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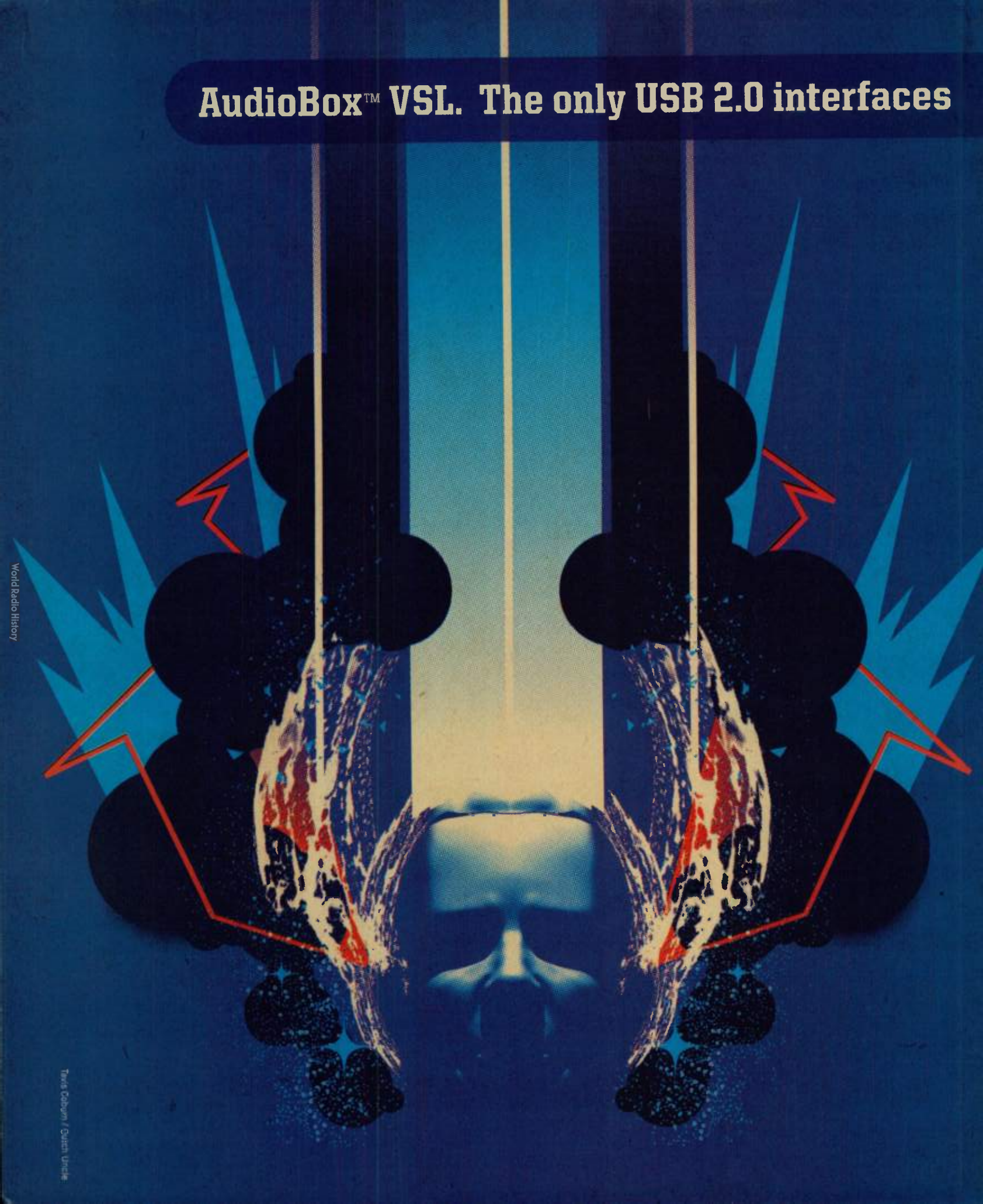

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that can improve the way you record. And perform.

You'll make better recordings when you can hear reverb, compression, and EQ in your headphones.

That's easy to do if you have a digital mixer or outboard effects processors.

But it's impossible if you try to use DAW effects plug-ins with our competitors' interfaces — excess latency (delay) makes your headphones sound like you're driving through a tunnel, and your guitar strumming feels all wrong.

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AudioBox™ 44VSL 4 x 4 24-bit / 96 kHz USB 2.0 recording interface ■ 4 Class A XMAX™ mic preamps (2 mic / bal. instrument inputs + 2 mic / bal. line inputs) ■ 2 bal. ¼" L/R main + 4 bal. ¼" aux line outputs ■ Headphone output with level control ■ MIDI In/Out ■ Visit www.presonus.com for a complete feature listing.

* 4 channels at 88.2 or 96 kHz.

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"I did it myself...
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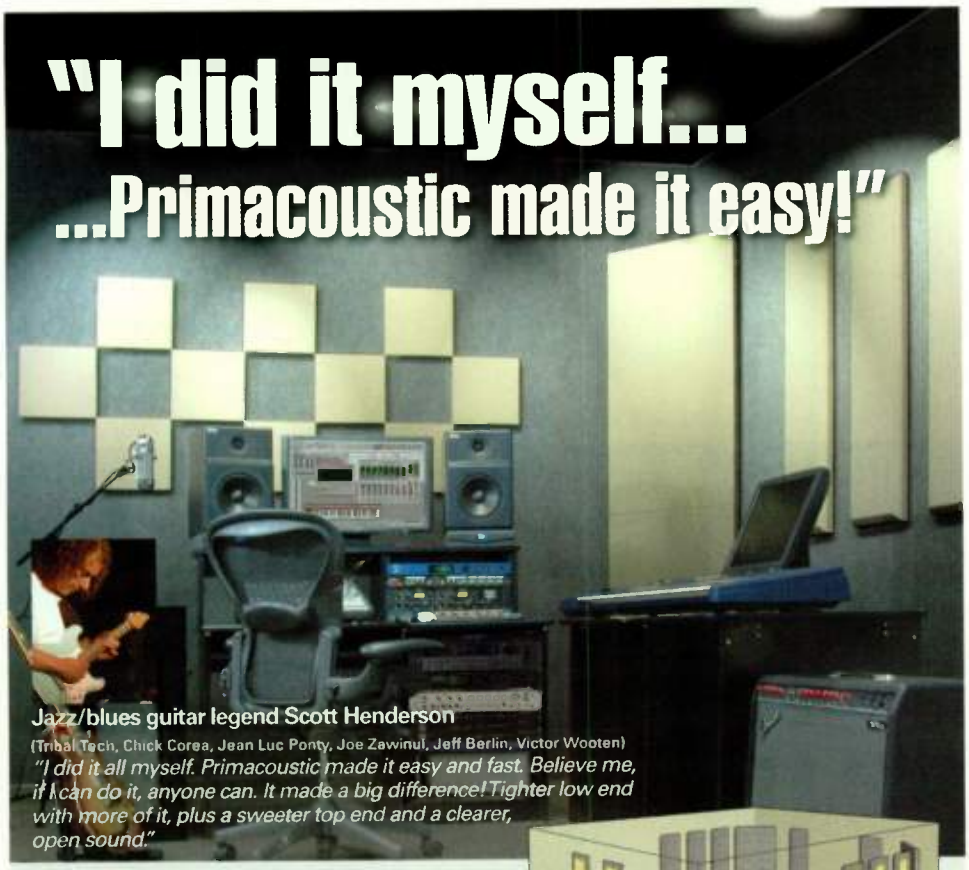

Jazz/blues guitar legend Scott Henderson
(Tribal Tech, Chick Corea, Jean Luc Ponty, Joe Zawinul, Jeff Berlin, Victor Wooten)
"I did it all myself. Primacoustic made it easy and fast. Believe me, if I can do it, anyone can. It made a big difference! Tighter low end with more of it, plus a sweeter top end and a clearer, open sound."

Right from day one, we have been led to believe that a great sounding room could only happen if you custom built it from the ground up. Although world class studios will never be replaced, Primacoustic can get you closer than ever before!

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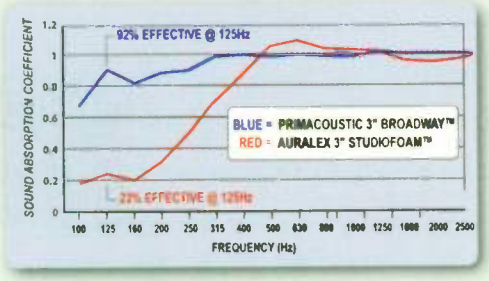
London™ 12 room kit



Tests performed by Riverbank Labs on Primacoustic Broadway™ panels and common acoustic foam. Both absorb high frequencies but as sound shifts to bass, the foam stops working.

Installation is easy: unlike foam that ruins your walls, Broadway panels hang like pictures. They take no time to put up and look terrific! Each panel features resin hardened edges and is individually fabric wrapped in a choice of three architecturally neutral colors.

For those that want to go the extra, Primacoustic offers a wide array of bass traps, diffusers and ceiling clouds to suit.

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insight

Sampling, Then And Now

THIS MONTH marks the 20th Anniversary of A Tribe Called Quest's *The Low End Theory*, a landmark project widely recognized for ushering in a new era of hip-hop production. Bob Power, who engineered the record, was at the forefront of the movement, crafting complex, elaborate constructions of samples that would have been impossible to perform by real players, in real time.

Working in the box, we tend to take the ease of sample-based production for granted, but back in the day, it wasn't so simple: In our interview with Power (page 44), he reminisces about the endless layering involved on the album; how, using an Akai sampler with a whopping 75K of memory (that's about two seconds of sample time), he worked meticulously, laying tracks, loading samples, and repeating. And repeating.

Well, we've come a long way since 1991. In our "Loops, Samples, Kits!" Roundup (page 62), obsessive looper Craig Anderton takes a look at the latest generation of sound libraries, which include everything from truly realistic samples of exotic and rare instruments to highly tweakable construction kits to a convincing virtual rock band. And if you're feeling a little more DIY, Craig's "Refined Repetition" Master Class (page 86) breaks loop construction down into 11 easy steps—whether you're creating loops for hip-hop, techno, or straight-up rock and roll.

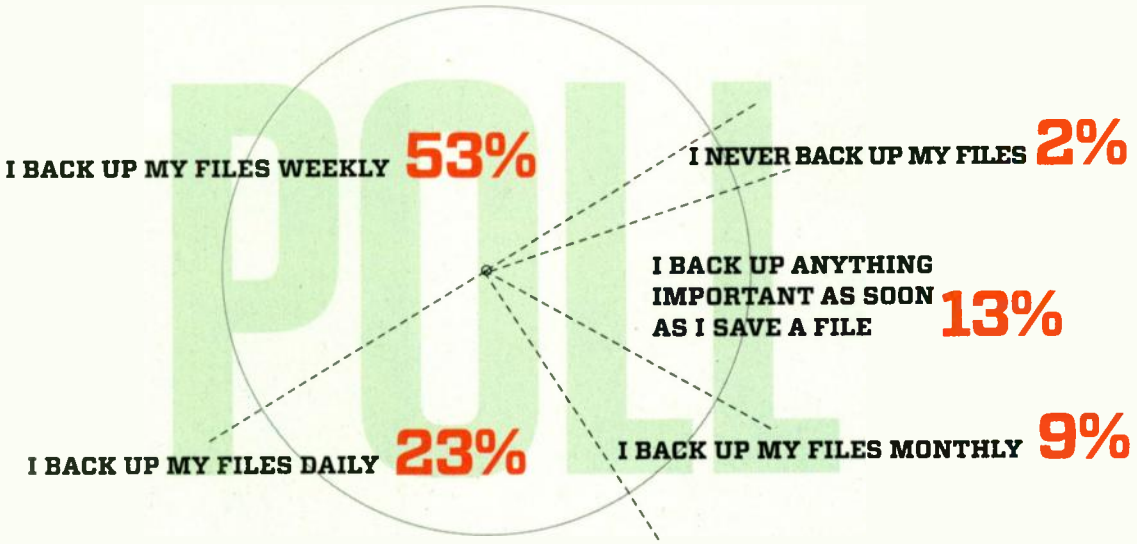
SARAH JONES
EDITOR
sjones@musicplayer.com

"PERHAPS THE MIGHTIEST SLAP IN THE FACE OF MUSIC HAS BEEN THE MUSIC FILE, EASILY DOWNLOADED AND PUT INTO A PLAYBACK DEVICE. THIS FORMAT STRIPS THE MEAT FROM THE BONE. IMAGINE AN ORANGE, SQUEEZED BY A GORILLA. IT'S STILL AN ORANGE, BUT IN NAME ONLY. IF OTIS REDDING COULD HEAR HIS MUSIC ON MP3, HE'D WONDER WHAT HACK WAS TRYING TO IMPERSONATE HIM."

Henry Rollins, in the *LA Weekly*, Feb. 2, 2011

The *Electronic Musician* Poll

HOW OFTEN DO YOU BACK UP YOUR FILES?



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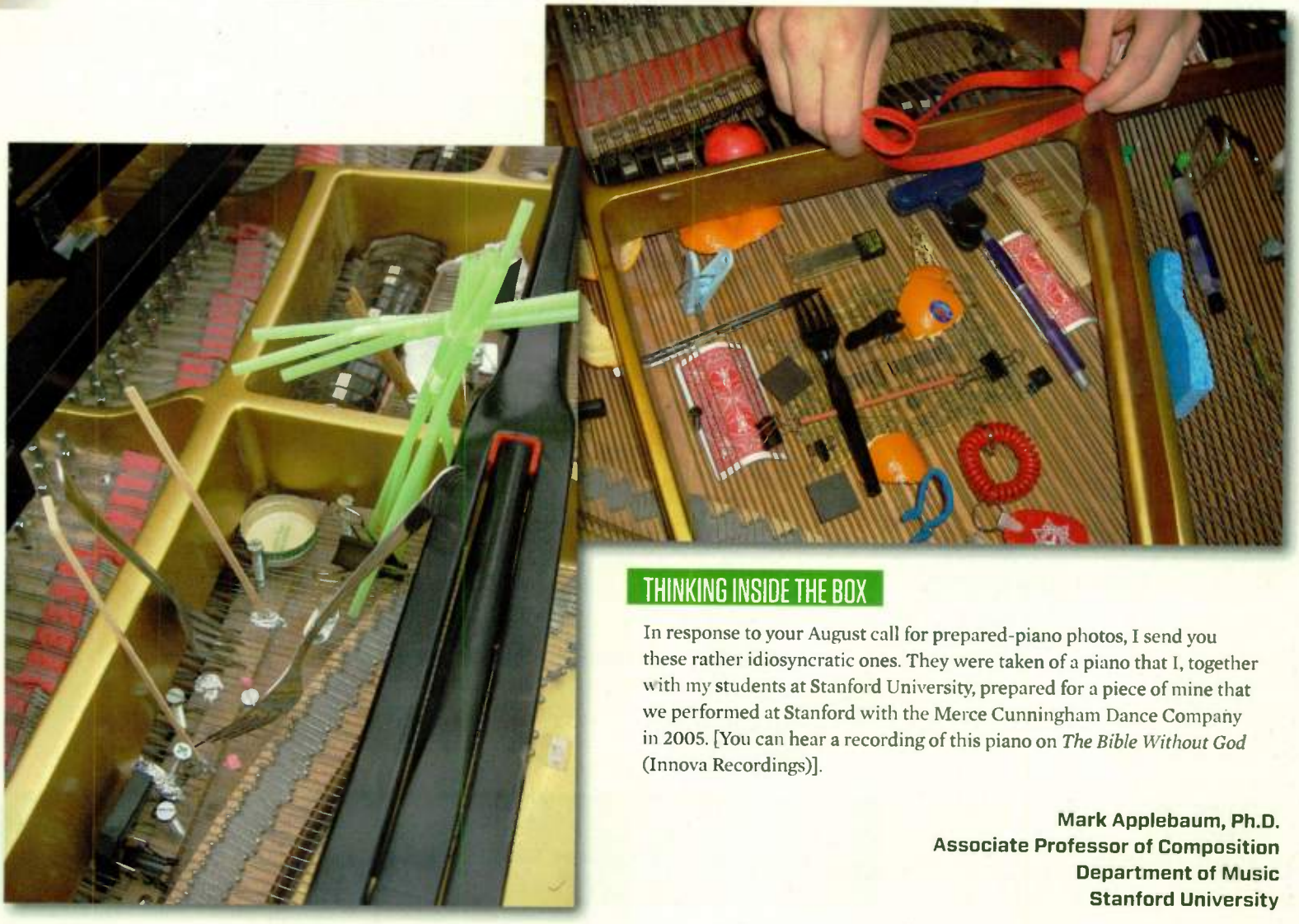
Gadget Geek

Guitarists, recyclers, and obsessive confetti crafters everywhere will love the Pick Punch, a sleek metal hole-punch with a guitar pick-shaped cutout that lets you turn just about any kind of thin sheeting (Credit cards? Chocolate?) into a pile of 351-style picks. Stuck at your day job? Keep one on your desk and rock out your paperwork.
$25; Pickpunch.com



THINKING INSIDE THE BOX

In response to your August call for prepared-piano photos, I send you these rather idiosyncratic ones. They were taken of a piano that I, together with my students at Stanford University, prepared for a piece of mine that we performed at Stanford with the Merce Cunningham Dance Company in 2005. [You can hear a recording of this piano on *The Bible Without God* (Innova Recordings)].

Mark Applebaum, Ph.D.
Associate Professor of Composition
Department of Music
Stanford University

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BY THE NUMBERS

A tale of two concert grosses

$1,828,950
Gross, Miley Cyrus show at Simón Bolivar University Stadium, Caracas, Venezuela, May 17, 2011

5,087
total attendance

$760.35
high ticket price

$1,825,000
Gross, Rod Stewart show at Carrow Road, Norwich, England, June 8, 2011

17,029
total attendance

$155.79
high ticket price

DIG MY RIG

HERE IS a picture of my basement studio, located in Grayslake, IL. I teach guitar, music, and recording to kids in the area. It's a unique, hands-on experience that is hard to come by in our suburban town.

Greg Henkin
www.gregsguitarlessons.com
photo by Greg Henkin and Arthur Schroeder

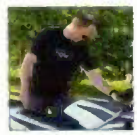
FEEDBACK

HOW MUCH OF YOUR STUDIO GEAR IS ANALOG, AND HOW MUCH IS DIGITAL? WHAT ARE YOUR DECIDING FACTORS?

Joseph Edward Karstens
60% clean digital, 40% glorious analog. My ears and my budget make the decisions.

Shannon McDowell
100% digital—mostly due to budget issues. Also, I am most comfortable in a digital environment.

Tom Kemp
The actual capture equipment is 90% digital: three mixers, PC, studio monitor inputs. The rest is analog, of course: mics and snakes.



Barrie Deatcher
100% digital for recording and effects. Musicians are still 100% analog, though ;-)

YOUR TAKE

How do you record using the natural acoustics in your home?

Here's our favorite reader response. E.B. Cox wins an Audio-Technica AT2020 mic. Thanks, E.B!

IF YOU'RE using the bathroom as a vocal booth (everyone does this, right?), once you've got it set up, try dropping a secondary microphone in your tub or shower area to find some fun tones to mix in! Face your singer or guitar away from the tub if possible and adjust the mic to face away from the source to pick up less "dry" signal. Experimenting with various levels of shower curtains and padding between the source and the mic can help you dial in tones even further!

E. B. COX
ASSEMBLY LINE GODS
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Send *Electronic Musician* Your Stories, Win Gear! Talk to us! Share your tips with *Electronic Musician*, and we'll print our favorite in an upcoming issue. And if we choose your letter, you'll win sweet gear! This month, we're giving away an Audio-Technica AT2050 multipattern large-diaphragm condenser mic with switchable 80 Hz highpass filter and -10 dB pad. Contest open to U.S. residents age 18 and over.

THIS MONTH'S QUESTION: **WHAT'S YOUR BEST RECORDING TRICK FOR GETTING A BIG BRASS SOUND?**
Send your answers to ElectronicMusician@musicplayer.com.

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THE BIG PICTURE

Music Startups Get Big Cash Infusions

WHO SAYS THERE'S NO MONEY IN THE MUSIC BUSINESS? ACCORDING TO DIGITAL MUSIC NEWS, MORE THAN 400 MILLION DOLLARS HAVE BEEN INVESTED IN MUSIC INDUSTRY STARTUPS IN THE FIRST HALF OF 2011. BELOW, A FEW OF THE HIGHER-PROFILE FUNDING ROUNDS:

MOG:	**$3,000,000**
TuneSat:	**$6,000,000**
SoundCloud:	**$10,000,000**
Rdio:	**$17,500,000**
Shazam:	**$32,000,000**
EventBrite:	**$50,000,000**
Beyond Oblivion:	**$77,000,000**
Spotify:	**$100,000,000**

ask!

From everything I've heard, equalization is crucial to getting a good mix, and I want to become more proficient at using it. But what with the different responses (shelving, notch, bandpass, etc.), and even different categories like "character" EQ vs. "surgical" EQ, I could use some help sorting this all out.

TOMMY BEHR
INDIANAPOLIS, IN
VIA EMAIL

Check out the screenshot at right for a whirlwind tour. A *shelving* response (1) drops the response at a particular frequency, but then the response flattens out again. This provides a gentle overall emphasis (or in this case, de-emphasis) of the bass and/or treble ranges.

The *peak/dip* (also called *bandpass/notch*) response fixes problems in specific frequency ranges, like reducing a resonance with a dip (2), or improving intelligibility of a muffled vocal with a moderate boost at 3.5kHz (3). A peak or dip's Q setting determines the range it covers—(2) shows a high Q for a narrow dip, while (3) shows a low Q for a broad boost.

A *lowpass* filter (4) reduces response more as the frequency increases, which can help remove hiss or excessive brightness; a *highpass* filter works in the opposite manner, reducing response more as the frequency decreases—great for attenuating room rumble or subsonics.

"Character" EQ refers to a response like that of the classic Pultec hardware equalizer, which imparted a unique character that was more about a gentle tonal change than extreme technical accuracy. "Surgical" EQ generally means highly precise EQ intended primarily to solve particular frequency response problems. You might also see the term "phase-linear" EQ, which means there's no phase shift between the input and output, as was often present in older analog gear.

To translate this theory into practice, tweak, listen, tweak, listen, then tweak and listen some more . . . before too long, you'll learn how EQ affects the sound, and know which type of EQ is optimal for particular situations.

THE EDITORS

Each audio channel in Steinberg Cubase 6 includes four bands of EQ, and each band can have any of eight possible responses.

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

DATA SOURCES: NEILSON SOUNDSCAN, DIGITAL MUSIC NEWS, EMUSICIAN.COM, BILLBOARD

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GRACE GETS HER GROOVE ON

GULF SHORES, AL
MAY 20, 2011

"There's a feistiness to these songs that's completely unapologetic," Grace Potter recently said about her third album, *Grace Potter and The Nocturnals*, still gaining momentum more than year after its release. The ferocious frontwoman and fiesty band brought their own brand of hard-driving blues/rock to the Hangout Music Festival, which kicked off the summer music season in style with four stages on the white, sandy beaches of Gulf Shores, Alabama.

PHOTOGRAPH BY DAVE VANN

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Anj Granieri – TAXI Member
www.anjmusiconline.com

My name is Anj and I'm 26 years old. Thanks to TAXI, I've recently signed a 5-year contract to compose for a publisher that supplies music for the #1 highest-rated daytime talk show in American television history.

Myth: Living in N.Y. or L.A. is a Must

I moved to NYC when I was 23 to "make it big" in the music business. I ended up living in a shoebox-sized apartment with broken windows and cockroaches all over the place. Not *quite* as glamorous as the movies make it out to be. I was frustrated and deflated.

That's when a friend told me about TAXI. She said it would provide me with the ability to make valuable connections that would advance my career. I was so intrigued that I called and signed up that day.

Myth: Cold Calls Work

Imagine that you're a busy music executive. Are you going to listen to the song a trusted source sent, or one from the pile of unsolicited stuff from people you don't know?

I used to spend countless hours trying to make connections, let alone the *right* connections! With TAXI, when my music is on-target and great, it's placed in the hands of people who need exactly what I have to offer. The results have been nothing short of amazing.

My music has been sent to more than 15 major record labels by TAXI, and my single, *Former Stranger* was released on a Universal Records compilation with Amy Winehouse and Duffy in Europe and Asia. It's also been placed in a prominent publishing catalog that features music on the CW network. All because I joined TAXI.

Myth: All Music Executives Are Cutthroat

My biggest success yet came from TAXI's annual free, members-only convention, the Road Rally. I met the decision-maker from a prominent publishing company that provides music for the #1 highest rated, day-time talk show on the air. I performed for him at TAXI's open-mic and he signed me on the spot.

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Best,
Allen Sides

Derek Snyder (left)
GC Pro Business Development
Western Region

Allen Sides (center)
Four time Grammy Award winning Engineer, Producer, and Owner of Ocean Way Los Angeles, St. Barths and Record One

Ernie Woody (right)
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Erasure (left to right)—
Vince Clarke and Andy Bell.

