best: guiding dissociative transmissions into episodes of fugue-like physicality.

TONY WARE



Foxygen

We Are the 21st Century Ambassadors of Peace & Magic

JAGJAGUWAR

This work maintains the duo's established multi-influenced four-and-a-half decade-old throwback sound. There isn't a '60s reference point that isn't included in the hiss-filled classic folk-rock songs. Foxygen dips into a funk swing on "Oh Yeah," heavy, densely layered rhythms on the instrumental "Bowling Trophies," and lazy poetic strums on "No Destruction." The amalgamation of styles is fully realized in the inventively arranged psychedelic title track.

LILY MOAYERI



Sallie Ford & The Sound Outside

Untamed Beast

COLUMBIA LEGACY

The latest hipster rockabilly record from Sallie Ford and band will drive you wild. With jungle drums, distorted noir guitars, and Ford's gorgeous Wanda Jackson-meets-Screamin' Jay Hawkins singing, the production is just modern enough to bring Ford's retro MO into the present decade, but there's no missing the rocking rebel influences that inspired her tough attitude and musical intensity. More records should sound like this.

BARBARA SCHULTZ



Richard Devine

RiSP

DETROIT UNDERGROUND

An alumnus of Warp and Schematic Records, Richard Devine sits resolutely in continuum with Aphex Twin, Autechre, Tod Dockstader, painters Francis Bacon and H.R. Giger, and other morpheic artists. For *RiSP*, Devine splinters the electro-acoustic topography of Euro rack modular synths like it's a tower defense game. He sets up an algorithmic gauntlet and aggressively funnels dislocating tonalities into a signal-chain melee of regurgitating filters and obliquely realigning axes. No frequencies emerge unscathed.

TONY WARE



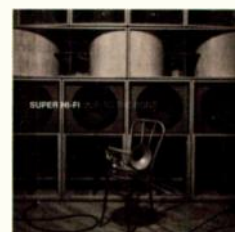
Various Artists

This Is 40: Original Motion Picture Soundtrack

CAPITOL

The soundtrack album for Judd Apatow's latest film *This Is 40* echoes the pensive but comic tone of the movie narrative, but also stands on its own as a consistently fine collection of mostly acoustic guitar-based tunes—some catalog material and some written for the film. Stand-out tracks include Paul Simon's Latin-flavored "Rewrite," Fiona Apple's playful "Dull Tool," and Wilco's "I Got You (At the End of the Century)."

BARBARA SCHULTZ



Super Hi-Fi

Dub to the Bone

ELECTRIC COWBELL

This Brooklyn-based quintet put double trombones at the center of its Africa-meets-Jamaica sound. In turns honking and soothing, the horns direct this Afro-dub debut to part skipping ska rhythms, part low-slung dub bass movements. More than half of the tracks are remixes, which if Beverley Road All-Stars echoing rework of the bombastic "Tri Tro Tro" is any indication, are far cries from the originals. While at times slowing down to the point of stoned catatonia, a paced head-bobbing tempo is maintained.

LILY MOAYERI

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electronic
MUSICIAN
EDITORS' CHOICE 2013



THE 2013 ELECTRONIC MUSICIAN EDITORS' CHOICE AWARDS 30 OF THE YEAR'S MOST INNOVATIVE PRODUCTS

BY CRAIG ANDERTON, SARAH JONES, GINO ROBAIR, PHIL O'KEEFE, AND JON CHAPPELL

EVERY YEAR, *Electronic Musician's* esteemed panel of judges climbs into the corporate jet, arrives at our executive villa on Kona, and breaks out the no-limit credit cards for a month of fine dining while we discuss—with Zen-like focus—which products merit the prestigious *Electronic Musician* Editors' Choice Awards.

And then the alarm clock goes off . . . time to wake up.

Okay, so the process actually involves numerous multi-hour conference calls on Skype. But the part about the Zen-like focus is true; we take this process very seriously as we pore over reviews, product releases, show reports, forum posts, and notes from the past year as we try for a consensus.

For those who have been following the awards, we followed the same basic strategy as last year, when we retooled the two-decade-old process to base the awards around hot products, rather than trying to shoehorn products into fixed categories. This makes the awards a lot more meaningful, and also, more fun for us to choose.

Choosing the winners was not easy. There were lots of really great products released during the eligibility period (post-AES 2011 through AES 2012), so to narrow down the choices somewhat, we tried to focus on innovation—and we *still* had a hard time choosing only 30 winners.

But one thing's for certain: Every product is exceptional for some reason, so congratulations to the winners—you deserve these awards and our deepest thanks for making the tools that allow us to express our musical dreams. And the winners are . . .



BLISS DISGUISED AS A SOFT SYNTH **Steinberg Padshop Pro**

Taming granular synthesis for new sounds

Padshop was cool enough—a granular synthesizer with an easy-to-use interface, and the ability to create atmospheric pads unlike anything you'd heard before. But then Steinberg dropped the other shoe with Padshop Pro, which allowed loading and deconstructing your own samples—pushing it into a level of coolness that exceeded its predecessor. The sounds it creates range from fascinating to gorgeous; if Enya had Padshop Pro, she probably would have sold twice as many CDs.

AFFORDABLE SYNTH AWESOMENESS

Casio XW-P1

No one's making jokes about watches and calculators any more



In the '80s, Casio put a lot of synths on the map, like the CZ-101 and CZ-1000. While the company continued to produce keyboards, no one expected the twin onslaught of the XW-P1 and XW-G1 that stole the show last year at Winter NAMM, and again at Frankfurt Musikmesse. Bold, original, clever, and definitely not “me-too” synths, the XW siblings showed that Casio is back in the synth game with a vengeance.



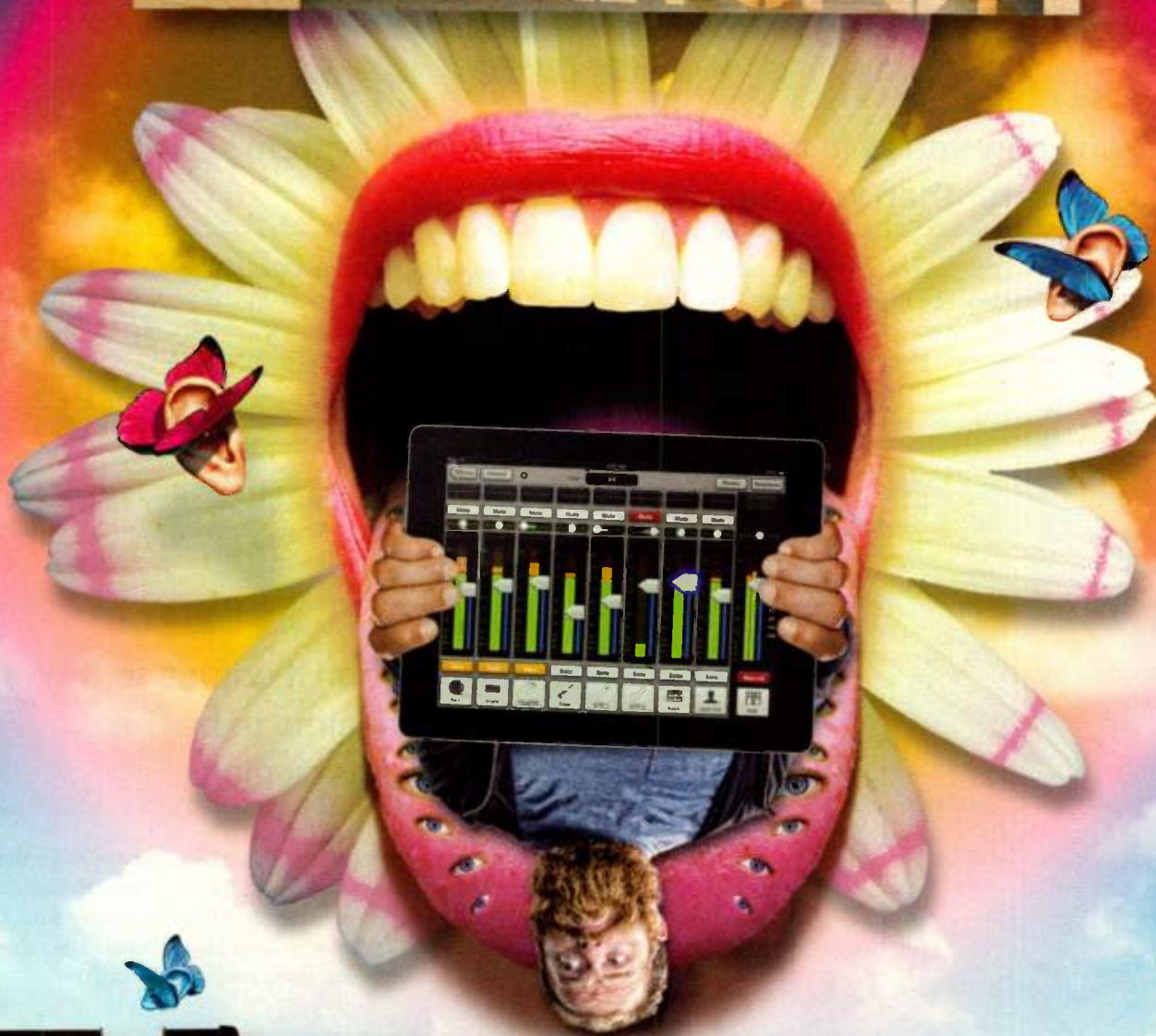
OVERACHIEVING AUDIO APP

WaveMachine Labs Auria

Busting iPad expectations

Before Auria, iPad apps for audio were primarily about synths, remote control, and useful accessories. But then WaveMachine Labs blew that stereotype out of the water with Auria, a full-featured DAW with up to 48 tracks of playback. And even that wasn't enough—they bought in ace plug-in programmers PSP Audioware to create a channel strip worthy of the app. After Auria, you'll never look at an iPad the same way again.

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 **MACKIE.**

THE P.A. WITH A BIG BRAIN

Line 6 SoundSource and SoundScape M20d controller

You know you're in trouble when your sound system is smarter than your band

Line 6 seems to take great enjoyment out of reinventing the ordinary into something extraordinary, whether that's turning kidney beans into effects, or making a guitar that can sound like 50 other guitars. And now, they've pulled the same kind of trick for sound systems by reinventing the mixer, the speakers, how they interact, and even the way you operate them. In the process, the P.A. has gone from a sound system to an ecosystem.



THIS DAW GOES TO 11

MOTU Digital Performer 8

When it comes to DAWs, DP aims to be the guitarist's pick

Sure, there are lots of great DAWs. But DP8 gets the Editor's Choice Award for the included guitar effects, with amp sims and processors that are not only the best you'll find bundled in a DAW, but are also equal to or better than third-party amp sims. Of course, many types of musicians use DP... but who would have thought the video community's favorite audio-for-video DAW was also a hardcore shredder?

TRUST US—THIS IS ACTUALLY A GOOD IDEA

Peavey AT-200 Guitar with Auto-Tune

An unlikely pair gets along extremely well

It would be so easy to make jokes like, "Well, now that Auto-Tune has destroyed music as we know it, guitars are next." But play an AT-200—while keeping noobies in tune is an appealing feature (especially for the listener!), it's not the instrument's only one, by far. From pure intonation to alternate tunings to assisted bends, Auto-Tune adds a new toolkit for creative guitar players—regardless of the level of expertise.





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EDITOR'S CHOICE 2013



THE iPad PIGGYBACK MIXING PARTNER

Mackie DL1608

Achieving synergy with consumer electronics

No doubt about it, the DL1608 is a Mackie mixer. But that's not enough to merit an Editor's Choice award. It's not even about the way Mackie has integrated iPad control with rugged hardware and SHARC DSP, clever as that is. The thing that makes the DL1608 special is the app that makes the concept work for live performance and allows for fluid mixing from a multitouch interface. That's hard to pull off—but Mackie succeeded.

