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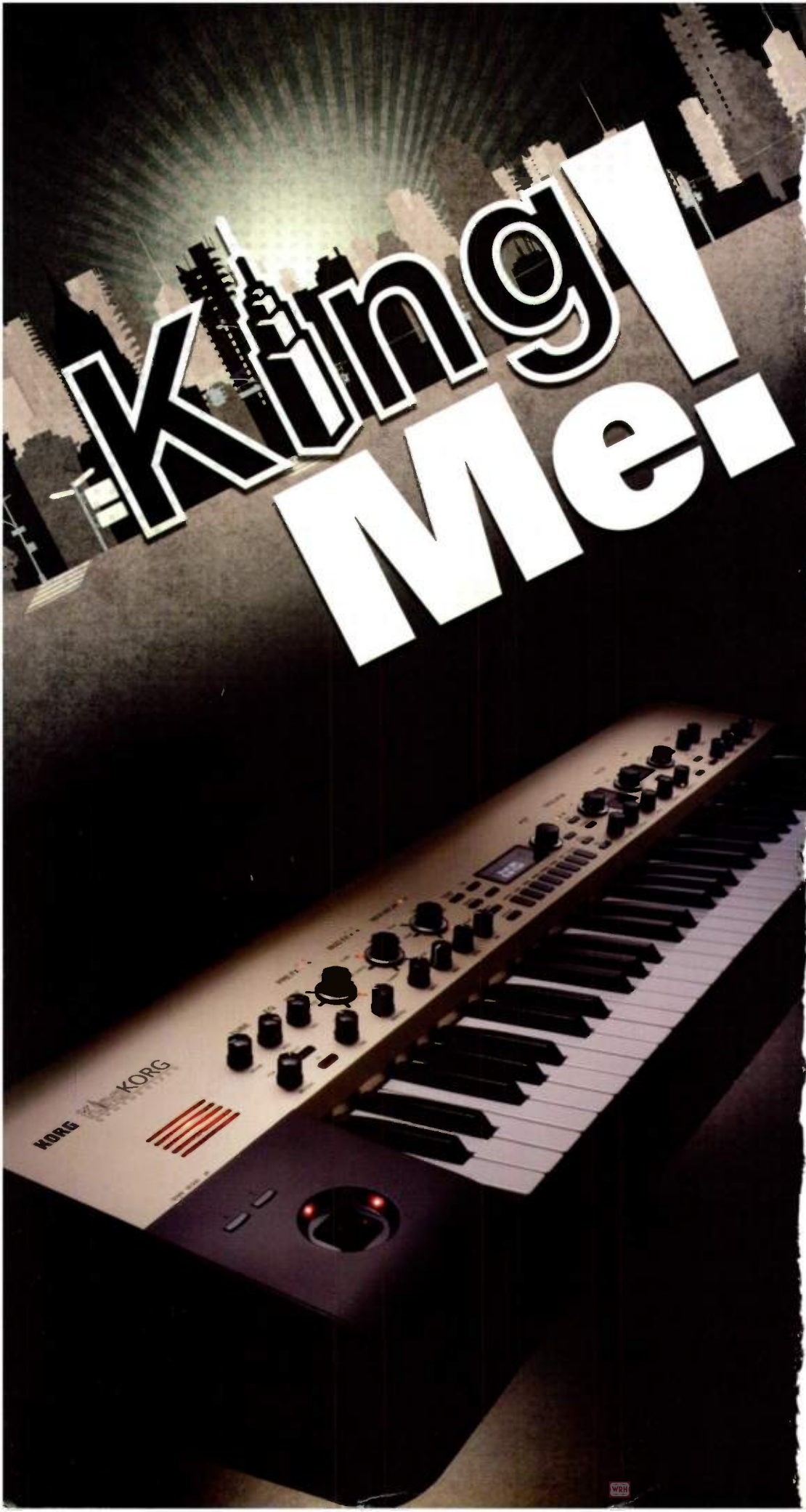


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COVER FEATURE

16 **Alice in Chains** For *The Devils Put Dinosaurs Here*, the follow-up to the band's 2009's smash comeback album *Black Gives Way to Blue*, they got together with superproducer Nick Raskulinecz and tapped into recording spaces ranging from Jerry Cantrell's bedroom studio to Henson Studios' room full of plate reverbs. We go behind the scenes to get the session stories.



16



24

PROFILES

- 24 **She & Him** Zoey Deschanel and M. Ward talk about ways their songwriting and recording processes have evolved on their third collection of original material, *Volume 3*.
- 30 **Iron and Wine** Sam Beam and producer Brian Deck experiment with live ensemble tracking and jazz flavors on the stylistically diverse *Ghost on Ghost*.

PLAYLIST

- 38 Music reviews from *Electronic Musician* contributors

ROUNDUP

- 40 **LUST**
Monitor Managers If you're constantly re-patching, switching among monitors and headphones, muting your DAW's output when the phone rings, can't figure out how to work talkback into your system, or just need to be able to adjust listening levels without changing levels in a software-based project, this guide is for you. Learn about tools that help your speakers be all they can be.

REVIEWS

- 50 **JDK Audio 8MX2** Eight-channel preamp/mixer
- 52 **Eventide H3000 Factory** Ultraharmonizer plug-in

NEW GEAR

- 56 Production tools to help you make better music

40



		LEARN
MASTER CLASS	58	Propellerhead Reason's CV Secrets Making connections among Reason modules using its "rear-panel" CV (control voltage) jacks is a great way to add color and excitement to your music. We show you how to patch your way to better tracks.
		TECHNIQUES
68	Drums	Craft explosive rhythm tracks with virtual kits.
72	Production	Change your room's acoustics—using plug-ins.
		POWER APP
76	Cakewalk Sonar X2	Simplify composite recording with Take Lanes and Isolate mode.
		DEPARTMENTS
10	Community	
		FIRST TAKE
14	Jane's Addiction	Up Close and Personal
		CRAIG'S LIST
82	Five	Things You Don't Want to Hear When You Get to the Gig



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regret it (and if you do, there's the **30 day money back guarantee**)." "I never thought I'd see the day this was possible." "I know it's been said before, but you guys are **incredible**." "This is **gonna set the world on fire!**" "I'm so stoked about how good everything sounds I can hardly stand it." "This is just killer." "Amazing, simply amazing." "[RealDrums] is really awesome sounding. Good work!" "Many kudos all around." "You never cease to **amaze** me. You got it." "**Wow and Double Wow.**" "The **RealTracks** and **RealDrums** sound awesome." "Long live PG Music!" "Mind bending." "I am frankly amazed at most of the styles." "I am absolutely **Kudos** to you and your team!" "First time I did a song with **Band-in-a-Box**, I couldn't believe it!" "I use it in the classroom and also in creating music in my studio. It is a fantastic piece of music software to own. I am greatly impressed." "I am very impressed with your fantastic **improvisational** program." "It's a great educational tool." "Awesome software at a fantastic price!"

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Artists and the Ask

IN AMANDA Palmer's gone-viral TED Talk, "The Art of the Ask," she explains how early in her career, as a street performer, she learned to understand the human connection with her audience; she goes on to use this relationship as an allegory for the music business. The heart of her talk: We are asking the wrong question when we ask how we *make* fans pay for music. We should be asking, how do we *ask* fans to support our art? The idea being, when you connect with people, people want to help you.

To make this work, you must work hard to engender loyalty among your fans and demonstrate why you're worthy of support. And perhaps define success in new terms. As Palmer notes, "Celebrity is about a lot of people loving you from a distance, but the internet is about a few people loving you up close." Does this make you a web version of a street

musician? Maybe. But why not make this concept work for you?

The most progressive artists are trusting fans to find value in their art and support them in ways that never existed before the internet removed traditional barriers between musicians and their audience. Artists like Palmer, Trent Reznor, and Radiohead have proven that this works on a large scale. How have you made this work for you? Let us know.



SARAH JONES
EDITOR
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COMMUNITY

**"THEY'RE GETTING A FREE RIDE ON
A CARNIVAL HORSE. BUT THEY'RE
STARVING THE CARNIVAL HORSE."**

The Dead Kennedys' East Bay Ray, referencing rogue websites offering free downloads of his band's tracks alongside corporate advertisements, at SF MusicTech, February 19, 2013

The Electronic Musician Poll

I GET INFORMATION ABOUT TRADE SHOWS FROM...



MANUFACTURER WEBSITES	6%
INDEPENDENT WEBSITES	27%
RETAILER WEBSITES	14%
TRADEHOW WEBSITES	6%
MAGAZINE SHOW REPORTS	30%
WEB FORUMS	17%

DIG MY RIG



I reside in Los Angeles, where I produce electronica and perform live. Here's my studio breakdown:

"Damage Control" starts with an Apple MacBook Pro i7 processor strapped with a dual hard-drive solid-state drive connected to an HP touchscreen 22" monitor. From there, the signal gets processed through a Native Instruments Komplete 6 interface, which has six inputs including two preamps. The audio then gets sent to a Presonus Monitor Station for control over multiple sets of monitors including KRK Rokit 8s, M-Audio BX5as, and a Polk Audio 10" low-frequency subwoofer. The Monitor Station is also used for talkback features and also has four headphone outs with individual volume control. As an input selection for multitrack recording, I

have a Presonus FireStudio Project with eight preamp inputs. This gets connected via 12-channel line snake, eight inputs, and four aux returns (headphones) for monitoring in a separate room. For MIDI instances, I use an E-mu X-Board 49 for main keyboard control and a Nano Key for sound searching and close-field navigation. The drum machine is a Native Instruments Maschine MK2 on a drum snare stand. There is also a Korg microKorg for extra sound synths. My live performance gear consists of two custom carbon fiber-wrapped Technics MK2 SL1200s and a Pioneer DJM-400 with Ortofon QBERT needles, all with custom LEDs.

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ask!

I SUBSCRIBE TO CRAIG ANDERTON'S TWITTER FEED, WHERE HE NAGS US EVERY MONTH TO BACK UP OUR DATA—AND I'M FINALLY GETTING SERIOUS ABOUT DOING IT. BUT WHAT'S BEST—HARD DRIVES? DVD-ROMS? SSDS? THE CLOUD?

MICHAEL HAMMOND JOHANNESBURG, SOUTH AFRICA VIA EMAIL

Anything is better than nothing, but consider cost and reliability. Hard drives cost about 10¢/GB, but need to be powered on periodically so the bearings don't seize up. Also, data isn't separate from the read/write mechanism so if it fails, you'll likely lose your data too (although recovery services may help).

SSDs currently cost about 80¢/GB. They

don't have moving parts, but according to a paper from Microsoft Research, "While flash density in terms of bits/mm and feature size scaling continues to increase rapidly, all other figures of merit for flash—performance, program/erase endurance, energy efficiency, and data retention time—decline steeply as density rises." Bottom

line: Go ahead and use an SSD drive in your laptop, but don't expect inexpensive, high-capacity SSD storage any time soon.

Blu-Ray is a fine archival medium. Cost is as low as 7¢/GB for 50GB discs, burners are about \$130 if you need one, a drive failure won't kill the data because they're separate, and accelerated life tests indicate a minimum

of 30 years once a recordable disc has been recorded. The downside is you need to store them properly—no temperature extremes, or high humidity.

As to the cloud,

remember that "digital data isn't real unless it exists in at least two places." Cloud storage is great for convenience, but physical archiving is prudent as well.

THE EDITORS



LG's BE14NU40 Blu-Ray burner has a USB 3.0 interface, writes at up to 14x real time, and supports disc capacities up to 128GB (although BDXL media is extremely expensive).



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

Red Bull Music Academy Takes Over NYC

Erykah Badu at a recent Red Bull Music Academy event.

The 15th edition of the Red Bull Music Academy will take place in New York City from April 28 to May 31, 2013, bringing together more than 230 artists, including luminaries such as Brian Eno, James Murphy, Erykah Badu, A-Trak, Kim

Gordon, and Four Tet, plus 62 carefully selected producers, vocalists, beat-makers, instrumentalists, and DJs from 35 countries. Events taking place in iconic venues around town include live concerts and curated club nights, as well as installations, film screenings, and public conversations with some of today's most inspiring music makers. Attendees will take part in intimate lecture sessions and collaborate on music in an expansive, custom-built creative studio space in Chelsea. Highlights include:

it. The exhibition will be accompanied by an "Illustrated Talk" by Eno on May 6.

- On May 25, DFA Records founder James Murphy will headline a nine-hour, multi-room show at the Grand Prospect Hall in Brooklyn, with more than 15 live acts and DJs spanning the entire history of DFA. The party will be accompanied by the documentary *12 Years of DFA: Too Old To Be New, Too New To Be Classic*.

For more information on the Red Bull Music Academy (including information on purchasing tickets and applying for next year's event) and to access thousands of lecture videos, mixes, and exclusive tracks, visit redbullmusicacademy.com or follow @rbma.



Red Bull Culture Clash

- During the month of May, Brian Eno brings his acclaimed audio-visual installation, *77 Million Paintings* to the former location of Café Rouge. *77 Million Paintings* is a generative work, making itself as you watch

Gadget Geek

Feeling DIY? The Bleep Electro Synth Kit includes everything you need to build your own synth, including a 556 Integrated Circuit, jumper wires, prototyping breadboard, and speaker. Once you finish assembling the kit (it should take about an hour), create square waves and use the two control potentiometers to alter the waves' frequency and width to make all sorts of fantastic noises. All of the parts come bundled in a tidy little bag; add a 9V battery and you're good to go. \$25 at bleep.com



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JANE'S ADDICTION UP CLOSE AND PERSONAL

MOUNTAIN VIEW, CA
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Last spring, Jane's Addiction's Theatre of the Escapists tour brought the band to small venues and classic theatres across North America, where they staged a series of intimate shows in support of their recent release, *The Great Escape Artist*. Yet even on large-scale summer shed gigs like this one, which took place just south of San Francisco at the Shoreline Amphitheatre in Silicon Valley, flamboyant frontman Perry Farrell still managed to give fans an immersive experience, drawing them into his musical web of sex, drama, and humor.

PHOTO BY STEVE JENNINGS





Alice in Chains (left to right)—
Sean Kinney, Mike Inez, Jerry
Cantrell, and William DuVall.

ALICE

DAVE MA



CHAINS

The Devils Put Dinosaurs Here
displays new lineup's power,
resiliency, and dark sense of humor

BY KEN MICALLEF

THERE'S AN enduring tale that goes something like this: Seattle-based grunge rockers Alice in Chains only truly existed when led by former vocalist and co-songwriter Layne Staley, who overdosed in 2002 at the age of 35. Staley's gifts as a singer and songwriter were so enormous, his talent so unique, that once he gave up the ghost, Alice in Chains had no choice but to follow. And for a couple years the remaining bandmembers did just that. After the fall of Alice in Chains, fellow founders Jerry Cantrell and

ALICE IN CHAINS

Sean Kinney dead-ended off the musical map, escaping into parts unknown to recover, lick their wounds, and heal. But Cantrell bristles at the notion that Alice in Chains is anything less than a living, breathing entity.

"It's always funny when I hear the odd comment," Cantrell says, "when someone says 'It's weird, man. They sound like Alice.' Well, we are Alice, dick. What are we supposed to sound like? Are we supposed to sound like Kansas? We were all necessary to the [band] and nobody knows more of what we went through and what we lost. But we didn't lose sight of what we are. And we aren't any different. We carry all those experiences: the bad, the good, and the style, with us, and into the future. That's how we've made the transition. It's something that we're very proud of because it was f**king difficult as hell to do. It was the hardest thing I've ever done in my life to decide to move forward and do that."

