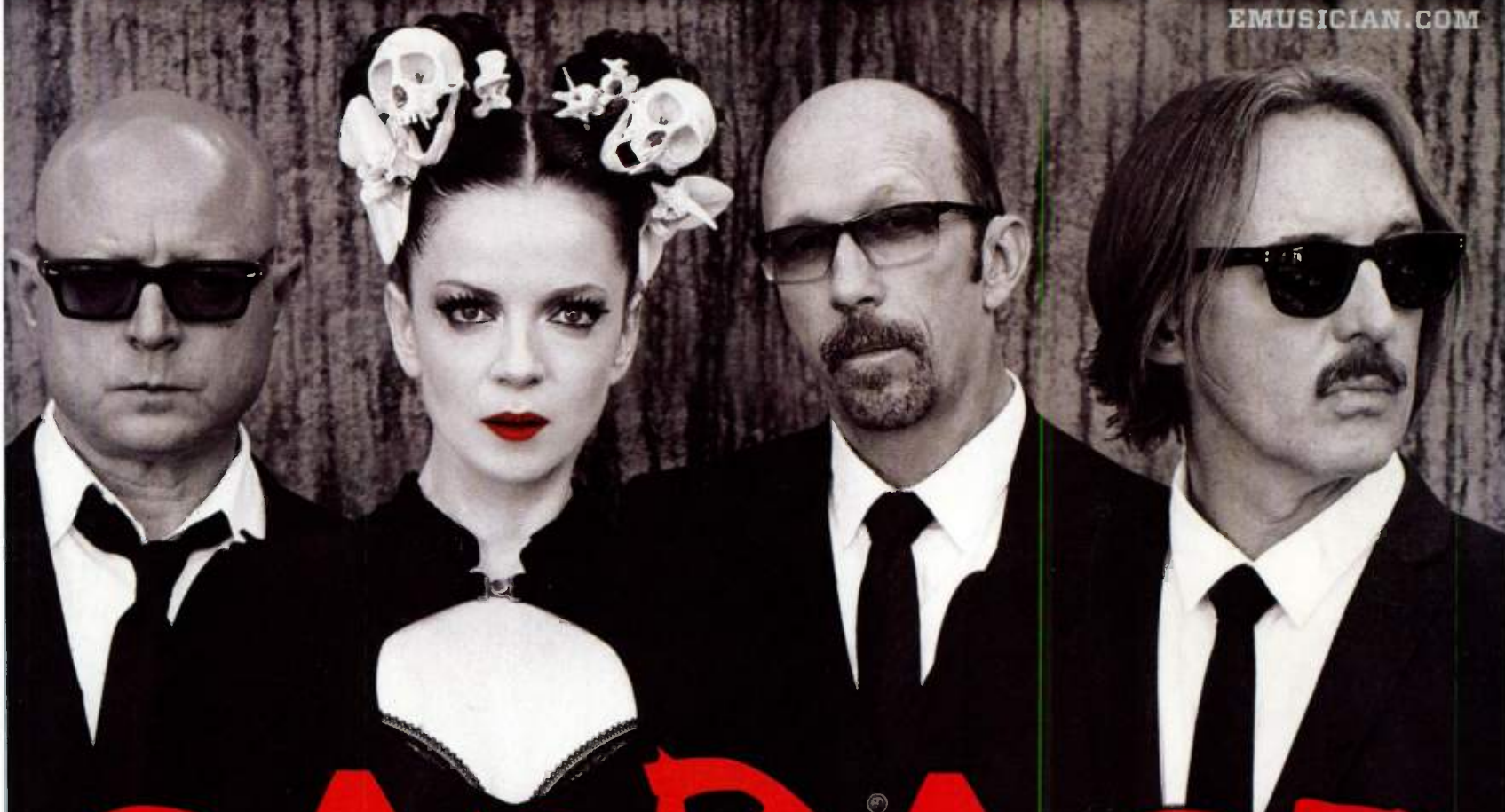


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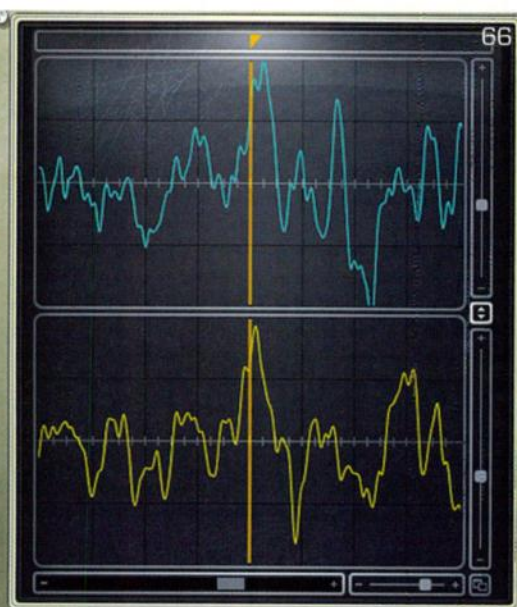
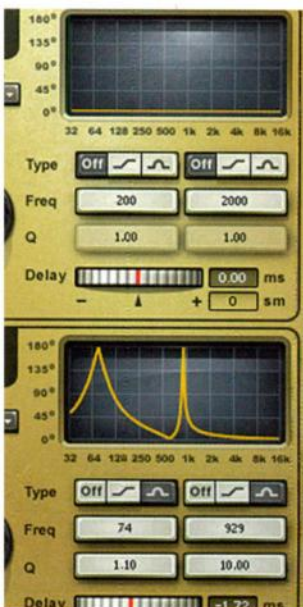
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Garbage photo by Elias Tahan

05.2012

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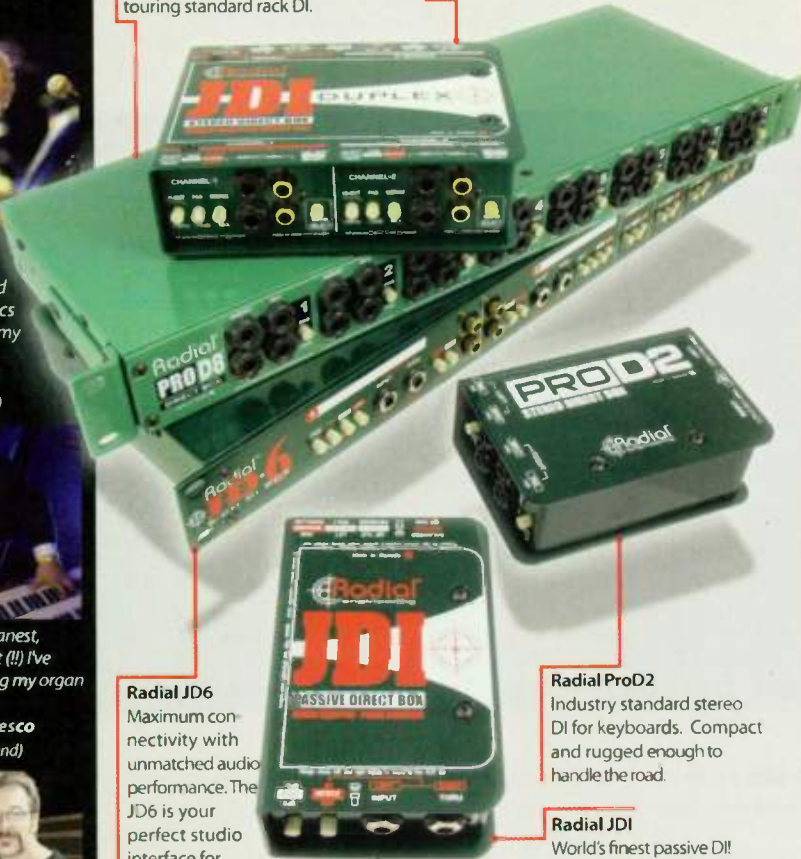
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insight

Head and Heart

THIS MONTH marks a year since we merged *EM* and *EQ* magazines and launched the new *Electronic Musician*. Looking back, we've talked to a lot of artists in the past year, and we've gained insight into some amazing creative minds.

Everybody has their own processes and tools—whether it's this month's cover band, Garbage, deconstructing and reconstructing songs at home between studio stints; Skrillex tweaking tracks on his laptop night after night in hotel rooms around the world; the Foo Fighters recording drums next to the washing machine in Dave Grohl's garage; or Moby humming scratch vocals on his Blackberry. The common thread? These artists know how to make technology work for them, yet they never lose sight of the human element.

As *Electronic Musician*

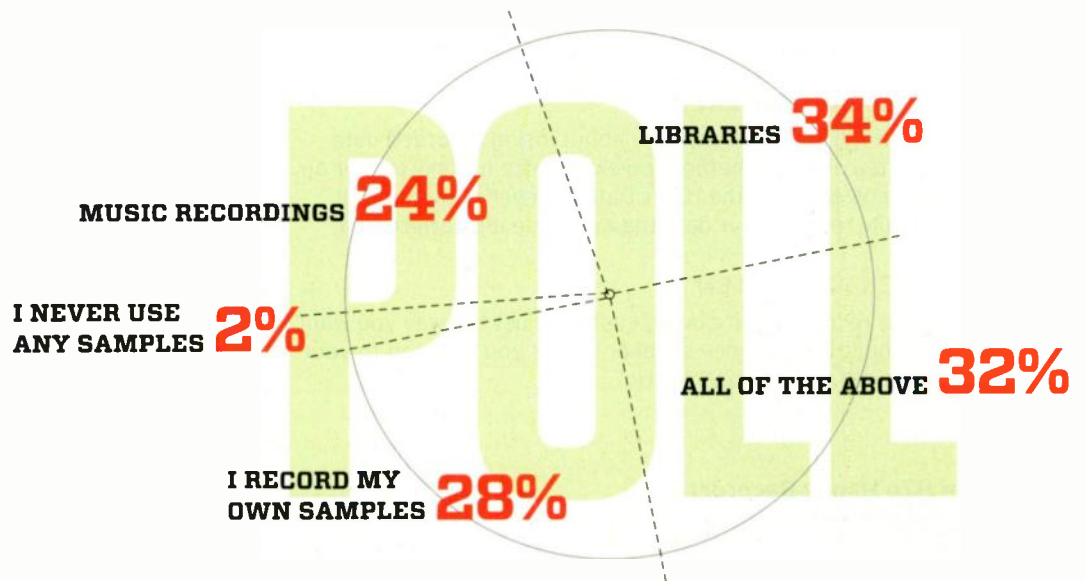
evolves, we remain grounded in our core mission—to provide you with all of the tools you need to make better music. So as we continue to move forward, we'll bring you more in-depth artist interviews, technology tutorials, and career resources. And we'll help you figure out how to make them work for you. Thanks for your loyalty, and here's to another great year together.



SARAH JONES
EDITOR
sjones@musicplayer.com

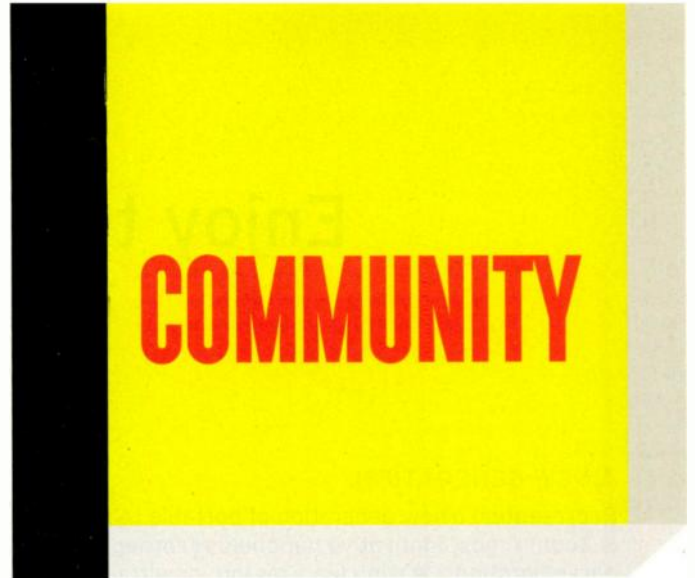
The *Electronic Musician* Poll

WHAT ARE YOUR FAVORITE SAMPLE SOURCES?



Correction

The March 2012 "Playlist" column referenced an incorrect web address for Steve Thomas' *Audnoyz Project Volume 2*. The correct URL is audnoyz.com.



"YOU CANNOT DEVELOP ARTISTS WHEN DIGITAL RETAILERS, STREAMING SERVICES, AND BLOGS HATE YOUR GUTS AND THINK YOU'RE AN EXTORTIONIST."

ex major-label executive Jim McDermott, on digitalmusicnews.com, February 15, 2012

Producer Spotlight

Harry Aponte

Harry Aponte is the winner of a “mix-off” contest held by engineer Ken Lewis and Indaba, in which contestants mixed the stems of G-Note Records/G-Unit Records artist Lea’s single “November Skies,” written and produced by Lewis and Brent Kolatalo.

How long have you been mixing and producing?

Since 1999, when I graduated from Eastman School of Music with a Masters in Piano Performance; during that time, I worked as a studio musician, where I became interested in the recording arts.

How did you learn your craft?

Even though my studies are as a concert pianist (I still do 50 percent of my work as a performing musician), I’ve always played drums, guitar, and bass. I watched the engineers at various studios as they recorded me, and I asked them tons of questions. A short time after that, I purchased my first computer with a soundcard, a few microphones, and



started to experiment. I fiercely studied the recordings that I admired. I still do the same thing every time I work on a project.

Tell us about a few of your projects.

I have a few solo piano albums and have also collaborated with other artists in the Latin pop industry, but I mostly produce other artists in the Latin world, ranging from classical to salsa, reggaeton, pop rock, and hip-hop. Artists I’ve worked with include Victor Manuelle, Gilberto Santa Rosa, Daddy Yankee, and Noel Schajris “Sin Banderas.”

To hear Aponte’s winning mix, visit indabamusic.com/opportunities/ken-lewis-mixing-contest.

ask!

I enjoyed your feature on mixers [“Roundup,” March 2012], and because of it, bought the Phonic digital mixer with the USB+FireWire board. I love the mixer, but sometimes USB works and sometimes it doesn’t. I’ve also tried FireWire, but it has problems too. I’ve downloaded the updates and am using Windows. What’s wrong?

**KURT SCHNEIDER
DALLAS, TX
VIA EMAIL**



With either USB or FireWire connections, you need to follow some basic precautions.

That’s not a lot of information for troubleshooting, but we’ll give it a shot, as USB and FireWire issues are pretty similar for any interface, whether on Windows or Mac.

Don’t use USB audio devices with a USB hub (including

powered hubs), but connect directly to the motherboard’s USB port. A USB card (e.g., PCI or PCIe) can also give good results, but avoid using combination USB/FireWire cards.

Sometimes Windows won’t recognize a USB device if it’s turned on

before the computer has booted; boot first, then turn on the USB device. With the Phonic mixer, make sure you’re plugged into a USB 2.0 port, not a USB 1.1 port. Finally, the device driver may not have installed correctly—with

most USB driver installations, you install the software before connecting the hardware.

For FireWire, make connections with both the computer and Phonic turned off—although FireWire is supposedly hot-swappable, there have been isolated, but verified, incidents of damage to FireWire ports due to hot-swapping. As with most interface manufacturers, Phonic recommends a TI (Texas Instruments) FireWire chipset. If your computer doesn’t use TI chips, you can

buy an inexpensive FireWire interface card with the TI chipset. Also, avoid daisy-chaining any other FireWire device (like a hard drive) with the interface. As with USB, FireWire audio devices are selfish and want a port all to themselves.

With either USB or FireWire, if problems still persist after following the above advice, swap out cables. Cables aren’t always perfect, and you won’t hear any crackling to tip you off when they’re carrying data instead of audio.

THE EDITORS

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





**FIRST
TAKE**

**JIM JAMES AND
LOUISIANA VOODOO**
NEW ORLEANS, LA
OCTOBER 31, 2010

My Morning Jacket spent much of 2010 recording and performing in New Orleans, working on tracks with the legendary Preservation Hall Jazz Band and headlining both JazzFest and Voodoo Fest. But for MMJ frontman Jim James, there was something extra special about taking the stage with the Hall band during their Voodoo set, late on a balmy Halloween evening: “The air is so thick with magic.”

PHOTOGRAPH BY ALYSSE GAFKJEN





Garbage (left to right)—Steve Marker, Duke Erikson, Shirley Manson, and Butch Vig.

Garbage

**Working Collectively and Apart on
*Not Your Kind of People***

BY KEN MICALLEF

TWO DAYS after enjoying a big, sloppy group hug onstage with the Foo Fighters as they accepted their Best Rock Album Grammy, Butch Vig is still savoring the moment. “It was a great, wild evening,” Vig says from *GrungeIsDead*, his home studio in Silver Lake, Los Angeles. “We had dinner afterward with Paul McCartney, Bruce Springsteen, and Joe Walsh. I was pretty fuzzy the next morning. Dave and I were up ’til 3 A.M. It was a long, fun night.”

Musing over his Foo Fighters’ production success—just one album in a long career that spans such million-sellers as Nirvana’s *Nevermind*, Smashing Pumpkin’s *Gish*, Green Day’s *21st Century Breakdown*, and his own band’s

1995 quadruple-Platinum debut, *Garbage*—Vig stands on Mount Olympus, surveying his past and future.

“What’s so important about *Wasting Light* is the performance and feel and the vibe,” Vig says. “When you can’t fix everything, you really have to go for it. Rather than quantizing guitars and chopping them all up, the new Garbage album is rougher-sounding than *Version 2.0*, *Beautiful Garbage*, or *Bleed Like Me*. I compare it to our first album. We didn’t have Pro Tools, so you couldn’t really go crazy with [effects]. We’d run things to tape and trigger from MIDI, but the MIDI delay was slightly off so it would drift. Our first record has a looseness to



“Our first record has a looseness to it. Then we got microscopic on *Version 2.0*. We didn’t do any nano-editing on *Not Your Kind of People*.”

—Butch Vig

it. Then we got microscopic on *Version 2.0*. We didn’t do any nano-editing on *Not Your Kind of People*—maybe take a one-bar or two-bar chunk and paste it around, but we didn’t go any deeper than that. We definitely didn’t go grid-mad.”

The first Garbage album since 2005’s *Bleed Like Me*, produced by Vig and Garbage and engineered by longtime colleague Billy Bush, *Not Your Kind of People* (StunVolume) traffics in that classic Garbage sound: From Shirley Manson’s first bitter shout out of “Lies, lies, lies” in “Automatic Systematic Habit,” you know Garbage is back. A Theremin squiggles, vocals get phase-shifted and freaked, guitars pound like short-circuiting jackhammers. “I won’t be your dirty little secret,” Manson warns, and it warms the heart. “Big Brite World” is wonderfully queasy and dislocated; “Blood for Poppies” trades rock for dub (another classic Manson performance); “Sugar” finds the pint-sized singer luxuriating in whispered threats as the band swirls like floating spirits; “Man On A Wire” recalls The Pretenders by way of the Foo Fighters. *Not Your Kind of People* is a return to form after the virtual retreat that left a bad taste in Shirley Manson’s mouth.

“On *Bleed Like Me*, we shouldered a lot of criticism because people felt we’d lost our

edge,” Manson recalls. “Looking back, we definitely got burnt out; we toured too much. We’d always been happy in the studio making records, but then the music industry began to panic; they put a lot of pressure on their artists. [Our label] was scrabbling for more money; they wanted our chart positions to be higher, and quite frankly, that isn’t what we signed up for. It really shut us down. We just lost our joy. And you heard it in the music. Now, with time off and having regenerated ourselves, you hear that on the new record. It sounds like classic Garbage. I am very proud of that.”

Culled from early 2010 jam sessions tracked during a two-week booze-and-bullshitting-fueled Garbage reunion at the now-defunct The Pass Studio in L.A. (then rough-mixed at engineer Billy Bush’s Red Razor Sounds in Atwater Village), *Not Your Kind of People* is a true composite, state-of-the-digital-art recording. After the band—drummer/producer Vig, vocalist Manson, and guitarists Duke Erikson and Steve Marker (aided by bassists Eric Avery and Justin Meldal-Johnsen)—improvised a handful of tracks, the members went their separate ways. Garbage has closed Smart Studios in Madison, Wisconsin, where their early records were recorded, in favor of such destinations as Aspen, Colorado (Steve Marker’s home), and the more bohemian neighborhoods of L.A. (home to Vig and Manson). Only Duke Erikson remains in Madison. After their L.A. jam, with laptops in hand and files in hard drives, the band returned to their respective homes and began deconstructing, then reconstructing the songs with various plug-ins, effects, and instruments. Trading two-week stints between Red Razor Sounds (where guitar parts were replaced and rerecorded) and home for the bulk of 2011, Garbage wrote *Not Your Kind of People* collectively and apart. The result is an album where Vig often played guitars, Erikson contributed drum loops, Manson pushed for ever more bizarre vocal treatments, and Marker built finished songs from crude MP3s. Garbage is at their best when the lines are blurred.

