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World Radio History



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StudioLive 16.0.2 Overview video  
[www.presonus.com/vid109](http://www.presonus.com/vid109)

graphic EQ settings. Or save unlimited settings *from* the mixer. Share presets with friends via email, IM, or disk swap. Fine-tune Fat Channel and graphic equaliser settings with a rich graphic user interface.



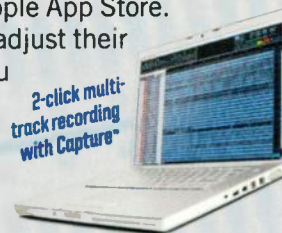
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Open your live recording directly into Studio One Artist DAW and tweak the performance to your heart's content (or record directly into Studio One).

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Capture offers simple cut-and-paste editing tools but for really sculpting your recordings, we've included **Studio One Artist™ 1.6**. Created by veteran digital audio workstation programmers,

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Studio One Artist comes with twenty-five 32-bit plug-ins and over 4 GB of third-party goodies such as Native Instruments™ Kore Player and Toontrack™ EZDrummer Lite.

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StudioLive 16.4.2

NEW StudioLive 16.0.2



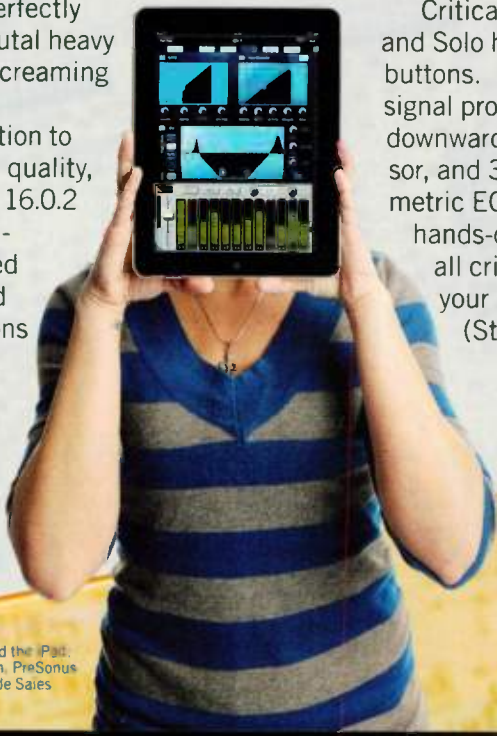


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The woman behind the iPad: Ashley Creek-Datum, PreSonus International Inside Sales

## It's flat-out easy to use.

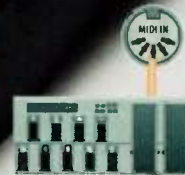
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## The more you know, the more you'll want one.

Check out the StudioLive 16.0.2 overview video (see the express URL and QR code symbol at the start of this ad), visit our Web site for an excruciating amount of detail, or visit a PreSonus dealer and get your hands on one today.

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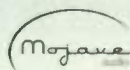
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## COVER FEATURE

18 **The Foo Fighters** The veteran rockers bring in producer Butch Vig, mixer Alan Moulder, and engineer James Brown, hole up in Dave Grohl's garage with an arsenal of vintage analog gear, and emerge with the explosive *Wasting Light*.



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insight

## Welcome, and Welcome Back

Hello, *EQ* and *EM* readers. Wondering what happened to your old magazines? Welcome to the new *Electronic Musician*.

These days, making great music means becoming an expert at a lot of things—from writing lyrics to recording a perfect take, to working the stage, to marketing your “brand.” But there hasn’t been a single source for all of this information, until now: We’ve merged *EQ* and *EM*, taken the best content from both magazines, and expanded our focus to provide guidance on everything from songwriting to social media, while keeping the deep technology perspective and insightful artist profiles that drew you to both magazines in the first place.

We’ve come full-circle in this merger: I took over *EQ* magazine last fall, after 14 years at *Electronic Musician’s* sister magazine, *Mix*. And longtime *EM* readers already know Craig Anderton, who served as editor for the magazine’s first five years, way back in the mid-’80s. Craig has been *EQ’s* Executive Editor for the past five years, a role that he carries over to the new *Electronic Musician*, where he’ll continue sharpening our technology focus while

providing his trademark wit and wisdom. (To get a taste, check out the new “Craig’s List” column on our back page.)

So, what’s new? We’ve kept in-depth tech features from each mag—such as *EQ’s* “Roundup” and “Power Apps” and *EM’s* “Master Class”—and added more reviews, more tips and techniques, more career advice, and of course, more artist profiles, beginning with our Foo Fighters cover feature on page 18. And we’ve expanded this “Community” section to give you, our readers, more of a voice. Hey, we’re all in it together, right?

The new *Electronic Musician* is the ultimate resource for anyone who wants to make better music, from the studio to the stage. We’re convinced you’ll agree.

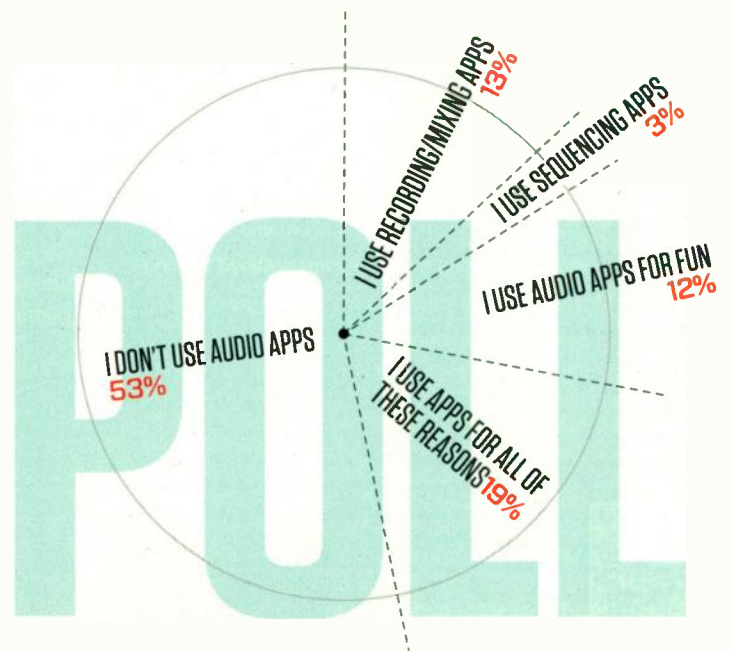


**SARAH JONES**  
EDITOR  
sjones@musicplayer.com



### The *Electronic Musician* Poll

## DO YOU USE MOBILE AUDIO APPS?



# “WHO WOULD WANT TO BREAK INTO IT? IT’S LIKE A BANK THAT’S ALREADY BEEN ROBBED.”

**RANDY NEWMAN**, backstage at the Oscars, responding to a college reporter’s question about breaking into the music business.

# COMMUNITY



## Gadget Geek

DO YOU wrestle with a tangled ball of power cables and chargers everywhere you go? The Grid-It organization system from Flight 001 just might make a neat freak out of you. This slim laptop-size pad is covered with woven rubberized elastic bands that hold any combination of mobile devices, cords, and accessories in place. With a rear zippered pocket for extra storage. \$22 at [www.flight001.com](http://www.flight001.com).



IK Multimedia's Classik Studio Reverb plug-ins provide four different algorithmic reverbs.

reverb tells it how to process an incoming signal so that it decays in the same way as the impulse.

Algorithmic reverb synthesizes a room's characteristics by creating algorithms that generate a particular number of reflections, subject them to high-frequency damping, add pre-delay, simulate a particular room size, and so on. Although

this is an "imaginary" reverb, the algorithms are based on analysis of the way acoustic spaces affect sound. You can think of convolution reverb as similar to keyboard samplers, while algorithmic reverb is more like virtual analog synthesizers.

As for which type to choose, convolution reverb is more "literal," while algorithmic reverb is more "impressionistic." Convolution reverb is more flexible in that you can load different impulses and obtain entirely different sounds—even impulses of tunnels, or something like the body of an acoustic

bass. However, it's less flexible in other ways because changing individual parameters—decay time, damping, and so on—is difficult, or in some cases, impossible. Algorithmic reverb limits you to the chosen algorithm, but you have far more flexibility to edit the algorithm's parameters.

Each type of reverb has its own sound quality, and neither one is "wrong" unless it doesn't sound right in the context of your music. Try different types of reverb, and it should be obvious which works best with your recordings.

**THE EDITORS**

### ask!

I've seen references to "convolution reverb" and "algorithmic reverb." What's the difference between them? Is one type better than the other? How do you know which kind is best for a particular project?

JOE PASQUALE, HACKENSACK, NJ

Convolution and algorithmic reverbs use different technologies. A convolution reverb gets its sound by loading an impulse, which is a sampled "snapshot" of a room's decay characteristics. One way this is performed is by recording a starter pistol shot and decay. Loading this impulse into a convolution

Got a question about recording, gigging, or technology? Ask us! Send it to [ElectronicMusician@musicplayer.com](mailto:ElectronicMusician@musicplayer.com).







first  
take

MUSE AT ARCO ARENA,  
SACRAMENTO, CA  
SEPTEMBER 28, 2010

“We’re always trying to push it to the limits of the laws,” Muse drummer Dominic Howard recently said about the band’s bombastic, futuristic, and vaguely Orwellian stage set for its *Resistance* tour. Three hydraulic risers lift the band 20 feet into the air, below giant suspended cubes covered in LED video panels awash in millions of lights. Dozens of P.A. cabinets hang in arrays on all sides of the stage, supplemented by 18 subs hidden under the stage, all powered by 96 amps. Howard admitted that set pieces, however outrageous, tend to be toned-down versions of the band’s original ambitions: “Most of our ideas get shot down by Health and Safety.”

PHOTOGRAPH BY STEVE JENNINGS



cover  
story

# THE **FOO FIGHTERS** TAKE A



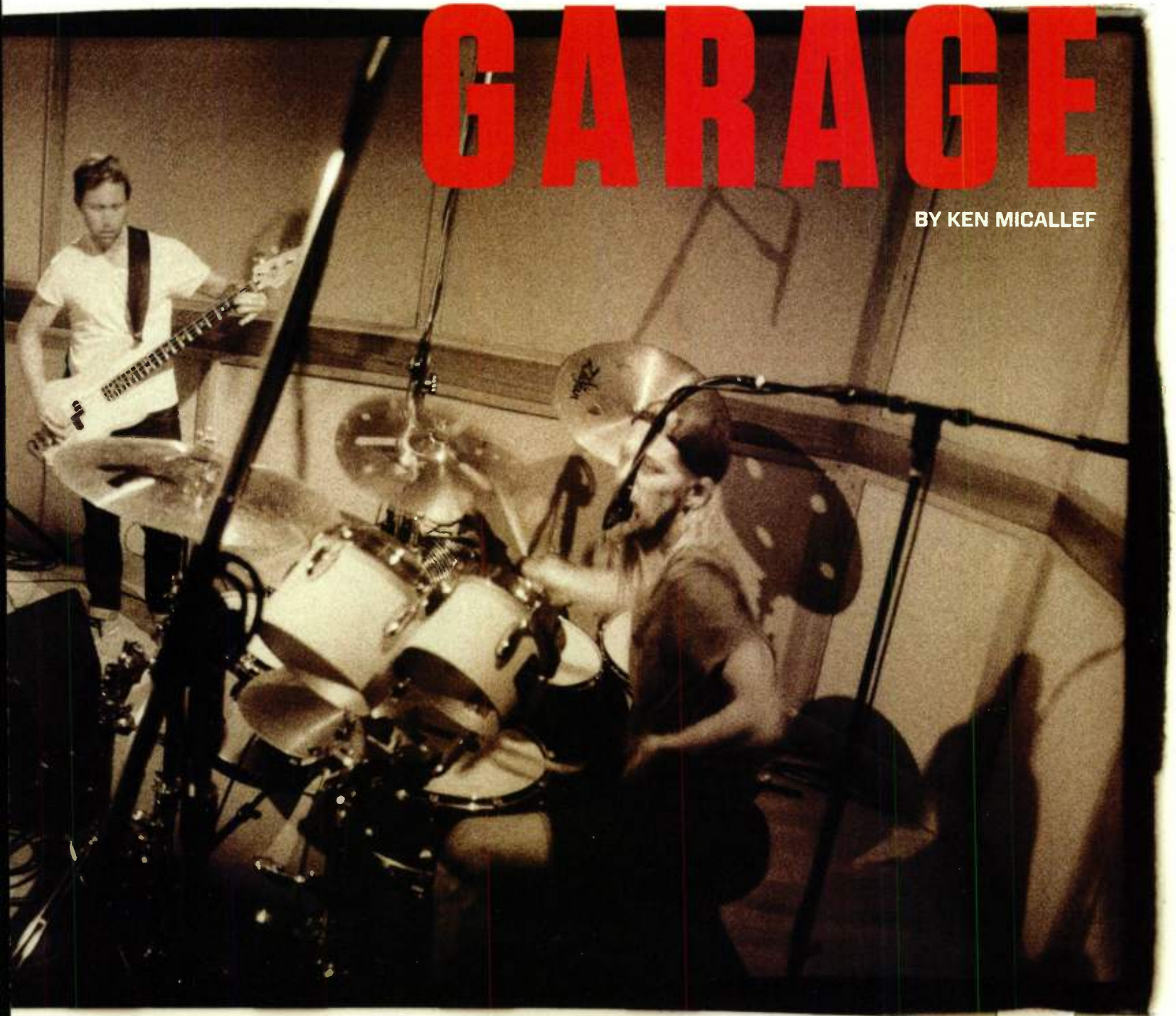


# GROHL'S

LOW-TECH APPROACH TO HIGH-INTENSITY ROCK

# GARAGE

BY KEN MICALLEF





# Y

“You know that scene in *The Wall* where the faceless people are falling into the machine that’s grinding them into paste?” asks Dave Grohl from his 606 Studio in Los Angeles. “Digital editing has robbed drummers of their identity, just like that. I’m heartbroken by what heavy-handed producers have done with drummers over the last 10 years.”

“A drummer walks into a studio,” he continues, like he’s telling a Borscht Belt joke. “He says, ‘This is how I play the drums,’ and the producer says, ‘That’s not good enough. I am going to make you sound like a machine.’ That’s f\*\*king lame! I am not the greatest drummer in the world, but when I record drums, it doesn’t sound perfect and I am all over the place and the cymbals wash a little hard, but that’s how I play the drums. If you don’t like it, don’t call me back. I wish that every drummer would tell their producer,

The Foo Fighters recorded *Wasting Light* in Dave Grohl’s garage, on all-analog equipment.

‘That f\*\*king machine doesn’t make me sound like me. It makes me sound like *you*, and you’re not the drummer, motherf\*\*ker!’ We’ve got Taylor Hawkins—who is the greatest f\*\*king rock drummer I’ve ever played with—why not let Taylor sound like Taylor? So that’s why we used tape and no computers.”

*Wasting Light*, the Foo Fighters’ seventh album, is a messy, often distorted, over-the-top record that pulses with attitude and energy. Every Foo Fighter’s album is an adrenaline junkie’s dream, the twin powers of Dave Grohl and Taylor Hawkins guaranteeing maximum energy like twin turbojets propelling a 747. But *Wasting Light*, recorded analog to tape (API 1608 32-track, two Studer 827s) with no computers, not even to mix or master, is an entirely different beast. You hear guitars clipping, cymbals pushing VU meters into the red, the sound of a live performance: blood, sweat, and tears (literally). What you don’t hear is a grid. Or Autotune. Or perfectly lined-up drums.

Deciding to track at Dave Grohl’s house with producer Butch Vig and engineer James Brown (veteran producer/engineer Alan Moulder came in to mix), the band (Grohl, Hawkins, Pat Smear, Nate Mendel, and Chris “Shifty” Shiflett, and bassist Krist Novoselic on one track) set up in the garage (drums), the living room (control/live room), and in closets (vocals), with no sound treatment and plenty of bleed. Three baffles were placed behind Hawkins’ vintage Ludwig drums, but that was it.

“I am no stranger to tape,” Grohl says. “Call me dumb, but the simple signal path of a microphone to a tape machine makes perfect sense to me. There’s not too many options, and the performance is what matters most.”

But not everyone agreed with Grohl’s “analog only” rule. “The first song we recorded, we get a drum take





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and Butch starts razor-splicing edits to tape,” Grohl recalls. “We rewind the tape and it starts shedding oxide. Butch says, ‘We should back everything up to digital.’ I start screaming: ‘If I see one f\*\*king computer hooked up to a piece of gear, you’re f\*\*king fired! We’re making the record the way we want to make it, and if you can’t do it, then f\*\*k you!’ Nobody makes us do what we don’t want to do. ‘What if something happens to the tape?’ ‘What did we do in 1991, Butch?’ You play it again! God forbid you have to play your song one more time.”

With that behind them, the team settled into the tracking process: Hawkins recording drums to click, and Grohl’s scratch guitar and scratch vocal to a master reel, which was the reel used for edits. Rather than recording numerous drum takes, punch-ins and edited transitions completed the master takes. The master reel and a blank slave reel were striped with SMPTE timecode: “We would lock those two striped reels together and simultaneously bounce down the drums to four tracks (kick, snare, and a stereo mix of all the other drum tracks); Dave’s scratch parts would also get bounced over,” says Brown. “We would then record all of the overdubs to the slave reel. We never went back to the master reels, due to the fact that we ended up mixing back up at the house...under normal circumstances, one would lock the master back up with the slave and use the first-generation drum tracks from the master reel (in other words, not the bounced-down drums on the slave reel) when mixing... however, with only 32 channels on the console, that wasn’t an option for us. All of the mixes, with the exception of ‘Dear Rosemary,’ were mixed using the bounced-down drums.” Everything was mixed with all eight hands (Grohl, Vig, Brown, and mix engineer Alan Moulder) on deck, riding faders in real time to tape.