The overwhelming success of Alice in Chains' 2009 comeback, *Black Gives Way to Blue*, put the past to rest and opened the door to the future. Joined by vocalist William DuVall, Cantrell, Kinney, and bassist Mike Inez raised the Alice spirit for a new generation. And far from the gloomy, tortured souls their music might suggest, these guys are whip-ass hilarious as evidenced by the title of Alice in Chains' latest album, *The Devil Put Dinosaurs Here*.

"Sarcasm is a prized commodity in this band," Cantrell laughs. "There's no big message, but it always amazes me that we as a people don't grow with the knowledge we gain. 'The devil put dinosaurs here to fool ya!' It's just like someone saying 'Jesus don't like no queers!' If your belief system is teaching you to kill someone because they believe differently than you, if you discriminate on any level, from sexual preference to how someone gets their orgasm, then screw you! 'The Devil Put Dinosaurs Here' speaks to that kind of ignorance and hate and fear."

Produced by Nick Raskulinecz, and engineered by Paul Figueroa (both on return duty from *Black Gives Way to Blue*), AiC's latest opus was tracked at Henson Recording Studios' (formerly A&M) Studio D and benefited from the studio's extensive collection of plate reverbs, which are housed in a separate building and strategically isolated to cancel the noise pollution coming off nearby Hollywood Boulevard. Recording via Henson's SSL SL 4072G+ console and bouncing to a Studer A800 MKIII for tape

effects, Raskulinecz and Figueroa also brought their own outboard gear: Cantrell's monster guitar sound was created from a collection of seven amps and five cabinets for a total of 15 guitar tracks (five left, five center, five right) per song! Raskulinecz and Figueroa paid special attention to capturing Kinney's titanic thump and the Cantrell/DuVall harmonies, which eerily resemble and extend the classic AiC sound. The AiC vocal style is as much about Cantrell as it is about anyone else, living or dead.

"When Layne and I worked together vocally, we shared some influences but he had some that were unique to him," Cantrell says.



"As a kid I sang these brooding, Bartók pieces in school choir. It was creepy, and it stuck with me. When Layne and I got together, that kind of thing was there from him and me. That's what was great about it."

—JERRY CANTRELL



"As a kid I sang these brooding, Bartók pieces in school choir. It was creepy, and it stuck with me. When Layne and I got together, that kind of thing was there from him and me. That's what was great about it."

"I didn't have a lot of confidence as a singer then," Cantrell continues. "But Layne pushed me to sing my own sh*t. I was unsure, especially standing next to a guy like Layne, who had an amazing voice, was super talented and so quick. He was a natural. I'm not. But with Layne pushing me, my confidence grew. William is real challenging, too—a natural like Layne was. The way we work together is very similar. The sound and style of the band is intact because of Sean, Mike, and myself, and what William brings to the band. That's how we are able to continue and be ourselves."

CHASING THE DEVIL DOWN

AiC began *The Devil Put Dinosaurs Here* sessions in July 2011 at Ocean Studios Burbank with three completed songs, looking for inspiration to strike.

"But it was too much pressure," Raskulinecz says. "So we pulled out, and built a home studio for Jerry in his bedroom. We had to get him back to basics. He'd get up in the morning and have his cereal and write songs. Sean came over and played drums, and we set up FXpansion BFD to program drums. We gave Jerry all the tools he needed. It was very productive. Then we moved to Dave's Room in North Hollywood to flesh out and refine songs with the band before going into Henson. We finished in September."

Though AiC used the SSL at Henson, Raskulinecz and Figueroa added outboard gear including Neve, API, and Shadow Hills Industries Quad Gamma mic pre's (guitars and vocals), a Hairball Audio 1176 Rev A Compressor (mono room mic for drums), and Raskulinecz's secret weapon, a Martech MSS-10 mic preamp.

"I've used the Martech on every lead vocal on every record I've ever done," Raskulinecz says. "And a [Telefunken ELAM] 251. The Martech is fast and punchy and clear, and it's got a ton of headroom. You can have a singer as loud and heavy as Corey Taylor or someone as soft and delicate as Geddy Lee, and it handles both extremes and everything in the middle brilliantly. The tube mic in conjunction with a solid-state pre like the Martech is totally badass. It's the deciding factor in my vocal chain, followed with a dbx 160XT: a crusty old compressor."

The Devil Put Dinosaurs Here is a reverb lover's dream. Every song rocks, sways and convulses in grand AiC style, but with gossamer reverb trails that intensify the sense of darkness and otherworldliness. Mixer Randy Staub (Metallica, Bon Jovi, Bryan Adams, U2) performed his special magic after final tracking; Raskulinecz used SoundToys to create effects while recording.

"The SoundToys and Eventide plug-ins are my favorites," Raskulinecz says. "After we'd sing the chorus and double harmonies, I would create vocal delays and reverbs, and try out all kinds of stuff to create space and ambience and make it sound cool. On the title track, for instance, check out the first verse—the reverb on the voice and filtered vocals that are panned and phased—it's really stony!"

Raskulinecz, Figueroa, and AiC also exploited Henson's collection of classic plate reverbs for guitars, vocals, and drums.

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ALICE CHAINS

“Henson’s plate room is isolated from the studio on its own concrete foundation,” Raskulinecz reports. “It’s a bunch of little chambers and different-sized little rooms with rounded corners and different angles and depths, with a speaker on one end and a mic on the other. The building is on rubber or springs so it doesn’t pick up the traffic rumble. It’s three stories of plates, four per floor—Western, EMT. Some of the plates are regular old, self-contained EMT 140s, but they all sounded good.”

“We had the EMT 140 plate and the EMT 250 running while tracking everything,” Figueroa recalls. “Nick and the band love something big, lush, epic, and moody. Nick also used the Fractal Audio Systems Axe-FX for reverb.”

“And we used a lot of tape on this record,” Raskulinecz continues. “Every instrument was hit with tape at one point. We’d record drums in Pro Tools then bounce them to tape, then Varisped them down, then back to Pro Tools. These days I use tape as an effect, not the main medium. We striped five reels with timecode and had it ready to go. We do it all while the band is there. If the tape machine works and it’s synced, I use it all the time.”

Cantrell modestly describes his vocal and guitar style as “meat and potatoes”; AiC’s recording method is fairly basic as well. After a scratch track was established, Kinney laid down drum parts, followed by Cantrell’s guitar stacks, Inez’s bass, and finally, Cantrell and DuVall’s vocals.

DRUMS OF DOOM

With his large frame and what Figueroa calls a desire to “kill his snare and knock the cymbals off the stands” Kinney produces a massive drum sound. On these tracks, he was also aided by an odd collection of ancient hieroglyphs carved in the ceiling of Studio D’s live room.

“At the top of the ceiling is a four-foot band of concrete,” Figueroa says. “It has these grooves all the way round the top like someone wiped their fingers through the concrete. When we put the room mics up and Sean started playing, that room became so massive sounding—a really ambient room. The grooves in the concrete diffused the overall sound.”

Figueroa used Sennheiser MD421IIs on the toms, “so we didn’t pick up so much cymbals; Sean has big cymbals.” A Sennheiser e602 miked the inner bass drum, with a Neumann U47 FET on the outside, and a Yamaha NS10

for sub-bass farther out front, with a blanket over it. A Shure SM57 handled snare top, with a Sennheiser MD441 catching the strainer.

Telefunken ELAM 251s worked as overheads, placed six feet above Kinney’s head, in a “V” shape. “He’s a big guy, so when he swings his arms we don’t want him hitting \$60,000 worth of mics!” Figueroa says. “Then we’d spot-mike each cymbal with an AKG 451 with a 10dB pad, aiming the mic between the bell and the outer cymbal edge about a foot up;

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“After we’d sing the chorus and double harmonies, I would create vocal delays and reverbs, and try out all kinds of stuff to create space and ambience and make it sound cool. On the title track, for instance, check out the first verse—the reverb on the voice and filtered vocals that are panned and phased—it’s really stony!”

—NICK RASKULINECZ

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that way, we had control over the cymbals. The 451 has a rich sound and it helps the snare.”

Room mics included a pair of RCA 44s: one in front of the drums, one behind. “The rear one was amazing on the snare, placed three feet behind Sean,” Figueroa says. “It added pop to the entire kit. The one out front was aimed diagonally across but pointed at the kick drum and low, at head height. Then [we had] a pair of Coles 4038s in the middle of the room, and a pair of Neumann U87s up high at the rear of the room. Those are all pretty much my go-

to mics for those positions. Nick and I came up at Sound City, and these are the things we learned from being in that drum room.”

A MULTILAYERED MONSTER

Cantrell’s epic guitar crunch was mainly produced by his two favorite models, a G&L Rampage and various Gibson Les Pauls, including one that’s covered in cigarette burns. His guitar arsenal on *The Devil Put Dinosaurs Here* was augmented with a Gibson SG, Raskulinecz’s Flying V, a Rickenbacker, Fender, and various acoustics.

Amps and cabinet combinations were equally diverse, comprising Cantrell’s long-suffering Bogner Fish, Dave Friedman Marsha, HiWatt, and a 1968 Laney Clip. Vintage Marshall, Bogner Uberschall, and EVH (Eddie Van Halen) cabinets projected Cantrell’s nasty notes. With his amps placed in Studio D’s two iso booths, Cantrell used the same four-amp/cab combo for left and right, with a different assortment for the center; guitars were used in different configurations for each track.

“It sounds like one big hand playing guitar through the whole album,” Figueroa laughs. “You’re hearing ten cabinets per track, at least. You make sure your phase is tight, then listen back and decide to maybe push that amp up to put more teeth on it, or clean it up and push it for more punch. The phase issue is huge. If that’s wrong, it will screw up everything. Which leads to the toughest thing about recording this record: staying on top of the guitar tuning. Say you have three guitar passes that are loud in the mix and we’re stacking more guitars on top of that. If you’re off just a little bit it creates a giant mess later. Some of Jerry’s guitars are vintage and the saddles don’t move, so tuning was the most challenging thing.

“After choosing an amp and cab combination, we’d pick certain mics for each one,” Figueroa continues. “Either a Neumann U47 FET, Shure SM7 or SM57, through Neve 1073s and 1081s. Then we’d blend it all on the return—one mic per cab, sometimes two, making sure the phase was tight. We’d flip the phase on one, then bring up the fader until the other one disappeared, then un-phase it and the guitar sound would be just massive. I’d have guitar tones up, then Nick and I might clean things up and roll off some low end, or gain up an amp more. And if the guys didn’t like something, they would tell us; they’re not shy.

DuVall and Cantrell both played guitar with the latter taking the lion’s share of the space or “laminates” on each track. “Stacks of



TRAVIS SHINN

guitar, that's me!" bellows Cantrell. "You have one chance to make it f**king legendary and larger than life, and stacking is what works for me. The trick is not doing it so much where the sound gets mushy. You have to be able to double yourself well. If you get too many tracks going you lose the edge. I think of it like tones, or like layering a wood laminate. You put down one layer of one kind of wood and another layer of a different kind of wood, put a few of them together and blend everything, and it makes it stronger than any one [layer] would be individually. It's something I've always done.

"And I don't always go for first takes," Cantrell adds. "What's important is knowing what makes the song work and what the song needs, and also what the song does *not* need. The simplest stuff is usually the best stuff. The song doesn't need an extra part, or 32-bar solos. You just have to listen to what the particular thing is you're doing."

Figuroa describes Inez's Warwick Moonbird as the band's secret weapon. "It's got this great low-end growl and note definition." The Warwick ran to a Little Labs PCP [Instrument Distribution Box], split off to a Martech/Jensen DI, into a SansAmp

through a Neve, into a '70s Ampeg SVT head to two SVT 8x10 cabs. Figuroa used either a Neumann U47 FET or an AKG D112 three inches from the cone and dead center. A Neve 2254 for compression, Teletronix LA2A, and dbx 160X completed Inez's signal chain.

HIGH-SPEED DRAGSTERS, CHEVY TRUCKS, AND LAYNE STALEY

The vocal sound that appears consistently on every Alice in Chains record is Cantrell—spooky, ghostly, and bizarre.

"Jerry sang on a ton of those old records, 'Rooster,' 'Down in A Hole,' 'Man in the Box,'" Raskulinecz says. "[On] all those hits, his voice is right there next to Layne's. And when Jerry and William sing now, it's reminiscent of Jerry and Layne. William is the polar opposite of Layne, his voice is bright and powerful, and he has such an amazing range. And the harmonies didn't die; it's still Jerry."

DuVall and Cantrell sang until Raskulinecz was happy, laying down "tons of vocal tracks," Cantrell says. "We even sang the same track multiple times to have a slight wash across the background, to get the performances tight to create a larger vocal. You'd think that would

remove the edge, but we did it so many times we were locked in. That gave us a unique vocal sound on the record.

"William is a high-speed dragster; he's nitro," Cantrell adds. "I'm more like a Chevy truck. I kind of just plod along. But my good old Chevy truck will last a long time. William gets up there, and gets gas behind it. I don't have that sort of range, I am a medium to low plodder. That's how we differ in styles. Layne and William are similar. Layne had gas and he could hit that nitro button and go to the next level with some teeth on it."

"With Jerry, he sings it until I tell him he's got it," Raskulinecz says. "Then we comp. I'm listening to his tone and pitch, how throaty it is, and the spit and the pronunciation. All these little things that comprise a great vocal take. He wants to hear a final comp; then he might change little things. He might re-sing something small as well. We want performance, not perfection. The more you do it, the more the chances of getting an amazing take. There's no tuning on this album, not a word."

Cantrell tracked vocals through a Soundelux 251 into the Martech, followed by dbx 160X compression. "With the 251, the Martech is really wide open and clean," Figuroa says. "The image in the speaker is

ALICE CHAINS



TRAVIS SHINN

right in your face. We're not using EQ when tracking, just mic, mic pre, and compressor. So it's wide open and as honest as it can be. William had a couple mics, between a Neumann U47 and a Shure SM7 through a 1081 or 1073 into a similar dbx 160X. Then I brought the Shadow Hills in. It's so silky—a great pre to have in the chain.”

BOY, YOU'RE GONNA CARRY THAT WEIGHT

Cantrell has a reputation. He's cagey, he's sensitive. Journalists who have misquoted him, or asked the wrong question with the wrong attitude, have been denied access forevermore. But consider Alice in Chains' history. "He not busy being born is busy dying," Dylan said, and that applies to anyone trying to move on from tragedy with some degree of grace and their mind/soul/body intact. Cantrell carries that weight, and after one listen to *The Devil Put Dinosaurs Here*, you would have to say he does it admirably.

"Jerry has tried to carry this thing on and

✦ ✦ ✦

“When we put the room mics up and Sean started playing, that room [at Henson] became so massive sounding—a really ambient room. The grooves in the concrete diffused the overall sound.”