“There’s no delineation between each band member’s job,” Bush explains. “Everybody does everything. They all produce, they all can engineer, they all write. The ideas for pushing things out there often came from Shirley. Butch plays guitars, Steve makes drum loops. They all play keyboards, they’re all good at programming. All of that makes the band

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“The live drumming is so cut up that it sounds programmed. I recorded a lot of the drums at my home studio, basically a 16 x 18 den where I watch football games.”
—Butch Vig

unique. The Garbage sound only exists from the input of all four of them.”

“A lot of the success of Garbage is in trading ideas,” Erikson confirms. “Something will begin as one idea then end up as something totally different and better. You don’t have that when you’re working totally isolated in your home studio. Some ideas were thrown down really quickly, and a lot of it is actually on the record.”

Not Your Kind of People is a geek wonderland of hardware- and software-enabled production treatments that always serve the band’s raging electronic rock. Those trippy dub tom effects in “Blood for Poppies” and its freakish manual typewriter/ambient chorus? “That’s a distorted drum fill that Butch sampled and ran through SoundToys Decapitator,” Bush explains. “He and Duke came up with that section using a bunch of [Native Instruments] Reaktor sounds for the ambience and swells and then added some sound-effect samples. That chattering sound is actually a hi-hat running through GRM Doppler to create a stereo effect. Shirley wanted the vocal in that section to sound like it was a garbled radio transmission so I treated it using [iZotope]

Stutter Edit, Decapitator, and Waves H-Delay.”

Bush is a big fan of both Stutter Edit and iZotope Trash for shape-shifting Manson’s battle-cry vocals, a key ingredient on *Not Your Kind of People*. “Trash is still one of the best-sounding sonic manglers out there,” he laughs. “It’s all over the record. Trash allows you to distort things in a way that no other plug-in rivals. The other one I used was [OhmForce] Ohmicide, a multiband distortion unit that has more digital versions of distortion.

“I don’t really use Stutter Edit like most people do,” he continues. “Most people use it to freak a whole track out. I will use it as a particular effect. I like the way it can make [vocals] fall apart (as in “Control”) or speed up over a period of time. If a plug-in made all of us ask, ‘What was that?’ we’d gravitate toward that kind of effect.”

“Big Brite World” bubbles with robotic ’80s synths created from strained laptop plug-ins; “Automatic Systematic Habit” piles on even more synths. “There are a couple of synths in the intro to ‘Big Brite World,’” Bush continues. “Steve came up with the parts on his laptop using [Pro Tools] Vacuum for the main two parts and the other more ambient, panning arpeggiated one was done in Ableton Live. The synth in the bridge of ‘Automatic Systematic Habit’ is a combination of [NI] Reaktor and [Spectrasonics] Omnisphere. Reaktor is the source of the distorted synth sound and the choir is an Omnisphere patch. The vocal was run through [NI] Razor to vocode it.”

Throughout the album, Manson’s vocals are strobed, distorted, and delayed, deconstructed, layered, and literally shattered like breaking glass, as in “Control,” which gets extra juice from a ripping harmonica hook. “Butch played the harmonica but he didn’t have one in the right key so he pitch-shifted it down a few steps to get it to work,” Bush adds. “It gave it a great low-fi quality and made the fact that it’s a harmonica not as obvious. It’s run through Echo Farm and Reverb One. We put the chorus vocals through a combination of Decapitator, Tremolator, and PanMan. A virtual SoundToys fiesta!”

Garbage still pen sick, sinister ballads. (Remember “Queer”?) This time it’s “Sugar,” where strings, guitars, and samples create a darkly ambient sound cloud. “A lot of that is Eventide H8000 reverb,” Bush continues. “The ambient fuzziness is a guitar that was run through a Death By Audio Robot pedal. There’s

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“The problem for the band is I’ve never spent any time learning the technical lingo. So I might say, ‘Make my voice here sound like it’s going through a hair dryer!’ Sometimes they want to murder me.”

—Shirley Manson

also a ‘verbed-out musical saw, some Omnisphere, and most importantly Shirley’s ‘verbed-out melodica solo!”

“I have a pretty extensive setup in my Pro Tools rig,” Vig says, “and Billy Bush has a way bigger one with plug-ins and soft synths at Red Razor Sounds. Once, we were trying to find an abstract sound for something and we spent two hours just scrolling through what seemed like thousands of different presets with the more exotic things. I love using [NI] Massive and [Spectrasonics] Omnisphere and [NI] Absynth, [FXpansion] Geist, and [NI] Kontakt. Sometimes you want a noise or something pretty or abstract or jagged sounding, and it’s amazing what the software can do.”

Working from those initial jam session tracks, Vig and Bush constantly updated their mixes, incorporating the band’s new ideas as they flowed in from across the country. “We kept squeezing and saturating the sound so it became less clean and more trashy and f’cked up,” Vig explains. “Often we’ll run things through submixes. All the drums are on one aux, and all the samples and loops are on another aux, and then I’ll start blending in Decapitator and the Studer [A800] tape plug-in. We’d run that across the bus and hit it harder and harder. We’d have different harmonic plug-ins that really played with tonal qualities on each bus—vocals, guitars, bass drums, then we wanted more and more!”

The effects extravaganza is apparent on Vig’s DW drums, which blur the line between programmed, live, and Lord knows what. “You’re hearing more loopy drum programming and the live stuff is tucked back; it’s 60/40,” Vig says. “The live drumming is so cut up that it sounds programmed. I recorded a lot of the drums at my home studio, basically a 16 x 18 den where I watch football games. I used six mics on the kit, maybe a Bock Audio 507 put back in the hallway and turn it up and run it through Decapitator. I would do a bunch of takes, edit them, then take them into Billy’s studio and we’d carry on. Sometimes we’d only use the Bock room mic and delete the rest. We didn’t really labor over the stuff.”

Bush says Vig either programmed the drums or he’d record drums then chop them up and turn it into a loop, then sample a kick and snare and throw it around in FXpansion BFD or Geist: “For drums [DW Artist Series set with a titanium Dunnett snare drum], we

put a FET 47 on the outside of the kick. One of my favorites for the inside of the kick is the Crowley & Tripp El Diablo. That’s going into an API 512C preamp into an API 550B EQ. The snare mic is a Telefunken M80 or a Josephson e22S, depending on what Butch is going for. That’s going into an API512 as well, and a 550B and a Chandler Little Devil Compressor. Overheads are Audio-Technica 4033s into a couple APIs. Toms are the Josephson e22S again, into Helios preamps. Butch likes a spaced pair of overheads over the left and right cymbals directly over him pointing outward to make it a little wider. The signal from the Bock 507 ran through Decapitator and a compressor and was squashed to death.”

Following the album’s off-the-cuff vibe, Manson’s vocals were cut in Vig’s comfy den, sitting on his couch with a handheld Shure SM58. Nothing was sacred, as when Manson recorded vocals for “I Hate Love.” The original scratch vocal was used, pitched down 30 BPM, then pitched back up further 30 BPM to “make it sound clubby.” Manson played a large role in her own vocal deconstruction, pushing Garbage to the brink.

“I am an opinionated woman,” she says. “I am not a ‘sit on the couch and shut up’ type of girl, and I am sure at times my band would prefer that I was. I have a lot of ideas that I want to hear on my vocals; sometimes they work, sometimes they don’t. The problem for the band is I’ve never spent any time learning the technical lingo. So I might say, ‘Make my voice here sound like it’s going through a hair dryer!’ Sometimes they want to murder me.”

At Red Razor Sounds, Manson used either a Telefunken ELAM 251 or a Brauner VM1 K.H.E. Historically, the band used Vig’s original Telefunken ELAM 250 or Bush’s K.H.E. But this time, Bush wanted one mic to leave up so he asked Telefunken to create a new 251—Butch’s 250 was not used.

“They put together a new 251 for me with a 6072a tube,” Bush explains. “They tried many tubes until they found one similar to the hard-wired AC701 tube in Butch’s 250E. The 251 they built sounded great. If I use the two of them in stereo pairs, you can’t really tell the difference. Butch’s has a little midrangey thing that signifies it as a 50-year-old mic.”

Next in Manson’s chain was an original Chandler Limited LTD 1 into a Retro Instruments 176 compressor. “I am not afraid of compressing the bejesus out of the signal while



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“I don’t really use Stutter Edit like most people do. I like the way it can make [vocals] fall apart or speed up over a period of time. If a plug-in made all of us ask, ‘What was that?’ we’d gravitate toward that kind of effect.”
—engineer Billy Bush

tracking,” Bush laughs. “That makes it sound intimate and forward, and it really sits in the mix well. It allows the singer to feel like they can really go for it and the compressor will just grab it and give it back to them. No matter how dynamically Shirley sings—and Shirley is a very dynamic singer—the Retro 176 lets her sing right on top of the mic.

“Shirley’s voice sounds amazing regardless of what she sings through,” he adds. “‘I Hate Love’ was done on a 58 and you can’t tell. ‘Beloved Freak’ was a scratch vocal, just one take. The 251 is perfect for her vocals, but I add a little bit of 10k, like maybe a dB and a half, and then I take a little bit of 330 out and that’s it.”

Erikson and Marker modified their guitar parts with a Line 6 POD and their home laptops (Ableton Live, Pro Tools), but Bush’s initial miking at The Pass formed the bed. “Steve played through a Line 6 Mi6 into a Mojave JTM 45,” Bush explains. “There I used a Heil Sound PR30 or a Heil PR22, sometimes an RCA BK-5B. An old Garbage standby is the Matchless DC30 and a Carol-Ann with a 12” for clean tones, then the Mojave for heavier sounds. Duke has this weird-sounding Fender Telecaster he loves to play into this old Silvertone of mine, a really aggressive amp. I used a ribbon mic on the Silvertone, just to tame a little of the bite. Every guitar sound was recorded with some different permutation of a bunch of different things.”

Justin Meldal-Johnsen recorded bass on nine tracks, Eric Avery on two. Johnsen brought in multiple basses, which he regularly changed out. Bush used one of the new Fender Bassmans, miked with a FET 47. Avery played a Fender Jaguar Bass recorded with a Groove Tubes Viper DI and a Line 6 Bass POD.

When mixing *Not Your Kind of People*, Bush took the broad approach, being careful to fit each sound and instrument into its own frequency range. “It’s such a geeky prospect, making one of these records,” he laughs. “A lot of editing goes into making sure there is space for the frequency ranges. If you solo the guitars, they may have really bizarre EQ settings ‘cause I want that to cut through in a specific way. A guitar sound might need to be thin or dark in order to fill in whatever is missing sonically in that particular section. It’s about what needs to be featured without losing the groove or the dynamics or getting in the way of Shirley’s vocal.”

As veteran rockers, Garbage has a 16-year history in an industry that was once seemingly

omnipotent, but which is now as decentralized as the KGB. Years of ups and downs, of creating trends and falling flat, has given the band a unique perspective. Ultimately, Garbage has survived and created yet another great record due to artistic tenacity and faith in their vision.

“We sound like Garbage because we have a sensibility that we gravitate toward,” Vig says. “It’s important for a young artist to figure out what their aesthetic is and what defines them. Everyone can buy the same plug-ins, but what can you do with them to make them more interesting and unique? That comes from your heart and your brain. Your sensibility is what you love.”

“You are the only one who knows how you feel and how you want to represent yourself as an individual,” Manson says. “You have to listen to who you are and be true to how you want to represent yourself in the world. If you are genuine and honest, people respect that and they believe it when they come up against it. There isn’t very much authenticity any more. It’s all people at recording companies deciding how to present an artist. And that’s crazy. It can’t end well; the artist has to be in the driver’s seat. Always.”

But how do you believe in yourself in this age of collapsing empire, when doubts loom and hopes often seem dashed? “As a singer in a band who has had a lot of ups and downs,” Manson replies, “I know what it’s like to think, ‘Wow, I am just getting drowned by everybody else and all of their talents and their successes. How do I dig myself out of this hole?’ You have to say, ‘Do I have enough reserve to stand back up and take another hit? Another punch?’ Everybody’s career is defined by how many times they’re willing to get knocked down and stand back up again. Because inevitably every single artist, even great ones like Bob Dylan, get passed over and forgotten about for a while. You have to find your reserves. It’s that simple.”

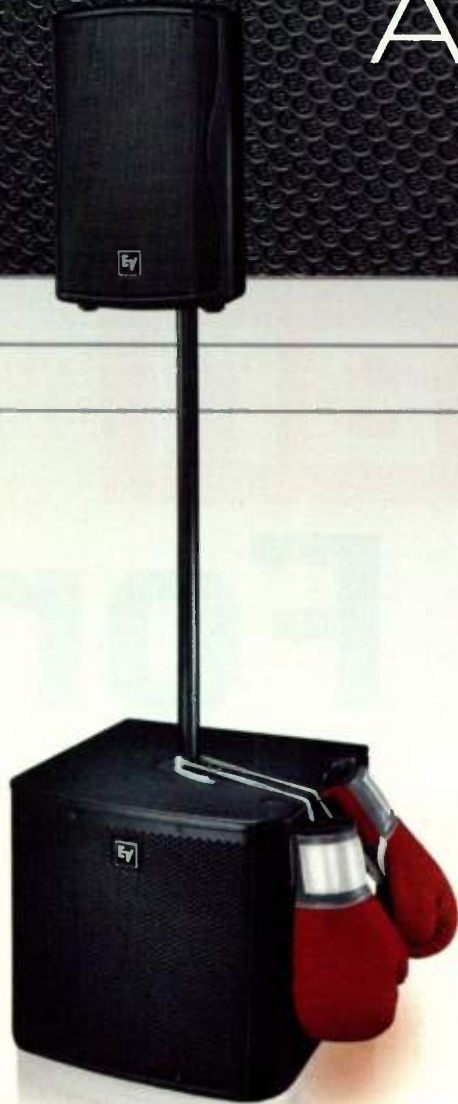
Ken Micallef covers multiple genres of music for various publications, domestic and global. He lives in Greenwich Village with his cat Marty and his Shindo hi-fi.





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**It's not just price
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music retailers**

BY GINO ROBAIR



Sweetwater's Mitch Gallagher (right) interviews artist BT for a seminar in the company's state-of-the-art theater.

WHILE THE Internet has made it easier than ever to find low-cost gear, there are a variety of services that retailers provide beyond competitive pricing. Thanks to the ever-increasing complexity of the products involved in modern music making, musicians and engineers often need advice on specific products, how to integrate them into a system, and, in some cases, how to use them. Consequently, you need more than just a convenient and inexpensive place to shop when it's time to expand your setup.

How do you know what to look for in a music store and who to trust for advice? Let's look at the types of so-called *value-added* services that top-notch retailers offer, in order to demonstrate how some of the more successful companies take care of business.

Hands On Many retailers combine the classic brick-and-mortar storefront with an online component, as well as with more traditional mail-order and phone sales. Well-known companies like Sam Ash Music (samashmusic.com), West LA Music (westlamusic.com), and Chuck Levin's Washington Music Center (wmcworld.com) grew from being neighborhood shops in New York City, Los Angeles, and Washington, D.C., respectively, into world-renowned retailers because they've expanded their services as customer expectations evolved with communication technology. Yet they still have a well-stocked showroom when you need it. "I think a lot gets lost when you just look at something online and take that as

the word," explains Adam Levin of Washington Music Center. "A lot of people still like to get their hands on something and give it a try, rather than just reading specs and numbers online. We're here so somebody can understand what they're getting into, and we're going to show them how to use it and not leave them in the dark."

Probably the biggest reason musicians visit an actual music store is to try something. Consequently, the pressure is on for locations to provide a representative number of products, while having knowledgeable staff ready to answer questions. Although most stores do this with their guitar, bass, keyboard, and drum inventory, a number of retailers have worked hard to create this experience within the challenging pro-audio categories. For example, B&H (bhphotovideo.com) has a room dedicated to mics and preamps. "We have 60 large-diaphragm condensers and 26 preamps that are all connected through a bantam patchbay," explains John Pace, B&H's pro-audio sales manager. "You can listen to any microphone with any mic preamp that you choose. The bantam patchbay introduces no coloration to the signal-path at all, and the room has just enough liveness that you can gauge the nuances of each mic." Click the Microphone Room link on the B&H website to get a look.

Similarly, Guitar Center (guitarcenter.com) stores have custom displays that let customers A/B computer-technology products. "In every store, we have a display station

You need more than just a convenient and inexpensive place to shop when it's time to expand your setup.



The Full Compass dealership in Madison, WI, includes a 1,000-square-foot studio.

Service is very important when you're ready to lay out serious cash on something complex.

that holds 22 to 24 controllers—keyboard and non-keyboard—connected to an iMac loaded with every virtual instrument on the market,” explains Bill Wrightson, SVP of Technology Merchandise for Guitar Center Inc. (GCI). “The customer can go through an easy, self-guided tour of how each controller interfaces with the software. We’ve done something similar on the DJ side, with four or five leading controllers hooked up to a single computer that has the major DJ software packages. This allows a customer to have the same visceral experience that you get by taking a guitar off the wall and plugging it into an amp, but with computer-based products.”

Vintage King (vintageking.com) takes the process a step further by allowing artists and studios to audition products in their own production environments. “Most of the gear we sell is available for demonstration,” says Jeff Ehrenberg, Vintage King’s director of West Coast sales. “People can try them out in their studio—microphones, compressors, reverbs, whatever—and use them for a couple of days, do a mix with them and see what works, and then make an educated decision. Wherever we have reps in the field—New York City, Boston, Detroit, Chicago, L.A.—we’ll come by the studio and help set it up. Any other area, we’ll ship the gear, or if it’s a design job, we’ll fly a representative out.”

GC Pro, the “outside sales” division of GCI, has a similar approach. “Our sales staff is out

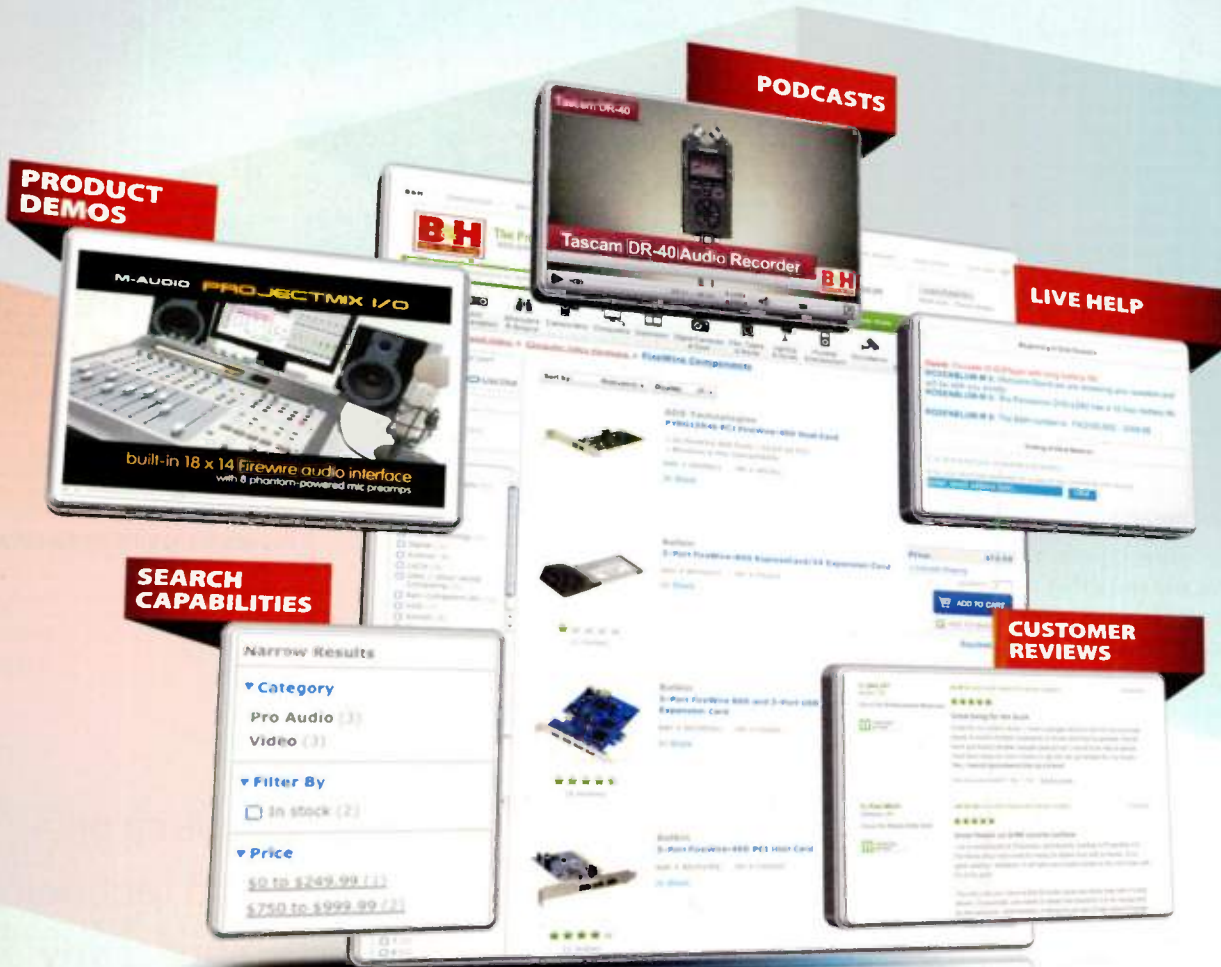
in the community calling on recording studios, post-production houses, house-of-worship accounts, and live-sound venues to see what they need,” explains vice president Rick Plushner. “We can provide products to our customers for demo purposes so they can try things out before they purchase. And they can come into the offices and have demos done within the store itself. We’re kind of a boutique-style brick-and-mortar group. We offer all the advantages of working with a big company, but we make it very personalized.”