ADVANCING THE CAUSE

Radial 500 Series

2012 Releases

Reaching a module tipping point

We've never given an award for a product line before, but this is no ordinary product line. In 2012 Radial Engineering did more than anyone else to popularize API 500 Series setups, both by creating frames in a variety of sizes and prices, and producing a wide range of modules to populate them—from simple and useful to esoteric and lust-worthy. For those who want to add analog mojo to their digital worlds, Radial aims to please.



SOMETIMES THE SEQUEL IS BETTER

Native Instruments

Maschine MK2

The total tool for the beat generation

Few products were such immediate hits out of the box as the original Maschine: Its combination of great sounds, fluid workflow, and tight control launched a zillion grooves.

NI got it so right the first time, a sequel seemed superfluous; but the workflow tweaks, inclusion of Massive, more sounds, even more sensitive pads, and accessorizing options took Maschine on its path to the next level—and an Editor's Choice Award.



DJS PLAY INSTRUMENTS, TOO

Pioneer RMX-1000

Don't just spin—play

Pioneer's RMX-1000 opened the floodgates for DJ controllers designed specifically as “sidecars” to the more traditional dual-platter controllers. No longer did DJs have to adapt controllers designed for recordists or keyboard players to use with their DAWs or samplers—the RMX-1000 bridged the twin worlds of DJs and electronic musicians, and in the process, created a powerful new instrument for the burgeoning controllerist movement.



HIGH END FOR THE LOW END

TC Electronic BG250

Bassists go high tech

Yes, a few people here wondered what a bass amp was doing as a nominee for an Editor's Choice Award. Then they checked out what the BG250 was all about. From its light weight and compact size to its internal processing and TonePrint options, the BG250 delivers high-tech amplification disguised as a traditional bass amp . . . that just happens to do a whole lot more than most bass amps.

TOUCHY-FEELY EXCELLENCE

Numark NS6

Responsiveness puts this one over the top

There's been a bumper crop of fine DJ controllers from a variety of manufacturers, and frankly, it was tough to choose just one. But the NS6 has rugged hardware that's downright sexy, coupled with being both a high-level controller and mixer. Part of what makes the hardware exemplary is the responsiveness and fluidity of the platters themselves; sometimes it seems the NS6 would be more than happy to play itself if you just nudge it in the right direction.



THE CURE FOR '80S PRODUCTION EXCESSES

Zynaptiq Unveil

Banish excess ambience back to where it belongs

Zynaptiq had some strong competition from . . . Zynaptiq, for their PitchMap pitch-processing software. But Unveil's ability to remove ambience, from reverb to room sounds and more, is novel and has applications varying from compensating for mistakes (e.g., remastering cuts with too much reverb) to removing ambience when recording dialog. How do they do it? We have no idea. Possible explanations are a deal with devil, or being magicians in their spare time.



PORTABLE PARTY DJ MACHINE

IK Multimedia iRig Mix

There are so many ways to do iOS wrong, but this company got it right

Some musicians still look at iOS devices as toys—capable toys, but toys nonetheless. That's why iRig Mix is so interesting. Yes, it's more expensive than typical apps; but that's because of the mixer hardware, which despite its diminutive size is eminently useful. Couple that with DJ software that even allows beat-matching with music from external sources like CD players or iPods, make it super-portable and easy to use, and you have a novel DJ rig you can take anywhere.



ALL THE DAW YOU NEED—AND THEN SOME

Acoustica Mixcraft 6

The "little engine that could"—did

Mixcraft was always "good for the price." But with Version 6, it became "really good, and it's still the same price." While it has fast, smooth workflow and tons of content, it's set apart by video capabilities that beat any music DAW, regardless of price—including text and image inserts, clip crossfades, and automatable video processing. If anything ever qualified as the "direct-from-garage-to-YouTube" program, this is it—for less than \$100.

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FEATURE CREEP CAN ACTUALLY BE GOOD

PreSonus AudioBox 1818VSL

Continuing to blur the line between stage and studio

Why does the 1818VSL deserve an award when there are so many great audio interfaces? This one is different in that it's an element in a seemingly ever-expanding system that involves PreSonus' StudioLive mixers, iPad control, Virtual StudioLive software, and our personal favorite—the "Wheel of Me" iPhone app that lets musicians dial in their own monitor mixes ("more me!"). By continuing to add features—mostly free—to mature products, PreSonus has shown that feature creep can be a good thing.

SUPER-SYNTH FOR
STAGE AND STUDIO

**Roland
Integra-7**

Rejuvenating the hardware rack synth



The rack synth has fallen out of favor over the years, but Roland has given the genre a major shot in the arm. Whether you're on stage and need a rugged hardware synth, or in the studio and want to add Roland's SuperNATURAL sounds without having to buy another keyboard, the Integra-7 does both—while adding a ton of I/O, powerful effects, and a unique ambience engine that places sounds in a 360-degree sound field. Hot.

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THE WAR IS OVER, BOTH SIDES WON

Lewitt Audio LCT 940

Tube or FET? Well, why not both . . . and more?

It's not just that you can select the tube or FET path (and adjust their blend). This mic also has nine polar patterns, along with multiple pad, filtering, and attenuation options—all of which you can adjust remotely from the power supply. But the LCT 940 isn't only about features; its own flavor of detailed and articulate character makes it well-suited to a wide variety of miking applications. Flexible, innovative, sounds great . . . pass the award.



SO MUCH FROM SO LITTLE

Yamaha THR10

This amp is small in stature, but big in features and sound

The compact THR10 has a lot going on under the hood: five different guitar amp types (and flat, bass and acoustic amp settings), onboard effects with tap tempo, tuner, five user preset slots, and battery/AC power options. But wait—it's also a USB-equipped DAW interface (bundled with Cubase AI and THR editor software) that offers stereo hi-fi audio playback and direct recording capabilities. Yes, the THR10 sounds great at bedroom-friendly levels . . . but if you want to meet your neighbors, crank it up!



AS IF GUITAR PLAYERS NEEDED MORE EGO

Electro-Harmonix SuperEgo

Super sustainer scores big

Your guitar player isn't the only one who'll want this. Taking the EHX Freeze pedal's concept to new levels, the SuperEgo has latch, momentary, and auto switching modes, as well as gliss and speed/layer controls. It even has a handy effects loop for processing the sustaining signal, without affecting your dry sound; the result is a fully-polyphonic, sustaining "synthy pedal of goodness" for accompanying yourself or soloing. Whew!

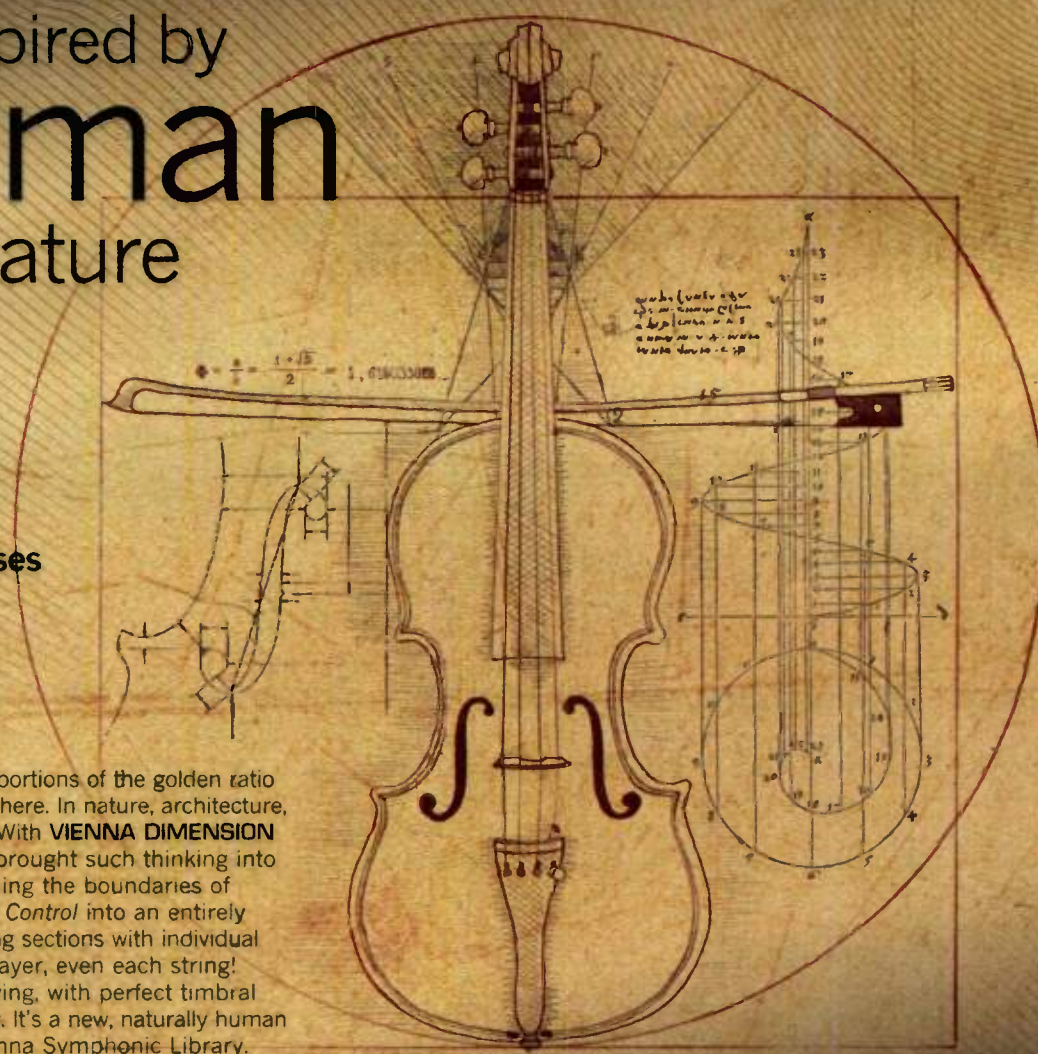
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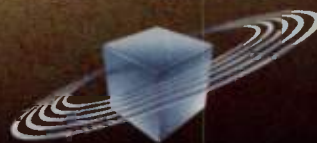
The harmonious proportions of the golden ratio can be found everywhere. In nature, architecture, painting and music. With **VIENNA DIMENSION STRINGS**, we have brought such thinking into the digital age, pushing the boundaries of *Human Performance Control* into an entirely new dimension. String sections with individual control over each player, even each string! Divisi or unison playing, with perfect timbral balance, all on the fly. It's a new, naturally human dimension from Vienna Symphonic Library.



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VIENNA NEWS

- Remote App for Vienna Instruments PRO Free Download!
- Vienna MIR PRO / MIR PRO 24 Now as AU/VST/AAX Native/RTAS Plug-in
- Recorders – Introductory Offer!



HEARING THINGS FROM A NEW ANGLE

Dynaudio DBM50

Speakers designed for serious desktop production

Dynaudio addresses desktop musicians and production suites by approaching speaker design from a different angle: The DBM50 (a two-way bass reflex design with a 7.5" woofer and a 28mm soft-dome tweeter, each with its own 50W amp) sits astride your monitor, and is angled upward so the sound makes a direct path to your ears. Around back, lots of EQ controls let you better match your room or dial in personal preferences; there's even an optional remote level controller.



THE TOMORROWLAND AUDIO INTERFACE

Universal Audio Apollo

It's no fantasy—this adventurous interface explores new frontiers

Apollo offers onboard Duo- or Quad-core DSP for running UAD's acclaimed powered plug-ins, near-real-time processing when tracking or mixing, and less than 2ms of latency. It also offers extensive internal mixing and routing capabilities, lots of digital and analog I/O (18x24), four UA mic preamps, and first-rate converters. The icing on the cake: In addition to handling FireWire 800, its optional Thunderbolt card provides future-friendly interfacing—and we're ready.