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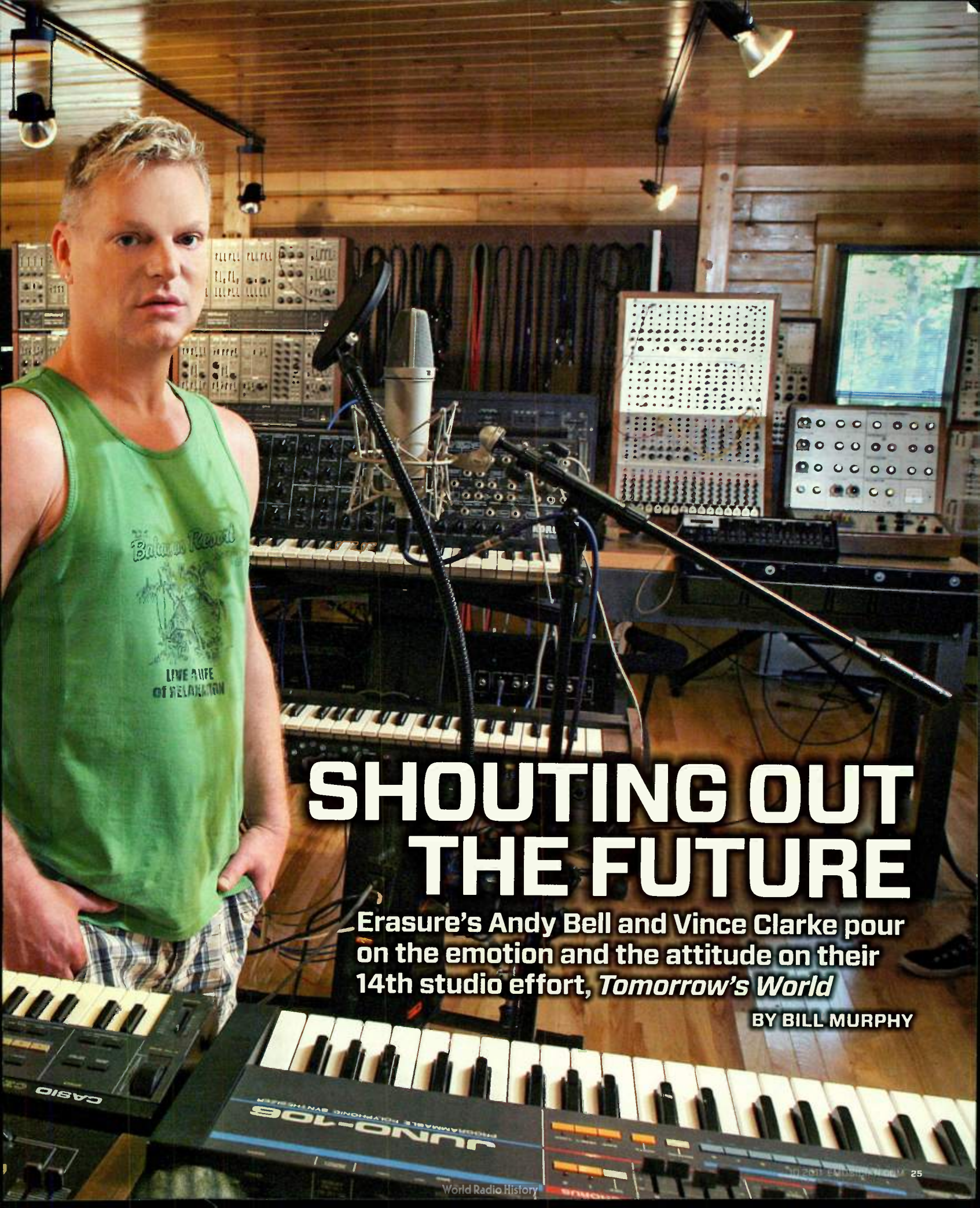

SHOUTING OUT THE FUTURE

Erasure's Andy Bell and Vince Clarke pour on the emotion and the attitude on their 14th studio effort, *Tomorrow's World*

BY BILL MURPHY

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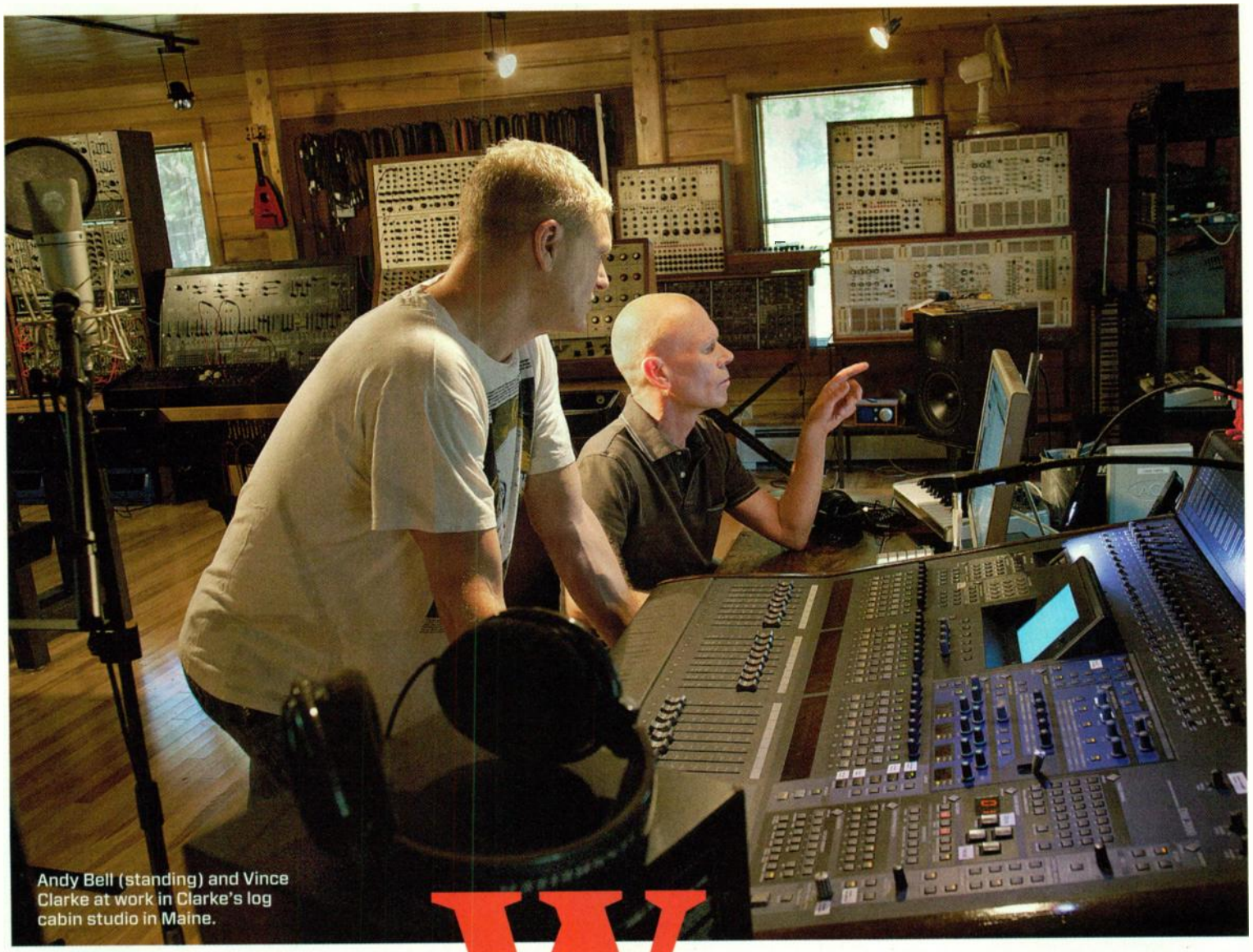

Andy Bell (standing) and Vince Clarke at work in Clarke's log cabin studio in Maine.

When Andy Bell gets fired up, it doesn't take long for his energy to turn contagious. Just ask the thousands of fans who have followed his every move since 1985, starting with the finely cut synth-pop gem "Who Needs Love Like That," which broke Erasure to London's club crowd and sparked a creative partnership with bandmate Vince Clarke that's still going strong, more than a dozen albums and 40-odd singles later. In the fickle world of dance music, longevity like that is hard to come by, and while a lot of it has to do with just cranking out good *songs*, it's really Bell's commitment to his audience and his craft, his heart-on-my-sleeve honesty, that seals the deal.

That's not to say it's always been easy. Bell found himself emotionally and physically drained after making *Tomorrow's World* (Mute), Erasure's long-awaited 14th studio album, but he's quick to point out that he had fun nearly every step of the way, especially with up-and-coming producer Frankmusik (a.k.a. Vincent Frank) lending his distinctively musical touch to the sessions. Rife with the ecstatic strains of electro-pop, soul, and even dubstep, this might well be the toughest-sounding Erasure album yet.

"Definitely underneath, I think there's a sense of anger," Bell observes. "Always when we do an Erasure album, I want there to be this passionate pathos and yearning going on. But I was quite thrilled to be working with Frank because to me it was a grass-roots decision. It had come via the fans, and he had done a remix of our song 'Phantom Bride,' so to me it just felt instinctively right. His sense of melody quite blew me away, and I think it definitely gave us a fresh impetus as a band. When you're a singer, you're always in performance mode, so when you go in the studio, you rely on your own trills and your own melodic ideas. With Frank, I was totally handing over the reins,

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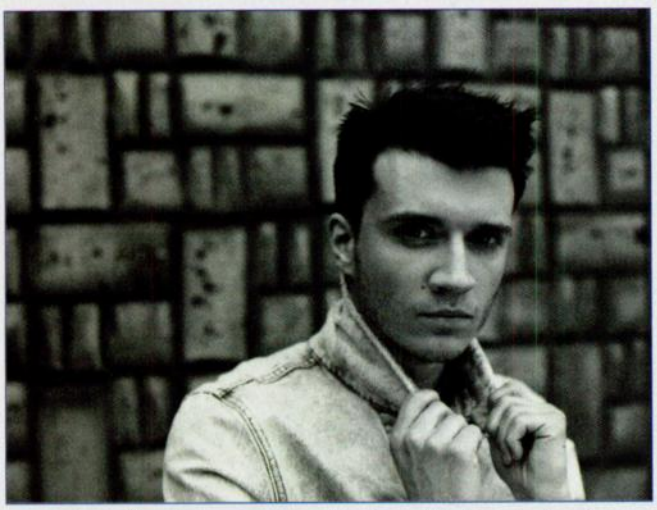
even with adlibs and stuff—he would ask me to try just about *anything*, and it would come out differently, but it was something that we really enjoyed. His musicality is just incredible."

Vince Clarke concurs. As the other half of Erasure and an acclaimed producer, composer, and keyboardist in his own right (as well as a founding member of Depeche Mode and Yaz), Clarke knows his way around a mixing desk. He also knows when to cede control if it will lead to a fresh and compelling sound, as Erasure's studio outings with Flood, Gareth Jones, Thomas Fehlmann, and more have demonstrated over the years. This time, Clarke and Bell were content to hand over a grip of largely acoustic demos, amassed since late 2009, and let Frankmusik work his magic. (See the "Mobile Musik" sidebar below.)

"It wasn't really until we started working with Frank that the album took on any particular direction," Clarke says. "He has quite a different sound from ours. You could say that the Erasure sound from the past is fairly minimal, whereas what Frank brought into the mix was a very *maximum* sound—it's almost like a wall of sound, I think. A lot of it is heavily compressed and effected, and sounds much bigger than the kind of stuff that we would normally be producing. So it was really Frank's guiding influence that brought us the end result."

Lines of Communication Work began in earnest at Clarke's state-of-the-art log



"I'm not really the cheesy guy in the studio sitting at his SSL desk; I'm the guy with the backpack." —Frankmusik

MOBILE MUSIK

Since moving recently from his native London to Hollywood's Sunset Strip, 25-year-old producer and recording artist Frankmusik has already made his mark as a talented mixologist who can pack a sonic wallop into a compact setup. Working in Logic on a Macbook Pro, not only does he record and mix entirely inside the box (with a small array of outboard gear for tracking vocals, described in the "Vox Verité" section on page 31), but at any given moment, he's ready to pick up and hit the road with full studio capability and a minimal footprint.

"I'm not really the cheesy guy in the studio sitting at his SSL desk," Frank quips. "I'm the guy with the backpack. That's pretty much how I work. I do have a proper studio where I keep the outboard gear, and I work on Adam A7X monitors and a JBL sub—with a pair of Dynaudio BM15s in case some A&R people stop by and want to have a listen [*laughs*]—but really I work more off the vibe of the music, so I mix in my Sony V700 headphones for EQ. I have maybe five pairs and I've been using them since I was 17, so I know what they sound like."

Naturally, for maximum portability, Frank is heavily reliant on plug-ins, sample libraries (such as Kontakt's OTTO, a favorite source for drum sounds), and soft synths—in particular, reFX's Nexus 2 virtual synth. "It's just an easy way of nailing ideas quickly and simply," he says. "I'm not a trance DJ or producer, and the Nexus seems to have this reputation of being a really trance-y, dance-y synth, but what all the kids seem to forget is, if you turn off the bloody reverb and delay, you have a really beautiful keyboard spread of some great, crafted samples. Someone spent hours trying to find the best sounds they could, on the original equipment."

With plug-ins like Waves' CLA Vocals (for fine EQ), SoundToys' Crystallizer (for trippy after-effects), Smart Elektronix's SupaTrigga (for re-ordering audio slices), MeldaProduction's compressors (primarily for drums), and scads more, Frank is always looking to take full advantage of whatever random possibilities he can squeeze out of an algorithm. "I like to make things move through *texture*," he says. "I'll print a lot of plug-in effects over an initial waveform that's unchangeable, and just let chance take over. Sometimes you can get very maffed out on specifics. When you're given that much choice, you lose a lot of the fun, whereas if you print a random effect, put it on 'full wet' and just turn off the 'dry,' and cut that in and out of the original, that's where you're opening your mind to more creative options and letting the unknown become the known."

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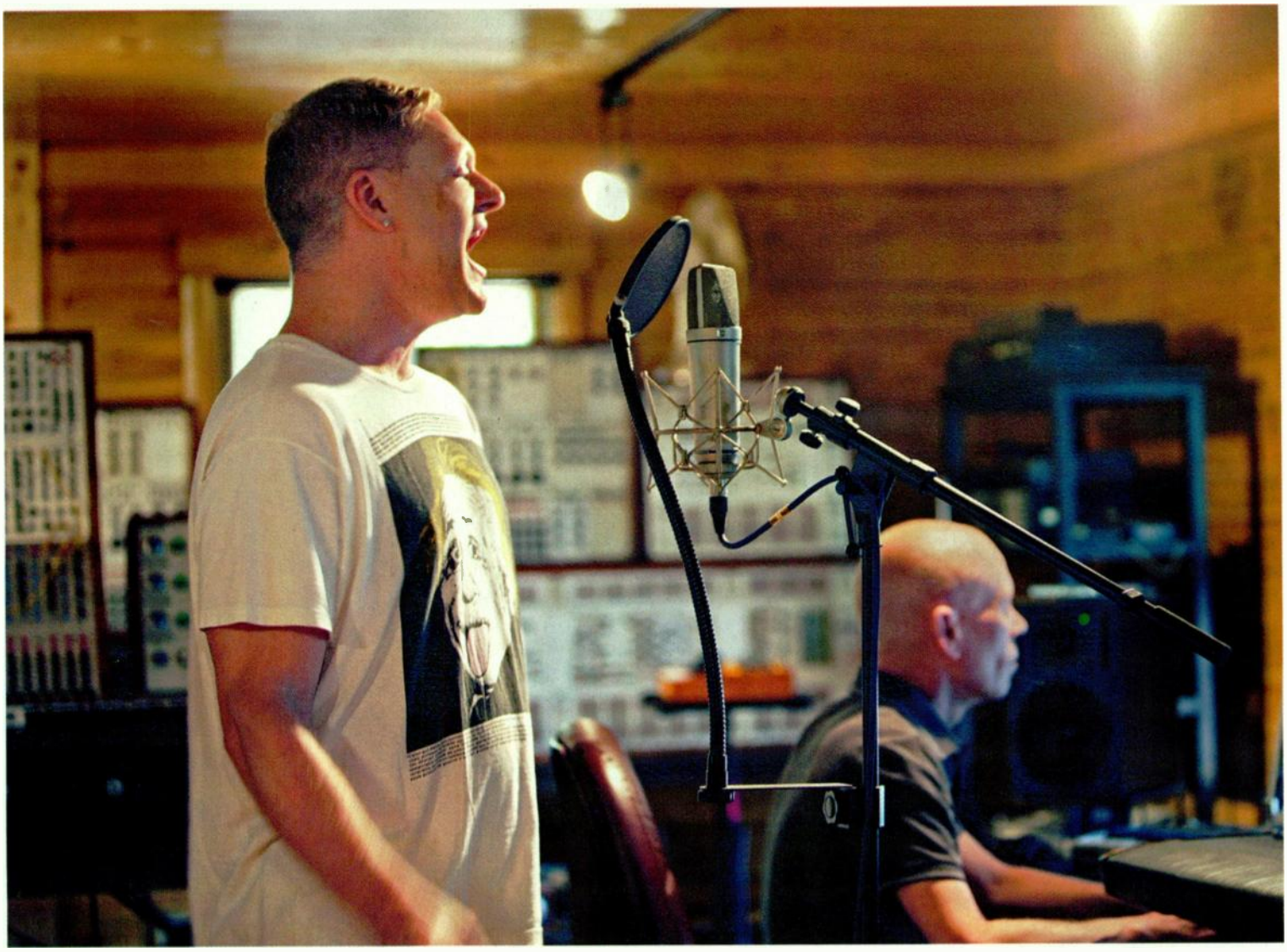


"Frank has so much compression going in . . . it was quite hard for me to sing melodies because you're really singing on the top of your voice. I was right on the edge of my throat, just to get through the system."

—Andy Bell

cabin studio in Maine. After a brief period of listening to demos and getting to know each other, Frankmusik was ready to dive in. "For me, I engage with the song first," he says. "The production will always fall into place, but the song has to be structurally sound, and then we can put the production in bit-by-bit. I like to close my eyes and let the sound guide the production. I never go in with a fixed, this-is-how-it's-gonna-be attitude. I think that's very limiting."

Tomorrow's World ripples with a musicality that reflects this approach, starting with the album's first single, "When I Start to Break It All Down," a down-tempo torch song that relies on subtle dynamics, rather than key changes, to imply its movement. It's an emotional journey that starts quietly and builds toward each chorus, with Bell gradually reaching for the top of his vocal range as a simple cut-time beat and dozens of atmospheric synths trail him into the stratosphere. Clarke's dizzying arsenal—which includes Roland's modular System 100M, a monophonic RSF Kobol, an Oberheim Xpander, and the workhorse Roland Juno-60, Jupiter-8, and Sequential Prophet 5—has always been the lynchpin to Erasure's sound, but in this instance, and on the rest of the album, the track-building process was a little different.

"Frank works mostly out of the box," Clarke explains, "so once he and I had worked together using soft synths at the studio in Maine, I would find analog replacements for those sounds. I try to build a mixture of lots of different synths in each track, with the idea being I can get a slightly different sound incorporated into the song. Then I'd send those tracks to Frank over the Internet. Once we'd gotten down the bulk of the work, all the starky bits were done that way. We'd just send files back and forth."

Frank clarifies further. "I would flesh out all the production that I felt the song needed—a lot of light synths and really thin stuff, so Vince could bring in his huge, full-bandwidth analog

World Radio History

synths. I'd send him consolidated WAVs from zero—all the separate files, just gigabytes of WAVs. Most of my sessions peak up to about 80 tracks at least, and that's all production. I only ever use one to three vocals, so the vocal tracking is doing hardly any of the work. And then Vince would just replace my synth parts with whatever he liked in his studio, send everything back, I'd drop it into Logic and turn down all the original parts and start layering."

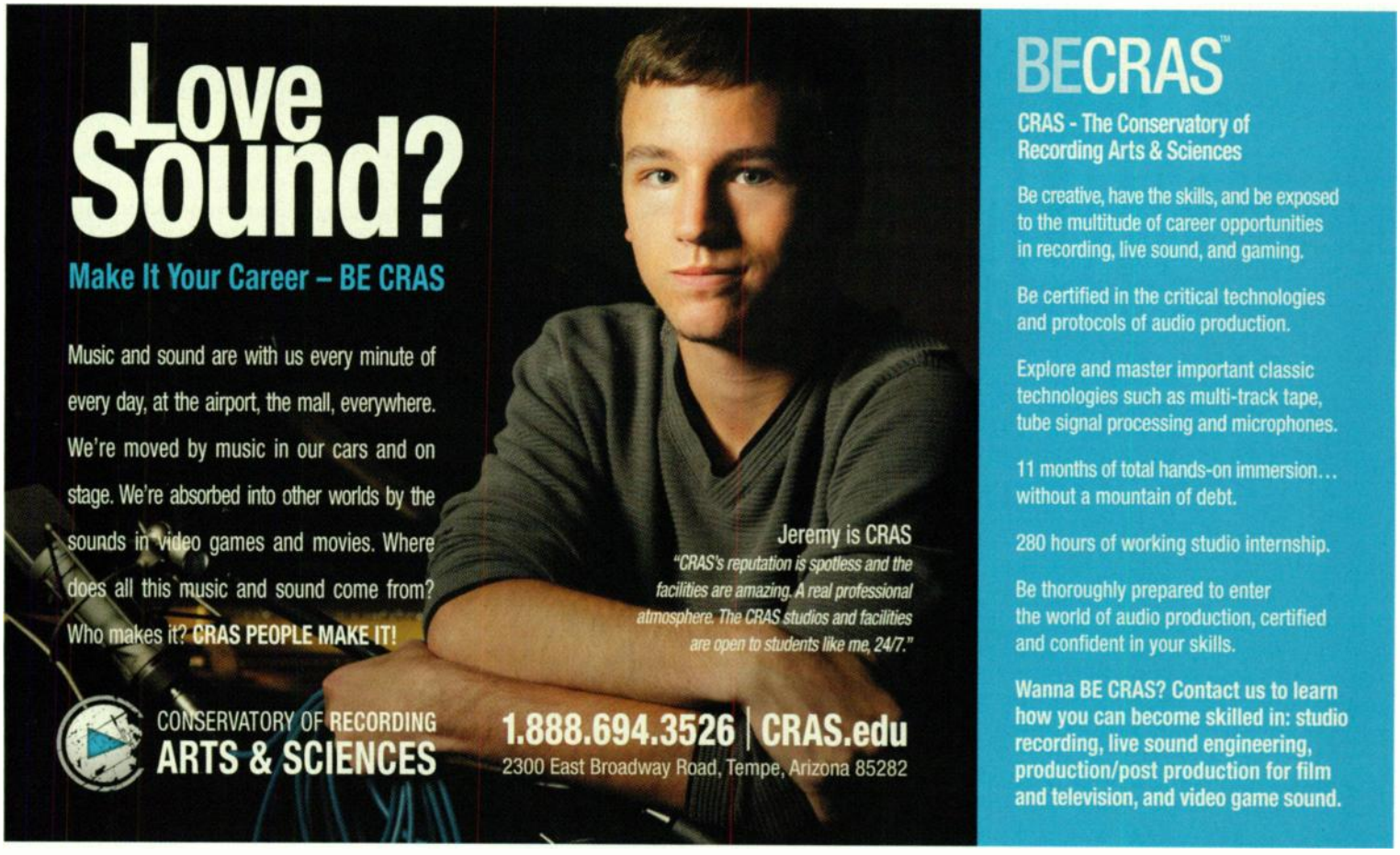
Vox Verité There are other mixtures moving through *Tomorrow's World*, specifically with Andy Bell's vocals. Some of the original demo passes he recorded in Maine, using just a handheld Shure Beta 58, actually made the cut. (The best example: "Be With You," a hi-energy opening track where Celemony's Melodyne came in handy for shaping the drawn-out "eee" Bell is singing in the main verse.) These early vocal sessions had a pristine quality that often worked well for the song, but Frankmusik was intent on getting even more from Bell when the two got together at Frank's studio in L.A.

"I found it quite difficult, to be honest," Bell recalls. "I'd never done it in this way before. Frank has so much compression going in, and that's what he's used to doing, so it was quite hard for me to sing melodies because you're really singing on the top of your voice. I was right on the edge of my throat, just to get through the system, you know?"

The resistance comes from Frankmusik's signal chain. Starting with a Blue Baby Bottle microphone, the vocals pass through an Avalon VT-747 compressor before they get slammed by a Universal Audio 1176. "It makes you really have to *sing*, because you're fighting that compressor at the very end," Frank says. "I usually set the attack on the 1176 to about 11 o'clock, and the release and input to about 2 o'clock. Then I really push back the output, to about 10 o'clock, so you have to sing twice as hard just to hear yourself decently. I think Andy *hated* working with me because of that."

Singing through all that compression might be a bitch, but the results, in Bell's case, are stunning. On "I Lose Myself," one of the few songs on the album that sounds like a throwback to Erasure's heyday, Bell is singing an octave higher in the chorus than he did on the original demo, and the power that he unleashes really propels the song to another level. "I said to Andy, 'You need to

"You could say that the Erasure sound from the past is fairly minimal, whereas what Frank brought into the mix was a very maximum sound—it's almost like a wall of sound."
—Vince Clarke



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sing this an octave higher, and you need to give it everything you've got,'" Frank recalls. "The verse is so feisty that the chorus had to hammer that last bit—that's the payoff."