Customer Service Not surprisingly, every company I talked to emphasized that customer service was its biggest strength. And though it may not be a big deal if you are simply looking for picks or strings, service is very important when you’re ready to lay out serious cash on something complex. At that point, you’ll want a salesperson that understands your specific interests.

“Each of our stores has its own microsite with a comprehensive profile of each person working in that branch,” explains GCI’s Wrightson. “That way you can find the right salesperson for your needs before you visit your local store.” Besides the Guitar Center stores themselves, GCI controls nearly 100 stores under the Music and Arts (musicarts.com) name for band and orchestral instruments, Woodwind and Brasswind (wwbw.com), and online retailers musiciansfriend.com and music123.com.

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A recording studio at Sweetwater headquarters.

No matter how you shop—phone, email, or direct—look for a music store that values the old-fashioned shopping experience of building a relationship between the customer and salesperson. “It can’t be overstated how important it is to have someone who knows what your goals are and what you want to achieve, what gear you already have, and what you want to change about the gear,” says Mitch Gallagher, editorial director at Sweetwater (sweetwater.com). “The people we have on the phone are not just order-takers, but are qualified service consultants. They recommend products based on real-world experience and education in the products that we carry. They go through constant training—we have twice-weekly meetings where manufacturers come in and train us on their products. We also have Sweetwater University, a 13-week program that everybody here goes through, covering recording technology, guitars, bass, drums, synthesizers—everything we carry.”

It shouldn’t be surprising that salespeople from companies like Sweetwater, B&H, Vintage King, and Full Compass (fullcompass.com) are seasoned audio professionals. Successful retailers understand that its sales engineers need to know *how* the products are used, through real-world experience, on top of the education they get about specific items. Rather than simply trying to make a sale, this level of sales engineer can provide information about system configuration or

design that you may have overlooked.

A great sales rep will assemble a package deal that fits your budget and your needs. If you have unusual or specific requirements, ask if the retailer will put together a custom deal that includes a price break based on the size of the purchase. Many of the retailers in this story have institutional and government accounts, so they’re savvy about putting together custom orders.

Of course, retailers also want to capture you as a long-term customer, so their services don’t just end with the purchase. “Our salespeople take care of the customer both before and after the sale,” says Jonathan Lipp, CEO of Full Compass. “You receive the quality of a traditional retailer even if you order over the phone.”

“In our business plan, we looked at high-end retail stores such as Mercedes Benz,” notes Ehrenberg, “because we want to offer that level of concierge-type service. Not only before the sale with the demo, but after the sale. A ‘Worry-Free Warranty’ is our phrase for it.”

Continuing Education Because pro-audio technology is constantly changing, look for educational services from retailers. Many dealers produce online or email newsletters in which they alert their customers about events and educational items, such as product videos, clinics, and workshops.

“We frequently have workshops and seminars here,” notes Gallagher. “We have a 250-seat theater designed by Russ Berger, that has

Because pro-audio technology is constantly changing, look for educational services from retailers.

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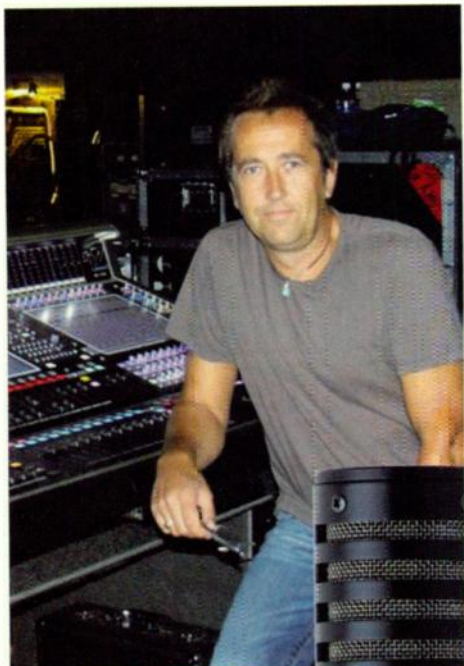
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"We also have Gearfest every June," adds Gallagher. "It's an annual two-day event where roughly 200 manufacturers show their products. There are clinics and workshops all day, and inside the building we have a couple of halls where we also have workshops for recording, mixing, mastering, and guitar." Sweetwater also offers a variety of online educational content, from Gallagher's informative "Sweetwater Minute" video series to the company's Expert Center, which includes demo videos, the extensive Glossary and Tech Tip lists (both of which are updated daily), and informative Buyers' Guides.

Guitar Center offers weekly classes coordinated throughout its chain of stores. "In May 2011, we launched the "Recording Made Easy" classes and workshops in conjunction with Apple Computer," says Wrightson. "They're free classes conducted every Saturday in every store from 10 A.M. to 11 A.M. It's a 4-week curriculum based on

GarageBand, aimed at the customer who is new to recording."

Beyond Gear You might be surprised to find that some retailers offer many services beyond gear sales. For example, Sweetwater Productions offers general recording, transfer, and mastering services.

While it doesn't have a brick-and-mortar presence, retail upstart Hello Music (hellomusic.com) offers daily specials that span most gear categories and include services such as recording, mixing, and mastering, using well-known engineers and top studios.

"We refer to Hello Music as a 'do-it-yourself empowerment platform for musicians,'" says CEO Rick Camino. "We look at the artist's entire value chain. We have a 360-degree view of musicians and try to come up with offers that cover the array of things that they might need. For example, in addition to instruments and home-recording gear, we're brokering studio time for about 50 cents on the dollar by guaranteeing studios a certain amount of units sold through Hello Music. We've brokered entertainment space on Delta Airlines—unless you're on a major label, you can't get access to any of the media on Delta Airlines globally. But through Hello Music you can buy yourself a slot on our radio station, with overhead video promotion as well as in-magazine promotion for your album." ■

Besides composing and performing, Gino Robair writes about and teaches music technology. He also has a manicuring license with the State of California.

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LISTEN

Esperanza Spalding

Experimenting With Instrumental Textures on
Radio Music Society

BY BLAIR JACKSON

IN RETROSPECT, it's almost comical to think that there was disbelief and outrage in some circles when Esperanza Spalding, a jazz bassist/singer/composer, beat out Justin Bieber at the 2011 Grammy Awards in the Best New Artist category. Esperanza who? What about Biebermania? But anyone who actually listened to Spalding's brilliant 2010 album, *Chamber Music Society*, understood the depth of her talent. The spare, tasteful arrangements incorporated myriad styles—from jazz to Brazilian to classical to pop—unified by Spalding's haunting vocals and impressive bass work.

Her newfound fame and popularity has allowed the 27-year-old Portland, Oregon, native to up the ante on her latest album, the eclectic *Radio Music Society*, which finds Spalding moving into ever-more complex arrangements for larger groups and



Spalding: "I wrote almost all of the album on piano."

Carlos Pericas

also furthering her explorations into R&B and pop stylings. This time out, she is experimenting with horns as a dominant instrumental texture—both big bands and smaller ensembles—and there is a broader range of other instrumentation, more different musicians, and Spalding herself plays electric bass on a number of tracks. Album title notwithstanding, though, this is hardly a determined push in a more "commercial" direction.

"I don't know what came first—the desire to do these larger ensembles or the means to do them," the cheerful and articulate Spalding

says from Manhattan as she packs for a European tour. "*Chamber Music Society* came about because of some experiments I was doing in college with writing for strings. With this one, I wanted to have some balance—because we had three strings, we'd have three horns. But then on some of the songs, three horns wasn't really cuttin' it, so I asked my teacher in Portland if he could give me a good deal on recording and showcasing his kids—the American Music Program—so that's what we did to get to a big-band. There are some 12-year-olds in there, and you would never know that from listening to them."

Those kids are the exception, not the rule, on *Radio Music Society*. Her core rhythm section mates are highly experienced holdovers from her previous album—drummer Terri Lynn Carrington and keyboardist Leo Genovese, and then the principal horn and reeds players are a combination of veterans such as trumpeter Darren Barrett, trombonist Jeff Galindo and saxophonist Joe Lovano, and potent younger talents like sax players Daniel Blake and Tivon Pennicott. The recently hot guitarist Lionel Loueke shows up on one song and monster drummer Jack DeJohnette on another. Spalding and Thara Memory handled the arrangements and Spalding produced. The main sessions were at Avatar (Studios A and C, both Neve rooms) in NYC with multiple Grammy-winning great Joe Ferla engineering; he later mixed the album at MSR in Manhattan. Additional recording for various specific parts took place at Kung Fu Bakery in Portland, Raydar Studios in Manhattan, Atlantic Sound Studios in Brooklyn, and Water Music in Hoboken, NJ. One track was mixed at Zobiz in Porter Ranch, CA.

Originally, Spalding had intended to cut *Radio Music Society* essentially live in the studio, with minimal overdubbing, as she had her previous three album projects, "but in the end that wasn't practical because of how complex the arrangements were," Ferla says, "so instead we worked on nailing the rhythm parts, nailing the horn parts, and then overdubbing more horn parts and lots of vocal parts."

The songs were also treated somewhat differently from a sonic perspective, beginning with Carrington's drums. According to Ferla, it was producer/rapper Q-Tip (of A Tribe Called Quest fame; he co-produced two tracks on *Radio Music Society*), who conceived of



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recording the drums “in a very dead iso booth with baffles around the drum kit—it was as dead as we could possibly make it. There was barely enough room for the drum kit and the drummer. There was no ambience whatsoever, and then the way the kit was specifically tuned and muffled in terms of tape and whatever they put on the heads, it really reminded me of when I made records in the ’70s.

“Q-Tips’s take, which I thought was brilliant, was to have this drum sound that basically had *no* resonance—no extra ring or anything—which left more room for everything else, and there’s so much else going on.”

As for the move to more electric bass textures, Spalding comments, “I wrote almost all of the album on piano, and usually at the point of writing I know which bass is going to be on it. Most of those songs were written at a time in my life where I wanted an excuse to play more electric bass, but I didn’t think anybody else would give me a gig playing electric, because they think I can’t play it, so I wrote it into the songs,” she adds with a

“Q-Tips’s take
... was to have
this drum sound
that basically had
no resonance—
no extra ring or
anything—which
left more room for
everything else.”
—engineer Joe Ferla

laugh. She’s being modest, of course—she’s an exceptional bass player, acoustic or electric, and on one tune—the exquisite “Smile Like That”—she plays both. “Electric bass is a different aesthetic,” Ferla notes, “but it goes along with the kind of tunes that are on there.”

Ferla’s miking technique for Spalding’s distinctive standup bass sound: “I had three mics on it. I had a Neumann 87 by her fingers, a [Neumann] U47 down by an f-hole, and a [Neumann] 84 in the bridge, plus a DI. I used different combinations and balances of those four elements from song to song.” Electric bass was a single mic on Spalding’s amp and a DI.

For horns, “I love the Cole 4038s on brass and [Neumann] U67s on reeds; you can’t go wrong with those. When we’d cut horns, we’d have three players at time, but then we’d sometimes also overdub more parts.” The big-band parts with the American Music Program were recorded by Bob Stark in Portland.

Even with her preference for recording live in the studio, Spalding admits that “there’s always room for things changing in the studio. And afterward, in the editing process, too. By that I mean some of the forms work really nicely on paper, and then after listening to them recorded, I think, ‘Oops, that’s not concise enough,’ so I got in there with Joe and actually edited down some of the forms. Like, ‘Hold on Me’ used to have

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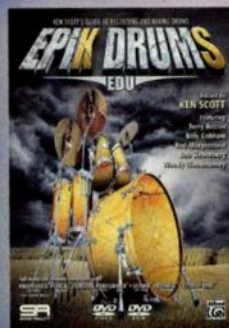
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six movements, but Thara Memory said, “This should be three, because to me it sounds like a new blues,” and I’m asking him to put a big-band track to it and it wasn’t concise. Eventually I cut it down to four because of the lyrics. He was right—all of a sudden the song made sense, it came to life and there was a way to balance the theme coming back around.”

This time out, all of Spalding’s vocals were done after the fact in separate vocal sessions “because most of the songs were too new to me and I hadn’t really learned to play them live and sing at the same time,” she says. “Sometimes I’d do vocals at the end of the night [at Avatar]. I like to sit with a song a bit and listen to what’s going on and really find the right solution for what the song needs. The downside of producing your own record is you have so many things in your head about each song, it can take a while to actually hear it from the outside to be able to make good vocal decisions.” Spalding’s vocal chain was a Neumann U67 into Neve 1081 mic pre and an UA 1176 compressor/limiter.

Ferla was the mixer (but not tracking engineer) on *Chamber Music Society*, which he describes as a “really straight forward, beautiful record; simple to mix. This latest one is such a mixture of genres—that R&B-ish dead drum sound and a lot of electric bass; not really ‘dance’ but still R&B—and then her very complex arrangements on top of that: the multiple vocals and horns and all the other things in there. I think her vocals are stellar on this and to me, it was like, ‘Okay, I’ve got to really feature her as a vocalist and also as a bass player, and put that whole thing together to highlight her, yet still maintain that R&B thing and have her arrangements come through big and strong.’ It was really a difficult task—like fitting a size 10 foot into a size 6 shoe.

“I mixed it at MSR [formerly Right Track] on the Euphonix [System 5] digital board without her, but we were emailing mixes back and forth constantly, so she was right on top of it at all times. I didn’t really use any outboard gear—just a Lexicon digital 480 and a 960. My main focus was fitting in all these different parts

and utilizing every trick in the book to make everything work. I had six or seven reverbs—horns were in a reverb, strings were in a different reverb, piano—everything had its own space and I was trying to utilize the panning and the space I created to allow things to be audible and to have everything be the right volume. When the horns came in, I wanted them to be loud and powerful. When the vocals came in, same thing. To make everything loud and clear when it’s that dense is really tricky, so I tried to create an almost three-dimensional space with a good amount of depth. All in all it was probably the most difficult record I’ve ever mixed. But it came out beautifully. Those arrangements are just brilliant, as are the performances.” ■

Blair Jackson is senior editor of Mix magazine.



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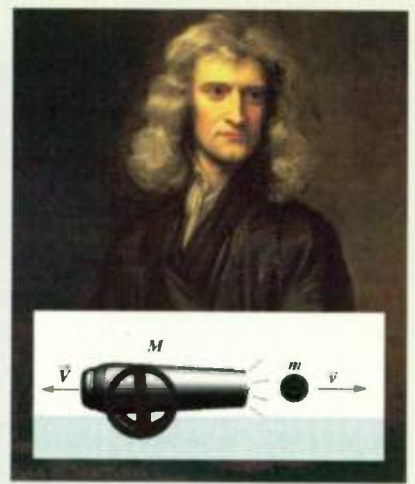
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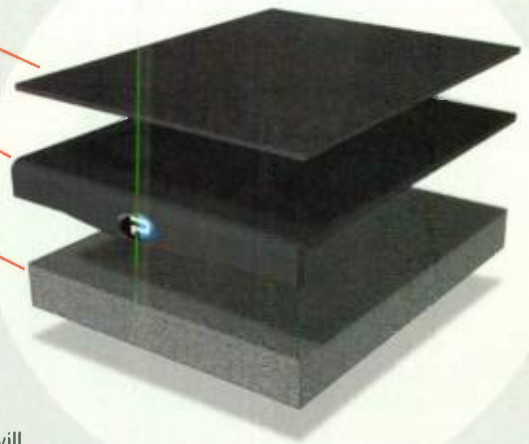
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The Mars Volta (left to right)—Juan Alderete de la Peña, Marcel Rodríguez-López, Omar Rodríguez-López, Cedric Bixler-Zavala, and Deantoni Parks.

Eliot Lee Hazel



The Mars Volta

**Omar Rodríguez-López
unwraps the secrets
behind the artery-busting
*Noctourniquet***

BY BILL MURPHY

LET'S SAY some arcane branch of alchemy made it possible to distill the surrealism of painters like Salvador Dalí, Frida Kahlo, and Remedios Varo through the acid-rock filter of Blue Cheer, King Crimson, and Can; the resulting brew might give you a decent approximation of what the Mars Volta's music sounds like. Barring that, it's probably best to approach the band's sixth studio album by preparing to have the top of your head sheared off.

Noctourniquet (Warner) is a turbulent slab of hard-driving rock, tempered with swirling eddies of ambient psychedelia and finely crafted electronic effects and filigrees—par for the course, longtime fans of the band will say, but as with any Mars Volta project, there's an underlying method to the madness. This one started, according to guitarist and producer Omar Rodríguez-López, with a bit of a spat he got into with lead singer Cedric Bixler-Zavala.

“After 20 years of being friends, Cedric and I have had very few arguments,” Rodríguez-López explains. “But he wanted to take his time to work on this record, and he didn’t like me being on top of him like I usually am. So it was strange for me because I recorded the music right after *Octahedron* [2009], but it was about two-and-a-half years before Cedric got around to writing his lyrics. I think he

“You can definitely get caught up in thinking some of these songs might be difficult to mix. They can, unless you’re completely reckless, which is something I really have fun doing.”

—Omar Rodríguez-López

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accomplished what he set out to do, though—I mean, I consider a song like ‘Empty Vessels [Make the Loudest Sound]’ to be his best work to date.”

The song’s trippy intimacy makes his point, but first things first: The instrumental tracks for *Noctourniquet* were laid down, for the most part, at Rodríguez-López’s Pro Tools-based E-Clat studio in Guadalajara, Mexico, but unlike past Mars Volta albums, he ended up keeping a good deal of the demo parts he recorded himself (on guitars, synths and bass) instead of giving them to the rest of the band—specifically, bassist Juan Alderete and keyboardist (and younger brother) Marcel Rodríguez-López—to re-cut. “I played most of it, but Juan is a longtime ally and I didn’t want to upset him,” Rodríguez-López clarifies. “And this will be the last record where I’m the sole composer of the music or the dictator of the band, because I definitely want to open it up. A big part of that awakening was running into an artist like Deantoni Parks.”

Gifted with an almost surgical grasp of rhythm, a boatload of hard funk chops, and the instincts of a free-jazz drummer twice his age, Parks brings an energy to *Noctourniquet* that pushes a song like “The Whip Hand,” which opens the album, into sliced-up time signatures and heady grooves that the band hasn’t really tried before. In the last few years, the Mars Volta have gone through drummers the way Jimi Hendrix went through guitars, so the importance of landing Parks, who’s known for his work with everyone from John Cale to Meshell Ndegeocello, isn’t lost on Rodríguez-López.

“He’s a kindred spirit,” he says, referring to Parks’ ability to listen just once to a demo and not only duplicate whatever drum machine pattern Rodríguez-López could throw at him, but change it up slightly with taste and precision. “I don’t think we did more than two takes on anything, and we usually took his first take. If we did more than that, it was merely for my



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own enjoyment because I was so blown away by what I was hearing.”