“In Pro Tools, you can take a band that’s not very good and make them razor-tight,” Butch Vig explains from Silverlake, California, where he is working on the forthcoming Garbage album. “But this became more about the band’s performances, about what they would have to do in order to make a great record. They wanted a challenge. That was exciting. Somebody would want to do a punch, and I’d say, ‘If you go over it, it’s gone.’ The Foos rehearsed very hard to pull this off, and not many bands could do it.”

Vig and the Foos did allow a click track for drums; they’re not *insane*. But even then, Vig discovered the joys of free flying and forgetting the grid.

“Clicks were used, but it’s loose,” Vig says. “Sometimes we’d worry about the timing or a snare hit. Then we realized that when everything is off just a few milliseconds, the sound gets wider and thicker. If you zoom in with Pro Tools and put everything exactly on that microscopic downbeat, it’s so perfect that it loses a thickness. If everything is off just a little bit, the music just gets wider and thicker.

“It all made our brains switch into a different focus,” he adds. “For one thing, everyone is used to looking at a computer screen, so you look at the music, what the timing is, what the waves are like. There was no computer screen at Dave’s, so I would look at the



“[Recording to tape] made our brains switch into a different focus. Everyone is used to looking at a computer screen—you look at the music, the timing, the waves. There was no computer screen at Dave’s, so I would look at the meters, which is how I initially learned how to record.”

—BUTCH VIG

meters, which is how I initially learned how to record. We set up this huge HD monitor on the meter bridge of the tape machine so we could see how hard we were hitting the tape. Eventually we started feeding that live to the Net, with no explanation!”

**BUNKER DRUMS** Down in the concrete bunker/basement that functioned as a drum booth, engineer James Brown had his work cut out for him. Brown used the same close mics as he would for any date: Yamaha SKRM100 Subkick (with custom API pre) and an AKG D112 (custom API pre/Inward Connections EQP2/Distressor) on kick; Shure SM57 on snare top and bottom (custom API pre/EQ’d and summed in API 1608/Distressor); AKG 452 (Neve 1073) on hi-hat; Josephson E22S (API 1608 pre) on toms; AKG 452 (Neve 1073) on ride.

But as the concrete floor created mad reflections, Brown experimented with overhead and ambient placement. Grohl demanded more “garage” whenever things became too tidy-sounding, which meant turning up the room mics, and turning down the close mics. For overheads, after a shootout, Brown settled on a Violet Designs Stereo Flamingo (Neve 1073) and Shure SM58 “trash” (custom API/Urei 1176 (all buttons in, “Brit mode”). Kit ambience (about four feet out) was a Neumann M49 (Great River/Harrison 32EQ/Retro Instruments Sta-Level); overhead ambience was a Violet Black Finger (Neve 1073/Urei 1176); main ambience, two Soundelux 251s at knee level against the garage door (custom API pres/Dramastic Audio Obsidian). For floor ambience, a pair of Crown PZMs (custom API pres/DBX 160).

“I’d use the same mic placement in that garage, regardless of the mics,” Brown explains. “Turning the Soundeluxes away from the drums and pointing them into a corner tempered the top end. The mic choices were more about choosing cymbals and asking Taylor not to hit so hard. That allows more room for the snare and kick to cut through in the ambient mics. That’s when you can really hear the garage; the air



isn't getting sucked up by cymbals and midrange."

Room mics were placed eight feet out from the kit—basically, against the garage door at the farthest point away from the drums. "It was purely to temper the cymbals," Brown says. "The garage being untreated and literally a concrete box, it was a very harsh, loud environment. So it required an unconventional miking setup. The Crown PZM, whatever you stick it to, it expands its pickup area, so those added a lot of punch in the low/mid area. The Shure 58, I stick it directly behind the drummer's head and compress the living daylights out of it with all the buttons in on the Urei; that adds a trashiness to everything. The Neumann between the garage door closer to the drums is to capture some of the air around the kick drum. There are three mics on kick drum: one inside, aimed at the beater; then the NS10 sub bass; and the kit ambience from the Neumann. The mic pre choices are what I generally use. For tom, kick, and snare, I used my go-to choices."

Grohl sang through his time-tested Bock 251 (Neve 1073/Distressor); Brown used his go-to mics for bass and guitar. Bass choices were an Avalon U5 DI (Neve 1073/Inward Connection EQP2/Distressor) and two close mics on Nate's Ashdown ABM 900 EVO/Ashdown 8X10 cab: Lauten Clarion (FET) and a BLUE Mouse. Guitar mics were many: two RCA BX5s, Royer R121, Josephson E22S, Shure SM57, Shure SM7, Sennheiser 421. Guitar pres were "almost exclusively Shadow Hills Quad Gama—occasionally, I would use the API board pres," says Brown. "That would in turn



Top: The control room, with video feed of the API 32-track's meter bridge. Bottom: Taylor Hawkins' drum kit.

## BIG SOUND ON A SMALL BUDGET

ENGINEER JAMES BROWN'S ADVICE FOR GETTING PAST GEAR LIMITATIONS

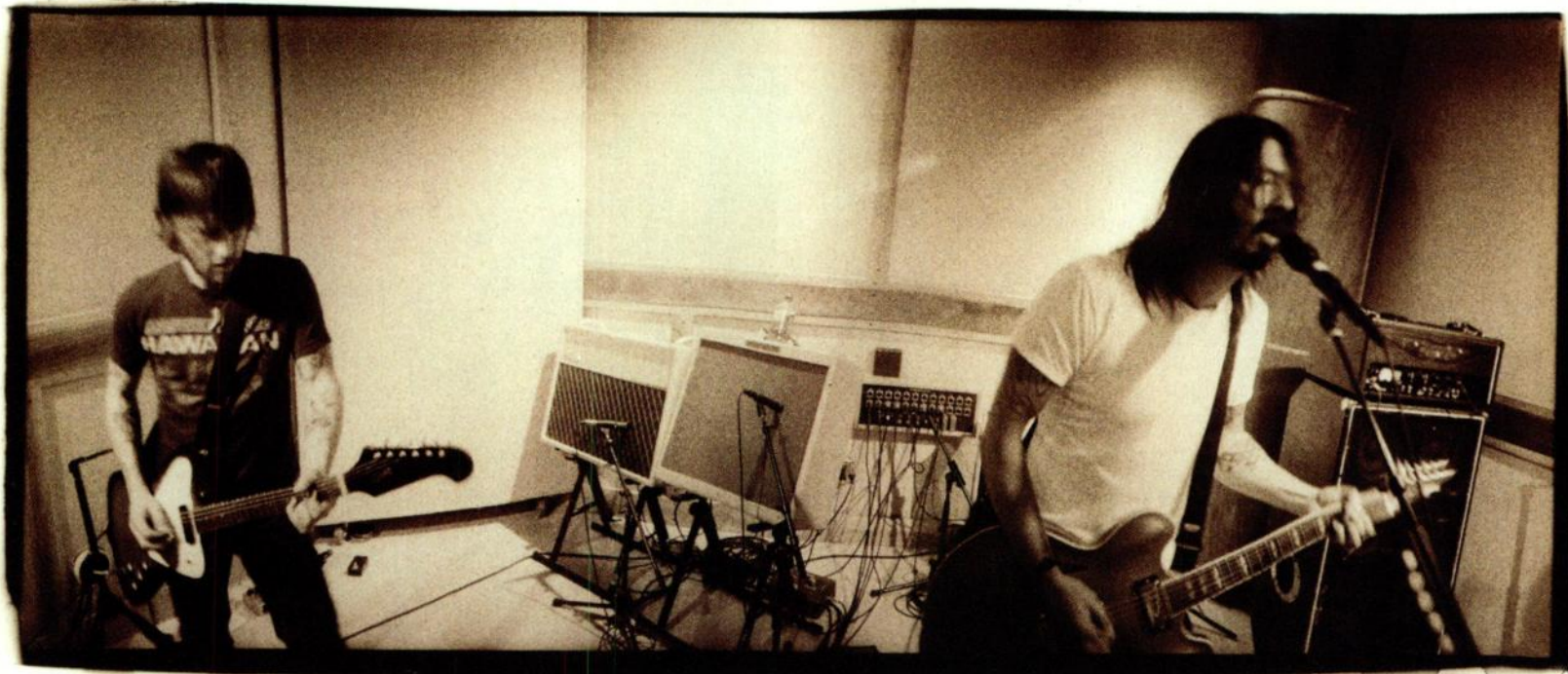
"If you only have cheap mics and pres on hand, it doesn't mean you can't get good sounds," Brown says. "Understanding mic placement can be the difference between your work sounding like it's made up of a bunch of disparate sounds, as opposed to a cohesive, robust-sounding recording. The main rule of thumb is, if it sounds good in the room, there's a good chance it will sound good recorded. Then if you can add to that an understanding of phase cancellation and how to avoid it, you'll be on your way. The rest of it is all about the way you hear things. But it's hugely important to nurture an understanding or feel for how musical parts and sounds interact and fit together—the alchemy of it, if you will. There's an art to engineering music, so at some point you have to let go of all of that knowledge and start thinking about it in those terms."

be fed through a Universal Audio LA3A limiter, just touching the peaks. Nearly everything went through a fader and EQ on the API 1608 console that Butch would manipulate during performance to send as clean a signal to tape. We had to tape a guitar pick to the fader track to stop him burning a hole in the tape!"

After tracking instruments, Grohl cut vocals, typically sitting next to Vig and Brown in the makeshift control room. As with everything he does, Grohl pushed himself to the max.

"Ask Dr. Phil about my headaches!" Grohl laughs. "I like to make vocals feel atmospheric and ethereal. But then I want them to sound like I'm in primal scream therapy. Some things I am singing I can't make sound pretty. Punk rock is my identity. I am from a little town





in Virginia, a high school dropout who wanted to play punk rock. So when I am screaming my balls off, it's because I don't feel any different than when I was 15.

"Anyway, I do get headaches. I want a song to have maximum emotional potential when I am singing in the studio. When the mic is picking up every tiny inconsistency, you really strain to make it sound right. And I sit down to sing. That's the only way I know how to do it. Maybe I feel funny 'cause I don't have a guitar on. I project the same; I don't know how else to do it."

### RETROSPECTON, INTROSPECTION

"We did a couple songs where Dave sang right next to me," Vig says, "like, 'I Should Have Known.' Lyrically, there are references to Kurt Cobain, but I don't know if Dave would admit to that. We ran Dave's mic into a Space Echo there—it's got this spooky, distorted sound. At the end of that take, the hair on my neck stood up; I couldn't say anything. Dave looked like he was crying, 'cause he was singing so hard. He was obviously channeling something inside. It's one of my favorite songs on the album, and the darkest and weirdest, in a way. I love that song."

Grohl won't confirm that "I Should Have Known" is about Kurt Cobain—only that the doomed legend is in there, somewhere. "There is something to be said for starting over," Grohl says. "To be able to say, if this all ended now, I'd be totally okay with it, and I'd start over again. 'Cause that's what I've always done. I've always felt like this is temporary, ever since Nirvana became popular. So a song like 'I Should Have Known' is about all the people I've lost, not just Kurt.

"There was a lot of retrospection and introspection going back to the way we used to make records," he continues. "and with someone who started my career 20 years ago: Butch. I wouldn't

"I like to make vocals feel atmospheric and ethereal. But then I want them to sound like I'm in primal scream therapy. Some things I am singing, I can't make sound pretty. Punk rock is my identity."

—DAVE GROHL

be doing this if not for Butch Vig. After we were finished, I realized there's a reason why we're here, and why we made the album the way we did, and why we used Butch, and a reason why Krist Novoselic played on a song. I was writing about time. And how much has passed and feeling born again, feeling like a survivor, thinking about mortality and death and life, and how beautiful it is to be surrounded by friends and family and making music."

Ultimately, *Wasting Light* is a life-affirming, uplifting record, like most Foo Fighters records—from the roaring opener, "Burning Bridges," and the guitar shrapnel counterpoint of "Rope," to the Ministry-esque death-metal howl of "White Limo" and the introspective "I Should Have Known." Somewhere in his 40s, Dave Grohl comes to grips with his past by facing his present.

"This band was a f\*\*king fluke," Grohl says. "To think now that we can headline these huge shows and there are these huge expectations, like, 'You better make a f\*\*king hit record!' That kind of shit. So, okay, I'll go back to my garage, 'cause that's what everyone thought we *shouldn't* do. It diffused any of that expectation. If we have songs that mean something, and you hear them once and they stick, and they're recorded so it sounds like a beautiful explosion and it feels like human beings making music, then we've accomplished everything that we've wanted to do. It made perfect sense. Why do it the way everybody else does it? I want to sound like *us*, like the Foo Fighters." ■



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# LISTEN

## The Kills

With vintage effects, meaty amps, and mature songcraft, the lean-and-mean duo deal a deathblow to the naked scuzz-rock sound that they helped perfect.

BY BILL MURPHY

"WE MADE this record in such a different way," says The Kills' Jamie Hince, pausing to reflect on how he and Alison Mosshart prepared for recording their fourth album together—a seething potboiler of art-punk swagger called *Blood Pressures* (Domino). "A lot of the songs came together really quickly, and then I didn't really strike upon a way of making it until we got quite far into the sessions. There was the vibe of certain records that were really getting to me—









all those Compass Point [Studios] bands like Grace Jones, Sly & Robbie, Talking Heads, and Tom Tom Club—and that was mixed while listening to lots of the first Roxy Music record. So I had this idea about using different instruments to tug on different heartstrings.”

In the end, *Blood Pressures* marks a telling progression beyond the keening, angular textures of the duo’s 2008 cult breakthrough, *Midnight Boom*. That album bristled with compact, tightly rendered and spiky-sounding garage pop songs, many of them inspired by children’s playground chants from a 1967 documentary short called *Pizza Pizza Daddy-O*. This time around, the scope was more expansive, with Hince and Mosshart working separately and in unison to flesh out finished songs from a stockpile of ideas, and then building up a careful layering of the different parts for a heavier, cage-rattling tone throughout the album.

Teaming up once again with co-producer Bill Skibbe at his Key Club Studios in Michigan made the process feel familiar at first. “I have pretty strong memories of sitting in my little spot in the corner of

**“It’s almost like the songs are less important than the attitude we put into playing them, which I guess is the spirit of punk.”**  
—Jamie Hince

the live room,” Mosshart says. “I had my [Tascam] 4-track cassette recorder, my acoustic guitar, my microphone and my reverb unit, and I was just writing most days, filling cassette tapes with ideas sometimes almost finished songs, and then showing everything to Jamie. It’s what I always do, really.”

But Hince felt immediately that Mosshart’s song sketches were coming from a deeper source; she’s been doing this for a while, after all, and the time she spent on the road last year with Jack White and Dead Weather certainly didn’t hurt. Hince knew his instrumentation had to match the energy. The Kills are a true “power duo,” in the sense that Mosshart belts out the lead vocals while Hince lays down the music with only programmed drums and one of several Hofner Galaxy guitars, which he de-tunes on the low string so he can play bass lines and chords simultaneously. But before he started work in earnest on *Blood Pressures*, he upgraded his old Akai MPC60 to an MPC4000, and assembled an arsenal of guitar amplifiers to get the big, beefy sound he needed.

“We had all the amps isolated in a separate room,”





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Skibbe explains, “with Jamie and Alison performing the songs in the live room. He has a crazy pedal board set up with two Boss [DD-3] delays and two Electro-Harmonix POGs. We usually use one of the POGs to thicken up the sound, and that feeds three guitar amps—a modified Fender Twin, this amazing Vox AC50, and a ’60s Silvertone 610 that bit the dust right after we’d finished tracking everything [laughs]. We split off the other POG for sub frequencies to help with the bass, and that goes to a ’68 Ampeg SVT with an 810 cabinet. Leave it to Jamie to have to be a full band, right?”

The big sound comes through like a sledgehammer in “Satellite,” which kicks off with a regenerative feedback effect that Hince gets by setting one DD-3 delay to overload the other. On the steady-rocking “Baby Says,” the main guitar part modulates through a vintage Maestro G-2 Rhythm ’N Sound—more of a suitcase than a pedal—while a faraway Mellotron comes in near the end of the song, doubling the guitar line in the upper registers, Eno style. In fact, Hince sometimes didn’t play the guitar at all; “Nail In My Coffin” features a clavinet cycling through an Echoplex Mark IV over a stripped and insistent backbeat.

**“When you hear an old Stevie Wonder or James Brown record, the vocal is going in way too hot to the tape machine, and it’s over-modulating. I wanted to get that sound on this record.”**  
—Bill Skibbe

A sparsely arranged song like “Nail” is the perfect vehicle for Mosshart to step to the mic—usually a Neumann M249, at the top of a vocal chain that includes one of Skibbe’s custom-built compressors. Based on a vintage LA-2A schematic, his Red Stripe 5-9c was used on most of *Blood Pressures*, but figures most prominently on “You Don’t Own the Road,” where Mosshart teases the edges of distortion whenever she goes strongly for a note.

“When you hear that on an old Stevie Wonder or James Brown record,” Skibbe explains, “the vocal is going in way too hot to the tape machine, and it’s over-modulating. I wanted to get that sound on this record, but since we’re going into Pro Tools, the best way to do it is crank up the gain [on the Red Stripe] and let Alison push into that over-modulation. We set the reduction all the way up, and let it over-compress the whole time, so when she’s singing, she’s really mashing the compressor. The only EQing we did was a highpass filter on about 80 or 100 [Hz], just to get rid of that low-frequency rumble so the limiter wouldn’t hit it.”