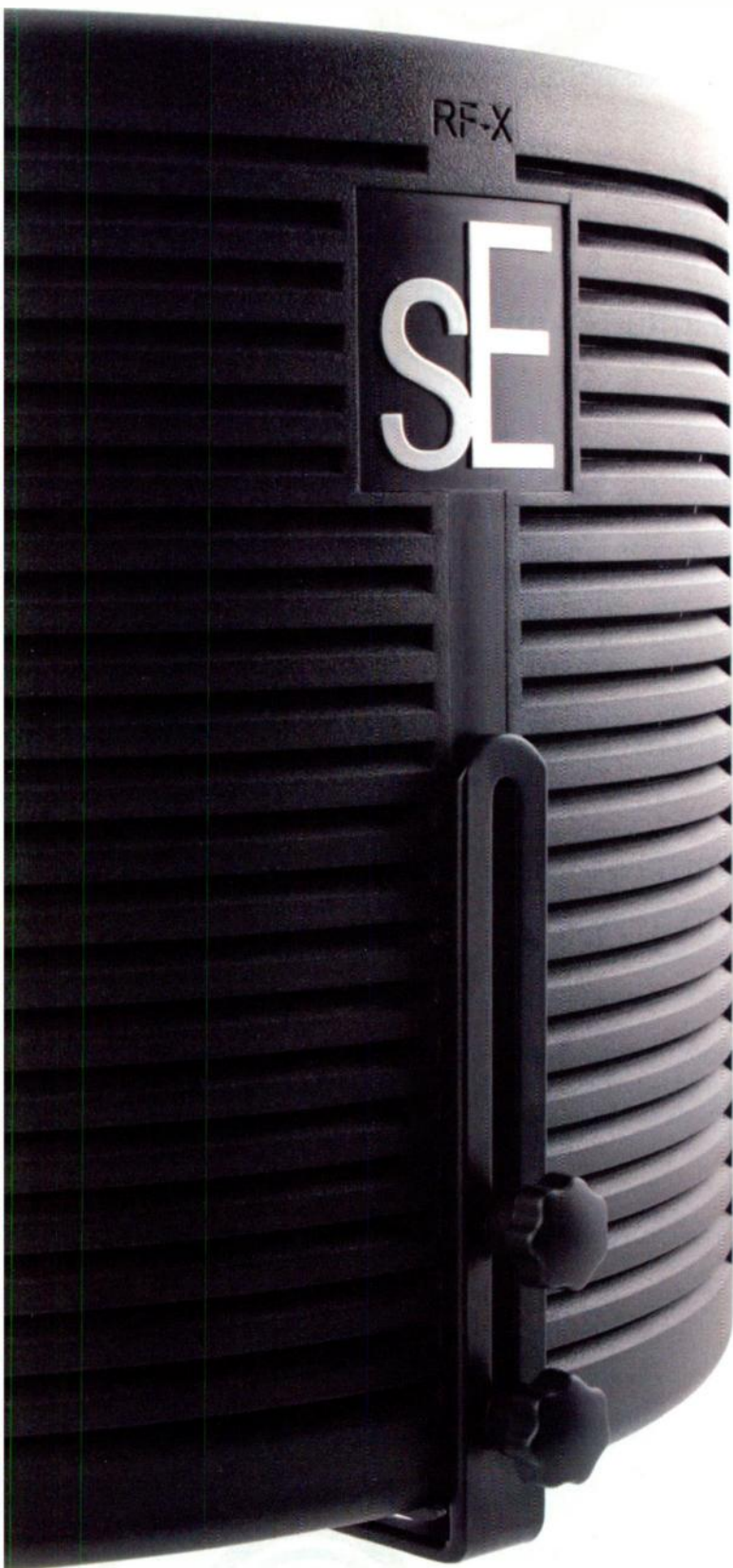
Once Again, Bob Would Have Approved

Moog Music 500 Series Analog Delay

Spice up your rack with something from the Moog Cookbook

It's somewhat ironic that after nearly 50 years, Moog returned to a modular format. With the 500 Series Analog Delay, Moog didn't simply shoehorn their Moogeroo MF-104M pedal contents into a module; the company upgraded the hardware specs, added stereo linkage, and coded a studio-friendly editor plug-in to control the unit from your DAW—features that befit a pro-audio environment, as well give some serious incentive to take the plunge for a 500 Series system.





RF-X

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Sound Engineering

Digital or Analog? Yes!

Make Noise SoundHack Echophon

Taking voltage-controllable delay to infinity and beyond

The modular synth scene has long embraced a hybrid approach where CVs control digital signal processors, and Make Noise took full advantage of this when it collaborated with DSP whiz Tom Erbe to create the most inspiring Eurorack module of the year. The Echophon provides patchable control over two octaves of pitch shifting, with multiple feedback paths, tempo sync, a freeze function, and more—resulting in a powerful new delay processor for your patching pleasure.



Fistful of Analog Goodness

Korg Monotron Duo

A superb two-oscillator synth that fits in the palm of your hand

The Monotron Duo pushed Korg's cred even higher—but not just because it's a fat-sounding, dual-oscillator analog synth with a hearty MS-series filter and tangy modulation capabilities. As with the original Monotron, the company took the audacious step of posting the instrument's schematics online, ensuring that DIYers around the world would snatch up several of these babies for circuit bending. It's the synth in your pocket that everyone's happy to see (and hear).

VISUAL VIRTUAL SYNTHESIS

iZotope Iris

Setting the standard for spectral sound manipulation

While audio repair tools have long been subverted for creative purposes, it took iZotope to make that concept a core feature of a virtual synthesizer. With up to four samples loaded into a patch, Iris lets you independently highlight and play portions of each file's harmonic spectrum using intuitive computer art tools—brush, lasso, magic wand—and further sculpt each sample using synth modules and effects. With Iris, the term “sound painting” is no longer a metaphor.



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Electronic
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EDITORS' CHOICE 2013

The Chameleon in the Pedalboard

DigiTech iStomp

Reload your stompbox faster than a NASCAR pit stop

With the right app, an iOS device can be a great guitar processor. However, your iPhone and iPad aren't exactly stage-ready on their own—so DigiTech created a rugged footpedal that can load any of the company's great-sounding, DSP-based "e-pedals," completely untethered from your Apple hardware. Whether you've downloaded a delay, reverb, compressor or distortion from the iTunes store, the sound is so good that you'll forget that the pedal is reconfigurable—until DigiTech releases a new effect.



Yes, You *Can* Unbake the Cake

Sony SpectraLayers Pro

Fix it in the mix? How about fix it *after* the mix?

With SpectraLayers Pro, spectral editing has moved beyond the realm of noise reduction to become a powerful creative tool. It's easy to find parts of a mix that you want to isolate and process, extract and remove, or analyze and repair because the tools will recognize and follow the specific frequency or bandwidth you select—as well as the related harmonics. You can even use VST effects to process layers. Who would have thought repairing mixes can actually be fun?



MODERN MEETS RETRO

Arturia MiniBrute

Your wish for an affordable analog synth has come true

Are we crazy for giving a monosynth an Editors' Choice Award in the 21st century? We'd be crazy not to, because the MiniBrute is packed with features, built like a tank and, most importantly, sounds fantastic. What's more, Arturia boldly ditched the ubiquitous ladder filter for a vintage design by Steiner-Parker; and the MIDI, USB, and CV I/O means it'll play well with all of your toys—analogue modules, soft synths, and DAW environment. Cool—we can all get along! ■



Best of the Best

The new Electro 4D features everything from the award winning Electro 3 series, adding a brand new set of physical drawbars, the tone wheel organ engine from the Nord C2D and USB-MIDI - all in an ultra portable package sporting a 61-note Semi Weighted Waterfall keyed.

nord electro 4D
SEMI WEIGHTED WATERFALL SW 61



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For more information contact
info@AmericanMusicAndSound.com



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Grace Design m103 Channel Strip

Feed your DAW properly by getting the sound right at the source

BY CRAIG ANDERTON

SUMMARY

STRENGTHS: Clean path with innovative “ribbon” switch. Transparent EQ and compressor. Can switch EQ/compressor order. Solid construction. Stepped gain control for repeatability. Global power supply. Hi-Z instrument input.

LIMITATIONS: Nothing significant.

\$1,895 MSRP
gracedesign.com

THE GOOD news: Analog-to-digital audio conversion and “in the box” algorithms continue to improve. The bad news: Deficiencies in the analog elements feeding your DAW become more apparent. In that respect, Grace Design was a bit ahead of the curve with the single-rackspace m103—an all-analog, mono channel strip dedicated to signal purity. But as more people concern themselves with getting the signal right at the source, before it hits the converters, the m103’s time has come.

Interfacing Separate mic and line XLR ins, with separate XLR mic pre and main outs, complement three additional 1/4” jacks for unbalanced mic pre out, balanced main out, and unbalanced main out; a front-panel 1/4” jack provides a hi-Z instrument input (2.5M balanced, 5M balanced). The 1/4” sidechain compressor input jack is switch-selectable to provide a stereo link when using two units, while the IEC cable jack feeds a global (100-240V) supply.

Preamp The transformerless preamp sounds—well, it doesn’t “sound,” really; it just amplifies, with a range of 10 to 65 dB of gain in 12 steps. It has a clip indicator, mic/line switch, phantom power enable, and 75Hz (12 dB/octave) highpass filter. Enabling the innovative “ribbon” switch simultaneously increases input impedance, disables phantom power, and bypasses the phantom-power coupling capacitors. I also like this position with dynamic mics, due to the input impedance increase.

EQ This is not your surgical, digital EQ—do that in the DAW. Rather, the EQ’s three bands gently correct for deficiencies at the source. The mid band (500Hz to 4kHz) is parametric,

with variable Q. The lower and upper bands can switch between shelving or bell response, with the low frequency variable from 20Hz to 750Hz; highs range from 3kHz to 20kHz. Gain for all stages is ± 12 dB. The fixed Q for bell mode isn’t specified, but sounds fairly broad; I tended to use the shelf mode more, although the bell response is useful when you want, for example, a little more “boom” on acoustic guitar without amplifying frequencies below its natural range.

Dynamics This isn’t a brickwall limiter, but an easy way to tame dynamics and add a bit of a “lift” to signals while remaining unobtrusive. Based on optical technology for an inherently smooth response, controls are the expected threshold, attack, release, and ratio (1:1 to 12:1). Attack goes down to 3ms, while release extends out to 3 seconds. A 10-stage gain-reduction meter provides visual feedback.

Extras Both the EQ and compressor have in/out switches, but the coolest switch reverses their order in the signal chain. There’s also a master trim control, 10-stage VU meter, and peak meter that monitors the internal headroom. Also noteworthy: the packaging. The m103 is suspended within the box, almost like it’s shock-mounted—take that, UPS.

How to Feed a DAW The m103 isn’t cheap, but the sweetness and transparency explain why. For capturing a vocalist going through a quality mic, retaining the nuances of an acoustic guitar, maintaining the crispness and snap of percussion, or for any other critical acoustic instrument tracking, it doesn’t get much better—or more importantly, less intrusive—than the m103. ■

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A|A|S Chromaphone

A virtual instrument that excels at more than percussive sounds

BY CRAIG ANDERTON

SUMMARY

STRENGTHS: Creative design. Fresh, organic, warm sounds. Excels for percussion. VST/AU/RTAS/standalone versions. Small footprint. Cool playground for synth addicts.

LIMITATIONS: Limited response to MIDI controllers. Doesn't exploit multiple cores when pushed to maximum polyphony.