For all his hardcore roots, Rodríguez-López insists he didn't record and mix *Noctourniquet* as a rock album, but looked instead to the classic dub reggae sound that he has mined in the past (starting in the late '90s with De Facto, a dubbed-out side project of the Mars Volta's previous punk incarnation At the Drive-In). It's the foundation, for example, of the epic "In Absentia"—a marauding beast of synthesized pads, cavernous echo-flanges, and stripped dub-style beats.

Layering a Roland SH-101, a Dave Smith Mopho, and several Doepfer A-100 patches, Rodríguez-López ran the synth parts, along with bass and Parks' drums, through several treatments for the song's A section, eventually bouncing nearly 20 tracks down to a stereo mix he could continue working from. For the choruses, he used a Critter & Guitari Kaleidoloop to sample and loop the effects treatments that were hanging over from the A section, creating an undulating sheet of synth washes and cascading after-effects.

"There's no true meter to the chorus," he says, "so I had to turn off all that sh*t and just give Cedric a click and a drone to sing over. I used to mic his voice with [an AKG] C12, but for this one—for the whole record, in fact—I used a [Neumann] U67 and sometimes a U48 to get a darker sound. Once we got the right take, I turned on all the other stuff." In the final mix, Bixler-Zavala's vocals were run again through SoundToys' EchoBoy and Decapitator, pushing the song further into a disorienting, dreamlike fugue that recalls early Pink Floyd or even *Pet Sounds*-era Beach Boys.

Production moves like these abound on *Noctourniquet*, from the quirky Critter & Guitari handheld synth that opens "Vedamalady" to the vibrato-soaked guitars (aided by a Maestro Phaser and a Boss VB-2 Vibrato) that wander through "Imago." Working with longtime engineer and synth expert Lars Stalfors, Rodríguez-López mixed the album in L.A. with a simple plan in mind: Don't mix it like a rock record, and don't waste any time thinking about it.

"You can definitely get caught up in thinking some of these songs might be difficult to mix," he says. "They *can*, unless you're completely reckless, which is something I really have fun doing. I mean, I put a lot of guitar parts on right before the mix, just with my Ibanez [AX120 Custom] and whatever pedals I had lying around. But I've written, recorded, and mixed about 20 albums in the last three years, so I've done a lot of experimenting, and like I said, this was a strange record for me. I'm used to taking what I always say are snapshots—Polaroids—of where I'm at, and this was different. It was more drawn-out, but maybe that's what needed to happen." ■

Bill Murphy is a freelance writer based in New York City, and a regular contributor to Electronic Musician and Bass Player.

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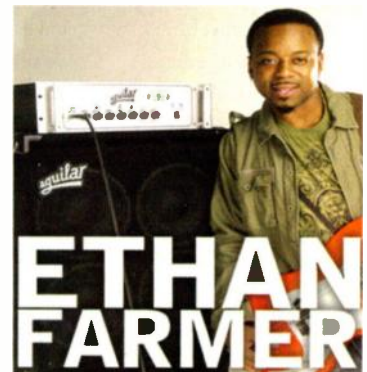
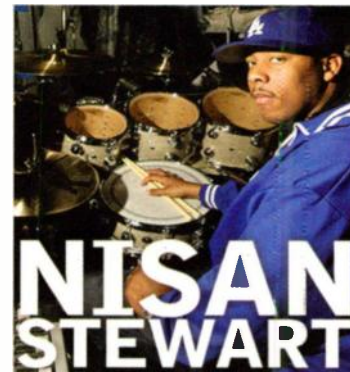
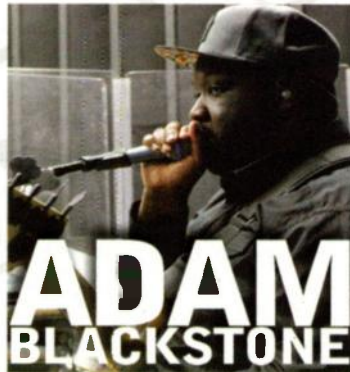
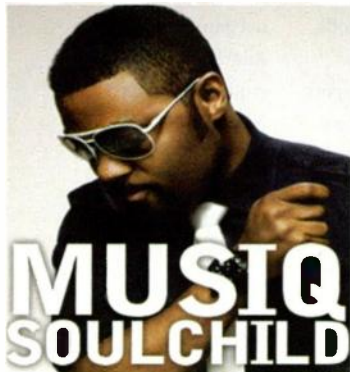
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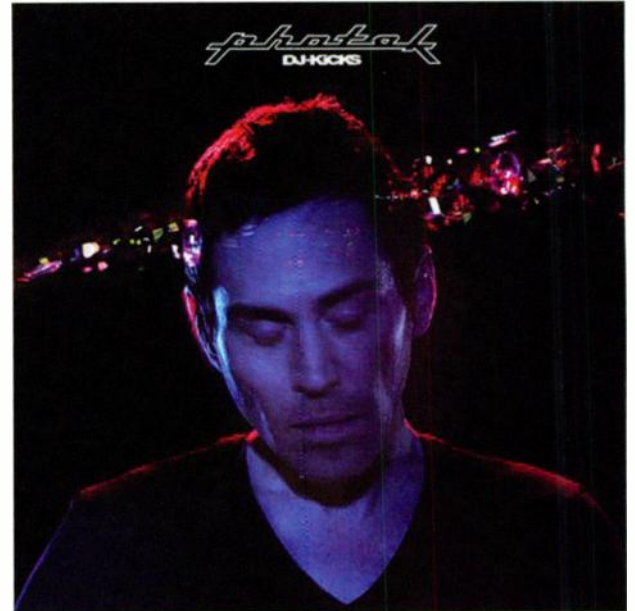
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DJ-Kicks

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WHILE WE wait breathlessly for Rupert Parkes' next move, he gives up a taste with four new tracks for his hour-long *DJ-Kicks* set. Don't expect the obvious though; besides the smooth dubstep-meets-"Ni Ten Ichi Ryu" flavors of "Azymuth," he plays it close to the vest, allowing the surrounding cuts to flow over and through his originals. The highlight: a synth-washed "No Agenda," sandwiched between Photek & Pinch's dark-tech "M25FM" and Baby Ford & Eon's trippy "Dead Eye." Drum-n-bass drops are few, but this is *Photek* we're talking about, still at his ambient and funky best.

BILL MURPHY

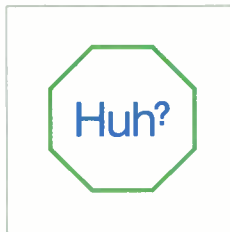


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Dating back to 1995, the *FSOJ* comps mysteriously combined dance artists that produced singular sounds, even given the so-called "electronic revolution" then erupting worldwide. This two-disc set never fails to excite, from the cosmic drones of Der Dritte Raum and the slice-and-dice bass riffs of Holmby Hills to the synthetic swing of Andreas Saag. Uneasy listening abounds, through superior production and trancelike states.

KEN MICALLEF



Spiritualized
Sweet Heart Sweet Light

DOUBLE SIX/SPACEMAN

At this writing, Jason Pierce is in the midst of remixing his seventh album with Spiritualized, but that doesn't mean we can't wax lyrical about what's been leaked to press. *SHSL* is loaded with the expansive sonic lushness, guitar feedback and garage psychedelia we've come to expect, but the real strength here resides in Pierce's poignant songcraft, from the heart-shredding "Heading for the Top," which channels Roxy Music's devil-may-care Eno heyday, to the string-soaked gospel ode "Life Is a Problem."

BILL MURPHY

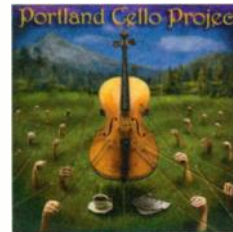


M. Ward
A Wasteland Companion

MERGE

There were many hands in the kitchen, cooking up the sixth solo album by the male half of She & Him, M. Ward, including eight engineers, and more than twice as many musicians. The sounds are as eclectic as this versatile musician's talents: sometimes gritty with processed vocals and distorted guitars; others, intimate with intricate strings and quiet voices. But throughout, there's that old-fashioned sweetness and charm, and that delicacy, that graces everything Ward touches.

BARBARA SCHULTZ

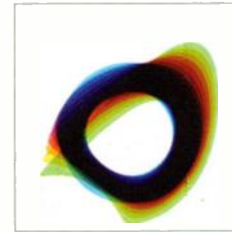


Portland Cello Project
Homage

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Combine a mini cello orchestra with a love for all things hip-hop and you've got *Homage*, the first ever album to cover "She Will" (L'il Wayne), "That's My Bitch" and "H.A.M." (Kanye West and Jay-Z), and "Hey Ya" (Outkast) with an ear to Rostropovich and Yo-Yo Ma. Recorded at "studio spaces and sacred spaces all over Portland," *Homage* makes hip-hop palatable to hipsters and blue-hairs alike. It's funky, it's fly, it's Johann Sebastian Bach channeling an MPC.

KEN MICALLEF



Orbital
Wonky

ACP RECORDINGS

Brothers Phil and Paul Hartnoll helped define 1990s "electronica" with squelchy, pitch-bent, blissed-out loops. Their first album since 2004 doesn't redraft the blueprint, but adds gloss to open-air-arena-sized presets. Nostalgic MIDI pianos, celestial portamento, LFO cutoffs, and animated stabs achieve melodic transport. Neither overly goofy nor aggressively augmented, *Wonky* is a well-mannered bridge between 2012's in-the-box sequencing and 1992's analog burbling, with nods to Detroit strings and techstep snare rushes, back-masked choruses, and dubstep wobble.

TONY WARE



Dr. John
Locked Down

NONESUCH

The great Dr. John's indelible fusion of supernatural funk and New Orleans blues gets an extra shot of adrenalin from producer Dan Auerbach (of the Black Keys). Auerbach put together the band on this album, and the tunes came out of live jam sessions in Auerbach's personal studio (Easy Eye, Nashville); Dr. John wrote all of the lyrics after the music tracks were shaped. This is a very groove-y, rhythmic record that adds a modern cast to the veteran's always soulful work.

BARBARA SCHULTZ

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LUST

Roundup

Portable P.A. Systems

They're small, they're loud—and they're tailor-made for small-to-medium-sized venues

BY STEVE LA CERRA WITH CRAIG ANDERTON



PLAYING LIVE shows is great—but moving gear stinks. Compound the backache with the aggravation of setting up and tearing down a P.A. system, and it's enough to make you want to tear your hair out. We can't help if you're running a Marshall double-stack in a cocktail lounge, but we can help you choose a small P.A. system that won't break your bank or your back. We're talking about what *Electronic Musician* refers to as a "Portable P.A." system: a compact P.A. that won't require a truck to move—or a degree in physics to operate.

You'll find representative examples of this new breed of P.A.s sprinkled throughout this roundup (note that all prices are MSRP). Although these systems have many similarities, they also have many differences and special features that might be deciding factors in helping you determine which type of system will be best for your needs.

Ground Rules Conventional P.A.s are too big and complicated for quick, easy setup, and the investment isn't commensurate with the returns from the gig. Any band that carries its own P.A. knows the drill: Pack up the mics, mic stands, mixing console(s), outboard EQ and effects, power amps, speakers, and cables. Load everything into a van or small truck because it won't fit into a car. Arrive at the venue (allow plenty of time to set up), get help to unload the gear, unpack it, set it up, wire it, test it, tune it . . . there's a reason that engineers make money providing their gear and services.

If you're in a full band, a portable P.A. is probably not appropriate. But if you're a singer-songwriter, solo performer, DJ, or duo/trio playing gigs at coffee houses, small bars, clubs, or restaurants, a portable P.A. is the way to go.

Most of the portable P.A.s we examined run under a grand or two, so they won't suck up your profit margin—but choose wisely, and verify exactly what's included in the sticker price. Although stands, cables, and carry bags aren't big-ticket items, they can add up, and they may not be part of the package.

What Goes In Must Come Out Most portable P.A.s accommodate a minimal number of inputs (typically not more than six or eight, although there are exceptions), so evaluate whether the system has enough inputs for your

Peavey Triflex II

\$1,599.99
peavey.com

Basics 1,000W three-piece, 2-channel sound system with shared 15" subwoofer and pair of satellite speakers (10" woofer and 1.4" compression driver tweeter) with speaker pole stand adapters. (Speaker stands are sold separately, but 15-foot speaker cables are included.) Construction is typical Peavey—the company obviously doesn't want to see it again after it leaves the factory.

Special features DDT compression on the satellite power amps helps control overloading and distortion. The subwoofer has locking casters for easier transportation, and it has heavy-duty, four-pin, twist-lock connectors on the amplifier outputs and satellite inputs.

Bottom line There's enough bass and power for DJs, solo/duo acts, and smaller bands in mid-sized venues. You'll probably need help transporting it, but the extra weight pays off in a big sound.



The original Triflex was one of the first portable P.A.s designed for more than just presenters; the Triflex II carries on the tradition, but with serious power and enough bass for DJs.

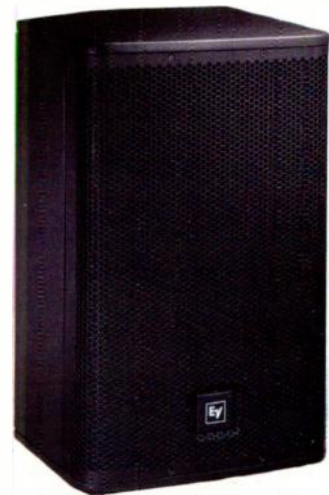
Electro-Voice ELX112P

\$949
electrovoice.com

Basics 1,000W Class D amp with 12" woofer, 1.5" titanium compression driver, and selectable 100Hz high-pass filter to accommodate an external subwoofer. Inputs are two Neutrik XLR/TRS combo jacks with level controls, stereo RCA jacks, and an XLR link output for daisy-chaining speakers.

Special features Can be pole-mounted for stacking on top of an acoustically-matched Live X Series sub, and its angled design facilitates use as a floor monitor. Built-in side handles make for easier setup, breakdown, and transport.

Bottom line At 42 pounds, the 12" woofer provides extra bass for medium-sized venues, with the 1,000W amp providing enough power to give it more push than expected.



The ELX112P is a good example of a high-power "P.A. system in a cabinet," with internal mixer and the option to daisy-chain.

needs. Many solo performers really need just two inputs—microphone and instrument—although if you use backing tracks (from a file player, drum machine, or arranger), or intend to work with another musician, you'll need additional ins. Some portable P.A.s support proprietary, optional-at-extra-cost expansion mixers, while others might require that you add your own external mixer, then connect its output to the P.A.'s input—which kind of mitigates the easy-setup aspect.

Dedicated instrument inputs (e.g., for guitar or bass) obviate the need for direct boxes, simplify setup, and keep a hundred bucks in your pocket. An aux input (like RCA jacks or a 1/8-inch stereo minijack) that can accept an iPod or CD is useful for supplying pre-show music, music between sets, or backing tracks.

EQ on each channel is a must, but at best you'll get a fixed, 3-band (low/mid/high) EQ. Fortunately, this is usually sufficient. The mixer may feature an onboard 5- or 7-band graphic EQ for the main outputs, but if it's not present, don't let that be a deal-breaker.

Not all portable P.A.s provide an input gain or trim control on each channel, and inputs with fixed sensitivity can be problematic. Microphone output levels vary widely, and a "hot" condenser or a wireless mic receiver could overload a channel's input stage. At the very least, look for a pad switch on the input; engaging this will let the input sensitivity accept hot signals. If possible, try your favorite mics with the system to ensure it can produce the desired volume level and still have a bit of headroom.

If karaoke is your main activity (hey, we all have to make a living), check for plenty of line-level inputs to accept the outputs of your disk player(s). Line inputs are also useful for connecting wireless mics, some of which may output a line-level signal only.

Other important mixer features include phantom power for condenser microphones; a polarity reverse (commonly referred to as "phase") switch, which may help reduce feedback in certain instances; and feedback detection. (More on that shortly.) Most portable P.A.s include onboard effects processing such as reverb or delay, but may be limited to a few programs; an effects level control on

Line 6 StageSource L3t

\$1,679

line6.com

Basics 3-way, 1,400W tri-amp design with integrated multichannel mixer (includes 3-band EQ with sweepable mids, feedback suppression, acoustic guitar modeling, and more); DSP sound optimization controls the two 10" speakers (one optimized for lows, one for lows and mids) and 1" exit compression driver horn. An output limiter with 12-band feedback suppression provides protection.

Special features Part of the Line 6 "live sound ecosystem," the L3t is the basis of a scalable system that connects to other elements of the network, such as the Line 6 StageScape M20d digital mixer, via the L6 Link digital networking support. An onboard accelerometer and pole-mount sensors sense the speaker's orientation and set the speaker mode automatically;

Bottom line While designed for use with other elements of Line 6's live sound system, the L3t can stand alone as a portable P.A. that weighs 57.5 pounds, or be augmented for larger venues.



The L3t uses advances in networking and DSP to produce a "smart" speaker that can serve as a standalone P.A. or a part of a larger "live sound ecosystem."

Fishman SA220

\$1,538.38

fishman.com

Basics Line array with six 4" cone midrange drivers driven by 200W amp, and 1" neodymium soft-dome tweeter with 20W amp. Each of the two mic/instrument channels has high/mid/low controls, anti-feedback controls, and pad, phase switch, and reverb. Phantom power is common for both. The system also features an additional aux input and monitor in/out.

Special features This is a very back-friendly unit, weighing 25 pounds, or 35 pounds with stand and carrying bag. Its mixer capabilities, including effects loop, DI out, tuner out, and four different reverbs, mean you probably won't need to pack extras.

Bottom line This is sometimes categorized as "I don't need something as big or expensive as a Bose L1," but it performs extremely well, given its size, weight, and cost. Setup and teardown is super-fast, but the system can fill small- to mid-sized venues if you don't need a lot of bass.



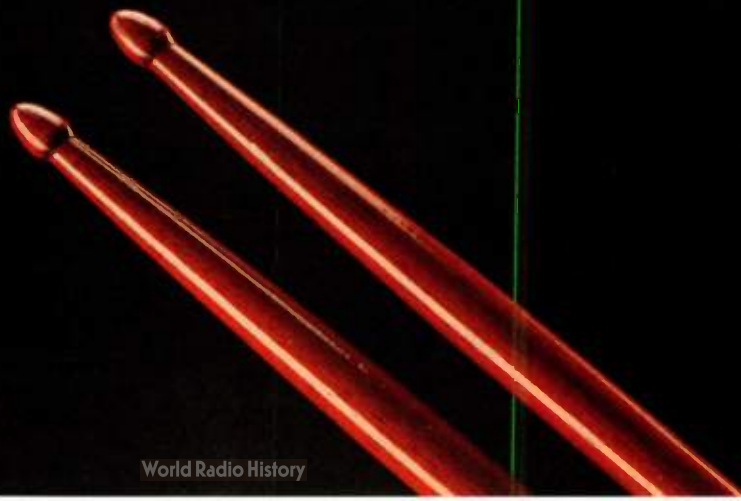
The SA220 is seriously portable, yet includes numerous extras intended for performing vocalists and instrumentalists.

nord drum

virtual analog drum synthesizer



norddrum.com



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music & sound **AM & S**
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Alto Professional Mixpack Express

\$599

altoproaudio.com

Basics This is the least expensive portable P.A. in the roundup. It has two 10" speakers, 350W continuous power, and multiple inputs (balanced XLR, balanced/unbalanced TRS, and unbalanced RCA—but no instrument input). It includes two mic cables and two speaker cables. The mixer has seven input channels.

Special features Speakers attach and detach to the amp/mixer module using latches, and the top handle lets you carry the entire unit with one hand. DSP effects include reverb, delay, and chorus, with output 7-band EQ and monitor out.

Bottom line For small venues, parties, house concerts, and presentations, this system is highly portable and cost-effective. Don't expect to shake the rafters—but the sound quality is there. Note: F-8 or F-3 speaker stands aren't included.



While the Mixpack Express has an extremely musician-friendly price tag, it still manages to put out significant sound levels without sacrificing sound quality.

each channel lets you add reverb or delay only where desired. A master effects mute button or footswitch effects on/off jack is a must. Nothing sounds more ridiculous than a bar singer speaking to the crowd with echo on his or her voice. Effects send and return jacks facilitate connecting an external processor if you decide you don't like the onboard effects or need a wider variety.