It was always important for Mosshart to be able to feel the compression dynamics during her performance, which meant printing her takes with the effect, instead of adding it afterwards. “I think I absolutely play to it,” she says. “I moan and complain in the studio if something doesn’t sound a certain way, because I’m playing for the bigger picture. You sing differently if the vocal is breaking up. You start to play with that and use that when you’re singing. If the delay is a certain length, you might lengthen and shorten words accordingly—things like that.”

For all the attention to sonic detail (and there’s more: the studio’s custom 32-input Flickinger console—a fabled piece that was rescued in 1975 from Sly Stone’s Hollywood den of hedonism—was used to add some bottom-end heft to most of the sampled and live drums on the album), Hince’s main concern was to make sure *Blood Pressures* came across as a hard-hitting statement of how The Kills have grown as a band. Even so, he’s quick to point out that he and Mosshart remain true to what inspired them to start making music in the first place.

“It’s almost like the songs are less important than the attitude we put into playing them,” he says. “That’s always been the thing, which I guess is the spirit of punk, and it’s the same with early blues. When you’re making music like that, you have to be a good editor. You have to know what to throw out, to know what’s good and what’s bad, and then commit all the way to what you’re doing.” ■

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Peter Bjorn and John (left to right)—  
John Eriksson, Peter Morén, and  
Bjorn Yttling.

# Peter Bjorn and John

Expanding spaces on  
*Gimme Some*

BY BILL MURPHY

SWEDISH INDIE rock chameleons Peter Bjorn and John know a thing or two about change. For more than a decade, they've shown a knack for completely reinventing their sound, from the jangly garage pop of their 2004 breakthrough *Falling Out* to the densely processed electro textures of 2009's *Living Thing*. Their latest outing, *Gimme Some* (StarTime International), finds the trio going back to a bare-bones, punk-meets-pop live setup—all of it colored by natural reverb, vintage analog effects, and a new set of ears at the controls.

"We wanted to try something less mystical, with just guitar, bass, drums, and vocals," explains bassist Bjorn Yttling, who has been PB&J's producer from day one. "So we had that in mind, but we also wanted to bring in somebody new to help us do it. We listened to a lot of American, English, and Swedish records, and the best drums we heard were on records produced by Per Sunding."



Sunding has worked with a slew of Swedish and Danish artists over the years, including The Cardigans, Superheroes, Swan Lee, Bob Hund, and his own band, Eggstone. He's also a co-founder and in-house producer at Tambourine Studios ([www.tambourinestudios.com](http://www.tambourinestudios.com)), which is outfitted with a late-'70s Neve 8068 console, a Pro Tools HD3 Accel rig with Apogee AD/DA-16X converters, and a large live room at its hub.

With its dry, deadened surfaces, the room presented the band with challenges as well as comforts. "Dig A Little Deeper" gets its echo-washed '60s psych-pop sound largely from placing John Eriksson's drums in the stone-tiled kitchen, and Peter Morén's Vox AC30 guitar amp at the end of a long corridor, with just two Sennheiser 421 mics set up in each space to capture the source *and* the ambience. By contrast, the basic take of "Eyes" was tracked entirely in the live room, with Ytting playing one bass line on an old Kent guitar through an Electro-Harmonix Bass Microsynth, and overdubbing the sliding bass on a Fender Precision. Eriksson's drums were

miked with a matched pair over the top of the kit, creating the stereo illusion that you're actually sitting in the drummer's chair, while Morén's vocals were run through an ancient Dynacord tape delay unit for a classic slapback echo effect. (Think John Lennon's "Mind Games," for starters.)

"We used that same delay on some parts for 'Breaker Breaker,'" Sunding says, citing one of *Gimme Some's* more overt punk-rock workouts. "The drums went through [Digidesign's] Lo-Fi plug-in post-recording, just to add some of the grittiness that the bass and guitar were getting. But John is a really talented drummer, so I shouldn't take too much credit. The whole thing is really in the way they *play*. Each song has a character in itself. You need to have a good performance—even if it's with crap equipment—for those dynamics and nuances to come through." ■



**“We wanted to try something less mystical, with just guitar, bass, drums, and vocals, but we also wanted to bring in somebody new to help us do it.”  
—Bjorn Ytting**

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LISTEN

profile

# Adam Goldberg

The veteran actor and musician explores lush, '70s-inspired indie-pop production for *The Goldberg Sisters*.

BY TONY WARE

AN ACTOR, director, singer, guitarist, and songwriter, Adam Goldberg is a true hyphenate. Well-known for his roles in such films and television series as *Dazed and Confused*, *Saving Private Ryan*, *2 Days in Paris*, *Friends*, and *Entourage*, Goldberg has also overseen all aspects of production—from screenwriting to score—for features including 2003's *I Love Your Work*. Now, with the flord, '70s-inspired indie art pop project *The Goldberg Sisters*, he turns his means of expression to a different type of film, one of Echoplex tape warble and envelope filter color and Lawson plate reverb, an analog film that coats the 10 tracks on the *Sisters*' self-titled debut album.

*The Goldberg Sisters* follows up the 2009 album *Eros and Omissions* by Goldberg's LANDy project, which amassed over six years' cut-n-paste concepts collated from collaborative sessions with the Flaming Lips' Steven Drozd, among others. For *The Goldberg Sisters*, however, the intention was to do something “cleaner, more precise, that wasn't homogenized, but that used a handful of elements to establish more of a band-like continuity,” says Adam, who has been four-tracking, exploring self-production and finding comfort in the snowy oscillation of analog effects off-and-on for almost two decades.

Working in Eagle Rock, CA, with producer Aaron Espinoza (Earlimart) and his outboard gear trove, the Ship Studio, Adam brought together Moogerfoogers, Roland



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**“Editing was all about balancing dynamics into a more cohesive but still brutally honest aesthetic.”**  
—Adam Goldberg

harmonies, and much more are treated almost like sound design elements, providing impressive dimensionality to the stereo image. The common denominator is Goldberg's persuasive croon, delivered steadily through a Pearlman U47 into a Shadow Hills Industries Mono GAMA mic pre.

“We didn't spend much time in post production . . . but I had these scratch tracks implying as much as I could in terms of vibe, so what we needed to do was fairly intuitive,” reflects Goldberg. “There was still a big editing job that needed to be done, though, an ongoing process of subtraction and addition that was all about balancing dynamics into a more cohesive but still brutally honest aesthetic.”

Using a Pro Tools HD|3 rig with Digidesign 192 I/O to reinforce the compatible underpinnings, Adam and Aaron wrestled the intensity into a cogent wash. The mix's final glue was a run through Aaron's API 8200 24-channel mixer/summing box, with its 2520 op amps, into an Alan Smart C2 stereo compressor, a GML8200 EQ with a shelf at the top for shine, then into a LavryBlue A/D in saturation mode, delivering that tonal narrative. ■

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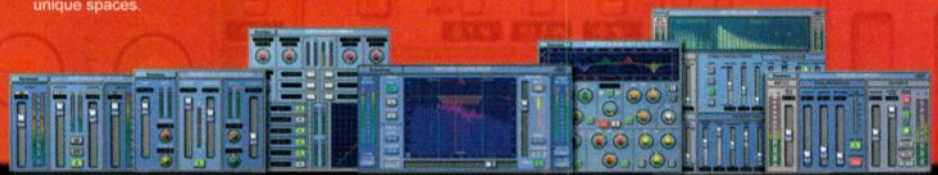
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LISTEN

profile



# Pendulum

Australian drum n' bass  
with a metal edge

BY BILL MURPHY

PENDULUM HAS managed to recast the face of hardcore dance music in their own image, grafting strands of emo rock and industrial metal onto live drum 'n bass beats for a chart-topping amalgam that is as evident as ever on *Immersion* (Ear Storm/Atlantic), their latest studio effort.

Lead singer Rob Swire uses Steinberg Nuendo to record and mix, with Avid Pro Tools serving to align drums and quantize vocal lines. "We don't actually use a mixing desk in the studio, since I learned how to do it all digitally with a mouse," Swire explains. "Everything is recorded through API or Great River mic pres, and goes through Lynx Aurora converters. I used to be on Logic about ten years ago, but I felt like I needed a program that was more of a blank canvas. Nuendo is definitely not as full of features as Pro Tools, but it's a lot easier to use on the fly, especially when you're editing tracks."

Swire uses a Brauner VMA mic, which comes with two switchable capsules—one for a flat, full-frequency clean sound reminiscent of the original VM1, and the other for a vintage-sounding emulation of the Neumann U47. For more rocked-out tracks like "Crush," he'll choose the latter, going into an Empirical Labs Distressor before hitting the converters. For the rest, he'll go clean, compressing after A/D conversion with a UA Blue Stripe 1176.

*Immersion* is steeped throughout in synthesis and signal processing. "Watercolour" surges with live horns (recorded on multiple

takes through a Royer R-121 ribbon mic, then detuned and stacked), Swire's brassy synth line (generated with the U-he Zebra 2 wireless modular), and lead vocals processed with Nuendo's Vocoder plug-in. "Comprachicos" taps into a Nine Inch Nails mood, with stabs of McGrillen's bass getting cut up, deconstructed and destroyed, while the synth solo in the second part of "The Island" follows a frenetically bent step sequence composed in Native Instruments' Massive, twisting and rising like a wacky amusement ride.

"Our music is based in the electronic world," Swire observes, "so we're constantly adjusting parts of the mix from the minute we start a track. But we're also a band, and that's where the second stage of mixing comes in. In the end, you have to restore the balance between instruments that might have been lost during all that processing." ■



**More Online**  
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outtakes with Pendulum.

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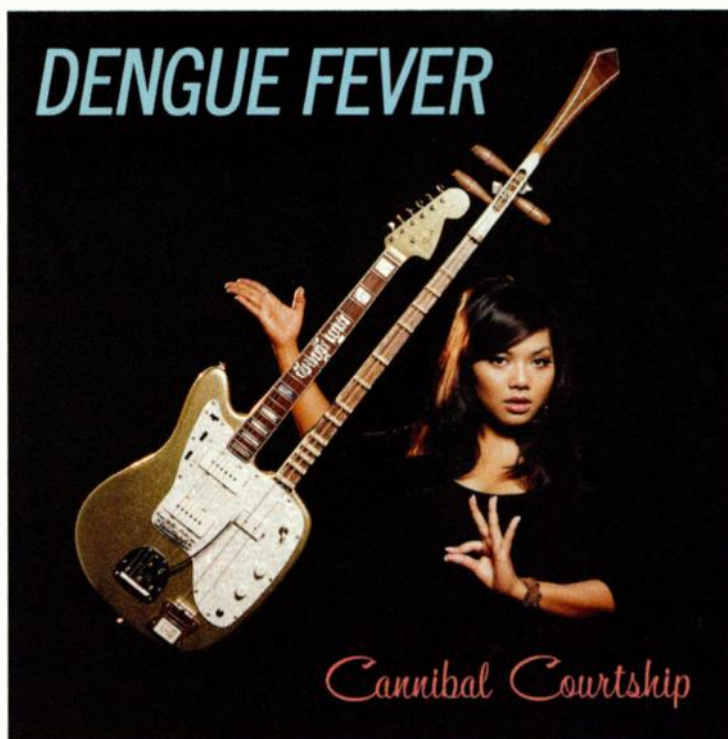
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## Dengue Fever *Cannibal Courtship*

FANTASY / CONCORD

FEATURING THE Mastadong, a half Fender Jazzmaster, half Chapai Dong Veng (a traditional Cambodian two-string guitar), Dengue Fever's *Cannibal Courtship* evokes pure worldbeat ecstasy. One minute, they're rocking shout-outs like Cake, circa 1997 ("Family Business"), the next ("Uku") they're adrift in 1975 Phnom Penh: fuzz-wah guitars, spooky flute, and Chhom Nimol's wailing vocals creating an ethereal sound collage. Recorded at the band's home studio as well as The Village in Santa Monica, CA, *Cannibal Courtship* spins Cambodian pop into time-warp dimensions. **KEN MICALLEF**



## The Sea and Cake *The Moonlight Butterfly*

THRILL JOCKEY

The Sea and Cake serves up pretty indie rock with a marked jazz influence on their new album, *The Moonlight Butterfly*. The upbeat "Up On the North Shore" highlights a tight rhythm section and breathy vocals; and while most of the tracks on the album follow a simple guitar/bass/drums/vocal grouping, the captivating instrumental "The Moonlight Butterfly" is a synth masterpiece, starting off with simple, syncopated vintage synth tones, then building up with multiple layers of arpeggiation and rhythmically echoed groove.

MARSHA VDOVIN

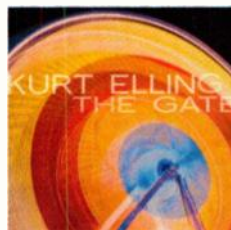


## Grizzly Bear *Music from Blue Valentine*

LAKESHORE

In his liner notes, director Derek Cianfrance writes that he originally considered Smetana and Vangelis for the soundtrack to *Blue Valentine*. Finally, Grizzly Bear met his needs, and the needs of the entire cast, who often listened to Yellow House while filming to elicit a collective mood. From bashing synth/drum solos ("I Live With You [Instrumental]") to banjo filled, *Pet Sounds*-styled epics ("Granny Diner") to plaintive vocal 'n' piano songs ("Foreground"), Grizzly Bear expands their gentle magic into cinematic realms.

KEN MICALLEF

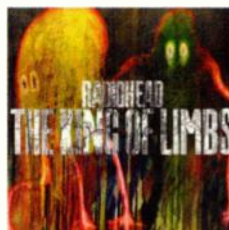


## Kurt Elling *The Gate*

CONCORD JAZZ

The Chicago-based jazz singer teams up with rock producer Don Was for a bracing and beautifully arranged album of intriguing tunes, including the obscure (but lovely) King Crimson number "Matte Kudasai," Joe Jackson's "Steppin Out," Earth Wind & Fire's "After the Love Has Gone" and a truly unique interpretation of "Norwegian Wood" (with scat interlude and heavy electric guitar break!). Elling's imperfect baritone is well-suited to his ambitions as a vocalist, and the band is as expressive as his singing.

BLAIR JACKSON



## Radiohead *The King of Limbs*

TBD RECORDS

*The King of Limbs* is possibly Radiohead's least cohesive album to date. The album seems to serve as a compilation of previous stylings, but give it a chance: Repeated listening unveils a complex structure of subtle production that takes the listener on a tour of emotional realms. As an example, the first single, "Lotus Flower," sounds familiar, with reverb-drenched falsetto, melancholy bass line, dry kit with effect-laden snare, and sporadic ambient meanderings. At just under 40 minutes, the band may be moving away from the long-play album.

MARSHA VDOVIN

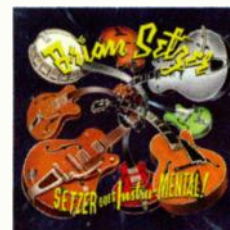


## The Mountain Goats *All Eternals Deck*

MERGE

"You don't wanna see these guys without their masks on. . ." One evocative line triggers the imagination of frontman John Darnielle and reveals a dark, intimate musical world. This lyric is from "The Autopsy Garland" on *All Eternals Deck*, the latest album forged from Darnielle's fearsome poetry and his collaboration with bassist Peter Hughes and drummer Jon Wurster. Guest string and keyboard players, and four producers in four studios, help create varied pop/punk/orchestral sounds, giving an engaging voice to Darnielle's grimly beautiful imagery.

BARBARA SCHULTZ



## Brian Setzer *Setzer Goes Instru-MENTAL!*

SURFDOG

Gretsch master Brian Setzer's first-ever all-instrumental album opens with a superb rockabilly/Texas swing take on Bill Monroe's "Blue Moon of Kentucky," a song that has seen as many incarnations as Setzer has. This is a serious guitar record, but it also showcases the artist's many musical moods: Big-band jazz, distorted rock 'n' roll, bluegrass picking, surf noir, and Stray Cats-era rockabilly are all showcased on this joyful collection of stellar covers and inspired originals.

BARBARA SCHULTZ



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*"Apart from the dual-engine H8000FW, the H7600 is by far the best-sounding and most versatile professional multi-effects unit now available." **Barry Rudolph, Mix***

*"If I had the choice of just one processor unit to have with me in the studio, at this point, the Eventide H7600 would have to be that choice." **Simon Tillbrook, Audio Media***

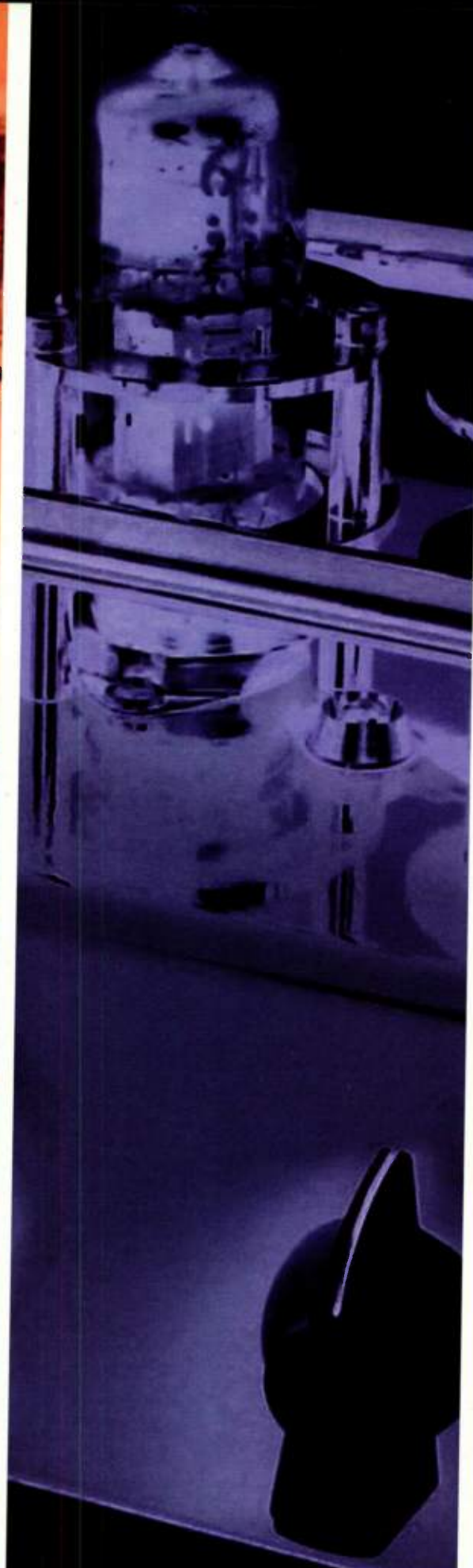
*"If you haven't been out-of-the-box for a while, do yourself a favor and find your inspiration with a great outboard processor like the H7600...it will long outlast your next several digital workstations." **Adam Kagan, Tape OP***



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# LUST

Roundup

## Analog/ Digital DAW Synergy

Analog versus digital? That's so 1999. It's been said the only rule in recording is that there are no rules, so cast off those prejudices and pick the right tool for the right job.

