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COVER FEATURE

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Coming Full Circle

OVER THE next few months, you'll notice changes in these pages. Craig Anderton, who founded this magazine almost 30 years ago (back when it was called *Polyphony*, for those old enough to remember) and coined the term "electronic musician," is embarking on a new career with Gibson Guitars. At the same time, we're thrilled to welcome back former *Electronic Musician* Editor In Chief Gino Robair as Technical Editor, starting next month.

In this tiny magazine world, we're all connected in some way: My first association with Craig was in college, soldering together clunky versions of the filters and metronomes in his book *Electronic Projects for Musicians* . . . fast forward to 2010, when I joined him at *EQ* magazine, which became the new *Electronic Musician*.

Meanwhile, Gino and I spent more than a decade working side by side, him at *EM* and me at sister mag *Mix*. Gino, an accomplished musician with credits ranging from Tom Waits to Anthony Braxton, has contributed regularly to *Guitar Player*, *Remix*, *Mix*, and has already helped us shape the new *Electronic Musician* in many ways.

This won't be the last you see of Craig, though: "With *Electronic Musician* firmly established as the premier technology magazine, it seemed like a good time for a new adventure," he says. "But I'll remain involved in an advisory capacity, and will keep writing my 'Craig's List' column. The magazine is in great hands with Sarah and Gino, close friends whose loyalty to *Electronic Musician*'s readers is absolute. Besides, 'never say never'— *Electronic Musician* is part of my DNA."

SARAH JONES
EDITOR
sjones@musicplayer.com

COMMUNITY

"IMAGINE BOB DYLAN STANDING THERE, SINGING 'BLOWIN' IN THE WIND' IN FRONT OF CHRISTINA AGUILERA: 'MMM, I THINK YOU SOUND A LITTLE NASALLY AND SHARP...' "

Dave Grohl, joking about the absurdity of judging musicians on reality shows, in his SXSW keynote speech, March 14, 2013

The *Electronic Musician* Poll

WHAT IS THE MOST-USED ITEM IN YOUR STUDIO?

WORKSTATION	42%
MONITORS	24%
INSTRUMENTS	19%
COFFEE POT	12%
MICROPHONES	2%
OUTBOARD EFFECTS	1%

This is an overhead view of my live rig for the Avril Lavigne 2012 "Black Star Tour." Pictured are: Arturia Origin, Motif XS8, Axiom Pro 61, Wurlitzer A200, Axiom Pro 25 (triggering one-shots), iPad running custom version of Grid Pro designed to control two synced laptops running a redundant backing track rig from onstage.

Left Rack:
MacBook Pro 15
Two Mac Minis
Linksys wireless router (connected to two Mac Minis for onscreen control via VNC on iPad, and two Muse Receptors also using VNC to control Receptora via iPad)
Furman PL Plus
MOTU 828 MK3s
Radial Sw8
UPS bottom of rack

Right Rack:
Yamaha 01V96 (for keyboard submixes)
Two Muse Receptors
Yamaha Motif Rack
Computers were running Ableton Live 8 for track playback as well as soft synth control. Also sending out SMPTE from Ableton to sync to a large video wall in back of the band.

STEVE FERLAZZO
AVRIL LAVIGNE TOURING KEYBOARDIST

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ask!

I'M LOOKING TO UPGRADE MY STUDIO MONITORS, AND WANT TO KNOW WHAT ADVANTAGES A THREE-WAY SYSTEM OFFERS OVER A TWO-WAY. IT SEEMS LIKE BEING ABLE TO DEDICATE DIFFERENT SPEAKERS TO LOWS, MIDS, AND HIGHS WOULD SOUND BETTER THAN HAVING ONE SPEAKER FOR LOWS/LOW MIDS AND ANOTHER FOR HIGH MIDS/HIGHS, BUT THREE-WAYS ARE BIGGER AND MORE EXPENSIVE, SO I'M NOT SURE IF THEY'RE WORTH IT.

KEN BAILEY
PORTLAND, OR
VIA EMAIL

Three-ways have several potential benefits over two-ways. They often produce higher SPLs, a separate midrange driver can reduce midrange distortion, and the sound may be more accurate. But the key word is "potential." It's more complicated to design and implement crossovers that split frequencies into three bands than two, and the physical design has to accommodate three point sources instead of two—while making sure all the drivers are working in unison. For speakers of roughly equivalent price, a two-way will usually outperform a three-way because the three-way will use less-expensive components to meet the price point.

Another option is a good two-way with a subwoofer for bass, which essentially creates a three-way system optimized for low-end reproduction. Also, filtering out the lows from the two-way's woofer can help improve its performance. Just remember that ultimately, room acoustics play a huge part in how speakers sound.
THE EDITORS

Focal's Twin6 Be is a three-way active studio monitor that takes full advantage of everything a good three-way design can offer—but as expected, it costs considerably more than two-way speakers.

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

FRIVOLITY, FLAIR, AND FUN.

OAKLAND, CA
FEBRUARY 7, 2013

Just days before snagging the Best New Artist prize at the 55th annual Grammy Awards, fun. took the stage at the historic Fox Theatre in downtown Oakland, just across the bay from San Francisco. Performing on an impossibly elaborate arena-style stage crammed into the iconic 3,000-seat venue, the band lived up to its name with a 90-minute set that thrilled the sold-out, mostly teenage crowd. February capped a wild ride of a year for the quirky indie poppers, who topped the charts with their irrepressible hits "Some Nights," "Carry On," and "We Are Young"— which won the 2013 Grammy for Song of the Year. Let the good times roll.

PHOTO BY STEVE JENNINGS
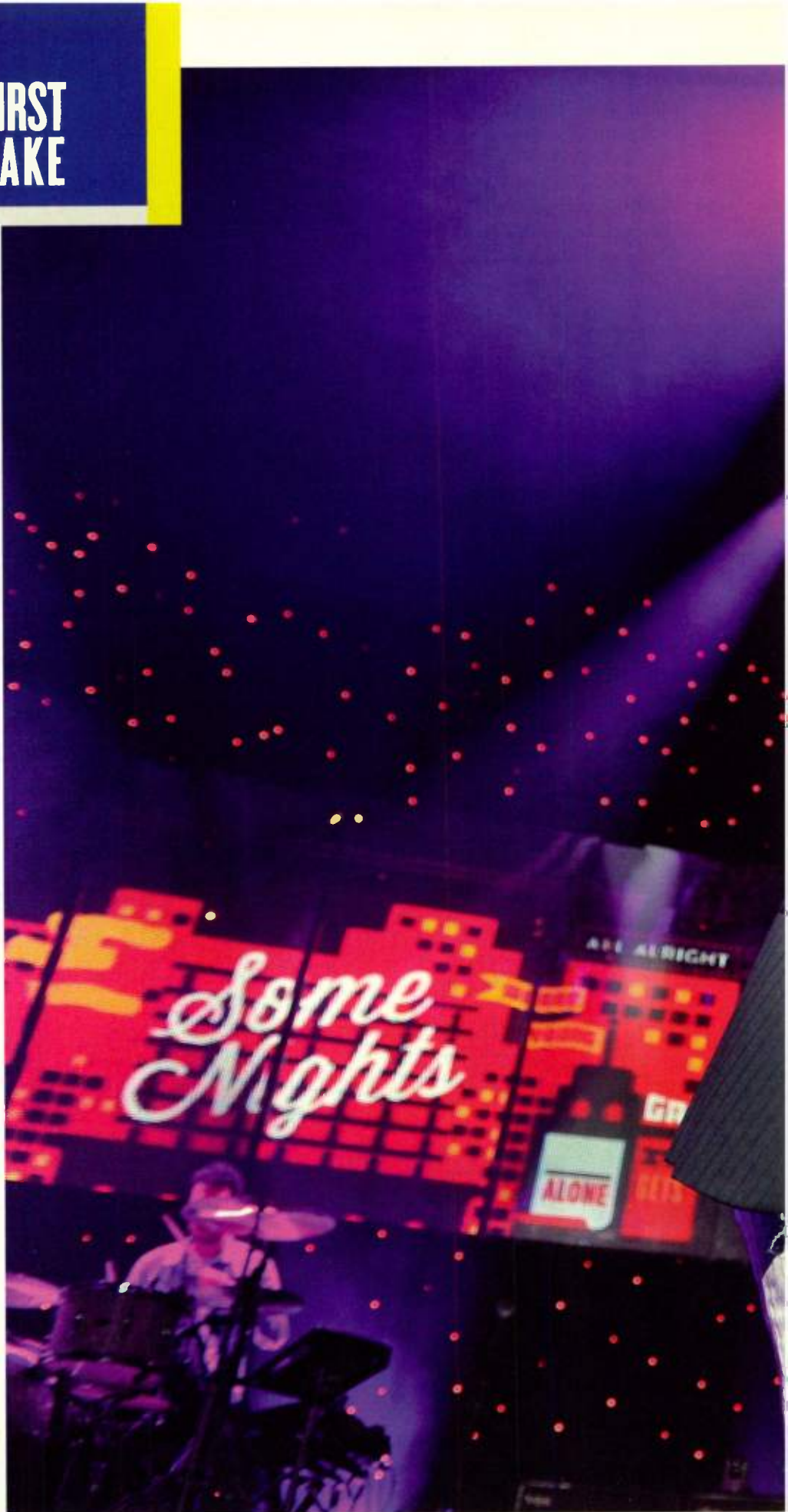
FORGETTING FEAR

French pop quartet PHOENIX uses imaginary Hi-Fis and real & **compressors to intensify the sweet (and sour) notes of *Bankrupt!***
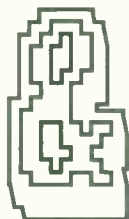
BY TONY WARE

T IS the opinion of Laurent "Branco" Brancowitz that the best music kind of stinks. Asked if there existed an overriding philosophy while recording *Bankrupt!* (LOYAUTE/Glassnote Entertainment), the fifth album by the strategically unfolding pop-rock band Phoenix, the guitarist/keyboardist

describes a compounding methodology laced with effervescent head notes, harmonious heart notes, and richly saturated components. "For this album, we had to forget fear and beauty," says Branco. "We had to think like a creator of perfume, and use very disgusting smells to keep the whole thing wonderful."

Phoenix (left to right)—Christian Mazzalai, Thomas Mars, Laurent Brancowitz, and Deck D'Arcy.

FLORA HANITIJO

"We love instruments and equipment that are cheap, and also what is top end. We like them to confront each other."

—LAURENT BRANCOWITZ

FORGETTING FEAR & Beauty

A diffuse and indulgent depiction feels like the appropriately rococo metaphor for Phoenix. *Bankrupt!* is an album of accumulation and alteration. There is nothing by any means "disgusting" about the album, but working again with producer Philippe Zdar, the band has blurred the line between magnetic. On first listen, *Bankrupt!* flares into passages so monolithic, it's difficult to imagine them composed by a group that's ever taken a stage with instruments in hand. However, there's a logical progression to the way Phoenix has embraced the seeming contradictions of "less is more," pushing needles to the right, and lacing reverb throughout the band's once-dry aesthetic.

Phoenix gestated in Versailles in the mid-1990s. The band—which also includes Thomas Mars (vocals, programming) and Deck d'Arcy (bass, keys)—released its first full-length in 2000 with *United* (Source/Astralwerks).

decamped to Berlin to funnel that spontaneous energy into 2006's self-produced *It's Never Been Like That*. Constructed in three months, the album showcased a desire to concentrate on purity of arrangement.

"We are often very bad with things like mic placement; we usually just put it in front of the source and then put it through a very good Telefunken [U73] compressor," laughs Branco. "We love instruments and equipment that are cheap, and also what is top end. We like them to confront each other. We didn't worry so much about technique, but one thing we learned is you can have a very cheap

ARNAUD POTIER

digital and analog, transistors and valves, achieving a sound that is fast, sharp, and creatively frayed and enriched with details that provoke curiosity. "We had more than 1,000 pieces of music, from 30 seconds to five minutes each," says Christian Mazzalai, Phoenix's second guitarist and Branco's brother. "The last album was a bit like that, but this album was 10 times more in the process of songwriting."

With 2009's *Wolfgang Amadeus Phoenix*, the band reached a critical and commercial apex, a point many, perhaps unfairly, reference as a starting point. So, having "arrived," Phoenix can push their stylistic charms into new directions less beholden to any expectation beyond sounding youthful and

Composed in basement practice spaces and garage studios in the outskirts of Paris, *United* imaginatively drew on elements of Prince, Hall & Oates, Simon & Garfunkel, Al Green, Kenny Rogers, Iggy Pop, Gram Parsons, the Cars, Nico and the Velvet Underground, and The B-52s, alongside influences drawn from AM soft rock, disco, and the synth-laden soundtracks of movies such as John Carpenter's *Escape from New York*. Phoenix, like their contemporaries, became successful by avoiding radio tropes.

After an extended break, the band released *Alphabetical* (Source/Astralwerks), a more melancholy, parched album that individual band members likened to both a puma's elegant rhythm and a caterpillar's decided pacing.

After touring extensively, Phoenix

microphone, and if you plug it into the right preamp [often a Telefunken V76] it can be good; at least that's our theory."

It was with the band's next album, however, that the sonic perfumers truly managed to stabilize their primary concepts and distressed modifiers into punchy formulations. *Wolfgang Amadeus Phoenix* reunited Phoenix with Zdar, who had produced United. However, with *Wolfgang Amadeus Phoenix* he became like a fifth member of the group, which lived for nearly two years in Zdar's Motorbass studio in the 18th Arrondissement when not searching for inspiration in a New York Bowery hotel suite and boats on the Seine.

One half of filter-house duo Cassius alongside Hubert Blanc-Francard, with a long production

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FORGETTING FEAR & Beauty

résumé that includes production work for the Beastie Boys, The Rapture, Chromeo, MC Solaar, and Étienne de Crécy (a colleague of Air), Zdar began his career as a tea boy at Paris' Marcadet Studios, transitioning to mix engineer. Zdar's primary function with Phoenix was not that of engineer, but rather as a creative antagonist. "He [Zdar] has become even more emotional than he was before; he may care more about our music than we do," says Branco. "He worked with us on the first record, saved us when we were very lonely . . . we have a long story together and the level of confidence we have with each other is at its peak."

Entering the studio to write, track, and mix simultaneously, Phoenix and Zdar established the template from which *Bankrupt!* developed. "On *Bankrupt!* everything has been embraced, left in the open, and it may surprise some but it is to me completely what I think would follow *Wolfgang*," says Zdar. "[*Wolfgang Amadeus Phoenix*'s] 'Love Like a Sunset' was the last song we did, and three years later, after they did many tours and I did many records, we realized we were starting from there again. If you listen to that, you can hear those reverbs, those synthesizer sounds, that big bass . . . all of those things have pushed their way forward and we have tried to stay honest in front of this sound."

This sonic evolution at times put Phoenix in what Zdar describes as "not safe territory," which he considers the most important path to quality. "Recording with some risk is *so* important," he proselytizes. "Sometimes I can feel the comfort in a record, I can hear how much money and women and drugs went into a band losing its edge. I have read that [Factory Records house producer] Martin Hannett would keep his AC very very cold so that no one would want to sit in the control room and they would be forced to stay with their instruments and concentrate on getting the best of their art on tape. I only have wooden chairs in my studio, because artists need to concentrate on pushing to do something they didn't know they could do.

"Sometimes you might spend weeks trying to find a sound, and as you are recording along the way, amazing things can also come of it," he continues. "But not if you are on the couch. But also, you should not spend all your time behind the board or a computer, because you might find a sound but lose the use of it. You must use your threshold of taste to know when a sound goes too far the wrong way, and with Phoenix we have the same threshold of taste, which is why we work together. I think they are four of the best producers I know; they could do it alone, and they did do it alone for several albums, so I am there because we have a good time and maybe with my help they can avoid some mistakes."

"The general strategy is to just be excited by what you are doing," echoes Branco. "What we are trying to do is have ideas in the beginning and we work on them and when we realize they are bad, that's when the real work begins, when you forget about what you had in mind and you just go into the darkness of creation. All those clichés about mistakes being more interesting . . . we based all our career on that, on mistakes that worked out for the best."

The first steps toward *Bankrupt!* took place across the Atlantic. "We started work on the album not far from here, over at Oscilloscope Laboratories, [the late Beastie Boys member] Adam Yauch's studio," says Branco, entertaining interviews with the rest of Phoenix at New York's Standard Hotel, East Village. "But our work in New York was for the palette. Later we used a lot of these sounds, and also the song 'Trying to Be Cool' happened here. I think it has a little East Village vibe. I didn't like it when I was young, but now I can feel the charm of that early Danceteria Madonna, the balance of freedom and careful styling.

"It's weird, though, that coming to New York had a greater influence in reverse mode," continues Branco. "It brought us closer to our Europeanness, our roots," meaning a cultural influence on songwriting, both from classic French pop but also the ". . . European vision of exotic countries," he says. "In the '70s and '80s, back to Serge Gainsbourg, there was more of an element of discovering the modes of foreign music, especially pentatonic, but also Ethiopian, Balinese . . . all these new things in music that teach you that instead of adding a note or a chord, you can subtract."

Guitarist Mazzalai shares that a French approach also helps explain the band's DIY studio philosophy, which echoes Zdar's belief in avoiding worshiping someone else's success or technique while recording. "There were many home studios in the late '90s—like with Daft Punk and Air and ourselves—and we did our first recordings on our own, built our equipment and learned on our own. We see the recording process the same way; we have never been interested in the culture of the big commercial studio, chasing the new sound or new equipment." For *Bankrupt!* Phoenix and Zdar used a mix of plug-ins, outboard processors, and an SSL 4000 E Series console, but not to chase any particular contemporary or even retro sound. Instead, they chased an imaginary one.

"There's an American brand of amplifier I know since the '80s, called Spectral [Audio], and they are known for this very powerful, very fast transistor sound," says Zdar. "I have never heard one, none of us have, but we fantasized that we wanted this Spectral idea, for our songs to be very sharp, very fast. With valves, some days it becomes too old, you lose a little bit of sound, and this sag can also sound wonderful but it is not the sound we wanted for *Bankrupt!* We put pictures of the Spectral up everywhere and would put limiter plug-ins going into a $10,000 Pultec, if it would help us maintain this hyperfast feel for the record but also create a full-frequency response."

This quest created shifting roles in the studio. Branco explains that Mars, for example, "is usually vaguely in charge of the beats"— which can originate from an Akai MPC, Native Instruments Battery 3, and/or Linn LM-1 and LM-2, among other sources—while "the rest of the burden [melodies, harmony, structure, arrangement, production] is shared equally between the four of us."

Branco reveals a "song" might start from something as simple as "one finger doing bass on my keyboard in the key of C, and the other hand on a toy keyboard. We also have huge custom bizarre sound banks of sounds, samples, harpsichord, flute. We prefer when things are processed. We would want a very organic sound like a flute; we would play the flute, but it would sound too much like a flute, so we would sample every note and it would sound like a flute played like a robot, and we like that very much.