A few portable P.A.s offer a "tape" output that's suitable for sending your mix to one of the commonly available, inexpensive handheld recorders—but don't expect facilities for multitrack recording, unless you're willing to spring for an external mixer. (Some offer FireWire or USB interfacing.) While a tape out might not net you a release-quality master, connecting a recorder for documenting gigs (and rehearsals) or swapping song ideas via MP3s can help you hone your craft.

Speak Up, Please Speakers for portable P.A. systems come in a variety of shapes and sizes, ranging from compact versions of the typical live sound box to long, skinny "pole" speakers. Speakers for portable P.A.s can be passive (*i.e.*, the speaker requires a power amp) or active (the power amplification is built-in). Active cabinets tend to be heavier but require less setup, while passive cabinets may be lighter but require a power amp. Ultimately, you're probably lifting the same amount of weight!

Column-type loudspeakers tend to have a limited low-frequency response, and may require a subwoofer to produce meaningful low end. For these systems, ask yourself:

- How loud does the system need to play?
- Can speakers be daisy-chained for more volume or wider coverage?
- Do I need a subwoofer? If so, how will it be connected—and how many can I add?
- Is a crossover provided, or do I need to purchase one?
- Am I more concerned with amplifying vocals, or do I need to run a DJ system with thumping subs?

A dedicated subwoofer output makes it relatively painless to add low end when you need (and can afford) it, and may even feature automatic switching so that plugging

M-Audio GSR10

\$499

m-audio.com

Basics Mixerless, single-input (dynamic mic or line-level signal) portable bass-reflex speaker cabinet with 250W Class D amp, 10" low-frequency driver, and 1" high-frequency titanium compression driver; can be pole-mounted but also has five fly points. Weighs 25 pounds.

Special features There are four EQ tunings: Normal, Hi-Fi, DJ, and Voice. Speakers can be stacked or pole-mounted on top of the GSR18 subwoofer to extend coverage; waveguide technology gives broader coverage, while the angled cabinet design allows use as a floor monitor.

Bottom line Putting this speaker on top of a pole mount gives a decent P.A. system for small- to medium-sized venues as long as you don't need to mix, or already have a mixer. Speakers can be daisy-chained to accommodate different-sized venues.

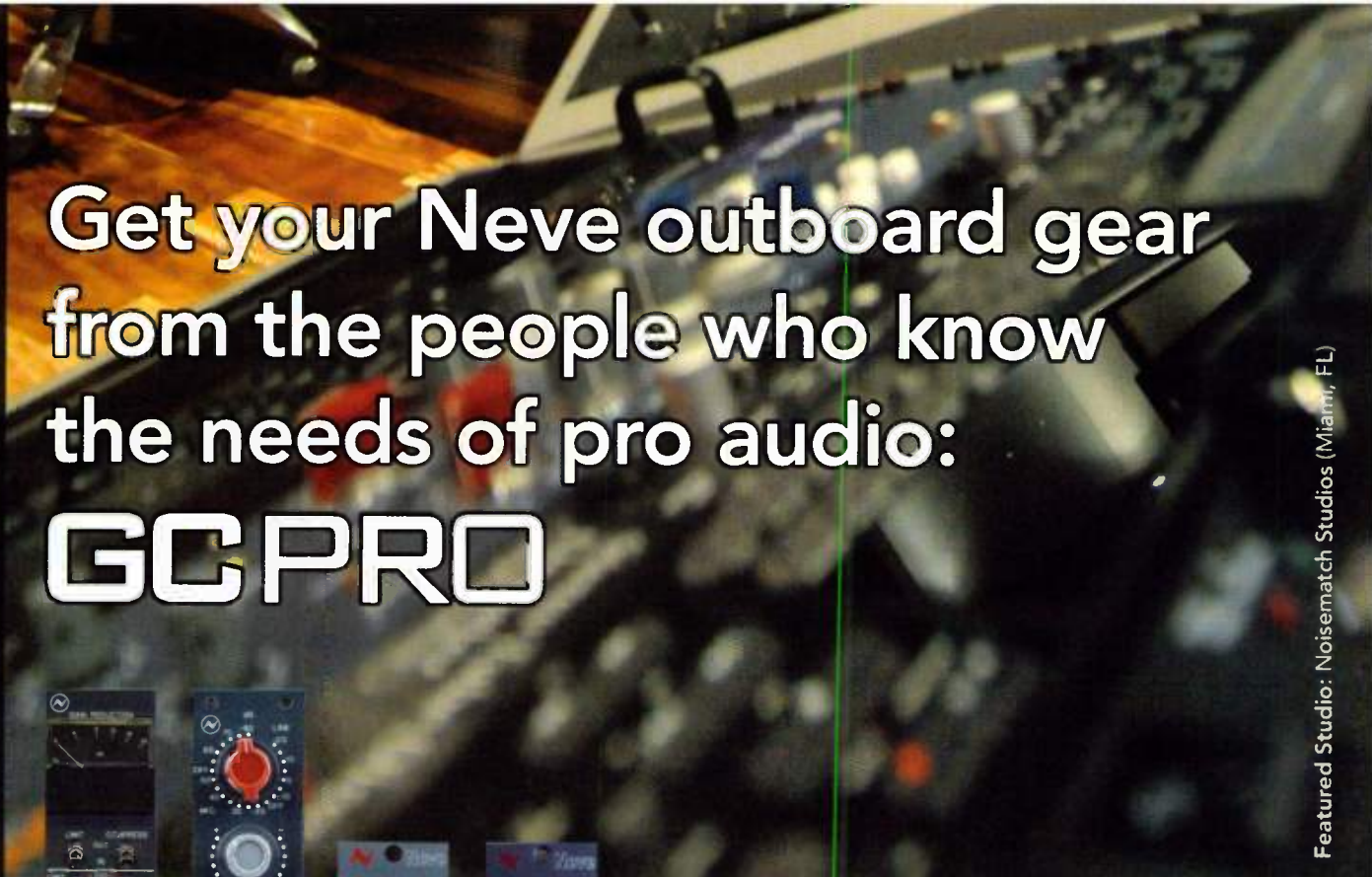


The back of the GSR10 reveals the power-amp heat sink, and control panel for the input and daisy-chaining option.

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a connector into the subwoofer output jack automatically applies a high-pass filter to the full-range speakers, relieving them of their low-end duties—and relieving you of dealing with a crossover.

Also consider the physical relationship between the sub and full-range speaker components. For example, the HK Audio Elements system can use either the power amp module or subwoofer cabinet as the base for mounting a pole that supports a full-range cabinet. This means you won't need to carry stands, and in this particular system HK Audio's unique "E-Connect" simultaneously provides the mechanical and electronic connection between sub, power amp, and full-range cabinets—making speaker cabling optional(!). A system like this is easy to expand for use in larger venues, while others may be more "closed" systems.

Amplifier power is important, but look past the raw power specs to how loud the system can actually play. As these systems integrate the power amp(s) and speakers, speaker sensitivity plays a huge role in the maximum achievable SPL—making the power rating less important than if you were mixing and matching power amps with traditional P.A. cabs. However, make sure your system isn't underpowered. If it starts distorting, the high frequencies that result from clipping can fry your high-frequency drivers.

Unfortunately, not every manufacturer publishes a maximum SPL spec, so you'll have to do something really radical: *Listen* to the system. Here's where having a relationship with a local music/audio retailer is a huge help, because a salesperson will be more likely to set up the system for you if you're a good customer. Failing that, you might propose renting a system with an "option to buy" so that you could try it in the field. As an alternative, see if any of your friends own one of these systems and check it out while they're doing a gig. This will also give you a handle (pardon the pun) on how easy or difficult it is to transport. While certain systems break down into many components, others from Fender and Alto mate the speaker cabs and mixer for transport, forming a single piece with a handle that requires only one trip.

Can You Hear Me Now? Every musician understands the importance of stage monitors, and a portable P.A.'s intended

Bose L1 Compact

\$999.95
bose.com

Basics Six small drivers in a vertical enclosure and a sub in the power stand team with a 2-input mixer. (Channel 1 has XLR mic input, with ToneMatch preset optimized for dynamic mic; channel 2 has an instrument in, RCA stereo in, and one 1/8" stereo in, as well as a ToneMatch preset for acoustic guitar.) The mixer is on the rear of the speaker stand—one less box to carry around.

Special features Two setup options—extended or collapsed—accommodate various rooms. The system weighs 29 pounds, and sets up in less than a minute. Dispersion is extremely good, and allows placement behind the performer to eliminate the need for monitors.

Bottom line Although they were controversial when first introduced, few would now deny that the L1 and L1 Model II systems are outstanding—albeit pricey—systems for live performance. While not expandable like its bigger brothers, the L1 Compact is light, very portable, and hits an affordable price point.



Bose originated the "line array for the rest of us," but the L1 Compact brings the company's technology to a less expensive—and more portable—price point.

Yamaha Stagepas 500

\$1,249
yamaha.com

Basics Each speaker cab has a 250W Class D power amp, 10" woofer, and 1" high-frequency driver. The speakers can be stand-mounted. The 10-channel mixer has four mono mic/line inputs with switchable phantom power and three stereo line inputs with monitor and record outputs, plus an auto limiter to prevent damage to speakers or amps.

Special features In addition to featuring more inputs than the average mixer, the Stagepas system lets you apply limiting or compression to channels 1 and 2; all channels have 2-band EQ, reverb switches for the onboard SPX reverb on channels 1-4, and overall reverb level mix control. A music/speech switch optimizes the system for the two applications.

Bottom line Intended for medium-sized venues, the Stagepas 500 gets the nod when you need more than the usual 2-6 inputs typically found on similar portable P.A. systems, and at 53 pounds, it remains quite portable.



Not only is the Stagepas the only mixer in the roundup with 10 inputs, but it includes Yamaha DSP for reverb and has a music/speech switch to optimize the system for different applications.

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Sound Engineering



application defines your monitor requirements. When you're providing a system for karaoke, your . . . uh . . . "talent" probably won't be expecting a monitor mix, but it's a good idea if the system can at least support connecting to a monitor. There's a huge discrepancy in monitoring capabilities among portable P.A.s, ranging from "Monitors? What monitors?" to "You don't need a monitor because you'll hear yourself through the P.A. the same way that the audience hears you."

Mixers in certain portable P.A.s feature an aux send output for routing to a power amp or powered monitor speaker—a very good idea that could alternatively drive an in-ear monitor mix. You may not need a monitor for low-volume gigs, or if you can position the P.A. so that you can hear it without causing feedback (see setup tips below), but keep in mind that if your main axe is electronic—such as a stage piano *sans* built-in speakers—you need a way to hear your instrument. However, when playing an electronic keyboard, you can place the P.A. behind you without fear of feedback. On the other hand, acoustic guitar players will have to experiment to determine what's acceptable, or explore using a soundhole cover to reduce feedback. The Fishman SA220 cabinet features monitor in and out jacks, so one performer can send audio to another performer's cabinet for monitoring purposes.

Setup Tips The Prime Directive of Live Sound clearly states that in order to avoid feedback, *the P.A. system must be in front of the musicians*. It might be possible to place the speakers so both you *and* your audience can hear them—but if you can hear them, the microphone usually can, too. The exceptions are systems designed and voiced for placement behind the players. For example, the Bose L1 Model II system is intended to be placed next to a wall at a distance between three and eight feet from the musicians, so the musicians hear the house mix. Placing the subwoofer cabinet next to a wall reinforces bass response, though this characteristic is not unique to Bose; in general, anytime you move a speaker near a boundary you'll hear more low-frequency response. Move the sub into

JBL Eon 210P

\$1,249
jblpro.com

Basics Two bass-reflex speaker cabs, each with 150W Class D power amp, 10" woofer, 1.5" neodymium compression driver, 8-channel (four mono mic/line combo connectors, one stereo with paralleled balanced 1/4" TRS and unbalanced RCA, and one stereo with 1/8" minijack) powered mixer with digital effects; 30V phantom power.

Special features The mixer attaches to one speaker, with storage pod for cables to the other; includes onboard DSP limiter and multi-effects with four effects (inputs have reverb send controls). The entire system weighs in at 33 pounds (19 pounds for speaker/mixer, 14 pounds for speaker/storage pod).

Bottom line Significant volume, with clarity of sound, for up to medium-sized venues while being extremely portable due to light weight and "one unit per hand" carrying configuration. Speakers can be pole-mounted (poles not included).



Although JBL is known for high-power, pro P.A. systems, the Eon brings the company's expertise to a portable P.A. system.

Behringer Europort EPA900

\$1,523.99
behringer.com

Basics Two speaker cabs, each with 360W RMS amps, 10" woofer, and 1.35" aluminum-diaphragm compression driver; an 8-channel (four mono with phantom power and pad and two stereo, plus an 1/8" minijack input) mixer, and 7-band output graphic EQ. Total weight is 82 pounds.

Special features The system includes a 24-bit stereo FX processor, feedback detection system that displays feedback frequency, lowpass-filtered output for subwoofer, integrated storage compartment, and voice canceler for karaoke. Includes XM1800S mic and 20' cable. 100/240V power supply works globally.

Bottom line The EPA900 has enough heft for mid-sized venues, with plenty of inputs for multiple instruments and effects.



The 360W EPA900 is the highest-powered system in a trio of portable P.A.s that includes 150W and 300W models.



The Fishman SA220

Because a musician's most important piece of equipment shouldn't be his friend's cargo van.

Performers want to move audiences, not gear. So now there's the Fishman SA220 Performance System. It's more than just a P.A. Think of it as a 220 watt, six foot tower of acoustic power. A sleek design hides a line array of speakers designed for extra-wide dispersion and deep penetration. It's like having a P.A. and an amp in one – so no need for separate wedge monitors. And an enhanced low end eliminates the need for a sub. It's really the one piece of equipment you need. And yet it weighs only 25 lbs and easily packs up into its own durable travel bag on wheels. Heck, those are the only set of wheels you'll need.

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a corner, and you'll get tons of low end—but I make no claim that it's going to be clear and tight.

For P.A.s not necessarily intended for placement behind the performers, onboard feedback detection helps avoid feedback, but don't ask for miracles if you get overzealous with the volume. Ditto for the graphic EQ on the main left/right output, where notching down an EQ control can help pull out a problem frequency. And while we're on the subject of feedback, aim stage monitors toward the rear of the microphone, where the mic has maximum rejection of ambient sounds. (In a future issue we'll discuss mic polar patterns and monitor placement in detail.)

Almost all of the systems we profiled either come with, or require, stands to get the full-range component of the P.A. at ear height. Placing speakers on the floor guarantees poor results because sound won't project toward the rear of the room. A practical reason for setting the cabs at the correct height is that many systems locate the controls on the speaker's rear panel, and those controls should be easy for you to access. Do you always sit or stand when you play? Will you be bending down in a dark corner to find the volume control if you need to make adjustments? Is it likely that someone can spill a drink into the electronics? Yikes!

As with any pro audio product, portable P.A.s offer additional features as you spend more money: more power, extended low-frequency response, enhanced input channels, perhaps conveniences such as a tuner output, and the like. But remember that you're not trying to cover a crowd of 15,000; you're just trying to get your music across to your small audience and maintain your sanity by using a simple P.A. system. Fortunately, there are so many options, you'll almost certainly be able to find a system that works for you—and your sanity! ■

Steve La Cerra is an independent audio engineer based in NY. In addition to being an Electronic Musician contributor, he mixes front-of-house for Blue Oyster Cult and teaches audio at Mercy College White Plains campus. Craig Anderton is Executive Editor of Electronic Musician magazine as well as a musician, author, and consultant.

Fender Passport 500 Pro

\$1,399.99
fender.com



Fender's Passport P.A. has been around for a while, but the latest version can record and play back performances with a USB flash drive.

Basics Dual-speaker cabinets and mixer pack up into a single package that weighs less than 60 lbs. The 8-channel mixer (six mic/line, two stereo line in) feeds a 500W, Class D amp; speaker sections use a 10" woofer and 1.2" horn-loaded tweeter. Stand adapters are built into each speaker cabinet.

Special features Records performances in WAV format to a USB flash drive that can also provide WAV/MP3 playback; other features include an effects loop (pre-amp out/power in), output jack for an external powered subwoofer, onboard reverb, phantom power for mics (no instrument ins), and docking connector for Passport wireless receiver.

Bottom line Intended for presentations, solo acts, seminars, and ensemble performances in small venues. As long as you don't need to cover a big space (or lots of bass), this is a portable solution that can even be battery-powered.

HK Audio Soundcaddy One

\$3,999
hkaudio.com

Basics Line array/subwoofer combination with 600W Class D amp, three 6" bass speakers, and six 3.5" mid/high drivers. The mixer has two combo mic/instrument jacks and two stereo line inputs. Built-in wheels make it easy to move the Soundcaddy One into position.

Special features The line-array speakers and pole fit in the sub for transport, then pop up hydraulically for setup—set to the desired height, then lock in place. RCA out jacks are available, as is an XLR line out to feed a second Soundcaddy. The unit weighs in around 64 pounds—not bad, given the functionality.

Bottom line The Soundcaddy One is the most expensive portable P.A. in the lineup, but it boasts the lineage of HK's Elements Series. It's super-fast and easy to set up while delivering reasonable power (and clean sound quality) for smaller venues.

The Soundcaddy One is derived from HK's high-end Elements scalable portable P.A. system, but is smaller, more portable, and less expensive.



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

"Are you sure it is legal to have this much fun?" "I'm looking for those **perfect band mates** and I just discovered they live in a box." "The soloist sounds amazingly like **real people** improvising!" "The program **sounds so much better** with **RealTracks**... A thousand times. Thank You!" "Band-in-a-Box is some of the **most fun** you can have with a computer." "I can load my **MP3** in and see the chords play on the screen." "My buddy and I sat around last Sunday night just jammin' away..." "As an old **BE-BOPPER** circa late 40s, most of the cats I played with are dead and gone." "Band-in-a-Box has made me a **much better player**." "Can't say enough good about your products. You obviously understand our needs exactly." "BB makes it so easy to quickly build an arrangement for composing." "Thanks to BB I can still swing with the help of the **fabulous cats** living inside BB." "Band-in-a-Box was the solution to an old frustration: being a musician. Now I am a musician." "The ease and **RealTracks** is by far the easiest way to make **high-quality** background tracks." "**Band-in-a-Box** is the **holy grail** for accompaniment software." "This is so much fun." "I'm speechless." "Who says you can't buy happiness." "This is absolutely a must-have item." "**Band-in-a-Box** is now on a whole other level of sophistication." "A giant leap forward""Keep the **RealTracks** coming!" "It blows my mind." "**RealTracks** add a whole new dimension of realism." "I was absolutely **blown away** at the quality of **Band-in-a-Box**." "Your **Band-in-a-Box** program is **extraordinary!**" "Your product is **AWESOME! THANKS**" "A fantastic leap forward." "Unbelievable" "I can't believe how fast I can generate **RealTracks** and renders with the new version." "They've **outdone themselves** this time, and I'll be singing the praises of **Band-in-a-Box** every chance I get."

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Type in the chords to any song using standard chord symbols like C, Fm7 or Gm7b5/Db; choose a style and **Band-in-a-Box** does the rest... Generating a professional sounding arrangement of bass, drums, piano, guitar, strings and more. **NOW** using **RealTracks**—actual recordings of professional studio musicians!



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"This new musical concept you have created is nothing short of evolutionary. If it were a living creature, it would be a whole new species." "I'm awestruck." "Just as **Brilliant!**" "All of the new instruments are just **smashing**." "I must say, the pedal steel is perhaps the greatest accomplishment in the history of this brilliant program." "The **RealTracks** are fantastic and provide great **inspiration** for creativity." "This changes everything." "It's a great gift to jazz musicians, educators, and singers." "Oh, wow. **This changes everything.**" "It's useful piece of software." "I tried the greatest accomplishment in the history of this brilliant program." "The **RealTracks** are fantastic and provide great **inspiration** for creativity." "This changes everything." "It's a useful piece of software." "I tried detection is **amazingly accurate!**" "This is absolutely a must-have item." "Wow, I'm learning tunes fast with help of your Audio Chord Wizard." "It finds the exact chords to the song... perfectly." "Wow!" "I am **blown away!** The jazz/swing **RealTracks** stuff is amazing." "Awesome." "Is this cool or what?" "I'm in seventh heaven" "You won't regret it (and if you do, there's the **30 day money back guarantee**)." "I never thought I'd see the day this was possible." "I know it's been said before, but you guys are **incredible**." "This is **gonna set the world on fire!**" "I'm so stoked about how good everything sounds I can hardly stand it." "This is just killer." "Amazing, simply amazing." "[**RealDrums**] is really awesome sounding. Good work!" "Many kudos all around." "You never cease to **amaze** me. You got it." "**Wow and Double Wow.**" "The **RealTracks** and **RealDrums** sound awesome." "Long live PG Music!" "Mind bending." "I am frankly amazed at most of the styles." "I am absolutely **Kudos** to you and your team!" "First time I did a song with **Band-in-a-Box**, I couldn't believe it!" "I use it in the classroom and also in creating music in my studio. It is a fantastic piece of music software to own. I am greatly impressed." "I am very impressed with your fantastic **improvisational** program." "It's a great educational tool." "**Awesome software at a fantastic price!**"

Our Customers Think So.