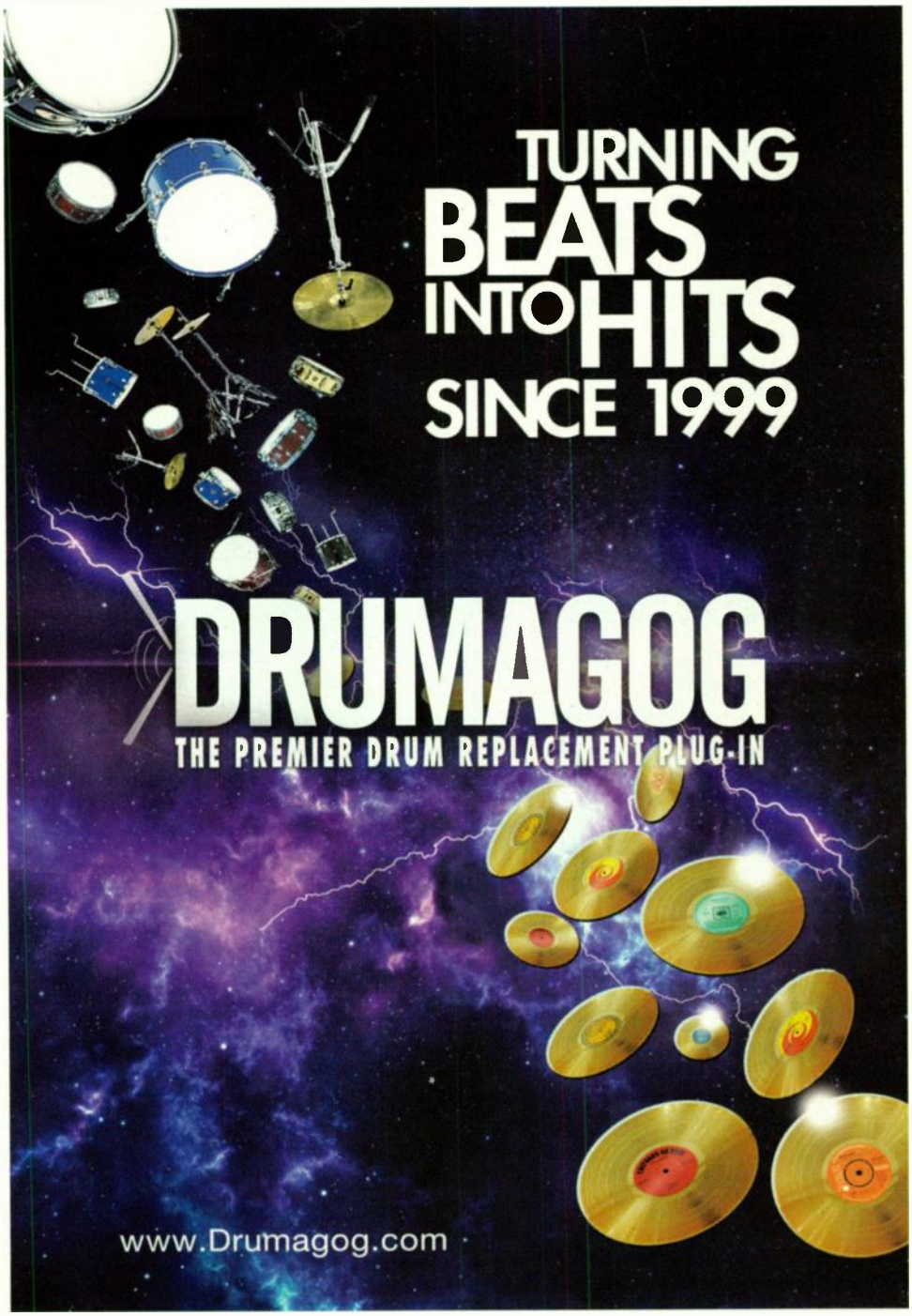
Bold New Steps For musicality and radical production moves, Erasure's latest is right on the edge, but what diehard fans will likely notice first is the group's embrace of more down-tempo percussive styles that don't fall neatly into the simple "dance music" category. The change stems in part from Bell's desire to paint a deeper and more detailed emotional picture with his lyrics; isolation, frustration, loss, and redemption have always been key themes for him, but lately they seem to have taken on even more importance and urgency.

"You don't realize the tremendous courage that it takes just to be out and open and honest, especially in the music business," he says, his voice rising. "You get it all the time in the snide UK press—always these barbed homophobic comments that you hear within straight society. So I wanted to manage to say *something* in some way, on an instinctive, subconscious level really, and I think that comes through on this album. A lot of the music to me sounds like a maelstrom going on, which seems to be what's going on around the world lately, but that's exactly what we were after."

"You don't realize the tremendous courage that it takes just to be out and open and honest, especially in the music busines." —Andy Bell

For Frankmusik's part, the music had to be reflective of that level of emotion. It's a connection he explores the furthest in "What Will I Say When You're Gone?"—a somber but hopeful tribute to a friend that's arguably one of the album's signature songs. "The one thing I'll say about this track from the production side is that I come from the hometown of dubstep. I come from Croydon in South London, where it all started, and I'm not a big fan of dubstep, funny enough, but the tempo of the track is 145, which is pretty much the dubstep format. I wanted to do something at that tempo, with a similar percussive format, but make it utterly beautiful and exceptionally musical."

As it turned out, matching the mood of the lyrics could only happen with the right drum treatment. "Initially the percussion in the verse was almost too heavy," Frank explains, "and it was actually in the last week of mixing the album that we made them very small. I just laid together a few drum sounds from [Kontakt's] OTTO and put them through the old telephone filter in Logic, and then I layered that with a FabFilter Volcano, just to really squeeze every bit of density out of it. When you know the back story to that song, it's achingly beautiful, and I wanted that to be in the work." ■



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LISTEN

DJ Shadow

Crafting beats from thin air

BY KEN MICALLEF

One of the last of the great vinyl-sampler-spinners, a pioneer in both textural atmospherics and technical esthetics, DJ Shadow (aka Josh Davis) casts a shiny vinyl shadow. His 1996 debut, *Endtroducing*, is part of the fabric of modern production and DJ culture, in the same stroke as masterworks by Public Enemy, De La Soul, and Portishead. Davis continues to evolve, yet his sonic stamp is clear—from ethereal moods and pulsing beats to full-on *rawk* send-ups to classic hip-hop missives. Two current releases reveal Davis' churning mind: *I'm Excited*, an EP, and *The Less You*

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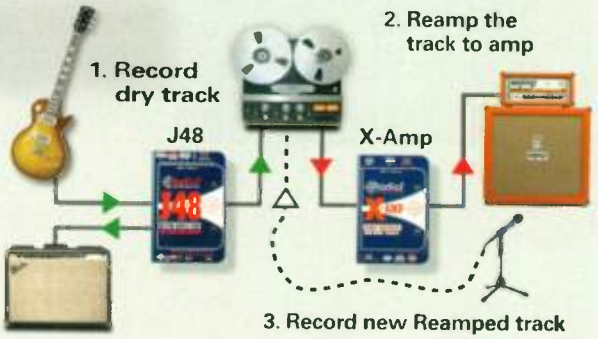

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Know The Better, only his fourth album in 15 years and his most forward-looking (if familiar) offering yet.

"My process is much the same as it's been since I first became a DJ 27 years ago," Davis says from Mill Valley, California. "You're playing records and trying to hear a couple things in a row that might work as a mix. At that time, I was inspired by the DJs on the radio who were starting to mix records together. Then once I got into learning the secret art of the breakbeat and the secret knowledge that you really had to work to discover—what these beats were, and what these samples were that I was hearing on hip-hop records—I'd listen looking for something similar to what DJs have always looked for: something unusual, something that sparks the imagination, and something the establishes the basic backing track that could carry a song."

Until very recently, Davis still worked a trusty Akai MPC as his main locomotion at his home studio. But for *The Less You Know...* he ran Pro Tools on an Apple PowerBook G4, aided by Native Instruments Maschine.

"It's like a virtual MPC," Davis explains. "Native Instruments sensed an opportunity to convert MPC users who were frustrated with the ability to go in and out of the box fluidly. They're not trying to make it feel like an MPC, but it does have a lot of the same functionality, with all the conveniences of having your sounds live in the box rather than having to import files from the MPC to your computer." He adds that Maschine introduces a tactile environment back into the beat-making process: "You can play beats with your hands-on buttons. just like the MPC's pads. But instead of triggering sounds that live inside of its hard drive, it's triggering the samples within your laptop. You can play beats out to a click the same way you would on an MPC. I did that on some of that on the album.

"On other songs, I bypass Maschine," Davis continues. "Some of the songs I made on the new record I didn't want them to feel programmed in the same way. I've gotten good at treating Pro Tools as a tracking device and chopping things up within Pro Tools and moving them around in more of a collage esthetic than a drum machine esthetic. And I still sample from vinyl."

Davis sampled vocals from vinyl, but also worked with Little Dragon's Yukimi Nagano, De La Soul's Posdnuos, and Talib Kweli. And though he likes to keep digital artifacts to a minimum, if necessary, he treats vocal samples with a Fairchild 660 plug-in, Waves effects, and basic EQ and compression (especially to the extreme top and low end).

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"My process is much the same as it's been since I first became a DJ 27 years ago...You're playing records and trying to hear a couple things in a row that might work as a mix."—Josh Davis

"Josh loves the processing of sounds so that they evolve during the course of a song," explains mixing engineer and producer Jim Abbiss (Adele, Kasabian, Arctic Monkeys). "To his samples I try to match interesting equipment processes that you can't do with plug-ins. Plug-in effects are limited by what the designers or programs allow them to do. With plug-ins, you won't ever push the inputs to distort or make it feedback in a way it wasn't designed for, like the Roland TB 303, which was meant to accompany organ players on pub gigs. We use harmonic generators, harmonizers, reverb units, tape delays; generally run the samples through them to process the sound. I also used a DeltaLab Harmonic Computer, a crap old piece that did auto-harmony parts; we feed it back on itself to create new frequencies."

"Unless I want to make a track to sound really f**ked up," Davis adds, "I try to avoid people detecting any kind of digital artifact. I don't like hearing squishy hi-hats, for example, that sound like they've been messed with digitally. I don't want people to detect manipulation.'

As well as processing sounds though hardware effects, Abbiss focuses on the low end of Davis' productions. Sampling ancient, obscure LPs presents many problems, not the least being thin bass samples.

"We filter and EQ the bass samples," Abbiss explains, "but that can bring up negative aspects. There may be phase or rumble, so you have to be careful to reinstate good-quality bottom end. We use subharmonic synths, re-amping certain sounds, all manner of things to compensate for what we may have to remove in the lower frequencies. I like the dbx 120A Subharmonic Bass Synthesizer; it puts in subharmonic versions or multiples of the frequency going through it. It adds lower octave harmonics to the sound. If you can filter the original sound so it's pure and there isn't any lumpy bottom end, you can extend that cleaned-up bottom end two octaves below it using the dbx 120."

But at the end of the recoding day, sometimes Davis simply rips it old-school—effects, Pro Tools, and computers be damned. The track "Stay the Course" is classic hip-hop filtered though the DJ Shadow mindmeld.

"I stitched that together in my classic MPC sensibility," Davis says. "There is no break that sounds like that. It's a short drum fill that I turned into a break, which I like doing. I like having moments on a record where I can imagine in the future a few of my peers might figure out what I used on that beat, and think, 'How did he turn this into a beat? There's nothing there!'" ■

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Fool's Gold at Infrasonic (left to right)—Lewis Pesacov, Luke Top, engineer Eric Palmquist, Brad Caulkins, Salvador Placencia, and Garrett Ray.

Photos by Pierre Auroux

World Radio History

Fool's Gold

Aiming for a deeper, more mysterious tone on *Leave No Trace*

BY ANGELINA SKOWRONSKI

"OUR FIRST LP, *Fool's Gold*, was thought of as upbeat, but in actuality the tone is much more melancholy," says guitarist and producer Lewis Pesacov from his L.A. domain as he packs for the first of two European tours this year. "So for the second album, we wanted to pull those dark tones we tried to create in the first."

The band—Pesacov, Luke Top (vocal, bass), Brad Caulkins (multi-instrumental), Salvador Placencia (percussion), and Garrett Ray (drums)—recorded *Leave No Trace* entirely live, in one room, tracking to an Otari MTR90 2" 24-track, completing the live tracking in a mere four days at Infrasonic Sound in Los Angeles. Lewis collaborated with recording engineer Eric Palmquist and mixer Noah Shain at Infrasonic to keep the album simple. "We wanted something physical, not just a bunch of zeros and ones, which is why we chose analog," says Pesacov.

To keep the darker tones, the team liberally used EMT 140 stereo plate reverbs and AKG BX20 spring reverbs in conjunction with tape delays and vintage synthesizers. "We did this to create an ambient and fitting sonic landscape for the songs to live in," continues Pesacov.

Pesacov and Caulkins played the same two guitars on the whole album. Pesacov played a 1978 Ibanez Professional 2680 Bob Weir signature series with a 1981 Boss CE-1 chorus pedal and an Electro-Harmonix Holy Grail reverb pedal, through his own '90s re-issue Fender Deluxe Reverb amp modified at The Amphole repair shop in L.A. Caulkins played a late-'60s Gretsch Roc Jet through a Roland JC-120 Jazz Chorus amp. Each amp was miked with a Shure SM57 and a Beyerdynamic M160, and mic tracks were then blended. "I'm a big fan of simple guitar miking," adds Pesacov.

Drums were treated in the same regard, with "nothing fancy," according to Pesacov; miking remained the same for the album's entirety, with the kick drum miked inside and out, tom, stereo overhead, and stereo room mics. The snare drum for the track "Leave No Trace" received some magic: The snare spot mic, a Shure SM57, was sent to EMT Stereo Plate reverb; in turn, the signal was then sent to a Roland Dimension D outboard stereo chorus effects unit to capture a lush snare sound. "In 'Leave No Trace,' you can hear that snare drum wash back and forth," says Pesacov.

The vocals were recorded as overdub with a Telefunken 251 through a Manley Pultec EQP-1A and a Manley ELOP compressor. "The vocal effects really helped to create a lush mood," explains Pesacov. "I used a 1973 Maestro Echoplex tape delay for a slap-back echo, as well as the EMT Stereo Reverb, both were also recorded onto the 2" tape machine at 15 ips."

That same track took on other instruments that are non-traditional to the Fool's Gold line-up; a 1963 Hammond A-100 organ was recorded in overdubbing sessions.

"We have spent the past two and a half years on tour and so much happens when we play together in the same room," explains Pesacov. "*Leave No Trace* is a gesture to playing live. We feed off each other's vibe and captured it on tape." ■

"*Leave No Trace* is a gesture to playing live. We feed off each other's vibe and captured it on tape." — Lewis Pesacov

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Bob Power

On the 20th anniversary of A Tribe Called Quest's *The Low End Theory*, the legendary producer/engineer reminisces about recording the landmark hip-hop album

BY CARL JACOBSON

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A Tribe Called Quest (left to right)—Q-Tip, Phife Dawg, and Ali Shaheed Muhammad.

"I spent a lot of time on *The Low End Theory* taking extraneous noise out of the samples—something I'd never do today—which is one of the reasons why it sounds very dimensional. Back then, we didn't have software that did it, so I did all sorts of nutty things."

TWENTY YEARS ago, rapper/producer Q-Tip, DJ/producer Ali Shaheed Muhammad, and rapper Phife Dawg, collectively known as A Tribe Called Quest, returned from the studio with *The Low End Theory*, a watershed album that ushered in a new era of hip-hop. Sounding fresh even today, the record has gone on to earn "top albums of all time" recognition from no less than *Rolling Stone*, *Spin*, *Vibe*, *The Source*, *Blender*, *Pitchfork Media*, the *All Music Guide*, and countless artists. The group is also now the subject of a new documentary film directed by Michael Rapaport entitled *Beats, Rhymes & Life: The Travels of A Tribe Called Quest*. With rekindled interest in the group on the 20th anniversary of this groundbreaking recording, what better time to dig deeper into the making of *The Low End Theory*?

This summer I had the pleasure of interviewing Bob Power, who engineered this landmark album. Power has produced, recorded, and mixed thousands of recordings (including numerous Grammy winners) for the likes of Erykah Badu, D'Angelo, India.Arie, Ozomatli, Common, Miles Davis, The Roots, Macy Gray, Curtis Mayfield, David Byrne, and Citizen Cope. He's also now a faculty member at the Clive Davis Institute of Recorded Music at New York University, but in 1991, he was a young man engineering one of the most influential albums of all time.

How did you come to work with A Tribe Called Quest?

In the later half of the '80s, this new wave of hip-hop, The Native Tongues, started coming through the studio—De La Soul, Black Sheep, the Jungle Brothers—and in 1989, Tribe Called Quest came in, with another engineer, Shane Faber, to make their first record, *People's Instinctive Travels*. We all got along really well, and I ended up splitting that first record with him. I then went on to do four records with them.

What's so special about *The Low End Theory*?

The Low End Theory was an interesting record; in a way, it was *The Sgt. Pepper's* of hip-hop. It's a record that changed the way that people thought about putting music together. I'm not a big hip-hop historian; I just know the stuff that I worked on. Until that point, when people used samples on records, it was pretty much one loop that played throughout. With *The Low End Theory*, and *People's Instinctive Travels*, to a lesser extent, Q-Tip and Ali Shaheed were at the leading edge of a new wave where people started making elaborate musical constructions out of samples from different places that would not, and in many ways, could not, have been played by regular players. It was a big growth time for all of us. I was learning a lot, they were learning a lot, so it was fun.

What do you mean by, "could not have been played by regular players"?

Musicians study all their lives how to fit into a track, stylistically and tie-wise. With elaborate sample constructions, these sounds weren't made

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"Records are a moment in time; you can't re-create that moment. So many different things come together—the place, the social and musical ethic of the times, the personalities, and also the intangibles, like, 'wow, it was a good night.'"

to go together in the first place, so the time feel would be very unique to the specific combination of samples from different records. If you told a musician, "play this part on this track," he would play *to the track* and it wouldn't have the "rub" of the parts that were never meant to go together. I used to get hired to replace guitar samples, to replay them for copyright concerns. When I first started doing this, I played the part to the new track and it never sounded right. Once I started playing to, and only listening to, the source track, and playing with that time feel, all of a sudden it worked. That's probably a good tip for anyone who has to re-record a sample.

How were these records realized in the studio?
I took a lot of pains to make sure it worked. They would often bring in stuff sequenced on an E-MU SP-12 or the early Macs. You couldn't slip tracks on the SP-12, so I'd say to them, "Let me go away for 45 minutes with this." I'd then take it into my Atari, running Creator (the precursor to Logic), where I could do track slipping and slide things around until it felt good, but not so much that it took all of the soul out of the music.

I also spent a lot of time on *The Low End Theory* taking extraneous noise out of the samples—something I'd *never* do today—which is one of the reasons why it sounds very dimensional. If you listen, you won't hear a lot of surface noise, crackles, or pops. Back then, we didn't have software that did it, so I did all sorts of nutty things. Among other things, I used an esoteric piece of gear called the Burwyn Noise Eliminator, and some high-end home stereo components that took clicks and pops out. I brought those into the studio, got an impedance-matching box, went through the tracks.

How about the process of the recording itself? Do you remember how the sessions were structured, the order that things were laid down, etc.?
That record was tracked mostly at Battery Studio [in New York City]. In most cases, the drums and bass would go down first, then layering in other elements. One of the issues at that time was sample memory. A standard Akai S-900 had, I believe, less than two seconds of sample time—750Kb or something. So we'd have to lay down tracks, load up a different sample, and repeat. I mixed the record on a Neve 8068.

***The Low End Theory* is noted for introducing people to the connection between hip-hop and jazz. Legendary jazz bassist Ron Carter played on the song "Verses from the Abstract"; what was it like to work with him?**

Let's start with an engineering tip: If the musicians are good and studio-savvy, always ask them what they do and what sounds best on their instrument. They know how they sound best, and if you do that, they'll play better and make you look very good as a recordist.

I said, "Ron, this is how I'm going to record you; is that okay?" I was going to compress him a little with my old Neve 2254E, but he said, "no compression." So I just put my old Neumann U47 on him, and he loved it and sounded great.

Tip had a bass-line riff from a record that he wanted Ron to play. Ron sketched it out on staff paper and went into the booth. He started playing, and a couple of notes weren't right. Tip, Ali, and I all looked at each other, and were all like, "No, *you* tell him." This is *Ron Carter*, after all. We were all shaking in our boots, but I went in and said, "Ron, look, the last 16th note, it's an E♭, not a B♭" And he simply said, "Okay," and played it right.

For me, that track was a great lesson in professional musicianship. We were worried about Ron being a bit prickly, but discovered that he's really just a super-pro working musician. If the circumstances are professional and he's not cast adrift . . . if you have a chart and know what you want, he comes in, does his job, and is great.

Talk a bit about "Scenario." That's a hugely influential track and might be the greatest "posse cut" of all time.
"Scenario" was huge for A Tribe Called Quest, and as far as I know, a real breakout track for Busta Rhymes, formerly of Leaders of the New School.

There was electricity in the air that night. What you hear is really what went down in the studio: all the MCs feeding off each other, one after another.

To get the best, sonically, but also to keep the flow going, I set up five different mics in the booth. Each MC would come in, and I'd ask, "Say the same thing on each one." They'd go through the mics; I'd say, "number 4," and we'd cut the vocal.

Everyone did their rhyme and then Busta came in with one of the great recorded MC performances of all time: "Oh my God! Oh my God!" I remember being blown away by the pure, visceral energy, and Busta's feature raised the bar considerably that night.

Speaking of "Scenario": Miles Davis, Ohio Players, Kool & the Gang, The Emotions,

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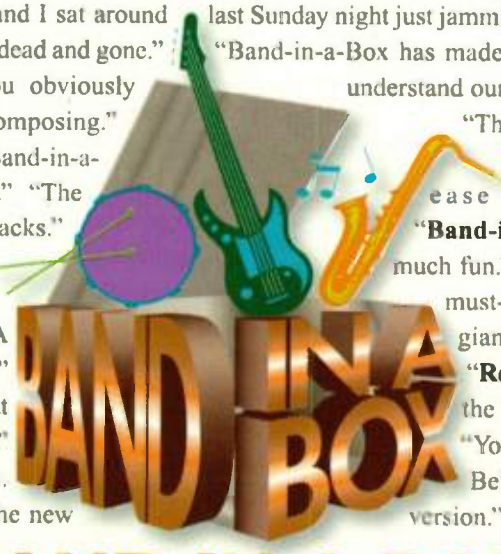

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Hendrix . . . so many samples. Do you think that that record could be made today?
It *could be*, but I don't know if it *would be* made today. Nor would it have the same resonance. I know you're speaking about something different, but records are a moment in time; you can't re-create that moment in time. So many different things come together—the place, the social and musical ethic of the times, the personalities, and also the intangibles, like, "wow, it was a good night." These things generally never happen in the same way twice, especially in different musical eras.

People have done and continue to do records like that since then, but they don't have the same resonance. I wonder how much of it is that the newer record doesn't have universal appeal or that those sounds were fresh and more appealing to us at the time?

Another example: People say, "Why doesn't Stevie Wonder make the kind of records he used to?" But if he did, they'd say, "Oh, he's just doing the same thing," and then if he changes too much, they'd say, "That's not as good as the old stuff." It's tough to call that one. One of the wages of success.

How did *The Low End Theory* affect your career?
It hugely affected my career. Partially because Tip called me out on the record a couple of times, and there was that funny little, "Bob Power . . . you there?" skit.

Often, when MCs were doing takes, I wasn't really listening to the words; I was listening to the music, paying attention to the console, making sure that everything was happening sonically and technically . . . but this time, I was really into his rhyme he was doing, and he goes, "Yo, my mike is sounding bug; Bob Power, you there? Adjust the bass and treble make my shit sound clear." After the take I said, "You should have me on the talkback going, 'Yup,' and answering you," and he said, 'Yeah, that's what I meant.' So it was a funny synchronicity.

It was also a big growth time for me as an engineer. I took a lot of time with the sonics of that record. I have a certain way that I go about things, and it's hard to explain verbally, but it's nice when you have a big, full low end but there's still definition within it. It was fortuitous that I did so

"I have what I call 'Power's Laws of Production.' One is, 'you need to know when to keep the good mistakes,' and another, 'every song should have one thing that doesn't belong there.'"

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much hip-hop early on, because it forced me to get a handle on low end, which is usually the big, final frontier for engineers. It's often the hardest thing to really get together.

Is there anything different in your approach to how you'd mix hip-hop as opposed to rock?
In hip-hop, for the most part, the bottom has to be pretty aggressive. Although when I mix rock stuff, it also tends to be pretty full and muscular on the bottom. I like to mix "tall," meaning that I like everything to be well-represented, top to bottom. A lot of people, especially with rock stuff, like to work in the mid range a bit more, so that's where my approach is different.

You continued to work with Tribe on *Midnight Marauders* and beyond; how were the later sessions different?
It was clear right away that they wanted *Midnight Marauders* to be a grittier album. Tip even said as much to me. So I didn't spend the time cleaning samples like I did with *The Low End Theory*.

I think a record should be as interesting to listen to on a purely sonic level as it is on a musical level. On the other hand, a good record is still about a compelling performance of a great song. I have what I call "Power's Laws of Production"—truthfully, they're neither laws nor all mine—that I use as talking points in my classes at NYU. One is, "you need to know when to keep the good mistakes," and another, "every song should have one thing that doesn't belong there."

One of the big things that hip-hop taught me is that everything doesn't have to be shiny, like a Barbara Streisand record. Just like an outfit, you can have different pieces of clothing that are a little worn but have lots of character. As much as I used to fight it, it's usually the things that are kind of f**ked up and not quite right sonically and/or musically, or really funky source material, that give the record its special and unique flavor. ■

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World Radio History

Apparat

The German techno innovator embraces imperfect sounds

BY TONY WARE

IN THE past five years, Sascha Ring has been haunted by the dead and possessed by some impulsive spirits.

Ring, a Berlin-based producer and original member of the Shitkatapult label, spent much of the new millennium establishing himself as an arterial-meets-ethereal sound designer recording under the name Apparat. His electrocoustic works, including collaborations with Ellen Allien and remixes of numerous peers, built on an adolescence steeped in post-Detroit techno arrhythmia and Warp Records harmonic diffusion. Tracks never lacked a sense of immediacy or animation, but they still held an equally hermetic quality. "I was some kind of musically autistic person ... sitting in the studio on my own for a long time," he laughs, acknowledging an undeniable influence.

Saturating deliberately paced sessions with cycles of alternating microloops, granular reverbs, and other expressive bit-crushing, Ring was left with a hard drive of what he describes as *songleiche*, or audio corpses—remnants of compositions never completed for public consumption. In 2008 Ring took these cadavers

Constantin Falk

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NATIVE INSTRUMENTS

THE FUTURE OF SOUND

World Radio History

Sasha Ring in the studio.

and collaborated with production duo Modeselektor to vivify them on an album under the project/album name *Moderat*. And it is in the wake of that album's 2009 release that Ring decamped from the familiar to conceive his fourth Apparat album and Mute Records debut, *The Devil's Walk*.

"*Moderat* is the reason my album sounds quite organic and analog, because with *Moderat* everything was inside-the-box, all programmed in Logic because it was the easiest way to exchange ideas," reflects Ring. "I'm happy to still consider Moderat as my second band, because it gives me the freedom to still do all the electronic stuff; it's where I can put all the rave ideas. And it also lets me play around more with what Apparat is, how it can be more poppy. And being able to completely change how I work keeps me inspired."

Ring did more than change up his drum sequencer, synths, or DAW to get out of his normal workflow. Accompanied by musicians Joshua Eustis (Telefon Tel Aviv), Fredo Nogueira, and Jörg Waehner, Ring rented a house, "Casa Magia," in Sayulita, Mexico, far away in body and spirit from the crisp gradients of Germany.