BY CRAIG ANDERTON

SOME PEOPLE still debate analog vs. digital, but the realists have moved past that—their only debate now is, which analog to combine with which digital. The answer can be as simple as capturing to tape to take advantage of its particular “sound,” then immediately transferring the tracks to a digital system before tape wear,



## TIP The DAW/ Hardware Connection

Everyone has a favorite piece of analog hardware—that classic vocoder, a tube preamp, a dust-encrusted wah pedal. These can all be productive members of your digital world if you have an audio interface with some spare audio ins and outs.

Many modern DAWs simplify the process of adding external hardware either by including “dummy plug-ins” that act like effects plug-ins but route audio from your DAW to an audio interface output, or by letting you specify audio buses within an insert (Figure 1). But really, any DAW with aux buses can do the job—here’s how.

1. Create a bus that feeds an unused audio interface output (mono or stereo, depending on your hardware and track requirement). The send to this bus should be pre-fader.
2. Assign the track you want to process to this bus, and turn down the track’s main fader so the unprocessed track doesn’t feed the DAW’s mixer.
3. Patch the audio interface output fed by the bus to your external hardware’s input.
4. Patch the external hardware’s output to an unused audio interface input.
5. Assign an input from your DAW’s mixer to this interface input. This track now carries the sound as processed by your external hardware.

Sounds simple, but there are a few “gotchas.”



**Fig. 1**  
Pro Tools makes it easy to add external hardware: Choose an insert, and tell it which buses you want to use as audio I/O. In this screen shot, a Chapman Stick track is being fed through a Line 6 PODxt via I/O bus 5.

- Match levels carefully. If your processor is a guitar stomp box (which is optimized for lower levels), you’ll likely need to cut the bus output level way down, and bring the output back into a mic preamp so you can get enough level going into the DAW.
- Going through extra stages of D/A and A/D conversion will cause a delay. Some DAWs will “ping” the routing, calculate the delay, and compensate by delaying other tracks so that everything lines up.
- Record a click if there’s no automatic way to compensate for delays. Simultaneously record a single, sharp click (e.g., clave) to a track that’s not being processed and to the track that’s going to be processed. Record the processed sound to a track rather than using the effect in real time (a good idea anyway, as once recorded you’ve freed up those interface ins and outs), then line up the clicks on playback.

stretching, or other gremlins start their inevitable attack.

Or the answer might be more complex, where a studio becomes a case study in “mix and match.” Most DAWs let you insert external hardware as inserts, just as you would use a plug-in; you can even insert a tape recorder, and process the audio through that. But if you don’t have a tape recorder to get “that” tape sound, then maybe a tape emulation plug-in is just the ticket—why not take advantage of the manufacturers who’ve probed, prodded, and analyzed to find out the essence of analog mojo? And while it’s hard to find something more analog than a great guitar, you might want to use sophisticated digital pitch-shifting to add a “virtual vibrato tailpiece” to that vintage Les Paul you would *never* modify.

So yes, cast those prejudices aside and pick the right tool for your needs. Which tools, you say? Keep reading—we’ll review some gear that offers analog/digital synergy, as well as provide some useful tips.

**If you don’t have a tape recorder to get “that” tape sound, then maybe a tape emulation plug-in is just the ticket.**

Continued



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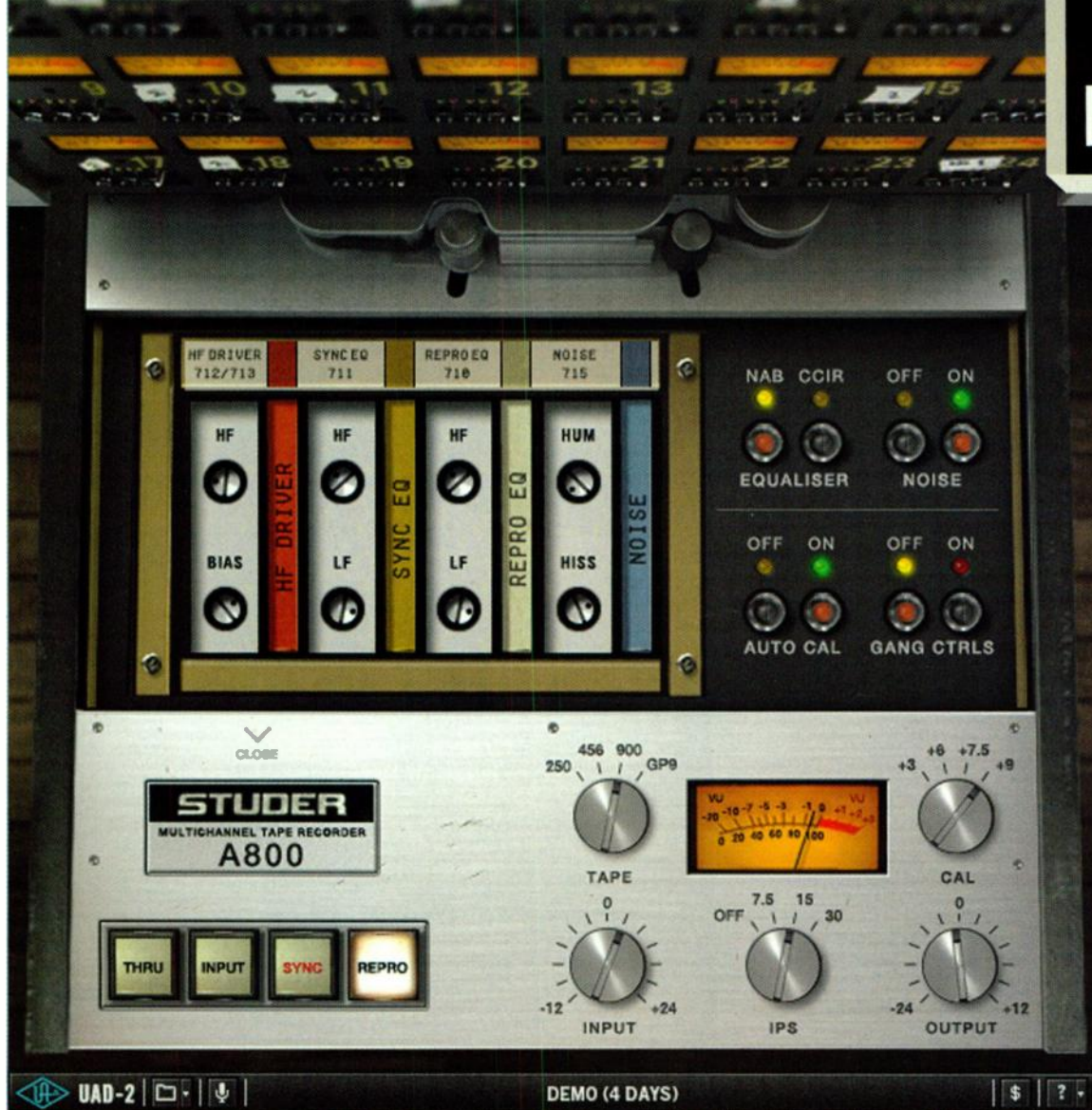
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**Universal Audio  
Studer A800  
(VST, RTAS, AU)  
\$349 MSRP**

**STRENGTHS:** Nails the tape sound. Models the recorder's signal path as well as the tape itself. Includes multiple tape formulations, default level calibrations, and speeds.

**LIMITATIONS:** Runs only with a UAD-2 card. GUI takes up a lot of screen space.  
[www.uaudio.com](http://www.uaudio.com)

is eschewing multitrack and inserting the A800 in the master bus to give the sound of mixing to tape) so when you adjust *any* control in *any* instance, the same control in all other instances matches the new value.

### The Tape Factor

Having logged multiple thousands of hours with multitrack analog tape, and knowing how to align and calibrate them, I was curious if UA "got it right." Simply stated, they did. Bull's-eye.

But remember that this requires a UAD-2 DSP board (or the Satellite external DSP farm for the Mac)—sorry, UAD-1 owners. The latency also seems significant, but as I see this mostly for mixing, it isn't much of a problem.

Universal Audio has specialized in imparting analog qualities to digital audio with their plug-ins. Their projects have become increasingly ambitious (e.g., Manley Massive Passive), and the A800 is arguably their most ambitious yet. What makes this emulation particularly successful is because it's not just about the tape—but gives equal weight to the elements accompanying it.

## Universal Audio Studer A800 Plug-In

### Not just virtual tape—a virtual tape machine

Did people like analog tape recorders because of tape stretch, alignment issues, head wear, window splices, demagnetizing, rewind/fast forward times, high-frequency self-erasure, head "bump," wow, flutter, oxide sheds, and replacing capstan motors? No. They liked analog tape recorders because *tape is a signal processor*. For proof, feed in a sine wave higher than -20dB, and listen—yes, you're

hearing distortion that only increases as you hit the tape harder.

So now Universal Audio, keepers of analog mojo in a digital world, have done the right thing by divorcing the *sound* of tape from the *mechanics* of tape—I didn't have to clean the plug-in's heads once!

### All That Really Matters

First, does it sound like tape? Second, what *kind* of tape does it sound like, how was the deck calibrated, what was the tape speed, was the bias tweaked for minimum distortion or minimum noise, etc.? To that end, UA has modeled the recorder's entire signal path, and includes adjustments for both the repro and sync head high/low EQ, bias, high-frequency EQ (pre-emphasis), NAB or CCIR response curve for 7.5 and 15ips (30ips

invokes the standard AES curve), and the option to add hum and/or hiss.

The front panel includes controls for tape formulation (four types, including 3M 250 and Ampex 456), IPS (7.5, 15, and 30), tape calibration standard (four choices, from +3dB to +9dB), and input/output controls to trim the distortion. Interestingly, there's a button to calibrate these according to Studer's original specs as you change tape speed, formulation, or EQ, but half the fun is tweaking the trims yourself. You can even switch the "input" among bypass, input electronics, sync head, and repro (playback) head.

A new option, "Gang Controls," is brilliant. UA presumes you'll be instantiating a lot of A800s within a project (however, an equally valid application



## TIP Tape sound with real tape

So maybe you can't afford a 2-inch 24-track just to get "the tape sound." Although there are some fine tape emulation plug-ins (such as the Universal Audio Studer A800 reviewed in this issue), if you don't want anything but the real deal, here's how to get reel—I mean, real—tape sound.

1. Comb the online classifieds for a two-track recorder with separate record and playback heads.
2. Find tape for said recorder.
3. Read "The DAW/Hardware Connection" section above to find out how to treat the tape recorder as an external effect.
4. Send the signal you want to "tape-ify" into the recorder input.
5. Set the recorder output to monitor the playback head (*i.e.*, repro mode, not sync mode).
6. Load tape, put the recorder in record mode, and roll tape.
7. While listening to the tape recorder output, set the input record levels for the desired amount of "crunch."
8. Once levels are set as desired, return to the track's beginning, and start recording the tape recorder output into a DAW track.

As mentioned regarding using external hardware with DAWs, you'll get latency—but it's the mother of all latency, due to the delay between the point when the signal gets recorded at the record head and the point when it moves past the playback head. This varies from machine to machine, but it will likely be below 100ms at 15 ips. You'll need to slide the recorded track from the tape output forward in time by this amount of delay to have it line up with the other tracks. As mentioned previously, a click reference can be tremendously helpful.

## Red Iron Amps Deluxe Buffer<sup>2</sup>

### Tubes meet code—and audio wins

Everyone knows that tubes add "something" to a signal, especially when overdriven. It's not just about distortion, but a complex combination of the Miller effect (an electronic phenomenon that affects high frequencies), a natural sort of compression, and a unique input/output transfer curve.

Deluxe Buffer<sup>2</sup> was created to give the designer's Line 6 POD a bit more of that tube "oomph," which it does. In a way, it's "sonic caulking" that fills in some of the holes of purely digital signals. The circuit is textbook basic, with no input or output transformers (part of the "tube sound" in some pieces of gear); what you get is purist tube processing.

However as the online audio examples show, saturation is good for far more than guitar processing and re-amping—like roughing up the sound of a tonewheel organ. As another example, I set up a drum loop from the Discrete Drums library in Sonar, and used the External Insert option to insert the Deluxe Buffer<sup>2</sup> as a "hardware plug-in."

The biggest advantage of this approach is that you can



**Red Iron Amps  
Deluxe Buffer<sup>2</sup>**  
\$399 MSRP

**STRENGTHS:** True stereo/dual mono operation. Looks extremely cool. Compatible with DAWs that accommodate "hardware inserts."

**LIMITATIONS:** No input level controls (only output level).

[www.redironamps.com](http://www.redironamps.com)

trim the level going into the Deluxe Buffer<sup>2</sup> to tailor the amount of distortion, then boost (if needed) on the way out to maintain unity gain. There was definitely a "sweet spot" with drums that gave punch without losing detail—in my setup, this happened when I dropped the input by about 7dB. Pushing it to 0 gave a much crunchier sound: If the first sound was vintage R&B, the second was punk.

Just for kicks, I also used Sonar's "Tube Leveler" plug-in, tried to match characteristics as closely as possible, and compared the results (also included in the online audio examples). Frankly, the Tube Leveler does an amazingly credible tube emulation—yet I could still hear quantitative differences

between the two. These were most apparent with lower input levels; heavier distortion minimized any differences.

### Let's get physical

Construction uses point-to-point wiring, to the extreme that some parts are supported only by their own leads, rather than being soldered to lugs on terminal strips. In a studio context this wouldn't be an issue, but I'd be concerned about subjecting it to the rigors of serious road travel. Besides, you want to keep it in your studio—clients will love the "future retro" look. Also note that the internal power supply (no wall wart!) uses a toroidal transformer, which minimizes hum.

Deluxe Buffer<sup>2</sup> isn't cheap, but it adds that boutique preamp vibe and sound to your studio. Granted, there are plenty of other ways to insert a tube in the signal path—and some DSP-based emulations, while perhaps not exactly the same, are extremely close to the "real thing." But when only real tubes will do, Deluxe Buffer<sup>2</sup> is a simple, classic design that works its particular magic on many more sounds than just PODs.





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## TIP Physical Tubes Meet Virtual Cabs

You love your guitar amp...we understand. There's something about a glowing tube pushing a speaker that has a certain magical quality, but what happens when you want to split off to a different cabinet, create some nifty stereo imaging, or even run your bass into an 8x10 bass cab that you don't have?

Unless you have unlimited physical cabinets, amp sims are a great answer if your tube amp has an effects loop. The loop send will be post-preamp, but pre-power amp; patch the send into your computer's audio interface, route the input to your guitar sim, and bypass the sim's preamp so that the amp send goes directly into the simulated power amp and speaker combination (Figure 2). From here on,

the sky's the limit: Feed multiple cabs, spread them in stereo, use a bass cab for bass—you get the idea.

Even better, plugging into the send doesn't interrupt the signal flow with most effects loops, so you'll be able to mike the cabinet while you're feeding the amp sim. There may be some timing issues, as the miked sound will be a little delayed compared to the direct sound because the mic is a finite distance from the speaker. Nudging the sim sound a bit later in time can solve this; delay it in tiny increments until it sounds "right."

The same principle can work in reverse: Use the amp sim's effects and preamp, but feed the out into a beefy power amp/cabinet, and mike it.

**Fig. 2**

Waves' GTR has been edited to bypass the preamp/amp section, while leaving the stereo cabinet module active, in order to apply the virtual cabinet to a physical preamp's signal.



### More Online

Hear audio examples, watch product demos, and more.

[emusician.com/may2011](http://emusician.com/may2011)

Continued





# The Check's in the Mail—Literally!

Jacqueline Van Bierk – TAXI Member  
[www.jacquelinevanbierk.com](http://www.jacquelinevanbierk.com)

**I** love color, especially pink ;-) I love writing music and performing with my band. I love to do the things people say are impossible, and I never take “No,” for an answer. I’m a dreamer, a believer and I am most *definitely* stubborn. I never really bought into the “struggling musician” mentality. I knew there had to be a way to turn my talent into a full-time career.

I've been writing music for a very long time, and had tons of songs sitting on my computer with no purpose; they just didn't fit my band's style. A friend told me about TAXI and brought me to their free, members-only convention, the Road Rally. Like many musicians, I was skeptical but thought, “Well, I’ve been asking for a sign, so I’d better go.”

The wealth of information there just blew me away. Everything that previously seemed so “far out of reach,” was now within my grasp.

I signed up with TAXI and started writing for specific music industry requests. All of the sudden I had a purpose, became very focused, and was finishing a lot more songs and tracks because I had targets and deadlines.

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I've become a much better musician and songwriter, and I've made friends with talented and established collaborators I've met through TAXI. Now I'm signed to two major music libraries, and my music is on two huge daytime TV shows, and several more.