—PAUL FIGUEROA

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move it forward, and he's put a lot of pressure on himself," Raskulinecz says. "Sean and Jerry both put pressure on themselves to make sure what they're doing is great and the right thing for Alice in Chains. Layne and Jerry were really tight. They were friends before they were even in a band together. It was a deep thing. They did it all together. And when Layne died, it broke Jerry's heart. Not many bands could recover from that. It's a big legacy to carry." ■

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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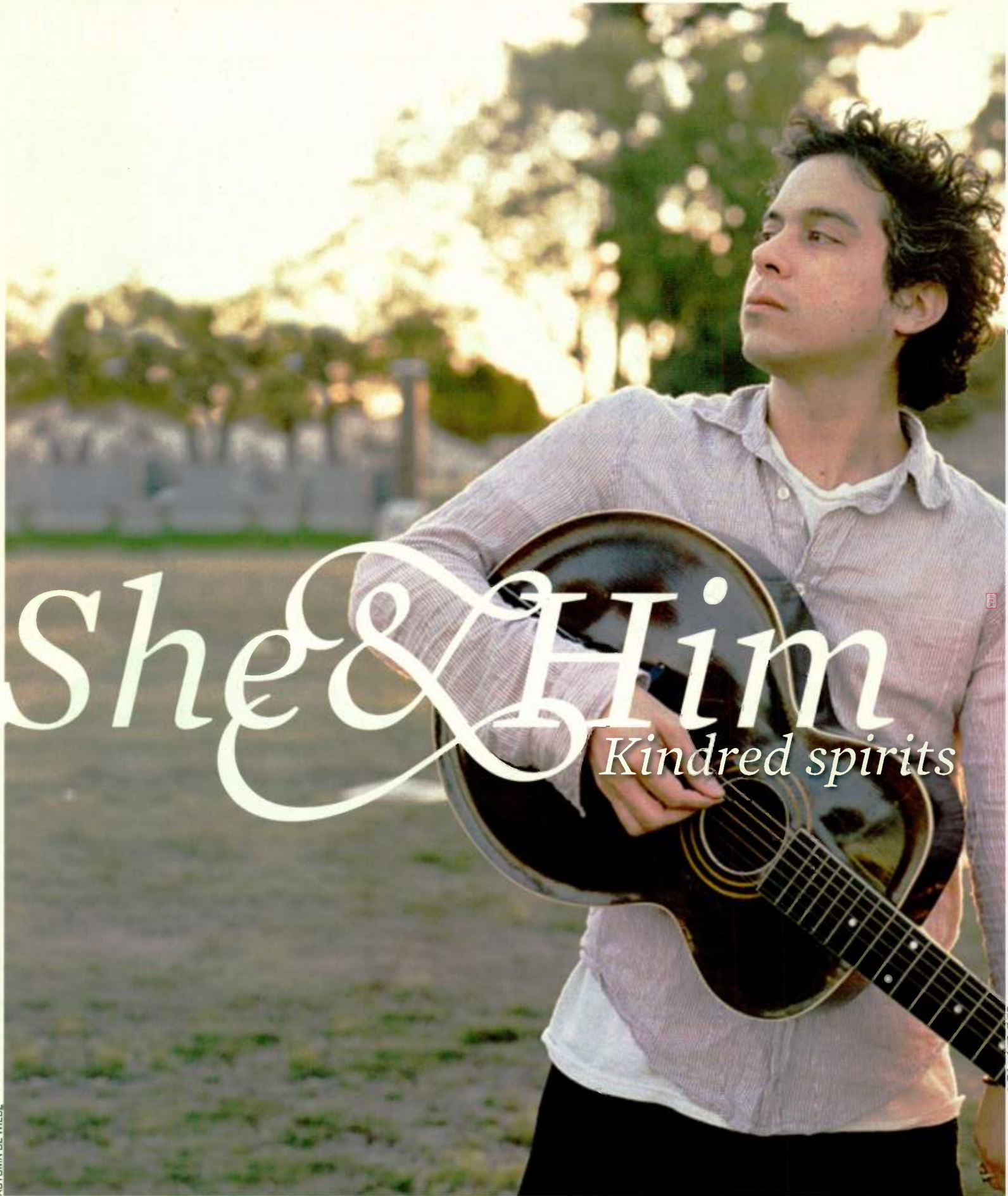
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She & Him

Kindred spirits

AUTUMN DE WILDE



LISTEN

Zoey Deschanel and M. Ward reinvent “old school” on Volume 3

BY BARBARA SCHULTZ

“IT’S NOT a specific kind of sound that we’re creating; it’s something I think we’re still in the process of inventing,” says Zoey Deschanel’s producer, collaborator, and friend M. [Matt] Ward about their musical project, She & Him. “But it’s definitely obvious to most listeners that Zoey and I listen to a lot of older records.”

M. Ward and Zoey Deschanel

A sincere, even sentimental, affinity for vintage music is certainly one of the places where Deschanel and Ward meet. But equally meaningful is that newly emerging quality that Ward refers to; their influences aren't taken straight, like "this song sounds like the Shangri-Las and this one is more Motown."

"I feel like crossing the guitar sound of Elmore James with a singer like Etta James is an interesting thing to shoot for in the studio," Ward says. "We always end up coming up with something different."

She & Him's latest creation, *Volume 3*, evokes '50s doo-wop and Phil Spector girl pop, old soul guitars and Bacharach-esque changes, plus lots of other ideas. A cover of Blondie's "Sunday Girl," for example, sounds like it has Buddy Holly's Crickets beating rhythm until the outro starts to sound a bit Johnny Marr. Old meets old; all is seamlessly and gently fused into something sweet and new.


Original She & Him songs start with Deschanel, the songwriter on this project. "I usually sit down at the piano, or sometimes guitar or ukulele, and play with chord progressions I like, then start humming melodies, then start fitting lyrics into the equation," she says of the way she begins to set down musical ideas. "A lot of times I will have lyric ideas jotted in notebooks, so I am ready when I start working out my melodies, but they are usually just basic ideas of things I like to write about or phrases I like. I can't really fully form lyrics until I have an idea of where I'm headed musically."

"Normally it's good to start asking myself questions about the song structure before I begin," Deschanel continues. "When do I want the hooks to begin? How do I want the sections to line up? On this record, a song like 'Snow Queen' has no repeating sections; it just goes A B C D E and then it ends, so there are no real choruses or verses since nothing repeats; it's like a song with five bridges."

Deschanel assembles her musical ideas in GarageBand and then sends them to Ward. "I normally spend quite a long time listening to the demos and trying to figure out where the song might want to go," he says. "When I get demos, it's always a process of transferring everything to guitar. That was my first instrument, and it's what I'm most comfortable operating with. So, I will arrange strings and other instruments just by using the guitar as a reference, figuring out harmonies and

different arrangements, either rhythmically or melodically. I'm using GarageBand at this stage, as well, reinterpreting the songs—sometimes with different rhythms, sometimes in a different key—but the heart of the song is her vocals and her song. I'm happy to be the one who puts the frame around it."

Armed with sketches and frames, She & Him laid down most of the tracks for *Volume 3* in Sound Factory's Studio A (sunsetsound.com) with engineer/musician Pierre de Reeder, a.k.a. the bass player from Rilo Kiley. "We toured together, probably 10 years ago, on a


"I usually sit down at
the piano, or sometimes
guitar or ukulele,
and play with chord
progressions I like, then
start humming melodies,
then start fitting lyrics
into the equation."

—ZOOEY DESCHANEL

tour where Rilo Kiley was on the bill and they played as my backing band, and I got to know Pierre," Ward recalls. "He's a great musician, a great friend, and a great engineer."

de Reeder, who also recorded She & Him's recent Christmas album, set up drummer Scott McPherson in the main tracking room, and Ward and Deschanel in a large booth with room for Deschanel's piano as well as vocal and guitar mics.

"It helps for Zooey and Matt to be next to each other and have that interaction during tracking," de Reeder says. "It gives everything more of a live feel than if everybody were separated. They could both see Scott, too."

This layout also allowed de Reeder to devote all that space in the 26 x 16-foot

tracking room (20-foot ceilings) to getting great drum sounds. "In my mind, and perhaps obviously, I always let the music dictate 'the sound' that's going to be recorded," de Reeder says. "And this album felt to me like a record from the '60s: something Connie Francis-ish, or like Patsy Cline or Peggy Lee. Not forcedly at all, but in a natural and honest way. So to capture that, for the drums, I would more often lean on the room mics. Though on some there would be more close mics blended in. All very song dependent, of course."

de Reeder put up Coles ribbons as overheads, and AKG 414 room mics, plus a single Neumann U47 in front of the kit to take in an overall sound. Close mics were pretty standard issue: Shure SM57s, Sennheiser MD421s. "But the main thing was, there's a lot coming in from the room and overheads," de Reeder says.

As much a part of the heartbeat of She & Him as the drums are Ward's guitars. "I'm happily sponsored by Gibson," says Ward, who mainly plays a Johnny A electric and a 1985-vintage J-45 acoustic.

"A lot of times, when we're tracking I'll play just the low notes, the bottom couple of strings of the guitar, to act like the bass guitar on a song like 'Turn to White.' The cover of 'Hold Me Kiss Me Thrill Me' starts off with just electric guitar and drums and vocals; I like to build from there, and bring in bass guitar later, because the Johnny A has a beautiful low tone that I'm looking for. I also use very thick strings. I'm not looking for an Eric Clapton sort of string shredding sound. I want the first position of the bottom few strings, especially when you're in Drop D, to sound pure and clean and low."

Ward's electric was double-amped through a Fender Deluxe and a Silvertone that De Reeder miked with SM57s, the idea being that the two amp sounds could be selected, blended or panned at will. Ward's acoustic went to a Neumann KM84.

Also cut during the basics: de Reeder came out from the behind the glass to play bass on a couple of songs; other bass parts were covered by Tyler Tornfelt, Mike Watt, or Joey Spampinato. And many of Deschanel and Ward's vocals were cut during band tracking as well.

"We both like to work quickly and capture, if not the first take, the feel of the first take, so you're not laboring over something," Ward

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says. “The vocal is the most important part of the song. You want the vocal to sound like the singer is discovering the song. Sometimes [first-take vocals] make the cut and sometimes they don’t, but I really believe in what kinds of ideas happen on the first couple takes, especially the first take.”

Deschanel usually sings into a Neumann U47. “I have done a number of mic shoot-outs to see what we liked best,” she says. “But we don’t always universally stick to [the U47]; I love an RCA 77, too.”

On this project, de Reeder placed U47s for Deschanel and Ward; both also went to Neve 1073 mic pre’s, and Deschanel’s vocal took a small amount of 1176 compression. “Nothing’s heavily compressed,” de Reeder points out. “It’s just barely rocking the needle and making sure everything’s in control.”

All of the other inputs went through preamps in Sound Factory’s custom API console, then straight to a Studer A827 24-track tape machine.

“I like to record to analog tape as much as possible, so every song I’ve ever produced begins on analog 2-inch tape,” Ward says. “After we have live drums with guitar and vocals, we’ll start to build from there.”

Embellishments include Deschanel’s lush vocal harmonies, which she develops to suit each track individually. “She comes in, more often than not, with her own idea for specific harmonies in mind, and depending on the complexity, we’ll either fill out the tracks on tape or, with some of the more complex ones with many parts—and it’s all her, those harmonies—we will create as many as 10 or 15 tracks in Pro Tools to make a big sound.

“There’s also a lot of plate reverb on the tracks,” de Reeder continues. “Sound Factory has three EMT 140s, and we used two, and analog delay, with just a touch of slap.”

Strings and keys were also overdubbed, including some of Deschanel’s piano work and some Moog parts. “We set up a bunch of keyboards from all different eras and said, ‘Let’s try this,’” says de Reeder. “It was pure experimentation, and it was fun to try different things.”

“We experimented more with the Moog more than we had before,” Ward says. “It became about adding flavor to the record, and adding more surprises.”

“Also, they had these original congas that were from when Sunset Sound, Sound



Pierre de Reeder

“It helps for Zoey and Matt to be next to each other and have that interaction during tracking. It gives everything more of a live feel than if everybody were separated.”

—PIERRE DE REEDER

Factory’s sister studio, was Disney’s studio; they are the congas that were used on *Jungle Book*,” de Reeder says. “The piano they have is the one Warren Zevon played on ‘Werewolves of London.’ I’m not sure if the congas made it onto the final mix, but we definitely played with those things.”

“We also tried triangle on this record, tympani, things like that,” Ward says. “Zoey and I cover a lot of the instruments ourselves, and that’s part of the fun.”

Ward recorded some additional pieces at Jackpot! studio in Portland, OR, and at Sonic Trout in Cape Cod, MA, before taking the tracks to mix with engineer Tom Schick at The Magic Shop in New York City (magicshopny.com). Additional overdubs were done in New York, too, including a horn section (Art Baron, trombone; C.J. Camerieri, trumpet; and Doug Wieselmann, saxophone).

“It was my first time arranging for horns,” Ward says. “It went great because we found great horn players. I think horn sections can be really annoying, at times, but if they’re subtle and not trying to take too much attention from the vocals, it can add a beautiful element, and so I love how it turned out.”

It takes a sensitive producer to use brass as a subtle element, but Ward definitely has the right touch.

“I love working with Matt,” Deschanel says. “He really recognizes when something is working, and if it’s not he knows how to fix it. If I send a demo to Matt and he thinks the basic arrangement is working, we will stick pretty close to my demo and make a more polished version. But if something doesn’t quite gel but he likes the song, he comes up with ways to bring the song out in production.

“A good example of this is ‘Never Wanted Your Love,’” he explains. “I wrote that song before our first record as a very slow piano ballad. We actually recorded it for *Volume One*, but it wasn’t working, so we didn’t put it on the record. The first day of recording *Volume 3*, we revisited the song, and Matt played me his idea, changing the main instrument from piano to guitar and taking the tempo from ballad to a mid-tempo swing time. It made the song come alive in a way I never pictured when I wrote it. That’s a great producer—someone who changes what needs to be changed but doesn’t gild the lily.” ■

Barbara Schultz is a contributing editor at *Electronic Musician*.



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IRON and WINE

SAM BEAM AND PRODUCER BRIAN DECK EXPERIMENT WITH LIVE ENSEMBLE TRACKING AND JAZZ FLAVORS ON ***GHOST ON GHOST***



Sam Beam, a.k.a. Iron and Wine.

BY BLAIR JACKSON

THERE MAY be a few Iron and Wine/Sam Beam fans out there who cling to the notion that the talented and visionary singer-songwriter is still a pastoral folkie at heart—the gentle acoustic guitar-picking soul that put out the stunning solo album *The Creek Drank the Cradle*, recorded in his modest home studio a decade ago. But with each subsequent Iron & Wine album, Beam's music and arrangements have become more complex and stylistically diverse.

So fans who have stuck with him and seen him grow will not be too surprised to learn that on his latest album, *Ghost on Ghost* (on Nonesuch), we are treated to lush arrangements featuring strings, female backup singers, and a horn section that occasionally ventures into jazz. There are flashes of '70s soul, some clearly Beach Boys- and Beatles-inspired moments, a dash of New Orleans here, gospel there, and more piano than guitar this time around. There are plenty of unusual sonic touches and interesting combinations of instruments, yet through it all, Beam's strong, distinctive vocals and his evocative and often elliptical lyrics shine through.

There were a couple of songs on 2011's brilliant *Kiss Each Other Clean* that hinted at this direction (Beam actually employed horns back on his 2005 collaboration with Calexico, *In the Reins*), and the tour following that album featured a large band that included a reeds player, but *Ghost on Ghost* still represents quite a musical departure.