\$199

applied-acoustics.com,
dist. by ilio.com

ONE OF the great aspects of virtual instruments is that creative designers can take them beyond emulating the ordinary. Chromaphone isn't the first modeling synthesizer to explore struck and plucked resonators, but its exploration runs deep.

Modeling synths create sounds on-the-fly with algorithms, not samples. Limitations like velocity or sample splits don't exist, and sounds can be realistic or push boundaries. Also, as no samples load into memory, presets load instantly; Chromaphone's overall operation is snappy as well. However, more voices requires more CPU power (and Chromaphone doesn't distribute its power over multiple cores). Still, CPU drain is certainly not unreasonable, especially with 16 voices or less.

Meet the Family There are several banks of presets (programs), although you can always manage banks (rename, create, copy, or move within banks, etc.). The mallets, percussions, drum kits, chimes/bells, and plucked strings play to Chromaphone's primary strengths. The kits aren't conventional drum kits, but stretch a sound so that low sounds give a satisfying "kick," while higher sounds are more like percussion—so you can *play* it like a kit.

The basses, keys, strings and pads, synths, and organs/pipes are not ROMpler sounds. The basses tend toward a warmer, more acoustic vibe; keys are mostly electric piano/clav-type sounds, while strings and pads are impressionistic. For synths, don't think Minimoog, but synthetic sounds; the organs and pipes provide alternatives to conventional sampled versions. The soundscapes/textures and effects also highlight Chromaphone's unique talents—some resemble sampled sounds, but you can push them into far more interesting territories. My only significant

disappointment is that few controls respond to MIDI, and there are no MIDI learn options for external controllers.

Rolling Your Own The architecture is unconventional—combining a mallet and noise source creates a signal that excites dual resonators (each chosen from eight types). These can either run in parallel, or in a "combine" mode that places the resonators in series but with bi-directional interaction (e.g., similar to how a piano string interacts with a sounding board, but the sounding board also influences the string).

There are familiar parameters like amplitude decay and release, pitch envelope, key follow, LFO, and the like (as well as various effects), but you'll also find material, tone, density, stiffness, partial, noise, color, and so on. I'd like to say that I understand all these parameters and have mastered the art of creating predictable patches... but I haven't! I adjust some parameters, stand back, and hear what happens. Changing just *one* parameter on the guitar pad gave impressionistic, evocative cellos—do I know why? No, but I *am* smart enough that the first thing I learned was how to save presets. And a wonderful History function takes you back through the edits you've made to a program, so if you go too far, you can reel yourself back in.

Cool, or What? Download the trial version—you'll find a novel, clever instrument that makes sounds your other virtual instruments don't make. Chromaphone isn't a "bread-and-butter" synth, so it's not for everyone; but if you find yourself booting up the occasional virtual instrument, yawning, and saying "been there, done that"—start downloading. ■

Active Loudspeakers
DXR Series

Active Subwoofers
DXS Series



YAMAHA

BEST IN CLASS

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133
dB

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1

1
Propellerhead Software
Radical Keys
Reason rack extension
\$99
HIGHLIGHTS Re-creates three classic electromechanical keyboards—Rhodes, Pianet, and Wurlitzer • based on the same ‘Radical’ technology as Propellerhead’s acclaimed Radical Piano • goes beyond emulation by enabling users to sculpt their own instruments from the originals
TARGET MARKET Reason owners who want to expand their available roster of instruments
ANALYSIS The introduction of Rack Extension technology has been huge, as it allows optional-at-extra-cost add-ons to the core Reason program. In addition to cultivating third-party contributions, Propellerhead Software has been active in creating new modules.
propellerheads.se



2

2
Yamaha
MX Series
Music synthesizers
MX49 \$599.99, MX61 \$799.99
HIGHLIGHTS Sounds derived from MOTIF synthesizers • 49- and 61-note versions • extensive audio/MIDI USB connectivity • DAW and VST controller features • eight-element engine, Virtual Circuit Modeling effects, and 1,134 preset voices • audio interfacing
TARGET AUDIENCE Stage and studio musicians who want strong hardware/software integration with on-the-go size and weight
ANALYSIS The low-priced MX Series makes the sounds of the MOTIF line more affordable to a wider range of musicians. However, MX synths are also designed for serious computer integration; the bundled software underscores that point.
yamaha.com



3

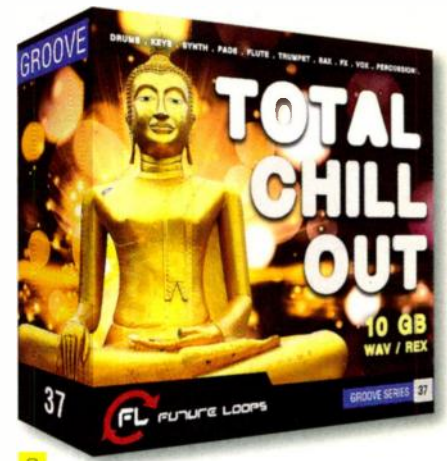
3
Apogee
Quartet
Mac audio interface
\$1,295
HIGHLIGHTS USB 2.0 • 4 ins, 6 balanced outs, stereo headphones out • Apogee A/D-D/A conversion technology • four world-class mic pres • ADAT/SMUX digital inputs • dual high-res OLED displays • works with any Core Audio-compatible application • three assignable touchpads • six touchpads for direct selection of inputs and outputs
TARGET MARKET Mac-based desktop studios requiring more than a basic 2-channel interface
ANALYSIS Quartet fills the hole in Apogee’s interface product line between the 2-channel Apogee Duet and the 8-channel Apogee Ensemble.
apogeedigital.com



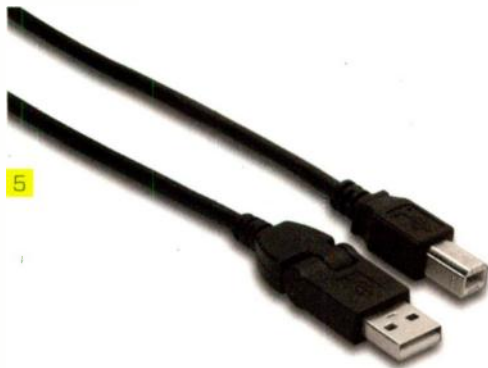
4
Puremagnetik
Skatik
Sound library
\$12 or part of subscription
HIGHLIGHTS Collection of instruments, sound effects, percussion kits, and more, sourced from a circuit-bent Casio SK-5 • for Ableton Live, NI Kontakt, and Apple Logic • Ableton Live Racks include precise incremental controls • Logic EXS version includes Channel Strip Settings with Logic effects
TARGET MARKET Those who seek unusual sounds based on the SK-5’s lo-fi character
ANALYSIS Circuit bending can open up a world beyond standard instrument sounds; but if you don’t have the tech chops to do it yourself, libraries of circuit-bent sounds are the next-best option.
puremagnetik.com



6



8



5



7

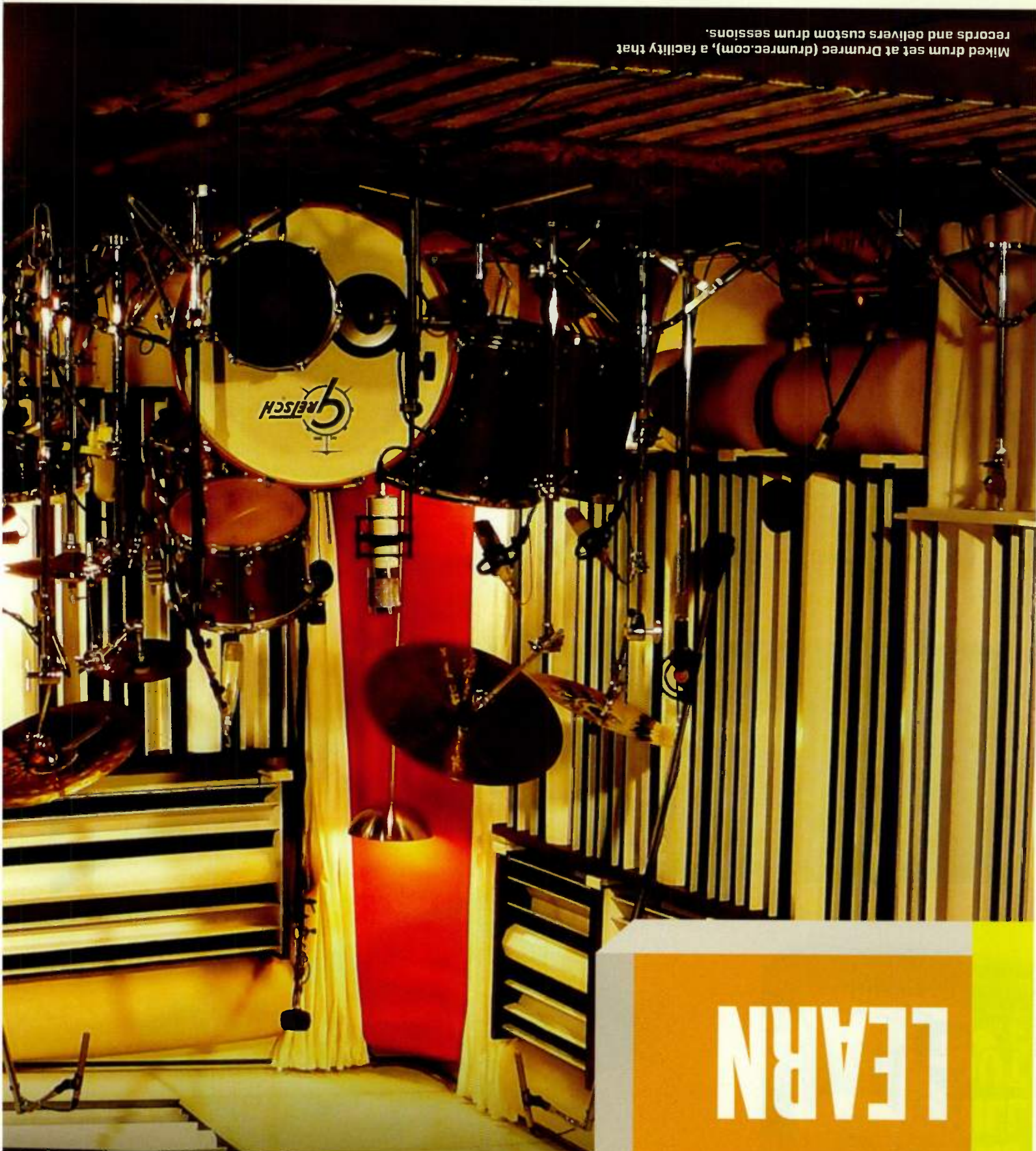
5
Hosa
USB-200FB Series
High-speed USB cables
\$8.95–\$11.95
HIGHLIGHTS Available in 3-, 6-, and 10-foot lengths • pivoting Type A connector (the end that typically connects to a computer) can be set to either straight or right-angle positions • supports burst data transfer rates up to 480Mbps
TARGET MARKET DJs, musicians, and audio professionals who need to make connections to an elevated laptop computer and related equipment in cramped quarters
ANALYSIS As more portable gear uses USB, connecting peripherals to computers in tight spaces can be a problem—one that the USB-200FB Series is designed to solve.
hosatech.com

6
Elektron
Analog Four
Hardware synthesizer
\$1,149
HIGHLIGHTS Four-voice analog synthesizer with digital control • step sequencer with parameter locks • two analog oscillators and filters per voice • dedicated CV/Gate and FX sequencer tracks • two external inputs • MIDI in/out/thru with DIN sync out • multiple LFOs and envelopes per voice
TARGET MARKET Keyboard players who favor analog synths
ANALYSIS While purists love the sound of analog, it's hard to forego some of the advantages of digital—like sequencing precision. By combining analog sound with digital technology, Elektron intends to offer the best of both worlds.
elektron.se

7
Lynda.com
Audio Recording Techniques
Video course
subscription-based
HIGHLIGHTS Five-hour program: hosted and written by audio recording educator Bobby Owsinski • walks through the process of miking and tracking a complete song • covers recording drums, guitars, vocals, strings, horns, bass, keyboards, and more
TARGET MARKET Beginners who need the fundamentals of studio miking and recording techniques
ANALYSIS While many musicians have become proficient with desktop recording setups, there are often gaps in their knowledge regarding fundamentals—like recording a drum set. This video addresses those kinds of users, as well as beginners.
lynda.com

8
Future Loops
Total Chillout
Sound Library
€99.95 (approx. \$130)
HIGHLIGHTS 10GB of chill-out and downtempo samples • tempos range from 80 to 110 BPM • WAV and REX format • with vintage keys, lo-fi breaks, phat and old-school drums, bass lines, strings, '70s flute licks, percussion loops, vocals, FX, saxophone, trumpet, pads, synths, and various one-shots • contains more than 10,000 samples
TARGET MARKET Producers working with hip-hop, breaks, or downtempo styles; film/TV composers
ANALYSIS Chill and downtempo continue to be popular musical niches, and *Total Chillout's* 10GB of material is tailor-made for these genres.
futureloops.com

Miked drum set at Drumrec (drumrec.com), a facility that records and delivers custom drum sessions.