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There's nothing more gratifying and inspiring than getting checks in the mail for doing what you love. Seriously, I never thought I would be writing for the TV shows I now write for. I'm so grateful my friend encouraged me to join TAXI. If I hadn't, I'd probably still have a computer filled with “brilliant little orphans” that might have never been heard.

### I Spent More on Coffee!

There are so many opportunities right in front of us that sometimes we don't *see* them. I was spending more on coffee than what a TAXI membership costs. I used every excuse possible to delay joining. Ironically, I wouldn't be where I am today if it weren't for TAXI and all the great friends I've made on its Forum and at the Road Rally. And this is just the *beginning*.

If our purpose in life is to do what we truly love, then I'm living my dream. What's stopping you? Call TAXI now!



## Morpheus Bomber Pedal

**A virtual vibrato tailpiece? Yes, but it's more than that.**

Pitch-shifting guitar signals isn't new; just ask anyone who bought a DigiTech Whammy pedal ten years ago. But time marches on, technology improves, and DSP gets faster and more accurate—which brings us to the Bomber, a truly polyphonic (yes, you can play chords), pedal-controlled pitch shifter.

### Vibrato Tailpiece In a Pedal

Some guitars, like a Fender Strat, are born with a vibrato tailpiece while others, like Gibson's Les Paul, aren't. But now, thanks to the Bomber, all

of my guitars have a vibrato tailpiece—it not only bends up and down, but is actually more like the electronic equivalent of Ned Steinberger's TransTrem, which provides an equivalent amount of pitch shift for each string.

### Ins, Outs, and Interfacing

The rear panel has ¼-inch phone input and output jacks, a control for setting levels, and a mini-USB port to allow for updating the pedal software. A wall wart provides power.

On the top panel, a sturdy, substantial pedal presents a decent-sized target. One footswitch handles bypass, while another selects the pitch-shift interval (down is 2nd, 4th, 5th, octave, two octaves, and "dive bomb"; up is 4th, 5th, octave, and two octaves). There's no "shortcut" to step through the intervals, but you don't have to hit the footswitch repeatedly—if you hold down the footswitch, the pedal cycles

### Morpheus Bomber \$269 MSRP

**STRENGTHS:** Delivers excellent fidelity with guitar and bass. Obvious UI. Sturdy, all-metal construction. "Dive Bomb" setting drops pitch 5 octaves.

**LIMITATIONS:** Needs to be the first effect following the guitar. Not optimized for other instruments.  
[www.morpheusefx.com](http://www.morpheusefx.com)

through the intervals. When it lands on the desired interval, release the footswitch.

### So What? Pitch Shifters Sound Nasty

But not this one, which is why it's being reviewed. Of course, the less transposition, the more realistic the sound; I found pitching two octaves up useful only for sweeping—you wouldn't want to leave it there and just play. However, as long as you stay within an octave, the sound quality holds up.

There are two catches, though. The reason why the Bomber works so well with guitar is because it's optimized specifically for guitar—although bass worked reasonably well if I played high on the neck, anything else I tried through the Bomber, particularly if it had high-frequency content, sounded as bad as the guitar sounded good.

The other caution is that the Bomber needs to precede any effects. Bomber through distortion sounded fabulous; distortion through Bomber didn't.

In the studio, matters get even more interesting—this box isn't just about playing live. I split my guitar into two DAW channels, one with an external insert feeding the Bomber followed by AmpliTube 3, and the other channel going through only AmpliTube 3, set for the same program. The two paralleled tracks sounded almost identical—except, of course, the one with the external insert could do all the pedal dive-bombing tricks. Playing the two against the other allowed seriously novel effects—I could do things like play guitar, then magically slide chords down an octave against the straight track.

If you don't play guitar or bass, forget about Bomber. But if you do, you'll get quality, polyphonic pitch-shifting that's happy to feed effects racks, be paralleled with other effects, and turn your pitch into a rubber band. ■





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## Focal Professional CMS 40

Joining the critically (and real-world user) acclaimed CMS 65 and CMS 50, is the ultra new, ultra compact CMS 40 Active Monitor. And when we say compact, we really mean it. Measuring no more than 9" high and featuring front porting, it can be placed almost anywhere - even flat against a wall. Yet don't let its diminutive size fool you, this baby packs a mighty big punch with a market leading 25 watts Class AB power.

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## Roland Octa-Capture High-Speed USB Interface

A multichannel USB/MIDI I/O that is as programmable as it is portable

BY JON CHAPPELL

### SUMMARY

**STRENGTHS:** Great sound. Comprehensive feature set. Highly programmable and portable. Outstanding monitoring options. Full-featured compressor. Expandable.

**LIMITATIONS:** Reverb only available on Direct Mix A. No metering in software control panel.

**\$699 MSRP**  
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THERE ARE a lot of compact audio interfaces on the market geared for project and live recording environments. Most of these consist of up to eight analog inputs and provide such features as phantom power, direct monitoring, effects on the monitor bus, and sometimes one or two other options, such as insert jacks or guitar-optimized inputs. They are all roughly the size of a *Harry Potter* novel and slide easily into a slim bag along with a laptop, headphones, and cabling. Portability is the key here, as you don't want your interface to be a greater space hog than your laptop—the control center of the operation. None of these units, while perhaps thicker than a laptop, are as unwieldy as rack-mount gear—or as pointy on their corners—so they are low-impact companions on the road and in ad hoc or otherwise non-permanent recording setups.

The Roland Octa-Capture fits neatly into the above description as far as form factor, while being something else entirely under the hood: a highly programmable interface offering extensive individual channel configuration, flexible monitoring, effects, expandability, and a patchbay function that quickly and easily routes both direct-monitored inputs and DAW outputs into subgroups. In other words, the Octa-Capture's

brown recalls low-cost bus-powered devices, while its brains make it competitive with rack units in the \$1,000 range. For those who need to step recording up a notch—but who still like the idea of a tabletop interface, and just need more features, mixer-like functionality, and the benefits of programmability—the elegantly designed Octa-Capture is just the ticket.

**The Right Combination** The Octa-Capture is the flagship of the new Capture line of audio interfaces from Roland. A high-speed USB 2.0 interface/preamp that can accommodate, as its name implies, eight analog inputs, the Octa-Capture can also simultaneously access stereo digital I/O, making it a 10x10 interface. It records in 24-bit resolution with sample rates up to 192kHz (though at 192kHz you get only four audio channels and no reverb) and supports both 32-bit and 64-bit Mac and Windows platforms. It has a well-designed software control panel and comes with ears for rack mounting.

Roland gets big points right off the bat for making all the analog inputs combo, jacks—you can plug either a 1/4-inch or XLR cable into any one of its eight inputs. This makes its software-based routing much more versatile, as you don't have to worry about, say,





**Fig. 1** The rear panel includes eight 1/4-inch outputs, stereo S/PDIF I/O, and MIDI I/O.

relegating your mics to inputs 1 through 4 and your line-level devices to 5 through 8. Even better, channels 1 and 2 on the front panel have configurable impedance settings to optimize them for high-impedance sources like guitar and bass, while channels 7 and 8 have slightly higher input impedance and extended headroom for particularly dynamic sources such as drums, a full-range sampler mix, or unpredictable vocalists. The back panel also sports eight balanced 1/4-inch outs, S/PDIF stereo I/O, a USB jack, and standard MIDI ports (see Figure 1).

The Octa-Capture has eight VS Preamps onboard, the same ones used in the VS-series of Cakewalk interfaces, which I've used in the past to excellent effect. In my tests, the preamps exhibited clean, quiet sound, and were nicely transparent on a variety of sources. I did a side-by-side evaluation of the Octa-Capture against several similarly priced interfaces I had available, and the VS preamps were equal or superior to anything else. My acid test for interface preamps is turning up the gain for low-level sources such as ribbon mics, to make sure the preamp doesn't contribute noise. These preamps aced the test, not only retaining a quiet, neutral signature throughout their range, but exhibiting a nice taper as well. I wouldn't hesitate to use them on critical projects with exposed acoustic instruments and voices.

**Get Your Programs Here** The big news regarding the Octa-Capture, though, is its front-panel display, functions, and programmability—all of which are, of course, closely integrated. I've always liked Roland displays and the thoroughness of their programming, and those qualities are present here. This may be Roland's first effort in an

audio interface, but the front panel is highly evolved. For example, all of the functions—per-channel configurations, global settings, monitor setups, and system-level operations—are easily gleaned and adjusted from the front panel using switches and knobs, some dedicated, some multi-function. There is a learning curve, but it's easier to negotiate using the included control panel software (more on that later).

Each of the eight input channels can have its own individual setting with regard to phantom power (on/off), impedance (channels 1 and 2 only), input sensitivity, phase invert, low-cut filter, and compressor—great for ensuring that an otherwise perfect take doesn't get spoiled because of input overload. Such a wealth of features gives you comprehensive control of signals going into your DAW and with far more flexibility than other interfaces that offer, say, just a level control. Just having one compressor per channel with a full complement of controls—attack, release, threshold, ratio, gain, and gate—gives you far more versatility than having insert jacks on the master L/R output bus.

**Monitor Machinations** The Octa-Capture offers a highly flexible monitoring system called Direct Mixer, which imbues the interface with true mixer-like functions. Here's how it works: Whether coming from the DAW or the direct-monitored, zero-latency input sources, sounds can be mixed and assigned to one of four submixes, called Direct Mixes (A through D). These can then be sent to any output pair, and multiple mixes can share outputs. In a live setup, this would give you different monitor mixes for different destinations—say, the vocal wedges in front

This may be Roland's first effort in an interface, but the front panel is highly evolved.

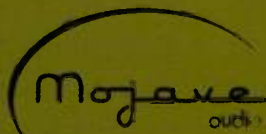


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# LUST

review



**Fig. 2** Each input channel on the Octa-Capture is configurable with respect to sensitivity, phantom power, phase invert, impedance (channels 1 and 2), low-cut, and compression.



**Fig. 3** The Octa-Capture offers a flexible monitoring system called Direct Mixer that combines zero-latency input monitoring with DAW-playback tracks.

or a drum monitor in back; in a studio setting, it lets each member of the band choose from four different mixes (e.g., one featuring background vocals, one for the kick and bass guitar, and so on).

In addition to level, the Direct Mixer gives you controls over each channel feeding it, including pan, stereo link, mute, and solo. My only wish is that the excellent and versatile reverb was available on all four Mixes. As it is, reverb is only available on Mix A. On the plus side, the Direct Mixer's Master page includes handy Mute Clear and Solo Clear controls, along with indicators as to whether they're engaged on any channel—the Octa-Capture's version of a "rude" solo light. Slick!

**Computer Control** If all this control seems a bit complex, well, it is—at least for a portable interface. But the Octa-Capture



**More Online**

Take a video tour of the Octa-Capture.

[emusician.com/may2011](http://emusician.com/may2011)



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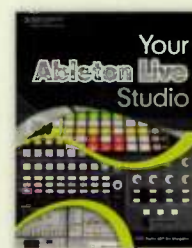
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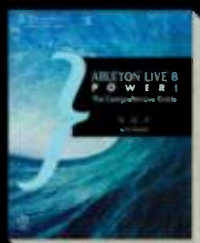
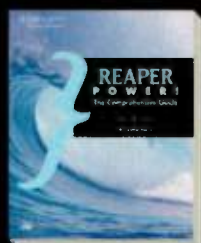
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comes with a very well-designed software-based control panel that arranges all of the unit's adjustable parameters on two screens, one for channel operations (see Figure 2) and one for Direct Mixer setups (see Figure 3). Other options available from the control panel include Reverb, Patchbay (a graphic method for assigning inputs, DAW tracks, and Direct Mixes to output pairs), and loading and saving setups. I only wish the panel also included meters, as other interface utilities do. As it stands, you have to rely on your DAW or the Octa-Capture's front panel to set and monitor levels.

You can perform all functions from the Octa-Capture's front panel as well (except for loading from and saving to disk, which makes sense, when you think about it). And actually, you *can* save your current setup from the front panel and reload it. So if you're on the road and don't want to break out the laptop, you do have the option to quickly normalize your studio, as defined by the last time you saved your settings.

Other global goodies include Auto Sens (an auto-sensing circuit that adjusts a channel's input sensitivity based on your loudest signal), editable Reverb (type, level, pre-delay, time) with individual channel sends and a master return (the settings of which are saved as part of the preset), and two Master levels that control the balance between the Octa-Capture's input and output mixers.

As mentioned, the Octa-Capture is expandable. The system-level feature VS Expand allows you to gang together two Octa-Captures, or an Octa-Capture alongside a Cakewalk VS-series interface. If you need, say, 16 tracks for your studio, you can link two interfaces.

**Capture the Flagship** Even with its gentle learning curve, the Octa-Capture makes you quickly appreciate the speed and control with which you can configure your channels and monitor mixes. Because most recordists recognize the value of templates in their DAWs, they will immediately see the benefits of programming the Octa-Capture in the same way.

The Octa-Capture's ability to do double-duty as a road warrior or permanent studio fixture makes it highly attractive. Wouldn't it be nice to have the same interface on the road as the one in permanent residence in your studio? The Roland Octa-Capture's great sound and outstanding flexibility finally makes this a reality. ■

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## SUMMARY

**STRENGTHS:** Cross-platform. Very low MIDI latency with above-average tracking. Deep, useful editing software. High-impedance audio interface.

**LIMITATIONS:** Limited to 44.1kHz/48kHz sample rate. Monophonic-only MIDI conversion. Windows ASIO driver still in beta, and needs work.

**\$193.50 MSRP**  
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Catch an i2M demo video.

[emusician.com/may2011](http://emusician.com/may2011)



**Fig. 1** The Desktop Editor is both flexible and deep, and can route data to six individual zones. (To save space, only three are shown.)

# Sonuus i2M Musicport

Compact guitar/bass MIDI and audio interface

BY CRAIG ANDERTON

DESPITE AN ongoing dispute with the laws of physics, MIDI guitar enjoys a significant niche following. The i2M, a tiny Windows/Mac audio/MIDI interface with a 1/4-inch phone jack input on one end and USB port on the other, provides low-latency, monophonic pitch-to-MIDI conversion with quite a few extras.

**Audio, ASIO, and Editing** The i2M is class-compliant. Under Windows, WDM latency wasn't really acceptable, however direct monitoring is available. Although Sonuus offers a beta ASIO driver (Windows XP/Vista/7, 32-bit only), with my XP system, this worked only with Ableton Live and Studio One Pro. Other programs I tried either gave no sound, or crashed. To be fair, though, it's a beta—when it's ready for prime time, presumably the i2M will work as well as it does on the Mac under Core Audio.

On either platform, MIDI tracking is extremely fast, and there are many ways to optimize performance. I had no problem triggering realistic sax lines, doing huge synth pads, and generally, being surprised at how well it worked.

Part of this success is due to the Desktop Editor (Figure 1). There are four modes (with individual legato note detection), and four possible instrument optimizations—guitar, 4-string bass, 5-string bass, and voice/wind. Each mode can have a custom MIDI configuration for six channelized “zones,” each of which offers:

- Pitch-bend response, or chromatic (quantizes to semitones or any of 23 scales—you can't play out of key)
- Transpose (+/-36 semitones)
- Pitch-bend range
- Breath controller data extraction from amplitude
- “Note gate” that restricts note detection range
- Hold option—sustains a MIDI note upon receiving a suitable controller message
- Note constrainer (sets the range over which MIDI notes are output)

**Conclusions** Multiple zones mean extreme layering possibilities: For example, only low notes can trigger a bass note in a different zone, set to chromatic while a lead does pitch bends. You can also adjust the overall preamp gain—very helpful.

No MIDI guitar tracks perfectly, but by optimizing i2M performance, the synth you're driving, and playing with reasonable care, the i2M does a far better job than expected—and a little MIDI editing will clean up a part. Sonuus shows no signs of letting up in its quest to make MIDI guitar both reliable and inexpensive—and the i2M delivers. ■



# "I did it myself... ...Primacoustic made it easy!"



**A conversation with jazz/blues guitar legend Scott Henderson**

(Tribal Tech, Chick Corea, Jean Luc Ponty, Joe Zawinul, Jeff Berlin, Victor Wooten)

**Scott, tell us about your studio.**

*It's a two room overdub studio - a control room and a room to mic guitar cabs, horn players, singers, etc...*

**What do you do there as opposed to in commercial studios?**

*I use commercial studios when there's a drummer involved, but I get the best guitar tones at home.*

**What were some of the problems you noticed with the acoustics?**

*Actually I never thought there were any problems, until I A/B'd the Primacoustic Broadway panels with what I was using before.*

**What type of panels did you have?**

*I had a popular brand of foam and I needed to take it down because after 3 years it started to crumble and fall apart.*

**Did you do the set up yourself?**

*I did it all myself. Primacoustic made it easy and fast. Believe me, if I can do it, anyone can. All you need is a drill, screws and a level.*

**How did you configure the panels?**

*In the control room, because there's a lot of gear to work around, I just put them where they fit. The mic'ing room was just bare walls so it required planning. I configured them randomly to cover about 30% of the walls.*

**What improvements did you hear?**

*A big difference! Tighter low end with more of it, plus a sweeter top end and a clearer, open sound.*

**How would you compare it to foam?**

*The foam gave the guitar a bit of a nasal sound - more emphasis on mid frequencies, and not good ones in my case.*

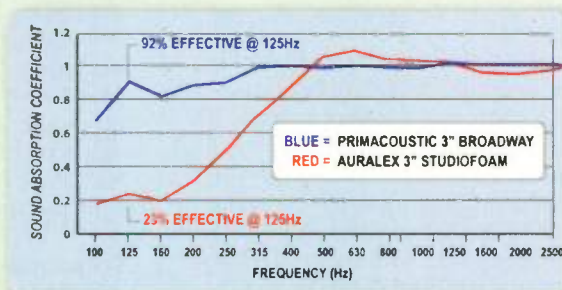
**What would you tell someone thinking about acoustic treatment?**

*Whatever you do, don't use foam, especially attached with glue. The foam turns into dust after a while and is a total mess. Even worse is trying to get the glue residue off your walls. Mine had to be completely sanded and re-painted. Plus foam doesn't sound nearly as good as the Broadway acoustic panels.*



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*Tests performed by Riverbank Labs on 3" Primacoustic Broadway panels and common acoustic foam. Both absorb high frequencies but as sound shifts to bass, the foam stops working.*



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VRM Box offers nine speaker options for the bedroom studio listening environment.