"I had built myself a nice studio for the Moderat album, but for this Apparat album I wanted to work with sounds that don't sound perfect," says Ring. "So we took a laptop, some preamps, and microphones, and went to record like a band, moving drums around this house ... using nice gear but not caring about mic placement or if things sounded a little f**ked up. It was playing with Legos instead of doing a computer-aided drawing; it was very playful, direct, and intuitive, and I found it very inspiring."

Armed with Soundelux U195, Sennheiser MD 421-II, and Neumann KMS151 microphones, a MacBook with an Apogee Ensemble, and an API Lunchbox, the participants experimented with the space, hanging mics from rafters and creating modular studios out of black fabrics draped in closets, hallways, and the *palapa*, a thatched-roof porch lined with open windows. Vocals, guitars, drums, keyboards, and other sound generators were tracked and then compiled into song arrangements. Returning to Berlin and surveying the sessions, however, Ring found himself battling old demons. "I realized it wasn't the record I wanted to do and it was just completely my fault, because I overworked everything again," admits Ring, who had traded the temptation to obsess over digital's infinite options for an infatuation with over-processing analog sources.

Ring then took a three-month break before connecting with Patrick "Nackt" Christensen, who co-produced the second sessions for *The Devil's Walk* between his studio, Chez Cherie, and Ring's own home base. Nackt provided an ear free of emotional attachment, pressing mute on many, many sounds that were declared superfluous, as well as adding string arrangements and providing additive instrumentation. The two kept the spirit of the first sessions, however, recording as much natural response as possible.

"I have favorite instruments, like my Nord Wave, and I would rather spend time figuring it out to get the sound I want directly than later pile it with EQ and plug-ins," says Ring. "I have things I do run, like Pluggo from Cycling '74 and Native Instruments Guitar Rig, because I want to make certain sounds more interesting, more wide. I definitely treat most things in the computer, but I'm trying harder now to set things right while I record them. I want to avoid MIDI quantization as much as possible, and to bury in real sounds, little noises."

This dogma to keep as much as possible within the physical realm extended in several directions. These included tweaking mistake-flecked guitar runs till they sounded like synths; replacing scratch tracks generated in Reaktor with percussive flourishes from pianos, pounding metal, and mallet instruments; plus creating single-minded processing modules out of

Willi Bîhm

World Radio History

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old gear like a Korg MS-50 modular synthesizer. "But I just run audio through the output section, and maybe also the filter," explains Ring. "Once you just turn the output completely up, it always generates this really, really cool hiss and a little crackle. You run a bass sound through and it distorts in a nice, thick, sparkly way."

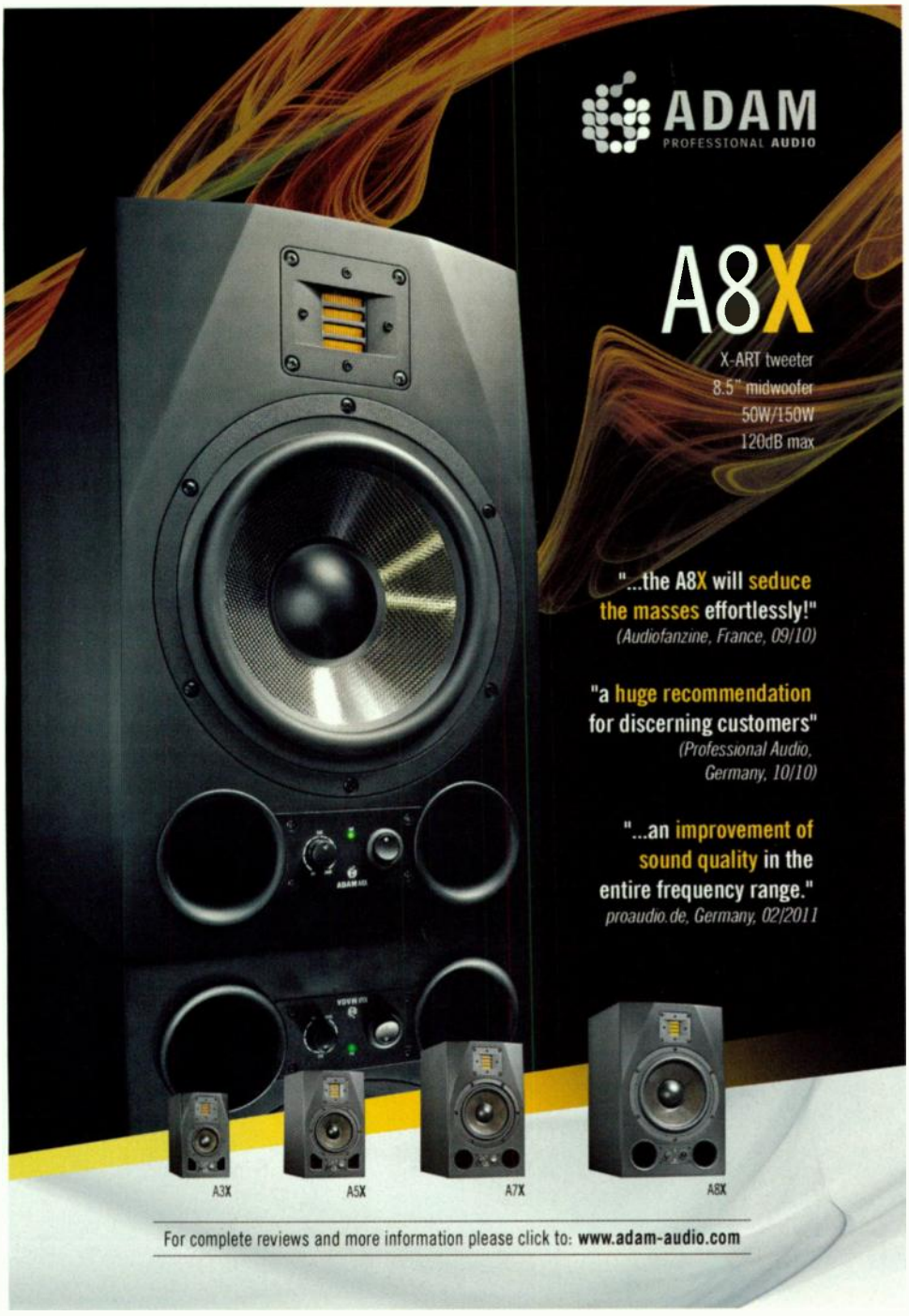
Additionally, Ring used an Altec 1612a preamp repeatedly to generate what he describes as a "mids-y, old, and sh*tty" sound to impart distressed character to certain elements, such as mandolins in the album's lead single, "Ash/Black Veil." "The Altec definitely makes some frequencies disappear, but it doesn't sound annoying," Ring says.

With its drum snippet palpitations, bow scrapes, and sighing decays, "Ash/Black Veil" stands as a template of the album's initial blueprint—an elegant textural tension influenced by Roxy Music and the Cure and akin to the melancholic bliss of Doves or Radiohead or a remixed composition of a contemporary classical minimalist composer than some track by a tech-house/dubstep-influenced DJ who plays Fabric and records mixes for *DJ-Kicks*. In contrast, "Song of Los" is the most sequenced, holographic, artificially augmented, and therefore furthest from the concept.

Having Nackt's studio accessible also allowed Ring to revisit the vibe of the palapa. Whereas the Apparat studio has a single small room with a flat frequency response, Chez Cherie offered a large loft space with portable rigs/walls where more room could be recorded (though it was dialed down in the final, more intimate mix). Even at the Apparat studio, elements would be backed off the mic by meters to get as much roominess as possible.

To enrich the presence of his vocals, which anchor many tracks and act as another directly manipulable instrument, Ring switched to a Bock Audio 151 cardioid tube condenser mic with a Universal Audio 6176 pre/compressor, as he felt the tone was similar in thickness to a vintage Telefunken ELA-M 250. The one number Ring doesn't sing is "Goodbye," which features Anja Plaschg of Soap&Skin and holds the hushed, hazy lope of certain songs by mellifluous Swede duo jj.

In the end, Ring crafted an encompassing album intended to gradually unfurl during front-to-back listening in concentrated sittings. *The Devil's Walk* is possessed by soft-focus dream-pop, dusky syncopation and affecting swells that Ring equates to Bon Iver records rather than electronic music's culture of flurried singles. He hopes the album won't lose context by having its songs plucked out and orphaned in playlists, as the sequence exerts a pulmonary rhythm throughout its 10 oxygenated, aspirating tracks. Systolic longing pulses beneath arpeggios and ruddy flushes of cloistered harmonies, offering a testament to a fleeting summer of rediscovery and the dynamics of a corporeal aesthetic. ■



More Online
Read interview outtakes with Sascha Ring.
emusician.com/october2011

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Chuck Leavell

Keyboardist for the Rolling Stones for over 28 years. Songwriter. Solo artist. Musical director. Music Hall of Fame inductee and environmentalist.

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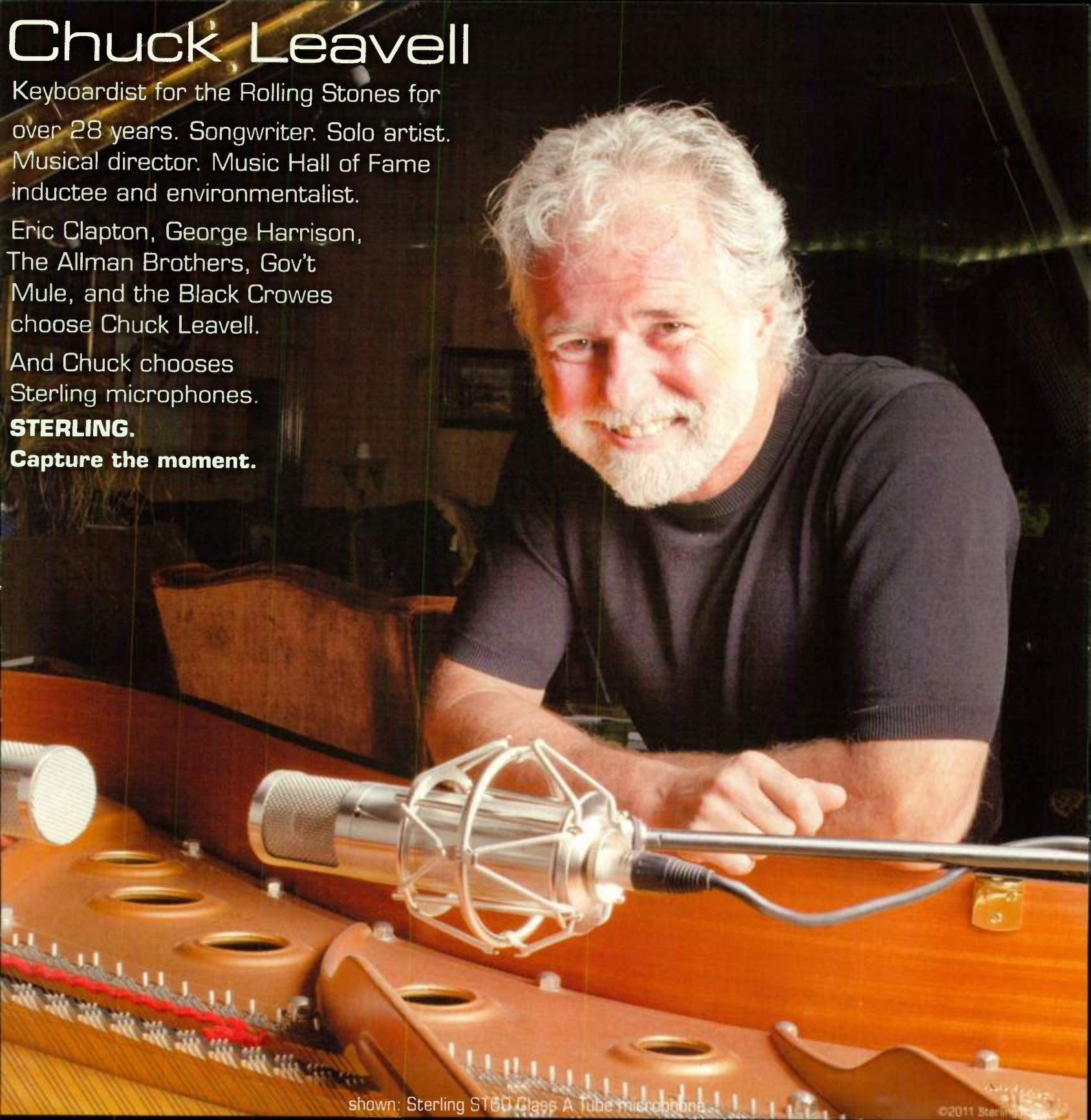

shown: Sterling ST69 Class A Tube microphone

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STERLING

See our Chuck Leavell interview at
YouTube.com/SterlingMicrophones or visit sterlingaudio.net

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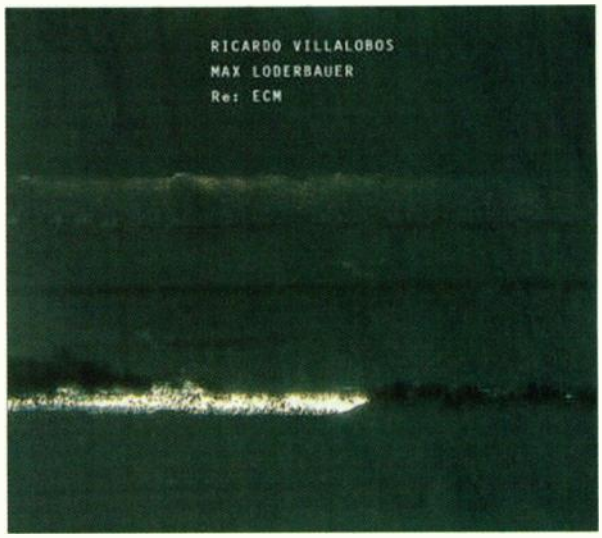


Ricardo Villalobos

Re: ECM

ECM

WORKING WITH a live mixing board and modular synthesizers, Chilean-born DJ Ricardo Villalobos and techno artist Max Loderbauer manipulated tracks from the ECM catalog, the results sounding more like the combined pauses, rests, and silences within the music than the music itself. The duo isolated atmospheres, voices, choirs, and instruments, and then looped them, which became the basis or root for further experimentation. It's largely a quiet ride, like the moment between consciousness and sleeping, when thoughts turn into sweet dreams or nightmares.

KEN MICALLEF

Wild Flag

Wild Flag

MERGE

The estrogen is bubbling over on the debut from this alt/punk supergroup teaming Sleater-Kinney singer/guitarist Carrie Brownstein and drummer Janet Weiss, Helium singer/guitarist Mary Timony and Minders keyboard player Rebecca Cole. The artful racket served up by these DIY-rooted gunslingers (captured live off the floor by engineer Chris Woodhouse) leaves ample room for the Brownstein-Timony guitar fireworks. Highlights include the careening, harmony-laced opener "Romance" and "Endless Talk," which splits the difference between the Patti Smith Group and the Shangri-Las.

BUD SCOPPA

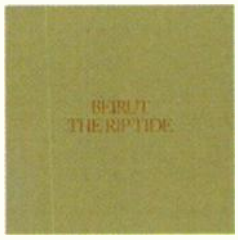
Various Artists

Download For Good

ITUNES EXCLUSIVE

No doubt director David Lynch's vision of a calmer, brighter world through transcendental meditation is shared by many of the 33 artists featured on this diverse compilation, which benefits Lynch's TM teaching programs worldwide. There's much to enlighten here, from Andy Summers and Geeta Novotny's "Ave Maria" to Rodrigo y Garbriela's flamenco fireworks on "Satori." As a pairing with this graceful and noble collection, gain some candid insight into boosting creativity by reading Lynch's book *Catching the Big Fish*.

CRAIG DALTON



Beirut

The Rip Tide

POMPEII

Unlike Zach Condon's last effort as Beirut, *The Rip Tide* takes Beirut's marching drums, clunky synths, brass band instruments, and accordion into more experimental terrain. *March of the Zapotec* was like a wild gypsy ride complete with wedding band and funeral procession. *The Rip Tide* can't be contained in simple parameters. Condon's vision is wide, his arrangements broad, from the field-band brass roar of "Sante Fe" to the chugging, 1890s feel of "East Harlem," to the orchestral grandeur of the title track.

KEN MICALLEF

Tom Russell

Mesabi

SHOUT! FACTORY

Troubadour Tom Russell has been writing and singing folk songs about the West since the early '70s. An occasionally strident storyteller, his recordings are populated by cowboys, drunks, movie stars, and meth addicts. *Mesabi*'s beauty lies in Russell's finesse working traditional Mexican folk guitars, accordions, and horns into his lonely desert soundscape. Also featured are guest appearances by Lucinda Williams, Van Dyke Parks, and Calexico.

BARBARA SCHULTZ

The Kooks

Junk of the Heart

ASTRALWERKS

Despite the occasional synth burp, The Kooks remain righteously retro on their third album, tailor-made for playing on a sunny afternoon. The 11 compact songs form a cavalcade of ginormous major-chord hooks, fallen-choirboy harmonies, Charlie Watts-steady snare hits and unremittingly good vibes, even when Luke Pritchard is singing "Fuck the World Off" in his nasal, languid tenor, a dead ringer for the young Ray Davies. And "Taking Pictures of You" is as pretty as a Waterloo sunset.

BUD SCOPPA

Eilen Jewell

Queen of the Minor Key

SIGNATURE SOUNDS

With her intoxicating, sultry voice, Eilen Jewell is often compared to Madeleine Peyroux, and there is some sonic similarity there. But Jewell's arrangements also channel Big Maybelle—full of soul and witchcraft. At least half of the original tunes on this beautiful, provocative record would make a great sax-laden soundtrack to a noir-ish nightclub scene in a film. Others are old-school country ballads with pedal steel and fiddle taking over. This is a real throwback gem.

BARBARA SCHULTZ

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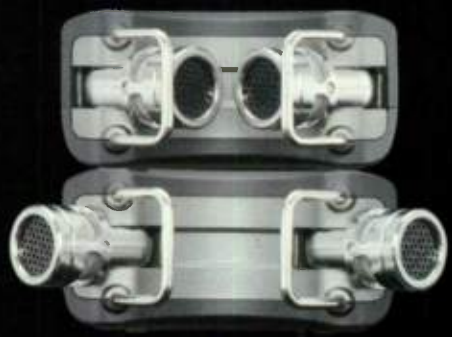
Game on.

● XLR line level input



● Adjustable cardioid microphones

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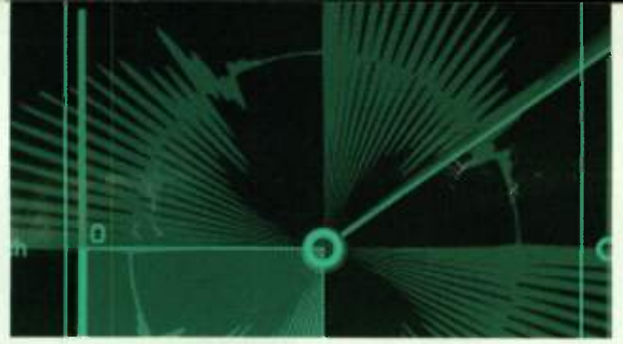

World Radio History

Roundup

Loops, Samples, Kits!

The next generation of sound libraries has arrived

BY CRAIG ANDERTON

World Radio History

IT MAY be hard to believe now, but videogame consoles crashed and burned in 1983, when companies trying to cash in on the craze flooded the market with sub-standard games. But that was then, and this is now; these days, a new game in, say, the *Mass Effect* franchise gets the same kind of response that a new Beatles album received back in the '60s.

Loop and sample libraries may be following the same kind of arc. When they first hit the world, people couldn't snap them up fast enough. But frankly, quality wasn't uniform, the bloom came off the rose, and a lot of companies went back to the drawing boards.

Now they've emerged with a new generation of sound libraries, and the timing is right. Part of it is the general downsizing in today's economy—with a decent library, you really can produce a pretty good video soundtrack before the FedEx dropoff. But that's not all. Dance music is (of course) a primary consumer of loops; however, as its various musical sub-genres mutate like drosophila on speed, there's a constant quest for more exotic, boundary-pushing sounds. Even rock bands are getting into the act by adding a track of exotic percussion, or maybe some sampled parts to complement the "real" ones.

This roundup surveys the current soundscape, from traditional loop libraries and construction kits, to virtual instruments that think they're loop libraries, to virtual "needledrop" music, to libraries that provide the sounds while you provide the playing—as well as some products that defy easy categorization.

The one bummer: We got more great stuff in for review than we had space to review it all in, and our publisher didn't think it was such a hot idea to use 4-point type and include a magnifying glass with each issue. So we'll be doing more coverage of sounds in the months ahead—while waiting eagerly to see what the sample librarians come up with next.

More Online
Check out audio demos of products.

emusician.com/october2011

Kontakt is hosting *West Africa*; note the mixer toward the bottom, with the limiter effect being edited. The colored keyboard keys indicate articulations and other performance-oriented aspects, while the Pattern Player generates loops.

Native Instruments *Discovery Series: West Africa*

Style: Authentic West African music
Product type: Virtual instrument with looped patterns and playable instruments
Loop formats: Playback within free Kontakt 4 Player, can sync to host tempo
Stats: 26 percussion instruments, 8 melodic, 888 patterns total (including variations)
Documentation: Well-written PDF with useful, applications-oriented info

This library has the virtue of being hosted by Kontakt 4, an extremely capable sample player that provides significant customization—edit the onboard percussion patterns, instantiate onboard insert/aux effects, use articulations, add hits, and more. The loops aren't sampled, but play in real time by triggering sounds, so they have inherent variations (thanks to the transparent KSP scripting engine). Percussion instruments are duplicated with 12- or 16-step patterns. Instruments include kora, balafon, flutes, djembes, percussion ensembles, etc.

There are 12 patterns per instrument, and 38 ensemble patterns (each with 12 variations). Although the emphasis is on authenticity, inclusion of performance gestures, and sparkling audio quality, allow the instruments to add an exotic element to anything from dance to New Age.

Compared to software like MOTU's *Ethno*, the price may seem high. However, the approaches are different. *Ethno* emphasizes a comprehensive library, while *West Africa* is about exceptional playability for a more limited soundset.

Kontakt 4 has a learning curve, so read the manual. Once that's squared away, the instrument itself is pretty obvious, and the documentation is helpful—within ten minutes I was putting evocative, expressive sounds on the timeline. Overall, the entire package is classy and musical.

STRENGTHS:
Excellent recording quality. Kontakt 4 Player is very full-featured. Editable patterns.
LIMITATIONS:
Kontakt 4 Player has a learning curve.
$119 MSRP
native-instruments.com

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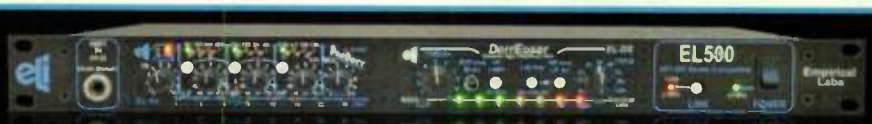

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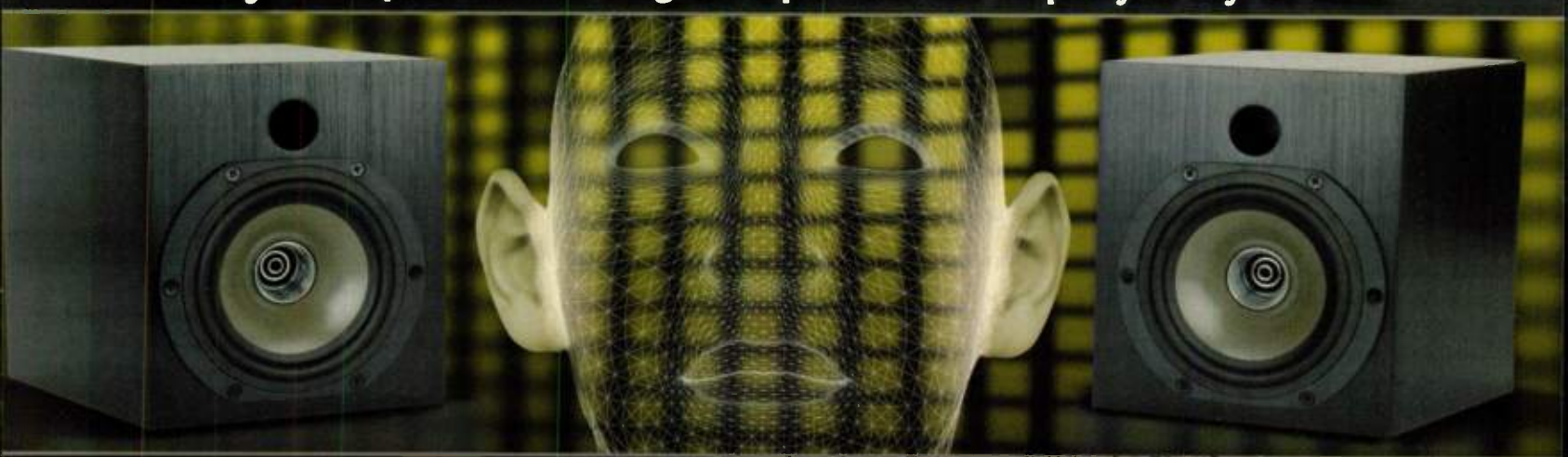

Chris doesn't believe sensitive electronics belong in a vibrating, magnetized enclosure or that power cords should be near audio cabling, so individual 100W amps for each driver and precisely tuned active crossovers are housed in a sleek external unit.

The innovative rhomboid shape of the cabinet allows for several convenient orientations.

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Pelonis Signature Series

World Radio History

Ueberschall's Elastik player (from zPlane, who creates the stretching algorithms for, among others, Ableton Live) makes loops playable, and encourages improvisation. But the really interesting action is the Random button in the lower left, particularly for their Inspire series libraries.