LEARN



Master Class

Tracking the Band, Part 1

The final sound depends on the initial sound, so learn how to mike instruments correctly

BY PHIL O'KEEFE
LEAD PHOTO COURTESY HAKAN HANSSON

so you've been tasked with recording the band's new song. Miking a whole band can be a bit daunting, but it's not nearly as difficult if you break the process down into individual elements. In this issue, we'll cover how to mike the band's foundation—bass and drums. Next time we'll continue with vocals, acoustic guitar, and electric guitar, as well as provide some general tips to wrap up the subject.

Whether you record each part separately or the entire band at once is up to you. For many years, it was *de rigueur* to record everything separately to a click track, but for musical and musician-interaction reasons, I recommend recording the rhythm section (drums, bass, rhythm guitar, etc.) together whenever possible, then overdubbing the lead parts and vocals. Although recording multiple musicians together requires more input channels on your audio interface and possibly some baffling to reduce leakage, it's usually a more natural process for the musicians, and allows them to “play off” of each other.

We'll assume that you have at least a four-channel audio interface; fewer than four channels places too many restrictions on recording drums, and you'll need at least an eight-channel interface to record the rhythm section together. (Sixteen channels would be even better.) You'll also need enough microphones, mic preamps, and stands, along with a direct box or two, maybe some amp sim pedals, headphones, and of course, plenty of cables.

Ready? Let's start with a boom.

DRUM KIT

Miking up a drum kit is one of the most challenging recording tasks. There are two general approaches:

- Capture the kit's main "picture" with a stereo pair of overhead mics, and then fill in the sound with the use of a few "close" mics.
- Capture the individual elements of the kit with close mics, then fill in the sound with the overhead and room mics.

These approaches may seem similar on the surface, as they both involve combining overhead and close mics. However, the philosophical difference is considerable. Emphasizing the close mics gives a more detailed, precise sound, whereas relying primarily on the overheads captures more ambience and leans toward a "live performance" vibe.

Neither approach is right or wrong, although each does have some advantages over the other. For example, it's simpler from an equipment standpoint to use your overheads to capture the main drum sound. This generally requires fewer microphones, but it also places greater demands on the drummer's ability to control the dynamics and relative balance of the kit elements. It also works a lot better in a room that sounds good (which usually, but not always, translates into having good acoustics), because you're recording the room almost as much as the drums.

The close-mic approach, with each mic recorded to a separate track, is excellent when you want lots of control. It's also useful if you plan to use drum-replacement software to "change" or augment some of the kit's elements later on, particularly during mixdown.

Let's consider each part of the kit, and some recommended mics and placements.



Fig. 1. The most common way to mike a kick. If the kick doesn't need to be highlighted, sometimes engineers will pull the mic back a bit to get more of the "kit sound."



Fig. 2. When placing the snare mic, aim it at the snare's center, but also try placing it a bit off-center before making a final decision.

SHATTERING EXPECTATIONS



NAMM BOOTH #5900

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CASIO

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Kick The Electro-Voice RE20 and RE320, Heil PR48, Shure Beta 52, Audix D6, and AKG D112 are all popular choices. Start with the mic placed just inside the hole in the kick drum's front head, aimed halfway between the spot where the beater hits the head and the tom side of the drum shell (Figure 1 on page 72). For more attack, aim the mic more toward the beater; for more resonance, angle the mic more toward the shell.

Snare Small-diaphragm moving-coil dynamic mics like the Shure SM57, Audix i5, and Audio-Technica ATM650 are the usual choices, but both large and small condenser mics can work well. (You may need to engage a pad switch on the mic to avoid overload.) The Audio-Technica Pro 37, Røde NT5, and AKG C-414 are good condenser choices for snare.

Positioning is a matter of taste. Top-miking the head is the most common approach, with the mic placed a few inches above the drum's rim, and angled in so it's aimed toward the center of the head, or a point two-thirds of the way toward the center (Figure 2 on page 72). Some engineers place a second mic a few inches under the drum, aimed at the snares themselves. To avoid cancellation, this mic normally needs its polarity (phase) inverted when combined with the main snare mic at mixdown.

An alternative approach is to use only one mic, pointed at the side of the snare drum (the shell) instead of the head (Figure 3). This technique can result in a very even sound, with a nice balance of crack, resonance, and snare rattle. However, avoid aiming the mic directly at the air vent on the drum's side.

Toms Dynamic mics usually get the nod for toms, and their ruggedness gives them a better chance of survival if they are subjected to an unexpected stick hit. The Audix D2 and D4, Sennheiser MD421 and e604, Audio-Technica ATM25 and ATM250, and Shure SM57 are all common dynamic mic choices for toms. The CAD M179, AKG C-414, Neumann TLM102, and Audio-Technica Pro 37 are suitable condenser alternatives, assuming the drummer has good stick control. You may also need to use the mic's built-in pad with condensers. With either mic type, the placement approach is similar to snare—usually with the mic above the edge of the rim, and angled in so that it points roughly midway between the rim and the middle of the drum (Figure 4).



Fig. 3. The “side capture” option isn’t always about the sound—if the drummer has sketchy stick control, it can save your mic by taking the hit.



Fig. 4. With toms, it’s particularly important to place the mic where it won’t get hit by an errant stick.

Overheads Small-diaphragm condensers are common for drum overhead duties. Good choices include the Mojave MA-101, Audio-Technica AT4041, Oktava MK012, MXL 603, and AKG C-451B. Ribbons like the Royer R-121, Beyer M160 and Cascade Fathead II can also work very well for drum overhead miking, especially if you're trying to tame overly bright or enthusiastically played cymbals.

Placement options are numerous. I really like the classic Glyn Johns technique, which places one mic over the center of the kit—usually above a spot somewhere between the rack tom, snare drum, and hi hat, with the second “overhead” mic placed much lower, near the far side of the floor tom, aimed “across” it toward the hi-hats (Figure 5). An important point with this technique is to



Fig. 5. Note the mics in the upper-left and lower-right corners of the photo.



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eisenberg

keep the two mics equidistant from the center of the snare drum. A tape measure, or three- or four-foot length of twine or even a cable, can come in handy to check to make sure the spacings match. Doing this will ensure that the snare drum hits remain “centered” in the stereo sound field, as captured by the overhead mics. Adding a kick drum mic, and possibly a snare mic, to this type of overhead arrangement is often all you need to capture a great drum sound with only three or four microphones.

Other overhead placement options include spaced pairs of microphones, or an X/Y stereo pair directly above the kit’s center. Try placing them about two to four feet above the level of the top of the toms if your room has a low ceiling, or move them up a bit higher in a tall room. A great choice for getting an “as the drummer hears it” perspective is to place an X/Y pair of cardioid microphones, or a Blumlein (crossed at right angles) pair of bi-directional ribbon or condenser microphones just above, and directly behind, the drummer’s head. Angle them so they’re pointed downwards slightly, and aimed so they’re pointing toward the center of the kit.

Hi-hats You’ll usually get more than enough of the hi-hats in the overheads, or in bleed into the snare mic; but if you need a bit more hi-hat in the mix, a small-diaphragm condenser is usually the go-to choice. Ribbon mics can also work well here—especially if you’re trying to subdue an overly bright or aggressive pair of hats. Try to avoid miking the very edge of the hats or miking them from the side, as these locations can suffer from air blasts. I normally start with the mic placed four to six inches above the hi-hats, and about three to four inches in from the outer edge.

ELECTRIC BASS

The sound of the electric bass starts with the instrument itself and the way it’s played. In particular, round-wound strings will have a dramatically different sound than flat-wounds, and playing with a pick vs. playing with your fingers also makes a huge difference in timbre. For example, you’ll have a much easier time achieving an old-school, Motown-inspired bass tone if your bassist uses flat-wound strings and plays with his fingers, while using a pick will emphasize transients and help the bass stand out in a busy rock mix. As part of the rhythm section’s



Fig. 6. Close, on-axis miking tends to give the “roundest” sound when miking a bass amp.



Fig. 7. Off-axis miking can yield a tighter sound, but here, it’s also being used to pick up the sound from the amp’s tweeter.

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foundation, getting the sound right at the source is important, and having a specific type of bass sound in mind initially will help you achieve a better bass track than just hoping you accidentally stumble into something.

Bass is typically recorded either “direct,” or by miking the speaker cabinet. Many engineers use both methods, with each mic signal recorded to a separate DAW track. To use a direct box, insert it inline by plugging the bass into the direct box, and patching the DI’s “through” output into the bass amp. Route the Direct Box’s line output to a line input on your mixer or audio interface, and thereafter to its own recording track. On a second track, record the miked bass amp. Combining the two at mixdown gives you the flexibility to use the best aspects of each to build your final bass “sound.” Direct recording also allows makes it easy to use reamping techniques and amplifier-modeling plug-ins.

If you take this approach (or can’t use an amp for some reason), most audio interfaces have high-impedance instrument inputs that are optimized for use with passive pickups. These are equivalent to active DI boxes, and because they reproduce the bass sound very faithfully, subsequent plug-ins can impart their full effect. As most bass sounds don’t rely on distortion to the same extent as guitar amp plug-ins, and as the toughest task for any amp sim is to reproduce distorted sounds, bass amp plug-ins can often sound exceptionally life-like.

Miking the Bass Amp Miking a bass amp is somewhat similar to miking a guitar amp, except bass usually means dealing with a wider range of frequencies. Unlike guitar amp speaker cabinets, which typically reproduce frequencies in the 100Hz to 6kHz range, bass amps can extend considerably lower and higher. Many bass rigs even have onboard high frequency tweeters to complement their extended low-frequency bass drivers, and the trend for many years has been toward full-range bass amplification systems. These are especially important not only for giving you a great sense of the fundamental, but also for the harmonics and attack that are so important for modern bass playing—especially with slap and pop playing techniques.