## Focusrite VRM Box

Emulate speaker sounds via headphone monitoring

BY CRAIG ANDERTON

LISTEN TO a recording over speakers. Now listen over headphones. Not the same, is it? Headphones give a wonderful intimacy, but there's no space—and the sound doesn't represent what people will hear over speakers.

To address this, Focusrite invented "Virtual Reference Monitoring"—a DSP process that emulates listening in an acoustical space with speakers while you wear headphones. Is it *exactly* the same? No, but what's surprising is how close it *does* come. There are two main applications for VRM:

- Enjoy the sense of listening in a space, even if you're mixing on headphones at 2 A.M. in a hotel room.
- Emulate the old studio trick of switching among multiple speakers to hear how your mix translates over different systems.

**Let's Hook Up** VRM Box connects to your computer via USB, acting as a high-quality headphone amp that supports 44.1 and 48kHz. VRM Box also works with audio interfaces that sport coaxial S/PDIF and can handle sample rates from 32kHz to 192kHz.

You'll need to install software (for XP SP3, Vista, 32/64-bit Windows 7, Mac OS X 10.5 Intel, and OS X 10.6), as your computer's CPU provides the processing. However, this is all about the DSP, not the drivers, as the VRM Box is class-compliant.

**Listening Tests** VRM lets you dial in multiple speaker types in three listening environments: pro studio, bedroom, and

living room, with 10, 9, and 5 emulations, respectively. Given 15 speaker options, there's some overlap—for example, the Stirling speaker emulation appears in all environments. It's instructive to switch among environments using the same speaker, to highlight the differences among environments.

Bypassing the VRM effect is easy, so you can determine which emulations work best for you. There's no question that using VRM sounds more like speakers—there's no "hyper-stereo" effect, and VRM adds in room acoustics. For those who like to switch among various speakers, VRM is tremendously helpful—is there really a bit too much bass? If it sounds like too much bass on most emulations, the answer is probably yes.

My favorite use for VRM was while creating tradeshow videos in hotel rooms. First, I didn't disturb anyone! Second, I could hear what the audio would sound like when played back under real-world conditions (translation: crappy computer speakers) as opposed to my excellent-sounding headphones. This was invaluable, as I could create a "compromise" mix; when I played the videos on my laptop, they not only sounded like what I heard through VRM, but the mixes were serviceable.

**Conclusions** Focusrite is on to something with VRM, and VRM Box will allow the technology to reach a larger audience. It's cost-effective as a headphone amp by itself, but add in the VRM software, and the final result is novel, utilitarian, and effective. ■



### SUMMARY

**STRENGTHS:** Compact, cost-effective. VRM really does work as advertised. Superior headphone amp compared to computer audio. Easy to use and operate. Supports audio I/O up to 192kHz when used with S/PDIF.

**LIMITATIONS:** Limited to 44.1kHz/48kHz sample rate with USB. Results vary somewhat based on the headphones you use. Can't alter the "virtual distance" from the virtual speakers.

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## Mackie Blackbird 16x16 FireWire Interface

Flexible I/O, headroom, and  
eight transparent preamps

BY CRAIG ANDERTON

### SUMMARY

**STRENGTHS:** Excellent mic preamps. Eight ADAT channels that also work at 88.2/96kHz. Very useful matrix mixer software. Excellent build quality. Dual FireWire ports. Clean, obvious ergonomics. Cascade up to four units on Mac or Windows.

**LIMITATIONS:** Phantom power can't be enabled for individual channels or each channel pair (you can do channels 1+2 and/or channels 3-8). No S/PDIF I/O.

**\$629.99 MSRP**  
[www.mackie.com](http://www.mackie.com)

LET'S GET real: There are a *lot* of audio interfaces, and if you can't find one that precisely fits your needs, you probably aren't looking hard enough. So where does the Blackbird fit in?

No one interface has it all. Some might have exceptionally low noise but a bit more THD than others, while some have superior crosstalk but maybe slightly more intermodulation distortion. These differences tend to be quantitative, not qualitative, and audible differences are subtle at most.

Blackbird's main asset is its eight Onyx preamps. These preamps have a great rep, but when you put numbers on them, low noise and extremely low intermodulation distortion stand out. Subjectively, these are not "character" preamps, but follow the "straight wire with gain" philosophy. Gain goes up to +60dB, and all inputs are true Neutrik combo jacks that accommodate XLR or 1/4-inch balanced/unbalanced inputs.

**More than Mics** You won't find bells and whistles like onboard reverb or processing. Instead, Mackie has clearly gone for "industrial strength" features like word clock I/O, ADAT optical I/O (eight channels that support the same sample rates as the analog inputs—44.1/48/8.2/96kHz—with dual SMUX ports for the higher sample rates), three stereo outs (Main, Mon, and Alt), dual FireWire ports, dual headphone outs,

low latency (64 samples with ASIO/64-bit Windows 7), and of course, direct monitoring. Curiously, the optical ports can't be used for S/PDIF, and there are no coaxial S/PDIF jacks.

The first two preamps are "special" inputs. They're front-panel and switchable among mic, line, and hi-Z for guitar; they also have a low-cut filter (-18dB/octave with a cutoff of 75Hz) and rear-panel TRS insert jacks. The remaining six inputs are rear-panel combo jacks with no additional features.

Phantom power is switchable in two groups: inputs 1+2, or 3-8. This is the one area where there's an obvious compromise, as you can't initiate phantom on individual channels, or even each channel pair.

As to construction, the 1U chassis is all-metal, and it's built like a tank. If you dropped it, I think the main damage would be cosmetic (e.g., a scratch or dent). Also, the software matrix mixer GUI (which you need to download from the Mackie site) is full-featured—it allows linking, provides flexible direct monitoring with eight individual mixes, indicates peaks and levels, and much more. It also looks like a Mackie mixer, which is a cute touch.

Finally, if you need expansion, the company claims it's possible to cascade four units on both Mac and Windows platforms—so for less than \$1K street price, you can have 16 Onyx pres for complex acoustic sessions.

**Conclusions** I've been impressed with Mackie's Onyx interfaces since the Onyx 400F hit the world several years ago; the mic preamps aren't just hype. If you're looking for "color" you're in the wrong place, but if transparency and headroom are what matters, you'll be very pleased with the Onyx design. Add in the other pro-oriented features, and the result is a solid, utilitarian, no-nonsense interface that just sits there and does its job—unobtrusively and professionally. ■



#### More Online

Download the Blackbird manual.

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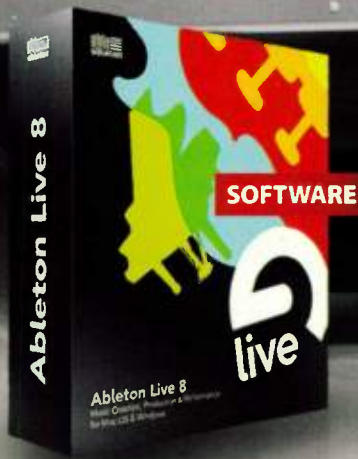




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**TARGET MARKET** Computer-based club DJs

**ANALYSIS** Native Instruments continues to make gains in the DJ arena. Their latest generation encompasses new interfaces (Traktor Audio 10 and Traktor Audio 6) as well as new software, and Traktor Duo 2, a scaled-down, two-deck version of the Pro line. With this new generation, NI is offering complete solutions for intermediate and advanced DJs.

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**Omnisphere 1.5  
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**HIGHLIGHTS** Interactive “The Orb” interface for realtime synthesis manipulation and morphing • expanded synthesis engine • 5-column browser view • polyphonic aftertouch • 780 new patches (for more than 8,000 total included sounds)

**TARGET MARKET** Sound designers, audio-for-video soundtrack creation, live performance keyboardists, general recording of innovative, sample-playback sounds

**ANALYSIS** Spectrasonics is known for large, deep, innovative sound libraries coupled with highly editable synth engines. Their products are years in the making, and not meant to be disposable but instead have long, useful lifespans, due in part to generous, free updates to registered users; V1.5 continues that tradition.

[www.spectrasonics.net](http://www.spectrasonics.net)

**3**  
Audio-Technica  
**U851R0  
Omnidirectional  
Boundary Mic**

**\$313**

**HIGHLIGHTS** Phantom power range 11–52VDC • omnidirectional in hemisphere above mounting surface • optional interchangeable elements (UE-C 120° cardioid and UE-H 100° hypercardioid) • 80Hz, 18dB/octave low-frequency rolloff • maximum input level 132 SPL

**TARGET MARKET** Recordists who want to add another mic type to their arsenal (e.g., for placing under a piano lid, on the floor for picking up drums, on walls for room sound, etc.)

**ANALYSIS** Boundary mics, although commonly used to record speeches and conferences, have many uses in the studio for experimentally-minded engineers. The U851R0 is designed for more than just recording speech, making it well-suited to music recording; furthermore, the fidelity is higher than lower-cost models that are designed primarily for A/V.

[www.audio-technica.com](http://www.audio-technica.com)

**4**  
vescoFX  
**Cross Delay  
VST Plug-In**

**\$29**

**HIGHLIGHTS** Echoes can be sent to opposite channels • subsequent echoes can ping-pong between channels • modulation section allows chorusing and similar effects • adaptive damping • VST plug-in format

**TARGET MARKET** Recordists who work “in the box” and rely on plug-ins for signal processing

**ANALYSIS** Cross-delay echoes can create interesting stereo imaging and time-delay effects, but traditionally required using multiple delays in parallel with potentially complex bussing. Cross Delay creates these effects within a single plug-in.

[www.vescofx.com](http://www.vescofx.com)







5

**5**  
**TASCAM**  
**DR-05**  
*Handheld Recorder*  
**\$149**

**HIGHLIGHTS** Up to 24-bit/96kHz resolution for WAV files • 32-320kHz MP3 recording • stereo condenser mics • automatic or manual gain setting • variable speed playback • 2-second pre-recording buffer • microSD cards to 2GB, microSDHC to 32GB • runs on two AA batteries  
**TARGET MARKET** Budget-conscious musicians seeking a quality portable recorder that requires minimum setup hassles

**ANALYSIS** The DR-05's greatest strength is ease of use, with automated level setting, peak reduction, built-in limiter and lowpass filter, and built-in speaker for instant monitoring—the portable recorder equivalent of “plug and play.” Musician-oriented features include variable speed, loop and repeat playback, and chromatic tuner.

[www.tascam.com](http://www.tascam.com)



6

**6**  
**TK Audio**  
**The Strip**  
*1U Hardware Channel Strip*  
**\$1,300**

**HIGHLIGHTS** Channel strip with mic preamp, compressor, and EQ • hi-Z instrument input • blend control for parallel compression • up to 75dB gain • vintage transformer-balanced Class-A or electronic balanced output stage • Baxandall EQ with high- and low-frequency shelving  
**TARGET MARKET** Studios that use analog gear or need an analog front end for digital gear

**ANALYSIS** Despite the trend toward performing all aspects of recording “in the box,” it’s still primarily an analog world. This channel strip provides essential signal-processing functions for those who prefer conditioning analog signals in the analog domain before feeding them into a DAW.

[www.tk-proaudio.com](http://www.tk-proaudio.com)

**7**  
**Dynacord**  
**Compact Mixing Systems (CMS)**  
*Live Performance Mixers*  
**\$TBA**

**HIGHLIGHTS** Three models: CMS 1000-3 (10 inputs), CMS 1600-3 (16 inputs), CMS 2200-3 (22 inputs) • six aux buses • dual 24-bit effects unit • 11-band graphic EQ • 4-in/4-out, Mac/Windows-compatible USB interface • high-impact plastic lid for protection when transporting  
**TARGET MARKET** Gigging musicians looking for a higher-end, but portable, live mixing solution with computer interfacing

**ANALYSIS** For gigging, live recording is becoming a necessity for many bands—whether to sell music to their fan base or to critique their performance afterward. Adding a 4-in/4-out interface to the CMS line handles these needs, but the mixer itself is also rugged and can handle the rigors of the road.

[www.dynacord.com](http://www.dynacord.com)

7



8


**8**  
**Marcodi Musical Products**  
**Harpejji**  
*Musical Instrument*  
**\$2,999 base 16-string model**

**HIGHLIGHTS** Tapping instrument, while guitar-like, requires only one finger to play a note—no strumming • keyboard-inspired playing interface is comparatively easy to learn • can play chord intervals that would be difficult or impossible to play on guitar or keyboard • piezo pickup

**TARGET MARKET** Keyboard, guitar, and bass players who want to open up new possibilities without abandoning all of their traditional techniques  
**ANALYSIS** Alternate controllers have a hard time getting traction, but the Harpejji incorporates enough familiar elements that those with traditional instrument chops aren't starting all over again. Go to [www.marcodi.com/sights-sounds/videos/](http://www.marcodi.com/sights-sounds/videos/) for videos of the Harpejji in action.

[www.marcodi.com](http://www.marcodi.com)





Artist DJ Spooky performing with his iPad app at the Multiplicidade\_ Imagem\_Som\_inusitados multimedia festival in Rio De Janeiro, Brazil.





# LEARN

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## Producing With the iPad

Four pros speak candidly about the dawn of “tablet music”

BY JASON SCOTT ALEXANDER

SURELY WE'VE all sat bemused through the viral hit YouTube video showing New York City indie band Atomic Tom, whose gear was supposedly stolen, take to the subway and put on an impromptu performance, using only instrument emulations running on each of the members' iPhones. Publicity stunt or not, this virtual tapping of drums and strumming of guitars is proof of concept for all naysayers to witness.

The animated alt-rock-hip-hop collective Gorillaz took it a step further on their new release, *The Fall* (Parlophone), making extensive use of iPads to write and record the album while on tour during a 32-day stretch between Montreal and Vancouver. The fact that such a high-profile band chose to go that route is pretty impressive, but is the medium ready for prime time?



**Inspiration's Key** As far as Dream Theater keyboardist virtuoso and die-hard synth junkie Jordan Rudess is concerned, the iPhone—and, by extension, the iPad—has allowed him to fulfill a longtime creative vision. “I’ve always been interested in putting together the world of audio and visuals,” he says. “It’s my goal to try and put those together as much as possible and make a musical instrument or a visual instrument that’s as enjoyable and informative as possible.”

Taking what he’d learned over the years playing the Continuum hardware controller developed by Dr. Lippold Haken, plus early inspiration from Russel Black’s Bebot singing robot app for the iPhone, Rudess enlisted the help of Kevin Chartier (developer of the 4D Synth) to begin work on his very own MorphWiz application.

Their design began with the concept of using the vertical grid as a tool for not only expressing pitch but also—at its most basic purpose—to express amplitude. “You’re able to put your hand down on any spot on the playing surface and know that, if you want it to, you’ll be absolutely in-tune to a diatonic pitch,” says Rudess. “And that’s fine, but what makes it really cool is that once you slide to another note, when your finger stops near a grid line or a pitch that’s marked, it has the ability to ‘round’ or auto-correct your pitch at the speed that you determine within the program.”

While the secondary goal was to make the interface unique, visuals were carefully designed to give the player

**“I’ve always been interested in putting together the world of audio and visuals.”**  
—Jordan Rudess

real information about performance parameters. While you slide pitch, for example, rings beneath your fingertips morph through the colors of the rainbow. Once your finger stops, the ring will change to white, according to the speed of the pitch-rounding. So, you have five fingers on the playing surface, and each finger’s moving, you can visually determine what’s going on with intonation.

“I’m so happy that a device came along, not only for me to see my vision through,

Rudess with the MorphWiz app.



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but to allow people to experiment with musical concepts that they would have never had the chance to touch before,” says Rudess. “If I can give someone who’s never played music before an iPhone or an iPad and say, ‘check this out, just put your finger on this,’ and they can do something that sounds cool and inspires them, that sounds musical, there’s a lot of joy there. How can you say that’s not the greatest thing in the world?”



**Anytime, Anywhere** Portability and convenience are of course paramount to a gigging musician. Alex Skolnick, the stylistically diverse guitarist with heavy metal outfit Testament and, most recently, the Alex Skolnick Trio (a jazz group known for playing bebop renditions of classic rock and metal tunes), admits that these features originally sold him on the whole notion of tablet-music in the first place. Already accustomed to pocket headphone amps like the Zoom, Korg Pandora, and Tom Scholz Rockman back in the day, Skolnick—a self-proclaimed “iPhone geek”—found it a natural progression to join forces with Agile Partners (in affiliation with Peavey) and endorse their AmpKit guitar amp simulator app.

“Sometimes, when you’re backstage, you might leave your headphone amp on the bus, or vice versa. But you *always* have your phone on you,” he chuckles, adding that it was AmpKit, alone, that really made him an iPad user.

“You know, I didn’t really see the purpose of the iPad at first. I have my iPhone and Macbook Pro, and I just didn’t see the point of this third product that’s kind of in the middle. But, after using AmpKit, I really ‘got it,’” he says. “The graphics are better, yet it has the same kind of [iPhone] interplay with the touchscreen, which you don’t have on a laptop. Just to have that in a bigger package than your phone is great.”