"Sam's wanted to reach for larger instrumentation for a while, and I think he felt the songs he was writing would fit that kind of instrumentation," comments producer Brian Deck, who has been Beam's primary recording ally since 2004's *Our Endless Numbered Days*. "Because of the way his albums have built, from bedroom 4-track recordings to larger productions every single time, people think that mirrors his musical vision and his ambitions. But the fact is, when I first met him, before the *Creek Drank the Cradle* came out, he was opening for Ugly Casanova [Isaac Brock's solo project including Deck] when we were on tour, and he had a really big band at that time—it was a seven-piece—and he'd *always* had these sorts of ambitions for what he wanted to do with his music."

Beam says the experience of working with horns

on the previous album and tour “didn’t really affect the writing of the songs [on *Ghost on Ghost*]—the core of the songs—which is always me fooling around with the guitar or piano. But as far as the approach for recording the tunes, it definitely did. As an artist, you’re always reaching out for something else, so it was fun to get into these other textures, and also to free the melodies from the guitar and write more on the piano. I’m not that good a piano player,” he laughs, “so it’s a different sort of writing experience for me. I basically hum a melody and then try to find it with my fingers.”

Beam’s home demos incorporated some string pads and horn samples, “though they didn’t have the complexity and elegance of what we eventually arrived at,” he says. “The basic parts were there and you could get the feel of what I was getting at, but there was certainly plenty of room for the musicians to develop ideas and parts, which was really important on this album.”

He called on keyboardist Rob Burger, who has played on the past three Iron and Wine albums (and is perhaps best known for his work with Tin Hat Trio and John Zorn) to work up string and horn arrangements. “In my composing studio, I employed Vienna Instruments and L.A. Scoring Strings for Kontakt to mock up my arrangements,”

Burger says. He also contributed dynamic and sometimes subtle textures on a multitude of instruments: “Keyboards I played were acoustic, electric, and prepared pianos; various Hammond, Yamaha, and Farfisa organs; Clavinet, celesta, Orchestrion, and Arp synths. Non-keys I played were tubular bells, jew’s harp, and hammered dulcimer.”

Another departure on the new album is that it was recorded in New York, at Brooklyn Recording and Mission Sound (also in Brooklyn), using top local musicians brought in by NYC resident Burger. “The last few records all took a long time to make,” Beam says. “There was a lot of going to Chicago [where Deck has his studio] and then bringing it back here [to Austin, where Beam lives] and

fooling around with it, and then going back and forth. I don’t think I could’ve made the records I did if I *hadn’t* approached it that way, because a lot of it was using the studio as an instrument and making discoveries along the way. It was a good process, but I definitely wanted to do something different and shake it up. So we went Brooklyn, because that’s where Rob was.”

The core group for the sessions at Brooklyn Recording included Burger, the extraordinary drummer Brian Blade (Dylan, Daniel Lanois,



CRAIG KIEF

“[On the home demos] there was certainly plenty of room for the musicians to develop ideas and parts, which was really important on this album.”

—SAM BEAM

Wayne Shorter), bassist Tony Garnier (Dylan, Loudon Wainwright III), and Beam on vocals (and occasionally guitar). On a few tracks, Tony Scherr took over on the upright bass and Kenny Wollesen played drums; both are members of the NY jazz group Sex Mob.

“The basic tracks for every song was piano, bass, drums, and lead vocal,” Deck says. “Sam did the lead vocal live with the take, and when we finished the take, the vocals were finished. We recorded to Pro Tools, but there is *zero* editing on this record.” Engineering in the Brooklyn’s main room, which boasts a customized Neve 8068, was Neil Strauch, who has worked with Deck the past eight years at Engine Studios in Chicago, and helped on a few Iron and Wine projects.

Deck says, “Brooklyn Recording was a great place to work. The guy who owns the place, Andy [Taub], is a serious collector. He’s got a stereo pair of anything you’d ever want to use, and tons of keyboards, guitar amps; everything.

“There were two spaces in Brooklyn Recording we used for drums. One was the main room, a little off in the corner, because we had live piano in the same room with the drums and we had to get some amount of separation. That large room probably has a reverb time of less than a half-second; it’s

very tight and not terribly bright. Then there’s a large booth where most of the time Sam was set up singing, but for a few songs we put the drums in there, and that was brighter because there’s a big glass door.

We did not do a lot of tight miking on this album.”

The approach to capturing Blades’ drums was relatively straightforward—an AKG D12 on the kick, a Neumann KM86 on the bottom of the snare, Neumann U67s as overheads, and an RCA 77 ribbon as a mono kit mic about five feet away and two feet off the ground.

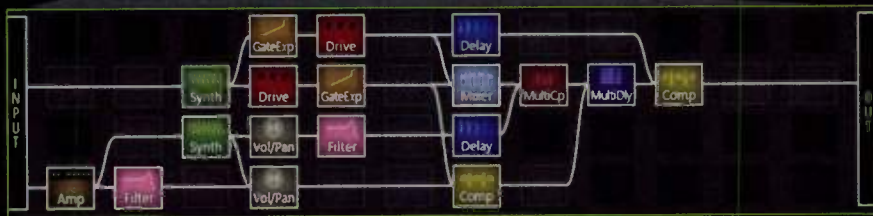
Beam’s vocal mic was an obscure vintage tube model made by Klangfilm, which Deck describes as “a company in postwar Germany that specialized in making motion

picture equipment, and they contracted the making of this microphone from Neumann. It had an M7 capsule and it sounded incredible. The rest of his vocal chain was an old RCA tube mic preamp, and for compressors, an LA3A into an LA2A.” Though Beam’s vocals were recorded dry, Deck notes, “We had an EMT plate [reverb] on an aux send for him, and probably a little slap-back, and he was listening to whatever amount of reverb he was enjoying on a song-by-song basis.”

For the most part, the string and horn parts and the backing vocals were added in separate sessions later at Mission Sound, another Neve room (theirs is a 8026 with 1073 preamps), but there was one notable exception: For the song “Lover’s Revolution,” which the *L.A. Times*

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perfectly described as a “post-beatnik coffee-shop-jazz experiment,” the horn players were brought into Brooklyn Recording, Scherr handled the upright bass, “and that song was completely live except for the background vocals and the tambourine,” Deck says, “and Brian Blade overdubbed the bebop tambourine immediately after we nailed the take.

“In the development of that song, Sam had a baritone sax idea on his demo and the song went from slow to fast to chaotic, and then slowed down again [as does the finished version]. But in terms of the development of the horn figures, and here’s where the musicians are going to go ape-shit, we didn’t know what that was going to be—it just sort of developed over the course of the day, running down the chart and rehearsing, discussing the arrangement.”

“That was take four,” Beam adds. “That was a magical day. You hear stories about how

records used to be made with everyone playing at once, but it’s really uncommon these days. It was fun to go in and feel like at the end of the day you’d made a whole thing.”

“Sam did the lead vocal live with the take, and when we finished the take, the vocals were finished. We recorded to Pro Tools, but there is zero editing on this record.”

—BRIAN DECK

Beam says that Charles Mingus’ “angry, revolutionary” music provided some of the inspiration for the jazzy approach to that track, but also notes, “That song had been demoed in lots of different ways. It was more R&B and sort of an inner city blues at one point, but then I thought this approach brought out a lot more.”

The horn players who worked on the album

included Doug Wieselmann on saxes, clarinet, and bass clarinet; Sex Mob’s Steve Bernstein on trumpet, cornet, and alto horn; his Sex Mob band mate Briggan Krauss on saxes; and Curtis Fowlkes (Lounge Lizards, Jazz Passengers) on trombone.

The string players were Maxim Moston (violin), Marika Hughes and Anja Wood (cello), and Hirokmo Taguchi and Entcho Todorov (violin, viola)—all respected players around town. “Each day we were working with three pieces—violin, viola, and cello,” Deck says, “and then we would triple it, quadruple it, quintuple it; whatever we thought a song needed. On ‘Baby Center Stage’ we really stacked it up a lot; on some of the others we tried it pretty pared down.”

Beam readily acknowledges the influence of the string sound common on so many early ’70s soul/R&B records, from Motown to Philly: “It’s so sophisticated and complex, but at the

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Mikael Jorgensen of Wilco live using the Virus TI

Photo: Zoran G. G.

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same time it comes across as so effortless and beautiful." He also mentions a couple of perhaps unexpected inspirations—Harry Nilsson, whose songs often featured dramatic string arrangements and reverb-drenched vocals, and the mellow late-'60s pop act Seals & Crofts, best-known for "Summer Breeze."

"People don't really do that sound anymore, and there are a lot of people who would argue there's a reason for that," Beam laughs. "But I love that music, so we mixed up that sort of feeling with some other things. There's a fine line between being delicate and beautiful and overplayed and schmaltzy."

Calexico steel guitarist Paul Niehaus added wonderful flavoring to four songs, often as a sweet counterpoint to string lines. The backup singers, who are quite prominent on several tunes, were Josette Newsome and Carla Cook.

Deck mixed the album in Pro Tools in his home studio "with 16 outputs going into a Dangerous 2-Bus—which is clean and reliable, with height, depth, and width—and then several

Cello Studios chambers—so I start reaching into the post sounds settings: I use a lot of forests, just trying to do something different; parking lots, industrial parks, things like that."

"I love working with Brian," Beam says. "When we first started working together, there was a lot of him teaching me how a studio works, and a lot of me teaching him what I wanted to do and what I didn't want to do. Now it's really searching together, exploring different sounds." ■

"You hear stories about how records used to be made with everyone playing at once, but it's really uncommon these days. It was fun to go in and feel like at the end of the day you'd made a whole thing."

—SAM BEAM

channels of a couple of different analog flavors to give it a little more smear and *schmutz*. I used some old Scully 280B tape electronics, and I've also got some of my stuff going through an Electrodyne 8-channel rack mixer that has program EQ." He favors Altiverb reverb plugins, but notes "I get tired of going to the same old [plug-ins]—the Wendy Carlos 140 and the

Blair Jackson is a regular contributor to Electronic Musician.



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This 12-song set from four reunited British synth-pop pioneers picks up where 1984 left off, carried on a dynamic chorale of rounded bass oscillation, monosynth-thickened drum textures, and sparkling chords with undeniable nods to golden-era OMD's own *Architecture & Morality* and *Dazzle Ships*, as well as Kraftwerk, Depeche Mode, and other archetypes. Sequencing may now be in soft synths or the Roland Fantom-X8 workstation, but tonality maintains the lush melodicism historically filtered from legendary Korg M500 Micro-Preset and MS-20, Roland SH-2 and SH-09, Sequential Circuits Prophet-5, E-mu Emulator, and Fairlight CMI components.

TONY WARE



Luke Winslow-King

The Coming Tide

BLOODSHOT

It's not just the New Orleans jazz style that gives the first track on this album from King and collaborator Esther Rose a Crescent City sound. It's also the way clever mic placement and mixing give the impression there's a parade passing by, with singers in front, and strings, horns, and then drums falling in line behind. Other tracks sound more conventionally like a band in the studio, but all are equally soulful, with sweet male/female harmonies and expert, authentic musicianship.

BARBARA SCHULTZ



Bonobo

The North Borders

NINJATUNE

Bonobo, a.k.a. Simon Green, struck paydirt with 2010's *Black Sands*, elevating his soul/electronic craftsmanship to the stratosphere in both popular consumption and in the insular world of DJs, stylish print media and vinyl. With success comes influence, which is repaid on *The North Borders* with guest vocals from Erykah Badu on "Heaven for the Sinner" and sweet newcomer Szjerdene on "Towers." But it's ultimately Bonobo's dark night of the soul, a whirring late-night groove that never ends.

KEN MICALLEF



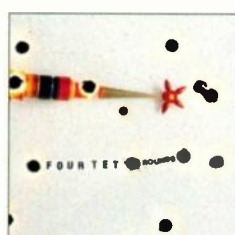
Dirtyphonics

Irreverence

DIM MAK

Dirtyphonics does not believe in limitations. The French electronic dance foursome plunders from all genres on its debut album. Tethering itself to a bass base, Dirtyphonics freely experiments with classic orchestration ("Prelude (White)," "Prelude (Black)"), twerpy Euro-rave rhythms ("Stage Divers"), and even crunching Metallica-like grinds ("Walk In The Fire"). With a cross-section of collaborators from the Duke Spirit's Liela Moss, Steve Aoki, Modestep, and Foreign Beggars, *Irreverence* maintains a relentless level of irrepressible futuristic drum 'n' bass.

LILY MOAYERI



Four Tet

Rounds

DOMINO

Unquestionably indebted to the racking-focus cut-n-paste of DJ Shadow's *Endtroducing*, this third full-length by Kieran Hebden is an even more subversive take on the sampledelic aesthetic. *Rounds* reverberates like London 2003: a city of rhythms changing every few metres and measures. Reissued in a 10th anniversary edition, the still-vital electroacoustic recordings are accompanied by a vintage live set showcasing how Hebden's wozy resonances and vitreous melodies flip effortlessly from micro-edited helixes to discombobulating yet still funky cosmic groove.

TONY WARE



Hey Marseilles

Lines We Trace

ONTO/THIRTY TIGERS

Central to this Seattle-based sextet's wondrous orchestral/pop sound are strong songs and gorgeous string parts arranged by cellist/producer/engineer Sam Anderson. Piano, horns, guitars, and electronic instruments create richness and complexity in this music, which is somehow earthy and ethereal at once. The young players, who recorded *Lines* mostly in Anderson's home studio (though one inspired string part was captured in a tunnel in Golden Gardens Park), have created something new and beautiful that should inspire other DIYers.

BARBARA SCHULTZ



Highasakite

In and Out of Weeks

PROPELLER RECORDINGS

Vocalist Ingrid Havik's deadpan cadences and Gothic lyrics form the hypnotic tissue within this endearing Norwegian quintet, their punchy power pop fortified by tumbling rhythms, playful synths, and inspired songwriting. "Son of A Bitch" is Highasakite's perfect template, Havik chanting spells ("Hold my hair while I vomit," she pleads), drummer Trond Bersu thumping beats like the perfect Ed Blackwell/Mick Fleetwood BFD program, guitarist Kristoffer Lo spiraling riffs like devilish cherubim. Absolute head tripping, sky spinning, brain-out-of-body magnificence.

KEN MICALLEF

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BY CRAIG ANDERTON

WHEN THE recording world made the transition from tape machines to computers, we gained a lot of flexibility—but we lost the physical routing and monitoring controls that connected tape machines and mixers to the outside world. Not for long, though: Several manufacturers have provided the missing hardware links for the soft studio, bringing hands-on functionality back into the land of ones and zeroes.

This benefits more than just workflow; external analog level controls offer another not-so-obvious advantage. Reducing the level in a DAW before the final D/A conversion sacrifices resolution, but with external control you can optimize levels in your DAW yet still have total control over the final output level. And an advantage of a single master level control is that, if you're using speakers with individual volume controls, once you have them matched you don't have to touch those controls again; you can do all your level-setting from the monitor controller.

If you're constantly re-patching, trying to switch among different monitors and/or headphones, need to mute or dim a DAW's output when the phone rings, can't figure out how to work talkback into your system, or just need to be able to adjust listening levels without changing levels in a software-based project—read on.

Note: All prices are given as MSRP, followed by the "street" price.



Mackie's Big Knob set the stage for similar monitor/switching management products.