Ueberschall
Funk & Soul

Style: Like the title says . . .
Product type: Construction kit meets loop library meets playable instrument
Loop format: WAV, exportable as WAV
Stats: More than 700 loops, 1,282 samples
Resolution: 44.1kHz/24-bit
Documentation: Downloadable Elastik Player manuals

Longtime readers know I'm a fan not just of Ueberschall's sounds, but their extremely playable and customizable Elastik loop playback engine. (Rather then get into details, visit their website for a free player/demo bank download.) However, their new Inspire series of libraries is a huge advance in loop libraries: After loading an Inspire construction kit, you can invoke random replacement for whichever loops you select, thus creating usable variations; replacements are consistent (*e.g.*, bass replaces bass). As the Elastik engine is uncanny in matching key and tempo, the results are at least usable, and at best . . . well, inspirational. What's more, you can save the collection of loops, including any modifications you make, as well as create full loops from the various individual instrument loops.

The randomize function works across any Ueberschall libraries you have installed, not just the ones with Inspire kits—for example, combining loops from their *Sounds of Berlin* with *Funk & Soul* created a kind of future funk. (An upcoming rev will let you restrict randomization to specific libraries.)

The recording quality and musicality are, as usual, spot on. But the Inspire feature is amazing: It merges construction kit and loop library concepts intelligently, yielding an almost infinitely expandable library.

STRENGTHS: Seamless mix and match. Brilliant "Inspire" feature can generate new combinations of loops. Elastik host is playable and encourages improvisation.
LIMITATIONS: When multiple Ueberschall sound banks are installed, you currently can't limit randomization to specific banks.
$199.95 MSRP
ueberschall.com, dist. by bigfishaudio.com

The cover graphic for Sony's *Charm* is actually a pretty good representation of the sounds inside.

Sony
Charm

Style: Downtempo, IDM
Product type: Construction kits
Loop formats: Acidized WAV
Stats: 31 construction kits with strong mix-and-match potential, 250 unique loops
Resolution: 44.1kHz/16-bit
Documentation: None in downloadable version

I realize this couldn't be titled Prozac for legal reasons, but *Charm* is almost as good. Each kit typically has a keyboard part, separate kick/hat/snare, some percussion, pad, bass, and various ear candy—bells, arpeggio, synth leads, etc. The pianos are appropriately dreamy, the pads thick, and the percussion non-intrusive; if this library was a woman, she'd be achingly pretty and would speak with an unidentifiable (but hypnotically intriguing) foreign accent.

However, she wouldn't have any identification on her, because these kits continue Sony's habit of generally not including key or BPM info. The mitigating factor is that the Acidization is as good as it gets, so you can time- and pitch-stretch with abandon. (Most kits are in keys between *F* and *A*, so you don't have to pitch-stretch too far.) For more than two decades, Sony has been top dog for loop editing; *Charm* keeps the company's reputation intact.

What's more, *Charm* totally owns the "how much can I put together in how short a time?" contest. For one kit, I just pulled files in where I thought they might go based on their names ("We'll start with piano, bring in some bells, then percussion . . .") and when I played it back, it was good to go. I'd feel guilty if I cut an entire "Music for Relaxation" CD from this library, but I could—and I bet people would buy it.

STRENGTHS: You can throw just about any loops together and they work. Best-in-class Acidization.
LIMITATIONS: File names don't include key or BPM information.
$39.95 MSRP
sonycreativesoftware.com

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YAMAHA

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World Radio History

Ministry of Rock 2 works with EastWest's Play Engine, which provides mixing, multiple effects, and a browser. As with other instruments, keyboard shadings and colors indicate instrument placement and articulations.

EastWest *Ministry of Rock 2*

Style: Hard rock
Product type: Virtual instrument
Stats: 57GB (not a typo) library with 3 rock drum kits, 6 guitars, and 8 basses (all except one bass remastered from their *Hardcore Bass* and *Hardcore Bass XP* libraries); all have multiple preset variations
Resolution: 44.1kHz/24-bit
Documentation: Comprehensive PDF

EastWest seems to like challenges, whether it's capturing the Beatles' vibe, or transforming haunting vocal samples into a playable instrument. This time, it's creating a "virtual rock band" where listeners can't tell whether they're hearing a "real" recording or samples. EW has succeeded (check the audio demo online), thanks to a *lot* of well-recorded data—eight double-layer DVDs with multisampled everything (over 7,000 samples for the 5-string Stingray bass alone), room mics for drums (overhead, room, compressed room), instrument articulations, you name it.

EW's 32/64-bit, cross-platform Play engine has a limited number of controls, but they're the important ones: drum mixer, envelope, filter, delay, ADT, and reverb. The drums in particular have a great feel (EW claims some proprietary mojo called "live technology"—whatever it is, it works), but running the guitars and basses through beefy amps helps too, as does using top-flight players.

You'll need chops to exploit the articulations, but time invested in "learning" the instruments is time well spent—*MoR II* is the only library I've used out of the box that, with sufficient practice, produces a convincing virtual rock band. $395 may seem steep for casual users, but film composers will likely consider the price a bargain, especially as the library is up to EW's exemplary standards.

STRENGTHS: Strong, well-recorded sounds. Drums are very realistic. Articulations add serious realism.
LIMITATIONS: Learning the articulations is required to take full advantage of the library's playability. Requires iLok.
$395 MSRP
soundsonline.com

The inclusion of a reel of multitrack analog tape on the cover of Freshtone Samples' *Lost Tapes, Vol. 1* is not a coincidence.

Freshtone Samples *Lost Tapes Vol. 1*

Style: '60s/'70s soul and funk
Product type: Compact construction kits with mix-and-match library potential
Loop formats: Acidized WAV, REX2
Stats: 43 construction kits, 970 unique loops
Resolution: 44.1kHz/24-bit
Documentation: PDF with license info

This library tries—and succeeds—to capture the "analog era" through analog recording gear from the '60s and '70s, vintage instruments, and most importantly, vintage attitude.

The construction kits are divided into folders of jams (full mixes) and instrument loops (drums, bass, guitar, keys, stabs, fills, etc.). Sorting by instrument instead of kit isn't standard, but with limited riffs per kit, this emphasizes the loop library aspect. Loops from different kits often work well together, although unfortunately the filenames lack key signatures (but include BPM). Acidization/REX editing is unusually good; some sounds have too much reverb for me, but this is a '60s/'70s project—and they *loved* their 'verb!

The kits are ideal for projects requiring "that" sound, while the individual loops are well-suited for adding unique elements to music from hip-hop to rock to dance. Years ago, a remix of one of my tunes couldn't get clearance for a Stax/Volt-type sample; had this library existed, any of several loops would have worked instead.

It's fast and easy to put material together, particularly if you stick within a kit. But it's also fun—it's hard to resist cracking a smile as you work with these files. This is a left-field sample library that might not end up as your most-used library, but it's done with style, and there's nothing else like it.

STRENGTHS: Really does re-create that vintage vibe. Excellent Acidization/REX stretching.
LIMITATIONS: Many sounds have lots of reverb. No key signatures in file names.
$69.95 MSRP
freshtonesamples.co.uk, dist. by bigfishaudio.com

World Radio History

K-Size loop libraries offer samples in a wide variety of formats—they're compatible with just about anything.

Best Service
K-Size Electro Edition

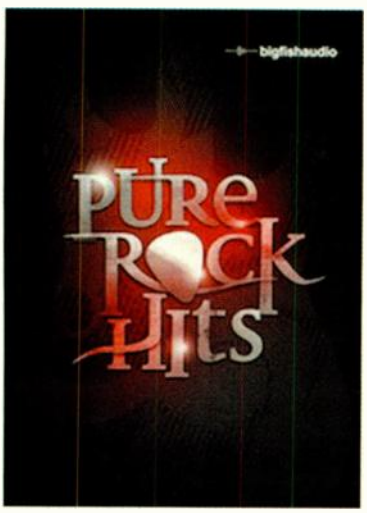
Style: Dance—electro, house, tech-house, progressive, dash of trance
Product type: Library collection with loops (including a construction kit slant) and one-shots
Loop formats: Acidized WAV, Apple Loops, REX2, RMX, WAV
One-shot formats: Mapped to patches for Ableton Live (Drum Racks, Samples, and Simpler), Battery 3, EXS24, Halion, Kontakt, NN-XT, WAV
Stats: 831 unique loops, 1,716 unique one-shots
Resolution: 44.1kHz/16-bit
Documentation: PDF with installation instructions for one-shots and the various compatible instruments

The loops are organized in four folders—Beats, Hi-Hats, Synth & Bass, and Addon. Beats tend toward four-on-the-floor electro-house rather than Kraftwerk-type offbeats, but all lay down an excellent foundation. Related loops are named similarly (and tonal ones include the key signature), making it easy to locate variation loops.

The construction kit angle comes into play when layering other loops on top of the beats, particularly as the hi-hats are broken out into separate loops. Stretch editing is good for the REX and Apple Loops files, but not for the Acidized ones due to missed transients and not having a base pitch assigned, requiring manual transposition. If you use Acidized loops and need to stretch much from the 128BPM default, use Acid or Sonar to edit them for optimum stretching.

Putting together tracks is easy: The only hiccup is having to transpose Synth & Bass loops; a lot of them are in *A* and *C*, but you'll also run into the occasional *A*♯, *G*, etc. Regardless, if you're into electro that leans toward house, *Electro Edition* gives solid, well-recorded, muscular tracks—and the relatively specific focus lends itself well to loop mix-and-match. It doesn't take much browsing to find plenty of loops that work well together; *Electro Edition* is equally comfortable complementing existing tracks or laying a foundation, yet doesn't sound generic.

STRENGTHS:
Well-recorded. Topical. Loops work well together. Good Apple Loops/REX stretching.
LIMITATIONS:
Acidized loops have inconsistent stretching quality. Base pitch not assigned.
$99.95 MSRP
dist. by bestservice.de



It's arranged like a construction kit, but *Pure Rock Hits* is a good example of modern needledrop music—the music is defined, but unlike earlier needledrop music, easy to rearrange.

Big Fish Audio
Pure Rock Hits

Style: Radio-friendly rock
Product type: Construction kits
Loop formats: Acidized WAV, Apple Loops, REX2, RMX, WAV; drum stems are WAV only
Stats: 20 construction kits, with drum loops supplemented by multitrack drum "stems" (WAV only), 1,491 unique loops
Resolution: 44.1kHz/24-bit
Documentation: PDF with instructions for using the different formats

This library is more about "needledrop music": The construction kits break a song down into different sections of different instruments, inviting re-arrangement (extend or shorten sections, weave instruments in and out, etc.). The guitar parts are great—melodic and "hooky," with complementary electric, distorted, acoustic, and picked parts. The bass lines are also strong; keyboards play a more supporting role.

The drum loops are disappointing, though. They're overcompressed, with muffled—not crisp—mixes. Fortunately, the parts are also available as stems, so you can create your own drum loops out of the "raw materials." They're only in WAV format, so to stretch tempo you'll need to do transient marker editing; also, some of the levels are rather low. On the plus side, the stems avoid the limitations of the loops, and get props for including overhead and room mics so you can customize the ambience. I wish more libraries would take this approach.

Using the drum stems means it takes longer to put songs together, although you gain the advantages of flexibility and customization. But the stars here are the infectious, well-played guitar parts; if the clock is ticking really fast, combine them with drum loops from another library. For a rock tune or video theme that people will hum after the music stops, *Pure Rock Hits* has the goods.

STRENGTHS:
Pop/rock guitar riffs with a high "hook" factor. Easy to re-arrange songs. Multi-track drum stems.
LIMITATIONS:
Drum loops are overly compressed. Using stems requires some effort.
$99.95 MSRP
bigfishaudio.com

World Radio History

The sound quality is expressive and rich, but so are the editing options. This shows just one page of four pages with editable parameters.

Synthogy *Ivory II Upright Pianos*

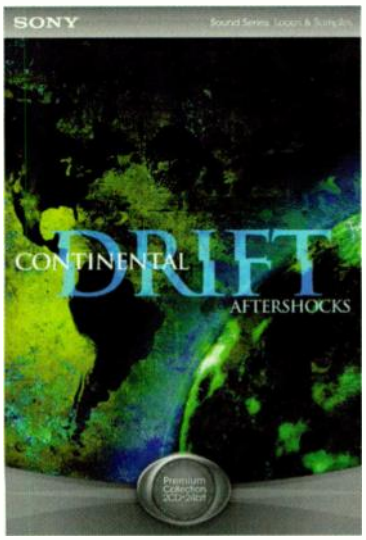
Style: Four different upright pianos
Product type: Virtual instrument
Format: VST/AU/RTAS plug-ins, Mac/Windows
Stats: 84GB of multisampled notes for four pianos
Documentation: Printed manual

Having set the standard with their virtual grand pianos, Synthogy has now done the same for uprights, with a Yamaha U5 (pretty much the modern upright piano), vintage Hume, honky-tonk piano, and tack piano with, yes, real tacks. If you choose to install all four, expect to spend some quality installation time with the 12 DVD-ROMs.

There are up to 16 velocity layers (you can select the number of voices, from 4 to 160), but part of Synthogy's "secret sauce" is resonance modeling for sympathetic string vibrations. I'd always felt sampled pianos were to acoustic pianos as White Castle burgers are to Kobe beef, but the *Ivory II* engine changed my opinion. It's not just about sound; pianos are also about feel, and the *Ivory II* pianos *feel* right, with exceptional dynamics. They're also surprisingly editable, with pedal noise, stereo imaging, sustain resonance, tuning table support, and more. There's even a synth layer, as well as EQ, chorusing, and ambience effects.

As a reality check, I compared the *Ivory* uprights to some other sampled pianos—which only made the Synthogy ones stand out more. Of course, nothing playing through speakers sounds exactly like a real acoustic piano; but *Ivory II's* pianos nail the sound of real *recorded* acoustic pianos. More importantly, the experience of playing them is truly satisfying—and that's the toughest emulation of all.

STRENGTHS:
Wonderful piano feel, recording quality, and dynamics. Quite editable. Package includes four pianos.
LIMITATIONS:
Requires 84GB of drive space to install all four pianos. Requires iLok.
$299 MSRP
synthogy.com, dist. by ilio.com



The industry has certainly seen plenty of "volume 2" projects, but *Aftershocks* is designed to extend the original *Continental Drift* library.

Sony *Continental Drift Aftershocks*

Style: World, ethnic
Product type: Loop library add-on to *Continental Drift* library
Loop formats: Acidized WAV
Stats: 466 unique loops
Resolution: 44.1kHz/24-bit
Documentation: None in downloadable version

The original *Continental Drift* impressed me, not just due to the wide variety of world loops, but also because—whether by accident or design—loops from seemingly disparate cultures often worked very well together. I met one of the people involved in creating the library at AES, and he mentioned they had a lot of good material left that they couldn't fit into the library, and were planning a follow-up.

Well, here it is. It's the same cast of characters: African, Appalachian, Arabic, Asian, Celtic, East Indian, Native American, and Gypsy. While *Aftershocks* can stand on its own—it exhibits the same cross-cultural mix-and-match options as its predecessor—it really does work best in the context of expanding the original *Continental Drift*.

Like the original, the sounds are true "world" sounds, not watered-down "New Age," and as such are quite exotic and have a Smithsonian-field-recording vibe, albeit with better quality (and of course, Sony's superior Acidization). This limits their usefulness in traditional music, but makes them ideal for soundtracks, as well as for adding dashes of spice to dance and other open-minded musical genres.

If you like *Continental Drift*, but wish there was more, *Aftershocks* is for you. And if you're looking for some really evocative world loops, the combination of the two libraries is a great place to start.

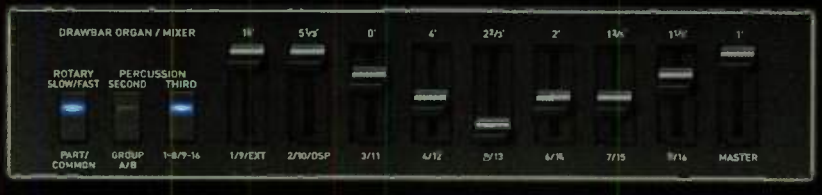
STRENGTHS:
Wide variety of authentic, but well-recorded, world loops.
LIMITATIONS:
Strongly ethnic nature likely not compatible with much pop music.
$69.95 MSRP
sonycreativesoftware.com

World Radio History

The SONGWRITER'S Portable KEYBOARD

WK-7500: 76 Keys
CTK-7000: 61 Keys

Plug in a mic and a guitar, capture your entire song as a stereo audio recording.



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- Keyboard Magazine

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World Radio History

Synth lovers, rejoice: *Synth-Werk* from Yellow Tools is loaded with a huge variety of synth sounds.

Yellow Tools *Synth-Werk*

Style: Synth tones, synthesis, and rhythms
Product type: Virtual instrument with built-in mini-drum machine
Loop formats: Proprietary, within instrument
Stats: 1,500 sounds total
Documentation: Printed manual

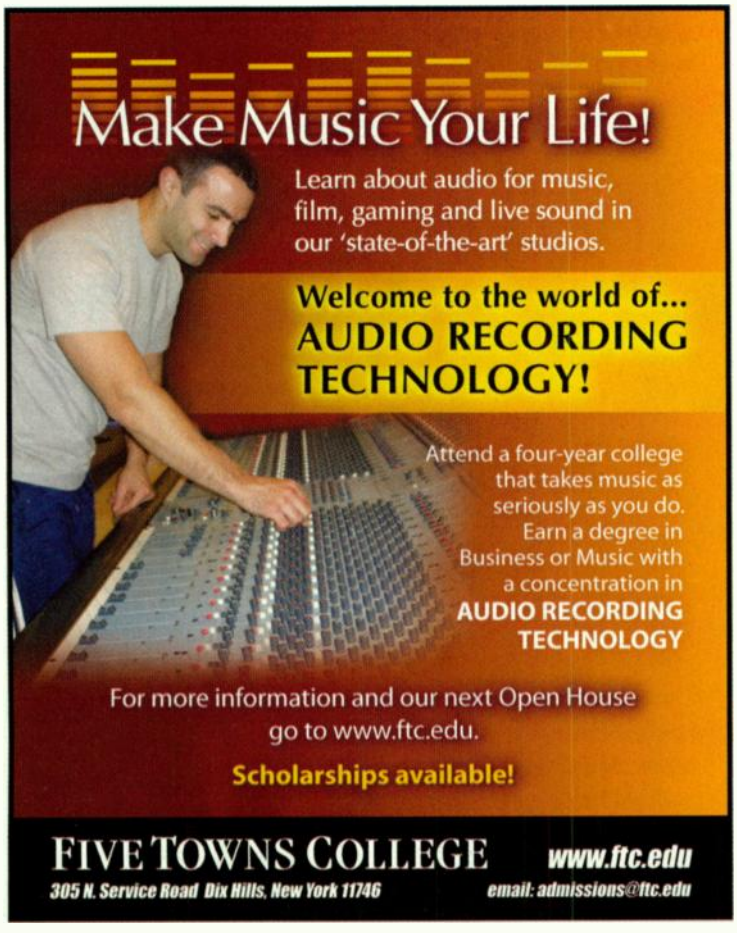
This virtual instrument is a worthy addition to this roundup for those who like to fashion their own loops. *Synth-Werk* is a synth lover's dream, particularly if your taste runs to the more Euro strain. Sounds include chords, dissonant chords, synth patches, computer-type sounds; choirs and vocoders; melodies, pads, basses, effects, drum machine, and rhythm sounds; and an engine with lots of editing options (multimode filter, lo-fi, flanger, reverb, delay, sample start, randomization, and a lot more).

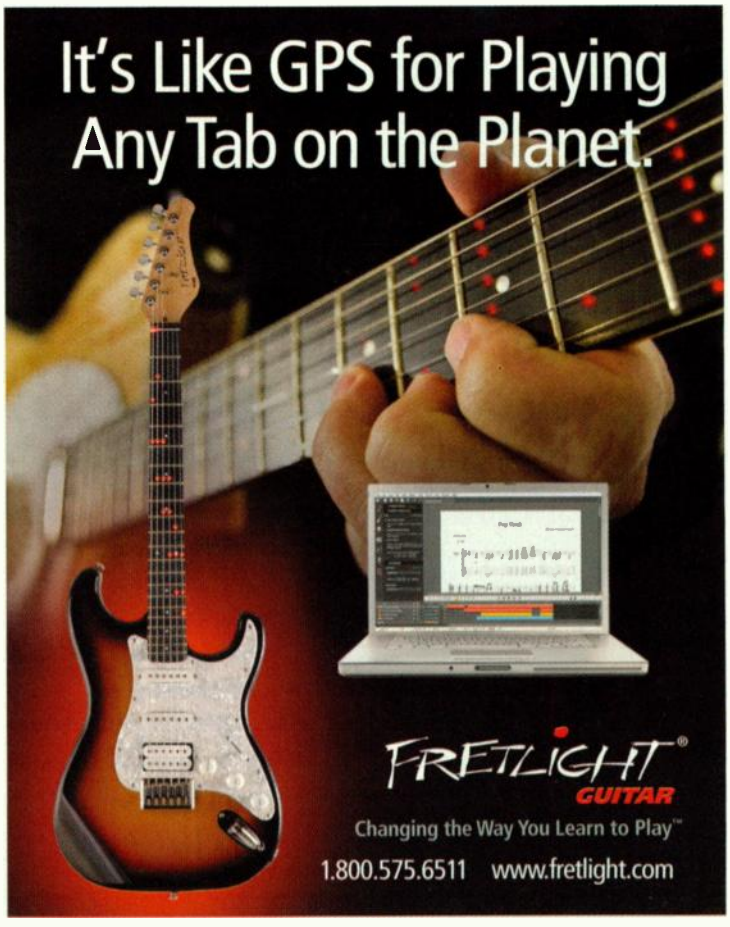
You add or remove layers, then choose the sound for that layer. I was initially put off by the naming convention (for example, with Chord Sounds, you have Chord Sound 001 to Chord Sound 195—not very descriptive), but pretty much everything I pulled up was cool. Fortunately, you can create favorites when you find ones you like.

This is a somewhat impractical instrument because there are so many variables; but that's also its charm, as the ratio of hits to misses is very high. In a way, *Synth-Werk* feels like the software equivalent of a modular synthesizer: "Hmm, what happens if I plug in this patch cord and turn this knob. . . ."

I don't know how this one flew under my radar, but it's *great*. Put some of these sounds on top of the *K-Size Electro Edition* loops, and you'll get the dance floor moving.

STRENGTHS:
Great concept. Sort of like an encyclopedia of robot-friendly synth sounds.
LIMITATIONS:
Not particularly predictable.
$299 MSRP
yellowtools.com,
dist. by bestservice.de





World Radio History

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by HARMAN

From left to right:
LSR4326P, LSR6328P, LSR2325P, MSC1 Monitor System Controller

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World Radio History

This top module shows the loop slice editor with pitch being edited, while the lower module is an instrument's effects section set to show editable parameters for the delay effect.

Big Fish Audio
RiG Urban Workstation

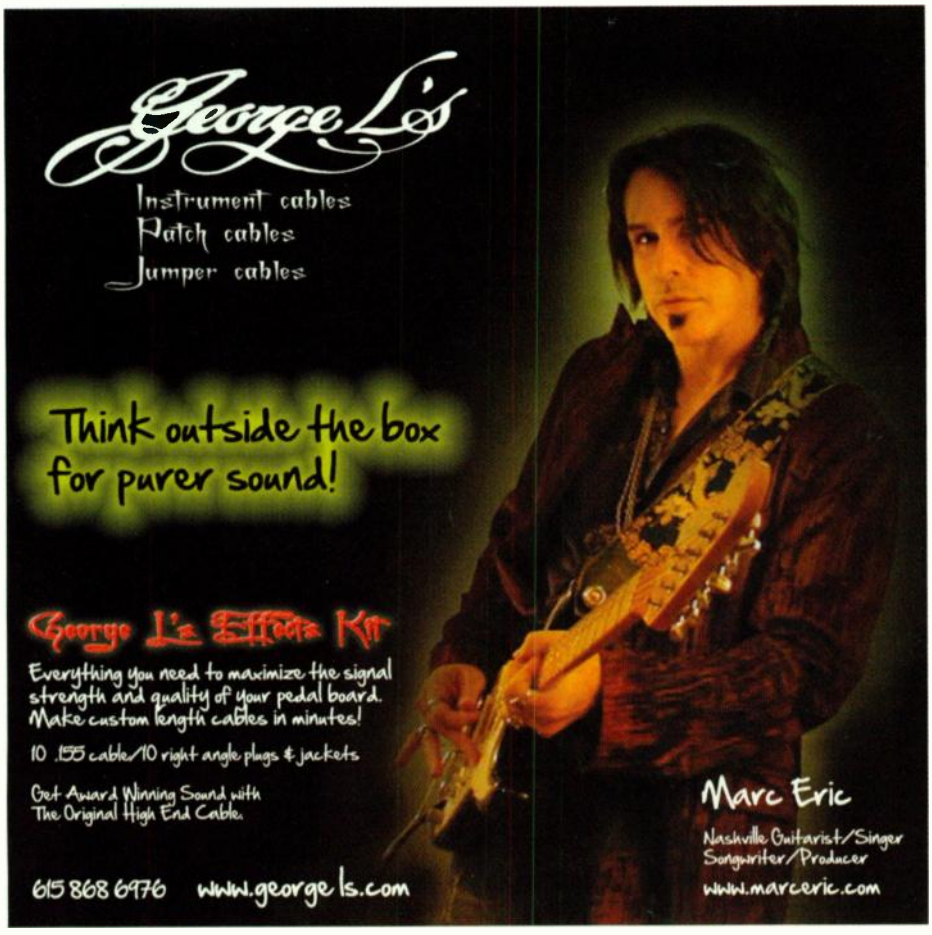
Style: Urban, rap, R&B, pop
Product type: Virtual instrument with looped patterns and playable instruments
Loop formats: Playback within free Kontakt 4 Player, can sync to host tempo
Stats: More than 1,200 patches, 26GB sample library (compressed, requires 15GB disk space)
Resolution: 44.1kHz/24-bit
Documentation: PDF with Kontakt quickstart and info on instrument interfaces

Our second Kontakt 4 library can also be a plug-in (VST, AU, RTAS) or work standalone, but is quite different from most Kontakt instruments—it recalls Avid's Transfuser, as it's optimized for a specific musical style, and offers various distinct instrument "modules."