Recording to Pro Tools|HD, Phoenix zealously sketched (evidence of this is made public on the deluxe iTunes edition of *Bankrupt!*, which features 71 bonus "tracks"). A wealth of hi-fi-meets-lo-fi gear was utilized, including the Fender Bullet Stratocaster (a "simple, affordable and

practical guitar for beginners and students"), a Yamaha PSS-390 with MIDI retrofitted by Maitre Dirstein, an ARP Solina String Ensemble, a Yamaha CS-80, Korg Trident, a Memorymoog, a Fender Mustang Bass, a custom crunch pedal made by the band's friend and stage manager, Cédric Plancy, and much more. Beyond the aforementioned Telefunken preamps, and perhaps some Neve 1073 EQ, minimal processing was done during tracking.

By far the real money has been invested in Zdar's outboard mix chains, which often remain constant. For example, bass and kick drum sounds regularly go through an insert that includes a Neve 1073 EQ into a Pultec EQP-1A, a Massenburg GML 8200 EQ, then a Neve 33609 compressor. Vocals and snares are threaded primarily through a Urei 1176 or LA-3A compressor, while synths are often guided through the V76, Neve 1073, a Urei LA-4 compressor/limiter and the Massenburg. Hi-hats, cymbals, and toms often get compressed right in the SSL, with possible some application of an SPL Transient Designer.

Compression in multiple stages became especially integral to *Bankrupt!*, while also threatening to choke the songs at times. The initial arrangements from the band used iZotope Alloy and Waves Ultramaximizer compression to achieve a crispy, fast, fat dynamic, but Zdar stepped in to allow for a far more judicious use of digital congestion.

To recreate/complement the more aggressive moments of the in-the-box compression scheme, Zdar assembled transistor modules including the Pultec EQP-1A3-SS EQ with the API 2520, Urei LA-5 (a fixed-ratio limiter originally for live sound), as well as the Helios Type 69 EQ (particularly for boosting in conjunction with cuts and additional compression on the SSL console, increasing excitement and reducing fatigue). This ability to control both broad outlines and surgical details achieves a softened loudness, so to speak.

"We would use some of the hard limiting and EQ plug-ins before my insert, because sometimes it would be easier to add a little [Universal Audio Neve] 1073 on a specific bass in the box instead of changing a physical chain for affecting many instruments," admits Zdar. "And there's the [Universal Audio Ampex] ATR-102 [mastering tape recorder] plug-in I love, to get some wobble or add some air. But wherever we could, we would use hardware to keep a sound that is hi-fi but also trashy in a good way that won't hurt your ears. I would never use five plug-ins when I have the Pultecs, and I always filter and EQ on the desk."

Zdar discloses that the members of Phoenix, who appear to be men, are actually alchemists who grafted themselves together to actualize *Bankrupt!* "We wanted to create our own instrument sounds that could only be played by a gigantic eight-armed man," admits Zdar. "I'm obsessed with Robert Fripp and Carlos Alomar working with David Bowie and Adrian Belew with the Talking Heads . . . these men who when they play you can't say it's a Stratocaster going into a Boss pedal into a specific amp. And we wanted this colossal thing, where Phoenix was no longer four guys but one multi-armed creature, so we'd always double, triple, quadruple instruments ... listen to the song 'Chloroform' and you will hear this beast."

"That's always been a strategy of people who are interested in sound," confirms Branco. "Like Brian Wilson doubling clarinet and violin, doing layers. It's been done before, but it's a very powerful trick to do new things with old instruments. We love it when the limit between something very organic and something very synthetic is blurry. We love it when it's mysterious."

FORGETTING
FEAR &
Beauty

Considering the potential for conflict in this approach, Zdar cautions against the common impulse to push the focal point desired in a mix. "When I was young I was working with Bootsy Collins and I recorded a guitar where I wanted it to have lots of bass, lots of medium," he reflects. "But then we started the mix and [Bootsy] told me to make it sound like it was going through a telephone. So I cut everything out and then it just was sitting in the mix, and in five minutes I already forgot there was no bass on the guitar. This day I discovered a lot; it made so much sense to me how, if you're mixing lots of stuff, before thinking of invading you need to think about making room. The synths should make room for the bass, the guitar should make room for the snares or the highs, instead of the synths pushing and taking the room from the guitar. So at the end of the day there's as much filtering as there are plusses on my EQ. One of the worst things you can do in mixing is soloing stuff, worrying about how 'perfect' one sound is. It's how well it all balances."

Compounding all of these odd, thinned, so-wrong-they're-right sounds is a slathering of reverb, which the band previously allowed only in sparing increments. Its increased presence fits in with the importance of unease in the compositional viewpoint, and also acts as a bridge between both Phoenix's recording and childhood inspirations.

"We read that when making 'Kiss,' Prince decided to take out the bass and put some AMS reverb on the kick to create that impression," says Zdar. "Everyone told him he was crazy, but it worked so well that it is now what 'Kiss' is about. The great thing about reading such things is that it is freeing you to experiment, to believe there is no rule and you can try anything. There was no judge to say *Bankrupt!* would not come out if we had the guts to do something like take out the bass or push the reverb and delay. So we used the EMT 250, the AMS 15-80 and RMX16, a Lexicon 200, a cheap spring reverb like a Master Room like what they used in the Compass Point Studios. If you know where each one goes well, no one can tell you these cannot live together. When you use them right they appear to have always been part of the rhythm."

Zdar and Phoenix avid readers of "behind the closed door" studio stories, and are always enthusiastic to find out that artists

> "We wanted this colossal thing, where Phoenix was no longer four guys but one multi-armed creature, so we'd always double, triple, quadruple instruments . . . listen to the song 'Chloroform' and you will hear this beast."
> — PRODUCER PHILIPPE ZDAR

as contrasting as the Dead Kennedys and Fleetwood Mac have the same problems and very different solutions when recording. Zdar is particularly adamant that it's important to read about artists that are *not* favorites in order to avoid just emulating your influences. He acknowledges that the use of AMS delays and reverbs is part homage to Prince, but that first and foremost they are used to establish a rhythm that fits the evolution of Phoenix.

"We have always cared about the final recording first," says Branco. "We grew up with records more than with live music, so for us songs only exist when it's finalized, you know? It changes the process from other bands who have songs and play them, rehearse them ... I don't know how they do it. We need to hear not just structure but the exact tone of everything to fill the emotion. Everything is linked as a whole."

The decisive link for *Bankrupt!* comes from the SSL board in Motorbass. Doing minimal volume automation in the box in consideration of the compressor inserts, Zdar rides his board in a style Branco calls "jazz mastering." "The SSL 4000, if you pull back too much it sounds sloppy," says Zdar. "The Beatles, Quincy Jones, Chic, Thelonius Monk—they have all slammed their sound in a way that is well orchestrated and like velvet." Zdar identified

the driving element of each song, brought in the vocal quickly. locked it in, eased it back, brought everything else up and then went for precision. Finally, a pair of Ear 660 Limiter/Comp Amplifiers on the stereo bus, a final tube stage, helps "move the speakers, help things get crispy, thumping, or have magic even on technical, transparent compression."

Hundreds of studio hours and 41 printed minutes later, *Bankrupt!* establishes a heady scent ready to push wideband, high-current amplifiers of both the real and fantasy variety. "We like the moments where the structure doesn't matter anymore, that are about letting go, and we also love things that are compact, perfect like a cube," concludes Branco. "We feel enough in control that we can be less mastered." ∎

Tony Ware is a regular contributor to Electronic Musican.

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Vampire Weekend (left to right—Christopher Tomson, Rostam Batmanglij, Chris Baio, and Ezra Koenig) collaborate on tracks.

VAMPIRE WEEKEND

employs ancient analog gear and 14 hands to mix the quirkily orchestral, sonically adventurous *Modern Vampires of the City*

AS IT SEEMS

BY KEN MICALLEF

AN EXHILARATING collision of innovative recording techniques and classic equipment, Vampire Weekend's *Modern Vampires of the City* (XL Recordings) is an extreme hit to the sonic head. Its recording sessions involved liberal use of Universal Audio plug-ins and the console used to track *Exile on Main Street*, *Smile*, *Abraxas*, and *Tupelo Honey*; lightning-fast solid-state drive laptops and an Ampex MM1200 tape machine; and Ableton Live and doomed drummer Jim Gordon's Rogers bass drum, reportedly used on the Incredible Bongo Band's 1973 track "Apache," one of the most sampled breaks in all of hip-hop.

Co-produced by Vampire Weekend's Rostam Batmanglij and producer Ariel Rechtshaid (Justin Bieber, Haim, Kylee Minogue) and recorded at Batmanglij's Brooklyn loft (DUMBO), Slow Death Studios (Burbank), Downtown Studios (NYC), Echo Park "Back House" (LA), and Vox Recording Studios (Hollywood), *Modern Vampires of the City* is a warm-sounding record of cooing vocals, madly treated drums and arrangements so cut up and affected it sounds at times like DJ Kool Herc battling Pet Sounds.

Modern Vampires of the City was engineered by 14 hands, including those of Batmanglij and Rechtshaid, Dave Schiffman, Michael Harris, Nick Rowe, and Juan Pieczanski. The album was mixed by Batmanglij and Rechtshaid, with additional mixing by Scott Jacoby and Emily Lazar (Eusonia Studios, NYC), and Rich Costey (Eldorado Recording Studios, L.A.). But while many fingers partook in creating this unique Vampiric pie, Batmanglij credits the unique facilities at Vox Recording Studios—said to be the oldest private recording studio in the world—as the album's game changer.

"Much of the overall sound and approach to the album was being able to record the drums to tape on an old Ampex machine at Vox Recording Studios," Batmanglij says from his large loft in Brooklyn, NY. "That put us in a different world. There's a quality that happens with tape; it lets you really crunch and compress the drums and they don't get harsh or painful. It has to do with the transients hitting the tape; something changes. Once the drums have been passed through tape to Pro Tools, you can really mangle them and go crazy with them."

While Vampire Weekend (Chris Baio, Rostam Batmanglij, Ezra Koenig, and Chris Tomson) recorded and refined vocal and instrumental passages at various studios, the earliest recording passes (after songwriting stints in New York City, L.A., and Martha's Vineyard) happened at Vox, now owned and operated by Woody Jackson. Vox is no ordinary ancient analog studio. Barely unchanged since its inception in 1936, "Electro-Vox Recording Studios," as it was then known, features original linoleum floors, a '50s-era Gretsch drum kit, various EMT plates, and a Fairchild Reverbertron, four Ampex tape machines, Binson/Echoplex/Space Echo delays, and the 1967 Universal Audio/API custom console built by Frank Demideo for Wally Heider, which he used to track the aforementioned rock classics

LAUREN DUKOFF

"We worked our asses off to not let any single moment sound harsh. . . . We used a spectrum analyzer to really see when frequencies are harsh, they build up."
—ROSTAM BATMANGLIJ

and many more. Of course, it's what Vampire Weekend did with this invaluable gear that made Modern Vampires of the City special.

"This was a quest to make an album that sounded like nothing we'd ever heard or worked on before," Rechtshaid explains. "It was a conscious effort to not repeat ourselves. We pushed it as far as we could. Everything is based around live performance but we manipulated sounds. Whenever we came up with something familiar sounding, it was rejected. They wanted it to sound new and different."

That choice to make everything "sound new and different" resulted in vocals, guitars, Steinway piano, strings, modular synths, bass, and drums being treated to a "kitchen sink" approach from plug-ins to Varispeed to '60s-era mic pres.

"For the sessions at Vox, we ran everything to tape using the studio's Ampex MM1200 16-track, and we used the mic pres from the Ampex 351 1" 8-track, as well," Schiffman (Tom Petty, RATM, Johnny Cash) explains. "The first thing I did every time with each instrument was run it through the Ampex mic pres, and 90 percent of the time it would sound great and we didn't touch it afterwards

for most of what we were tracking. Those mic pres were enormous sounding, punchy, and clear; a 'less is more' thing."

Drums and bass (along with some piano and guitar) were tracked to tape at Vox before treatments from various plug-ins and Ableton Live. "It's a pretty non-conventional drum-miking setup," Schiffman explains. "We wanted a vibe. It's a classic sounding room in that it's not super ambient but it has tall ceilings. It's intimate although it's big. We focused on overhead mics to capture everything. I put up a pair of Neumann U47s but we wanted more dirt, more substance, so we added a pair of RCA 77dx ribbon mics, same lineage as the RCA 44bx. We lined up the RCAs with the U47s over the kit and blended them together. It gave us a really nice full sound of the whole kit. On the kick drum, we used a Neumann FET U47 on the outside and a Shure SM57 on the beater side to capture some click and attack. For the snare, a SM57 on top; that was it. We had Coles 4038s up for ambience, with all the mics running through the Ampex mic pres. We didn't close-mike, we got a nice picture without it. They wanted to take these classic elements and use them to get a unique sound."

After drums were tracked, Batmanglij and Rechtshaid skewed the natural sound with SPL Transient Designer and Varispeed, messing with the noise floor and messing with drummer Chris Tomson's mind. "We discovered that SPL Transient Designer would make the drums sound bigger," Batmanglij says. "We used it to accentuate and pump the tape hiss with the song. But at some point the tail of decay only goes so far. When you're hitting a drum in a room, it's not echoing forever, so when you max out the SPL Transient Designer there's nothing left for it bring out; it starts to grab the noise floor, the hiss, and pull it up. You can hear that happening on the drums in 'Finger Back.' There's certain moments where the decay knob is all the way up on the SPL and the hiss is pumping in reaction to the drums. It's a pretty modern sound, but we came about it using a lot of old stuff. Just tape. The tape is what's doing it. The hiss of the tape."

In some songs such as "Everlasting Arms," and later "Hudson," the drum tones dip like water pygmies playing ping pong, or alternately, shatter and spread like drum corps masters clubbing hundreds of marching snare drums.

"On 'Everlasting Arms,' we used the Varispeed on the Ampex," Batmanglij continues. "We were recording congas and at the same time using Varispeed so the tape speed was changing. On 'Step,' we recorded parts of the drums, then bounced the scratch tracks to a stereo track our drummer could play along to. We could make everything faster and higher pitched with Varispeed, record his live drumming, then slow it back down. The drums took on this underwater, otherworldly quality.

"The marching drums were recorded at Vox using Varispeed too," he says. "It gives them that weird quality. We layered samples around a lot of the drums. The samples are just reinforcing sounds, just adding a tiny bit of a sample behind the drums to stand them up. We'd throw them in at moments just to punch up a part. Like on 'Don't Lie,' there are moments where the kick drum needed to get bigger or more defined. There we'd layer in a sample of many we've collected for years."

Not surprisingly for an album where nothing is quite what it seems, Batmanglij ran his 1980 Les Paul direct for much of the album. At least that's his side of the story. "I used a SansAmp running direct with the guitar," Batmanglij explains." I like the control the SansAmp gives you with a DI signal for guitar, but my Les Paul
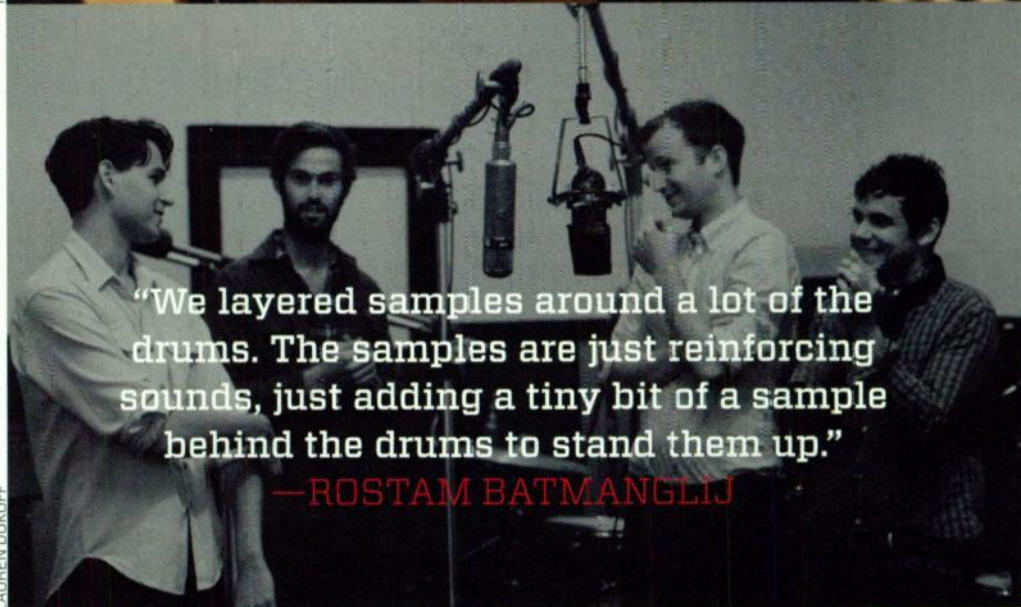
KEN MICALLEF

"We layered samples around a lot of the drums. The samples are just reinforcing sounds, just adding a tiny bit of a sample behind the drums to stand them up."
—ROSTAM BATMANGLIJ

LAUREN DUKOFF

was also going through a Neve pre and an 1176. The most beautiful sound was adding or using the wow and flutter of the Universal Audio [Ampex] ATR-102 [Mastering Tape Recorder] plug-in on the guitars and the keyboards. We got addicted to that UA tape plug-in and put it on everything. It's one of the defining sounds of the record. You hear it at the end of 'Don't Lie'; those guitars have this beautiful wobble."

Running guitars direct is an old trick Jimmy Page often used, Schiffman explains. "Jimmy Page would run guitars direct through the channels of a Helios console for this overdriven, creamy sound. For certain parts, we ran the guitar right into the UA console. But we focused on keyboards and drums and bass at Vox. We used a Steinway piano there; for the close mics, a pair of Neumann KM84s worked well, and the Coles 4038s for some ambience and texture. We placed the KM84s towards the hammers to get more attack, and the Coles were just out in the room. We also tracked the bass direct running a Retrospec

Juice Box DI but we didn't use it. We used an Ampex mid-'60s B18 with a Neumann U47 instead. The B18 sounded great and we went for a fairly ambient miking approach where the mic was three feet away from the cabinet."

The band didn't stop at pitch-shifting instruments. Batmanglij and Rechtshaid used the UA ATR-102 plug-in and Ableton to dismantle, disfigure, and reassemble most everything in earshot.

"We used Ableton Live's pitch-shifting function in 'Ya Hey,' that let us pitch-shift things easily," Batmanglij reports. "By accident, the 'ya hehs' weren't pitch-shifted with everything else while we were looking for the best key for the song. But we liked the way the vocal sounded, even though it was weird. We recorded one version in Pro Tools going for this Tropicalia vibe. I love the Os Mutantes' records; they used a chamber reverb and I am always chasing after that sound. For this record and every record I've made, we used a beautiful Cello Studios reverb in Audio Ease Altiverb. On 'Ya Heh,' there's also

saturation happening after the reverb in the chain, and then a little wow and flutter from the UA ATR-102 plug-in, too. That whole song, you can bathe in it, it's warm."