Fig. 1. CH Channel Controller

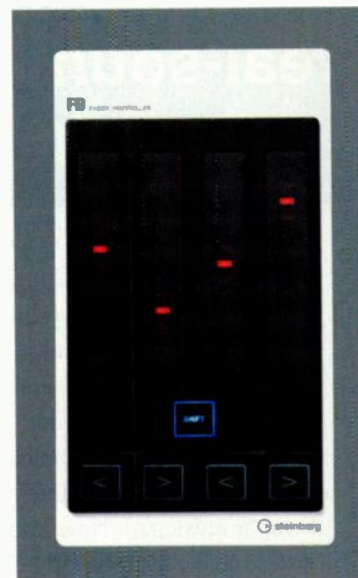


Fig. 2. FD Fader Controller

Steinberg CMC Controllers

Gain modular, hands-on control over Cubase, Nuendo, and Wavelab

BY REEK HAVOK

SUMMARY

STRENGTHS: The units' modular approach and compact size allow for great placement and customizable control options. For Cubase/Nuendo/Wavelab 7.2 users, the tight integration speeds up many tasks.

LIMITATIONS: No daisy-chaining of USB connectivity.

All controllers **\$199.99 MSRP** except the FD (**\$249.99 MSRP**) steinberg.net

SOFT SYNTHS and “in-the-box” mixing have brought unprecedented power to our studios, but have limited hands-on control to simple click-and-drag. While there’s no shortage of control hardware to regain the tactile experience, many generic controllers bring additional levels of menus and complication.

Dedicated controllers solve this issue, and Steinberg has released the CMC (Cubase Modular Controllers) line of compact control surfaces designed specifically for Cubase, Nuendo, and now, Wavelab 7.2. The CMC family consists of six products, useable individually or as a group in any combination (up to nine total, with the option of having up to four of the Fader controllers). As a bonus, each one includes an access code for downloading and installing Cubase AI6 DAW software.

Basics Each 4” x 7-1/4” CMC controller is lightweight and includes a set of rubber feet to keep them firmly in place, and a small lift on the back side allows for slight tilting. Included Mac/PC software provides editing for the PD (Pad) and QC (Quick Control) units; what’s more, this software can program standard MIDI note and controller data messages, making these two units compatible with any DAW. (The other four controllers are Steinberg-only.) Each of the CMC controllers focuses on a particular set of tasks such as transport, faders, or channel strips, and offer custom configurations for a secondary set of user-defined controls. This unique approach to control surfaces solves a lot of problems for studios with limited desktop space, as well as those with tight budgets or who want quick access to a particular set of functions. (However, there’s

no way to daisy-chain USB connectivity from one controller to another, and they’re bus-powered—so plan on buying a powered USB hub if you expect to use multiple units.)

The modular approach allows for a huge variety of ergonomic placements for just about any setup. What’s more, these clever little devices play nicely with other control surfaces. While I use and love my Mackie Universal Controller, augmenting it with the CMC controllers’ instant access to Cubase-specific functions provides a far better overall control surface experience.

In addition to the dedicated controls for faders, channel strip functions, transport, EQ, etc., most CMC units have a shift button that allows customizing that particular control’s functions, thus letting you personalize the control with a staggering 46 categories and over 1,200 choices. So if you want to use only a few functions from a different controller, you could probably assign those commands your existing controller. Steinberg also sells an optional tray that holds up to four CMC controllers; another frame lets you use the CC121 controller with up to two CMC controllers.

We’ll touch on the highlights of each controller, but if you really want to dig into the various options each controller offers, you can download the manuals at steinberg.net.

CH Channel Controller (Figure 1) This is a one-stop shop for accessing an individual channel’s parameters. The touch-fader controls the channel’s volume, with Catch or Jump modes. Catch lets the fader take over only after it has crossed over the current setting, which is shown in illuminated lights under the fader. Jump instantly assumes the parameter value



Fig. 3. AI Advanced Integration



Fig. 4. TP Transport Controller



Fig. 5. QC Quick Controller



Fig. 6. PD Pad Controller

associated with the fader's physical position as soon as you touch the fader. Dedicated < and > Channel buttons allow moving quickly from channel to channel; holding down the shift key while moving the fader allows for fine-tuning the volume parameter, and the shift key also allows user-defined control of eight additional controls. I found this unit extremely useful for my needs, and it really sped up workflow.

FD Fader Controller (Figure 2) This box offers four touch-sensitive faders for mixing without using the mouse. One of the LEDs below the fader indicates the current fader value; as with the CH, you can specify catch or jump response, and the shift key provides fine control over a shorter range by dividing the fader up into 1,024 steps. (The four faders can also serve as four VU meters.) You can use up to four FDs simultaneously, for 16 faders total.

AI Advanced Integration (Figure 3) The AI controller has become one of my favorites. This simple and extremely powerful device gives you control over any parameter for virtually anything in Cubase—mixer controls, EQ, plug-in DSP or instrument parameters, etc. Simply use your mouse to hover your cursor over the control, then twist the AI knob. Yes, it's that simple. Talk about useful and fast. . . .

You can lock the knob into controlling a single parameter, and then move your cursor anywhere you want while the AI controller still tweaks that locked-in parameter. However, the ability to assign AI knob control requires that a Steinberg mixer parameter, VST plug-in, or third-party VST plug-in supports the VST 2.4 plug-in architecture with scroll-wheel support.

That covers quite a lot, but also means the AI knob can't control any plug-in parameter from any VST plug-in maker.

Other dedicated buttons quickly assign the AI knob to jog or master volume; < and > buttons let you select items in a browser window; and four assignable buttons provide quick access to file commands such as save, undo and redo, and opening and closing the mixer window.

TP Transport Controller (Figure 4) In addition to typical transport functionality, this controller offers nudge, set left and right locator points, loop, and more. One of the standout functions is the horizontal touchstrip, which is similar to the fader in the Fader Controller; a quick Mode button can assign it to Jog, Shift, Locate, Scroll, Zoom, and Tap Tempo. This is a good starter controller that—like most all of the other CMC controllers—includes secondary assignable controls.

QC Quick Controller (Figure 5) This controller has multiple focuses, and offers channel control of EQ, MIDI, and Cubase Quick Controls, which you can assign to control up to eight of your favorite parameters on project tracks. It also features four dedicated buttons (which in conjunction with the shift key, provide up to eight functions) for any of the user-assignable commands, along with dedicated automation read and write controls, and < > channel select buttons. The Quick controller is a good multi-use tool, and is both fast and handy for dedicated EQ tweaking and custom control.

PD Pad Controller (Figure 6) This provides 16 touch-sensitive pads as well as

dedicated shift, curve setup, and browse pads. Its single dial comes in very handy for the browse functionality; you can access 16 banks of notes, so accessing banks for different devices or sets of instruments is a snap. The Browse button is great for quickly accessing presets. You can also use the PD in "four-velocity mode" to lock in four dynamic levels for one note across four pads, and this feature includes eight additional banks. I was surprised by how well these pads triggered, with predictable dynamic response and very light touch, but would have liked larger pads for two-finger use. The PD has a separate editor application (included) for changing the PD's note assignments: interestingly, in Bank 16 it's possible to assign a unique key command shortcut to each of the 16 pads in Cubase/Nuendo.

Something for Everyone While each of these controllers has a dedicated use and flexibility for custom configurations (including secondary functionality on some), I would have loved to see the AI knob—or at least its functionality—on all of the other units. For me, this control is the shining star.

As controllers, these hit the target. The ability to mix and match them for your needs, or even for specific projects, makes them great tools; their relatively inexpensive cost and small footprint makes having at least a couple of these a no-brainer for any Steinberg user, even if you already own another controller. ■

Reek Havok is a four-time Platinum Album recipient, drummer, sound designer for various instrument manufacturers, and interactive exhibit designer.



Eventide's dual-identity Space is equally at home on stage or in the studio.

Eventide Space

High-class reverb and more, for stage and studio

BY CRAIG ANDERTON

SUMMARY

STRENGTHS: Class act, from sound quality to construction. Versatile I/O. Lots of extras for tweekers. Deep MIDI implementation. Very helpful documentation. Truly an Eventide “rack in a box.” Considerable real-time performance control.

LIMITATIONS: Delay when switching between presets.

\$579 MSRP
eventide.com

LET'S FACE it: Reverb is a compromise in a lot of multi-effects and software plug-ins. It takes not only a huge amount of CPU power to emulate the sound of a zillion sound waves bouncing around in a room, but considerable “algorithm savvy” from the designers. Generally the choice is between realistic (but relatively inflexible) convolution reverbs, or algorithmic reverbs that try to shoehorn a concert hall into a microchip.

If I told you that Eventide made great algorithmic reverbs, you probably wouldn't be surprised. While the big deal with Space is that Eventide managed to condense their “rack sound” into a floor pedal, to me an even bigger deal is that you can also take it into the studio and have top-of-the-line reverb and many other innovative “space” effects without the compromises inherent in many plug-ins. In today's still-struggling economy, the dual stage/studio identity is welcome.

Sound Garden Space is based on 12 algorithms, and ships with 100 useable (not just “impress the guy at Guitar Center”) presets you can overwrite with your own; presets can also be saved via SysEx. The user interface is outstanding—yes, it's easy to navigate, but there's quite a bit of flexibility with nine parameter control knobs in addition to dry/wet mix and preset select. Even the display is bright, readable, and informative. The three footswitches have two modes—one for preset selection, the other for live performance (bypass, tap tempo, and a third switch whose function depends on the preset). There's a noticeable delay when loading a preset, but that's unavoidable when you have to flush, then load, so much data.

Space works in mono, stereo, or mono in/stereo out, with selectable instrument/line input and amp/line output. It offers jacks for an expression pedal and aux switch jack, 5-pin DIN MIDI in and out, and USB port for class-compliant MIDI or updating.

Attention to Detail Sound isn't the only thing that separates Space from the pack. As just one example, it has three bypass modes: relay-based true bypass, DSP bypass (bypasses effects), and DSP+FX, where delay “tails” continue after bypassing. For send/return applications in the studio, you can disable the dry path altogether.

Why Be Normal? Sure, you have hall, plate, spring (outstanding), room, and above-average reverse algorithms. But there's more. DualVerb can morph between two reverb sounds, while ModEchoVerb is . . . well . . . reverb meets freeze meets modulation meets echo, and it's brilliant and versatile. The remaining five reverbs range from industrial to celestial, with stops along the way for dynamics, tremolo, and other variations. These are exceptionally creative effects; I've heard some of them before in Very Expensive Eventide rack processors. They blew me away then, and they blow me away even more when packaged in a stomp box.

The expression pedal implementation is superb. It can control up to ten parameters; set them as desired in the toe position, set them as desired in the heel position, and *voilà*—you've set your expression pedal limits. Even the MIDI implementation is deep, and allows control via external CC messages.

The sounds are winners, every algorithm oozes quality, the fidelity is smooth and transparent, and the options extend way beyond a “reverb pedal.” You can just dial up presets, or get deep into customization; and don't overlook what this can do in the studio. Granted, all of the Eventide Factor pedals are excellent, so this doesn't come as a surprise—especially if you're familiar with Eventide rack gear. But the fact that you can equate Space to Eventide rack gear tells you something right there, doesn't it? ■

Perfectly Angled

The Pinnacle of Desktop Monitoring

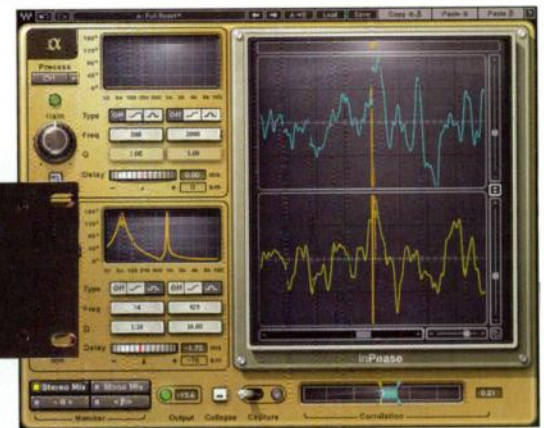


DBM50 is the only choice when it comes to desktop monitoring. From the handcrafted Dynaudio drivers to its beautiful exterior, DBM50 is specifically engineered to perfectly reproduce your desktop mix and truly represents a revolutionary new angle in desktop mixing.

dynaudioprofessional.com

20th
Anniversary
Dynaudio Studio Monitors
World Radio History

DYNAUDIO
Professional



1
Sonuus
Wahoo
 Wah pedal
\$TBA

HIGHLIGHTS Dual analog filters (each can be lowpass or bandpass) for organic sound quality • pedal, envelope, LFO, and pitch-tracking control • USB interface for editing and using Wahoo as a MIDI controller • true bypass • pedal position sensor can't wear out
TARGET MARKET Those desiring an innovative wah effect that's more flexible than the average pedal
ANALYSIS The pitch-tracking control is arguably Wahoo's most innovative feature, as it allows changing the filter frequency based on parameters such as string bending. Wahoo combines a true analog signal path with digital control.
sonuus.com

2
TASCAM
iM2
 iOS stereo mic
\$79 street price

HIGHLIGHTS Stereo condenser mics for iPhone 4, iPod Touch, or iPad dock connection • mics are adjustable 180 degrees from front to back • built-in A/D converter and mic preamp for low-noise recording • 125dB SPL maximum level • switchable limiter • dock-powered, no additional battery required • USB input allows iPhone/iPad charging from USB
TARGET MARKET Field recording, rehearsals
ANALYSIS By avoiding the iPhone/iPad's internal audio electronics, the iM2 can take advantage of higher-quality A/D conversion and mic preamps to withstand higher SPLs and provide lower-noise recording.
tascam.com

3
Muse Research
Receptor VIP
 Virtual instrument player
\$1,599 minimum advertised price

HIGHLIGHTS Loads virtual instruments/effects in stageworthy 2U rack-mount unit • economical alternative to Receptor 2+ Pro/Pro Max models • dual-core processor/4GB RAM/1TB drive • stereo ins/outs • "dongle garage" protects dongle for copy-protected instruments • OS 2.0 simplifies navigation • configurable effects
TARGET MARKET Performing musicians who need a more rugged host than typical laptops, and studios that need virtual instruments installed in a computer-agnostic environment
ANALYSIS The original Receptor became a favorite of pro touring bands that didn't want to hassle with computers onstage; Receptor VIP offers similar performance at a lower price point.
museresearch.com

4
Waves
InPhase
 Phase-correction plug-in
\$200 native/\$300 TDM
HIGHLIGHTS Designed for phase-shift treatment, phase-alignment and complex phase-manipulation tasks • high-resolution dual waveform displays • phase-shift filters with adjustable frequency and Q • correlation meter shows phase relationship and provides visual confirmation • move waveforms manually, with a delay control, or align them in relation to a sidechain input
TARGET MARKET Mixdown and mastering engineers who are confronted with phase problems
ANALYSIS Phase incoherence can be introduced while tracking, for example due to phase relationship anomalies among multiple mics. InPhase can help identify and correct these problems during the mixing or mastering process.
waves.com



5
JBL
PRX400
Passive monitor series
\$624-\$936

HIGHLIGHTS Reasonably-priced passive speakers with significant sensitivity and power handling • series includes the PRX412M 12" two-way stage monitor/loudspeaker system, PRX415M 15" two-way stage monitor/loudspeaker system, PRX425 15" two-way loudspeaker system, and PRX418S 18" subwoofer • 12 M10 suspension points • Neutrik Speakon combination connectors • 18mm birch/poplar multi-laminate hardwood covered with DuraFlex, 16-gauge steel grille
TARGET AUDIENCE Musicians, DJs, houses of worship
ANALYSIS The PRX400 series is essentially a non-self-powered version of the PRX600 series, which reduces price considerably and allows the use of existing power amps and processors.
jblpro.com

6
Lewitt Audio
LCT 940
Tube+FET microphone
\$2,099

HIGHLIGHTS Combines large-diaphragm FET condenser-mic and tube-mic characteristics in one housing • "Crystal" and "Tube" settings can be mixed and merged • separate tube-based and FET-based impedance converters provide independent, dual signal paths • nine different polar patterns (omni, cardioid, figure-8, wide- and super-cardioid, and four additional intermediate patterns) • three levels of attenuation, three switchable low-cut frequencies
TARGET MARKET High-end recording and stage applications
ANALYSIS The LCT 940 retains the versatility associated with multiple mics for those who want to invest in a single, high-end tube mic.
lewitt-audio.com

7
Behringer
CMD controllers
Modular DJ mixer system
\$TBA

HIGHLIGHTS "Mix and match" line includes the CMD MM-1 Mixer Module, CMD DV-1 Digital Vinyl Control Module, LC-1 Live Control Module, and the CMD DC-1 Drum Control Module • class-compliant USB, no drivers needed • supports software like Ableton Live and Traktor
TARGET MARKET DJs, including laptop DJs, who want to go beyond typical mixing/controller setups
ANALYSIS As more DJs expand the standard "platter" setup with software like Live, they often need multiple controllers. The modular approach allows using drum machines, software, and standard DJ-platter controllers as a unified system.
behringer.com

8
EastWest
Quantum Leap Solo Violin
Virtual instrument
\$99, download only

HIGHLIGHTS Includes five passes of true legatos at sampled intervals—legato soft, legato forte, expressive legato, portamento, and fast legato/trill/run • round-robin up/down bowing on most articulations • handles very fast playing and live trill playing • all basic articulations, various expressive articulations, vibrato styles, and non-vibrato styles were sampled • uses the latest version of EastWest's cross-platform, 32/64-bit-compatible Play engine
TARGET MARKET Film and classical projects
ANALYSIS One of EastWest's specialties is highly realistic orchestral virtual instruments; Solo Violin joins their choirs, pianos, brass, and symphonic instruments.
soundsonline.com



Behringer

Ultralink USB Wireless Mics

\$TBA

WHY: Wireless USB eliminates mic cable issues like hum and noise pickup.

DESCRIPTION: Models include the ULM100-USB (one-channel receiver with single handheld dynamic mic), and ULM200-USB (dual-channel solution with two mics). Both transmit audio digitally, operate in the 2.4GHz band, offer up to 8-hour battery life from two AA alkaline batteries, and include a USB “dongle-style” receiver that works with both PCs and Macs. They can also pair with Behringer’s latest P.A. systems or QX Series mixers. behringer.com



Alto

Truesonic Wireless Speakers

\$499 TS112W, \$549 TS115W

WHY: Get rid of cables by sending audio over Bluetooth.

DESCRIPTION: The Truesonic Wireless TS112W and TS115W are two-way 12” and 15” models, respectively, with 800 watts of Class D power. They can receive audio from any Bluetooth audio-equipped device, such as an iPad, iPod touch, iPhone, or other smart phone; and feature two mic/line female XLR 1/4” combo inputs (with independent gain controls) for wired installations. altoprofessional.com

Wi Digital Systems

AudioLink iM

\$351

WHY: Virtually any instrument (even stereo ones) can go wireless.

DESCRIPTION: 2.4GHz digital wireless stereo audio system provides up to 100 feet of uncompressed 16-bit, 48kHz audio connectivity using frequency diversity with dual internal antennas. The transmitter weighs in at 1.08 ounces and features three power-up modes, including stereo line in, mono line in, or passive guitars/electro-acoustic instruments. The system also accommodates in-ear personal monitors, studio headphones, and iPad/iPhone/iPod.

widigitalsystems.com



Fishman

Triple Play

\$TBA

WHY: Wireless guitar-to-MIDI converter frees you from bulky multi-conductor cables.

DESCRIPTION: The Triple Play system comes with a wireless controller, hexaphonic pickup, and wireless USB receiver that interfaces with Mac/Windows computers or iOS devices for driving virtual instruments. String and fret splits are supported to drive multiple instruments, and additional functions include sustain, looping, and arpeggiators. The controller also includes menu navigation controls for bundled software, and a guitar/synth/mix switch.

fishman.com



SM Pro Audio

Tranz-T

\$229.99

WHY: Put a direct box where cables don't go.