You essentially have two main miking options: on axis (Figure 6 on page 76) and off

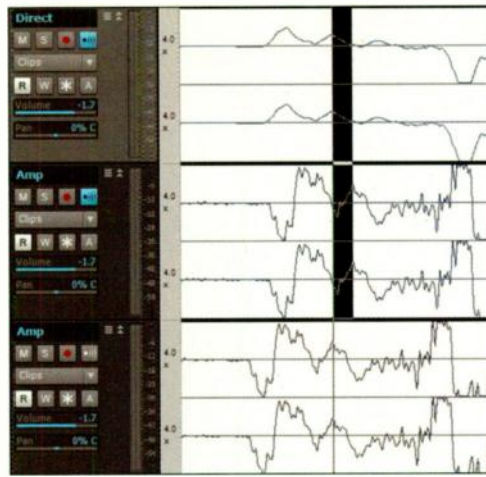


Fig. 8. The top track is the DI bass. The second track is the miked bass amp; the black band indicates the time difference between a peak in the top signal and the same peak in the signal below it. The lowest track shows the second track moved forward in time so that it lines up with the direct track.

axis (Figure 7 on page 76). On-axis positioning tends to accentuate the lower frequencies and catches the maximum amount of moving air, giving a round, full sound. Off-axis miking usually places the mic more toward the speaker’s edge, which produces a somewhat “tighter” sound. With some amps, this technique lets you set the mic to pick up a combination of the low-frequency driver and an additional horn or high-frequency driver.

Experiment with moving the mic back a bit further from the bass cabinet than you would with guitar. While near-contact distances from the grille can work just fine, bass wavelengths are considerably long (often measuring many feet), and getting the mic back a bit to where the waveform has “developed” more can sometimes result in a better sound.

Microphones that work well on bass cabinets tend to have good low-frequency response, along with enough mids and highs to provide a balanced sound. Some common “big studio” choices include the Neumann U47 FET condenser, and for dynamics, the Electro-Voice RE20 and Sennheiser MD421. Other condensers that have worked well for me include the Neumann TLM102 and Rode NTK. Dynamic microphones such as the Heil PR40, AKG D112, Audio-Technica ATM250, and Electro-Voice RE320 are also excellent choices on bass cabinets. You can certainly experiment with ribbon microphones on bass, but watch the proximity effect! Ribbons—and mics with figure-8 polar patterns in general—tend to have abundant bass boost due to proximity effect; if placed too close to the speaker, a ribbon mic can sometimes be “too much.”

If the bass-amp rig is bi-amplified, with separate speaker enclosures for the lows and highs, consider using separate microphones for each of the cabinets. In this case, I’d recommend optimizing the microphone choices for each cabinet—e.g., using a dynamic mic such as the RE20 for the low frequency

cab, and maybe a condenser for the horn. Once again, by recording each mic to a separate track, you can retain control over their relative balance in the final mix.

Timing Issues When miking an amp and recording DI simultaneously, there will be a slight delay between tracks that depends on how far the mic is from the speaker (Figure 8). As sound travels at a approximately 1 foot per millisecond, if the mic is six inches away from the grille, the delay will be about half a millisecond. Although this isn’t enough delay to create an effect like an audible slapback echo, it can cause comb filtering due to phase differences. The solution is to look at both waveforms, and move the miked sound forward somewhat so its peaks and dips match those of the DI sound.

SYNTH BASS

Although the usual procedure is to record synth bass direct into the board or an audio interface’s instrument or line input, splitting the signal to the board for the “DI” sound and through an amp to give some growl and character is often a better choice. As with bass, you’ll need to “nudge” the miked sound a bit earlier during mixdown to avoid phase issues with the direct source, but the results can definitely be worth it. See you next month for Part 2: vocals and guitar. Stay tuned! ■

Phil O’Keefe is a multi-instrumentalist, recording engineer/producer and the Associate Editor of Harmony Central. He has engineered, produced and performed on countless recording sessions in a diverse range of styles, with artists such as Alien Ant Farm, Jules Day, and Voodoo Glow Skulls. His articles and product reviews have also appeared in Keyboard and Guitar Player magazines.

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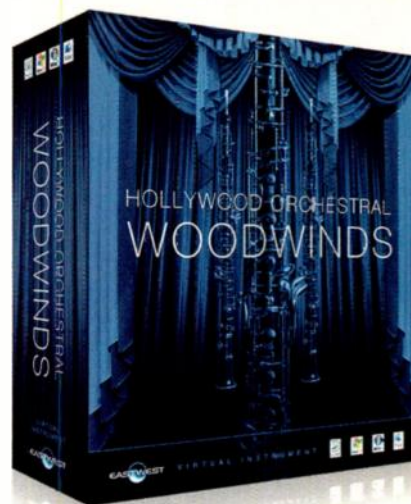


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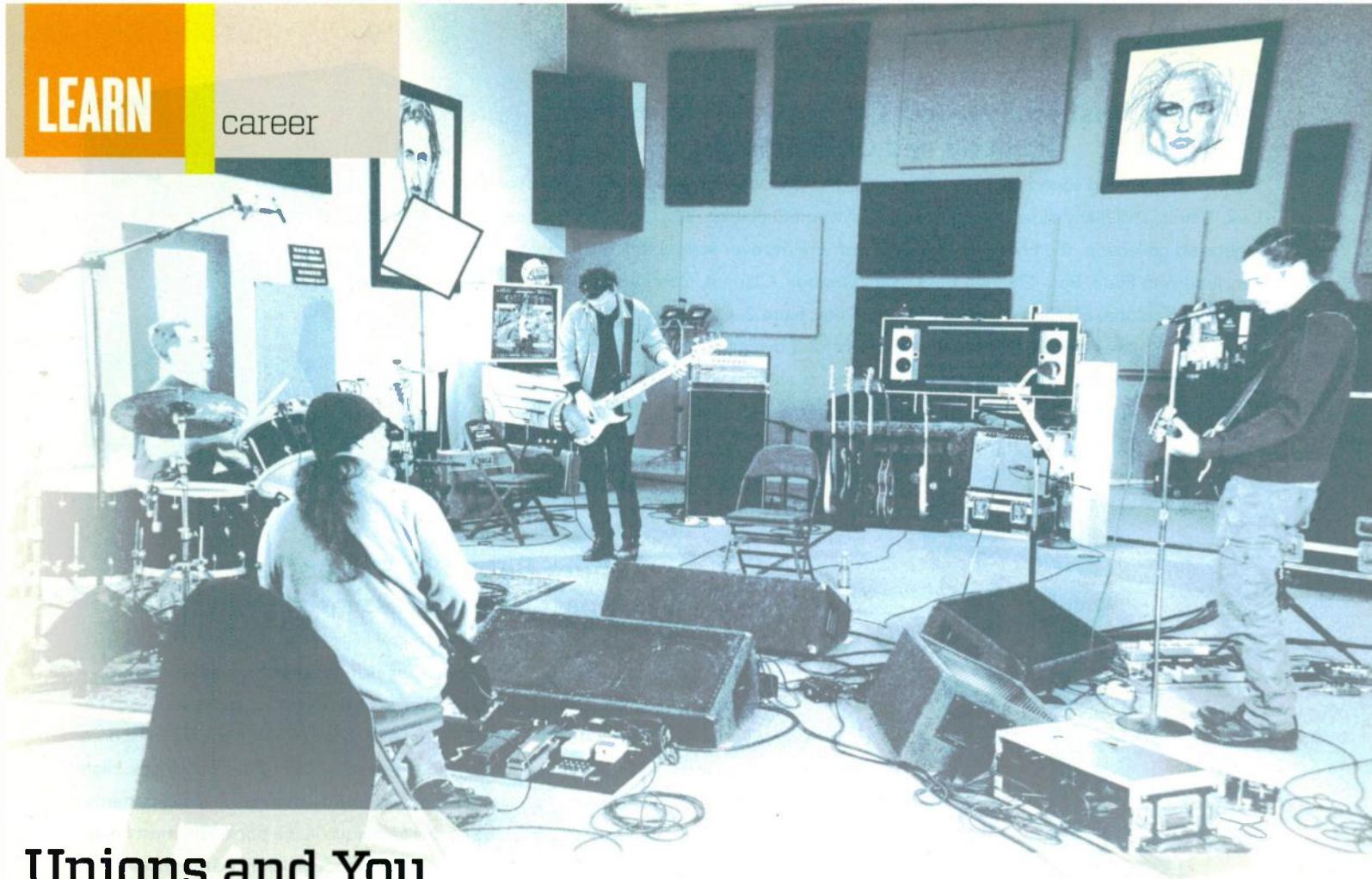


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Unions and You

An introduction to advocacy organizations for recording musicians

BY ZORO

The following excerpt is from The Big Gig: Big-Picture Thinking For Success, an insider's guide for independent musicians, by legendary session drummer Zoro. For more information, visit alfred.com/TheBigGig.

TWO PROFESSIONAL organizations advocate for musicians and vocalists to ensure fair compensation and appropriate working conditions. The American Federation of Television and Radio Artists (AFTRA; sagaftra.org) was founded in 1937. It is the union that represents singers, actors, announcers, and news broadcasters in sound recordings, radio, television programs, and commercials.

For more than 100 years, the American Federation of Musicians, better known as the AFM (afm.org), has represented musicians in the recording industry and is dedicated to raising industry standards for musicians. The sole purpose of these unions is to advocate better work situations for their members by using collective bargaining power. It

serves a number of functions that benefit the independent musician, such as negotiating contracts, securing health care and pension benefits, as well as lobbying legislatures for laws that protect the interests of independent musicians.

The AFM is made up of more than 250 branch offices (called "locals") in various cities throughout the United States and Canada. It is the largest and oldest entertainment labor organization in the world representing the interests of professional musicians. The AFM governs basic wages and pay scales for all professional recording work.

Besides helping to make sure musicians get paid for their work, the AFM offers access to licensed signatory booking agents and discounted legal advice. The union's legal department is there to help you recover unpaid fees from those who have tried to stiff you. It also offers a variety of insurance coverage, including medical, life, disability, accident, and even equipment insurance in

the event that your equipment is damaged or stolen. Its newly developed GoPro program offers everything from buying and selling instruments and listing your band on the AFM live music referral site, to music lessons and even website hosting.

The three biggest locals are the Professional Musicians Union Local 47 of Los Angeles, the Associated Musicians Local 802 of Greater New York City, and the Nashville Musicians Association Local 257 in Nashville. The lion's share of major-label recording sessions that are commercially released are filed by these locals.

Each local AFM is run autonomously, so fringe benefits will vary to some degree. Your eligibility for these benefits depends on many qualifying factors, particularly how much recording work you are doing. Check with your local union to see what its stipulations are. Being an active member in your local union is a great way to network and meet more experienced musicians in the business. ■



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~ Pro Audio Review



"The Workhorse makes a terrific host for modules - solidly built with useful routing features and extensive connectivity."
~ Resolution



"No other manufacturer currently offers anything like this level of functionality in a 500 series rack."
~ Audio Media



"The Workhorse is one of the most versatile and well equipped racks I've ever tried, and exudes the typical Radial Engineering detail and thoughtfulness..."
~ Sound-on-Sound