While Skolnick mainly uses AmpKit for songwriting, warming up, and practicing, he admits that the technology’s not at the level yet where he can experiment with amp/mic combinations that directly translate to the studio with physical gear.

“But, that’s no fault of the product—I feel that way about pretty much any handheld amp product, or even a lot of the plug-ins. I haven’t really found one that replicates the sound that you can get with a real amp and a real mic. But, I wouldn’t be surprised if we get to that

point. Compare it, though, to any other miniaturized rigs, and it’s one of the best out there.”

Could he ever see himself taking to the stage with just an iPad? “I mean, if it *really* got close, sure! I remember the dawn of Pro Tools, for instance, and thinking, ‘there’s no way this is ever going to replace 2-inch tape.’ But, I was completely wrong. Sure, analog is special, and if you’re a purist and you have a huge

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budget, somebody like a Lenny Kravitz, for example, then it's great. But most records, even huge-budget records, aren't made like that. When Metallica cuts a record, it's done digitally, you know? So, okay, I was wrong about that. But, if we were to see something like that where this iPad technology competed, absolutely."

**Remote Possibilities** It's been a decidedly less of a sonic revelation for Joe Gore, a Bay Area producer/multi-instrumentalist (and former editor for *Guitar Player*) who's recorded with the likes of Courtney Love, Aimee Mann, Carrie Underwood, Tracy Chapman, and The Velvet Underground's John Cale, to name a few.

"I'm not yet at the point of using the iPad as a sound generator for much, except for fun. But, I'm using it as a tool to control the more mature sound generators in a computer. It's really 100-percent there," he says. "The most amazing hit-the-ball-out-of-the-park app that I'm working with so far is TouchOSC [by Hexler]. Especially since Apple, to their eternal credit, jumped on it really quickly and released a Logic upgrade [9.1.2] specifically designed to support that functionality."

Essentially a programmable remote-control environment, TouchOSC is user-definable and can be customized to any hardware or software system that implements the Open Sound Control protocol. "It's just spectacular," says Gore. "The template included with the app is a brilliant piece of UI design. Not only does it, as you might expect,



Touch OSC, with the Korg microKontrol

work really well at moving faders and things like that, but it has a very ingenious way of getting deep inside each channel and editing plug-ins directly from the iPad surface."

Speaking about his previous experiences with hardware DAW control surfaces, Gore recalls that it was always more effort to access anything beyond basic levels adjustments, and it often took as much time to remember how to perform functions as it would have to just grab the mouse.

"But with TouchOSC on the iPad, it's just so beautifully done," he says. "Because the communication is two-way, you get meaningful text about everything. It also feels really good and the ergonomics are fantastic. And that's just the provided template. With TouchOSC, you can build your own control surfaces, though I haven't experimented with that yet. It's kind of like MainStage, where you can drag virtual knobs and faders and size them; it's just fabulous. A few minutes with that is just enough to convince you that the future (of mixing) is going to be some version of a touch interface."



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DJ Spooky's iPad app has had 3.5 million downloads.

**More Online**  
 Read interview outtakes and watch Alex Skolnick demoing the Ampkit in the *Electronic Musician* studio. [emusician.com/may2011](http://emusician.com/may2011)

**Turning the Tables** Acclaimed New York City-based reggae-dub composer, producer, remixer, and multimedia artist Paul D. Miller, a.k.a. DJ Spooky, whose autonomous virtual DJ/mix app has already enjoyed 3.5 million downloads, credits the iPad as being a total game changer.

"My app lets me DJ pretty much in the same way that I would use turntables. I've been slowly getting rid of the turntables altogether—I know that sounds like sacrilege," confides Miller. "But I use it all the time, every day. I'm in the studio now, for instance, in the middle of doing classical music, and I'm using Sibelius and Finale to notate material through a virtual piano app." Miller also uses his iPad for effects, especially the Moog Filtatron app; remixing looped tracks with the Audio Palette app from Kent Jolly; and beat generation with apps such as DigiDrummer, iDrum, and Major Lazer.

He does see shortcomings with the iPad as a professional audio tool, though. "The interface, and being able to get things out of it is a drag. It's a definite bottleneck. You have to do everything through the iTunes interface—importing, exporting. I mean, they've tweaked it and they've done all sorts of stuff, so that's good to see. But, it's just very 'locked,' and you have to figure it out a little more. You have to open up a Mac account like me.com or mac.com, and it's just that extra step. It's a very sticky architecture; it keeps pulling you further and further in, and it doesn't talk to other things."

For this reason, Miller generally records the output of the iPad rather than rendering and saving audio internally. Random slowdowns and/or crashes, he says, are other issues that plague the machine at the moment.



"I mean, even the *New York Times* app or friggin' Martha Stewart app—there's always quirky things that somehow

bounce out and all of a sudden, the next thing you know, the software's quit, right in the middle of something. So, it's that kind of uncertainty in the middle of a concert that you don't want to have. I'd like it to be as robust as the desktop Macs. But, because it's so new and it's had so much energy leveled at it so quickly, I think (developers) have just been throwing software into it without going through a lot of beta testing. In fact, the audience is the beta testing!" Miller laughs.

"The iPad has become this mega ecosystem very quickly, like really shocking. I had no idea it would move this fast." ■

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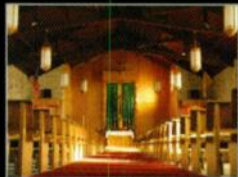
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# Small Room, Big Drum Tracks, Part 1

BY MICHAEL COOPER

GOT A small recording space? Fear not: Even with no room to swing a cat, you can easily record drum tracks that sound huge. In this first installment of a three-part series, I'll offer some tried-and-true tips for recording bang-up trap drums in pint-sized digs.

**Set A Trap** Choose a room with good bass-frequency response to record the kit. Rectangular rooms offer a more even bottom end than square-shaped ones. Avoid perfect cubes (where the length, width, and height of the room are exactly the same dimensions) if at all possible—they are the worst for recording drums (or anything else, for that matter). If you can, set the kit up on a hard surface instead of on carpet. Wood, cork, bamboo, tile, concrete, and even vinyl flooring will make your drums sound much more lively than a carpeted floor. Treat any opposing walls (and the ceiling, if it's a consistent height above a hard floor) with acoustic materials as needed to tame flutter echoes.

**Get High and Mighty** The most important thing you can do to assure great-sounding drum tracks is to raise the crash and

The Foo Fighters tracked their new album, *Wasting Light*, in Dave Grohl's garage. Learn more about drummer Taylor Hawkins mic setup on page 22.



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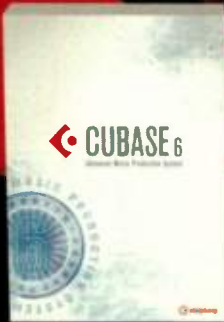
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ride cymbals as high as possible without compromising the drummer's ability to play well. If you were to set the cymbals too low, they would bleed so loudly into the tom mics that it would be virtually impossible to shape the sound of the toms independently of the cymbals during mixdown. You wouldn't be able to make the tom tracks sufficiently loud without the cymbals overwhelming the mix. And goosing high frequencies on a rack-tom mic to bring out the *thwack* of stick hits would also make crash and ride hits cut like razor blades across the ear drums. Get those cymbals up!

If possible, have the drummer rack the floor tom before the session. It will produce much deeper and longer sustain when racked compared to when sitting on legs.

**Go On A Microphone Binge** There are two basic approaches to recording trap drums. One method uses a pair of somewhat-distant mics to capture the entire kit and then reinforces the kick and snare drums as needed with a close mic or two. While this strategy produces an organic sound that works well for traditional styles of music, it often won't give you the control, flexibility, and focus you need to fashion explosive drum tracks that rock.

**A binge-miking setup dramatically increases your options later in the game. You can adjust the level, eq, panning, envelope shape, and dynamic range of each trap drum independently.**

And an over-reliance on ambient mics in a small room—especially one with sub-optimal acoustics—is a recipe for weak and washy-sounding drum tracks.

A better approach is to place a separate close mic on each and every trap drum. Additional overhead and ambient mics are used to record the cymbals and the overall sound of the kit in the room. Each mic signal gets recorded to a separate track on your multitrack recorder or DAW.

This binge-miking setup dramatically increases your options later in the game. You can adjust the level, EQ, panning, envelope shape, and dynamic range of each trap drum virtually independently of the others during mixdown. Overhead and ambient mics can be goosed or lowered in the mix without dramatically changing the levels of the traps. Discrete drum tracks that sound weak can be bolstered or replaced by samples using plug-ins such as Slate Digital Trigger and WaveMachine Labs Drumagog.

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drums

For the Foo Fighters recording, multiple room mics captured "garage" tone.

**Bottom line: Multiple mics placed willy-nilly on a drum kit can make the traps, in particular, sound weak and thin.**

**Know Your Enemies** Using a lot of mics to record drums has two major drawbacks if done improperly: It can cause phase cancellations and degrade stereo imaging.

Let's examine phase cancellations first. When the sound of the kick drum, for example, arrives at both its intended mic and the mic for one of the toms, the two signals will be out-of-phase with one another and cause certain frequencies to become attenuated. For reasons too complex to explain here, the most audible penalty is weakened bass frequencies. **Bottom line:** Multiple mics placed willy-nilly on a drum kit can make the traps, in particular, sound weak and thin.

The same combination of intended and unintended mic signals can also cause stereo imaging to degenerate. If the recorded kick is panned dead-center but kick hits also bled into the mic for the floor tom, panning the floor tom anywhere but dead-center will pull the image of the kick drum off toward the side of the stereo field. Poor stereo imaging makes drums sound washy.

No worries. In Part 2 of this series, I'll show you how to place each mic on the traps to minimize both phase and imaging problems. You'll learn how to produce punchy drum sounds that have laser-like focus and clarity. See you next month! ■



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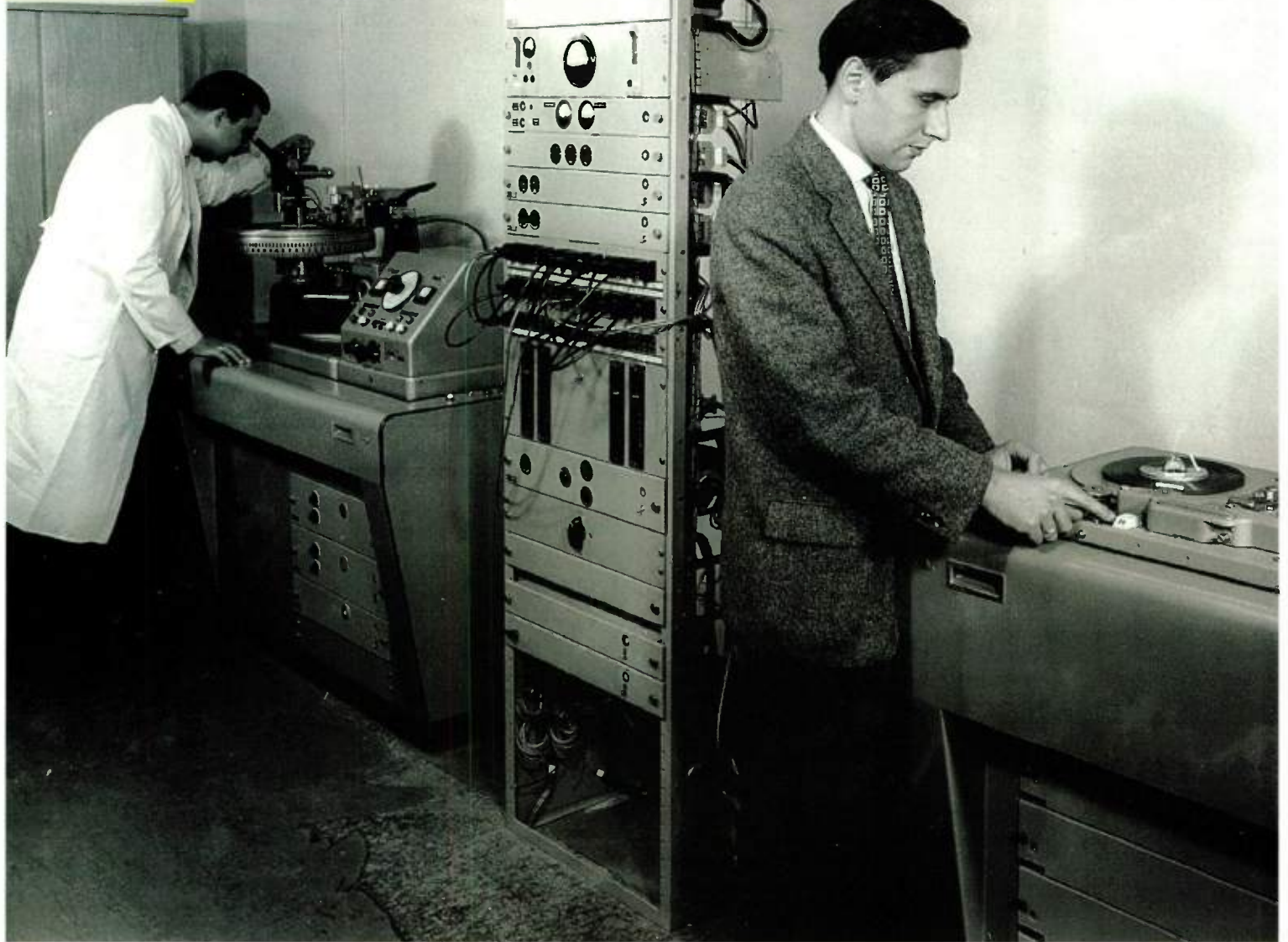
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mixing



## Tips for Mixing for Vinyl

BY GINO ROBAIR

VINYL RECORDS are very much in vogue again, as much for their sonic quality as for their collectability. To get the best sounding results when pressing a record, you need to consider the physical limitations of the medium before you mix. Here are some tips for maximizing the sound of your record, the first time around. When pressing vinyl, you'll trade off program length versus audio quality, so begin by determining how much music you want on each side of your record. An LP typically holds less than 30 minutes of music, and the width and spacing of the grooves plays an important role in the sound quality of a vinyl record.

Keep in mind that the volume level at which you can cut the tracks is proportional to program length. If you want the record to be loud, you need the largest grooves possible. However, wide grooves take up physical space, so you'll need to keep the timing of each side short if you want maximum volume.

Speed also plays an important role. Like analog tape, the faster the vinyl media moves, the better the sound reproduction will be, but the more media you'll need. For example, the hottest playback signal will come from a 12-inch pressing at 45 rpm, which is one reason why it's the preferred format for dance music. However, the optimum program length of a disc at that size and speed is

Engineers cut vinyl in an early mastering facility.



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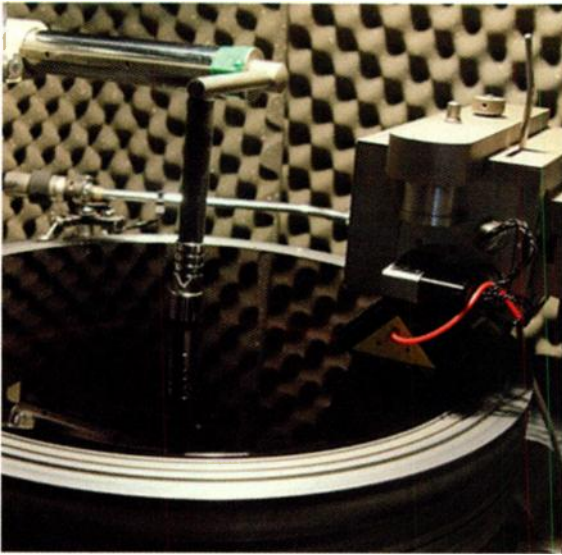
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An example of a disk lathe.

**If you're pressing to vinyl because you prefer the sound quality of analog over digital, you'll want to mix to something other than cd.**

around 9 minutes per side—great for an extended remix, but not much for a full album. Even with a maximum length per side of 15 minutes at 45 rpm, it may not offer enough time for your project. At 33 1/3 rpm, a 12-inch yields a maximum length of about 22 minutes per side, although the optimum length is around 14 minutes.

To make a record longer, you will have to cut it at a softer level to fit more grooves into the same amount of space. The softer level also means you'll have an increase in the noise floor.

**Freaky Frequencies** Low frequencies also require a lot of space on a record. If your music is bass-heavy, you'll want to have fewer songs on the release, to leave room for wider grooves.

Keep an eye on the level of your low-end: Excessive bass will cause a needle to skip, and mastering engineers will tame this frequency range if they think it'll cause a problem during playback. In addition, low frequencies are panned to the center during the mastering process, and the crossover frequency differs between mastering houses. It's recommended that you mix the bass instruments to mono, so that you have control over the sound before it gets to the mastering studio.

Excessive high frequencies can also present a problem on vinyl, particularly sibilant vocals or sharp transients which will distort during playback. Mastering engineers recommend using a de-esser on vocal parts. In addition, too much compression and limiting in the final mix will exaggerate the highs, making it difficult to cut a good vinyl master.

It's also important to understand that the quality of high-frequency reproduction diminishes as the needle

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gets closer to the center of the disc. If you boost the highs to compensate for this, you'll end up with a record that distorts. One popular approach is to sequence the songs so that the loudest tracks are at the beginning of the record, where the stylus has the greatest distance to travel, allowing it to accurately reproduce the upper registers.