DESCRIPTION: Basically a wireless DI system, the Tranz-T features 2.4GHz operation with two-channel automatic frequency hopping, and up to a 100 meter range. Inputs and outputs both have balanced XLR and unbalanced RCA connectors; outs are XLRs. It has a continuously variable input control, and operates from a 9V battery or optional +12V external power supply.

smproaudio.com



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"Superb. Stellar. Excellent. Outstanding. Best in class. Pick a superlative, and it won't adequately convey how real Ivory II sounds, nor how immersed in the music you'll feel when playing it... Ivory II is the platinum standard."

—KEYBOARD MAGAZINE

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Ivory II Italian Grand

Ivory II Upright Pianos

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Rock The Vox!

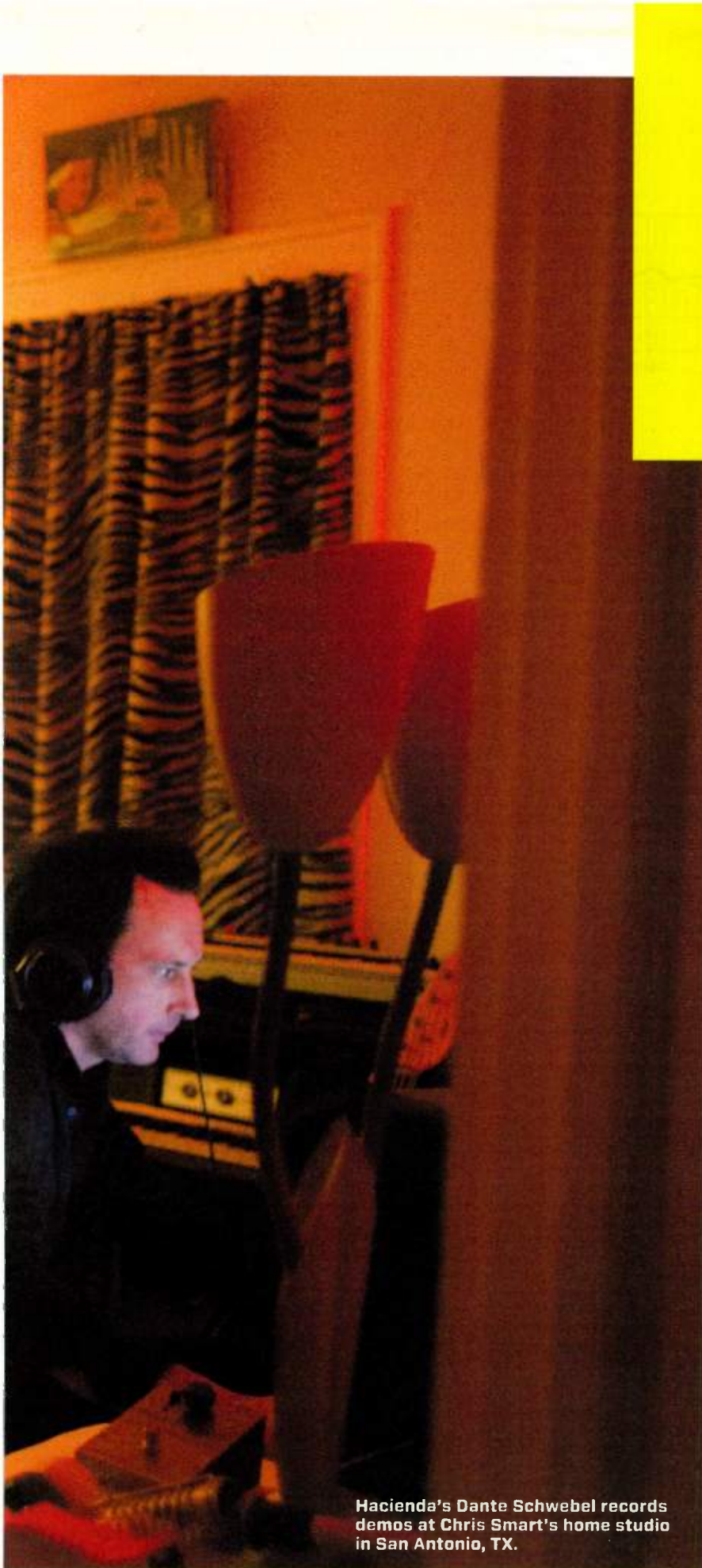
A soup-to-nuts guide to recording killer lead-vocal tracks

BY MICHAEL COOPER

There's a good reason why music-production illuminati dub the lead vocal the "money track": If it's not fantastic, you don't have a record. To casual listeners, it hardly matters how good the instrumental tracks sound. The lead vocal is the thing that grabs their attention and impels them to listen to a recording, or hit the Skip button.

In this article, I'll detail the techniques that have worked for me when recording lead vocal tracks over the past 30 years. My focus will be on overdubbing vocals to existing instrumental tracks, but much of what I'll cover applies equally to tracking a singer simultaneously with a band. It all begins with common-sense tips.

Prepare Ahead of Time Nothing drains a singer's mojo faster than waiting forever while his mic is set up, a preamp and compressor are patched into the signal path, a new DAW track is created, and a headphone mix is devised and routed to his cans. If possible, make sure all these tasks are completed before the singer arrives at your stu-



Hacienda's Dante Schwebel records demos at Chris Smart's home studio in San Antonio, TX.

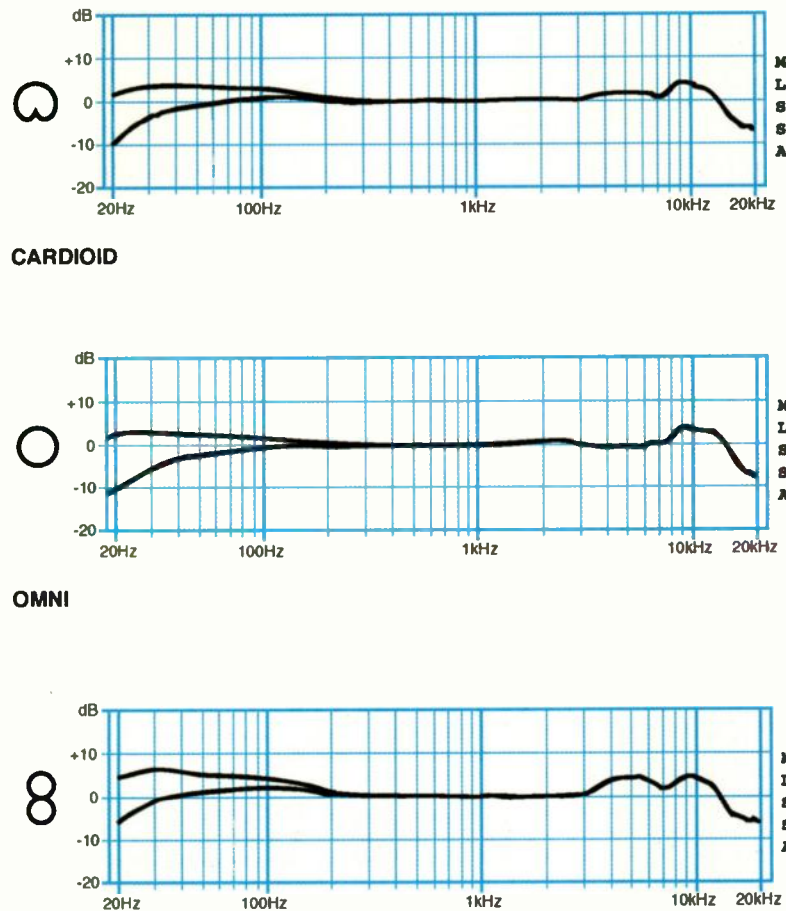


FIGURE 8

Fig. 1. The frequency-response charts for the Lawson L251 multipattern tube microphone show the increased bass response attendant with progressively higher directionality. (These plots were derived at 18 inches from the mic; close placement would show much higher bass-proximity effects for the directional patterns.) The lower curve in the bass band for each chart is the response of the mic with a bass roll-off filter activated on the mic's outboard power supply unit.

Using Polar Patterns To Shape Tone

Multipattern microphones offer various tonal responses depending on the polar pattern selected. This is due in part to a bass-proximity effect inherent in mics producing directional patterns: The closer you get to a multipattern mic set to a directional mode, the more pronounced the mic's reproduction of bass frequencies.

The omnidirectional, or omni, pattern doesn't exhibit any bass-proximity effect and usually offers the flattest and smoothest response. No matter how close you stand to an omni mic, its bass-frequency response will remain consistent.

A mic's bass-proximity effect increases as its polar pattern becomes more directional (see Figure 1). Placed at a consistent distance from its source, a mic's hypercardioid mode will produce more bass than its cardioid mode. The mic's bidirectional (a.k.a. figure-eight) mode, if available, will produce the most pronounced bass-proximity effect. Knowing this, you can dial in the perfect amount of bottom end for a singer's track without using EQ. Have the singer stand at a consistent distance from your multipattern mic—initially set to omni mode—and then shift through increasingly more directional patterns until the low end sounds just right.

dio. That way, you can immediately get down to making magic together after a couple minutes of ice-breaking chitchat.

I'll talk in-depth about equipment selection and setup shortly, but a few words about mic choice bear discussion now, before your session begins. If you'll be working with a singer for the first time, ask her well before the session what her favorite mic is for recording; that is, one that has yielded flattering results on her other sessions. Try using the same mic model if you own it. If it's not in your arsenal and you can't justify renting it, choose another mic from your collection that has a similar frequency response, polar pattern, and bass-proximity effect.

An alternative tack is to set up a few of your best vocal mics before the session and have the vocalist briefly sing into each one so you can hear which is the best match for her voice. The drawback to this approach is it takes time, something that the project's budget might not allow. Fortunately, there is a simple way to choose the perfect mic on the spot. But first, a little feng shui is in order.

Pamper the Talent Physical discomfort or an impractical setup will derail a singer faster than any other performer on a session, so baby the songbird. Offer her a warm glass of water so her pipes won't dry out midway through the session. Set up a music stand on which to place her lyric sheets, if any, and let her decide where to position it; a squinting, craning singer isn't going to give you a commanding performance. Ask her how she'd like you to adjust the room's lighting: dim for vibe, or bright for more energy and easy viewing of lyrics. And while you're practicing your bedside manner, borrow the lyric sheets and make a copy of each for yourself so you can follow the bouncing ball while tracking.

Choose the Right Mic If there's no time for auditioning mics with the singer, don't fret. Assuming you intimately know the strengths and weaknesses of each of the mics in your collection, you can usually tell which one will sound best simply by having the talent sing a few lines *a cappella* sans microphone. If singing *a cappella* makes the singer self-conscious, listening to him talk will often help you divine the most appropriate mic.

Choose a mic that de-emphasizes any overly pronounced frequency bands and bolsters



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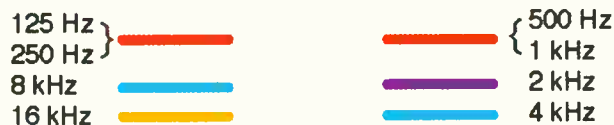
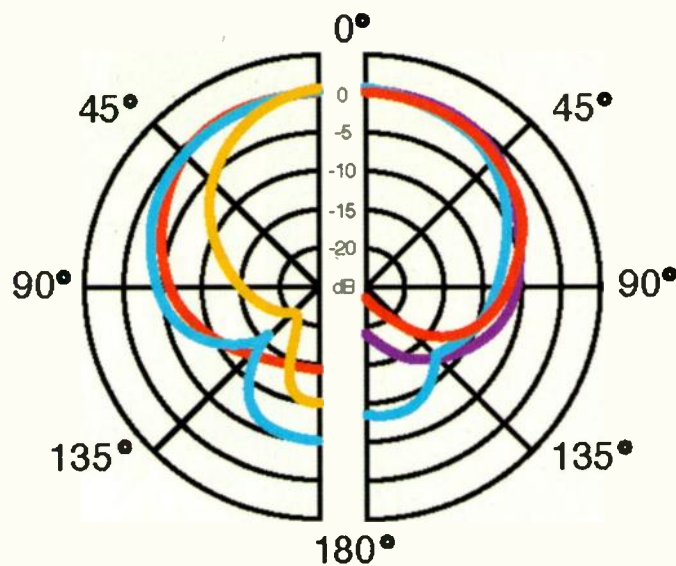


Fig. 2. The cardioid polar plot for the Lawson L251 multi-pattern tube microphone shows the pattern's typical rejection of very high frequencies arriving off-axis to the front of the mic.

Charging Ahead

A condenser mic's electrically charged head capsule attracts fine dust particles floating in the air. When water vapor or fine droplets of spit from a singer's mouth combine with this dust on the mic's diaphragm, it forms a cement-like film that prevents the diaphragm from vibrating freely. Repeated deposits progressively degrade the mic's frequency response over time.

Using a windscreen (pop filter) will protect your mic's diaphragm from dewy minstrels. A nylon pop filter sounds more acoustically transparent than a fitted foam windscreen, which stifles high frequencies. If possible, power down and store your condenser mics in a closed box after each session to protect them from dust and humidity.

weak bands in the singer's voice. For example, you wouldn't want to use a mic that has a hyped top end on a very sibilant singer; that would only make sibilance sound worse. If the singer's timbre is very thin or shrill, consider using a multipattern condenser that will let you dial in the perfect amount of bass-boosting proximity effect to balance his tone. (See Figure 1, as well as the "Using Polar Patterns To Shape Tone" sidebar on page 72.)

A singer who projects loudly should be paired with a mic citing a high maximum-SPL spec to avoid distortion. Conversely, a very weak singer needs a mic boasting both high sensitivity and very low noise; otherwise, your track will be infected with noticeable preamp hiss (especially after compressing it during mixdown). If you suspect your chanteuse has poor mic technique and might sway off-axis while performing, pair her with an omni or wide-cardioid mic that will capture her voice despite her wandering. (One caveat: If your studio's room tone sounds terrible, use a more directional mic and be prepared to either compress the vocal track heavily or automate its fader during mixdown.)

Get in the habit of listening to vocalists sing *a cappella*. With practice, you'll soon be picking the best mic for singers within seconds of them opening their mouths.

Hang it High If you're using a side-address mic, hang it upside down to get it out of the way of a music stand and give the singer a clear sight line to the lyric sheets. Then ask the singer to stand for a moment within kissing distance

of the mic's diaphragm. Instruct him to hold his head the way he will when he sings—for example, he might look slightly downward at lyric sheets positioned on a stand—and adjust the mic's height and angle so that his lips are pointed directly at the diaphragm.

Next, tell the singer how far away from the mic you'd like for him to stand. Base your preference on the timbre of his voice, the mic's polar pattern, and the vocal effect you're shooting for. For instance, if his voice is fairly deep and you're using a cardioid mic to weed out room tone, try having him stand five to 12 inches away from the mic; that will reduce the bass-proximity effect that would otherwise make his track sound boomy or blurry. Conversely, when using an omni mic on a rock singer with a perfectly balanced tone, you'll get a very urgent and focused sound if his lips are practically touching the mic.

Consider all the setup you've done so far to be just your starting point. After listening to the singer over your control-room monitors, you may need to make some subtle adjustments. For instance, a persistently bassy sound may impel you to open up the mic's polar pattern (say, from cardioid to omni) or point the mic at the singer's nose instead of his lips (that is, farther away from any chest resonance). Conversely, you might need to position the mic below a shrill female singer's mouth to capture *more* chest resonance. If she is extremely sibilant, try rotating your directional mic so that it is aiming to the left or right of her mouth; such off-axis positioning (of a directional mic) will gently roll off very

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high frequencies and soften any offending whistling (see Figure 2 on page 74).

However you set up your mic, remember to place a nylon wind screen between it and the singer. This will quell any plosives that might otherwise audibly pop the mic's diaphragm. It will also prevent your condenser mic's frequency response from degrading prematurely. (See the "Charging Ahead" sidebar on page 74.)

Patch in a Preamp and Compressor

When selecting your trinity of mic, preamp, and compressor for recording vocals, a good rule of thumb is to choose a solid-state design for at least one of those items. Too many tube stages can result in an overly velvety tone that lacks definition. You can always add more tube harmonics at mixdown—running your track out to analog gear or using a high-quality tube-emulation plug-in—but you can't get rid of an excess amount after it's been recorded.

Another pitfall to watch out for is oversaturating the mic preamp, causing unwanted distortion. Begin the singer's soundcheck with

the compressor (placed downstream from the preamp) set to 1:1 ratio and unity I/O gain levels. Heavy gain reduction at the get-go might fool you into thinking your preamp gain is too weak, when in fact it's too *high* and the compressor is merely neutralizing it. Downstream compression won't stop distortion caused by over-the-top preamp gain.

Once your preamp's gain is set, dial in a moderate ratio (roughly between 2:1 and 5:1) on your compressor, using a soft-knee mode. (If you're using an opto-electronic compressor, simply raise the peak-reduction control to increase compression depth as desired.) As a starting point, set the threshold so that the quietest vocal phrases don't trigger any gain reduction. Peaks should not sound squashed. If the singer is highly dynamic, you may need to chain two compressors in series—each performing moderate gain reduction—in order to handle the most explosive vocal peaks transparently.

For a VCA-based compressor that uses an RMS detection circuit, good attack and release times for recording lead vocals are typically

10–30 ms and 100–500 ms, respectively. (Most opto compressors have inherent time constants that can't be adjusted.) Faster attack and release times can produce really urgent-sounding vocal effects, and for this reason some engineers prefer using lightning-fast FET compressors when recording vocals. Be careful, though: A radically shaped compression curve will be virtually impossible to correct at mixdown. I generally prefer to use a light touch when recording to capture vocals cleanly; I try my most adventurous processing at mixdown, when it's possible to undo overly zealous experiments.

Because most amateur and semi-pro singers hold back a little during soundcheck, you should initially set your compressor's output gain for a -10 to -6dBFS reading on the meter for your A/D converter or I/O box. If you were to set your initial levels higher than -6 dBFS, the singer might push levels into the red later when he cuts loose (especially if you're compressing very lightly).

The singer's soundcheck should ideally be his first run through the song (versus setting

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levels *a cappella*). No matter how lame your initial ballpark settings might be for your mic pre and compressor, record everything. Magic often happens only once, and sometimes it's during the singer's warm-up. During the first take, fine-tune your preamp gain and compressor settings as you listen and watch your meters.

Once all of your gear is dialed in, refer to your copy of the song's lyrics to set markers on-the-fly for verses, choruses, bridges, and coda during the next take. Being able to jump to each song section with the click of your mouse will speed the session along and help keep everyone's creative juices flowing.

Tweak the Cue Mix The singer's head-phone (cue) mix—which you set up prior to the session—should be independent of the mix playing through your control-room monitors. You may need to hear her live vocals or a specific instrument at a different volume than what she needs to hear in order to give her best performance. Try to set up

an inspiring mix in her cue feed, with the following provisos: Emphasize the kick and snare tracks a bit so she can readily lock her phrasing to the song's tempo, and mute any gliss-happy tracks (such as fiddle and pedal steel guitar) that might throw her pitch off. If she's still pitchy, or if her vocal phrasing sounds too loose, reduce the amount of reverb in her cans. A singer whose pitch is consistently sharp probably needs her headphone level lowered.

After all these adjustments, if the singer's pitch or phrasing is still too loose, try stripping her cue mix down to just her vocal and a basic rhythm section: drums, bass, keys, and one guitar. Reducing clutter in her cans will help her accuracy.

Fix Now or Comp Later If you're pulling double-duty as producer on the vocal session, you'll need to choose how to best approach the recording process. Some producers prefer to record a few continuous passes of the entire song, pick the best take and then fix the clams by punching in. I much

prefer to record a lot of passes in shorter segments and composite-edit them into one super-take after the singer leaves; that strategy gives me more material and time to raise the money track to its fullest potential. If the singer is amenable, I like to work section by section through the song, recording phrases at the top of their range last so I don't blow out their voice before we're finished.