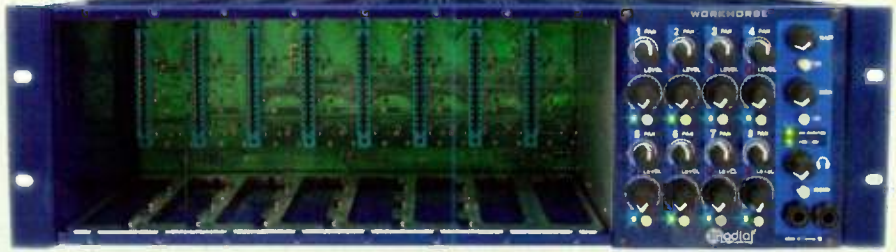
"The Workhorse is the perfect choice for bringing analogue processing to a DAW-based studio."
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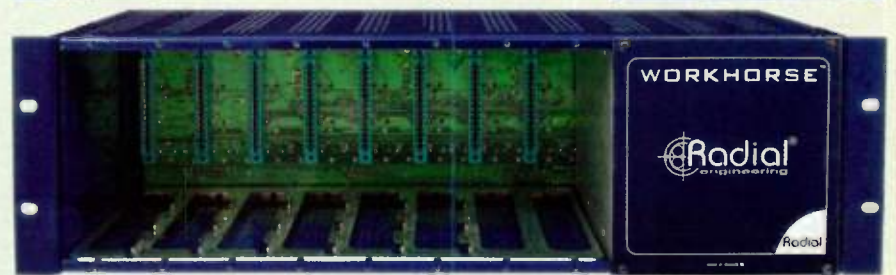
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MVE	REC	MON	INPUT	CH	LEVEL	PLAY	SMP	OUTPUT	TAKE	ENA	COL	TRACK NAME	ATO	COMMENTS
									1			Conductor		
												drums		
												~ kik-sub		comp tracks are keepers for all tracks
												~ kick		
												~ snr		Enable automation (lowers range of TransX during verse 1 sidestick)
												~ hat		
												~ tm1 rack		
												~ tm2 floor		
												~ OH L/R		
												~ Room L/R		
												↓ Aux-IR1		
												MC acgtr		recorded dry
												~ fiddle		
												~ Bass		Enable automation (changes L1 threshold during verse 1)
												~ piano L/R		
												~ Eg2 57		SMS7
												~ eg2rib		Royer R121
												~ sti		
												~ sti last note		
												~ MC egr L		
												~ MC egr R		
												↓ Aether		
												egtr3 57		Enable automation (enables TransX on verse 2)
												egtr3 rib		
												↓ BV doubler		
												~ synth verses		UVI> Synth Anthology>Classic Analog>Curtis Ambience
												~ tuned voc vers		tuned with AutoTune
												~ tuned voc bridg,chorus		tuned with AutoTune. Enable automation (toggles SPL Free Ranger EQ on/off)
												~ vox double		Enable automation (mutes and unmutes track)
												~ ME BV		Melodyne editor BV
												~ mix		mix4 only had a plusive removed on the word "recall" (subchorus2) on ld vocal. Otherwise identical to mix3.
												~ mix		
												~ O2R data		
												~ click		
												~ vox verse		Source for "tuned voc vers," takes 3-12 are almost whispered on verses; don't use anywhere in song.
												~ vox bridge,chorus		Source for "tuned voc bridg,chorus," takes 3-12 are almost whispered on verses; don't use anywhere in song
												~ ME BV source		tuned voc bridg&chorus copy; source trk for Melodyne editor BVs
												~ synth verse 1		use UVI> Synth Anthology>Classic Analog>Curtis Ambience
												~ bridge strings		Cellos on last 2 bars of bridge (EWQLSO playing custom Multi "BTR fast violins")
												~ svoc		scratch voc; dnu

Fig. 1. A screenshot of your DAW's track list serves as an archival log of your project's I/O routing. Entries in the comments field help speed a future remix.

Future-proof Your Mix

Be prepared to execute full recall when opportunity knocks

BY MICHAEL COOPER

IMAGINE THE following scenario: A music supervisor calls you out of the blue to request a new mix of a song you wrapped years ago, for use in a TV series airing the next day. She wants a couple changes made to your original mix but everything else kept exactly the same. If you can't deliver the goods by mid-afternoon, the deal will be retracted.

You locate the project's folder on an archival hard drive, but there are five different file versions containing mixes. Which one was for the final mix? You take a guess and open the file. Your new I/O boxes, DAW upgrade, and system reconfiguration arbitrarily reroute the outputs for each track. You see automation enabled for several tracks, but you can't immediately tell which parameters were automated or if the dynamic changes are appropriate for the requested revision. Some of those same tracks are muted; are

they outtakes? One of the five guitar tracks was bounced while rendering an effect that's no longer desirable; which track was the dry source (so you can use it instead)? Several inserted legacy plug-ins are incompatible with your current operating system and won't load. Glancing nervously at your watch as you fumble about, you see golden opportunity slipping through your fader-fidgeting fingers like water through a sieve.

It doesn't have to be that way. By using several common-sense strategies ahead of time, you'll be able to precisely resurrect your old mix in a heartbeat later, when you're under the gun. Use the following tips to future-proof your mix.

Give Each Track a Distinct Name

Name your tracks according to their source ("lead guitar," "bass," "low BV," and so on) *before* you record them. Default names

like "Audio-1" will only spawn a *Memento* moment when searching for specific tracks or regions years later. Likewise, tracks you'll bounce to render plug-ins should be named (for example, "tuned vocal") before you bounce.

Color Your World Mac users can apply color labels to their DAW project files using the File menu in the Finder. The files—both audio and DAW documents—comprising the final mix should be labeled gold, for "golden." If I master my final mix, I save the mastered version as a separate file and label it gold, too. Name each respective file with the title of the song followed by "final mix" or "master" for instant and positive identification at a later date.

Make Notes Use your DAW's comments field (typically located in the tracks list) to

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note anything important that you might later forget. For example, if a lead vocal has been bounced with AutoTune rendered, type “tuned with AutoTune” in the comments field for the bounced track and “source for tuned lead vocal” for the untuned track’s comments. Save the plug-in’s settings you used as a custom preset with the song and track’s names in its title.

Tracks containing multiple takes should have their keeper takes designated as such. Any track that’s an outtake should have “do not use” (or “dnu”) noted in its comments field and should be moved to the bottom of the tracks list (assuming you want to keep it). I place the click track below the last keeper track in the list and all other unused tracks below that; the click track becomes my marker that tells me at a glance that all tracks listed below it are garbage or sources for bounced tracks that took their place in the mix.

In the comments field, note any synth patches or multisamples used on rendered tracks for virtual instruments and on the associated

MIDI source tracks. And if automation is used on a track, note the purpose (for example, “to ride fader”). Such a reminder will save you invaluable time when remixing at a later date.

Make a printed template for all your outboard gear. After each mix, document the knob settings and patchbay routings for each piece of hardware you used. If you use an external mixer, save the scribble strip for each mix. If no strip is provided, you can tape some adding-machine paper to the mixer’s armrest and use it to write down which track was routed to each channel. Write the song’s title, artist’s name, and date of the mix on the strip, and save it. Take a screenshot of your DAW’s track list that shows the I/O routing for each track, label the image file gold, and save it in your project folder (see Figure 1 on page 84).

Print Everything Every plug-in is at risk for becoming obsolete at some point. Be sure to render its effect by bouncing to a new track, so you can get that sound back when you remix

later. Save this rendered version of your project as “(song title) final mix FX print” and label it gold. Because the baked-in sounds will restrict your future options, you’ll only want to use this version if some of your plug-ins won’t load.

If you used an external digital mixer for your final mix, make sure you record SysEx data for all mixer scenes, dynamic automation and other automation assets to a new MIDI track for your project. Save and name that file version “[song title—mixer model] automation” and label it gold.

All project data should be backed up to two other places, including an external hard drive or disc stored off your premises, if possible. If you do everything I’ve detailed in this article, you won’t even break a sweat when someone asks you to recall a mix made several years ago. ■

Michael Cooper is the owner of Michael Cooper Recording in Sisters, Oregon (myspace.com/michaelcooperrecording), and a contributing editor for Mix magazine.

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In the Loop

Tips and tricks for building realistic drum parts with audio or MIDI loops

BY MIKE LEVINE

PUTTING TOGETHER drum tracks that sound like a real drummer played them can be challenging. Naturally, the best option is to have a real drummer play on your song, but if that's not possible, parts based on loops—audio or MIDI—can be effective when skillfully assembled and edited. I'm less enthusiastic about programming MIDI drum parts by tapping them in with your fingers on a keyboard or pad controller. In my experience, that's a very tough way to get a realistic-sounding, live-drummer feel, except on the simplest of parts.

Electronic styles, in which programmed, quantized drums are the mainstay of the sound, are a different story. I'm focusing here on drum parts for styles like rock, country, and blues, where you want the music to sound as if you had a drummer in the studio.

Decisions, Decisions Choosing between audio and MIDI depends on a lot of factors, but it's safe to say that audio loops offer more instant gratification, assuming you have the right ones on hand. Audio loops are typically recordings of real drummers, tracked in good studios, so they give you both high-quality sound and natural feel components that you need.

MIDI loops are usually recorded by drummers on electronic kits, so they feel

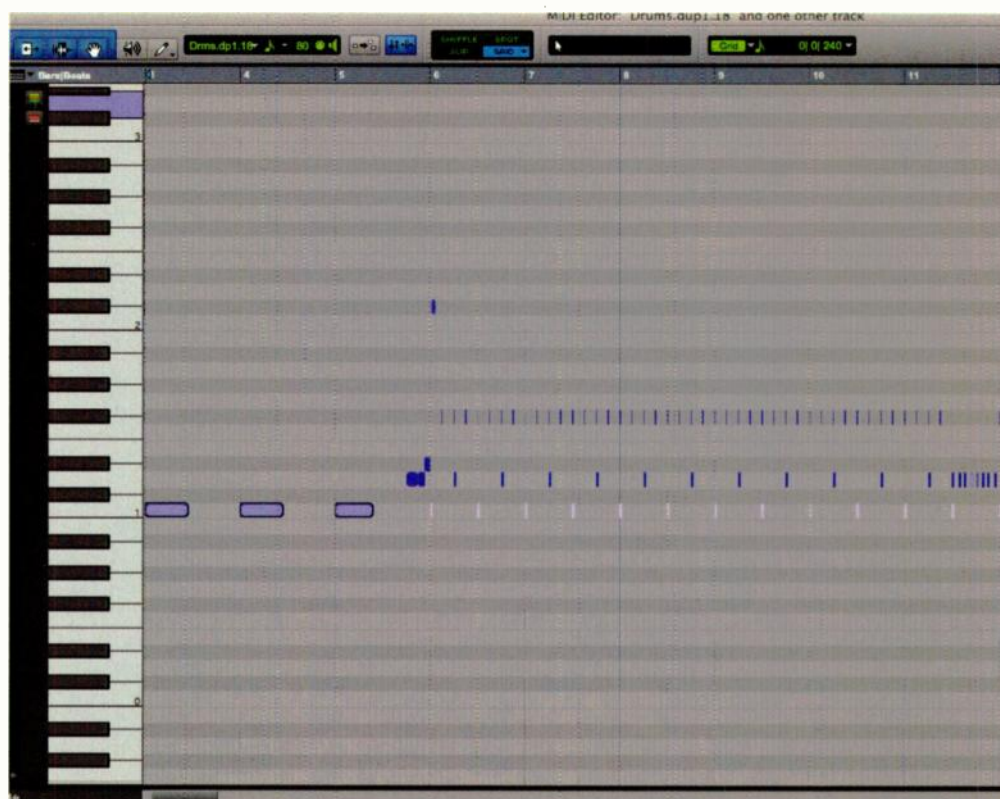


Fig. 1. It's easy to select and split out an individual drum from a MIDI drum track, so you can process and mix it separately on another track.

pretty realistic, too, but you need to pair them with good-quality drum samples in order for them to sound authentic. In addition to being sold separately, you can find MIDI drum loop collections in drum instruments like FXpansion BFD-2, Native Instruments Studio Drummer, Sonoma WireWorks KitCore, Toontrack EZ Drummer, and others.

There are a number of limitations with audio loops: First, you have to fit them to your song. Second, you don't have the same editing ability that you do with a MIDI part, although DAWs like Pro Tools, Digital Performer, and others offer audio-quantizing features that allow you to make some pretty significant feel modifications.

Another way to change an audio loop is by moving individual drum hits around via editing—for instance, moving a kick back by an eighth-note or sixteenth-note to match an anticipation. As long as the drum you're editing isn't overlapping with the sound of another drum, it will likely sound okay to move it. Sometimes it works better to move it to a separate track, with identical processing, to avoid cutting off another sound in the loop.