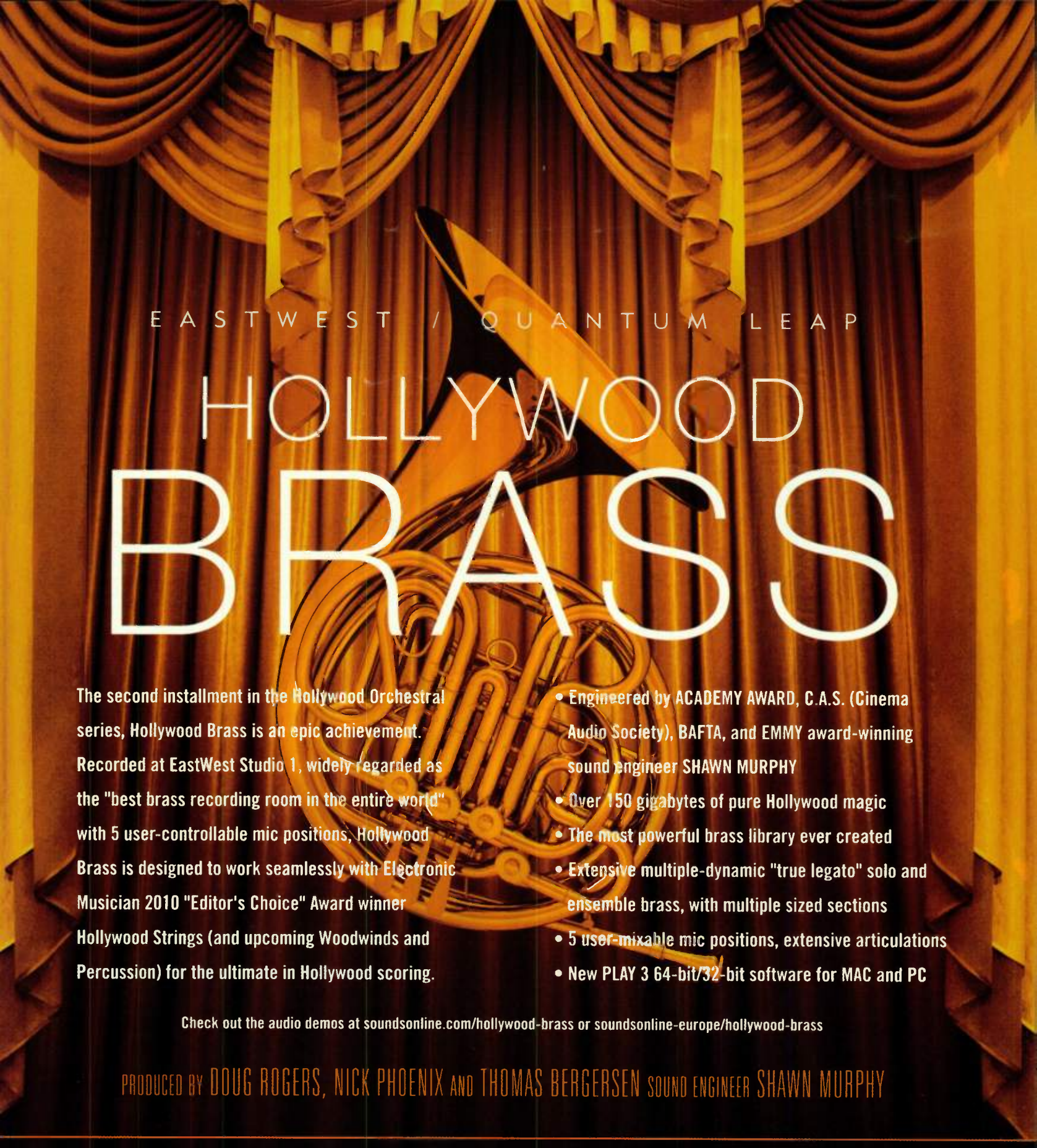
The loop/sample library has what you need for urban production (drums, synths, guitars, basses, hits, keyboards, horns, pads, strings, pianos, etc.), but there are three different instrument types with different interfaces. For example, drum loops have a slice editor that can edit pitch, amplitude, reverse, filtering, etc. per slice, with 16 "slots" (presets) for storing your edits. Playable instruments have 12 editable effects, as well as envelope, legato, and microtuning parameters. Arpeggiation-oriented instruments add dual step sequencers (for gate, pitch, attack, decay, lowpass, resonance, highpass, and pan with 4 to 64 steps) to the instrument options, and offer 32 presets of settings. The instrument interfaces are obvious, although you need to learn the Kontakt interface as well.

Within the limits imposed by a dedicated musical style, *RiG* is all about fast & fun. Fast because of the compatible sounds, fun because it's easy to create tracks and edit them into useful variations. Within minutes I had funky guitar, moody organ, and ethnic/hip-hop drum loops grinding away—then playing bass and horns on top gave me all I needed. Nice! ■

STRENGTHS:
Well-chosen sound/loop library. Inviting, obvious interface with more flexibility than initial impressions might indicate. Many parameters controllable via MIDI. High fun factor.
LIMITATIONS:
Electric bass is under-represented. (There are lots of synth basses.) Could use a few more special effects. Kontakt Player doesn't allow for auditioning without loading.
$199.95 MSRP
bigfishaudio.com



World Radio History



The second installment in the Hollywood Orchestral series, Hollywood Brass is an epic achievement. Recorded at EastWest Studio 1, widely regarded as the "best brass recording room in the entire world" with 5 user-controllable mic positions, Hollywood Brass is designed to work seamlessly with Electronic Musician 2010 "Editor's Choice" Award winner Hollywood Strings (and upcoming Woodwinds and Percussion) for the ultimate in Hollywood scoring.

- Engineered by ACADEMY AWARD, C.A.S. (Cinema Audio Society), BAFTA, and EMMY award-winning sound engineer SHAWN MURPHY
- Over 150 gigabytes of pure Hollywood magic
- The most powerful brass library ever created
- Extensive multiple-dynamic "true legato" solo and ensemble brass, with multiple sized sections
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Check out the audio demos at soundsonline.com/hollywood-brass or soundsonline-europe/hollywood-brass

PRODUCED BY DOUG ROGERS, NICK PHOENIX AND THOMAS BERGERSEN SOUND ENGINEER SHAWN MURPHY

EASTWEST VIRTUAL INSTRUMENT

PLAY WinXP Win Mac

World Radio History

The HK Audio Elements modular PA system is available in various configurations.

HK Audio Elements

A new benchmark in portable PA systems

BY GINO ROBAIR

SUMMARY

STRENGTHS: Powerful for its size. Lightweight. Excellent sound quality.

LIMITATIONS: Pole locks may require a bit of finessing to lock in place.

COMPONENTS START AT $399
hkaudio.com

PORTABLE PA technology has been a lifesaver for mobile DJs and bands playing small venues. But like most audio products, you get what you pay for when it comes to sound quality.

HK Audio takes the high road with Elements, a modular sound-reinforcement system made of up to six parts that you can mix and match—a 600W power amp, a 600W powered subwoofer, a 250W passive subwoofer, a 150W passive line array of speakers, and a special speaker pole and base. While HK Audio's power amps alone are more expensive than many low-end portable PAs, Elements offers excellent audio fidelity and is configurable for venues ranging in size from coffee bars to moderate-sized houses of worship.

Look Ma, No Cables The first thing you'll notice with Elements is the lack of cables. The audio and electrical connections between amps and speakers are embedded within the poles using the company's E-Connect technology: Simply stack the speakers onto the power amp and poles—each speaker array has a connector on the top and bottom of the unit—and you're ready to go. You'll still need to patch a cable from your mixer to each power amp and plug the amp's IEC cables into the wall. However, E-Connect makes the Elements system easy to set up.

Each Class D power amp can deliver 600W at 4 ohms. The EA600 ($599) can drive four E435 Mid/High ($399) passive speaker arrays, two arrays and an E110 passive 10" subwoofer ($699), or a pair of the passive subs. The E110 Sub A ($1,099 street) active subwoofer has a 10" speaker and can power two E435s or a passive sub. Both power modules have a hole in top that accepts the EP1 pole ($99), while the powered sub also has an E-Connect hole on the side, so you can lay the sub horizontally.

Each power amp includes a 1/4"/XLR-combo input, a through-port for routing the input to additional power amps, a Speakon speaker output, a -10/+4 input sensitivity switch, and a built-in limiter with indicator light. Considering their output, the amps are lightweight—the EA600 weighs a mere 6.1 lbs. while the E110 Sub A is about 42 lbs. The remaining system part is the EF45 bass ($179), which can hold an EA600 power amp and several speaker arrays.

World Radio History

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mobile for iPhone, iPod Touch and iPad

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FL Studio desktop version, installed over **10 million** times per year, is now available on on iPod Touch, iPhone & iPad.

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- Attack and release times per instrument
- Resizable & stackable keyboard
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- 5 Effects: reverb, delay, equalizer, amp, filter
- Drum pads
- Pitch bend via accelerometer
- Drum loops & rhythm sequences
- 99-track sequencer
- MIDI import/export
- Mixdown to wav
- iPhone 4 Retina Display support
- iTunes file sharing support
- Compatible with the Akai SynthStation 25

Available on the App Store

World Radio History

The review system included two E110 active subs and four E435s, allowing me to set up a dual mono or stereo configuration. Each E435 holds four 3.5" speakers and weighs 5.2 lbs. Its overall frequency range is 140Hz to 20kHz, with a 12dB/octave crossover at 140Hz. The powered sub has a frequency range of 45Hz to 150Hz.

Assembling the review system took five minutes. I placed the EP1 poles into each subwoofer, making sure each locking button was aligned, then I stacked the speakers on top, aligning each of their locking buttons. Next, I powered up the subs, plugged in my audio source, and I was in business.

The pole's usable length is 34 to 60 inches once it's inserted into the sub, allowing you place the arrays over the audience to reach the back of the room. With the pole fully extended, the final height stretched 9 feet from floor to the top of the second speaker array. You can swivel the speakers about 45 degrees in either direction without damaging the interior cables. The arrays are more directional than the Bose systems I've heard, but I prefer the narrow directionality, which resulted in less feedback at high volume.

The resulting PA tower is very stable and light enough to move if you need to adjust its position. The upright subwoofer is 11 inches wide, so the entire setup takes up much less space onstage than a system with tripods. And it looks more elegant because there's less exposed cabling in the system.

The only issue I had with setup was getting the locking button on one of the subs to go into the hole of the pole. However, the audio and electrical connections were secure, and it didn't affect the system's performance.

Crankin' Cabinets I used the review system to rehearse a rock band, as a PA for an acoustic group in a small club, and as sound reinforcement for an exercise class. Whether it was amplified acoustic guitars, vocal mics, or CD and MP3 playback, the sound was clear and well balanced, without the excessive midrange I'm used to hearing from inexpensive portable systems. Even with a considerably high input level from my mixer, the system sounded great. And for a street price just shy of $2,000 per channel, it had better!

The inputs accept balanced and unbalanced 1/4" cables, so if you don't have a mixer, you can just plug your line-level media player in directly. However, you'll have more control over the sound using a mixer.

The E435 and E110 Sub A are easy to lift and carry, but the speaker arrays are somewhat vulnerable. To protect them when traveling, HK Audio offers soft cases that hold four of the units and one pole. Cases and covers are also available for the power amps.

Hit the Road As a modular system, Elements lets you create a PA that meets your exact needs, while allowing you to add modules as the size of your audience increases. And it's a system worth considering if sound quality is as important to you as portability. ■

World Radio History

Ivory II

"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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World Radio History

Blue Reactor

Tune your mic—not just your guitar

BY KENT CARMICAL

MOST OF US yearn for a tolerant society in which people are judged by the quality of their person rather than looks, gender, or place of origin. In the spirit of this noble ideal, I won't dwell on describing the looks of this large-diaphragm, multi-pattern mic. Besides, the best I can do is compare it to crop circles, the Stargate, or an IUD for a giraffe. But once I got past the whimsical design, this sucker is substantial—2.2 lbs. doesn't sound like much, but Reactor feels like Thor's Hammer in your hand, and causes lesser mic stands to slip and bend to its heavyosity.

Reactor's capsule, based on Blue's B6 model, uses a matched pair of single diaphragms mounted back-to-back inside the head to provide cardioid, omni, and figure-8 pickup patterns. The electronics are solid-state Class A, with no additional pads or low-end filters; there was a slight tendency toward rumble, but nothing some EQ couldn't stop. The head swivels 90 degrees, and there's a totally cool magnetic pop shield.

While Blue provides one of the best teeny manuals I've read, there's no diagram that outlines which part is the front, or the capsule's address side. As Reactor pushes the design envelope, such no-brainers may not be obvious to persons like myself who live in perpetual confusion. But then I actually *read* the manual (always a good idea), not just looked at the pictures, and my questions were answered.

Patterns on the Side The right side of Reactor's body covers pattern selection via a Captain Nemo-meets-steampunk toggle-with-a-magnifying-glass over teeny omni, cardioid, and figure-8 LEDs. This unusual setup begs experimentation by using the two capsules' frequency response variants to sculpt your sound. I like omni's high end, with a nice 1-2dB bump over 5-15kHz, and the flattest overall response. Cardioid is warmer in the high end, has a character bump in the 6-7kHz range, and offers a nice dose of proximity effect to make everything sound great on FM radio.

The audio quality is fantastic for a multipattern mic in this price range, and when combined with the swiveling head/capsule, Reactor becomes a mic-physics-exploration fun factory. You can "tune" the mic to specific applications to capture fat vocals, super-present guitar acoustics, and the room frequencies of drums.

This May Come as a Shock . . . Reactor's bottom screws into the provided shockmount, providing a springy fulcrum for the heavy, high-center-of-gravity mic—so the whole thing goes into spasms of bounce and swing when you make the slightest mic adjustment. Fortunately, Blue says this unpleasant quirk will be fixed by the time the mic hits stores.

Final Reaction Reactor is warm when you want it, with an airy top end that leads to incredibly clear reproduction of virtually any sound source. I rarely found a need to dial in additional EQ, choosing instead to work the polar patterns and make use of the swiveling head.

Reactor provides precise detail in a package that can take a sonic beating, and works equally well with soft vocals and screaming guitar amps—it's a great choice for a versatile, large-diaphragm condenser, especially for studios on a budget. ■

SUMMARY

STRENGTHS: Killer sound and features for a mic at this price. Versatile.

LIMITATIONS: Heavy, overpowers shockmount.

$499 MSRP
bluemic.com/reactor

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Highlights from Summer NAMM 2011

1
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Stereo tube mic
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HIGHLIGHTS Stereo microphone • uses hand-selected Electro-Harmonix EF86 pentode tubes • fixed X/Y 90-degree stereo capsules • tuned grill cavity to reduce standing waves • comes with stereo power supply, shock mount, Mogami XLR and power supply cables, aluminum flight case, cleaning cloth
TARGET MARKET High-end recording of drum overheads, acoustic guitar, backing vocals, and other sources that benefit from stereo recording
ANALYSIS Why set up two mics when one will do the job? With most DAWs defaulting to stereo tracks, the Revelation Stereo simplifies recording stereo sources.
mxlmics.com

2
PreSonus
Audiobox-VSL Series
USB 2.0 interfaces
$199–$499
HIGHLIGHTS Three models: 2-in/2-out, 4-in/4-out, 18-in/18-out • tightly integrated software provides virtual "Fat Channel" dynamics processing and EQ (*à la* StudioLive-series mixers), with ultra-low latency for realtime recording/monitoring • Class A XMAX mic preamps with 48V phantom power • MIDI I/O • reverb, delay effects • includes PreSonus Studio One Artist DAW
TARGET MARKET Depending on the model, laptop/portable recording, small studios, larger studios, laptop-controlled on-stage mixing
ANALYSIS To compete in a crowded interface market, PreSonus folds in virtual processing that bypasses a computer's operating system for extremely low latency.
presonus.com

3
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Paraline Series
Vertical array PA
PSA1 $2,399, PSA1S $2,399
HIGHLIGHTS System includes PSA1 active full-range loudspeaker system and 1,400-watt dual 12-inch PSA1S active subwoofer • injection-molded ABS cabinet and neodymium-magnet woofers minimize overall weight • integrated power amplifiers and internal DSP • patented Paraline horn lens technology • up to four PSA1 cabinets can operate safely from a standard 15-amp service
TARGET MARKET Mobile PA applications and venues where access to complex trussing or roof hangs isn't practical
ANALYSIS This compact, expandable active vertical array follows the industry trend of packing more power for live performance into a smaller, more-easily-set-up footprint.
yorkville.com

4
DigiTech
IPB-10
iPad-programmable pedalboard
$749.95
HIGHLIGHTS Design a pedalboard on an iPad or iPad 2, choosing from 87 pedals, 54 amps, and 26 cabs • assign effects to footswitches and pedal • can operate without iPad inserted • place effects and effects loop in any order • up to 10 pedals, one amp, and one cab per setup • library for storing, organizing, and rating presets
TARGET MARKET Guitar processing on stage or in the studio
ANALYSIS A brilliant melding of iPad and conventional pedalboards, the IPB-10 uses the iPad to create setups, then lets you transfer these to a rugged pedalboard with lots of I/O.
digitech.com

All prices are MSRP

World Radio History

5

Alesis

AcousticLink

Guitar-to-USB adapter

$69

HIGHLIGHTS Package includes single-coil acoustic guitar pickup, 1/4"-to-USB cable, and Mac/Windows Cubase LE software • do-it-yourself installation, no modifications or drilling required • 16.5′ total cable length • pick-up-mounting brackets feature soft, shock-absorbing cushions

TARGET AUDIENCE Acoustic guitarists who want to record an instrument into a computer quickly and easily, without mic setup issues

ANALYSIS As more musical devices feature direct USB interfacing, it's not surprising that acoustic guitars have now joined the club. The low price basically makes this an impulse item for songwriters.

alesis.com

6

American Audio

VMS2

MIDI DJ controller

$479.95

HIGHLIGHTS Two-channel MIDI controller • bundled with Virtual DJ LE software • two "Midilog" channels are compatible with MIDI software or analog inputs (CD players, turntable, etc.) • mic input • adjustable crossfader curve • balanced XLR outs • 4-in/4-out audio interface • dual platters allow for "virtual scratching"

TARGET MARKET Laptop-oriented, software-based DJs who want hands-on control

ANALYSIS Thanks to laptops, inexpensive hands-on controllers, and DJ software, it's easier, simpler, and more cost-effective than ever to get into DJing. Controllers like the VMS2 continue that trend.

adjaudio.com

7

Source Audio

Soundblox Pro Bass Envelope Follower

Bass processor

$299

HIGHLIGHTS 22 different envelope filter effects, including phaser and positive/negative filter sweeps • four modulation sources: envelope filter sweeps, LFO waveforms, expression pedal, and Hot Hand motion-sensing ring • three footswitches to hold six customizable presets • tap tempo • seven-band EQ • active analog bypass

TARGET MARKET Bass players who want to go beyond standard bass effects

ANALYSIS Effects manufacturers are paying more attention to bassists. The Soundblox Pro Bass Envelope Filter increases functionality compared to its predecessor, the original Soundblox Bass Envelope Filter.

sourceaudio.net

8

Q-Lighting

Micro PLS

Personal light show

$225

HIGHLIGHTS Powered by rechargeable lithium-ion battery pack, with 100–240V charger and 3-hour charge time • red, amber, blue, and white 1-watt LEDs run for six continuous hours on a full charge • 17-ounce weight, small, extremely portable • light filter caps included to create blended wash effect

TARGET MARKET Performers playing in small venues who want to add economical, portable lighting effects

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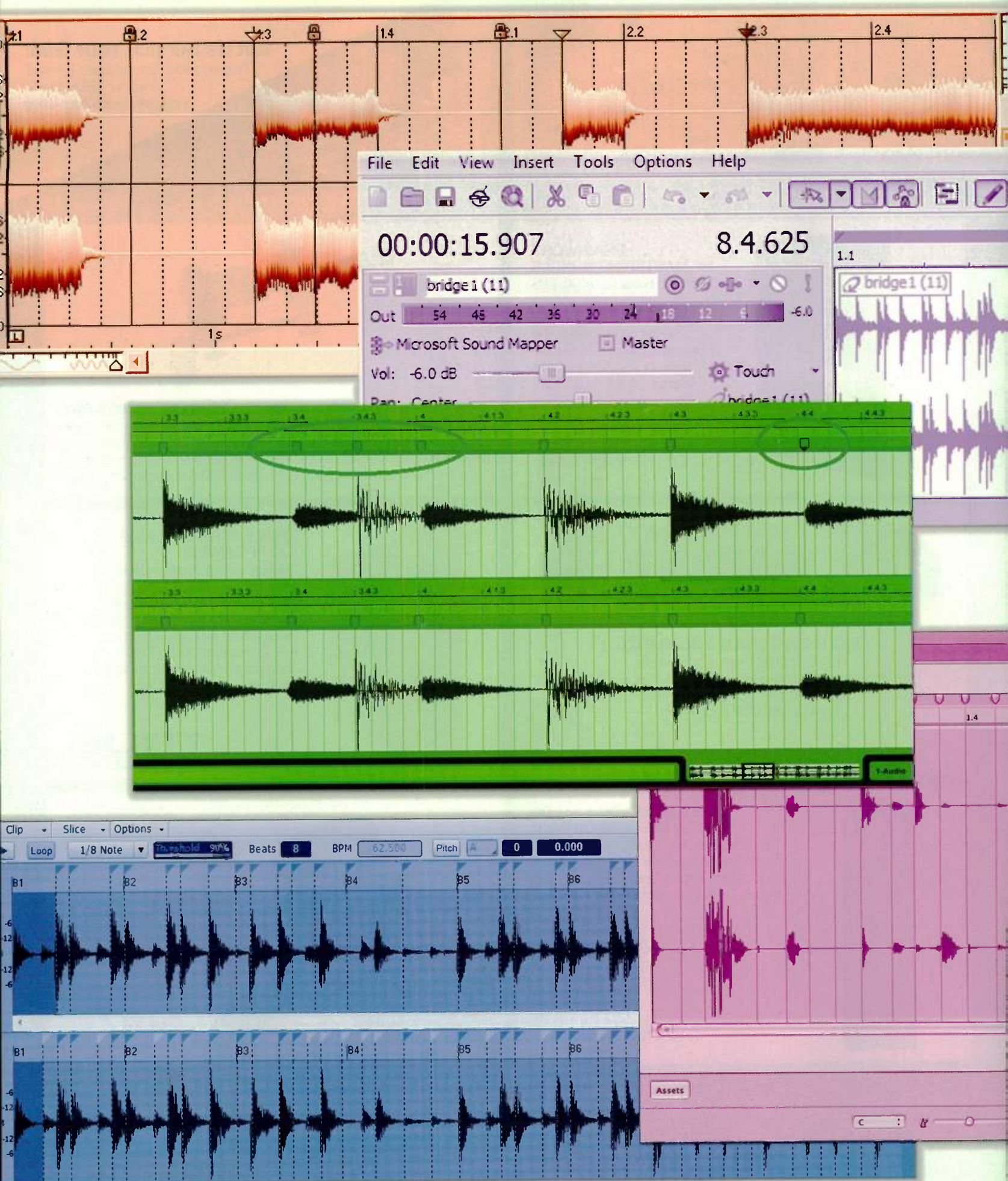

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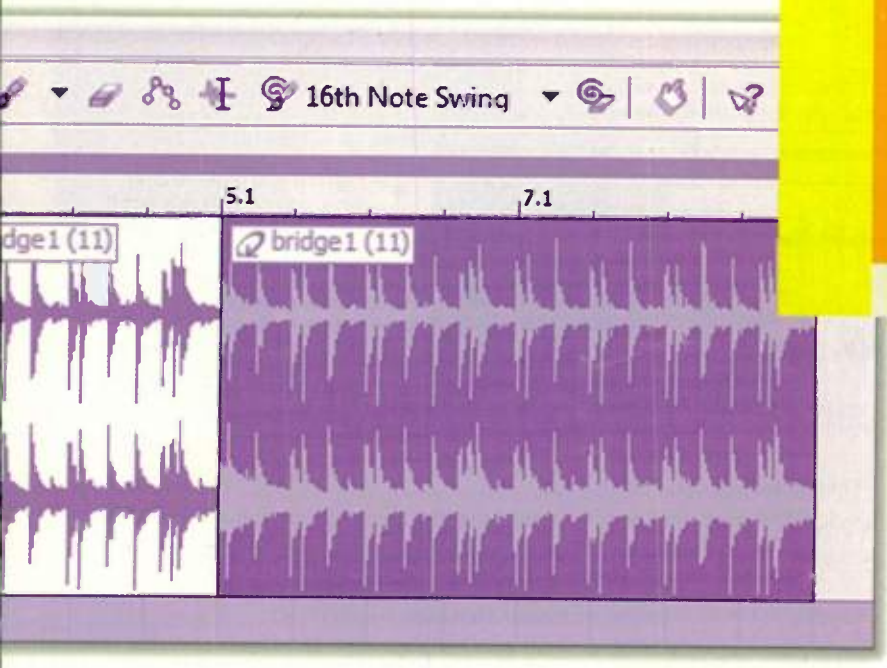

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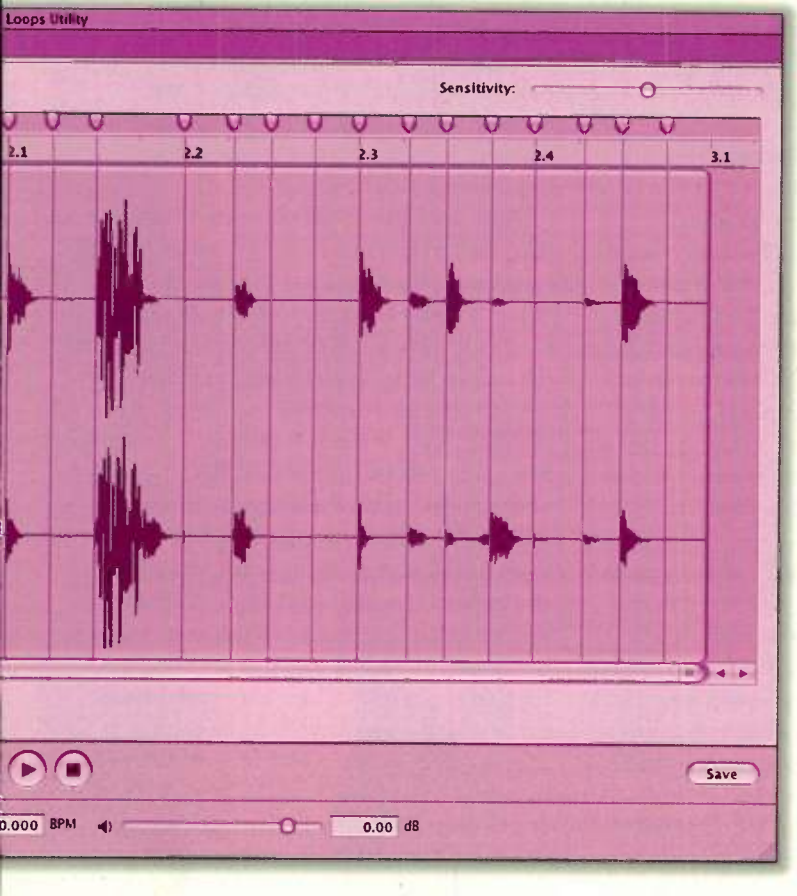

master class

Refined Repetition

Build the Perfect Loop in Eleven Steps

BY CRAIG ANDERTON

YOUR DRUMMER just came up with the rhythm pattern of a lifetime, or your guitarist played a rhythm guitar hook so infectious, you think you might need to soak the studio in Clorox. And you want to use these grooves throughout a song, while cutting some great vocals on top.