Mackie Big Knob

\$389.99/\$299.99

mackie.com

This tabletop unit started the trend toward hardware supplements for your DAW. The rear panel pretty much tells the story: Outputs include three monitor outs (with individual level controls); 2-Track A and 2-Track B stereo outs, each with level-selection switches; stereo output to feed your DAW; and studio output with level control. Inputs include 2-Track A and 2-Track B stereo source inputs with level controls, headphone mix input with level controls, DAW mix input with level control, and RCA phono input (with grounding post) for a turntable—remember those?

The front panel not only provides input and monitor selection, but also offers two headphone outs and talkback controls. Other conveniences are a sum-to-mono button for checking mono compatibility, and mute and dim switches, which provide instant level adjustments.

Mackie definitely got it right, because almost a decade after it was introduced, Big Knob is still in the product line—and that Big Knob inspired a lot of other manufacturers.



Dangerous Music's D-Box emphasizes a mastering-quality signal path.

Dangerous Music D-Box

\$1,679/\$1,399

dangerousmusic.com

Although Dangerous established its reputation with analog summing, monitor management is also a big part of the story. With the company motto being, "You can't mix what you can't hear," the D-Box emphasizes a mastering-level audio path with a fixed-gain analog summing bus that accepts signals from eight channels. For those who prefer to feed in digital signals, two digital inputs (AES or S/PDIF) handle sample rates from 32 to 100kHz. Furthermore, the two independent headphone amps are certainly not underpowered; they're 20W each, which doesn't mean you want to blast your ears out, but that's there's plenty of reserve power for transients.

You can choose between two monitor outs, and there are plenty of useful touches: pan controls for inputs 7 and 8, signal-present indicators for all channels, the ability to switch between inputs or sum them, an auxiliary stereo analog input, mono switch, and built-in talkback mic.



The Central Station Plus from PreSonus builds on the success of their lower-cost Monitor Station.

PreSonus Central Station Plus

\$699.95/\$599.95

presonus.com

PreSonus is one of those rare companies that underpromises and overdelivers.

I've been using their Monitor Station (\$369.95/\$299.95) to choose among speakers and headphones for years, but the 1U rackspace Central Station Plus takes the concept up a notch. It offers stereo digital ins (TOSLINK or co-ax S/PDIF up to 192kHz), along with three stereo analog ins (two TRS, one RCA unbalanced), three monitor speaker outputs with trim controls, two line outs (cue and main), and two headphone outs. As expected, there are also switches for mono, mute, and dim.

Those are the basics, but interesting extras include relay switching for the signal path to avoid active electronics, dual 30-segment LED meters that you can calibrate, and an omnidirectional talkback mic. But the "biggie" is the included CSR-1 remote control. A rackmounted unit won't always be conveniently located, but the CSR-1 can sit right at your mix position while offering talkback and master level, and the same input and output selection options as on the rack itself.



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TC Electronic's Level Pilot is a simple, effective analog volume control for your desktop.

TC Electronic Level Pilot

\$107/\$69

tcelectronic.com

Sometimes all you really want is a nice, big, convenient knob so you don't have to alter your speaker settings, change the master fader on your DAW and screw up your output levels, or reach around to the output control on your audio interface. And that's what Level Pilot is all about: It's a big, sleek level-control knob, with stereo XLR input and output cables. Use the Level Pilot's analog control to set the level—cut it down to check the mix at low levels, or crank it up when the guitar player wants to hear the sound at 11. Level Pilot does only one task, but does it well.



The VRM Box from Focusrite lets you switch among various monitors—virtually.

Focusrite VRM Box

\$124.99/\$99.99

focusrite.com

The VRM Box is a *virtual* monitor switcher. The premise is simple: You want to check your mix in a variety of speaker-based listening environments, but need to mix on headphones. Focusrite's Virtual Reference Monitoring technology emulates the characteristic sound and separation of mixing through 15 sets of speakers, distributed among three different listening environments—from cheesy computer speakers in the living room up to high-quality monitors in the studio. The ultimate results depend on headphone quality, but you'll still be able to do a "reality check."

The VRM can either serve as your DAW's main output, or insert inline with an audio interface's S/PDIF out (up to 24-bit/192kHz). It supports Windows XP SP3 or later, as well as Mac OS X 10.5 or later. And I particularly appreciate Focusrite's honesty in their ad copy: "Although monitoring with real studio monitors will always be ideal, a Focusrite VRM Box will make your next best option a whole lot better." Exactly.



JBL's MSC-1 adds Room Mode Correction technology to monitor switching and control.

JBL MSC-1

\$375/\$299

jblpro.com

The MSC-1 is a compact, tabletop monitor controller that switches between two monitors, offers a headphone out, selects among three inputs, handles subwoofer management, and includes a mute button as well as programmable EQ. But the star of the show is JBL's Room Mode Correction technology, which compensates for low-frequency acoustical problems.

The good news is that the system works *extremely* well. Switching in RMC gives a tighter, more accurate, more even bass over a very wide "sweet spot." The bad news is that the system is difficult to set up. It took me several tries, on a couple different computers (a Windows XP laptop finally did the trick) to get the system working, so I can't recommend it for those who frustrate easily. (Once calibrated, you don't need the computer any more.) But for me, the hassles were well worth it—the MSC-1 is now a permanent part of my studio.



Radial's MC3 follows the company's typical design philosophy—effective, indestructible, and affordable.

Radial Engineering MC3

\$300/\$249.99

radialeng.com

Radial is known for rugged, high-quality, reasonably priced products that fill needs other companies often haven't identified, and the MC3 is no exception. It has a 100 percent passive signal path (with 1/4" TRS connectors), so there are zero issues with active electronics—there aren't any. You can switch among two sets of monitors and a subwoofer (with top panel trim controls, along with a phase switch for the sub), as well as drive headphones with three paralleled jacks—two 1/4" jacks and one 1/8" jack (helpful, because a lot of engineers do a reality check on earbuds these days). It also has an associated level control for headphones. Additional front-panel buttons allow for dim, mono, and sub in/out. And, of course, there's a master level control.

And that's all there is to it—which is why the MC3 is a cool little box. It does what you need without any bells or whistles, and most importantly, doesn't color the sound in any way because the passive design means that, by definition, it can't.



SM Pro Audio's M-Patch 2 provides basic, rugged switching with a passive signal path.

SM Pro Audio M-Patch 2

\$199.99/\$179.99

smproaudio.com

Like the MC3, the M-Patch 2 features an all-passive signal path. Also as with the MC3, don't be fooled by the power supply input—it provides power for the LED indicators and headphone amp. Situated in a half-rack housing, the two front-panel rotary controls provide level adjustments within 1dB from 0 to -40dB for two input sources: a stereo input from two balanced combo XLR/TRS jacks, or an aux input that includes stereo unbalanced RCA phono jacks and a paralleled 1/8" stereo minijack. The outputs go to two stereo sets of XLR jacks.

Front-panel controls are basic: stereo/aux input selector, two output selector buttons that can be enabled simultaneously, mute, stereo/mono switch, and headphone amp with volume control.

The M-Patch 2 provides the basics of being able to compare two input sources (e.g., a CD and your mix) and route to two different sets of monitors and headphones, and offers convenient level control.



The ATTY is A Designs' simplest level control box, and its small size makes it suitable for live as well as studio applications.

A Designs ATTY

\$125/\$100

adesignsaudio.com

ATTY is all about passive, stereo, line-level signal control with a single knob. It's small (4-1/2" x 1-1/2" x 3") and features all-metal construction, so it's not only useful in the studio, but convenient for taking onstage.

The inputs are dual Neutrik 1/4" XLR/TRS combo jacks, with standard XLRs for the two outs. In addition to the level control, it also has a mute button.

Because ATTY is designed to be more of a compact, general-purpose box than a full-blown monitor controller, it suggests other uses—like cranking an external preamp's gain up to get some grit, but then attenuating the output before it hits the input of your mixer or A/D converter. But also note that if you need something more sophisticated, A Designs also makes the 1U, rackmountable ATTY2D passive line-level controller with two stereo and two mono signal paths. It's suitable for 5.1 surround as well as other general-purpose studio applications, and features individual mutes as well as a master mute.

IK Multimedia ARC 2

\$299/\$299

ikmultimedia.com

This isn't about speaker switching, but as we covered the KRK ERGO and JBL MSC-1 monitor control packages that also include room correction, it seemed only fair to include a room-correction option for those who already have monitor control systems.



IK Multimedia's ARC 2 room correction software can't overcome horrible acoustics, but it sure can help.

ARC 2 includes a calibration microphone and requires a fairly specific, but not particularly annoying, calibration procedure that tunes more broadly than systems intended for pinpoint correction for one sweet spot. However, the system works virtually, by using a VST/AU/RTAS correction plug-in that corrects for room acoustic issues. You mix and monitor with the plug-in inserted, and therefore mix for the properly compensated room. When it's time to send off the mix, bypass the plug-ins and export—without the “corrections” you would have added otherwise in your mix. I must admit it surprised the heck out of me: ARC 2 not only works, but also works very effectively. (Incidentally, it can also help show the effects of acoustical treatment.)

Kush Audio Gain Train

\$1,098/\$999

kushaudio.com

The Gain Train consists of the Main Gain, which has stereo in, stereo out, a mono switch, independent muting for the left and right channels, DC-coupled signal path (although this can be defeated for AC coupling), and metering using a tri-color LED. As such, it's basically an attenuator until you add the Function Junction, which is the second element of the Gain Train. This adds two stereo ins and outs (for a total of three stereo pairs), with I/O on a DB-25 connector, and includes dual headphone amps and a talkback system with level control. When active, talkback auto-mutes the audio.

The two units connect via a VGA-style connector, so you can just plug one into the other and create a single unit; or connect them via a standard DB-15 cable. As the cables trail out the back of these desktop boxes, positioning them separately can be helpful for routing the cables optimally. ■



The Kush Audio Gain Train consists of two modules; the Main Gain can be used stand-alone.



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ex·cel·lence ['ek-sə-ləns]

noun

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JDK Audio 8MX2

Eight-channel
preamp/mixer with
multiple applications

BY CRAIG ANDERTON

SUMMARY

STRENGTHS: Flexible and versatile. +24dB headroom. Packs a lot of functionality into a 1U space. Oozes quality. Built-in limiter for each channel.

LIMITATIONS: Input jacks aren't combo types. Cooling fan is always on.

**\$3,195 MSRP,
\$2,715.75 street**
jdkaudio.com

LOTS OF companies advertise “Swiss Army knife” products, but the 8MX2 (which boasts API lineage) has no problem claiming that title. Although it’s a 1U rack mount, which implies some kind of permanent home, you might not want to screw in those screws just yet—for reasons we’ll get into shortly.

Overview The 8MX2 has eight XLR inputs (not combo jacks) for the mic preamps, which are the same design as the ATI preamps in the Paragon and Paragon II sound reinforcement consoles. (In fact, the 8MX2 is a re-branded ATI unit.) The preamps offer up to 65dB of gain, 41-step detented controls for repeatability, individual ground lifts, and a built-in limiter. Their outs mix down to 1/4” stereo TRS outs, with additional TRS connectors for stereo monitor out or 2-track return. DB-25 connectors handle I/O for eight individual channel outs, or for eight channel returns (e.g., for analog summing), while two DB-9 connectors provide master in/slave out options for cascading units. The fused power supply uses an IEC-type cord, and is switchable between 115V and 230V.

Each channel has two concentric controls. One control pair sets gain and limiter threshold, while the other controls mix level and pan. Individual buttons for each channel select +48V phantom power, phase, return status (either the channel output or return feeds the mix control and pan), and cue. Enabling cue enables feeds to multiple cue busses—pre-limiter, post-limiter, and channel return. A Mix button assigns the channel output to the mix bus (or de-assigns if you want to mute, or use only the direct out).

The output monitor section has stereo 10-step LED meters that indicate level or amount of gain reduction, headphone jack (high

impedance headphones only) with monitor level, and a concentric control for main level and balance. Additional buttons determine whether the monitor section listens to the returns or the cues, and if the cues, which cue busses.

As to construction, the housing is all-metal, and the level of quality is self-evident. Just be aware of the concentric pots sticking up from the front panel—you don’t want them to bump into anything.

Applications For live recording, a quality submixer with this many inputs and preamps has obvious uses—and the built-in limiters are a great addition, providing you don’t hit them too hard. Sure, many audio interfaces have limiters or compressors, but they’re usually post-converter. Having limiters before hitting the A/D converters is far more important. When miking drums with multiple mics, having direct outs to send to a main mixer, or being able to premix, is handy.

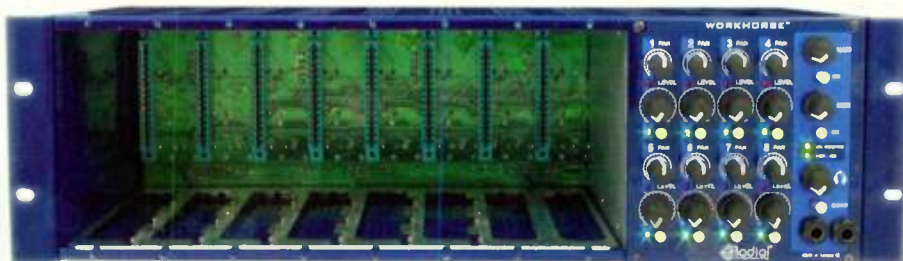
Broadcast and remote uses are obvious, but also, if you like analog summing for your digital stems, the 8MX2 provides that as well. Small live performance ensembles can combine electric instruments and mics, while sending a stereo feed for monitoring and direct outs to front of house. The 8MX2 could also serve as an overachieving keyboard mixer, although you’ll need 1/4” to XLR adapters as the input jacks aren’t combo types.

Conclusions The 8MX2 is a classy piece of gear. While not exactly cheap, in terms of value you get a lot in return and the sound quality is a big factor; it’s clean, but without being sterile. If you want a no-compromise rack mixer for stage and studio, that pretty much defines the 8MX2. ■

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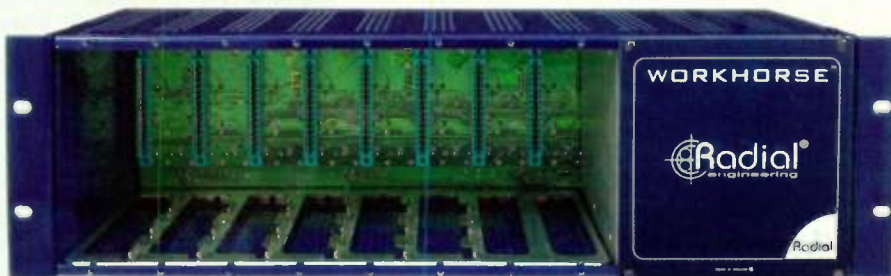
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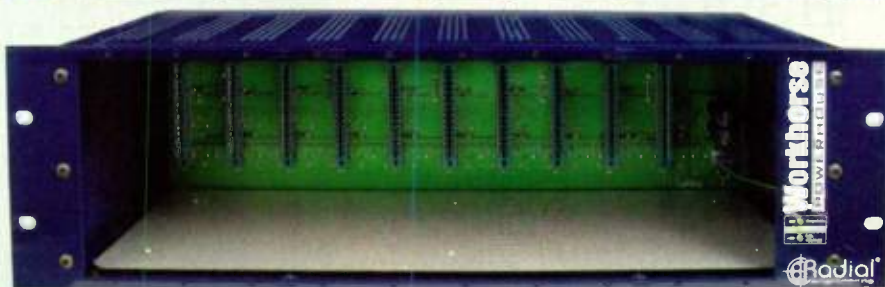
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~ Tape Op

Pro Audio Review
"Every connection and function worked as promised. The Workhorse is truly professional grade and worth the cost."
~ Pro Audio Review

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

AUDIO
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"The Workhorse is the perfect choice for bringing analogue processing to a DAW-based studio."
~ MusicTech

Eventide H3000 Factory

Classic multi-effects processor gets second life as a plug-in

BY MICHAEL COOPER

SUMMARY

STRENGTHS: Sounds great. Includes multiple processors. Highly flexible routing. Extensive modulation capabilities. Can create very unusual effects. Can synch to host's tempo.