When the session is over, be sure to make detailed notes about the signal chain you used—the specific mic, preamp, and compressor you chose and their control settings—so you can recreate it the next time you record the same singer. Keep your notes in a readily accessible file. It might be months or years later, but when the singer returns to your studio, you'll have his golden signal chain ready to rock. ■

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

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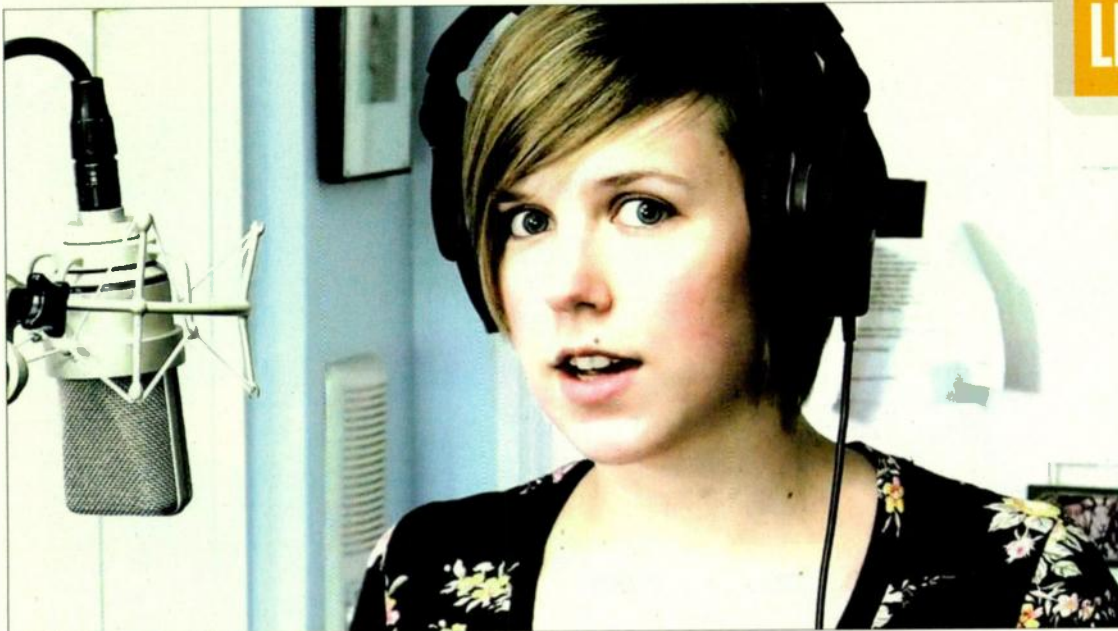
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Nataly Dawn of indie duo Pomplamoose, who have launched a successful career performing quirky covers of pop songs.

Recording Cover Songs

Pay tribute to your favorite artists—and gain new fans

BY KAITLIN MCGAW

DON'T FEEL cheesy—you will not be deemed an American Idol or Gleek if you secretly want to record a cover song in tribute to one of your favorite songwriters or artists. Recording cover songs can be a great complement to your work as an artist. Let's look at two approaches to covers:

The Sound-Alike Choose an artist who you aspire to be like, with lyrics that you can bring to life in your own way. Being a sound-alike artist gives your fans a way to describe your sound, e.g. "he sounds just like Marvin Gaye," and it will help potential fans discover you: When they come across your single as it's tagging as #MarvinGaye on Twitter, you'll get the chance to convince them to get onboard with your music. (My go-to cover song was Annie Lennox's "Cold.")

Changing it Up Go wild and choose a hugely popular song—and flip the entire arrangement or genre. This approach really works for viral video. Oakland-based Pomplamoose made a huge impression in their acoustic/electric arrangements of songs by huge pop stars like Beyoncé and Lady Gaga. Their exposure led them to placement in a car commercial that featured recording antics from their videos!

Licensing the Song Though you can perform cover songs at shows without any issues around legalities and licensing, when it comes to recording and distribution, you have to get clearance from the song's publisher. This doesn't involve finding some giant directory and doing a million letters and lawyer fees—just a web form and a credit card can get most songs licensed. If you are doing a mash-up, you need to license both songs. Get familiar with the following sites:

- **Harry Fox Agency (harryfox.com)**

Since 1927, HFA has been the go to clearing-house for licensing musical copyrights. They have an easy-to-use song search database, from which you select the song and add in the information on your recording. HFA also manages YouTube Licensing of musical works for independent publishers, so be sure to check this out if you are solely doing a cover for YouTube (or want to use existing songs for a film on YouTube).

- **Limelight (songclearance.com)**

There are probably other websites that broker this transaction, but I recently used this website at a client's request, and found it simple and easy. I licensed an album's worth of covers, at about \$140 a pop, with immediate receipt and electronic license.

Next? Start promoting! Need a boost to get started? Here's a great success story. My friends in Los Angeles, Karmina, were featured on Right the Stars' cover of Gotye's "Somebody That I Used to Know." They did a change-up, paying homage to both Gotye and The Police's "King of Pain." The band's tweet about the tribute video got retweeted by Miley Cyrus, and Gotye himself . . . followed by multiple mentions in *Billboard*. Now the fans of a tween star and a hipster pop star, along with industry insiders, got exposure to two up-and-coming bands, all through a cover song. ■

Kaitlin McGaw is a freelance writer and musician, who can be found rocking for kids with her hip-hop group Alphabet Rockers, or behind the piano composing as a singer-songwriter. For more information, visit kaitlinmcgaw.com.

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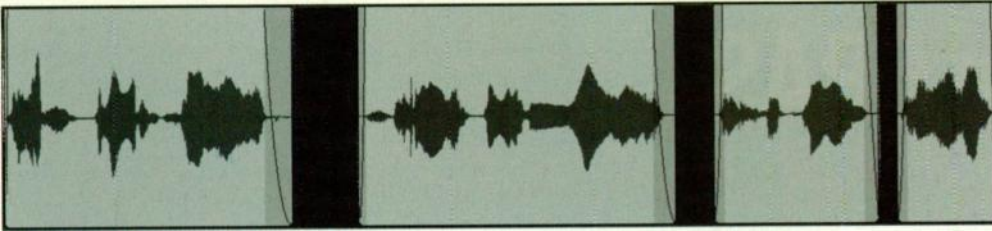


Fig. 1. The spaces between phrases and words have been cut, with fades added to create smooth transitions.

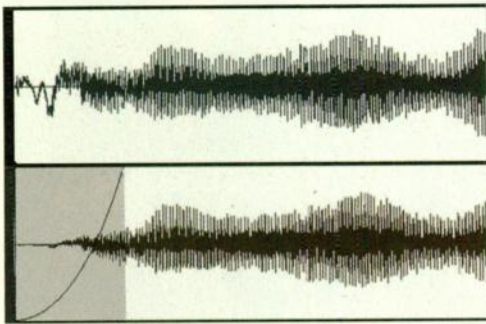


Fig. 2. The upper track has a major p-pop; the lower track had an equally bad pop, but the fade has tamed it.

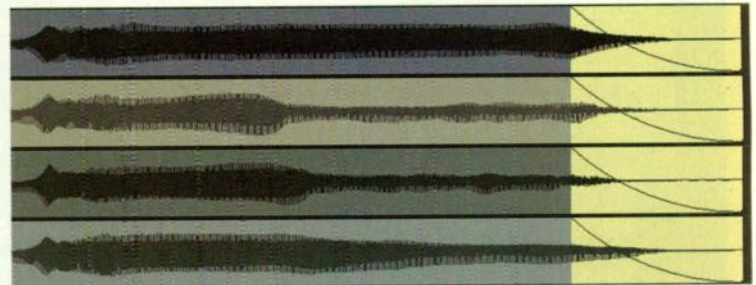


Fig. 3. Each word has been aligned to start at the same time, while a common fade time creates a common ending. Before the fades were added, each note had a different end time.

Processing Layered Vocals

Tricks for creating a coherent, solid vibe

BY CRAIG ANDERTON

Clean-up Remove the spaces between vocals to delete headphone leakage, mouth noises, etc., then add fade-ins and -outs to smooth the transition from vocal to silence (see Figure 1). Insert a steep (48dB per octave if available) highpass filter to cut the very low frequencies where subsonics, hum, mud, and p-pops live.

Dealing with Inhales Inhales are a natural part of singing; however with multiple voices, inhales often don't occur simultaneously. For a more unified sound, pick two inhales that are in sync (or just one, if you don't have two that sync), and delete the other ones. Adjust the gain of the inhale(s) so that they slide properly into the phrase. If you want to keep an inhale but it's too prominent, fading in on the inhale can make it less obtrusive while still retaining an authentic vocal quality.

The Dreaded "P-pop" Using lowcut filters, if you reduce the lows sufficiently to remove the pop, you usually reduce the voice's resonance. Instead, zoom in on the p-pop (it will have a distinctive waveform) and split the clip just before the pop. Then, add a fade-in over the p-pop (see Figure 2). The fade-in's duration determines the pop's severity, so you can fine-tune the desired amount of "p" sound.

Notes That Don't End at the Same Time If one note is short compared to a note with the correct length, split the short clip just before the last word, and use DSP to stretch it (e.g., in Cubase or Sonar, ctrl-click on the right edge and drag to the right). In some cases you

can split a note during the sustain, stretch the end longer, and crossfade the split region to make a smooth transition between the main part and "tail." This can give a more natural sound if you need a fair amount of correction.

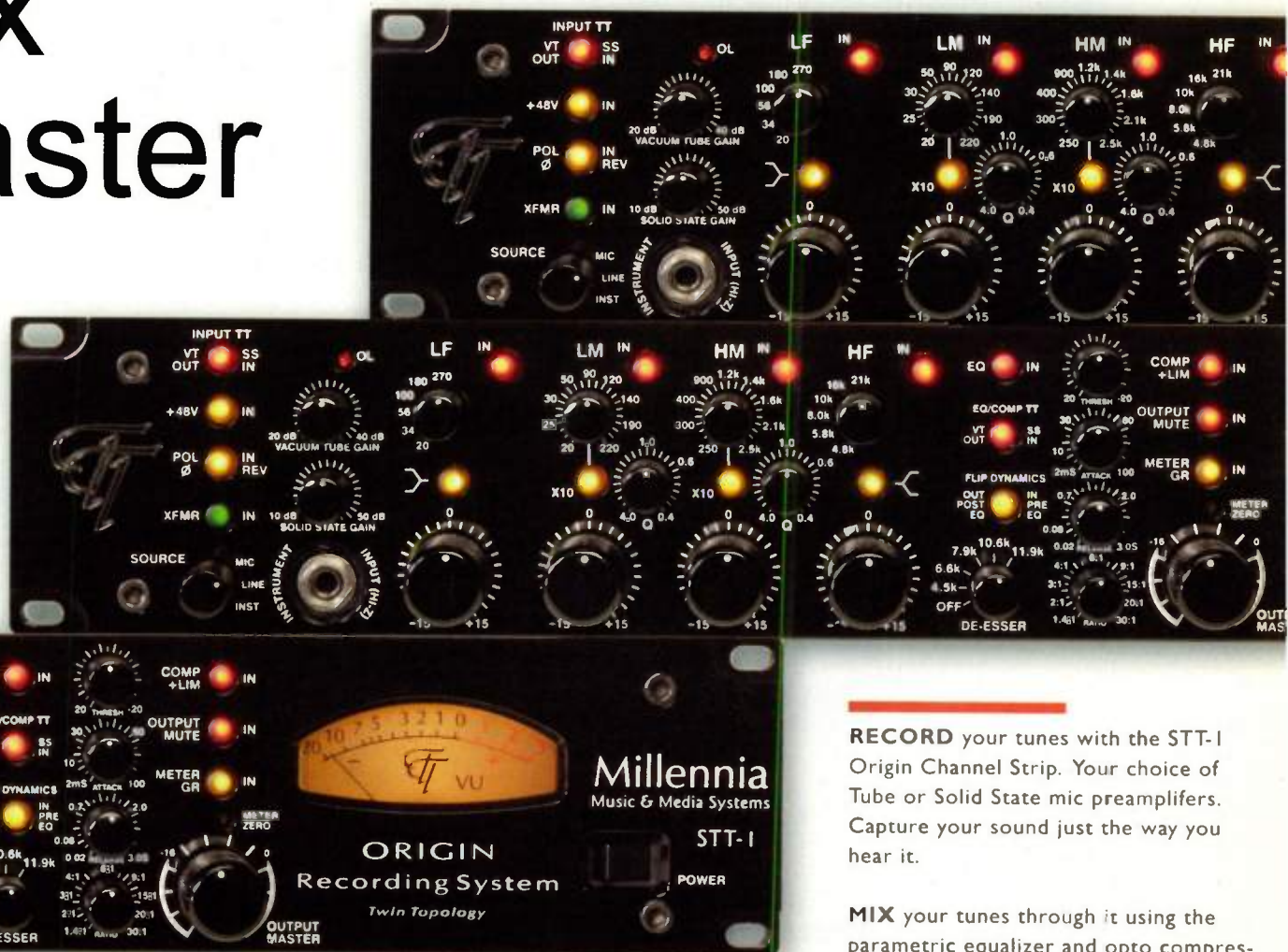
A note that extends too long is easier to fix—just fade it so its length matches the "reference" vocal, or split during a sustain and move the end closer to the beginning, with crossfade enabled.

For a really uniform sound, group all the vocal clips together and add a common fade so that they all fade simultaneously (see Figure 3). This creates a super-precise vocal sound, but as you're not processing the vocal itself, the sound is natural.

Busing I prefer not to mix a zillion tracks, so I like to set up aux sends to send all the layered vocals to a single stereo return. Not only does this make it a lot easier to mix, but you can also use a common signal processor (like a bus compressor set for a modest amount of compression) to "glue" the tracks together. A bused, individual stereo output also lends itself well to reverb, as the voices sound like they're in a common acoustical space.

Is it Worth it? These tricks involve a fair amount of detail work, but the results are worth it. Smooth, consistent, polished background vocals make an excellent bed for the lead vocal while also giving it more importance—and as far as I'm concerned, there's no more important element of any song than the lead vocal. ■

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Propellerhead Reason 6

Pump your dance-mix drums

BY CRAIG ANDERTON

OBJECTIVE

Create a pumping, dynamic dance-mix drum sound

BACKGROUND

Applying extreme amounts of compression to mixed drums, then triggering the compressor with an individual drum via sidechaining, “smashes” the drum mix when the individual drum hits but otherwise leaves the drums alone.

TIPS

■ Step 3: Turning the MClass Compressor Input Gain above +4.5dB makes the track sound even more rude.

■ Step 3: Reducing the Release limits the pumping effect to a smaller “window” of the drum sound.



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Step 1 Set up your basic signal path: Drums (e.g., ReDrums) stereo out > RV-7 Reverb in > RV-7 Reverb out > MClass Compressor in > MClass Compressor out > Line Mixer1 in > Line Mixer master out to Mix channel.



Step 2 Set up your sidechaining (for clarity, previous patch cords not shown): Send ReDrum’s snare solo outs to the Spider Audio Splitter in. Send one Splitter out to Line Mixer 2 in, so you can mix the snare audio back in with the drums. Send another Splitter out to the MClass Compressor Sidechain In so the snare provides the sidechain signal.



Step 3 Hit the Tab key to flip the rack around. For the maximum effect, turn the MClass compressor Ratio to at least 16:1 and Release to maximum, Input Gain to +4.5, and Threshold and Attack to minimum. When the snare hits, the gain-reduction meter should go way down. Adding reverb emphasizes the pumping effect; the control settings shown are a good starting point. Adjust the Line Mixer channel 1 and 2 controls for the desired blend of mixed drums and the individual snare sound, respectively.

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- John Vanderslice
(Owner, Tiny Telephone - recording studio)



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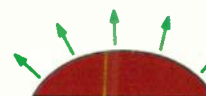
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Five Things We Learned From Winter NAMM 2012

BY CRAIG ANDERTON



1

The secret of the iPad's music industry success.

I was editing a video of an iPad app, and slowing it way down to find an edit point. *Every seven minutes*, the screen flashes: "You will use iPads for musical applications. Resistance is futile. Apple loves you!" just long enough for your subconscious mind to register the message. Really. That explains a lot, doesn't it?

2

Copper must be getting really, really expensive.

There was wireless everything—wireless speakers, wireless direct boxes, wireless cable replacements, even wireless thingies without wires, working wirelessly. So I guess we'll soon start hearing audiences scream at the band, "I can't hear you! You're breaking up!"

3

But "wired" was really big, too.

The lines at the coffee stands were longer than the ones for artist signings so when you ran into salespeople who just went on and on getting into every detail and *talking really fast* while shaking nervously and looking in 14 different directions at once... now you know why they were so wired. In today's downsized world, caffeine is the New Coke.

4

Why people just love the drums and percussion hall.

In the immortal words of drummer (and *EM* contributor) Reek Havok, "I can *never* hear enough drums playing together at the same time!"

5

Signs of the end times.

MOTU's Digital Performer 8 will be available for Windows, Waves is ditching the iLok dongle, and one of the most innovative products at the show was Behringer's modular DJ mixing system. I guess the end times don't look so bad after all! ■

ALL ABOUT THE MUSIC



NOTE EXPRESSION 6.5

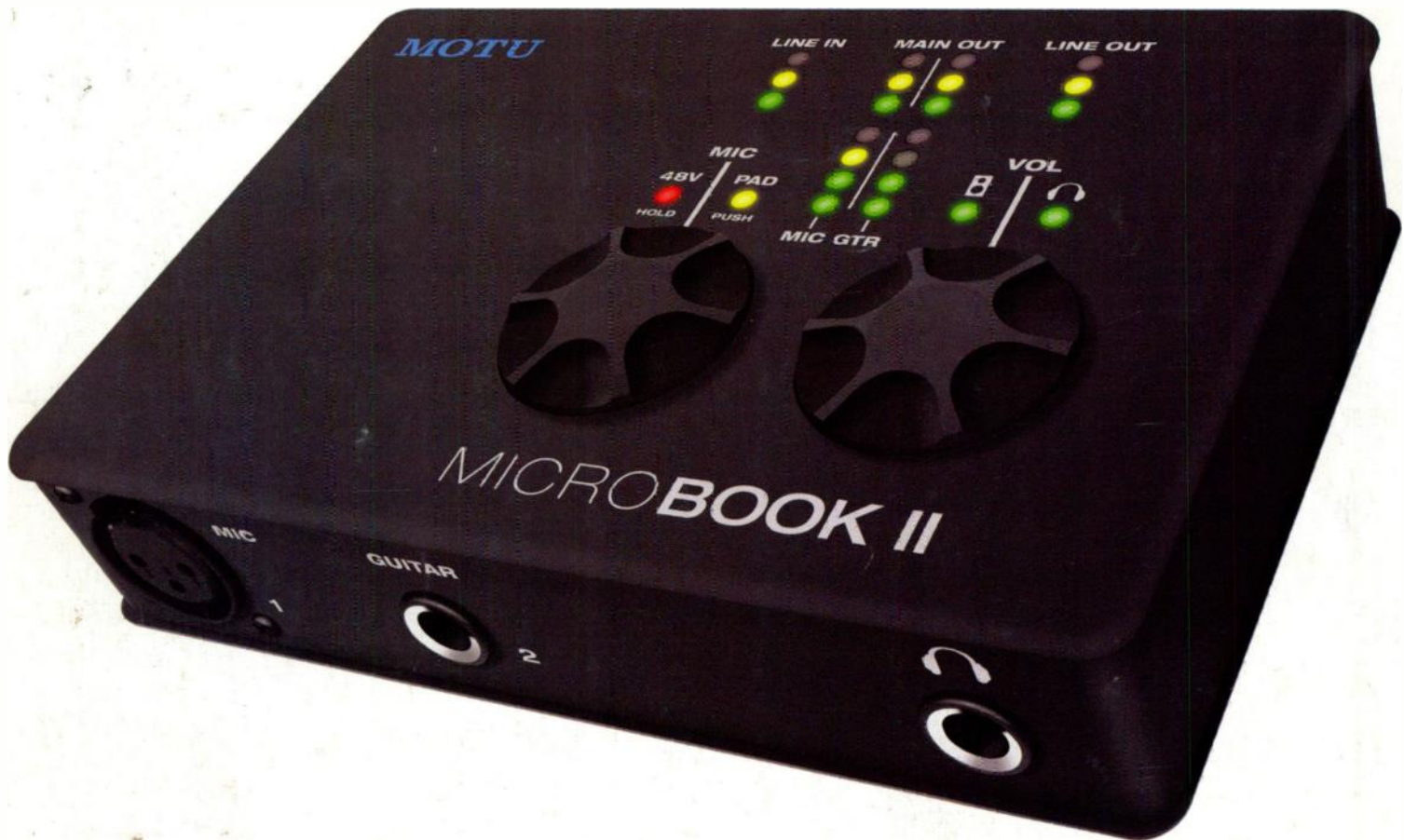
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