"Everything was mostly recorded in the moment as they wrote, then we manipulated it," Rechtshaid elaborates. "Like in 'Diane Young' and 'Ya Hey,' we recorded a vocal, then realized the key was too low in the chorus. So we pitch-shifted the whole song up and re-recorded it. Then the guys liked the song, but not the vocal. So we pitched the vocal up a half-step. We used the formant tool in Ableton, but it's less to do with the tuning than with the timbre of the vocal. So if you pitch-shift something up and it turns into baby vocals, you tweak the formant down and it makes the vocal go from baby to deep old man, without changing the pitch. I also used my old Eventide H949 and 910 harmonizers to play with the pitch-shifting in 'Ya Hey.'"

In "Step," which sounds like Simon & Garfunkel dropping acid on a merry-go-round, Vampire Weekend use inspiration from tenor saxophonist Grover Washington and '70s soft rockers Bread, then screw it all up. The inspiration began with a lyric from '90s New Jersey rapper YZ, which was sampled by Bay Area hip-hop crew Souls of Mischief for their song "Step to My Girl" (from their *93 'til Infinity* album). Their song sampled a Grover Washington Jr. cover of Bread's "Aubrey." But VW's "Step" has no master sample. The vocal melody of the chorus interprets the melody of "Aubrey," and it's close enough that the band had to clear it as a sample. The chorus vocals were recorded in Ableton using the onboard microphone in Batmanglij's laptop, a super-fast solid-state-drive MacBook Pro.

"It just clicked, so we used it," Batmanglij says. "You can hear the train going by out my window while we recorded. We became attached to it. The song was in *G* then, now it's in *B*♭. I used the formant function in Ableton to maintain the quality of the vocal. The vocal sounds like Ezra is singing in *B*♭ but he was actually singing in *G*. It has a unique quality.

"The newer solid-state-drive laptops are running Pro Tools faster than any computer we've used," Batmanglij adds. "The solid-state drive is incredible. The MacBook Pro with Retina Display has the high-def screen and two Thunderbolt cables. Samples load instantly. There's almost no wait time. But it maxes out at 750GB, and I have 20GB left, which is not a good place to be! I have all my samples in the computer as well. You want to use a collection of samples whenever you are working on music, you want them all in the computer."

With all this talk of fast drives, digital dalliances, and ancient recording studios, what matters most to Vampire Weekend is warmth. Like Petula Clark said, "what the world needs now is love, sweet love." But Batmanglij thinks today's world of digital recordings are in urgent need of warmth. Whether through love or headphone fixations, the man wants warmth, and he wants it now.

"Very few new recordings are warm," Batmanglij believes. "I don't mind erring on the side of warmth, but people are scared sh*tless to do that. Have you listened to the

new records coming out? There's insane brightness happening. We worked our asses off to not let any single moment sound harsh. You have to be able to enjoy the recording with the volume cranked or it's not a good mix. We used a spectrum analyzer to really see when frequencies are harsh, they build up. There's extreme moments on the record where we were severely limiting drums or vocals, or using a SansAmp on the vocal. To avoid buildup, you have to go in there and perform surgery and automate EQs if you really want to make a mix that never hurts your ears. The [Sonnox] Oxford SuprEsser plug-in was useful for non-vocal things. That would tame anything that was slightly painful. That plug-in lets you actually see which frequencies are being activated at any given moment."

All the vampires were enlisted, headphones on, pencils down, to check the relative warmth levels of *Modern Vampires of the City*. These guys aren't necessarily into vinyl, though they obviously espouse analog recording. They know the fishy smell of a bad digital recording.

So they listened until they heard it so they could destroy it.

"Some speakers make your record sound warmer, some make it sound harsher," Batmanglij says. "It is possible to make a mix that is clear and bright but never harsh. I think that is a successful recording. But if you're not careful, it is easy to make something that will straight-up hurt your ears. It won't hurt your ears on every system, but at some point, like with iPod headphones, it won't be fun to listen to. So we listened on everything. We used the iPod, and Sony 7509 and 7506 headphones. They're good at letting you know what is going on. Then you can deal with it."

Ultimately, an intimate if quirkily orchestral and technically brilliant recording, *Modern Vampires of the City* may not provide juicy ear candy for everyone. It's adventurous, it's beautiful, and it's downright daring. The band's previous recordings, *Vampire Weekend* (2008) and *Contra* (2010), topped year-end lists and tackled hipster highbrow problems from Williamsburg to Bangalore. But the next offering

from Vampire Weekend will be something totally different. Serge Gainsbourg meets Reign in Blood? *Channel Orange* mashed with Ennio Morricone's *A Fistful of Dollars*? Batmanglij ain't saying. But don't forget your laptop.

"We thought these three albums should look like they belong together on a bookshelf," he laughs, pointing at his bare walls devoid of bookshelves. "We realized that there are things connecting the songs across all three albums, like an invisible hand was guiding us. It does feel like we've been able to create three distinct worlds for each album, and yet have them be interconnected." ∎

In addition to contributing regularly to Electronic Musician, *Ken Micallef has written for* Modern Drummer, Grammy *magazine, and other publications.*

DISCO PUNK REDEFINED

Rhythmic Developers

!!!

Construct a Contemporary Album Off Classical Foundations

BY TONY WARE

"LET'S THROW 20 AT IT" SOUNDS LIKE A CAR TIRE CUSTOMIZATION, SOMEONE OFFERING YOU A BET, OR MAYBE A REALLY BAD IDEA IF YOUR NICKNAME IS "TWENTY." IN ACTUALITY IT WAS THE MANTRA THAT HELPED FUEL THE STUDIO SESSIONS FOR *THR!!!ER* (WARP RECORDS), THE FIFTH ALBUM BY GROOVE-CONVERGING BAND !!! (PRONOUNCED CHK CHK CHK).

"That's what Nic [Offer, !!! frontman] would always say when there was an idea that maybe didn't fit the initial direction of the song," says Jim Eno, drummer for the band Spoon and the owner of Public Hi-Fi, his studio in Austin, TX, where he helped produce *THR!!!ER*. "You don't want to throw out an idea, never hear it, and then be left with the question of whether there's something better that could have been done for a song. So we wouldn't shoot down many ideas, we'd just try to nail it in half an hour to see if it was actually something worth pursuing. It was a good studio philosophy."

!!! formed in Sacramento, CA, in 1996 and has been actively performing and recording since, though by 2000 the band members lived split between the West and East Coast. Today the sextet—which, along with singer/sequencer Offer, includes Mario Andreoni (guitar, synths), Dan Gorman (trumpet, synth), Allan Wilson (sax, percussion, keys), Paul Quattrone (drums), and Rafael Cohen (bass, guitar, vocals)— remains bicoastal, convening to tour and track records initially sketched and compiled in home studios split between Sacramento, Brooklyn, Portland, OR, and Philadelphia at various points.

PIPER FERGUSON

figure out how to get back to where you imagined you'd be."

Aware of Eno's pro-analog ethos and his skill at gluing together very physical responses that balance detailing and bundled hustle, Offer and Quattrone met with him in Austin following the 2011 South By Southwest conference. Sitting at Eno's 1969 Neve 8036, the centerpiece of the studio that sits adjacent to his Tarrytown house, the guys from !!! discussed their desire to step certain things back without toning the vibe down: While originating as a live act empowered by a gang mentality of everyone doing everything, going at it free and raw, the band wanted to make sure the energy didn't obscure more melodic, multifaceted ideas.

"One thing Nic had mentioned they were looking for on this record is that everyone pretty much says hands down that !!! is a great live band, and they have never had a record that captures that feel," reflects Eno. "So we talked for hours and days with all the band members about the differences between what makes a live show and a record exciting and how to translate the dynamics between the two.

"There are shows where it can be exciting when everyone starts at the top of a song and plays to the end, but that doesn't always make a great recording because it's static and linear," continues Eno. "I like production that has things coming in and out, that has those 'Wow, what was that?' moments, while still focused around the song. So we set up a time where Nic and Rafael came down, and we worked on the demo that became the song 'Careful,' identifying what was and wasn't working, dialing in those initial decisions that allow everything to fit sonically and stylistically."

Following that first interaction, !!! booked another session for the entire band to attend, and on his second trial run, Eno tracked the band working through the songs "One Girl/One Boy" and "Station (Meet Me At The)."

"With this record we had a real push to drive even harder, to make great songs that you can dance to," says Offer. "And I knew we nailed a killer take with 'Station,' then Jim took it that extra step by toughening it up with his Altec [1567a 4-1 tube mixer]. We knew we were heading in the right direction as we were watching that track bloom. I don't think the world thinks it needs another disco-punk record, but it's a very different record and the world does need it."

This physical disconnect makes it all the more impressive how fluidly !!! channels funk-driven, dub-routed rave-ups, a rubbery, adrenalized, occasionally blown-out style of jamming labeled "disco-punk" upon the band's debut. While the empowering influences of The Clash, Gang of Four, and Fela Kuti are certainly evident in the band's work, there are equally vibrant inflections inherited from Arthur Russell, the early-'90s Madchester scene in the U.K., plus the orchestrations of Quincy Jones and rhythmic accents of Bohannon. These, among many other touchstones, coalesce into what Offer describes as "the heat."

"We're always following that point where your eyes light up, that sweet spot where you're excited," he explains. "And more and more that means there's no typical workflow. It has to be that way, and not just because we live

long distance. We're used to that; we're used to each starting songs that we'll then share over the Internet or in person so someone else can improve on the parts where they exceed. But we're even more dedicated to reworking the blueprint, or otherwise what's the point? We want each song to deserve its own very individual column.

"We have a philosophy of whatever's clever; we're in a perpetual state of making it up as we go along . . . each song is wearing the clothes that fit it," continues Offer. "We've always chased interesting sounds, but sometimes we could go long and get lost. A big part of what Jim was good at was helping us be more efficient. We'd set out to get a bass sound, nail it, feel great about it and only then go to the synths, instead of saying something was good enough, filling in a few more competing parts, and later spending hours trying to

Eno corroborates that positive impression that came out of that session. "A lot of what you do as a producer and engineer is take comments from the band and figure out what it is they want to hear, so when they said they wanted it 'tougher' I knew positive distortion was the way to do it," he says. "It was all about pushing the input, the front end of my preamps hard, and with the Altec you have to throw it into the mic-level input and try to balance what is a super, super-saturated sound that you can dial in and use as that background weirdness. It adds a bounce, especially to kick drum and low-end things, that you can hear a lot."

After tracking their take on controlled chaos, "cluttering" the 1K–5K range with excitement, Eno and the group went through the remaining demos to pinpoint the ones with the most potential for studio reinterpretation. The actual recording and mixing took place over three additional sessions across a two-month period.

"In the early days we jammed on everything, and everything was made from edited jams and jams edited together," reflects Offer. "But we have a more mature viewpoint now, where we think about what could work versus bashing it out until something fits. So we looked at the best things that were really solid from the start and we dialed it in from there."

From freak out to geek out, the genesis of each song on THR!!!ER varied. In their home studios, the multi-instrumentalists of !!! primarily used Apple Logic Pro as a DAW/timeclock, with some Ableton Live incorporated. Shure's SM57/58s and the Beta 52A, as well as the AKG C1000 S were run into basic Radial DIs and various interfaces, with the majority of processing handled with stompboxes (such as classic Mutrons and modern Moogs) or in the box.

Offer and Andreoni have amassed a wealth of the band's recording gear over the years, and for them a lot of ideas were generated from Dave Smith Instruments gear, including the Poly-Evolver, Mopho, and the Tempest, as well as some classic keys such as the Korg MS-10 and a Wurlitzer 200A. A Viscount-era Oberheim OB-12, Moog Lil Phatty, Nord Stage 1, plus Elektron Machinedrum and Monomachine helped round out the physical sound generation engines.

With his sequencers synced up to Logic, Offer often started songs punching in rhythms, and once the groove was established, the beat dictated whether a bassline synth, vocal

melody, or perhaps a guitar loop came next. A song, such as "Get That Rhythm Right," may have originated with the drum machine, had its rhythm taken to California to be jammed on with other band members, then that session was taken back to New York to be chopped up, have some chords and vocals added, and only then was it ready as a template. "The thing about a good groove is, once it's going, you can do whatever you want on top," says Offer. However, the foundations of THR!!!ER varied more than previous !!! albums.

> "It was all about pushing the input, the front end of my preamps hard, and with the Altec [1567a 4-1 tube mixer], you have to throw it into the mic-level input and try to balance what is a super, super-saturated sound that you can dial in and use as that background weirdness."
>
> —JIM ENO
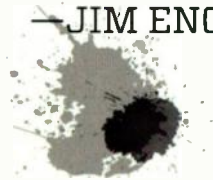
In some instances only one band member would contribute a nearly complete arrangement, such as the instrumentals for "One Girl/One Boy" and "Even When The Water's Cold," which came from Cohen ready for Offer to lay down guide vocals. In yet another scenario, the entire band would receive the opportunity while rehearsing for a tour to track a full-band live session as a source for samples and a bed for eventual overdubs.

All of these set-ups, as well as others, were fed into the band's time at Public Hi-Fi. Built

around the restored console plus Studer 827 2-inch 24-track tape machine and Ampex ATR-102 1/2- and 1/4-inch mixdown deck, and populated by a variety of compressor/EQ modules from Neve, Pultec, API, GML, and many more, Eno's process is very anti "fix it in the mix." While all the !!! sessions were recorded to the Pro Tools HD2 Accel System, putting everything in/pushing everything out through outboard gear was a key element in getting THR!!!LER's feel.

Instrument-wise, !!! enjoyed hands-on time with Eno's Memorymoog, Sequential Circuits Pro One Synth, and a Hohner Clavinet Pianet DUO, among other vintage kits. Lead and rhythm guitar were usually tracked with either a RCA BK5 or a Shure SM57 with a Royer R121 bussed to one track to get a great midrange, and this would go through either a Urei LA-3A or 1176 to tape. For bass guitar the chain would usually be an Opus mic or the Electro-Voice RE20, with both run into a DI and mixed together with additional keyboard bass for buzz. Compression and EQ were less common at the start, unless going for a specific effect.

In terms of effects and processing, key units made a distinct impression, including the EMT140 stereo tube plate reverb, Binson Echorec Magnetic Disk delay, Fender Spring Reverb Tank, Eventide H910 harmonizer, Masteroom Spring Reverb, Ibanez AD202 Analog Delay, Otari MTR12 1/2" four-track for tape echo, Roland 201 Space Echo, AMS DMX 15-80S stereo digital delay, and more.

"For each part we'd go through our options, commit to a sound and build off that till we got it right, because if you just record hundreds of tracks and then mix two months later, you can lose all your perspective," says Eno. "We didn't want an album made from notes; we wanted one made from great performances. And when you're working with a band with an incredibly dense rhythm section, where drums and bass take up a lot of space, it's better to know early on what kind of space there is for everything else in your mix so you can start to shape what you track instead of get stuck carving into things later to find room."

Looking for tones with more personality than absolute perfection, Eno would bring up a kick and a snare and throw them around to various delays until he'd stumble on a polyrhythmic pattern to tuck around other parts that would avoid the normal half-note, quarter-note, and triplet delays, and that

would stay out of the box wherever possible. He'd also turn to the Eventide and set up its internal delay and feedback to get a pitched down, intentionally degrading fringe on certain drums needing a sputter glam feel.

Various techniques were employed throughout *THR!!!ER* to help parts sit in with and stand out from the rhythm. For example, at the end of the song "Except Death" the guitar part is given added dimensionality by recording passes of the part through the filter section of the Korg MS-20, then panning several wide and delaying the left and right channel to differing degrees, keeping the initial performance in the center. The result was "a linear driving thing that still had special excitement," explains Eno.

Meanwhile, on "One Girl/One Boy," a guitar pass was recorded to the ATR-102 with its varispeed set down, then that was dumped to Pro Tools with the tape machine set to normal play. "The result is these takes that sound high frequency, very robotic; you lose the feeling because you can lock in a lot easier at the lower speed playback, but the different voicings really get the part to jump out at you," says Eno.

Another physical "effect" entailed putting a regular cymbal on top of a china crash cymbal, so it creates a "trashy" sound. "It's this incredibly short decay and it almost sounds like you're gating cymbals," says Eno, who used it to accent various songs. In addition, Eno's two-story live room has 25-foot ceilings, and he keeps a Neumann SM69 stereo tube mic 15 feet in the air in the live room; even when drums were tracked in a booth this catwalk mic was used to add some nice air into the tone.

While most of the album was structured as songs, not just mixes, there were outliers on *THR!!!ER*. "The song 'Slyd' is probably the most digital thing we've ever done," says Offer. "The idea was to write something like [M/A/R/R/S] 'Pump Up The Volume,' using contemporary technology to throw everything over the groove. But instead of buying samples, we decided to make a song that sounds like 12 different ones hanging together, pulled together like how a DJ cuts between themes that match up without necessarily making sense together. A lot of people chase these specific keyboard tones that reference the '80s, but I wanted to make a track that could represent the sound of

today's gear. I tried to use the first preset that would come up, building the whole thing in Logic." A collage of loops put through TC Helicon and Logic delays and pitch shifters, "Slyd" shows that everyone can take the same tools and achieve different results.

Whether it was a full band performance or parts compiled, the songs of *THR!!!ER* slam the meters hard without fatigue or muddying the focus. This is thanks to a cityscape approach to mixing, where not every component sits at the same height, and parts pull back to reveal new angles. A song like "Station (Meet Me At The)" has a distorted Rhodes track as its "Empire State Building," drawing attention whenever present, while another uses its tape-affected guitars to anchor its skyline. The album is consistently varied, pulled together not by mix bus compression but by the nexus of Eno's Neve and !!!'s aesthetic hub.

"We worked hard to have things pop through the middle," confirms Offer. "It's a continual lesson that every musician needs to learn, that sometimes you need less of one thing not more of everything."

Pushing forward, !!! is revaluating the tracks that didn't make initially *THR!!!ER*. "Out of 16 potential songs, we definitely burned the cake on some of them, but there's still some good stuff that might make an EP for the diehards," says Offer. "We've joked about calling that *F!!!ER* ['FILLER']."

Giving every 20 100 percent, *THR!!!ER* brings together spaced-out tendencies and tight structures without sounding overly slick, and it redirects the flow through familiar fields without hitting any ruts. Married to the groove, !!! will continue to break the process down while getting down.

"We were doing this style before it was a phenomenon, and we're doing it after, because it's what we love," says Offer. "I think we made a great record that you can dance to, but I don't think we did everything I wanted to do with this album, and I'm glad. That means there are still things to do. At the end of the day I'm just trying to make funky music, songs that every person just has to get up and dance to, so ultimately I'll keep trying until we make that perfect wedding jam." ▪

Tony Ware is a frequent contributor to Electronic Musician.

Trinity Cubed

The quintessence of tone! This powerful digital multi-effect begins with the flawless polyphonic tracking of the Micro POG, generating an octave above and below your pitch. Next, the creamy flanging and chorus of the Stereo Electric Mistress weave and undulate the richest modulations. Finally, the Holy Grail Plus wraps you in a silken shroud of luxurious reverb.