LIMITATIONS: No discrete bypasses or wet/dry-mix controls for effect blocks. Complex setup required for modulation-based effects. No Undo, Redo. Inadequate documentation. Some GUI elements mislead.

\$349 (\$175 crossgrade from Anthology II)
eventide.com



Fig. 1. H3000 Factory's signal flow is sequenced by dragging virtual patch cables in the GUI's lower-left section. Parameters for the currently selected block are accessed in the lower-right section. In this example, Pitch Shift 1's level is set to 100% and Delay 1's level to 23.3% in the summing mixer for the plug-in's left channel.

WHEN THE hardware version of the Eventide H3000 UltraHarmonizer was released in 1986, audio engineers were wowed by the combined firepower of its pitch shifters, delays, filters, LFOs, envelope generators and amplitude modulators. Nearly three decades later, the two-channel multi-effects processor has been reincarnated in plug-in form, dubbed H3000 Factory.

Playtime The most surefire approach to using H3000 Factory is to place it on a stereo aux channel; while mono-to-stereo operation is ostensibly afforded, some DAWs—such as Digital Performer 8—won't instantiate it on a mono track. Chaining the plug-in's effect blocks together is child's play: Simply drag your mouse from the output of one block to the input of the next, and a virtual patch cord appears in the GUI to illustrate the routing (see Figure 1). Drag-and-drop one

block onto another to swap their order.

Crafting the right balance for multiple effects is slightly complicated. That's because the plug-in doesn't offer separate wet/dry-mix controls (or bypasses) for each effect block.

For example, I could create an awesome ADT (automatic double-tracking) effect on lead vocals by detuning the H3000 Factory's left channel up and the right channel down, each by six cents (using two pitch shifters). The effect sounded fantastically lush and wide with the plug-in's mix control set to 58% wet. I then patched the pitch shifters' outputs in series to two respective delays, each synched to a different note value for my DAW's tempo, slathered with a little feedback and filtered so its highs sounded soft. The problem was my (global) 58%-wet setting made the delays sound way too prominent; 23% sounded optimal. The solution was to patch the pitch shifter and delay for each channel in parallel

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configuration and combine their outputs in a mixer block where I could adjust their discrete levels independently (Figure 1 on page 52 illustrates this.)

Modulation-based effects are more complicated to set up in H3000 Factory than with most other processors I've used, because the modulator and the parameter(s) receiving modulation are each nestled in separate processing blocks in H3000 Factory's

GUI. For example, I created an auto-pan effect on a rock organ track by first routing the left and right channels into separate amplitude modulators—neither of which offered integral LFO controls. I patched a discrete LFO block to the modulation input for each amplitude modulator. For each LFO, I assigned a sinusoidal waveform and a different frequency (the rate at which it cycled through its waveform), expressed in beats per minute

and synched to my DAW's tempo. I gave each amplitude modulator a different gain range and set the plug-in's global mix control to 100%. The resulting effect sounded excellent.

The benefit to having discrete LFO blocks is they can be routed to unusual and multiple destinations at once, such as the plug-in's filters and pitch shifters. For example, on each channel of H3000 Factory instantiated on a stereo electric guitar track, I mulled an LFO to both a delay block and the filter the delay's output was also patched to. I set each delay block to a very short delay time (less than 1ms), which its LFO modulated to create a nice flange effect. I crafted a highly resonant bandpass filter in the left channel's filter block and an extremely resonant low-pass filter in the right channel, with respective 1kHz center and corner frequencies. In each filter block, I set a 1kHz range for the LFO to modulate the center or corner frequency. The resulting effect sounded like the guitar was siphoned through an otherworldly wah-wah pedal.

Shortcomings There are no Undo and Redo functions. Some of the GUI's graphic elements have no function or are confusing. The documentation is meager, sometimes vague or incorrect, and omits key information. If you're not very adept at applying modulation to effects processors, you'll probably be confused by the cursory explanations afforded this complex aspect of H3000 Factory's functionality. Fortunately, Eventide told me they plan to improve the documentation, and will consider refining the GUI's graphics to address the issues I've raised.

Is It for You? H3000 Factory's intense building-block approach to effects processing—not unlike that of a modular synth—empowers you to create sounds ranging from conventional to bizarre. The current documentation's inadequacy makes getting there laborious; this plug-in isn't the best choice for those who want a streamlined, intuitive GUI and lightning-fast results. But if you're willing to make considerable effort, you'll be amply rewarded with sounds that transcend the ordinary. ■

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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TARGET AUDIENCE Small venues, rehearsals, lesson studios, bedrooms, apartments
ANALYSIS The TD-4KP combines V-Drums performance and features, but with extreme mobility and stow-away convenience.
roland.com



2
 Auralex
ProPAD
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HIGHLIGHTS Isolates the vibrations and resonant energy created by studio monitors from being transmitted into supporting furniture, which would otherwise color the monitors' sound and degrade imaging • three-layer, highly damped construction with increased durability and structural integrity • works with monitors employing up to 8" woofers
TARGET MARKET Recording studios, post-production/edit suites, mobile recording facilities, hi-fi listening rooms, home theaters
ANALYSIS Isolating speakers from the platforms on which they sit has now been accepted as a valid way to improve low-frequency definition and high-frequency imaging.
auralex.com



3
 Behringer
ADA8200
 A/D/A converter
\$TBA

HIGHLIGHTS 8-channel A/D and D/A interface • 8 Midas-designed mic preamps • phantom power on all mic ins • Cirrus Logic 24-bit converters • supports 48/44.1kHz sample rates • external sample rate sync via word clock or ADAT input • optical ADAT I/O • all mic/line inputs routed to the ADAT out • ADAT in routed to all line outs • "global" switching power supply
TARGET MARKET Recording studios, analog/digital transfer, ADAT format conversion
ANALYSIS The ADA8000 was a popular converter for Behringer, but the ADA8200 adds several improvements.
behringer.com



4
 Aphex
Microphone X
 USB mic with DSP
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HIGHLIGHTS Includes analog Aphex optical compressor, Aphex Aural Exciter, and Big Bottom processors • cardioid capsule • up to 24-bit/96kHz resolution • headphone amplifier based on the Aphex HeadPod 4 • processors have individual on/off switches • separate Aural Exciter and Big Bottom Amount knobs • ASIO 2.0-compatible for minimum latency
TARGET MARKET Home recording, podcasting, narration and voiceover, mobile recording, utility mic for studio use
ANALYSIS USB mics are becoming more sophisticated, and Microphone X includes several Aphex processors that enhance the overall sound.
aphex.com



5
IK Multimedia
iLectric Piano
 iPad instrument
\$19.99

HIGHLIGHTS 40 classic electric pianos, electric grands, and clavinetts, multi-sampled from the original instruments at multiple velocities • ultra-low-latency engine • onscreen keyboard slides easily to change octaves • accepts external MIDI keyboard controllers • effects section (EQ, Reverb, Overdrive, and five modulation effects) • onboard MIDI recorder • can export WAV or m4a audio files (e.g., file sharing, email)
TARGET MARKET Mobile music-making, education
ANALYSIS iOS apps are making the transition from toys to tools that justify their existence onstage or in the studio.
ikmultimedia.com

6
Radial Engineering
StageBug SB-2
 Compact direct box
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HIGHLIGHTS Passive direct box for bass, acoustic guitar, and keyboards • less than 2" wide and 3.5" deep • 1/4" instrument input and thru-put to feed an onstage amp • custom-made Eclipse ET-DB3 transformer matches impedance and balances the signal • -15dB pad • 180° polarity reverse switch
TARGET MARKET Performing musicians who want to reduce the size/weight of needed gear when traveling from gig to gig
ANALYSIS Direct boxes are as useful live as in the studio; the StageBug SB-2 brings studio-level performance to a highly compact, stage-oriented device.
radialeng.com

7
Stanton
SCS.4DJ V4.0
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Free

HIGHLIGHTS Preview songs directly from the song browser • user-adjustable gain control for each deck, stored with each track • active playlist sortable by artist, BPM, and time • increased Pitch Range options • BeatGrid Editing to edit a track's beatgrid in real time, with both Tap Tempo and Dial-In-BPM functionality
TARGET MARKET DJs who want a more compact DJ setup
ANALYSIS The SCS.4DJ doesn't need an external computer; plug in a storage device and mix using the built-in decks, mixer, and high-res color display. V4 software increases functionality.
stantondj.com

8
Hybrid Two
Project ALPHA
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HIGHLIGHTS Custom Kontakt 5 script allows for quick, easy customization of any of the library's 200 patches • FX, EQ, Amp, and Filter ADSR allow for "synth-like" patches • run sounds through a step sequencer for custom ostinatos and rhythm • more than 2.3GB of content • WAV file format allows easy drag-and-drop into projects
TARGET MARKET Film, TV, and video game composers
ANALYSIS Kontakt has become the "go-to" sampler for sound design/film scoring-oriented libraries. Like similarly sophisticated libraries, this one requires the full version of Kontakt.
hybridtwo.com





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Propellerhead Reason's CV Secrets

Add new dimensions to your tracks

BY JIM AIKIN

PROPELLERHEAD REASON isn't just an integrated recording program with multitrack audio and a suite of built-in instruments and effects—it's also a giant modular synthesizer, thanks to an exceptionally versatile patch-cord-based modulation routing system. Making connections among Reason modules using the rear panel CV (control voltage) jacks is a great way to add color and excitement to your music.

This Master Class explains the basics of Reason's CV patching, as well as potential applications; you can download Reason song files that demonstrate many of the techniques from *Electronic Musician's* website (emusician.com). Most of these concepts work fine with anything from version 4.0 forward, but we'll also look at a few of the new CV processing modules that are available as optional Rack Extension (RE) plug-ins starting with Reason 6.5.

What's a CV? The CV concept dates back to the early days of analog synthesis. Control signals were routed from a modulation source to a modulation destination within a hardware modular instrument by plugging in patch cords. The control signals were rising and falling electrical voltages—hence the term *control voltages*.

Because Reason lives inside a computer, its CV signals are streams of digital numbers—but they work very much the way analog control voltages used to work (and still do, if you own an analog synth). If you want to be technical, you can call Reason's CVs control values.

If you create a Subtractor synth and hit the Tab key, you'll see its rear panel

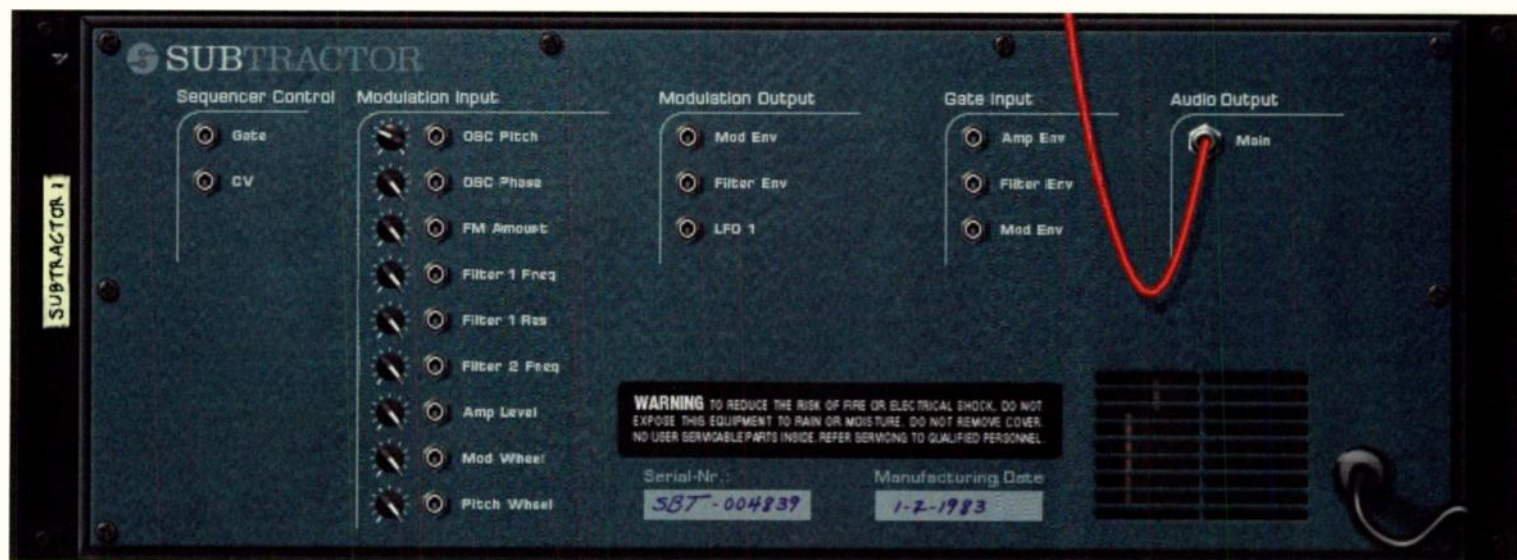


Fig. 1. CV connections in Reason are on the modules' rear panels. The Subtractor synth module has three CV outs and 17 ins. The knobs next to the modulation input jacks can reduce the levels of the incoming signals.



Fig. 2. The default routing of the Matrix Note and Gate CV outputs to the Sequencer Control inputs on a Subtractor. The unipolar/bipolar switch on the Matrix affects only the Curve CV output.

(Figure 1). There's only one audio output; those other 17(!) jacks are for patching CVs. In Reason, the audio jacks are a bit larger than CV jacks, but no worries—Reason won't let you make connections that wouldn't work. Many of the CV inputs have trim pots for scaling back the amount of signal being received.

The Subtractor's rear-panel upper-left corner shows CV inputs labeled Gate and CV. If you create a Matrix Pattern Sequencer below the Subtractor, the Matrix's Note CV output patches automatically to the Subtractor's CV input, while the Matrix Gate CV output patches to the Subtractor's Gate input. This patching suggests an important fact about Reason's CVs: While the input and output jacks are all alike, CV signals are *not* all alike.

Gate signals correspond to MIDI NoteOn messages, and like NoteOns, they contain some additional information—velocity for an actual



Fig. 3. Using track automation clips rather than CV signals will produce identical results, but more editing will likely be needed. Here, the filter resonance of a Subtractor is being swept repeatedly by identical two-measure automation clips to produce an LFO-like effect.

NoteOn, or a level value for a gate CV. The gate value ranges from 0 to 127. The CV input in Subtractor's sequencer control section (as in other Reason synth modules) corresponds to the MIDI note number value, which again ranges from 0 to 127.

The sequencer control CV inputs are designed to receive notes from the Matrix, but can usefully receive messages from other sources. A Redrum or Kong, for instance, can send a gate signal each time a drum sound is triggered.

You can patch an LFO from another device into a gate input; this works perfectly for triggering notes. However, patching a CV from anything except the Matrix into the CV (note) input in the sequencer section probably won't give anything useful.