There's just something about a loop that isn't the same as playing that part over and over again, and vice-versa. Sometimes you want to maintain the human variations that occur from measure to measure in your music, but sometimes you want consistent, hypnotic repetition. When it's the latter, here's how to create a loop—from start to finish.

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Before hitting Record, slow the tempo down— stretched files sound better when sped up.

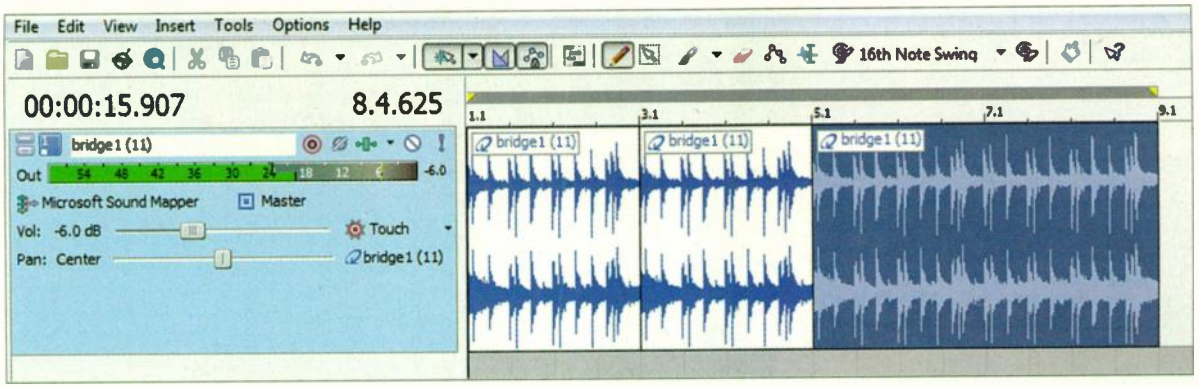

Fig. 1. If you make a long loop, you can always cut it into smaller pieces. In this example, using Sony Acid Pro 7, the original four-measure loop goes from measure 5 to measure 9. But its first two measures have been copied and pasted in measures 1 and 2, as well as measures 3 and 4.

1. Choose Your Pitch If you plan to use a loop in different keys, realize that pitch transposition places more demands on a stretching algorithm than time-stretching. One solution is to record the loop in two or more keys.

Most stretch algorithms can handle three semitones up and down without sounding too unnatural. So, when I was recording loops for the *AdrenaLinn Guitars* loop library, I played each loop in *E* (to cover the range *D*–*G*) and *B*♭ (for *G*♯–*C*♯).

In cases where it wasn't possible to obtain the same chord voicing in the two keys, I used DSP-based time-stretching to create the alternate version. This feature is available in several programs, and while files processed with DSP aren't stretchable, the sound quality is good enough that you can create a loop from the transposed version.

2. Play Against a Backing Track One of the easiest ways to create a loop involves grabbing part of a track from a multitrack recording. But when creating a loop from scratch, it's difficult to give a good performance if you're playing solo. Create a MIDI backing track to play against, and you'll have a better feel.

3. Record at a Slower Tempo Stretched files sound better when sped up than when slowed down, because it's easier to remove audio and make a loop shorter than to try to fill in the gaps caused by lengthening audio.

Set the tempo for the right feel, and practice until you nail the part. But before hitting Record, slow the tempo down. (This is why I recommend a MIDI backing track—not only is it easy to change tempo, you can transpose pitch as needed, and quantize so you have a rhythmic reference.) Typically, an Acidized/Apple Loops or REX loop can stretch (if properly sliced and edited) over a range of about –15% to +60% or higher. So, a 100BPM loop will be viable from about 85BPM to over 160BPM. For really downtempo material, like some hip-hop and chill, consider cutting at 70 or 80BPM instead.

As a bonus, you may find it easier to play the part more precisely at the slower tempo; also, any timing errors will become less significant, as you speed up the loop.

4. To Swing or Not to Swing There are two opposing viewpoints about whether to incorporate swing and other "grooves" in a loop, or go for rhythmic rigidity. Some feel that if a loop wants to swing, let it. Unless it has a huge swing percentage, it will usually play okay against something recorded without swing. However, modern DAWs often let you apply swing and groove templates to audio, so there's a trend toward recording loops to a rhythmic grid so they can be modified within the DAW for swing and other grooves.

5. How Many Measures? Although quite a few loops are one measure long, two-measure loops "breathe" better—the first measure is tension, the second is release. Four-measure loops work well for sounds that evolve over time. Eight- or 16-measure loops are more like "construction kits" which you can use in their entirety, but from which you can also extract pieces.

It's easy to shorten a long loop. For example, if you create a four-measure loop that builds over four measures but want to build over eight measures instead, split the loop in the middle, repeat the first two measures twice (to provide the first four measures), then play the full four-measure loop to complete the eight-measure figure (see Figure 1 above).

6. Cutting the Loop One of the best ways to make loops is to record for several minutes, so you have a choice of performances. Most DAWs let you create a loop bracket and slide it around to isolate particular portions of the track. You can also experiment with changing the loop length—you might find that what you thought would be a one-measure loop works well as a two- or four-measure loop, which gives some subtle, internal variations.

After deciding on the optimum length, use the loop brackets to zero in on the best looping candidates. Say you're recording rhythm guitar. Solo the track, and listen to the entire rhythm guitar part. Mark off regions (based on the number of measures you want to use) that would make the best loops.

After locating the best one, cut the beginning and end to the beat. With human-played loops, neither the beginning nor end will likely land exactly on the beat. Zoom in on the loop's beginning point, and slide the track so that the loop's beginning lands exactly at the beginning of a measure. Snap the cursor to the beginning of the measure, then do a split or cut. You'll also need to cut at the end of a measure; if the loop extends past the measure boundary or ends before it by a little bit, turn off Snap and cut at the end of the loop. Then turn Snap back on, and use the DAW's DSP stretching function to drag the end of the loop to the measure

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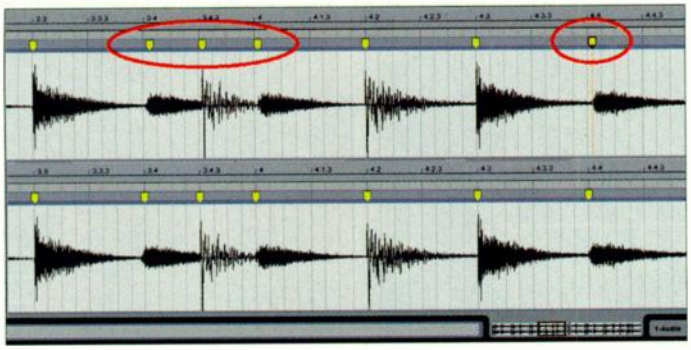

Fig. 2. The upper waveform in Ableton Live has warp markers circled that mark the beginning of a transient, but which aren't aligned to the beat. The lower waveform shows the results of moving the warp markers on to the beat.

Fig. 3. The Apple Loops Utility is a free program that allows optimizing the stretching characteristics of AIFF or WAV files, as well as tagging them for database retrieval.

boundary. The steps to perform this vary depending on the program, but generally involve click-dragging the edge of the audio while holding down a modifier key, like Ctrl or Alt.

If you hear a click when the loop repeats because there's a level shift between the loop start and end, add a very short (3–10ms) fade at the loop start and end points.

7. Pros and Cons of Audio Quantization Now scan the loop for note attack transients and see if they line up properly with note divisions. Small timing differences are not a problem and, if done musically (*e.g.*, a snare on a loop's last beat hits just a shade late), will enhance the loop. But if a note is objectionably late or early, you can use an audio quantization function (like Ableton's Warp as shown in Figure 2 above, Sonar AudioSnap, Cubase Multitrack Quantization, and the like) to quantize the audio.

If this degrades the fidelity, another option is to isolate the section that needs to be shifted by splitting at the beginning and end, then sliding the attack into place. If this opens a problematic gap between the end of the note you moved and the beginning of the next note, try the following:

- Add a slight fade to the first note so it glides more elegantly into the gap.
- Copy a portion of the first note's decay, and crossfade it with the note end to cover the gap.
- Use DSP stretching to extend the decay of the note you moved forward in time.

If the note was early and you shifted it later, then there will be a gap after the previous note, and the end of the note you moved might overlap the next note. If the gap is noticeable, deal with it as described above. As to the end, either:

- Shorten it so it butts up against the beginning of the next note.
- Crossfade it with the next note's beginning if there's no strong attack.

If you've edited the loop, you'll need to make it one file again. Bounce the region containing the loop to another track, bounce into the same "clip," or export it and bring it back into the project.

8. Consider Some Processing A "dry" loop is the most flexible—if you add reverb, then the stretching process has to deal with that. Cut a dry loop instead, and add reverb once the loop is in your DAW.

If an effect such as tempo-synced delay is an integral part of the loop, embed the effect in the file for a "plug and play" loop. Otherwise, add the effect during playback.

Some people "master" their loops with compression and EQ so the loops really jump out. But when you record other tracks (vocals, piano, etc.) then master the song, if you want to squash the dynamics a bit, then the loop dynamics will be super-squashed, and if you add a bit of brightness, the loop will shatter glass.

If there are response anomalies I'll often add a little EQ, and just enough limiting to tame any rogue peaks, but that's it. Loops fit better in the track that way, and are more workable when it's time to mix and master. You can always add processing more easily than you can take it away.

9. Choose Your Stretch Method The three main stretchable audio formats are Acidized WAV files, Apple Loops, and REX files. REX files are arguably the most universally recognized, with Acidized WAV files a close second. Mac programs generally recognize Apple Loops, but few Windows programs do. Several programs on both platforms recognize Acidized files.

Different formats are best for different types of audio. REX files are optimum for percussive audio, as long as prominent sounds don't decay over other sounds (*e.g.*, a cymbal that sustains for a measure sounding at the same time as a 16th-note hi-hat pattern). A single-note bass line or simple drum part is the ideal candidate for REXing. WAV and Apple Loops aren't always as good for percussive sounds as REX files, but are better with everything else—particularly sustained sounds.

Your software will likely influence your choice. Apple's Apple Loops Utility (Figure 3 above) is a free program for creating Apple Loops; you'll need either Sony Acid or Cakewalk Sonar to Acidize WAV files. To

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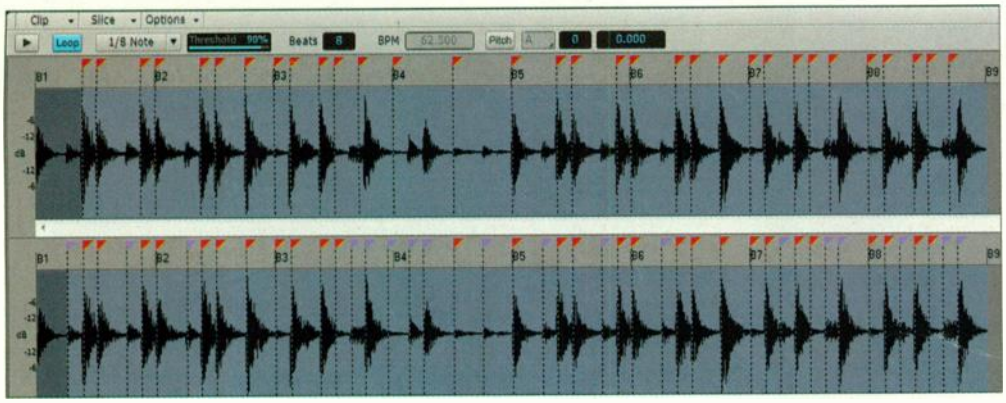

Fig. 4. The upper waveform shows an untweaked version of a difficult-to-Acidize file in Sonar X1's Loop Construction window. The lower waveform has been optimized—the markers with the purple handles have been either moved from their original positions, or added.

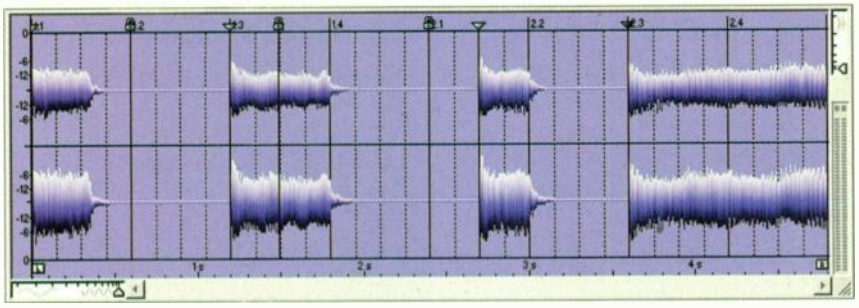

Fig. 5. Once imported into ReCycle, you add markers at transients (indicated with the inverted triangles or lock icons) to create "slices." The marker that splits the second chord in half is there for a reason—there are two eighth-note chords played in quick succession. Even though you can't see the transient that marks the beginning of the second chord, it still needs to be marked so that it plays back at the right time.

create REX files, you'll need Propellerhead Software's ReCycle program.

10. Create an Acidized or Apple Loops Version Acidized and Apple Loops are structurally quite similar, and the techniques that help turn a file into a stretchable loop are similar. Basically, you need to place transient markers at the beginning of each attack transient to turn the loop into a series of slices, each of which represents a distinct "blob" of sound (*e.g.*, kick+snare, bass note, or whatever).

The programs themselves take an educated case as to where these transients need to go, but manual optimization is almost always necessary to create a loop that stretches over the widest possible range. A non-optimized file will cause artifacts when stretched (*e.g.*, doubled attack transients that sound like "flamming," and/or a loss of some of the fullness from percussion). Optimization (Figure 4 above) involves several steps.

- Existing strong transients should all have a marker at the transient's precise beginning. Zoom in if needed to see the transient.
- Secondary transients, such as those caused by a delay or flam, should have markers as well.
- Remove spurious markers (*i.e.*, they don't fall on transients), as they can degrade the sound.
- With sustained material, add a transient marker at a rhythmic interval like a quarter note or eighth note. This tells the DSP to create a crossfade to help make a more seamless transition; putting it on a beat means that other sounds will likely mask any sonic discontinuities that may result from the stretching process.
- If you hear a "fluttering" effect during sustained notes, try adding another marker in the middle of the note.
- Sometimes adding a marker at the end of a note's decay prevents roughness toward the note's end.
- Enter the root key for pitched loops. This allows the loop to follow key changes in the host program. For percussive parts, specify no root key so that only the tempo changes.
- Transients are not always obvious. For example, a tom fill and cymbal crash might play simultaneously at the end of a drum loop, so you can't see the individual tom transients, Listen to the part: If there's a hit on every 16th note, then just place a marker at every 16th note. If it's mostly 16th notes but there are some hits that extend over an 8th note, add hits for the 16th notes but omit them for the sections that are longer.

11. REX File Tips If you want to create a REX file, import the loop into ReCycle. The basic principles of good stretching are the same as for Acidized/Apple Loops files—you want to identify where transients fall—but with REX files, these are hard cuts (Figure 5 above), not just markers for the DSP to reference. Creating good REX files is an art in itself that goes beyond the scope of this article, but the tips given above regarding Acidization and Apple Loops should help considerably.

If you followed the above directions and optimized your loops, they should work with a variety of material over a wide range of tempos, while fitting perfectly into a song . . . and that's what it's all about. ■

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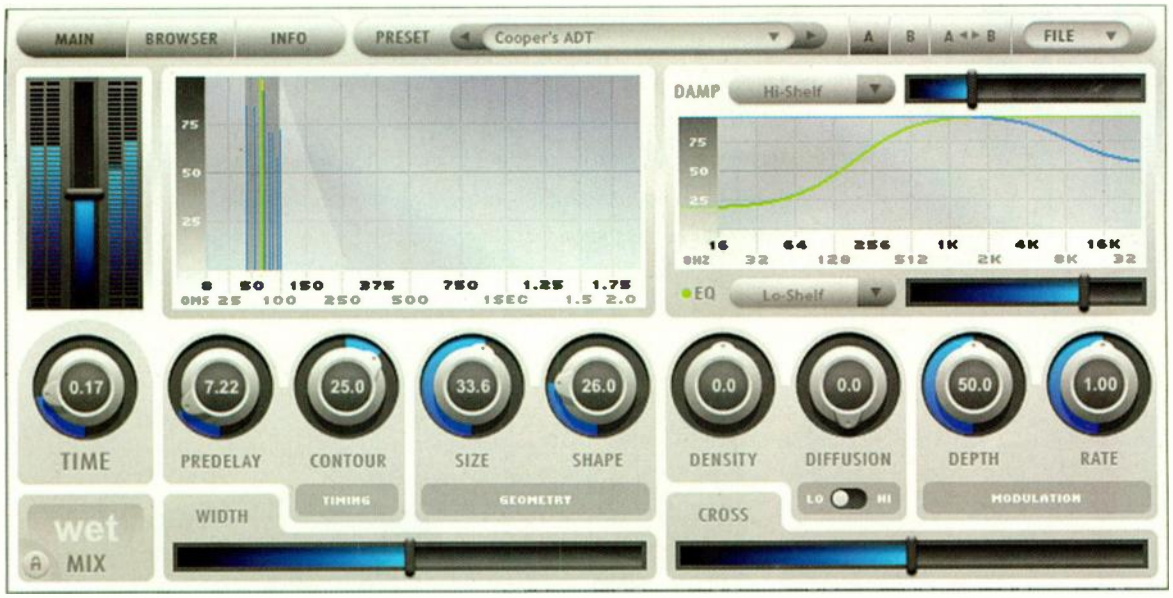

Fig. 1. Here's a fat ADT patch created using the 2CAudio Breeze reverb plug-in.

Mixing the Ultimate Lead Vocal, Part 3

Make it shine with automatic double-tracking effects and reverb

BY MICHAEL COOPER

OVER THE past couple of months in these pages, I've outlined sundry tools and techniques that excel at bridling dynamics and sculpting mondo tone for lead vocal tracks. This month, we'll tickle the troubadour's track with automatic double-tracking (ADT) effects and reverb. Put these best practices to work on your money track.

Double Up Celemony Melodyne Editor and Antares Auto-Tune can each produce fat ADT effects, creating the illusion that the singer sang the same melody twice for simultaneous playback. Make a copy of your lead vocal track and tune it, using either plug-in. (Auto-Tune's automatic mode will yield the fastest results, if you're in a hurry.) Then play both the tuned and untuned tracks together at mixdown. In most cases, the result will sound clearer and more natural and dynamic than a chorus effect fashioned from a modulating delay.

Reverb plug-ins can also be used to create ginormous-sounding ADT effects. The Softube TSAR-1, 2CAudio Aether, and Lexicon LXP Reverb Bundle all allow you to mute the reverb's tail (a.k.a. late reflections), leaving only early reflections that double up vocals magnificently.

If your reverb plug-in can't completely kill late reflections, try this alternative strategy: Reduce the reverb's decay time to less than 0.2 seconds. Set the size parameter fairly high and the diffusion control (if available) very low. You'll know the size parameter is set too high if you hear a significant delay between the dry track voicing and the onset of discrete echoes; if it's set too low, the effect will sound too subtle. Also make sure your pre-delay setting is very short (no more than 10ms) or off. Blend the 100%-wet output of the plug-in with your dry track to taste. Voilà, your singer sounds huge! The inexpensive and user-friendly 2CAudio Breeze plug-in sounds fantastic using the above-detailed settings (see Figure 1 above).

Push Back Your Reverb Of course, there are times when you *want* to hear a reverb tail on the lead vocal track. In this case, it's often a good idea to program at least several milliseconds of pre-delay for your reverb patch.

Pre-delay typically refers to how long (after dry input) it takes for early reflections to begin to voice. (The TSAR-1 implements pre-delay differently from other plug-ins.) A little bit of pre-delay gives the dry track a chance to voice without being veiled by reverb, thereby improving clarity and intelligibility. It also increases the apparent size of a virtual space: For every millisecond of pre-delay you've dialed in, your brain interprets

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the nearest reflective boundary to be roughly six inches away. You can bounce your lead vocal off a virtual canyon wall roughly 200 feet away, for example, by setting pre-delay on your reverb to 400ms.

But before you go Pink Floyd on me, consider this: If pre-delay is set higher than 40ms, you'll hear discrete echoes when the early reflections voice. If the onset of those echoes doesn't occur on a beat or subdivision beat of your music's groove, it'll throw a wrench into the rhythmic feel of the song. Luckily, the Lexicon PCM Native Reverb Bundle allows you to easily synchronize pre-delay time to your host DAW's tempo, using any of 13 different note values ranging from a 32nd to a half-note. All of the bundle's seven different reverb plug-ins also allow you to tempo-sync—to a different note value—the delay time that separates early reflections from the onset of the reverb tail that follows.

Break Out the Calculator If your plug-in can't sync early and late reflections to your DAW's tempo, you can calculate the necessary delay times needed for each and enter them manually, as long as your reverb plug-in allows editing those parameters. (This is only feasible for fixed-tempo recordings.) First, divide your song's tempo by 60 to arrive at the number of beats per second. (For example, 120BPM divided by 60 equals 2 beats per second.) Next, divide 1,000ms by your result (*e.g.*, 1,000/2 = 500) to arrive at the number of milliseconds one beat—or a quarter-note delay—takes at your song's tempo. Using this formula in a song that has a 120BPM tempo, we can program 500ms pre-delay time to make early reflections arrive a quarter-note's duration after dry signal voices. An eighth-note pre-delay would need half as much time or 250ms, a sixteenth-note pre-delay 125ms, quarter-note triplets 166.7ms (500ms divided by 3), and so on.

Go Beyond Reverbs Some productions—for example, those with very dense arrangements—don't take kindly to slathering 'verb on the lead vocal track; it just makes the singing sound veiled or ghosty. Next month, I'll show you how to use echo and multi-tap delay to add depth and ambience where reverb fears to tread. I'll also reveal some hot tricks using other types of processors to give your vocal track its moment in the sun. ■

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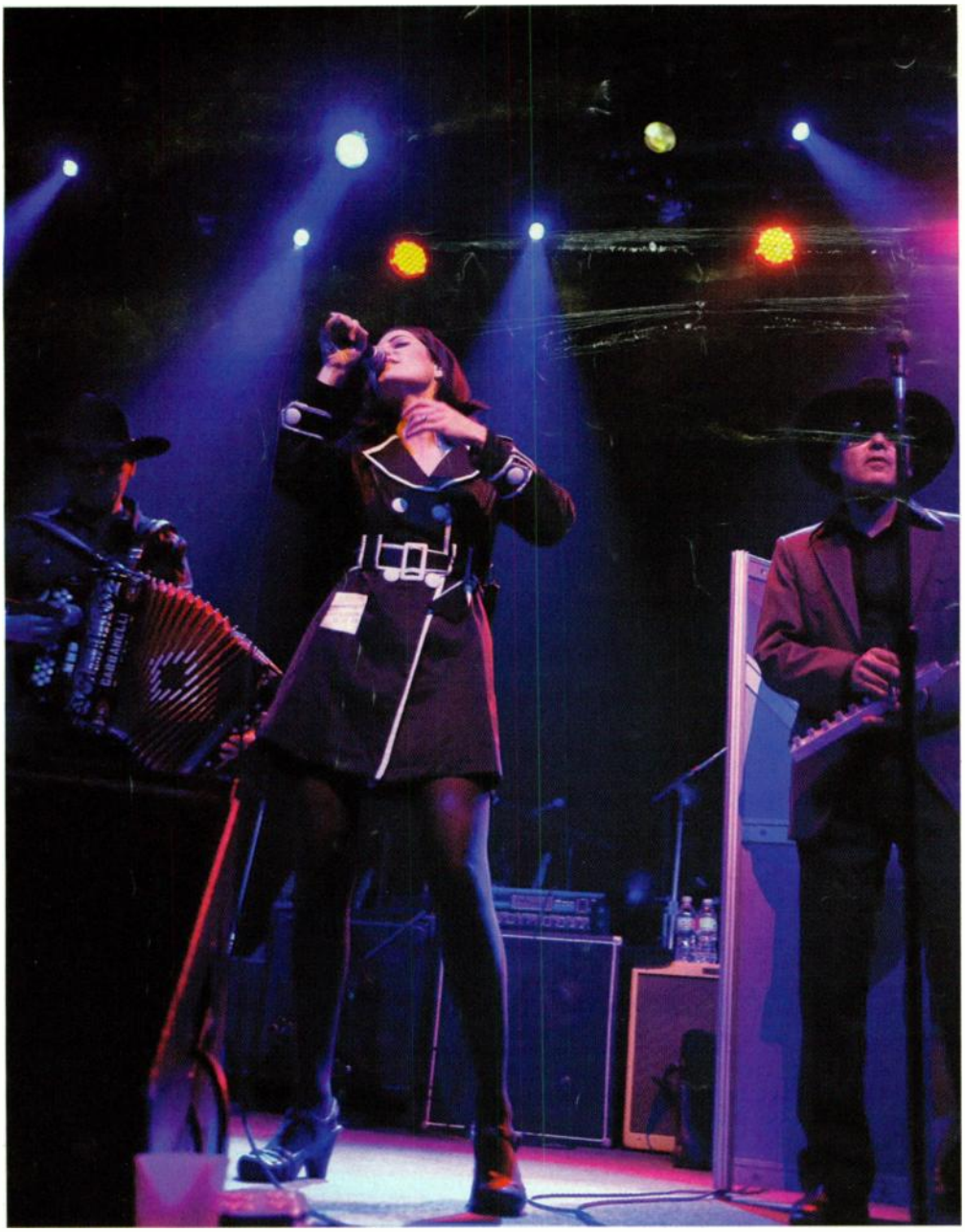

The author (center, singing) performs with Nortec Collective at The Fillmore in San Francisco.