Switch on Shimmer to re-route the effects. Now the Grail reverberates the POG's wet signal, with the Mistress at the end of the chain, adding lush flanging to the reverb tails. Shimmer also transforms the Grail into a digital delay with the POG in its feedback path for inspiring ascending and descending octave effects.

Rogue Fundamentals

The enhanced version of the venerable Bass Big Muff Pi. Switchable 0dB and -10dB input ensures the pedal is equally effective with passive and active pickups. The built-in noise gate eliminates unwanted hum, while the blend control allows you to mix the dry and distorted signals to taste. Footswitchable crossover activates a variable low pass filter on the dry signal and a high pass filter on the distorted signal. Features Effect, Direct (buffered dry) and XLR DI outputs.

Tone Genesis

A faithful reissue of the 1980 rarity. This palm-sized synth produces randomly changing, pure tones over a 4+ octave range. Rate controls speed. Glide adds portamento. The RTG creates a perpetual soundscape of evolving sounds. Use it alone or with other effects to capture the beauty of the unexpected.

electro-harmonix

Ólafur Arnalds
Now I Am Winter
MERCURY CLASSICS

Never trust the drummer. The former skins smasher for such Icelandic hardcore bands as Fighting Shit and Celestine, Ólafur Arnalds is reborn as orchestral beat maker supreme, plying mercurial strings and squishy beats in moody landscapes that recall Massive Attack's *Mezzanine*. Featuring arrangements from Nico Muhly and Icelandic vocalist Arnór Dan, *Now I Am Winter* is at its best when fully aloft, more 20th Century classical atmospheres than subterranean dance-floor fillers. Arnalds is a master of subtlety, from synths that infer Hades to strings that unleash the heavens.

KEN MICALLEF

Tricky
False Idols
FALSE IDOLS

Searching for spine-crawling, syncopated beats and eerie, whispered vocals to soundtrack your seduction scene? Press play on Tricky's latest, *False Idols*, an intentional return to the sounds of his perennial debut, *Maxinquaye*. Playing vocal catch with Tricky, *Idols*' guest vocalists are drawn into a sinister space sculpted by his spare, cinematic sounds. Hollow cello strings outline the shuddering "Nothing's Changed" while the childlike voice softens the edges of the doom-filled "If I Only Knew."

LILY MOAYERI

Charles Bradley
Victim of Love
DAPTONE

Gainesville, Florida's, "Screaming Eagle of Soul" resurrects the classic R&B of Otis Redding, Jerry Butler and James Brown, with the stellar Daptone production team to make you think it's 1968 all over again. Bradley's dark whiskey croon is a thing of joy, not pain, whether vamping a soul strut on "Strictly Reserved" or pumping a shuffle stomp on "You Put That Flame." That Bradley and the Daptone crew make this majestic music without a hint of irony or cliché—that's a real shout of soul.

KEN MICALLEF

Pistol Annies
Annie Up
RCA NASHVILLE

The bad-ass country trio of Miranda Lambert, Ashley Monroe, and Angaleena Presley scores again. As on their debut album, *Hell on Heels*, the spotlight shifts from one Annie's vocal to another, or shines on their awesome three-part harmonies, serving up tenderness, attitude, joy, darkness—whatever best serves each of the terrific, original songs. Lambert's star just keeps rising higher, and that's in part due to her commitment to heartfelt music full of relatable stories and emotional impact.

BARBARA SCHULTZ

Kylesa
Ultraviolet
SEASON OF MIST

This Savannah, GA-based quintet has churned out marshy, phantasmal, roiling post-hardcore anthems since 2001, and is following up one of 2010's highlight-heavy rock albums with a "colder" aesthetic. A theme of loss hasn't hampered Kylesa from compiling prismatic textures, however; the band employs quickening modulation in the higher frequencies to contrast with the heaving low end. Occasional digital flecks and gothic whorls reinforce Kylesa's impressive blend of the crunch of metal with the tension and paradox of post-punk.

TONY WARE

ADULT.
The Way Things Fall
GHOSTLY INTERNATIONAL

Detroit-based partners Adam Lee Miller and Nicola Kuperus have married step-sequencer percussion, detuning patches, and spectral pads mislabeled as detached "electro" since 1998. This fifth full-length backs off the aggro dissonance of 2007's *Why Bother?* for the duo's most "pop" album, in the way Gary Numan, early Human League, and the Normal were pop, as well as snap and crackle. Stripped of ratty bass panic attacks and atonal splatter, consonant arrangements and blanched analogue melodies manifest in wraithlike contortions.

TONY WARE

William Tyler
Impossible Truth
MERGE

Hazy, dark, half-distorted/half-glistening layers of strings jangle melodiously through the locations that inspire guitarist, sometimes Lambchop member William Tyler. "Cadillac Desert" twangs a little; "We Can't Go Home Again" sounds a lot like how melancholy feels, until it starts to build steam and roll away. This collection of breathtaking, carefully orchestrated instrumentals is like a musical road trip, and it will transport you to places you didn't even know acoustic guitars could go.

BARBARA SCHULTZ

Roundup

Tabletop Synthesizers

LUST

These synths offer more flavors than ever—from simple monophonic analog models to digital production centers

BY CRAIG ANDERTON

ONCE UPON a time, it seemed just about every keyboard synthesizer had a rack-mount version. Although rack-mount synths never sold that well, the concept has resurfaced as the tabletop (a.k.a. desktop) synthesizer.

Tabletop synths range from a basic, inexpensive unit like the Korg Monotribe to something as sophisticated as standard synthesizers—if not more so. Elektron's Analog Four has more of a groove orientation, while Moog's Minitaur is a special-purpose analog bass synth.

If you seek a tabletop synth, it's important to define your needs and preferences so you make the right decision; this roundup explains the types of features and techology you'll find, along with profiles of eight very different tabletop synth approaches.

TABLETOP TECHNOLOGY

The Analog Factor I'm not a synth purist; whether a synth is analog, digital, or virtual, I'll get some cool sounds. But analog synths have a particular sound quality that's another useful color for your palette, and many tabletop synths make analog technology affordable by stripping away the keyboard, large casing, and limiting the number of voices. (More voices equals a higher price tag.) If you want analog, your least-expensive option will usually be a tabletop synth.

Waveforms Analog synths typically have a fairly limited collection—sawtooth, square, triangle, and maybe some variations like variable pulse-width or duty cycle. That's been enough to power a lot of recordings over the years, but a digital synth architecture usually provides a wider range of options. The basic tradeoff is analog purity versus digital versatility.

Some analog synths accomplish a bigger oscillator sound by adding a sub-oscillator, which simply divides the main oscillator down an octave or two. Also, single-oscillator synths sometimes incorporate a chorus effect to imitate the sound of two detuned oscillators.
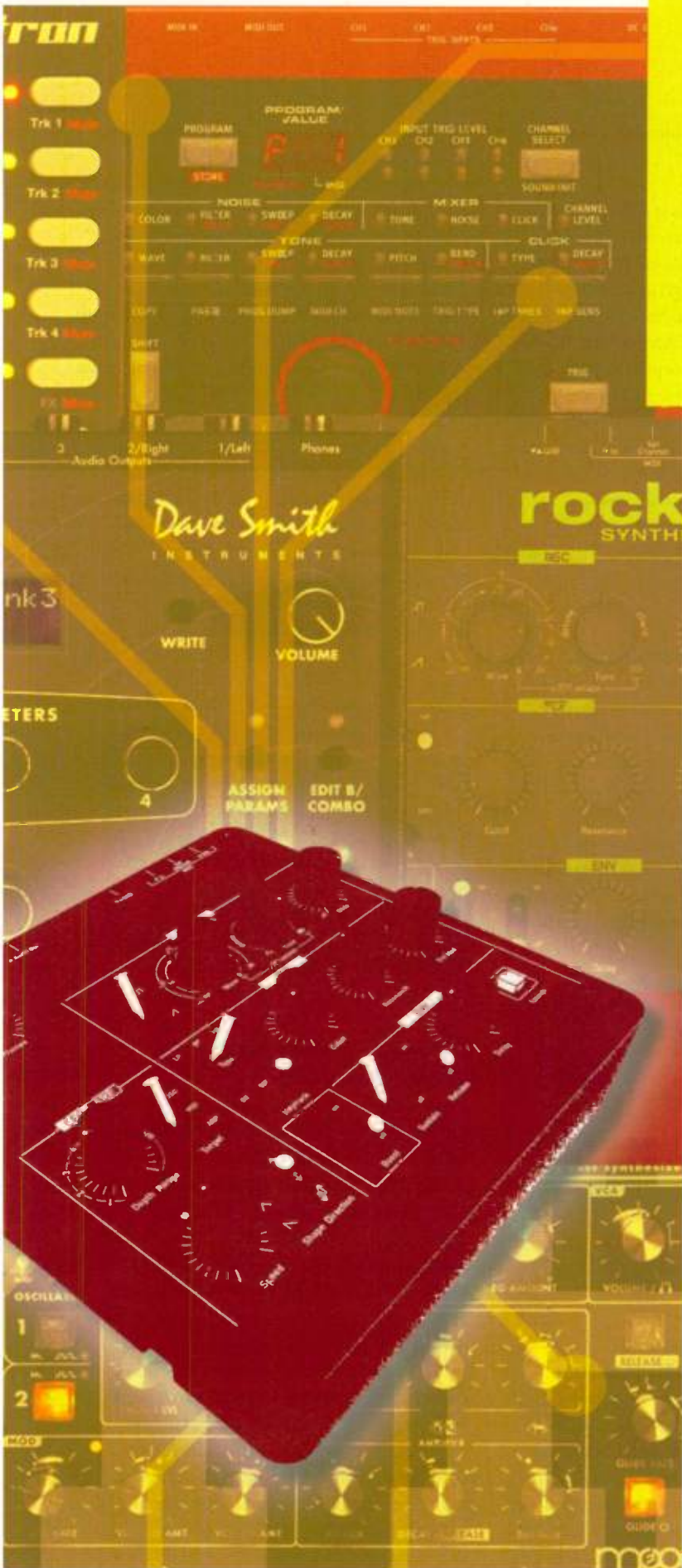
Multi-Timbrality This means a synth can create different sounds simultaneously. It's primarily a feature with digital synths, as polyphony and multitimbral operation are complementary; you need lots of voices to be able to distribute them over different sounds.

Onboard Sequencer/Pattern Generator A sequencer records your keypresses and (usually) controller motions. This function is great for songwriting, as you can often capture ideas faster than with a conventional recording setup. Full-blown sequencers are usually found only in digital workstations, so most tabletop synths downsize to pattern generators (also called step sequencers), which let you create mini-sequences of 8 to 32 notes or so. They're ideal for bass lines, electro-type drum patterns, melodic riffs, and the like.

Arpeggiator An arpeggiator triggers held or latched notes sequentially in a pattern. (Sometimes arpeggiators are polyphonic, and can trigger several parallel patterns.) Typical modes include going up or down the held notes, up/down, random, or extended, in which the notes you hold down repeat over several octaves.

Realtime controls Don't expect wheels or a control surface for your DAW, but Korg's Monotribe has a nifty little ribbon controller, and DSI's Tetra has a "Push It!" button that triggers notes and latches sequences. Also, tabletop synths often feature a lot of controls, which encourages realtime tweaking.

Programs/Presets More presets are good, because even if you don't create sounds, you'll probably want to store variations on factory presets. This is also where digital technology complements the analog world by providing digital control over analog circuitry.

Accessory Software Some synths include software for editing parameters, or even an option to make the physical synth look like a VST, AU, or RTAS plug-in (although of course, you can insert only one instance—it's hardware). Seeing parameters onscreen can sometimes lead to faster editing than tweaking knobs, as well as allow for storing presets in a computer, but may also allow accessing "hidden" functions.

Digital I/O USB I/O can offer options like transferring MIDI data over USB instead of using patch cords with 5-pin DIN connectors, or even streaming audio.

Audio Input Usually, this is about using the synthesizer to process external signals, like gating a guitar with the VCA or sweeping its tone with an onboard filter. However, few synths include functions to have the synthesizer *respond* to the input. (The Access Virus TI2's envelope follower is an exception.) As a result, this is most effective if one person plays the synth while another plays the input source, or you can sequence synth parameters as you play.

CV/Gate Inputs Old schoolers will appreciate a tabletop synth with control voltage and gate inputs so you can play from ancient keyboards (or even a new one, like Akai's way-cool MAX49).

But It's About More Than Specs Specs are important if you want to accomplish specific sounds, but ultimately, this is about playing music. If you fall in love with a synth, trust your instincts; some of the best synth parts ever recorded were played on a single-voice, non-multitimbral, non-expandable Minimoog. If you're trying out an instrument and it doesn't inspire you, move on even if it has the most amazing spec sheet you've ever seen. After all, no one has yet figured out how to play a spec sheet.

Dave Smith Instruments Tetra
$929 MSRP/$849 STREET
DAVESMITHINSTRUMENTS.COM

The Tetra analog synthesizer is basically a quad version of the monophonic Mopho synth. It offers four notes of polyphony, and two oscillators per voice with classic analog wavesforms—sawtooth, triangle, saw/triangle, or square wave with variable pulse width—as well as hard sync and a sub-oscillator for each oscillator. Each voice has three ADSR+delay envelope generators and four LFOs for modulation; the filter is a Curtis lowpass type that can self-oscillate, and switch between 12 or 24dB/octave response. The VCAs are analog.

Tetra doesn't have effects, audio inputs, or digital audio I/O; but it has an arpeggiator, 16x4 step sequencer (with one sequence per program), and provides MIDI over USB as well as standard 5-pin DIN connectors (in and out/thru). It includes a generous 512 presets, with a free downloadable software editor for Mac OS and Windows.

One very unusual feature lets you chain multiple units together for more voices, as well as chain with some other DSI products. Another is a feedback loop for each voice, with programmable level and gain, and there are separate glide rates for each oscillator. In addition to individual outputs for each of the four notes, it includes a stereo headphones jack.

Tetra is a clever synth with a big sound, and enough goodies to keep it interesting as well as fun.

Moog Minitaur
$679 MSRP/$600 STREET
MOOGMUSIC.COM

Moog's Minitaur (based on the Taurus 3) is a straight-ahead analog bass synth with the Moog touch. Why *Mini*taur? It's pretty small (8.5" x 5.25").

For I/O, it offers 1/4" analog in and 1/4" analog out, but more Moogishly, you'll find a gate input and separate control voltage inputs for pitch, filter, and level (remappable to other parameters). It has 5-pin MIDI in as well (but no MIDI out or thru) and MIDI over USB, but Minitaur can also perform CV to MIDI conversion.

The signal path is classic: two oscillators with square and sawtooth waveforms, amplitude and filter envelopes (attack, decay, sustain, and release), Moog filter with resonance and envelope amount, VCA, and MIDI-syncable LFO with rate control and separate amount controls for oscillator pitch and VCF cutoff. Although there's no downloadable editor to help you edit

Bullet Proof.

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the 100 internal presets, it's easy enough to tweak sounds from the front panel.

Moog never lost the recipe for big, badass analog bass sounds—but now you don't need a Minimoog to get the job done.

Elektron Analog Four
$1,149 MSRP/$1,100 STREET
ELEKTRON.SE

The Elektron Analog Four blends analog and digital—four analog oscillator-based voices for sound generation and an all-analog signal path, complemented by digital control. The synth capabilities go beyond your basic Minimoog-style architecture, with variable waveshaping, hard sync, and sub-oscillators. Filtering is Virus-like, with a 4-pole Moog-style ladder filter followed by a 2-pole multimode filter, and saturation in between the two; there's also filter feedback. There are lots of assignable envelopes and LFOs for modulation.

I/O includes a headphones-out connection, stereo outs, and two unbalanced audio inputs for processing external audio. MIDI in, out, and thru jacks are available, as is USB 2.0 interconnectivity. Unfortunately it doesn't offer a computer editor, but the front panel is loaded with knobs, switches, and user-friendly performance functionality.

The Elektron Analog Four has a definite "production station" vibe with its six-track step sequencer that follows the drum machine paradigm—128 patterns of up to 64 steps, which can be linked into 16 songs. You can even change patches within the sequences, utilize swing, slide, accent, and transpose options, and do microtunings. Four of the tracks control the four voices, another track controls the onboard effects (chorus, delay, reverb), and the sixth track controls the two CV/Gate outputs; all tracks are variable length. Still not enough? Then check out the six arpeggiators.

The step sequencer makes it easy to integrate modular synth modules with a sequencing/sound-generating environment,

and for the cognescenti, CV outs can be either 1V/octave or Hz/Volt; gates are gate or trigger types. You can also sync other analog gear (like drum machines) with DIN sync clock pulses.

There's quite a bit more, but only so much space . . . overall, the Elektron Analog Four is a groove powerhouse that's fun to play, but deep enough to go places most other tabletop synths don't go.

Korg Monotribe Analog Ribbon Station
$340 MSRP/$200 STREET
KORG.COM

A true analog synth, the Monotribe features three parts (synth with sawtooth, square wave, and triangle wave oscillator; kick, snare, and hi-hat sounds), which run through the same filter used in the MS-10 and MS-20. Pattern creation and arpeggiation are major features—pattern sequencing is based on the Electribe's eight-step pattern-sequencing paradigm.

Its size (HWD approximately 2-3/4" x 8-1/8" x 5-3/4"), battery power, and built-in speaker underscore the accent on portability; its small footprint also makes integration with DJ setups easy.

The Monotribe includes a ribbon controller with three modes (chromatic, unquantized, and "wide"), and a resonant filter. It also offers an 1/8" stereo audio input for signal processing, and two audio outputs (standard 1/4" instrument jack and 1/8" stereo headphone jack). As expected, it doesn't offer digital or MIDI I/O, as there's nothing digital about it. In fact, to update the Monotribe, you download a WAV file and play it into the sync input—sort of a 21st-century cassette interface, but without the tape dropouts. (Thankfully, some emulations aren't *perfectly* accurate.)

Speaking of sync, the unit has both sync in and out jacks so a bunch of Monotribes can sync

together into a . . . well, tribe. The Monotribe may look like a toy, and be as much fun as a toy, but it's an overachieving toy with some cool features.

Waldorf Rocket
$349.99 MSRP/$329.99 STREET
WALDORF-MUSIC.DE

The Rocket is clearly Waldorf having fun with an inexpensive, compact synth. It's monophonic, but for big sounds features a unison mode that stacks up to eight detuned digital oscillators with variable waveshaping and also includes hard sync (one of my favorite synth features). Although it has no pattern sequencer, it includes an arpeggiator with various patterns; you'll find an LFO for modulation, and envelope for VCA, VCF, and sync. The multimode filter (lowpass, bandpass, and highpass) is analog, and has the usual cutoff, resonance, and envelope mod controls.

Interfacing is basic—1/8" headphones out, 1/4" audio out, MIDI in and out, and USB for both power and MIDI over USB including MIDI clock sync. The envelope is basic, too: It has one knob (for decay), as sustain and release are switched. A Launch button triggers a note without needing a controller.

There are no presets, effects, expansion options, or digital I/O—and no complications. If you want to put sounds together fast, that's Rocket's mission.