General-purpose CV signals can be either unipolar (0–127) or bipolar (from –127 to +127). Some devices, such as the Matrix, have rear-panel switches for selecting either unipolar or bipolar mode (see Figure 2). This works with the Matrix's curve CV output, not its note or gate CV outputs. An envelope generator naturally

produces a unipolar signal, because its output is zero when no envelope is being generated, and rises while the envelope is happening. LFOs normally produce bipolar signals—but the mod generators in Malström, which are most often used as LFOs, have several unipolar waveforms, as you can tell by looking closely at the waveform graphic on the front panel. There are no rules about whether to use unipolar or bipolar CVs—use whichever suits your musical needs.

CVs vs. Automation You can automate any CV-controlled synthesis, effect, or mixing parameter in a Reason sequencer track: Just select the track for the device you want to automate, hit Record, and move the knob or fader. So why use CV signals rather than automation?

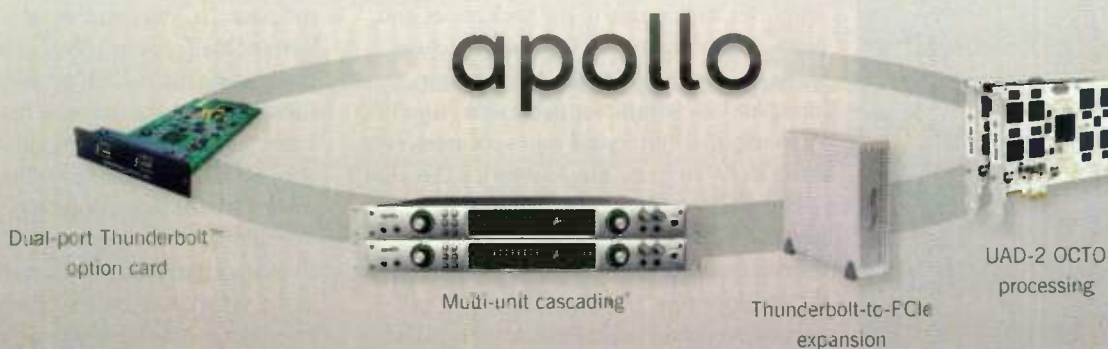
For a periodic parameter change, a CV (perhaps from an LFO or a Matrix) would be a better choice. You can get the same result by recording a brief automation clip into the sequencer and then copying it over and over down the track, as shown in Figure 3—but if you later decide you want to change it, you'll



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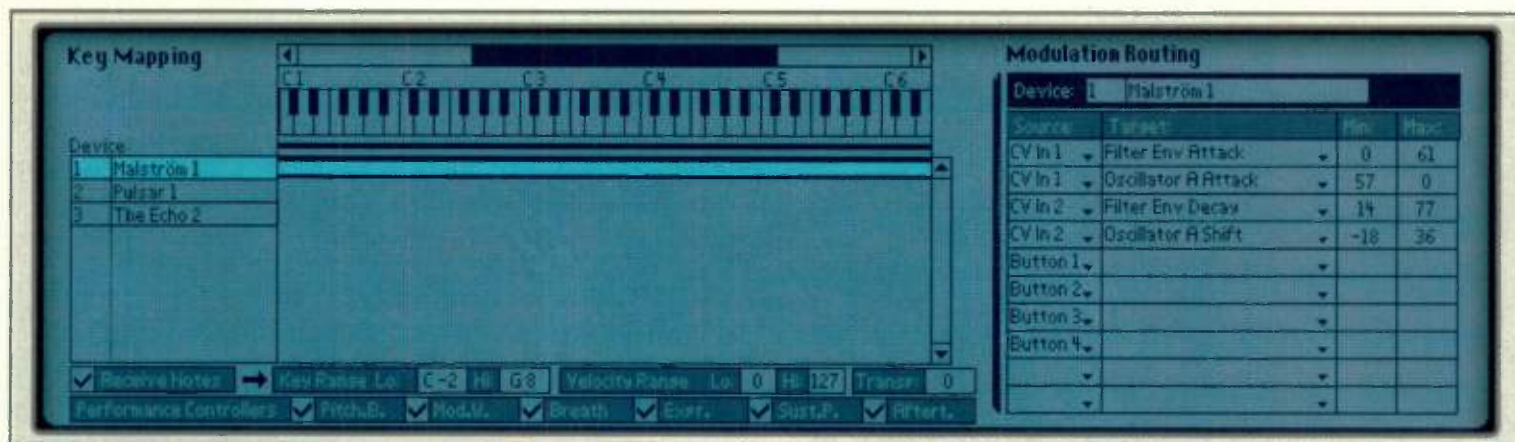


Fig. 6. The Programmer panel in the Combinator makes almost any parameter in a Reason device available as a destination for CV control. The routings are programmed in the list on the right.

rear-panel CV inputs. Using a Combinator, however, you can control just about anything from a CV. The trick is to install the device(s) you want to modulate in the Combinator. Patch the CV signals into the Combinator's Rotary 1 through Rotary 4 CV inputs if you want to use a CV to duplicate the function of a front-panel Rotary knob, or click the Combinator's Show Programmer button, which reveals four more CV inputs on the rear panel (see Figure 5, page 62).

The Programmer's front panel interface lets you select any of these inputs as the source for a modulation routing. This type of patching is important to advanced Reason programming, so let's take a quick look at exactly how to do it. Referring to Figure 6, the Combinator Programmer panel lists, in the left column, all of the devices residing within the Combinator. When you click on one of these devices to select it, you will then see a set of ten possible modulation routings for it on the panel's right side. You can choose a source and target for each routing using drop-down menus, and then set a minimum and maximum value for the modulation.

This is a great way to control parameters like envelope attack and decay time from an external, free-running LFO, so as to change the articulation from note to note. You can adjust the amount of CV modulation using the rear-panel trimpot, or by setting the Programmer's Min and Max values. [file: CombinMal.reason]

Unusual Destinations Using a CV to control a synthesizer's filter cutoff or oscillator pitch is an obvious technique, and often useful.

Here are some less obvious CV destinations that are worth exploring:

The Malström synth has inputs for its oscillators' Index and Shift parameters. These parameters affect the tone colors produced by Malström's wavetable-based synthesis.

The Thor synth module has several CV inputs for its step sequencer. After defining a 16-step pattern of note pitches, you can transpose some of the notes, on some repetitions of the sequence, using a Matrix's note CV output. (Set all of the notes to the bottom octave in the Matrix, as the lowest notes in this octave produce a transposition value of zero.) Then use the Matrix Curve output to add extra gate time to certain notes. [file: ThorSeqXpose.reason]

Propellerhead's new PX7 synthesizer, based on the classic FM synthesis design of Yamaha's DX7, has a CV input for the level of each operator. In FM synthesis, these inputs will change the timbre if the operator is a modulator rather than a carrier. Try patching several of these to different LFOs, all set to very low levels, for a tone color that changes over time.

The rhythm patterns in the Alligator Triple Gate effect are preset, but after deactivating the front-panel On button, you can easily attach three Matrix Pattern Sequencers to the rear-panel gate inputs and create your own complex, editable rhythms. Controlling the frequencies of the three Alligator filters from the curve CV outputs of the Matrixes (Figure 7) will add to the fun. [file: GatorGate.reason]

The Mixer 14:2 is no longer needed for output mixing and mastering in newer versions of Reason, because those functions



Fig. 7. To program your own patterns for the Alligator, hook up three Matrix sequencers as shown.

MUSIC SYNTHESIZER
MX49/MX61



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Fig. 8. The ReVolt CV Processor is an optional add-on. It has handy front-panel data displays and more than 20 CV connections on the rear panel.

have been taken over by the much more comprehensive mixing console. But the 14:2 is still very useful as a submixer, and each channel has CV inputs for level and panning. Try using these inputs for cross-blending various signals in a complex lead or pad patch, or for controlling the amount of return from a delay line or reverb.

I seldom use the RPG-8 Arpeggiator, because I prefer to record arpeggiating patterns myself, one note at a time. But the RPG-8 has a useful feature: It can transmit MIDI mod wheel and pitchbend messages as CVs. This feature lets you use your mod and pitch wheels to control just about anything in Reason. You can use the wheels live, or record your moves to an RPG-8 track in the sequencer. (It's also effective to put the devices you want to control into a Combinator and then use the Combinator's Programmer to set up the modulation.)

CV Processing (Beef Up Your Rack)

The new Rack Extensions implementation in Reason 6.5 has opened the door not only to some extremely cool audio effects and third-party synthesizers, but also to a variety of new CV processing modules. These devices tend to be so inexpensive (like, \$9 each) that they'll be a good investment even if you're not sure yet what you'll use them for. These modules add significantly to Reason's creative possibilities.

Reason's basic device for CV processing is the Spider CV Merger & Splitter. It does exactly what its name implies—and not much more. The merger's four inputs have attenuator knobs, so you can mix several CVs

at various levels before sending them on to a single destination; the splitter section has an inverted output, which is handy if you want to flip a CV signal from an envelope generator upside down, so that it drops when a note starts rather than rising.

If you need more control over CVs, you can now add the Quadelectra CV Line Processor, the ReVolt CV Processor (see Figure 8), or the Volt SH-1 and CB-1 to your rack. Each of these has its own unique features, and this is not the place for a feature-by-feature comparison. All of them are available as 30-day trial downloads, so you can explore them for yourself. (Note that the manuals are not currently available on the Propellerhead site. You'll need to use a search engine to find and download the manuals from the manufacturers' own sites.)

As to what might you want to do with a CV processor, ReVolt can limit the range of a CV sweep, so that it "maxes out" and has a flat top when it hits the upper threshold, or never falls below a floor that you've set. This is different from attenuation, because it affects only the signal's highest and/or lowest values. ReVolt also lets you use one CV to gate another one or switch between two signals.

The Line Processor and SH-1 can shape a CV signal in various ways. The SH-1 has two resonant filters—not for audio, but for the CV signal itself. Resonance adds fluttering to the output when the input changes rapidly. It also has a syncable sample-and-hold for turning a smooth input into a series of stair-stepped values.

Propellerhead's own Pulsar provides a

dual LFO with some extremely useful extra features, such as the ability to modulate one LFO from the other or sync one to the other. It also has a simple attack/release envelope that can control LFO rate and level. Before the advent of Pulsar, many Reason producers used a Subtractor as a handy source for extra LFO CVs, not using its audio output at all.

If you want to generate CVs, you can also install the Probability CV Trigger and Probability Drum Trigger from Ochen K. Both are 16-step randomizing sequencers. I've found the Drum Trigger very useful for adding occasional extra hits to a drum pattern. [file: GatorGate.reason]

Final Mix Even if it didn't have CV routings, Reason would be a very sophisticated music production platform. The CV implementation, especially when combined with the new Rack Extensions for CV processing, pushes it totally over the top. If you haven't yet discovered the power of CV control, get ready to be amazed. ■

*Jim Aikin started at Keyboard in 1975, and has been writing about music and technology ever since. His recent books include *Csound Power!* from Cengage Learning.*



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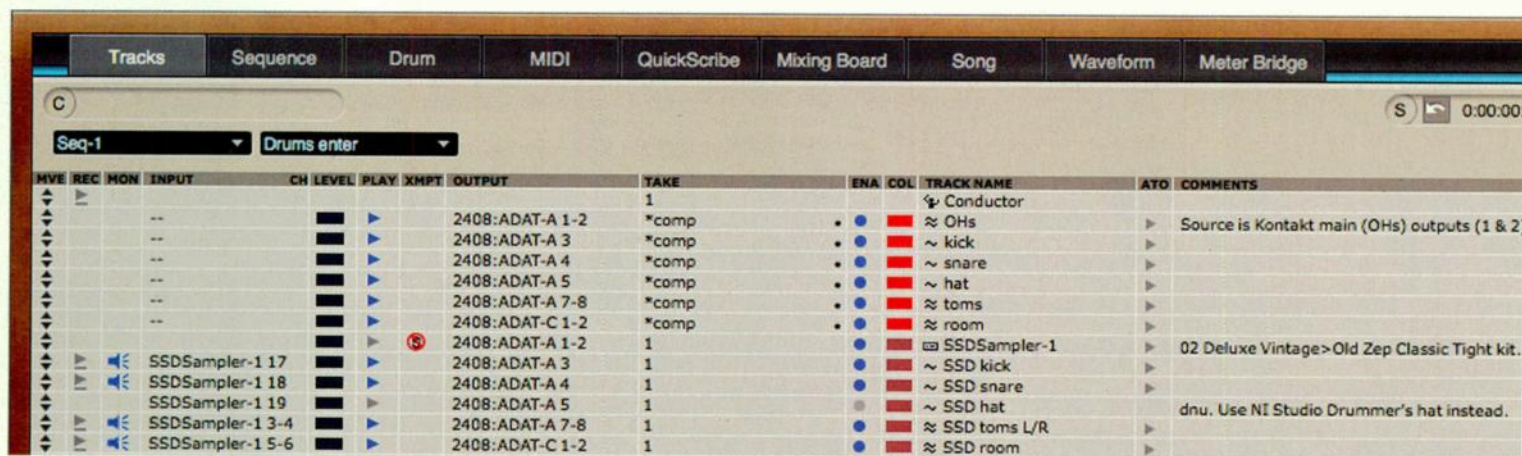


Fig. 1. The multi-channel outputs for two virtual-drummer plug-ins are mixed in Digital Performer 8. The first six tracks in the Tracks list are produced by Native Instruments Studio Drummer (a Kontakt Instrument). The bottom six tracks are from Steven Slate Drums 4 (SSD4). In this production, the hat and overhead cymbals are muted in SSD4 so as not to clash with the same kit pieces in Studio Drummer.

Build Jackhammer Virtual Drums

Make your rhythm tracks explode using these tips

BY MICHAEL COOPER

MOST VIRTUAL-DRUMMER plug-ins allow you to layer multi-samples for each kit piece to create bigger, composite sounds. I like to take this strategy a step further by layering kits from two different plug-ins. For example, I'll mix Steven Slate Drums 4 (SSD4) with Native Instruments Studio Drummer or Toontrack Superior Drummer. One advantage of working this way is you can use factory presets from each plug-in to quickly arrive at a logical composite sound—Led Zeppelin-style plus arena-rock drums, for instance—rather than audition numerous multi-samples for each kit piece within one plug-in to discover what might be compatible. More important, because the drums for each plug-in were likely recorded in different rooms, you can craft fresh and exciting ambiences by mixing their two kits together.

In this article, I'll detail how to jack up your drum tracks to monster size by combining two virtual kits from different

plug-ins. Many of the tips I'll offer can also be applied to layering drum sounds within the same plug-in.

Use the Same Groove Begin by loading a kit from your first virtual-drummer plug-in, and route each kit piece—and each channel for overhead and room mics—to a separate track in your DAW. Assemble your MIDI grooves and edit them as needed to build your drum arrangement.

Once you're happy with your arrangement, record the current kit to your DAW. Then remove the kit's plug-in from your DAW's mixer, making sure you first save any changes to its default configuration as a custom preset in case you need to re-record the kit at some point.