Check the Technique

Use rehearsal time to hone in on show details

BY KYLEE SWENSON GORDON

YOU'VE GOT a week before your next show: You've practiced, promoted, and picked the set list. Now it's time to polish your performance to increase your odds of killing it. Sure, you'll naturally tighten up your performance by running the set a few times before the gig. But if you hone in on a few technical details during your last couple practices, it could be the difference between a good show and one that ignites a word-of-mouth buzz about your band.

Narrow the Scope Sometimes, it's actually a good thing if a bandmate can't make it to rehearsal. That missing instrument or voice opens the space for others to hear themselves (and each other) more clearly. For example, if the guitarist doesn't get to a practice, you might hear—for the first time—a clash between vocals and synths.

This is a good opportunity to pick apart nitty-gritty details that don't *feel* right. Start by playing and looping a section that you're not sure about. Drop out instruments and pair up different band members: Have the bass player and keyboardist play together, then the keyboardist and singer. Keep trying different combinations until you identify and correct the problem (a discordant note, janky rhythm, bad timing, etc.).

Making the Switch Transitions between verses, choruses, and bridges are more important than we give them credit. They change the mood, create the dynamic range, and keep things interesting for the listener. They can also lead to a train wreck. Without practice, it's easy to rush into choruses, lag back into verses, or just biff the change altogether. So it's good to loop transitions, such as the last two bars of a verse and the first two of a chorus. That way, there's less chance of the drummer missing his fills or the guitarist forgetting the chord change.

Man vs. Machine Some musicians hate playing to a click, but shunning the click completely during practice is just your ego getting in the way. It can only help your timing and energy to play to a metronome in rehearsal. While the drummer carries the most responsibility for keeping the tempo consistent, playing to a click is helpful for everyone. It's good to run the set at least once with a click through your P.A., so everyone can hear. You just may fix some timing issues that had been plaguing you for months.

Finally, run your set dress-rehearsal style. Play it all the way through, stopping long enough in between songs to accommodate quick setup changes and talking points (whether you script your banter or have a rough idea of what you want to say). Once you finish, then you can punch the bass player for blowing one of the intros and force him to practice it 20 times in a row. ■

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Buddy Up

DIY doesn't have to mean "do it alone"

BY KAITLIN MCGAW

CAREER-PATH musicians are expected to DIY (do-it-yourself) and DIA (do-it-all). Every article in this magazine will provide you something to work on in your professional growth—I'm sure you've dog-eared, tagged, and made notes on the best learning points and gear investments. (Oh, and while you're at it, don't forget to blog/tweet/Facebook/Google+ about the choices and successes.)

But before you dive into the next project, take a moment to reflect on the big picture of your career. Is there a larger goal that you need to identify and clarify? And is it possible to identify one person you admire who's in a similar chain of development, or perhaps a bit further along? If so, perhaps you can achieve your goals and follow your career path without feeling isolated. This is the most valuable lesson I've learned about progress in the industry: We don't have to do it alone.

A few years ago, I attended a music conference that focused on goal-setting—breaking dreams into projects, and projects into tasks; each project was assigned a timeframe for completion. My head throbbed, overwhelmed by such focused self-analysis, but it was invigorating to break down the myth of the long, long path ahead. As the conference wrapped up, I introduced myself to a singer-songwriter from New York named Mari Rosa. We talked and laughed for just a few minutes, and decided to pair up as "accountability partners" toward tackling our goals, through weekly check-in phone calls and milestone-tracking our goals (ranging from 1-month to 3-month to 1-year to 5 years). Mind you, I did not know this person, but I could tell she was smart, and from our conversation we seemed like we both were big-picture thinkers.

The next Tuesday, at 4 P.M., I was dialing a Brooklyn number to share my dreams with this woman I hardly knew. We shared 20 minutes' worth

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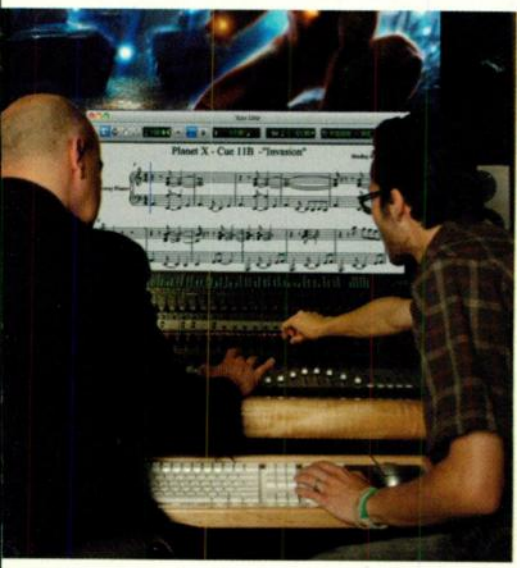

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of our goals for the coming year, which included my plan to relaunch my website and brand and her goal of building a database of booking contacts in New York and the East Coast, specific to her music. We provided suggestions and feedback on our goals and tasks, and then shared what we would do that week to get there. As awkward a blind date as it was, it was magical. For the next six months, our Tuesday afternoons included a cross-country conversation about our plans, triumphs, and challenges. We gave each other virtual high-fives for tasks accomplished: identified my web designer and made an RFP for design, check! Wrote my newsletter, check! Tried that new email software; it works! And we shared tips on how to tackle the challenges—our experiences were not so dissimilar in the ups and downs of it all.

Six months later, we had accomplished these goals and moved beyond, going from singers with bands to being able to accompany ourselves. We set a new goal together—to tour together as solo artists. Within a year of meeting each other, we set up three tours (California, Northwest, Massachusetts). Three years later, we continue to support each other's careers, as they grow and find new directions. I've become more focused on my children's music project and songwriting, and Mari has broadened her performances to include Latin, singer-songwriter, and even pop. We network cross-country, partner up, and champion one another. In the process, we're accomplishing our individual goals, and doing so in solidarity. "Do it alone" is a thing of the past for each of us. ■

Five Steps to DIT (Do-It-Together)

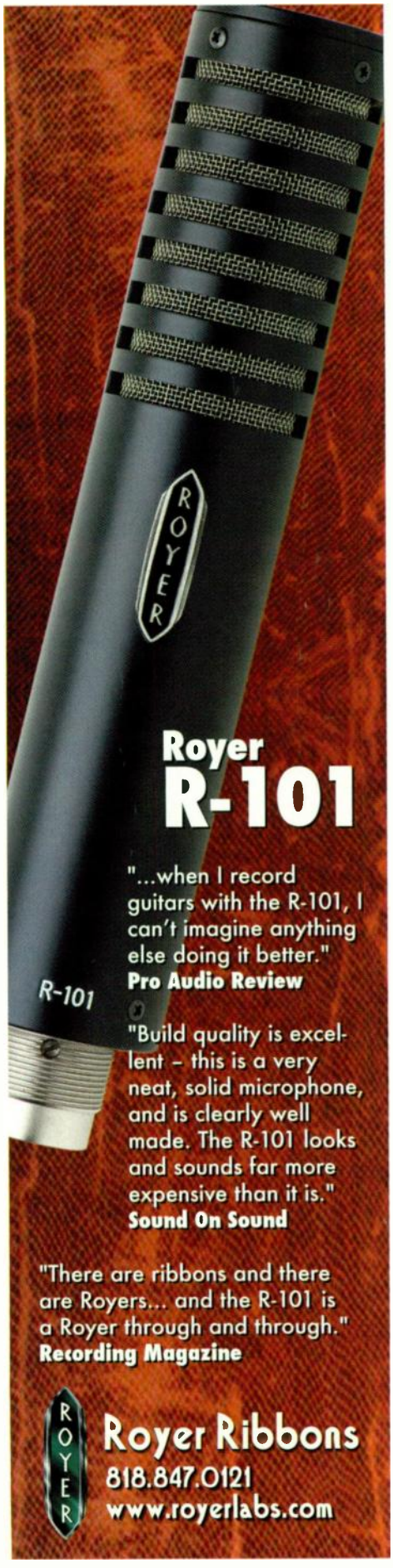
1. Take an hour to describe where you want to be in your career at this time next year. Then review, and break your plan into smaller goals (perhaps by theme), and attach a timeline to each. There is a myriad of information online about approaches to efficient goal-setting; Google "goal-setting," "time management," or any of these broad concepts. But more important than spending a week reading endless productivity blogs are prioritizing writing down what you want and identifying milestones and timeframes.

2. Identify someone on a similar path who can commit to you for three months of weekly phone calls or emails. The best idea would be to choose someone you genuinely respect and like, because this will allow you to be a bit vulnerable and admit when you feel frustrated and lost on the path to success. It doesn't have to be someone in music—perhaps it's another self-employed entrepreneur. But it helps to have it be someone who gets what your end goal is and is 100% behind you.

3. Set a time/date for talking—and don't alter it. Don't put your accountability call off by an hour, a day, etc. Soon, a week will go by and you'll be out of sync with the process, and it will be another task you've procrastinated on and not achieved. Think of it like "date night."

4. Keep track of your goals on paper so at the end of three months you can see what you've learned and achieved. Mari and I initially hand-wrote our lists, but the process evolved to emailing ours to each other before and after our weekly calls, which worked even better. However, I still have scraps from years ago; I can't let go of them—the journey is half of the experience of reaching the milestone.

5. Prioritize making music. This is the most important part of this process! Write your songs, practice them, record them, share them, and promote them. Because if you keep them in your head, then you will just be doing-it-alone!



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Ol' Cheeky Bastards deal with a funky stage setup at the Red Devil Lounge in San Francisco.

The "Other" Loudness Wars

Lowering your stage volume can do wonders for your performance

BY MIKE LEVINE

ACOUSTIC ISSUES are constant gremlins for performing musicians, but they're especially bad on the club level, where you often play in venues that have woefully inadequate or nonexistent acoustical design.

It's not unusual to find a stage situated in a corner or by a window, or in a place with hard surfaces all around. In those situations, the stage sound is often extremely reflective; everything sounds indistinct and louder than normal, and that makes it tough to hear properly, much less to relax and play your best.

To make matters worse, there are many gigs where you have little or no chance for a soundcheck, so you have no opportunity to even partially adjust to the subpar acoustics. How many gigs have you played where your first song—which is a very important one in terms of the audience deciding whether to pay attention or tune you out—had to function as your *de facto* soundcheck?

The acoustical gods are already lined up against you in many gigging situations. Unfortunately, many bands exacerbate this problem by playing way too loud. No matter where you are, but especially in acoustically challenged venues, the more you keep your stage sound under control, the better your performance will be. Why? Because you'll be able to hear each other, which is crucial to laying down any kind of groove.

Keep it Down Everyone in the band wants to hear themselves, and when they can't, their understandable inclination is to turn up. You've heard the term "loudness wars" applied to the ever-increasing levels of mastered albums, but this also describes the issues often taking place onstage among band members. The result of SPL escalation is that as the total stage sound gets louder and louder, the sound in the club gets worse, it gets harder for the FOH engineer to mix the band with so much sound coming off the stage, and it becomes uncomfortably loud for the audience.

If you were to take a sound-level meter onstage, you'd be shocked by the high decibel readings. Although the issue of hearing protection is a separate one from what's being covered here, it's certainly closely related. And be assured that if your band is way loud every night, you're increasing the chances of damaging your hearing over time.

The Usual Suspects Although anyone in the band can be a participant in the ever-escalating volume wars, in my experience, there are a few band members, generically speaking, who are most culpable when it comes to causing stage volume to go up.

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Vocalists: I can't tell you how many bands I've been in where the lead singer keeps asking the sound person to crank his or her monitor send to the point where the monitors are both on the verge of feedback, and are louder than the mains in the house (which is a nightmare for the FOH mixer). I understand that singers need to hear themselves (I sing myself), but for the good of the group, you need to learn to do with less, monitor-wise. Experiment with your vocal technique; for instance, opening your jaw wider when you sing makes your voice resonate in your head more, which can help with pitch recognition. You could also try wearing one earplug, and even visualizing pitches before singing them. The point is that you should be able to get by without your voice being ear-splittingly loud in the wedges. Of course, singers wouldn't need as much monitor level if the rest of the band wasn't so darn loud.

Drummers: The drummer has a huge impact on stage sound. Mediocre drummers frequently have little dynamic control, and have to bash their kits to feel the groove. Of course, drums are loud by nature, but drummers need to make an effort to play with power while keeping the volume under control.

Guitarists: As a guitar player, your ability to keep your stage sound at a reasonable level is impacted greatly if someone is running sound out front. If so, and if your amp is miked, you only need to be loud enough onstage to hear yourself—let the sound person take care of your sound in the house. Think of your amp as your personal guitar monitor. As a guitarist myself, I always try to be conscious of my stage sound. I know a lot of other players, however, who feel the need to cover the room from their stage amp. What's more, if you feel you can't get a good sound without cranking your amp way loud, it might be time to get a new amp.

Avoid the Ripple Naturally, other instruments can impact the stage sound, too. The bottom line for everyone is, remember that you're an ensemble, not a group of individuals, and that each time you turn up, play louder, or ask for more in the monitors, you're causing a ripple effect that will impact everyone's sound and make them want to turn up as well. It requires a group-wide effort to keep things from spiraling out of control. ■

The more you keep your stage sound under control, the better your performance will be. Why? Because you'll be able to hear each other.

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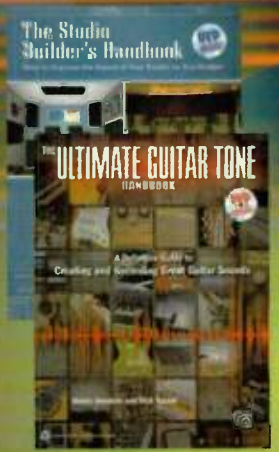

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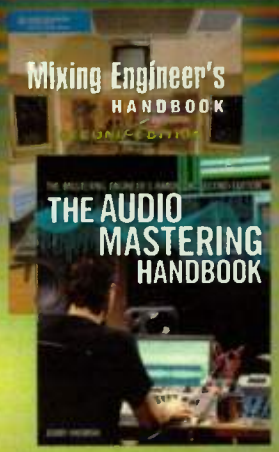

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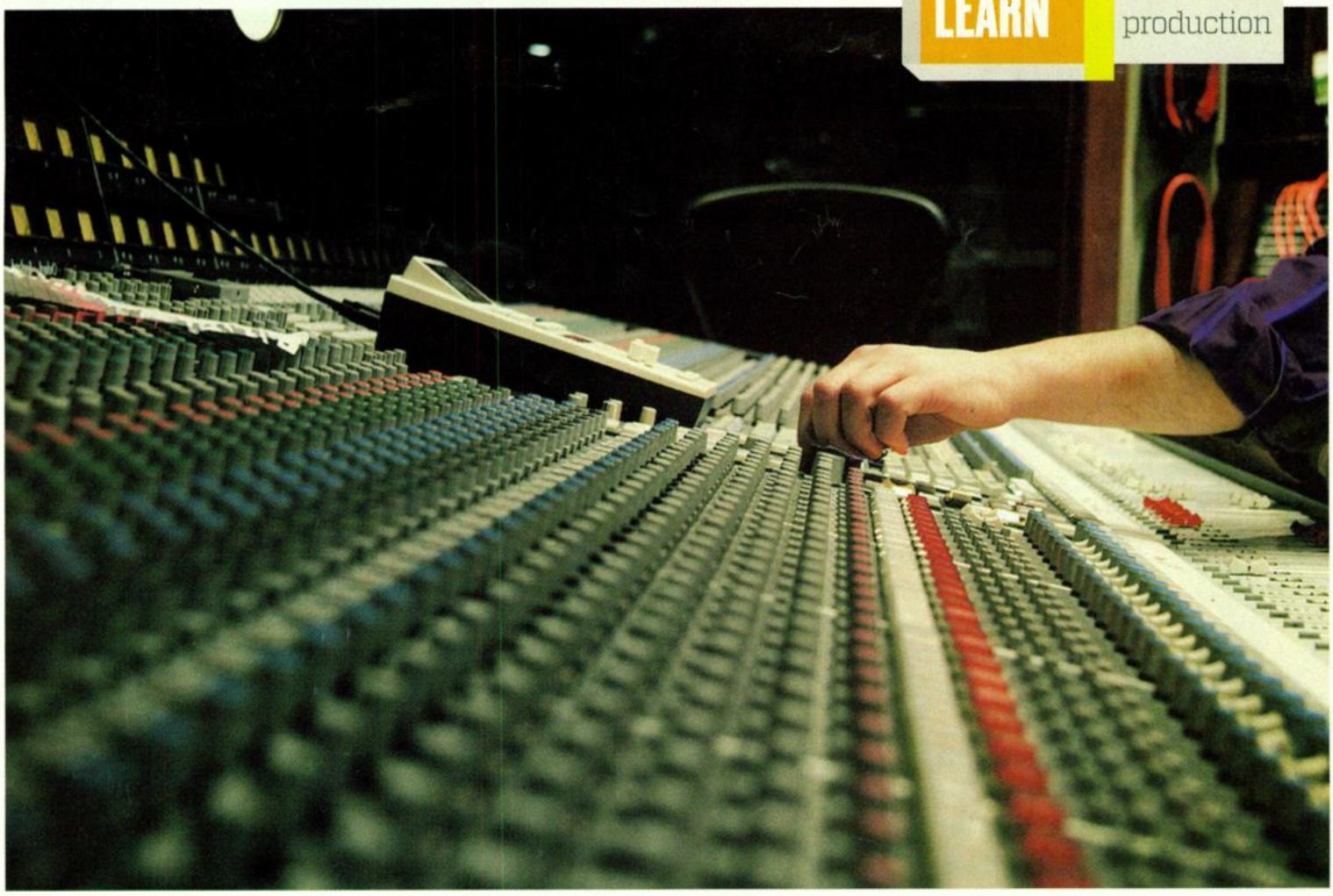

Ready to Roll

Simple strategies to start your mix off on the right foot

BY MIKE LEVINE

FOR MANY recording musicians, mixing is the most difficult aspect of the production process. It's part art form and part science, and incredibly open-ended. If you draw an analogy to a journey, mixing offers endless ways to get where you're going, and it's often difficult to tell when you've arrived. What's more, there are plenty of wrong turns that will lead you to nowhere. Considering the vagaries of the process, it pays to be as organized as possible when you start your mixes.

Of course, the point at which you finish the "tracking phase" and enter the "mix phase" of your project isn't always that clear cut. Many musicians are mixing as they go, adding reverb and compression, panning tracks, and EQing while still recording. Most don't pull all their faders down and remove all effects and panning from their tracks before starting to mix.

That said, when you have finished your last overdub and are at the point where you're concentrating solely on your mix, there are some things you can do to help make sure you get to your sonic destination. These are the mixing equivalent of starting a trip with a clean car, the oil and tire pressure checked, and the gas tank full.

Get Organized The greater your song's track count, the more you need to organize your tracks. The first step is arranging them by type. In both your DAW's mixer window and tracks window, place all the drum tracks together, the guitar tracks together, and so forth. Otherwise, unless you're mixing a tiny session, you're going to waste endless time hunting for tracks.

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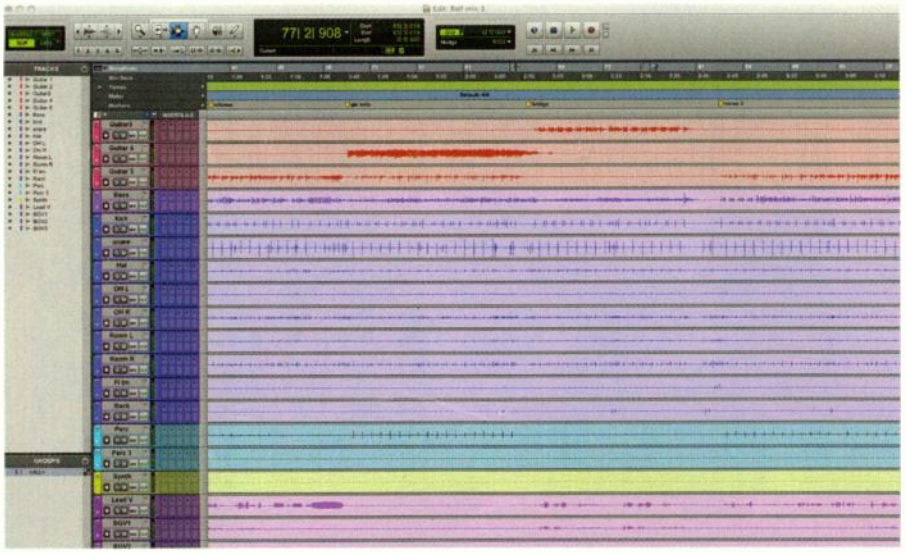

Fig. 1. Organizing your tracks by instrument type, color-coding them, and adding markers to song sections can help you mix more efficiently.

Color-coding your tracks is also helpful. Your DAW almost certainly has a track-color feature, which lets you assign colors to the track headers and the track lanes. Choose colors for the various track types in advance. It's an arbitrary choice, but once you decide on a color scheme—for instance, drums blue, bass purple, guitars red, vocals green, percussion light blue, aux and master tracks black—it's important that you stick with it from song to song. Once you've got your scheme memorized, you'll know at a glance which type of track you're looking at (see Figure 1 above).

Another useful organizing technique is placing markers at the beginning of all of your song sections. Most DAWs make it easy to insert and name markers, and most have a way to jump to a marker quickly. The latter feature is quite handy when mixing; it lets you instantly go to the song section you want to work on, without scrolling around and looking for it. Give your markers descriptive names, such as "verse 1," "chorus 2," etc., so that you know exactly which part of the song they're referring to. Over the course of a long mix session, this will save you a lot of time.

I also recommend soloing each track and listening to it from beginning to end. You'll be surprised at some of the extraneous noises that get picked up during tracking sessions: clicks, glitches from punch-ins, coughs between phrases, guitar buzzes, excessive finger squeaks, and so forth. You may not notice these when all the tracks are playing, but your mix will likely sound cleaner without them. You should be able to get rid of most problems through simple editing. Smooth out bad edits with crossfades, and cut out noisy sections that occur when the instrument or voice is resting.

Time Travel Even with your tracks prepared and organized, there will be times during mixing when you realize that you've taken a wrong turn, and wish to backtrack and resume working from a previous point. A good way to get back is to use the technique of incremental saving (a good thing to be doing regardless of your project phase). In its simplest form, incremental saving requires you to "save as" each time you make a significant change, and add an incremental number at the end of the file name, like "My Song 1," "My Song 2," and so forth. For the purposes of mixing, you want to get even more specific and add a description of the change into the file name, such as, "Song Name 1 bass down 2dB," or "Song Name 2 vox up."

Then, if you have one of those moments where you realize you've made a wrong turn with your mix, you can re-open one of your incrementally saved files from earlier, and everything will be as it was. The trick is to make those names descriptive enough so that you can choose the right one to open.

The more organized you are up front, the better off you'll be during mixdown! ■

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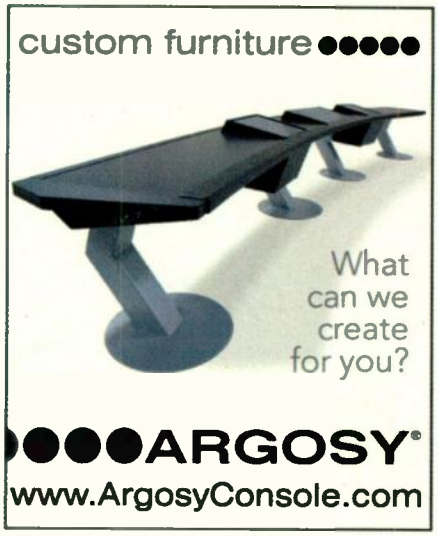

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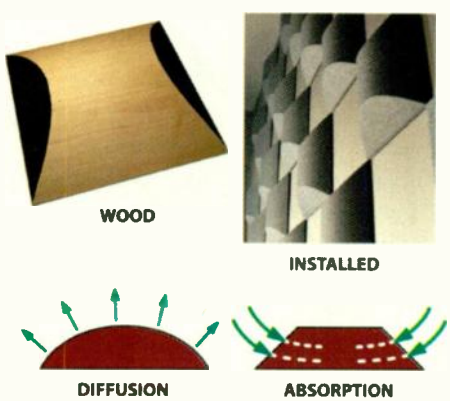

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Five Reasons to Run Away from a Recording Session

BY CRAIG ANDERTON

1

You walk in and the engineer says, "Wow, this is your *lucky day*! I just updated my DAW software, and you'll be my first project to use it!"

2

Setup is complete, and you're ready to rock. But when you switch on a 100-watt guitar amp to start recording, the lights dim. And it's not mood lighting. And they stay dim.

3

You make a comment, the engineer gives you a quizzical look, and then says, "Oh, *that* buzz? Don't worry about it—you can only hear it on playback."

4

Every time you talk to the engineer, he leans in a little closer, cups his hand to his ear, and says, "What?" in a loud voice.

5

There's a hardware pitch-correction processor in the rack. You see that the Bypass switch is taped to the "on" position. Be afraid . . . be very afraid. ■

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