Roland BK-7m
$1,499 MSRP/$1,000 STREET
ROLAND.COM

The BK-7m is more like a variation on a

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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General MIDI module that serves as a "backup band in a box." It can play back WAV and MP3 digital audio files (with the ability to change tempo and key) and multipart arrangements from Standard MIDI Files, courtesy of the built-in General MIDI 2/GS/XG lite sound module (1,092 tones and 57 drum sets).

I/O includes a USB port for data storage and another one for your computer to do MIDI-over-USB, MIDI in and out (with V-Link), a PAL/NTSC composite video output jack, 1/4" stereo audio output jacks, stereo 1/4" input jacks, and stereo 1/4" headphone jack. It also has pedal and footswitch jacks for realtime control.

The 433 built-in musical styles for backup, each with four variations, intro, and outro, emphasize its solo-performance aspect. The BK-7m also lets you display lyrics on a standard TV display, and if you end up in karaoke-land doing WAV or MP3 playback, it includes a voice-cancel function. What's more, an iPad app can display lyrics; another app allows for easy browsing and selection of tones, the lack of which is a limitation in the main unit itself.

The BK-7m is 16-part multitimbral with 128 voices, but also includes two sets of effects—one realtime (12 different reverbs, 6 choruses, 84 multi-effects, parametric EQ, and a multiband compressor) and a similar set of SMF section effects. Another nice touch is that you can record performances with 16-bit/44.1kHz resolution to a USB storage device.

It offers several additional tools, such as automatic chord detection for Standard MIDI Files and 999 performance memories. Overall, the BK-7m is a truly multifunction device that can provide sounds in the studio, serve as a backup band or tone module live, and record performances.

Nord Drum
$599 MSRP/$500 STREET
NORD.SE

This compact unit offers four analog, non-sampled drum sounds, designed for responsive triggering via six trigger options (three for electronic drum pads and three for acoustic triggers), as well as MIDI for use with sequencers and other controllers (like the pads on many MIDI keyboard controllers).

Each of the four percussion sounds incorporates three main elements—noise, tone, and click, which you can program as desired and then mix together into a final, composite drum sound. The tone waveforms are standard analog types (sine, square, sawtooth) but some complex waveforms are also available, as is a lowpass filter with sweep. Noise is what you'd expect, but with a lowpass filter and six resonant filter options. The click offers 27 complex attack transients, although the tone section also includes a Punch option that adds a short, velocity-controlled attack. The composite sound can then live in one of 99 program locations.

It has no internal sequencer or pattern generator; this is all about realtime playing and performing. Aside from the four trigger inputs, the I/O is elementary, with only a single, mono audio output, accompanied by MIDI in and out. But despite its simplicity, the Nord Drum provides those unique, programmable analog sounds that sampling can't duplicate.

Access Virus TI2
$2,495 MSRP/$2,240 STREET
ACCESS-MUSIC.DE

Access has been releasing Virus variants since 1997, and they have the recipe down. The Virus TI2 is more than four years old, but so what? I have a 1966 Telecaster, and it works fine.

The TI2 is the most costly and comprehensive synthesizer in this roundup, and makes no apologies for relying on digital technology to obtain its power. It has outstanding polyphony (typically 80 voices, depending on the patch), cool effects, and computer integration; the Virus Control 3.0 cross-platform plug-in allows synth editing, but also causes the TI2 to appear as a sample-accurate AU/VST/RTAS plug-in (with delay compensation) inside your DAW. Furthermore, audio data streams directly

into your DAW as three stereo channels over USB (as well as MIDI data), and the presets used in a project are stored within the plug-in—very convenient.

The programming options are deep enough that a thorough review would require all the pages devoted to this roundup. Fortunately, the reference manual is available for download for those who want to investigate the details.
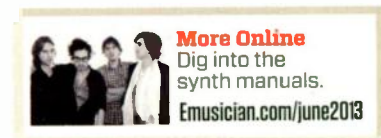
In addition to standard effects like modulation, delay, and reverb, Virus includes several distortion types, ring modulator, frequency shifter, a global vocoder, and a "character" effect that provides a variety of enhancements (lead, bass, pad, vintage, stereo imaging, etc.)—not unlike "mastering" effects for synth sounds.

You'll find plenty of presets (512 RAM, and more than 3,000 ROM sounds) so the sorting and searching options are welcome; if you hit a creative block, there's even a random patch generator. Each preset includes its own 32-step arpeggiator with adjustable length and velocity per step. These are augmented by a global control for swing and note length, and are destinations for the modulation matrix.

The synth architecture offers three main oscillators and one sub-oscillator per voice, with 16-channel multi-timbral operation. The rich assortment of waveforms includes analog synth waves, graintable, 62 spectral waves with FM modes, 100 wavetables, formant oscillators, and a wicked Hyper Saw that stacks up to nine sawtooth wave oscillators, with nine parallel sub-oscillators and a sync oscillator, per voice. That's pretty massive.

Two multimode filters produce lowpass, highpass, bandpass, and notch responses (one also provides a Moog-style ladder filter), and can be routed in series, parallel, or "split," in which different signals go to two paralleled filters. A saturation module between the two filters allows for lo-fi effects. Regarding I/O, the audio and MIDI I/O can also serve as interfaces for your computer and the inputs can also feed external audio into the synth for processing.
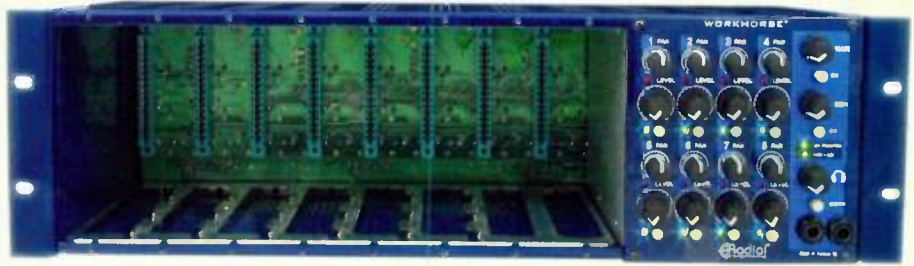
But the bottom line is that this just scratches the surface; the Virus TI2 is a no-holds-barred power tool in a tabletop format. ■

Cerwin-Vega P-Series P1500X and P1800SX Powered Loudspeakers

Solid, flexible portable P.A.s

BY STROTHER BULLINS

SUMMARY

STRENGTHS: Solid construction. Flexible for a variety of gigs. Advanced I/O.

LIMITATIONS: Bass Boost sunk vocals and lead instrument melodies too far back in the mix for our tastes.

**P1500X: $699 street;
P1800SX: $999 street**
cerwinvega.com

OVER THE past decade, I've used and/or reviewed a wide range of portable P.A. systems in live music performance applications. To date, one of the most impressive and unique systems I've discovered is Cerwin-Vega's Active Series—a truly overbuilt, road-worthy, and superior-sounding rig. As a matter of fact, it remains a personal benchmark of what to expect from a truly pro-grade portable P.A.

So, when I received Cerwin-Vega's new P-Series components for review (two 1,500W P1500X full-range loudspeakers and two 2,000W P1800SX subwoofers), I had high expectations, and subsequently tested them in a wide range of applications, ranging from one-man/one-speaker singer/songwriter sets to full configurations (dual P1500X/dual P1800SX) for large-hall dance-band and DJ events. In each scenario, the P-Series delivered a solid, if not surprising performance while offering improved I/O features that are now becoming the norm in the high-performance, "1,000W-plus" portable P.A. category.

Features Housed in a 53-pound high-grade, thick walled polypropylene cabinet, the P1500X ($699 street) is an active, two-way, full-range enclosure featuring lightweight/ high-output Class D amplification (providing 1,500W peak/500W continuous power) providing 134dB SPL maximum. It includes a 15-inch low-frequency driver, 1 3/4-inch diaphragm high-frequency driver, and comprehensive I/O—dual Neutrik XLR/TRS combo input channels (mic/line switchable), each with discrete XLR throughputs, a third dual quarter-inch TS input channel, and a mono XLR mix output. Further, a voltage-passing, three-pin terminal connector plug allows main volume level to be remotely controlled via signal wires and an external device (device not included).

The P1500X's four on/off switches engage Enhanced EQ (designed for DJ/playback only apps where an attenuated midrange is desired); C-V's lauded Vega Bass Boost (adding sculpted low frequency gain); high-pass filter (HPF) attenuating below 80Hz (engaged for stage monitor use or pairing with a subwoofer); and a helpful "limiter engaged" light behind the cabinet's thicker-than-average 18-gauge perforated steel grille. The P1500X measures 27.5" x 17" x 18.5" in size.

The 77-pound P1800SX ($999 street) is similarly equipped and built. It boasts an appropriately bigger Class D amp (rated 2,000W peak/650W continuous power); 18mm-thick reinforced wood cabinet; and 18-inch low-frequency driver for a maximum of 136dB SPL. I/O includes dual Neutrik XLR/TRS combo-equipped input channels, each with discrete XLR throughputs, and a XLR "link" output (the sum of the P1800SX's inputs, conceived to connect to an additional subwoofer). The sub also offers the aforementioned 3-pin terminal connector for remote volume control, Vega Bass Boost, and a front-panel limiting indicator. Additionally, polarity reverse and HPF Thru and LPF Sub switches are provided; the latter engages two filters—a lowpass to attenuate frequencies for the sub itself (above 80Hz) and a highpass to attenuate (below 80Hz) via both throughput channels 1 and 2. The P1800SX measures 24.25" x 20" x 24.5" in size.

Both the P1500X and P1800SX are designed for flexible use. On its side, the P1500X is an ideal floor wedge with a 45-degree angle toward the artist; pole-mounted, the cabinet provides two mounting angles, level and 7.5 degrees downward. An auxiliary mounting pole (CVPOLE-1A) is available from Cerwin-Vega for main/ sub speaker mounting; I recommend that buyers spend the extra $39 (street) per pole, especially if they expect to use one or two P1800SX subs with a mono or stereo P1500X system. For installed applications, the P1500X offers M10/25mm threaded suspension points: two on the cabinet's top handle and two vertically-arranged, rear-panel "pull back" points.

In Use A mark of a solid modern portable P.A. system lies in its flexibility. As any regularly gigging performing musician, DJ/KJ, or live sound provider has experienced, sound reinforcement needs are often unrealized until we find ourselves onsite to size up the space we need to fill. Though we don't want to unnecessarily carry around extra weight and size, we don't want to arrive with a potentially underpowered rig, either. Personally speaking, the worst gigs I've ever played seem to include an undersized, underpowered P.A. in an oversized untreated room (or outdoor setting).

In use, this P1500X/P1800SX rig did not disappoint. The full-range cabinet's built-in three-channel mixer was ideal for small environment, one- to two-person "acoustic" performances; except for one instance (where two vocal mics and a DI acoustic guitar input required an external mixer), the P1500X served as our only P.A. component, placed on its side as a floor monitor and angled for both the performer and bar patrons. Even with the HPF engaged and levels pushed near maximum SPL, both vocal and acoustic guitar low frequencies were full and rich—notably more so than with other standard P.A. cabinet options I've regularly used—while high-frequency details were precise and pleasing to the ear.

Next, I rolled out a mono P1500X/P1800SX rig with CVPOLE-1A pole mount to DJ a wedding party featuring pre-recorded music only. Did this system convince the revelers to dance? You bet it did! The wedding had club-quality sound, and the largely 20-something crowd sweated on the dance floor for two hours to prove it. For this reason, I'd recommend any bar or small club owner to check out a P1500X/P1800SX system, mono or stereo based on budget, before investing in any portable P.A. with the goal of getting their customers moving on the dance floor.

Finally, a full stereo P1500X/P1800SX system (dual tops and dual subs) delivered what the father of the bride deemed "concert sound!" for his daughter's outdoor wedding and reception featuring a full retro R&B band with pre-recorded modern dance music between sets. This is where Cerwin-Vega's R&D efforts become clear; the P-Series with Vega Bass Boost is basically "instant club sound." However, I must note that the band (myself included) still preferred using the system without Bass Boost during live performance; engaged, Bass Boost sunk vocals and lead instrument melodies too far back in the frequency mix for our tastes. No big deal, though—we simply switched in Vega Bass for music DJing between band sets and back off for our performances.

The P-Series ships with a well-written user's manual. For less confident and/ or experienced users, its six application examples provide users with most common signal flow scenarios—a good starting point for most every gig.

Summary Comparing Cerwin-Vega's Active Series and the new P-Series components isn't exactly apples to apples; if I could only have one pair of portable powered P.A. speakers, I'd still choose the CVA-28 (at $599 street) for its overall sound and build quality (featuring painted wood cabinets and a construction resembling high end touring/line array systems).

However, the Active Series is far less flexible that C-V's new cost-conscious P-Series; the singer/songwriter setup described earlier wouldn't be possible with just a CVA-28. For potential portable P.A. buyers with a truly wide range of gigs, I'd recommend an initial purchase of a mono P1500X/P1800SX rig, which could essentially cover most any gig where the band (or DJ, or KJ, or combination thereof) is expected to provide its own sound reinforcement. From there, a stereo P1500X/ P1800SX system is only bigger, better, more flexible, and more than ready for the 2013 outdoor live-gigging season. ■

Strother Bullins is an active gigging musician, self-recordist, and the Editor of Pro Audio Review (prosoundnetwork.com).

Fig. 2. The rear-panel connections.

Zoom A3 Acoustic Guitar Processor

Models, effects, and feedback suppression for acoustic guitars

BY CRAIG ANDERTON

SUMMARY

STRENGTHS: Sweet sound quality. Clever input mix options. Transparent user interface. Matches 16 different guitar input types. Sync to tempo. Solid construction.

LIMITATIONS: Physically difficult to adjust the controls. Don't expect the nylon or 12-string models to sound like their namesakes.

$334.99 MSRP, $199.99 street
samsontech.com

THE A3'S premise definitely caught my attention: It includes an interface/mixer to capture an acoustic guitar's sound, and an effects processing section with three stages. The first stage takes the relatively consistent piezo (or magnetic) output from acoustic guitars, then "re-models" other acoustic guitar sounds; the second and third stages can choose from among 40 different effects, including three mic emulations.

Ins and Outs One input can be optimized for piezo or magnetic pickups, or a flat response (Figure 1). An additional combo XLR/phone jack (Figure 2) accepts a mic, with +24V or +48V phantom power for condensers; you can switch the mic phase, alter where it's mixed into the signal chain, and choose three different low-cut filter frequencies (or turn off low cut). Each input has its own level control for blending the piezo and mic ins.

Outs are balanced XLR with ground lift, paralleled with two 1/4" jacks that provide stereo, mono, or stereo headphones out. Construction is metal and solid. Power can come from four AA cells, the included 9V adapter, or a USB adapter (the USB port is for anticipated firmware updates).

Models You choose your source instrument type from 16 different options (various guitars, but also upright bass, bodyless silent guitar, nylon string, parlor, resonator, etc.). I mostly play electrics, but do have a Gibson J-45 and the manual recommends using the "Round Shoulder" sound source for this guitar. For kicks, I called up the Zoom J-45 model and hit bypass—the sound was *strikingly* similar. The differences among most of the 28 models

are relatively subtle, but thankfully, avoid any kind of "cartoonish" quality and are surprisingly natural. However, note that the Nylon and 12 String models don't imitate those particular *sounds*, only representative body types. They were nonetheless useful timbres.

Effects The effects include dynamics, EQ, modulation, delay, and reverb, with variations on each theme (*e.g.*, 12 reverb types). The mic models have two distance and position options, along with a level control. The effects are not only clean and tasty, but have a certain sophistication.

Odds and Ends The anti-feedback detects three different frequencies, and while it won't do miracles, it can certainly help. There are also bass/mid/high EQ controls, and a boost footswitch with adjustable amount of boost and tone. The user interface is refreshingly transparent; but if you have big fingers, good luck with the knobs—they're small and hard to grasp. The unit comes with 20 factory presets, which you can overwrite as well as place in a particular order for stepping through with the main footswitch.

Overall The thing that strikes me the most is the defined, organic audio quality. The models sound natural, and the effects seem "reined in" somewhat for acoustic applications. The ability to mix in mic and piezo is brilliant. Don't expect the models to turn your guitar into something mind-blowingly different, but the kind of EQ changes they add would require a lot of tweaking with a lot of parametric stages (trust me, I've been there)—selecting a model is *far* easier, and the sounds are valid. If Zoom's intention was to design an acoustic guitar "channel strip" for stage or studio, they've succeeded. ■

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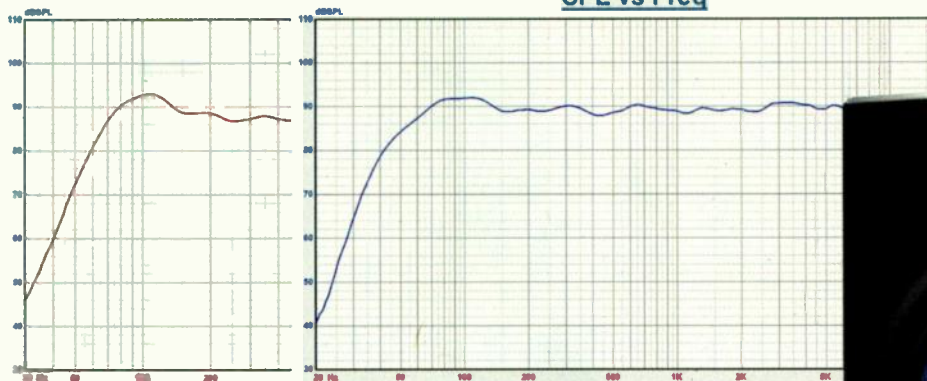publication, *Guitar Player.*

SPL vs Freq

Fig. 1. The E8's response, with the E5's low-end response shown toward the left.

PreSonus Eris Speakers

Eris targets price point—but adds some novel twists

BY CRAIG ANDERTON

SUMMARY

STRENGTHS: Cost-effective. E8 in particular promotes accurate mixes. Extensive rear-panel control set. Thermal and overload protection.

LIMITATIONS: E5 bass response is fine for listening, but less so for mixing. For both models, highs aren't as airy as more expensive speakers.

E5: $199.95 MSRP, $149.95 street
E8: $399.95 MSRP, $249.95 street
presonus.com

MY FIRST car was a used 1966 Beetle, and it refused to die. But in 2000 it became almost impossible to find certain parts, and figuring I owed Volkswagen some brand loyalty, I bought a used 2000 Beetle. (I did get a diesel model, though.)

What does this have to do with speakers? The Eris is PreSonus's Volkspeaker. Yes, they have their Porsche equivalent—the pricier Sceptre monitors, which got the buzz at Winter NAMM. But you don't need a Porsche to get from point A to point B, and you don't need to spend a bunch o' bucks for speakers that let you create solid mixes.