Next, instantiate your second virtual-drummer plug-in, load a kit, route each channel to a new track in your DAW and route your MIDI-grooves track to the

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plug-in. Convert the MIDI format for your grooves if necessary, using the plug-in's MIDI mapping. Don't be afraid to try triggering a different articulation for a kit piece than that which you already recorded. For example, the same MIDI note might trigger rimshots in your first plug-in and a snare drum struck in the center of the head with a stick tip in the second plug-in. If the blend of the two articulations (mixed in your DAW) sounds great, don't convert that particular MIDI note. Let 'er rip! Just don't record the second kit to its discrete audio tracks yet. We have more work to do first.

Layer Only the Traps and Room Kick, snare, and toms can all sound huge when layered, so make sure their close-mic channels are triggered by your MIDI track in both virtual-drummer plug-ins. Blending the room mics from two plug-ins can also sound downright explosive, especially when combining ambiances with different timbres and respective short and long decays. Just

make sure the panning for each kit piece and room mic is the same in your DAW for both kits. Inconsistent panning will weaken the traps' punch, separate their layered sounds, and make the stereo image ghostly.

Don't layer the overhead cymbals or hi-hat. Cymbals have too dissimilar decays and hats are played with too much variation to seamlessly blend their multi-samples from different kits; layering them just turns their sounds into mush. Audible bleed among the cymbals in the overhead mics also dictates that you wholly use the best-sounding cymbals from one kit or the other, but not both. Mute the cymbal tracks for the kit having the cymbals you don't want to use (see Figure 1 on page 68). Make sure you pan the keeper cymbals using the same perspective—drummer or audience—as that used for the traps.

Mix and Match Envelopes and Tuning

For each trap drum, experiment with the tuning of each layer. Floor toms in particular

can sound enormous when one layer is tuned quite a bit lower than the other. The higher-pitched tom preserves the stick strike that cuts through your mix, while the lower-pitched tom thunders.

If your two virtual-drummer plug-ins provide envelope controls, try setting them differently for each layer of a kit piece. For example, accentuate the attack of one kick drum to highlight the beater strike. In the second kit, increase the kick drum's sustain—and possibly lower its tuning—to give it heft.

Once you've got the second kit's sounds married nicely to those of the first, save the second kit's setup as a custom preset to allow later recall. You can record the second kit's channels to its audio tracks or trigger it with MIDI during mixdown—your choice. Either way, your monster has been spawned! ■

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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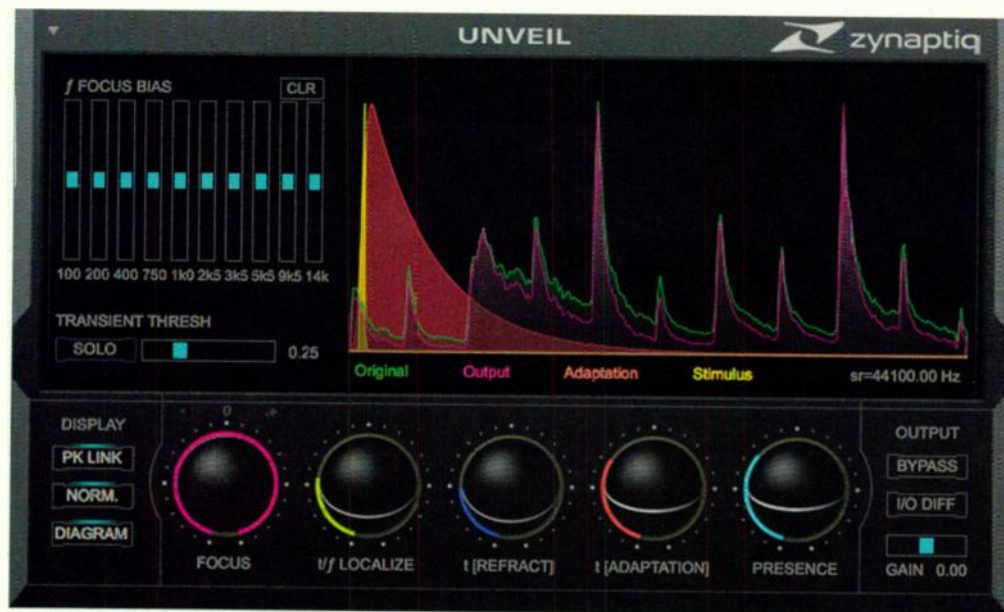


Fig. 1. Zynaptiq Unveil is used to diminish, remove or amplify ambience on a mono or stereo recording. Unveil is set up here to completely remove reverb from a recording.

Change Your Room's Acoustics—Using Plug-Ins!

Jettison, boost, and prettify your studio's ambience using these tips and tools

BY MICHAEL COOPER



Fig. 2. SPL Mo-Verb can magnify the amount of natural reverb on a mono or stereo track to an extraordinary degree.

I'M SURE many of you, our dear readers, have pored over stories of famous recording engineers extolling the benefits of using room mics to record in palatial studios, only for you to bewail, "Yeah, but my room sounds like a culvert! I want to hear *less* of it." Or, "Good in theory, but I'd need mic diaphragms the size of sperm whales to capture the faint ambience my tiny room produces."

You could plunder your savings, bring in the wrecking ball, hire an acoustician and rebuild bigger and better. Screw that! Here's a low-cost and instant fix: Use plug-ins to give your room tone a make-over. In this article, I'll show you how to ply three different types of processors to silence a bad

room or make a small but good room sound huge. I'll also explain how to spruce up the timbre of your room ambience.

Muzzle Your Studio Mid-side (M/S) plug-ins such as Brainworx bx_control V2 can lower the output level of the side channel for a stereo track, where most room reverberations live. But while M/S processing can reduce ambience, it can't totally eliminate it. And any benefit it bestows comes at the expense of a shrinking stereo field—at extreme settings, the processed track will sound mono. Furthermore, M/S processing only works on stereo tracks; it can't reduce ambience embedded in a mono track.

se·lec·tion [səˈlekSHən]

noun

1. the action or fact of carefully choosing someone or something as being the best or most suitable
2. a number of carefully chosen things
3. an extensive variety of tones for a sound engineer's sonic palette

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Two other technologies are far more effective at deep-sixing ambience. Plug-ins such as SPL De-Verb (and the company's more full-featured Transient Designer) use envelope followers in part to reduce the sustain portion—including any reverb tail—of an audio signal. Zynaptiq Unveil (an *Electronic Musician* Editors' Choice Award winner for 2013) uses cutting-edge pattern recognition and perceptive modeling to separate ambience from dry signal, allowing you to attenuate or boost room tone (see Figure 1). Both De-Verb and Unveil can completely eliminate ambience from a two-channel recording without shrinking the stereo field, and they work equally well on mono tracks.

At very high settings, De-Verb's reverb-reduction control can cause the sustain of a track's desirable dry elements to be shortened and make the overall sound slightly muffled. But unless you're dealing with a truly poisonous room, such extreme settings won't be necessary and De-Verb should perform like a champ. That said, Unveil is the most transparent-sounding plug-in I've heard for drying up room tone; it can completely rid a recording of ambience while retaining the presence and natural envelopes of sounds in the track's foreground. Crank Unveil's focus control fully clockwise to make your distant-miked instrument sound like it was close-miked in a completely dead room.

Grow Your Shed M/S plug-ins like *bx_control V2* can also *boost* the output level of a stereo track's side channel, thereby increasing the ambience on a recording. Of the three technologies discussed in this article, M/S processing typically provides the widest stereo image but the least amount of reverb boost. SPL Mo-Verb—a plug-in that uses the same technology as De-Verb but to opposite effect—provides the most reverb boost, even on mono tracks (see Figure 2). Jacking up its reverb-enhancement control can make your studio sound exponentially more ambient. That said, high settings can also boost the volume and sustain of instruments such as crash and ride cymbals tremendously and cause audible pumping (not always a bad thing!). Unveil can provide a laudable amount of reverb boost on mono and stereo tracks alike and lends the most natural sound on



Fig. 3. Brainworx *bx_digital V2* equalizes room tone on a stereo track, removing mud and attenuating sizzling frequencies, while simultaneously widening the soundstage.

drum tracks. Even with its focus control fully counter-clockwise (boosting ambience to the max), Unveil retains the organic balance of a stereo drum track's dry components. Optimal settings of its other controls preclude pumping and other artifacts.

Any of these plug-ins can be used on a full mix. Once you've adjusted your room ambience to be in desirable proportion to the dry elements in your track, you can sculpt the room tone further using an M/S equalizer such as Brainworx *bx_digital V2* (see Figure 3). Equalize the side channel to taste while leaving the mid channel alone. Dry components in the side channel—such as stereo-miked cymbals—will be filtered along with the ambience, but tracks such as kick, snare, and bass that are panned dead-center won't.

Blow Up Your Crib For a totally extreme effect, place Unveil, Transient Designer, and *bx_digital V2* in series—with *bx_digital V2* last in the chain—on an aux track to which a drum kit's stereo room mics have been bussed. Turn Unveil's focus control and the attack on Transient Designer fully counter-clockwise. Crank the sustain control on Transient Designer to the max. Set *bx_digital V2*'s stereo-width control to around 200% and filter the side channel's high frequencies to tame the now-blistering cymbals. With this setup, a closet will sound like an empty warehouse! ■

While M/S processing can reduce ambience, it can't totally eliminate it. And any benefit it bestows comes at the expense of a shrinking stereo field.

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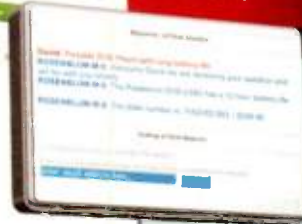
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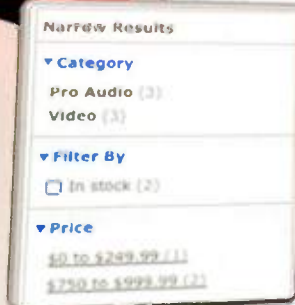
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Simplify composite recording with Take Lanes and Isolate mode

BY CRAIG ANDERTON

OBJECTIVE

Record multiple takes of a part, then combine the best sections to create a seamless, optimized part.

BACKGROUND

Composite recording lets you get into a “groove” by allowing you to record take after take of audio while a section of music loops. After choosing the best sections from each take, you can then bounce them together into a single clip.

TIPS

■ Step 4: To make more detailed changes, release the Ctrl key; the Isolate tool now becomes the standard Mute tool. To unmute a muted section, drag across the clip's top half. Drag across the lower half to mute an unmuted section.



Step 1 Choose *Edit > Preferences > Project > Record*. Under *Loop Recording*, click “Store Takes in a Single Track.” Under *Lanes*, check “Create New Lanes on Overlap.” For *Recording Mode*, choose “Overwrite” so that when you exit Record, all takes except the most recent one are muted.



Step 2 Specify the section you want to loop, record-enable the parent track, then go into record mode and record as many takes as you want.

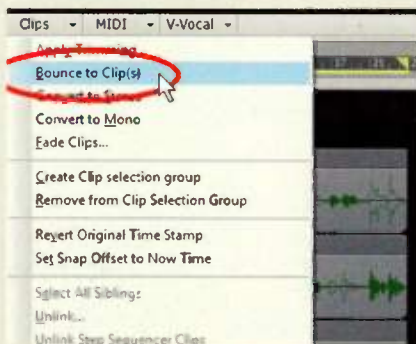
Part Process Project Utilities



Step 3 Select the Mute Tool from the Toolbar.



Step 4 Hold down the Ctrl key; an exclamation mark appears next to the cursor to show the Mute tool is in “Isolate” mode. Dragging across one take mutes (as indicated by an outlined waveform) the same section in all *other* takes.



Step 5 After your takes consist solely of sections you want to keep, select all takes and then select “Bounce to Clips” from the Clips menu.

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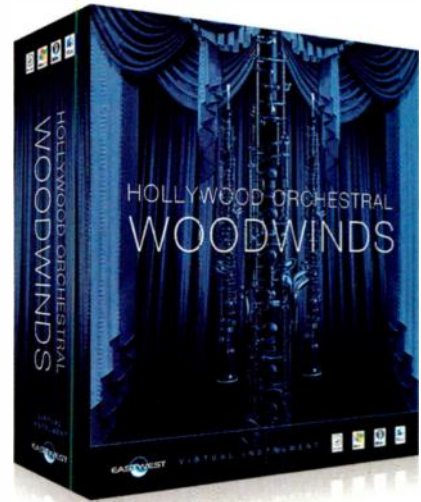
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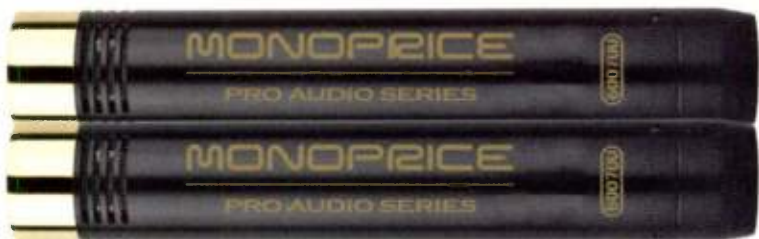
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Five Things You Don't Want to Hear When You Get to the Gig

BY CRAIG ANDERTON

1

"No, the elevator hasn't been working since the cable snapped. But it's only three flights of stairs up to the main ballroom."

2

"Hey! My cousin is a *fabulous* singer, and he's as good on sax as Kenny G! Maybe even better! He can sit in for your set, right? *And just imagine—he's only 14!*"

3

"Now that you mention it, I always did think those P.A. speakers sounded kind of funny. So do you know where I can find some . . . what did you call them? 'High-frequency drivers?'"

4

"Well, I dunno . . . the Junior Young Miss American Direct Marketing Salesgirl of the Year contest is right after you finish, and we really can't move their stuff off the stage for you and then set it back up again. How about the drummer just plays tambourine—then you won't need all that extra space!"

5

"Glad you guys are here, let me know if you need anything. I'll be in the office, talking to some of my . . . uh . . . business partners. Oh, and by the way, could you loan me \$20?"

cakewalk
by Roland

SONAR X2

The Professional Touch

Experience SONAR like never before with all new touch functionality. Improve your workflow with intuitive gestures like 'swipe' and 'pinch to zoom' that allow you to navigate through projects using the Skylight User Interface. Transform any touch screen into a virtual pad controller to trigger loops and one-shots using the Matrix View. Or open up a whole new way to mix and interact with plug-ins, the Console View, and ProChannel. Give your music a professional touch with SONAR X2. Touch is available on Intel®-Inspired Ultrabooks™, and other touch enabled devices running Windows 8.

SEE IT IN ACTION AT WWW.CAKEWALK.COM/TOUCH



Available at worldwide music retailers including:



“TRACK 16 HITS IT *OUT OF THE PARK*”

— HARMONY CENTRAL

“SPARKLING, TRANSPARENT SOUND”

— KEYBOARD MAGAZINE



TRACK 16

- **Hybrid connectivity** — connects to any Mac or PC with USB or FireWire.
- **8 x 6 analog** — includes 2 mic ins, 2 guitar, and balanced line ins/outs.
- **Studio-grade audio** — record with clean, transparent mic preamps and professional balanced connectors.
- **One-touch operation** — just tap the input or output you want to control. Backlit buttons are easy to see in dark studios or stage environments.
- **Optical I/O** — stereo TOSLink, 8-ch ADAT, or 4-ch SMUX @ 96K.
- **MIDI I/O** — connect any MIDI gear.
- **CueMix software** — control 8 mixes and FX with simple tabbed interface.
- **Across-the-board compatibility** — works with your favorite audio apps.
- **Optional breakout box** — same connectors as the included Track16 cable in a compact, sturdy enclosure.