It's a good practice to introduce loops (whether audio or MIDI) as early in the project as possible, preferably during the writing process. That way, the groove of that

loop is a big part of the vibe of the recording. If you wait until later, you'll have to shoehorn the loops into your recorded tracks, and the drum part may not match the rest of the song that well, feel-wise.

Wishing for More With both audio or MIDI loops, you're limited to the choices in your collection. When constructing a song-length part, it's easy to run out of variations, particularly for fills. Most commercial loop song sets give you a number of variations and fills per song, but, especially with fills, it's often not enough material to use on a full-length track without some repetition. What's more, not every fill in a set is going to work in your song. I've found that the fills in loop sets tend to be weighted towards the flashy, high-energy side. This may help sell loops, but isn't always musically appropriate.

With audio loops, you can add more fills by editing existing ones to create variations, and even construct fills from single hits (typically, audio loop sets offer you files of individual hits on the various drums and cymbals), but it's not always easy to make this technique sound realistic. A trick I've discovered for making new fills both from audio and MIDI loops is to take a two-beat fill and only use half of it. Depending on the fill, this technique can work nicely.

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A big advantage to MIDI loops is that you can use fills from other MIDI loop sets, as long as they're stylistically correct for your song. Usually if you just use the "fill part" of the loop—typically occurring in the last beat or two of a measure—it will be easier to match it with the rest of your track.

Unlike with audio loops, you don't have to worry about a sonic mismatch, because with MIDI, your own drum instruments are providing the sounds. You might have to remap some of the drums, but otherwise, you should be able to borrow fills from other

Commercial audio loops are generally mixed very well, but there are going to be times when the mix isn't right for your song.

songs in the same collection, or even from other loop collections.

Commercial audio loops are generally mixed very well, but the engineers who mix them have no way of knowing what the contents of your future track will be, so there are going to be times when the mix isn't right for your song. I've found this to be especially true in terms of the level of the kick drum. You can use EQ on a stereo loop track and attempt to change level of a particular drum by boosting or cutting in its frequency range, but it's tricky not to mess up the balance of the other drums, or the overall sound of the loop in the process.

In this respect, MIDI parts are way more flexible. You can adjust levels of individual drum parts in a MIDI kit, many drum instruments allow you to process individual drums, and you can easily split out the different drums to different tracks and process them separately (see Figure 1 on page 88), just like you would with a multitrack drum recording.



Fig. 2. Volume automation is used here to draw in a subtle rise in volume on the drum track during the solo section, to add to the dynamic interest.

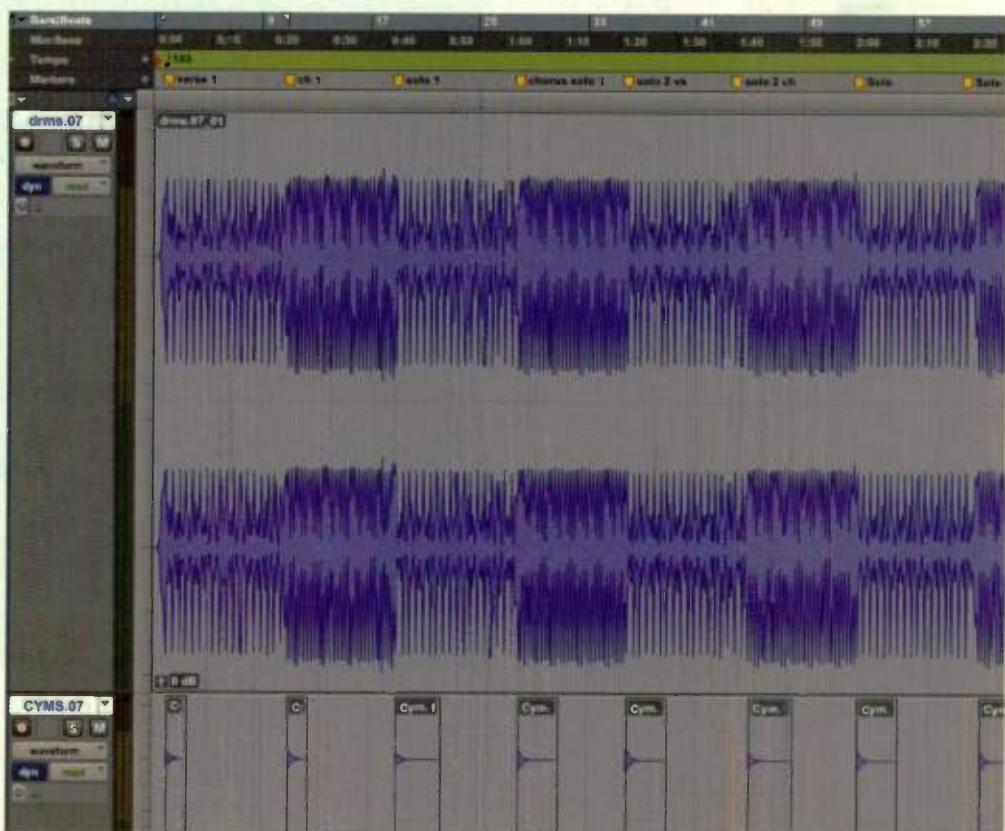
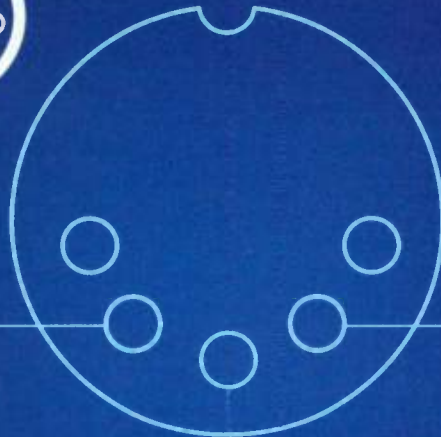


Fig. 3. Putting the drums and crash cymbals on separate tracks gives you more control of volume and allows for more processing flexibility.

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Mixing it Up If you analyze a live-drum part, you'll notice that there are lots of variations, both in the content of the part and the dynamics—some subtle, some not so subtle—both inside a particular song section, and between one section and another. You can simulate the part variations by occasionally using slightly different loops from within the set, rather than repeating the same one for the whole section—you usually get some alternates of the same section part in a loop set.

With MIDI loops, you can add variation pretty easily by editing—for instance, substituting a ride for a hi-hat in a particular song section. Remember too, that a real drummer brings in a lot of variation based on the way he or she hits the drum or cymbal, where on the drum or cymbal the hit occurs, and if the hit is accomplished strictly with the tip of the stick, or if the shaft of the stick makes contact as well. Good MIDI drum instruments have multiple velocity layers that change the sound subtly depending on the velocity level

of the hit, but it's also helpful to have some alternate samples that you can salt into the part here and there to change it up.

As for dynamics, most commercial loop sets are going to give you natural dynamic variations between song sections (typically, choruses are louder than verses), but you can use your DAWs automation to put in some additional variations. For instance, come up 1 or 2 dB on the last verse and chorus. You could even draw in a very subtle volume build, perhaps leading into the song's climactic moment (see Figure 2 on page 90).

Crashing it Down I recommend creating a separate track for crashes, and avoiding audio loops with crashes in them when possible. You can use the individual crashes that come with the loop set, or some good-sounding crash samples from some other source, and just place them in another track (see Figure 3 on page 90). It's easy to mix crashes too loud, so it's great to have the extra control over their

volume that you get by separating them from the loop track.

As mentioned, you can't go crazy processing audio loops, because you're affecting the entire kit. (That's another reason not to use the loops with the crashes in them.) Crash cymbals sound really whooshy and unnatural when heavily compressed. By keeping them separate, you'll be able to compress the main part of the loop, often giving the part some extra mojo, without causing sonic weirdness. You can also use a tiny bit of reverb on an audio drum loop, if you feel like it's sounding too dry, but be subtle. The kick drum will often sound strange with a lot of reverb on it.

So when you need a drum track to sound like it was played live, audio and MIDI loops are viable options. When you're putting the tracks together, try to think like a drummer, and you'll be a lot more successful. ■

Mike Levine is a writer, producer, and musician in the New York City area.



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Construct tempo-synced
effects for guitar

BY CRAIG ANDERTON

OBJECTIVE

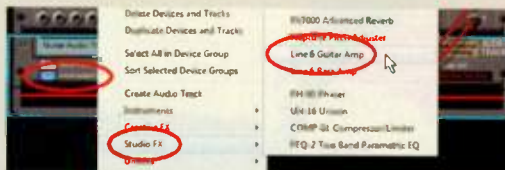
Create rhythmically intense processing for guitar (and other instruments)

BACKGROUND

Roger Linn's AdrenaLinn is one of the coolest hardware guitar effects ever; it's also available as a VST/AU/RTAS plug-in, but not a Reason Rack Extension. However, you can fashion AdrenaLinn-type effects with Reason's Line 6 Guitar Amp and Alligator processors.

TIPS

- Step 3: Remove any existing patch cords to the Alligator before performing patching.
- Step 4: Try different Alligator presets, tweak the knobs, and have a blast!



Step 1 With an audio track inserted, hit Tab to flip the rack to the rear panel. Click on the track's Show Insert FX button, right-click within the insert FX space, and select *Studio Effects > Line 6 Guitar Amp*.



Step 2 Go to *Create > Utilities > Spider Audio Splitter and Merger*, then while holding down the Shift key, go to *Create > Utilities > Line Mixer 6:2*; then go to *Create > Creative Effects > Alligator Filter Gate*. (All modules are shown folded to save space.)



Step 3 Patch the Audio Track Insert FX To Device to the Guitar Amp inputs, the Guitar Amp outputs to the Spider Audio Splitter in, one Splitter stereo out to Line Mixer 6:2 audio input 1, another stereo Splitter out to the Alligator input, the Alligator Main Output to Line Mixer 6:2 channel 2, and the Line Mixer 6:2 Master Out to the audio track's Insert FX From Device.



Step 4 Hit the Tab key to flip the rack to the front. Line Mixer 6:2 channel 1 provides the unprocessed amp-sim sound, while Line Mixer 6:2 channel 2 adds the tempo-synced effect sound in parallel.



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Five Totally Delusional Reasons for Switching DAWs

BY CRAIG ANDERTON

1

Only *your* DAW has bugs. All other DAWs have no bugs whatsoever; they're tested by a vast, highly skilled army of experienced users with access to every computer system ever marketed. What's more, unlike your DAW, none of those other programs are released until after *all* the bugs have been completely identified and removed.

2

The company making your DAW ridicules your forum comments behind your back. When any other DAW manufacturer sees a feature request mentioned in their forums, they *immediately* assign their A-team programmers to implement it. A week later, those changes have been made, QCed, and are ready to download. But the makers of *your* DAW read your comments, laugh, then print out your post and use it as toilet paper.

3

Your DAW is cynically designed solely to extract money from you. Sure, you got free updates from Version 4 to Version 4.1, and then 4.2. And admittedly, the free update to 4.5 was pretty darn cool. *So why didn't they put the features in Version 5 in there, too?* Clearly, they held back on those features for more than a year solely to make you fork over money for a paid update. Sucker!

4

The fabulous new feature in that other DAW will never, ever be in *your* DAW. It's a fact of life: If a DAW includes a great new feature, all of the other companies look at it and say "Damn, we wish we'd thought of that! But now that it's been done, there's absolutely no point in us adding something similar, if not virtually identical or maybe even better, in our next revision."

5

You've never created a hit song with your DAW. Sadly, your DAW is simply not up to the task of creating hit music. *Better switch to another DAW as soon as possible!* To add insult to injury, you just *know* every other DAW produces hit after hit for its users . . . even though they sometimes delude themselves into thinking they need to switch DAWs, too.



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