The Models There are two versions. The E5 powers a 5.25″ Kevlar woofer with a 45W amp; the 1″ silk-dome tweeter uses a 35W amp. The E8 has an 8″ Kevlar woofer (75W amp) and 1.25″ silk-dome tweeter (65W amp). All amps are Class AB, and both models have the same control complement: midrange and treble controls (gentle peak at 1kHz and shelving starting at 4.5kHz, respectively), along with a three-position lowcut filter (flat, or a bass rolloff at 80 or 100Hz) to help match the speakers to your room. An additional three-position switch compensates for the bass boost inherent in placing speakers close to walls or corners by gently rolling off frequencies below 800Hz by either –2 or –4dB (or flat).

Ins and Outs Inputs are XLR or 1/4″ TRS connections, and an unbalanced RCA input sums with the others. This makes it easy for the speakers to double as computer multimedia speakers, as well as speakers for an audio interface.
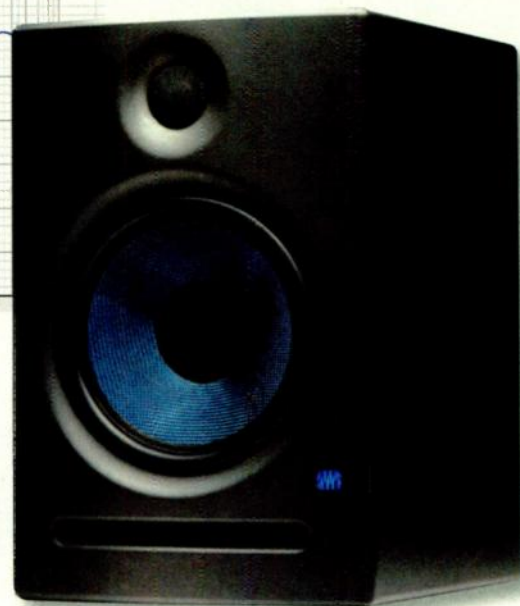
Sound The E5 has a slight bump around 100Hz, while the E8 has a smoother bass and extends down further (Figure 1). For studio monitors, the E8 is worth the extra bucks (and bigger footprint). The bass is tight and defined, with solid transient response, and the highs are accurate. If you're really tight for space, the E5 will do the job; as long as you're aware of the E5's bump, you'll find the mixes translate well to other environments. But also note the various rear-panel controls make it easy to emulate car speakers or desktop speakers. If you have a monitor control system just itching to switch between your "big speakers" and smaller, real-world speakers, the E5 could be an excellent choice.

Compared to more expensive speakers, the main difference is the "character" of the highs; Eris doesn't have the sort of airiness I associate with, for example, ribbon tweeters. But accuracy is paramount in the studio, because transportability is crucial—and the E8 scores high in that regard.

Conclusions Like mic pres, speakers have reached a pretty consistent level of quality for a given price point. PreSonus's "special sauce" is the set of controls, but listen carefully to the E8: The sound is even, projects well, and lets you reference accurate mixes at a reasonable price. Like I said—a Volkspeaker. ■
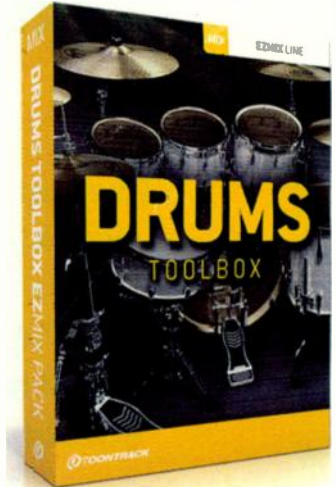
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1

Peavey
Escort 3000
Portable P.A

$849.99

HIGHLIGHTS Dual 150W power amps • integrates entire sound system into a single, portable package • includes digital multi-effects • USB MP3 player • folding speaker stands, space for accessories, and luggage-style wheels • FLS Feedback Locating System • 7 channels, 6 combination XLR 1/4" inputs • two-way speaker system with 10" woofer

TARGET MARKET DJs, small bands, schools, churches, presenters, solo musicians

ANALYSIS Small, portable sound systems are becoming more practical, affordable, and powerful. The Escort 3000 is a complete system that even includes a dynamic mic and mic cable.

peavey.com

2

Electro-Harmonix
45000
Multitrack looping recorder

$634.94

HIGHLIGHTS Each loop has four mono tracks and one stereo mixdown track • uncompressed recording is 44.1kHz/16-bit to removable SDHC cards • handles 4 to 32GB cards • each card holds up to 100 individual loops, accessed with the optional 45000 Foot Controller • supports overdubbing or punching, and quantized or non-quantized recording modes • loop speed is adjustable over a two-octave range • built-in metronome

TARGET MARKET Musicians who are into live loop-based performance

ANALYSIS Electro-Harmonix was one of the first companies to produce looper pedals; the 45000 offers an interface that is reminiscent of multitrack digital recorders.

ehx.com

3

Sonnox
Oxford Dynamics
AAX plug-in

$595 (HD-HDX)

HIGHLIGHTS Based on algorithms from the OXF-R3 digital mixing console's Dynamics section • includes Compressor, Expander, Limiter, Gate, Sidechain EQ, and Warmth functions • usable as a surround bus compressor/limiter • new metering • 64-bit compliant • three compressor types • HD-HDX supports Pro Tools AAX DSP, AAX Native, TDM, RTAS, and Native 32/64-bit AU, and VST • requires iLok 2

TARGET MARKET DAW users seeking precision dynamics control

ANALYSIS Pro Tools users have been waiting for some popular plug-ins to be ported to AAX, and Oxford Dynamics is one of them.

sonnox.com

4

Toontrack
Drums Toolbox
EZmix Pack

$49

HIGHLIGHTS Features one-click processor settings specifically tailored to enhance drum recordings • sounds designed by engineers Randy Staub (Metallica, Alice in Chains), Neil Dorfsman (Bruce Springsteen, Bob Dylan), Pelle Henricsson (Refused), and the Toontrack sound design team • presets offer complex chains with effects like EQ, compression, transient shaping, and tape simulation • each kit piece has dedicated inserts as well as aux and group bus settings

TARGET MARKET EZmix users

ANALYSIS The EZmix plug-in contains presets for a variety of instruments, but can also be expanded with packs like the Drums Toolbox.

toontrack.com

All prices are MSRP except as noted

5

Propellerhead

Reason 7

Music software

$449, upgrade $129

HIGHLIGHTS Features mixer, rack, and sequencer improvements • EQ with spectrum view • intuitive grouping/busing • easy creation of REX files • interfaces with external hardware synthesizers via a "MIDI rack" • automatic audio slicing and quantizing • enhanced Factory Sound Bank • Audiomatic Retro Transformer effect unit adds a futuristic-vintage sound to any track

TARGET MARKET General recording, songwriting, electronic dance music, ReWire-based instrument suite for other DAWs

ANALYSIS Reason made jaws drop when it was introduced, and each new version made jaws drop further. Version 7 is no different.

propellerheads.se

6

Novation

Launchpad for iPad

Music performance app

Free

HIGHLIGHTS Incorporates some key features from the hardware Launchpad • eight sliders, switchable between volume and filter • simple filter and repeat effects • includes sample pack from Loopmasters • works with Novation's Launchkey hardware controller and free Launchkey iPad app • eight sessions spanning various EDM styles

TARGET MARKET Anyone who likes fun music-making apps for the iPad; also, Launchkey controller owners who want to expand their horizons

ANALYSIS Lots of "free" iPad apps are really just teasers for paid versions, but this app is quite complete and entertaining.

novationmusic.com

7

Native Instruments

Komplete 9 Ultimate

Virtual instruments/effects suite

$1,099, updates from $149

HIGHLIGHTS Includes 65 instruments and effects • Monark monosynth • redesigned Battery 4 drum sampler with more than 70 new kits • more than 370GB of content and 16,000 sounds • now includes Scarbee Rickenbacker bass, Action Strings, Session Horns, Damage industrial percussion, Session Strings Pro ensemble, and more

TARGET MARKET DAW users who want to expand their options with a comprehensive collection of instruments, sounds, and effects

ANALYSIS Due to its sheer volume of instruments and content, Komplete 9 Ultimate is extremely cost-effective; however the more limited, lower-priced ($559) Komplete 9 is also available.

native-instruments.com

8

ROLI

Seaboard Grand

Digital controller

$TBA

HIGHLIGHTS Soft, three-dimensional keyboard surface enables real-time, intuitive control of pitch, volume, and timbre • simulates gestures from a plethora of other instruments—guitar note bends, string and horn swells, and more • SEA Interface enables seamless transitions between discrete and continuous input, and captures three-dimensional gestures while simultaneously providing tactile feedback.

TARGET MARKET Keyboard players seeking a more expressive keyboard that accommodates additional performance gestures. (It's already being used by Jordan Rudess.)

ANALYSIS You really have to see this to understand why it's different—watch a video at www.youtube.com/weareroli.

weareroli.com

LEARN

master class
Be Heard!

Sixteen Ways to Get Your Music in the Ears of New Fans

BY RANDY CHERTKOW AND JASON FEEHAN

THANKS TO the convergence of computers and media, there are more places to get your music "out there" and discovered by new fans than ever before—from digital streaming and social music services to MP3 blogs, podcasts, video, and more. Plus, music isn't limited to the car or home stereo anymore. People are listening wherever and whenever they want—through computers, phones, tablets, TVs, game consoles, and even watches. Today, music is accessible anywhere, anytime. You should make sure your music is, too. But where should you start?

In our latest book, *The Indie Band Survival Guide (Second Edition)*, we examine all of the ways you can get your music heard, and detail the specific steps to make it all happen. However, that's too much to cover here, so we'll break down 16 opportunities for you to target your approach and get started.

TRADITIONAL RADIO

1. Commercial Radio Getting played on commercial radio usually requires a big bankroll and radio promoter. But even if you're on a budget, there are still some backdoors you can use to get on the air. First, many radio stations have local music shows. Go after those. Second, radio stations have many non-music talk shows that accept music submissions as beds, bumpers, or to break up the talk. Talk shows are especially great in that if you send songs that fit their show topic, your music will stand out.

2. College Radio College radio works the way that commercial radio should: Good music can get played if you submit it to the right people. To maximize your chances of getting played on college radio, compile a list of stations (see Yahoo!'s list at bit.ly/102WC4a), then call them—*don't just send them unsolicited music*. If you can form a personal relationship with the music directors, all the better. Target music

95bfm.co.nz

radioactive.co.nz

wuvt.vt.edu

shows that feature your genre; these tend to be run by students. Be as targeted as you can. And, if you're touring through college towns, contact local college stations weeks in advance, since they often produce live, in-studio music shows that feature visiting musicians.

3. Public Radio Public radio has an open policy to listening to new music, and it has a large audience. But as a result, there's a lot of competition. To get on NPR, explore the shows produced at your local NPR station as they often feature bands from within town. Also, submit your music to nationally syndicated shows like *All Songs Considered* (npr.org/blogs/allsongs/), since music selected by that show will get played nationwide and through the show's website.

4. Satellite/Cable Radio (SiriusXM) As satellite radio grew up and competitors eventually merged into a single company, it became more difficult to break into. That said, stations like XMU (siriusxm. com/siriusxmu) feature independent music.

To get your music considered, contact the Sirius Music Programming Department. (See siriusxm.com/contactus.)

NEW RADIO

5. Internet Radio Because of new laws regulating Web radio royalty payments, most Internet radio stations are either affiliated with terrestrial radio stations or work with aggregator sites like Live365 (Live365.com), SHOUTcast (shoutcast.com), or Radionomy (radionomy.com). Many stations stream through iTunes Radio (iTunes.com). These sites act as platforms for a large number of stations in every genre imaginable. Each one is an opportunity to get your music played. Check these sites and find stations that match your music. Don't just submit to stations that feature indie music. If you make electronic dance music, approach stations that play that music. Listeners won't care if you're on a label or not; they just want to hear good music. Once you've identified relevant stations, visit their websites and follow their directions on submitting your music for airplay.

6. Podcasts Think of podcasts as radio shows on demand. Unlike traditional radio, listeners who discover a great podcast often go back through the archive and listen to past shows. So, getting on a podcast can be more advantageous than just getting played once on radio. Plus, it's relatively easy. Podcasts come in every flavor: music shows of every genre, talk shows on every topic. Don't just focus on music podcasts. Talk shows often want to feature music as a break between segments. Search through iTunes' podcast section and look for ones that either feature your genre or cover a topic that one of your songs tackles. Browse that podcast's website to find out how to submit your music for consideration. One good example of a well-established music podcast to get played on is Coverville (coverville.com), which focuses on cover songs.

7. Music Streaming Services Sites like Pandora (pandora.com) and Last.fm (last.fm) stream music to listeners based on their established tastes. Getting your music on these services gets you into their mix. Pandora has a

npr.org/blogs/allsongs

siriusxm.com/siriusxmu

radionomy.com
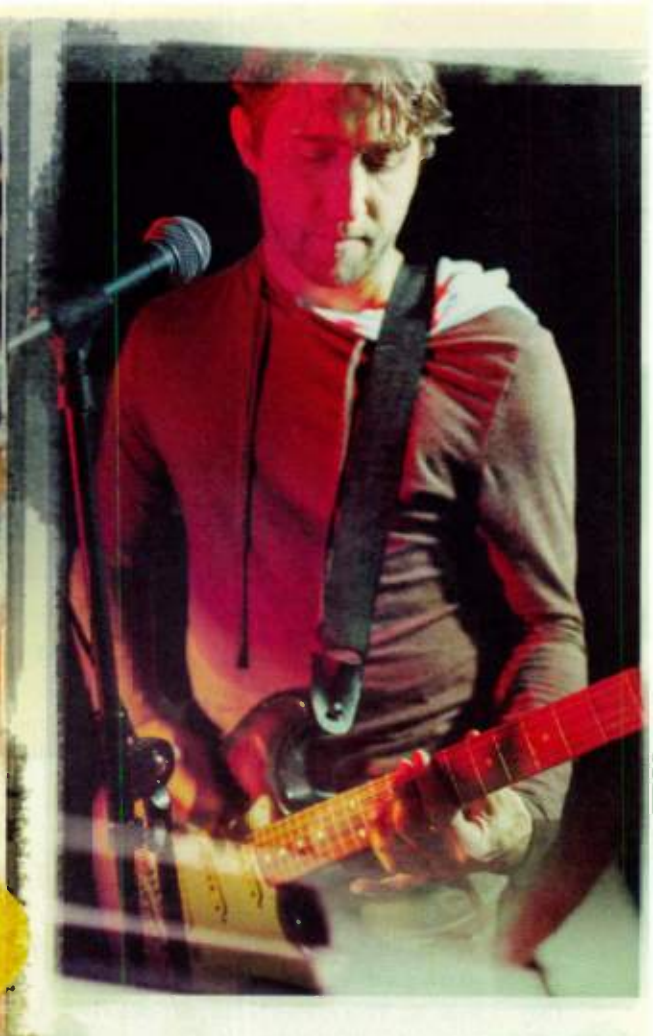
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coverville.com

pandora.com

grooveshark.com

submission mechanism (submitmusic.pandora.com) while Last.fm requires you to join and upload your music directly. Both services focus on providing listeners information about the music and artist as well as direct links to digital stores. So although these services are a bit like radio in that they limit listener control of song playback and sequence, they help to bridge that "last mile" between the listener and an impulse sale by offering a direct link to buy the song they're hearing. This makes them particularly effective opportunities to get heard.

8. Social Music Discovery Sites Services like Spotify (spotify.com) and Grooveshark (grooveshark.com) give listeners access to their music collections and include social and recommendation tools to help listeners discover new music. Plus, they are integrated with social media like Twitter and Facebook. Placing your music on these services can include you in the musical conversation and help you build word-of-mouth. To get on Grooveshark, join and upload your music (see grooveshark.com/artists). Getting on Spotify requires using a digital distribution service such as CDBaby (cdbaby.com), TuneCore (tunecore.com), and Reverbnation (reverbnation.com).

9. MP3 Blogs The Internet didn't open up opportunities just for musicians, it also opened up opportunities for music lovers to discuss and share the great music they've

> ## Listeners won't care if you're on a label or not; they just want to hear good music.

discovered. They do this by blogging and posting the MP3s they're discussing. To explore a large number of MP3 blogs, check out Hype Machine (hypem.com). Target blogs in your genre and follow the submission guidelines.

10. Music Archive Sites Websites like Archive (archive.org) and Etree (etree.org) are storehouses of music history and are used to share and discover media. While Archive acts as a giant library of recorded media, Etree
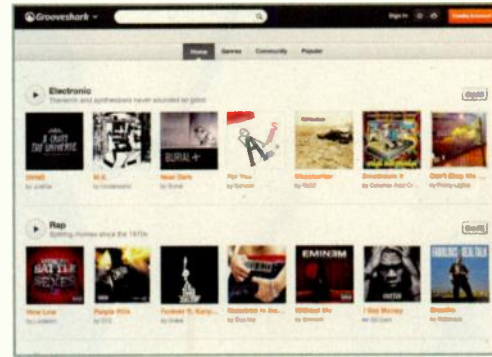
specializes in archiving concert recordings. Both sites have broad copyright agreements that encourage sharing, so if you choose to make your music available through these sites, make sure you're comfortable with their terms.

USING THE WEB

11. Audio Content Hosts We talk extensively in our book about the importance of having content hosts for all of your media since having it easily accessible and online is critical to properly build your Web, social, and mobile presence. Some audio content hosts do more than simply host and distribute your music, however. Sites like Soundcloud (soundcloud.com), Reverbnation (reverbnation.com), and Bandcamp (bandcamp.com) allow people to browse and listen to all the music hosted through their service. Getting on one or more of these services not only helps you build your Web, social, and mobile presence, but can lead to new fans.

12. Your Website If you've created your own website to promote your music, it would be a waste if your fans can't hear it. Embed a music player so people can sample and discover your music. This is where having an audio content host is helpful. The services

hypem.com

archive.org

soundcloud.com

above all include easily embeddable music players with their service.

13. Social Media Facebook and Twitter are major outlets for fans to discover and share music. Music players from most audio content hosts build social features into their music players to encourage fans to share songs within their networks. Some services, like Reverbnation (reverbnation.com), include creative ways to share your music through banners, Web links, and advertising.

14. Social News & Entertainment Websites A world of websites encourage people to share links to things they like. Sites like stumbleupon (stumbleupon.com), Metafilter (metafilter.com), Digg (digg.com), and Reddit (reddit.com) allow people to share, promote, and discuss anything—including music. For instance, Reddit has dedicated forums, or subreddits, for music discovery, broken into genres; target the forum that applies to your music. In forums
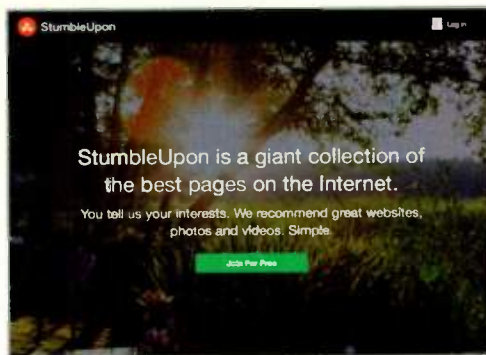
stumbleupon.org

that revolve around topics rather than music, you may be able to introduce your music if it's "on point" to the discussion. But be careful not to go overboard on promotion and spam the boards. There's an appropriate way to market yourself, as we discuss in our book.

15. Non-Music Websites A website doesn't have to be dedicated to music to share music. Blogs, message boards, charities, organizations, and businesses often post music. For instance, our band, Beatnik Turtle (beatnikturtle.com), wrote an album inspired by board games

beatnikturtle.com

and set out to target board gamers. We discovered websites like BoardGameGeek (boardgamegeek.com) that had millions of people discussing the very topic our music tackled. Game companies like Cheapass Games (cheapass.com) even posted our music to their audience. Thinking beyond the recipe "music = music sites" and contacting the owners of these sites can help get your music heard by new audiences.

16. Internet Video YouTube (youtube.com), Vimeo (vimeo.com), DailyMotion (dailymotion.com) and other video sites built

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sharing tools into their video players from the start. Now everyone knows how to share videos with one click. It's frictionless and it amplifies word-of-mouth faster than any traditional advertising campaign could ever achieve. Add to this the fact that YouTube is the number one music search engine in the world, and getting your music seen as well as heard becomes a no-brainer. If you don't have videos yet, it's time to make some. There's a lot to doing so, and we recommend checking out our book chapter "Get Seen" for learning how to create, market, and make money using video.

CONCLUSION

New devices and applications are being created every day that mash up content from these categories listed here into something novel. For example, Flipboard (flipboard.com), which bills itself as a "social magazine" for mobile devices, gives people a convenient way to discover, view, *hear*, and share any type of content—text, photos, video, and music—with

boardgamegeek.com

others. If your music is in just a few of the places we've talked about here, you'll likely be one click away in these types of mash-up applications going forward.

So don't view the above list as all "must-do's". Instead, focus on the ones within reach and appropriate for your music. By going for just some of these opportunities, you'll automatically get your music heard on all kinds of devices and systems—wherever listeners are. Remember, the goal of getting played isn't just to get heard, it's to get people *talking* about you. This the first step in the cycle of building word-of-mouth and creating "buzz". Once you get there, you can use it to
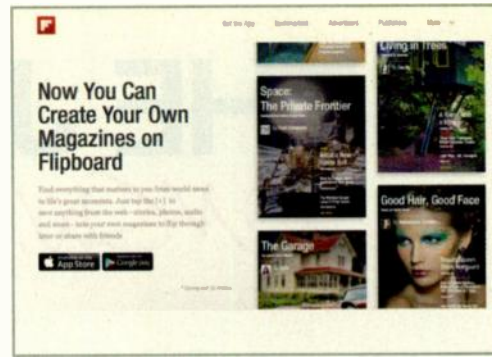
flipboard.com

build more "buzz" through the right use of social networking, press, music reviewers, street teams, etc.

Don't just sit there. You've got the basics, now go get your music into the ears of new fans! ∎

Randy Chertkow and Jason Feehan are authors of The Indie Band Survival Guide: The Complete Manual For The Do-It-Yourself Musician (Second Edition) *and* The DIY Music Manual; *teach and speak on music business; and are founders of the open and free musician resource IndieGuide.com.*

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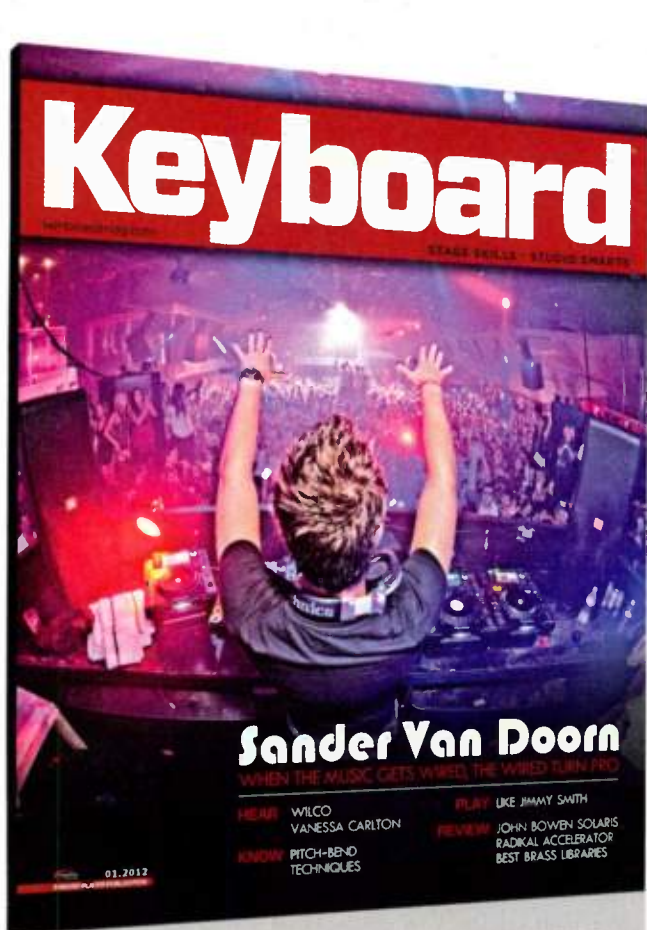
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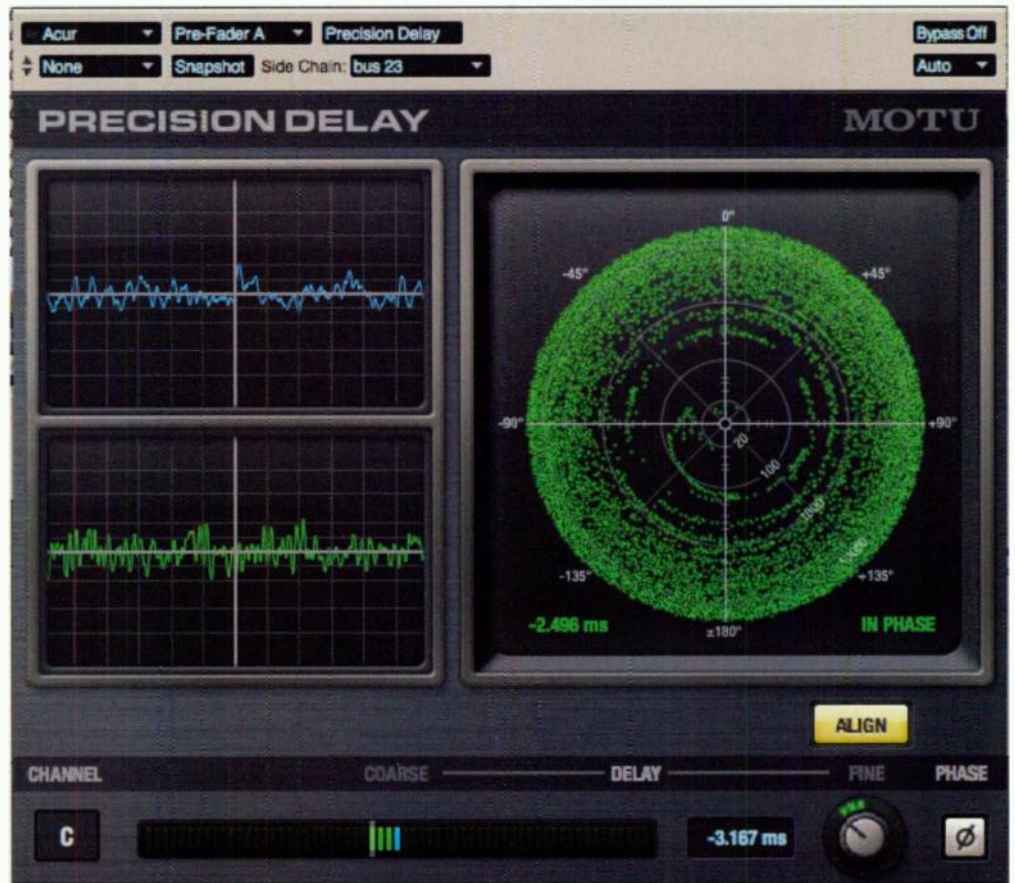
Fig. 1. MOTU Digital Performer 8's Precision Delay plug-in shifts one channel of a stereo acoustic guitar track forward in time roughly 3 ms, creating a huge stereo image.

Image Makers

Tools and techniques for crafting an ultra-wide mix

BY MICHAEL COOPER

A HUGE-SOUNDING recording has many crucial qualities, one of which is a wide stereo image. How do the best-sounding mixes paint such a broad expanse? Stereo-imaging plug-ins can help immensely, but use them recklessly and you'll get a ghosty, unfocused sound. Another strategy is to hard-pan tracks, but a careless approach here will make the mix sound lopsided.

In this article, I'll show you how to create a mammoth soundscape using smart techniques and powerful plug-ins. The nub is to understand how frequency and time affect our perception of width.

Take Direction Bass frequencies are omnidirectional: The lower a tone's frequency, the more difficult it is to tell from which direction it's emanating. Therefore, hard-panning a bass-heavy instrument—while possibly an interesting choice for other creative reasons—won't greatly change its perceived directionality and make your mix sound significantly wider when listening on external speakers. But because bass frequencies pack a lot more energy than highs, shunting them to one side of the mix could make your production sound off-kilter.

High frequencies, on the other hand, are highly directional. When you hard-pan a cymbal or shaker, you can readily discern from which speaker it's issuing forth. Add high frequencies to hard-panned tracks—and cut their bass frequencies—to increase their directionality and make your mix sound wider. Just be careful not to apply too much equalization, or your production will sound strident.

You can use the foregoing principles with the Brainworx bx_digital V2 mid-side equalizer to create über-wide mixes. Place the plug-in on a stereo mix. Raise the Mono Maker control to strip bass frequencies from the side channel and steer them into the mid channel, thereby panning the bottom end of your recording dead center. Doing so prevents low frequencies in the kick, bass, guitar, and keyboard tracks from masking

high frequencies in tracks that are panned hard-left and -right, increasing the perceived directionality of the panned tracks. Increase the mix's stereo width further by equalizing the side channel to slightly enhance its high frequencies. Bump up the plug-in's stereo width control to raise the side channel's level, making the mix sound wider still. Don't overdo it, though, or center-panned kick, bass and vocals will sound too quiet and the mix will become too reverberant.

iZotope Alloy 2 includes an Exciter module you can use to somewhat similar effect. Set the bass band's width control to -1.0 to make the bottom end mono. Leave the midrange band's width set to 0.0 (unchanged), and boost the high-frequency band's width above 0.0 to make the mix sound wider. The company's Ozone 5 plug-in includes a Stereo Imaging module—outfitted with a separate width control for each frequency band— which you can use in similar fashion to widen your mix.

Rather than widening a stereo mix as a whole, it often sounds better to apply stereo widening to just one or two discrete tracks. The Stereo Imaging module in the flagship Ozone 5 Advanced plug-in includes a Stereoizer function that widens even mono tracks. It sounds terrific on acoustic guitar and keys.

Put It Off Until Later You can make a stereo track for an instrument sound wider simply by adding a short delay—no more than several milliseconds—to one channel. Because sound travels roughly 1 foot per millisecond, every millisecond of delay in the right channel fools the brain into thinking the source is producing the sound a foot farther off to the right compared to where it is radiating from on the left. The longer the delay, the wider the composite sound seems to be. And if the delay causes a misalignment of phase between the two channels, the resulting attenuation of bass frequencies will make the left and right signals sound even more directional and discrete, adding to the perception that they are wide apart.

MOTU Digital Performer 8 (DP) includes a terrific new plug-in, Precision Delay, which you can use to add delay to one side of a stereo track (or shift it forward in time; see Fig. 1). Precision Delay's *raison d'être* is aligning two or three mic channels to prevent phase cancellations, but you can misuse the plug-in

to intentionally *misalign* a stereo track in order to widen the composite sound. My favorite application is using Precision Delay on a stereo acoustic guitar track. I instantiate the plug-in on the right channel, bus the left channel into the plug-in's sidechain (while also keeping it routed to the mix bus) and hard-pan both channels in DP's mixer. While the track is playing back, I click Precision Delay's Align button repeatedly; the plug-in will perform a

different alignment with each click. Usually within several clicks, serendipity causes a wonderful misalignment—totally mono-compatible—that makes the track sound wider than the Titanic. ∎

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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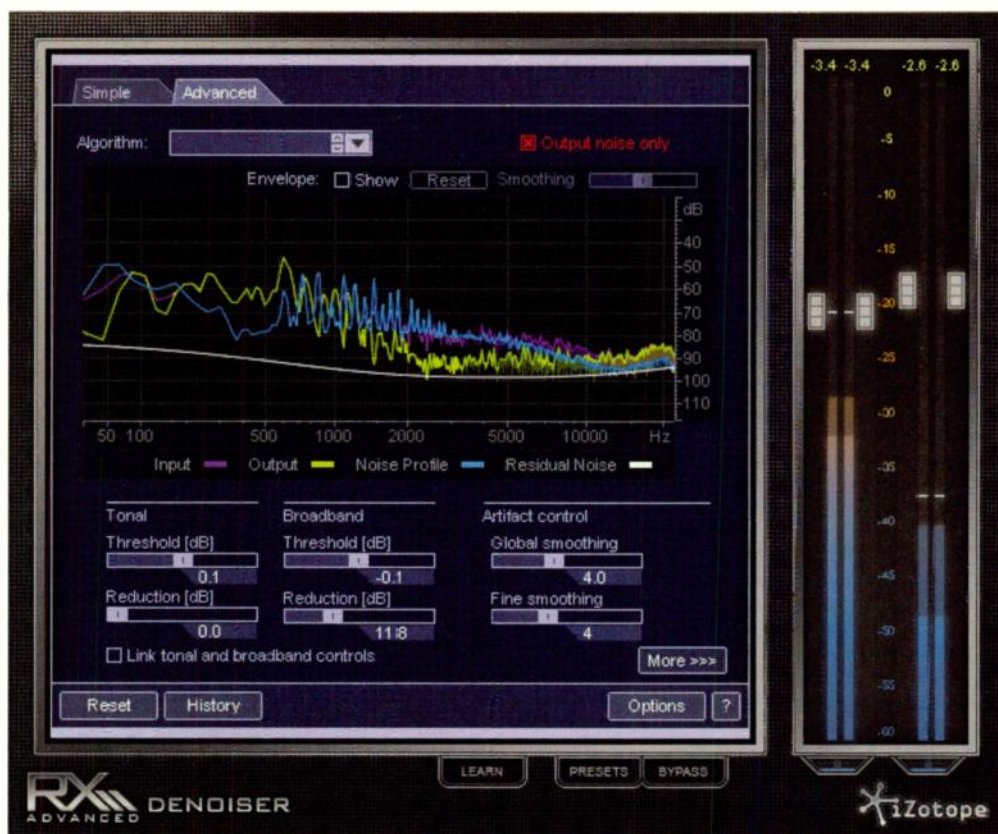
Fig. 1. iZotope Denoise provides controls for independently attenuating tonal and broadband components of noise. Output Noise Only (at the top of the GUI) is checked to solo the removed noise.

Power-Wash Your Tracks!

How to rid recordings of hiss, buzz, and traffic noise

BY MICHAEL COOPER

NOTHING IS worse than recording a terrific performance on an acoustic instrument, only to realize during playback that hiss from noisy mics and preamps has polluted the irreplaceable track. Similarly, a once-in-a-lifetime electric guitar solo quickly loses its luster when blighted by power-mains buzz. And while sonic filth can often be avoided in a properly grounded, soundproof studio wielding high-end gear, it's often completely unavoidable in location recordings for film and video shoots, where noise from cameras, traffic, and HVAC systems rule the roost. Let's face it, every mix and post-production sound engineer can benefit from having noise-reduction software in their armory.

This article will explore how to drain the dreck from infected tracks to restore their purity. I'll focus on techniques using the superb iZotope Denoise plug-in, which is included in the company's RX2 and RX2 Advanced noise-reduction bundles.

Identify the Enemy Find a section of your track where noise exists alone. While the noise plays back, click Denoise's *Learn* button to teach the plug-in the spectral content of the racket you wish to eject. If the snippet of noise is quickly followed by desired signal, you can

avoid including the latter in the scrap heap by looping only the noise in your DAW during the plug-in's learning process. Click the *Learn* button again to finish the analysis and ditch the din. Boosting the *Noise reduction* control increases the hush.

Go Solo You'll get better results if you also adjust Denoise's other controls. Select the GUI's Advanced tab. Check the *Output noise only* box to solo the removed noise while adjusting the respective *Threshold* controls for tonal (for example, buzz) and broadband (hiss) components of the noise (see Figure 1). Find the best settings to avoid including any desired signal in the removed noise. If buzz is the main problem, you can ostensibly treat it more heavily by raising the Tonal *Threshold* and *Reduction* sliders while leaving the *Broadband Reduction* control set closer to 0.0dB. But don't be attached to the controls' intended targets; I sometimes find the broadband controls to be more effective for removing buzz. Experiment and see which control set works best for the noise you want to remove. Regardless, the golden rule is to never apply any more processing than you need to make noise unobjectionable—not necessarily eliminated—while preserving the fidelity of desired signal.

Cranking the reduction sliders too high will make the track sound muffled, less detailed, and devoid of depth and nuance.

Keep Baby and Bathwater Separate

While you work, frequently toggle the Output Noise Only function to assess what is being removed (box checked) and the quality of the remaining, desired signal post-processing (box unchecked). If you hear watery-sounding artifacts in the desired signal, carefully raise the *Global Smoothing* control. You'll know you've raised it too far if you begin to hear noise modulating in level when transients in the program voice (with Output Noise Only unchecked) or you hear bits of desired audio signal when Output Noise Only is selected. Find the best compromise setting, then raise the *Fine Smoothing* control just enough to eliminate any remaining artifacts and no higher.
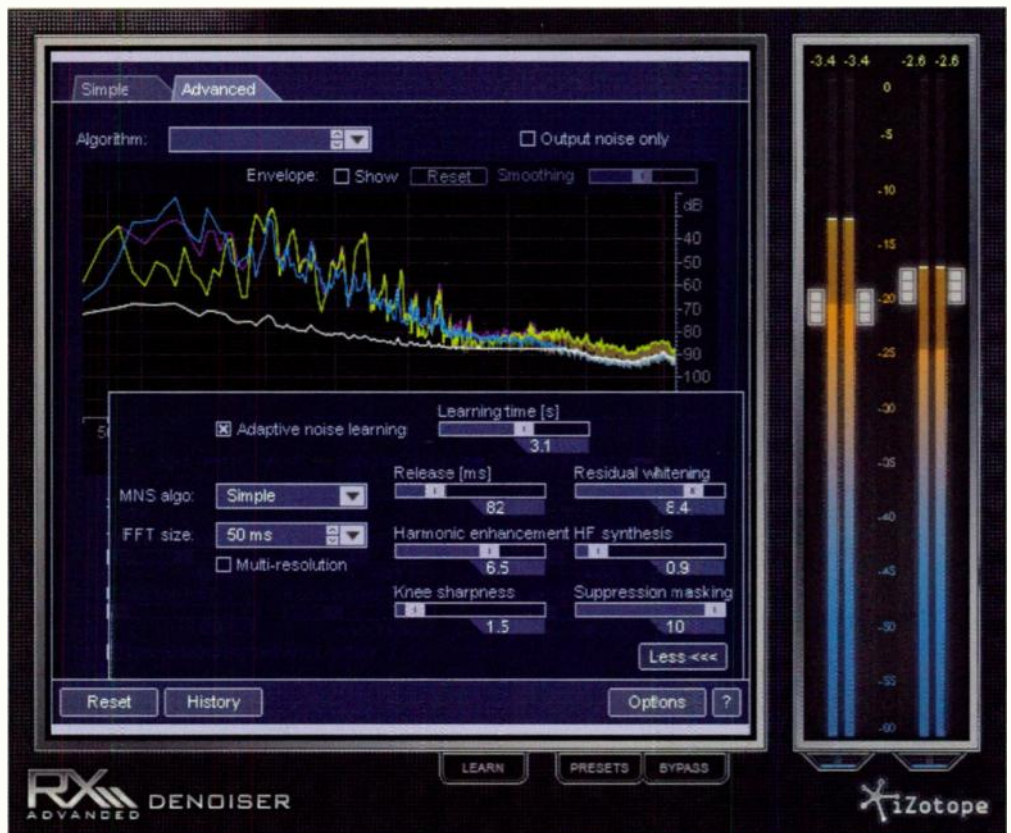
Fig. 2. The Denoise plug-in in RX2 Advanced offers an expanded control set, including facilities for dynamically attenuating noise that changes over time.

A once-in-a-lifetime electric guitar solo quickly loses its luster when blighted by power-mains buzz.

The Denoise plug-in in the more full-featured RX2 Advanced also provides a *Release* control you can raise to reduce artifacts. Be careful not to boost the release time too much, though, or transients and reverb tails will get munched.

Adapt If Necessary If you're treating tracks—such as those recorded outdoors during a video shoot—in which the quality of embedded noise changes over time, check Denoise's Adaptive Noise Learning box (included only in RX2 Advanced; see Figure 2). In this mode, the Learn button at the bottom of the GUI serves no function, so ignore

it. Instead. adjust the Learning Time slider (located to the right of the Adaptive Noise Learning checkbox) for the best sound during playback. The shorter the time value, the faster Denoise will react to changing input signal. nipping changes in traffic noise, for example, in the bud. If you hear transients getting munched or watery-sounding artifacts in desired signal such as dialog, increase the learning time.

This adaptive functionality is identical to that provided by the checkbox labeled Adapt to Changing Noise Profiles and its associated Learning Time slider under the GUI's Simple tab. The two checkboxes are titled differently for no apparent reason.

Put It In Neutral If the noise in some frequency bands sounds more audible than in others. increase RX2 Advanced's *Residual Whitening* control until the noise spectrum sounds more neutral. (I find it helpful to loop an isolated selection of noise while making this adjustment.) Doing so will preclude your having to crank the reduction sliders too high in an attempt to improve results in one frequency band while hammering the others too hard. In cases where the noise spectrum sounds really lopsided, you can create a custom noise-suppression response curve—

containing up to 26 frequency nodes—in either RX2 or RX2 Advanced.

Get Excited To preserve high-frequency harmonics and prevent dulling, try raising RX2 Advanced's Harmonic Enhancement slider until the de-noised track sounds sufficiently present. If you hear high-frequency noise pumping, lower the slider to the point where the modulation ceases. If that makes the signal sound too dull again, try raising the HF Synthesis slider, but be careful: Too high of a setting can make the track sound glassy.

Clean Deeper Denoise is just one of the noise-nuking weapons in RX2 and RX2 Advanced's arsenals. Other plug-ins included in the two bundles effectively discharge AC hum, clicks. crackling noises, clipping distortion, and even chair squeaks and dog barks from tracks. Let the world rumble and roar. There's a plug-in for that. ∎

Michael Cooper (myspace.com/ michaelcooperrecording) has worked with Academy Award-winning actor William Hurt and the Emmy Award-winning ABC News correspondent Barry Serafin. Cooper is a contributing editor for Mix magazine.

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Fig. 1. A pair of Neumann KM84 cardioid microphones in an XY array.

Basic Stereo-Miking Techniques

Recording methods for capturing depth, detail, and realism

BY STEVE LA CERRA

A GOOD stereo recording can be a thing of beauty. In addition to delivering a realistic sense of left-to-right position, a stereo recording can convey impressions of size, detail, and depth that cannot be obtained through other means of recording. We're not talking here about manufacturing an image by recording mono tracks and panning them across the stereo field during mixdown. We're talking about using two microphones to capture an audio event, including the space in which it happened. This month, we examine basic

stereo-mic techniques that can be used alone or in conjunction with close-miking (on drum kits, for example); in a future issue, we'll explore more advanced applications.

Stereo-mic techniques can roughly be separated into three categories: coincident, near-coincident, and spaced pairs. Each has variations with strengths and weaknesses. The best results will be obtained using two mics of the same brand and model; taking the results to a higher level usually requires a matched pair.

Fig. 3. Schoeps CMC64 cardioid mics in ORTF.
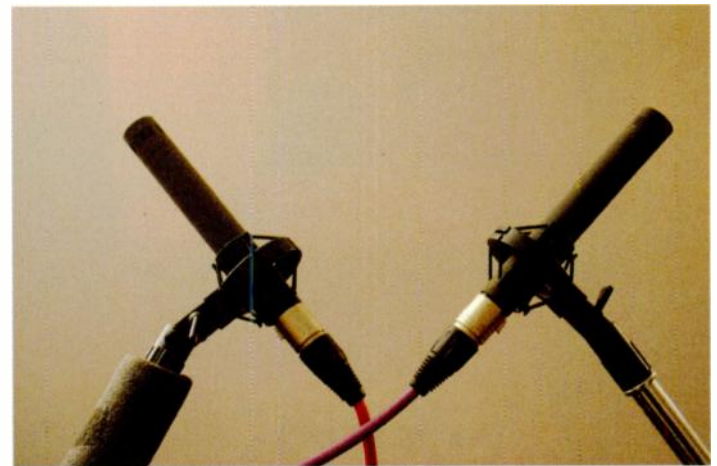
Fig. 4. Schoeps CMC64 cardioid mics in NOS configuration.

Fig. 2. A pair of Cascade Fathead II mics in a Blumlein array. These mics are figure-eight.

This Is No Coincidence A coincident pair comprises two directional microphones arranged so that their diaphragms are placed as closely together as possible (usually one atop the other), typically angled between 90 and 135 degrees. Figure 1 shows what is known as an XY array: two cardioid microphones crossed at a 90-degree angle. Regardless of how the mics are aimed, sounds coming from any direction reach the two diaphragms at the same time. This means that one, there is little or no phase cancellation between the mics because arrival times are the same, and two, the setup provides only what we call intensity or amplitude cues. In other words, your brain's impression of the stereo field is based solely on how loud an instrument may be in one channel or the other, or in the middle. You'll notice in the photo that both mics are pointed 45 degrees off-axis from the source but the cardioid patterns overlap in the middle, providing a solid, if somewhat small, stereo image. Along with the lack of phase issues, the solid center is one of the strengths of the XY array. When using an XY pair, you'll never have to worry about mono compatibility (and you'd be surprised at just how much mono is still in use). For a wider stereo image, you can open up the angle as far as 135 degrees.

Variations A configuration of two figure-eight microphones in an XY configuration is called a Blumlein array, named for the man who pioneered stereo, Alan Blumlein. The strengths and weaknesses of a Blumlein

pair are similar to those of an XY pair of cardioids, the biggest difference being that a Blumlein pair captures more room sound due to the rear lobes of the figure-eight patterns (Figure 2, page 73). A bit of experimentation may be needed to find the optimum distance from the source so that the stereo image doesn't get wishy-washy. (That's a technical term.) The Blumlein array is at its best in a good-sounding room, whereas an XY array of cardioids can more effectively be used to control the amount of room sound. If you're seeking somewhat less-ambient pickup than with the Blumlein array, but more than you'd get using XY with cardioids, experiment with hypercardioid or supercardioid patterns, both of which have slight pickup lobes at the rear. Another variation of a coincident pair is called M/S (Mid-Side) stereo, which we will discuss in depth next time.
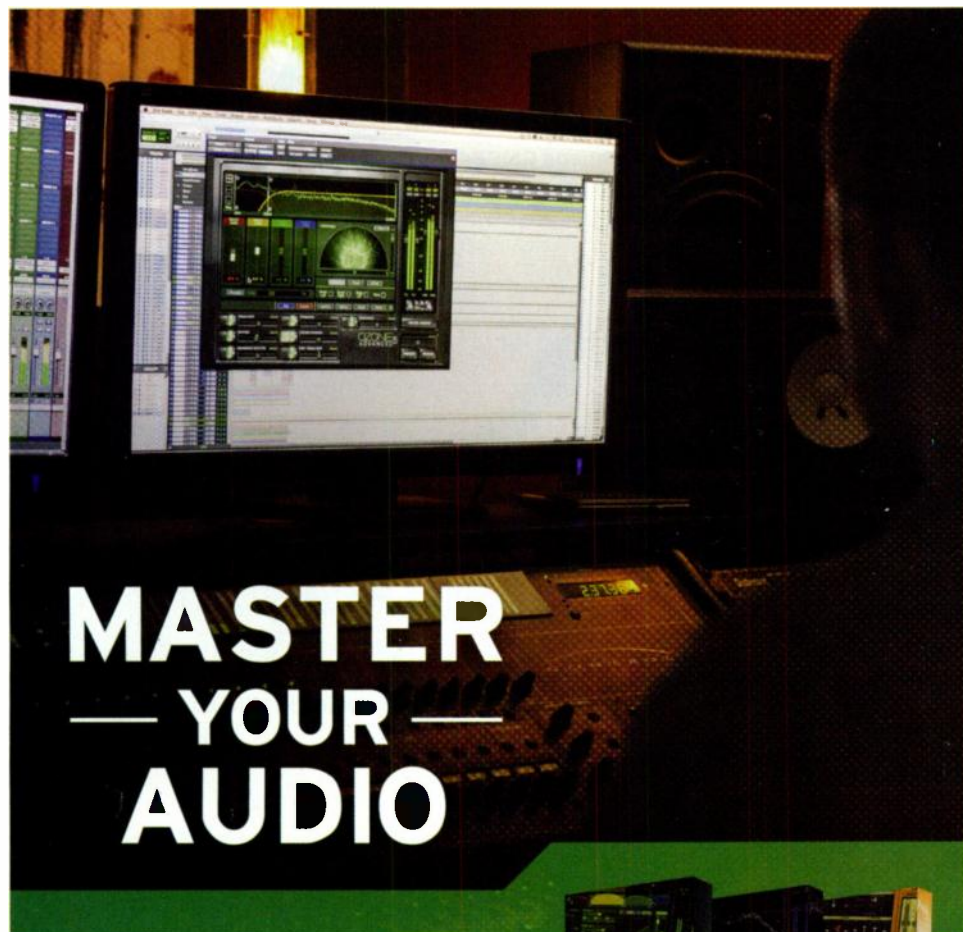
Near-Coincident Pairs In order to create a more realistic stereo image, we need to add a *time cue* to our mic array. Imagine that your eyes are closed and a friend is speaking to you while he walks around the room. Even though you can't see him, you know exactly where he is. That's because (dependant on his location) his voice reaches one of your ears first and then the other slightly later—unless he is directly in front of you, in which case his voice reaches both of your ears at the same time. A coincident pair does not take this timing difference into consideration, but a near-coincident pair does. A near-coincident pair is an arrangement of two directional mics splayed at an angle between 90 and 120 degrees but separated by a distance akin to the space between one's ears. The two most popular near-coincident arrays are NOS (Nederlandsch Omroep Stichting) and ORTF (Office de Radio-Television Diffusion Française), developed by Dutch and French broadcast organizations, respectively.

Figure 3 (page 73) shows ORTF configuration: two cardioid mics placed approximately 6.5 inches apart, each angled 55 degrees off-axis. NOS pushes the mics slightly farther apart (11.8 inches), but tightens the angle to 45 degrees off-axis (see Figure 4, page 73). These two techniques provide an increased sense of spaciousness over a coincident pair because they give your brain intensity and time cues, while still providing a solid center image. They may not be 100 percent mono-compatible, so you'll need to check your recording in mono.

Fig. 5. Sony C48 multipattern mics set to omnidirectional and arrayed as a spaced pair.

(Hint: If you use a near-coincident pair for drum overheads, listen in mono for 'swishy' sounds on the cymbals. That's an indication of phase cancellation.) Adjusting the distance between the mics, or between the mics and the source may help alleviate phase problems.

Spaced Out Sometimes known as an A-B stereo array, a spaced pair of microphones delivers a less precise, more diffuse picture of the sound source (Figure 5). This makes A-B stereo a good choice for orchestral, choir, or chamber music applications, in which blend is important. Traditional spaced pairs employ omnidirectional microphones, though you certainly can try any pattern. Spacing between the two mics is usually determined by the width of the sound stage: Generally the distance between mics is a third to half the width of the sound stage. When mics in a spaced pair are separated by more than three to four feet, the image may develop a hole in the middle, so some engineers add a third mic which should be panned precisely center (when recording an orchestra, for example).

Using a spaced pair requires you to be aware of critical distance—the location in a room where direct and reflected sound are of equal strength. Generally the more lively the room, the closer the mics should be to the source. Omnis can be placed closer to a small group (or small instrument such as a drum kit) while maintaining coverage and reducing room tone. Don't be sloppy about aiming (or not aiming) omnis at the source. Most omnidirectional mics become directional as frequency increases, and you may as well take advantage of this characteristic. Since phase issues are possible with a spaced pair, be sure to check the results in mono.

Stay tuned! In the future, we'll discuss M/S (Mid-Side) and other advanced stereo techniques. ∎

Steve La Cerra is an independent audio engineer based in New York. In addition to being an Electronic Musician *contributor, he mixes front-of-house for* Blue Öyster Cult *and teaches audio at Mercy College, Dobbs Ferry campus.*

Step 1 Native Instruments' Battery has four outputs exposed, as shown in the mixer's Instruments panel. We'll render these to four individual tracks.

Presonus Studio One Pro 2.5

Transform virtual instrument outputs into audio tracks

BY CRAIG ANDERTON

OBJECTIVE
Convert MIDI data feeding virtual instruments into audio tracks

BACKGROUND
Many virtual instruments have multiple outputs; for example, drums that group kick into one audio output, hi-hats into another, toms into another, and so on. Studio One Pro 2.5 can render these into individual audio tracks for editing.

Step 2 Right-click in the virtual instrument's MIDI track entry in the Track Column, and select Transform to Audio Track.
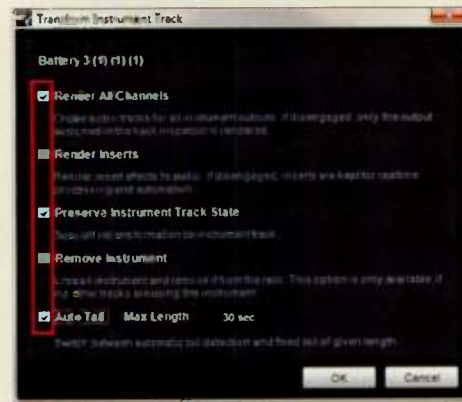
Step 3 Choose the transformation characteristics. If you check Preserve Instrument Track State, you can always revert to the original MIDI track. After making your selections, click OK.
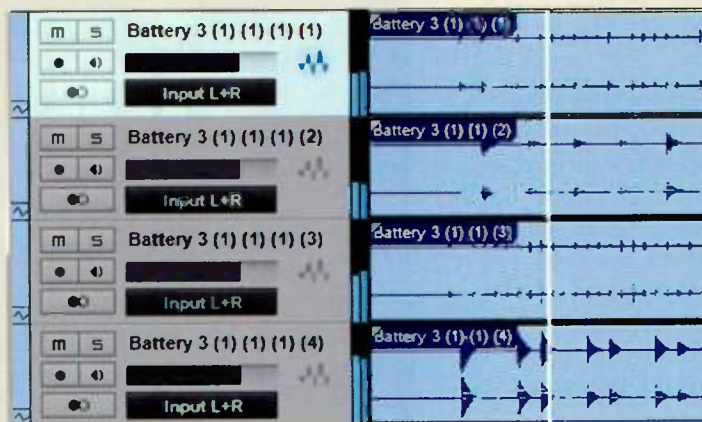
Step 4 The individual outputs are now rendered as separate audio tracks, and you can edit them as you would any audio tracks. The MIDI data is ghosted in the background.

TIPS
■ Step 3: If you check Render Inserts, any effects in the channel inserts will be rendered into the audio. Otherwise, the effects will be inserted into the corresponding audio track.

■ Step 4: To revert to the original instrument track (assuming Preserve Instrument Track State was checked), right-click on any of the rendered tracks in the Track Column, and select Transform to Instrument Track from the context menu.

Step 5 To see only the rendered audio channels and hide the virtual instrument channels, uncheck them in the Instruments panel.

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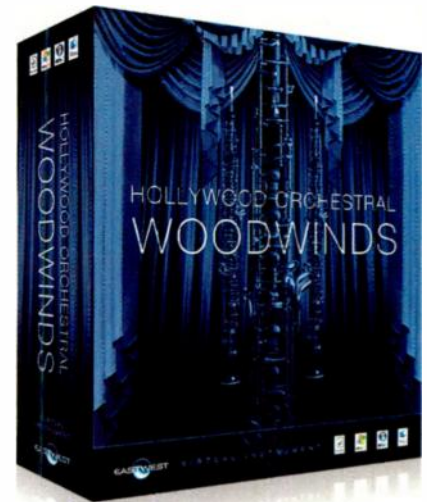
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Five Reasons

Why Computers Are Gonna Be *Great* for Music

BY CRAIG ANDERTON

(During a semi-successful time machine experiment, I traveled back to the '80s. Apparently I wrote this Craig's List *while I was there, because I just found the text today on a Mac 3.5" floppy disk when I was cleaning up.)*

1

There are *tons* of computer options for music. Atari, Mac, Amiga, PC, Yamaha's CX5M, and if you're on a budget, even the Commodore-64 or Timex Sinclair 1000 will do the job. So don't worry! You're never going to be forced to choose solely between a boring PC or an overpriced Mac.

2

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4

Computers are great investments. Computers are extremely reliable, so when you buy a computer and software, they'll keep doing what they do—just like a guitar. Ten years from now, you'll still be able to run your favorite software on your favorite computer. Talk about value!

5

Computers are *not* dictators. We're not talking about HAL—computers won't change your drummer's timing, re-tune your vocals into something weird and soulless, repeat the same sections of music over and over and over again, or kill your dynamics. Computers are your faithful servants, and will do *exactly* what you tell them to do. Hmmm . . . well actually, that *could* be a problem.

stand·ard ['stan-dərd]
noun

1. *an object that is regarded as the usual or most common form of its kind*

2. *something established by authority, custom, or general consent as a model or example*

3. *the stuff no studio is complete without*

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