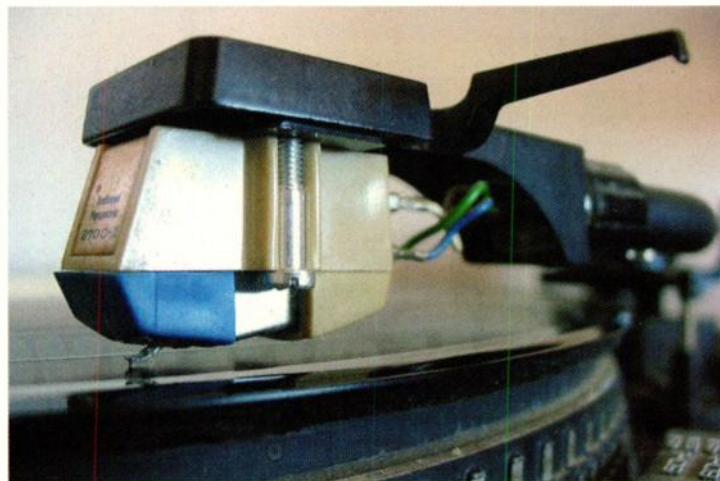
#### Analog or Digital Master?

Consider the media that you use to deliver your mixes to mastering. If you're pressing to vinyl because you prefer the sound quality of analog sound over digital, you'll want to mix to something other than CD. Many artists deliver their mixes on analog tape, from which the mastering engineer will cut the master lacquer. Select the mastering lab before you mix, and find out which tape format it prefers.

An alternative is to mix to a high-resolution digital format and deliver the files on a DVD-R or upload them to the mastering lab's FTP site. Each of the 16 songs of Arcade Fire's recent Grammy winning release, *The Suburbs*, was mastered to vinyl from 24-bit, 96kHz mixes, and then re-digitized from the lacquer masters at 16-bit, 44.1kHz for release on CD and MP3. This allowed mixer Craig Silvey and mastering engineer George Merino to impart the characteristic timbre of vinyl to the subsequent digital release.

But no matter how you deliver the mixes, be sure to document the song order and timings, as well as the length of time you want between songs. If your master is on tape or CD, add a few minutes of silence between the last song of side one and the first song of side two, so that it's clear where one ends and the other begins.

In all cases, find out what the mastering house wants to receive before you mix. That way, you don't waste money and time redoing one of the steps in the process. ■



The stylus has the greatest distance to travel on the outside of the record, letting it reproduce highs more accurately here.

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Your EAR is your most valuable musical asset

# Perfect Pitch vs. Relative Pitch

*In music, you are set free or held back by what you can or cannot hear . . .*

by David Lucas Burge



Musicians often think that **Perfect Pitch** is supremely superior to **Relative Pitch**. It's true in some ways, but it's like comparing apples with oranges.

The truth is, **Perfect Pitch** and **Relative Pitch** are *completely separate* hearing skills, each with its own unique powers and abilities.

**Perfect Pitch** and **Relative Pitch** are *complementary*. They do their jobs best when they work **TOGETHER** – like the two hemispheres of your brain: right (artistic) and left (logical).

Let's compare the experiences:

**1.**

Your experience of music **WITHOUT Perfect Pitch** or **Relative Pitch**:



*Without Perfect Pitch or Relative Pitch, your understanding of music is blurred.*

With a completely untrained ear, there is little or no insight into what you hear. Basically: zero comprehension.

Of course, everyone can ENJOY music without any training whatsoever. But an untrained ear doesn't give you any UNDERSTANDING of the music.

Simply put, without **Perfect Pitch** or **Relative Pitch**, you literally have *no pitch recognition*.

Since music is a HEARING ART, a great ear gives you a natural command of the musical language. A "great ear" means: an ear that understands PITCH.

When you do not know the notes and chords that you hear, the music literally passes you by, not fully heard:



Bottom line: An untrained ear leaves you with unanswered questions about everything you hear.

**2.**

Your experience of music **WITH Relative Pitch** and **WITHOUT Perfect Pitch**:



*With Relative Pitch, you hear music with a fully clear and sharp focus.*

Your sense of **Relative Pitch** tells you how pitches RELATE to one another to create the **language of music**.

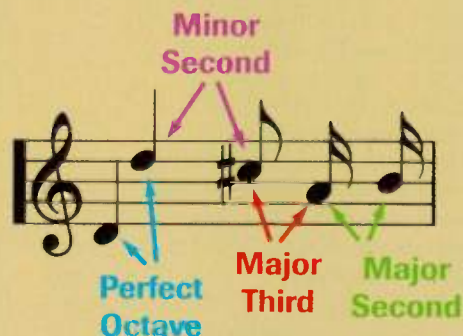
Here's how **Relative Pitch** works: When you play any two tones, a **RELATIONSHIP** occurs between them – which you'll hear as a simple sound pattern, or **INTERVAL**:



Major Third    Perfect Fifth    Major Seventh

There are 21 basic **Relative Pitch** intervals in music, each with its own name and distinct sound. You need to learn each interval **BY EAR**, because . . .

**Relative Pitch** intervals are the raw building blocks of all melodies:



**Relative Pitch** intervals are also the raw building blocks of all chords. This is why **Relative Pitch** also lets you name any kind of chord – instantly – **BY EAR**:



Major Seventh Chord



**Relative Pitch** gives you a clear insight into music in a whole new way.

*Examples:* Your ear can now probe deep into all the harmonies. You can now intelligently choose chords – **BY EAR** – to harmonize any melody. You can now easily take music out of your **HEAD**, and onto your instrument.

And when you can **FOLLOW THE FLOW OF MUSIC** by ear, you naturally can improvise, compose, and “play by ear” to an impressive degree.

To put all this very simply:

**Relative Pitch** gives you a *mastery of the musical language* – all **BY EAR**.

In fact, many musicians believe that **Relative Pitch** is all they need in order to excel in music. And for many people, this is probably true.

But **Relative Pitch** lacks a certain aesthetic experience. It lacks the artistic experience of **PITCH COLOR** . . .

## What is Pitch Color?

With **Relative Pitch**, you are still hearing all the tones as “black and white.” In other words, all tones sound basically the same. The only real difference is that some tones sound “higher” and some sound “lower.”

**Relative Pitch** cannot tell you when you hear a C#, an F#, or a Bb. Nor can **Relative Pitch** tell you the difference between a **D Major 7** chord and an **F# Major 7** chord.

To know the **EXACT** tones you are hearing, you need a new dimension of experience . . . which is **Perfect Pitch**.

## 3.

Your experience of music **WITH Perfect Pitch** and **WITHOUT Relative Pitch**:

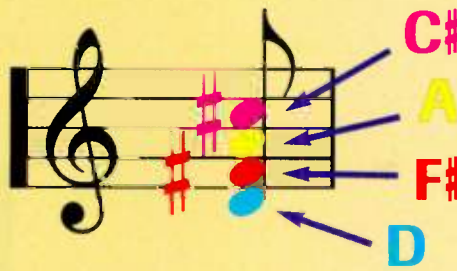


*Perfect Pitch lets you experience each tone as a distinct “pitch color” – so you know EXACT PITCHES by EAR.*

**Perfect Pitch** tells you the **EXACT** pitches that you hear.

When you hear a C#, you know it's a C#, and not an F# or a Bb. You hear it!

Each tone *sounds different* to your ears – similar to how you see colors by eye:



**Perfect Pitch** gives you the perception of an **ARTIST** because it endows you with the rich **COLOR** of every pitch you hear.

The experience of **Perfect Pitch** revolutionizes your abilities in music, because now you know the **EXACT** tones you are hearing. Quite naturally, this opens up whole new vistas of artistic possibilities for you.

Yet contrary to popular ideas about **Perfect Pitch**, a musician does not experience the full details of the music with **Perfect Pitch** ALONE.

If your ear does not possess the clarity of **Relative Pitch**, your experience of music will not be fully focused.

To hear the sharp details of what is happening in the music, you need another dimension of hearing. This is the dimension of **Relative Pitch** . . .

## 4.

Your experience of music **WITH BOTH Perfect Pitch** and **Relative Pitch**:



*With BOTH Perfect Pitch and Relative Pitch, you hear the TOTAL musical picture – in color and fully focused.*

Now . . . here's how **Perfect Pitch** and **Relative Pitch** work **TOGETHER**:

*Example:* **Relative Pitch** tells you that you hear a **Major Seventh** chord.

But now the question is: WHICH Major Seventh is it? Are you hearing **E Major Seventh**? **G Major Seventh**?

This is where your **Perfect Pitch** comes into play.

**Perfect Pitch** tells you the **EXACT TONES**, so you can pinpoint the **ROOT** of the chord you are hearing.

Now you know that you are hearing a **D Major Seventh** chord:



## D Major Seventh Chord

*Perfect Pitch tells you the EXACT chord – BY EAR.*

*Relative Pitch tells you the KIND of chord – BY EAR.*

Working together in many ways, **Perfect Pitch** and **Relative Pitch** give you the complete picture of the notes, chords, melodies, harmonies, and progressions that create all music.

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# Five Sonic Missteps

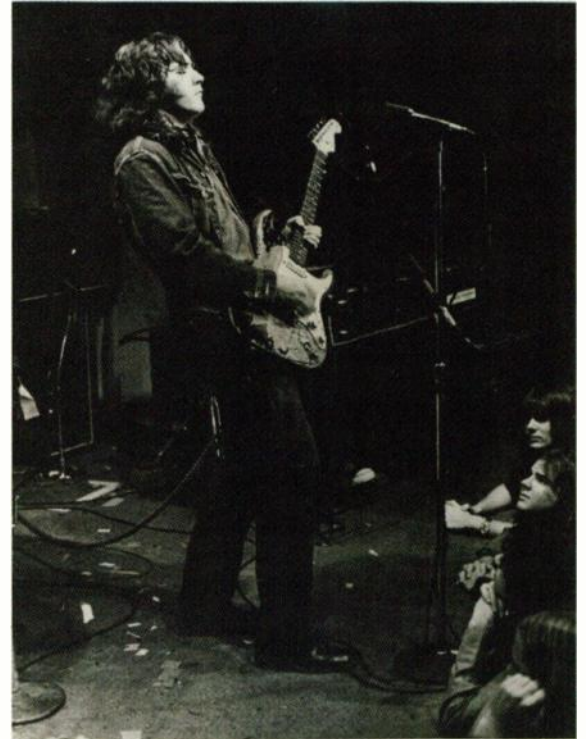
BY MICHAEL MOLEND

TODAY, THERE may be a zillion signal-processing options available to the average guitarist. Ya got your modeling software, boutique and mass-production pedals, studio processors, plug-ins, and myriad multi-effects devices—most of which are totally affordable and designed for all skill levels and stylistic forays. But having ultimate power doesn't mean you have to wield it like Thor's hammer. In fact, employing processing without forethought may actually tank your guitar tone. Here are five "oops-inducing" sounds that you might wish to avoid.

**Saturation = Muscle** Massive applications of distortion can actually neuter a guitar sound by obscuring attack, impact, and punch. Not much machismo in fizziness, bucko! In actual fact, some of the boldest guitar tones in rock aren't as overdriven as one might think. Check out "Highway to Hell" by AC/DC, "Smoke on the Water" by Deep Purple, or "Good Times, Bad Times" by Led Zeppelin. These tunes fire off some mammoth aural wallops, but the guitars driving the grooves and energy are relatively tame from a distortion/saturation standpoint. In many cases, heaviness is a matter of dialing in guitar sounds that allow the other instruments to rage. If you slaughter the frequency spectrum with buzzy waves of searing midrange distortion, the attack of the bass, snare, and other rhythm-oriented elements may be diminished, and effectively kneecap the sonic power of your track.

**Reverb Makes It Bigger** While reverb can absolutely place a guitar sound in a huge ambient environment, too much of a good thing can wash out your track, blurring rhythmic attacks with cascading reflections and devouring a significant chunk of frequency range. Phil Spector's classic "Wall of Sound" productions actually took a fair bit of genius and lots of experimentation and tweaking to deliver a rollicking ambient roar with impact and clarity. Phil didn't just crank up a cathedral reverb program to 100-percent wet and call it a day. This is definitely one of those instances where comparing your reverb-drenched guitar tracks to the guitars on a song you dig can save much embarrassment, as those guitars will likely prove to be much drier than you imagined.

Having ultimate power doesn't mean you have to wield it like Thor's hammer.



Rory Gallagher—he didn't need no stinkin' effects to blow your mind.

**Layers Are Lovely** Tone addicts often believe that if one guitar track is great, then doubling, tripling, or quadrupling that track will deliver tonal bliss. Well, watch those overdubs, because adding too many layers and textures to a guitar part can also weaken attack and diminish impact. A simple rule is: If you absolutely love the sound of a single guitar track, keep it lonely. Once you start piling on overdubs, you will alter the guitar's sonic DNA, and risk destroying all that you adored about the solitary track.

**Modulation Rules** It's no secret that chorus, phasing, and flanging are fabulous spices that add interest and vibe to guitar sounds. But too much goop can send listeners into an annoying carousel of swirling candy-cane sweetness that may pull their attention away from the song and the guitar part. Try blending in just a touch of modulation first, and then see how the processed guitar fits in with the stereo mix. Use only what you really need, and you'll cook up something tasty.

**Dry Is Boring** A great dry guitar sound that turns heads is a thing of beauty. Listen to raw guitar tracks by Rory Gallagher or any number of artists, and be astounded by the feral majesty of in-*yer*-face tone, attack, dynamics, and phrasing. Remember, kids, there's a ton of vibe in your fingers *if* you choose to unleash it. ■



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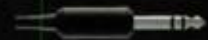


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## Tracking With Analog Preamps

BY STEPHEN FORTNER

YOU USED to have to go to an audiophile's basement to hear the "warmth" and "punch" of analog preamps and compressors. Now those formerly boutique items are nearly ubiquitous. Try these tips for optimizing outboard preamps.

**Preamp Primer** Tube preamps, as well as other old-school designs involving transistors and transformers, leave their own sonic fingerprint. Drive a tube gently, and it adds subtle, pleasant harmonics to the sound, as well as rolling off sonic information we perceive as harsh, which can make even a very good digital keyboard sound less . . . digital. Transformer-coupled preamp designs give more thickness or "meat" to the sound, especially in the bass and low-midrange.

**Pres in Practice** Can you plug a keyboard into a mic preamp safely? Yes, provided you're careful with the volume control on each. Technically, a preamp is anything that amplifies a signal. If a unit has enough gain to boost the relatively low signal a mic generates, it's a mic preamp. That's way more gain than you need for a keyboard, but you don't have to max it out to

In this two-part series, we'll share tips for using analog effects when tracking keyboard. Part 1: Preamps.

benefit from its sonic characteristics.

The harder a preamp works to bring up a signal's level, the more of its own tonal characteristics it imparts to the sound. Since a dedicated preamp, compressor, or direct box has higher-quality analog circuitry than the output stage of the average synth workstation, John Songdahl of Boston-based Professional Audio Design suggests breaking the "keep the keyboard volume at maximum" rule for analog output stages. "Just as with guitar amps, each keyboard's output stage has its own sound and character, and to keep prices affordable, manufacturers favor chip-based output circuits," he explains. "The trade-off is in the character of the sound. Older, non-chip-based output stage designs helped give analog synths like the Minimoog and Prophet-5 their sound. One way to get some of that mojo back is to rely less on your keyboard output, and make up the gain with a tube mic preamp" But Craig Anderton reminds us that with some digital synths, lowering the output level lowers resolution, which may or may not be desirable. As always, your ears will tell you more than a knob position.

**Try A DI** The more you want to work the preamp, the more you'll need to reduce the keyboard's volume to avoid distortion. Go too low, and the preamp will be magnifying a wimpy, noisy signal. A direct box (DI) hits the Golden Mean here, making the preamp think it hears a microphone even with the keyboard's volume up. The payoff: You can now be more adventurous with the preamp's gain. A passive DI is generally best here, because the transformer inside it is better at soaking up hotter signals. Active DIs give truer sound when you need to put a weak signal, such as from a guitar pickup or vintage Rhodes Stage piano, on a level playing field with mics and keyboards. ■



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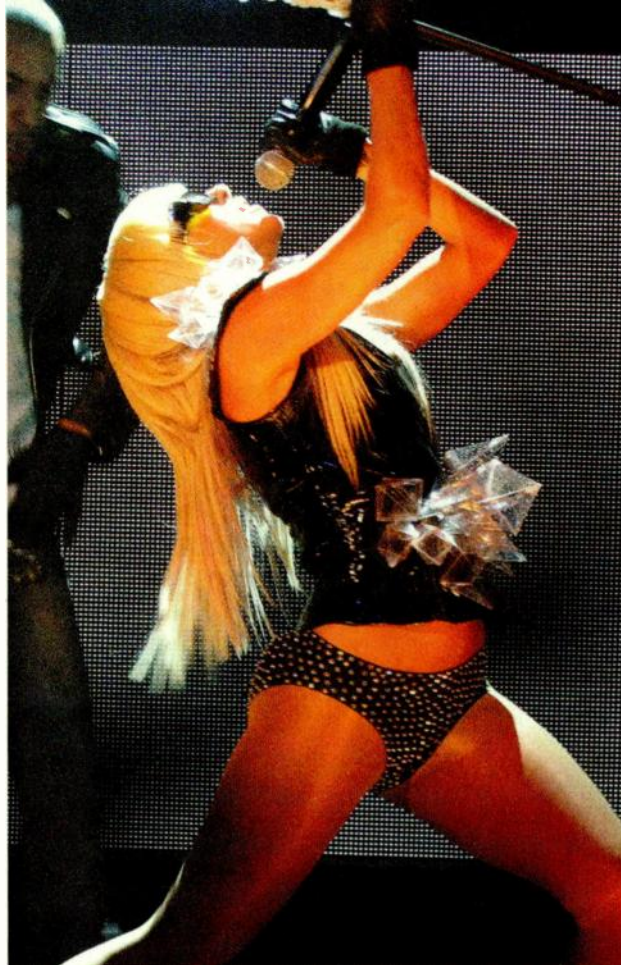
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Lady Gaga pulls out the stops to captivate her audience and put on a knock-out show.



# The Charisma Factor

BY MICHAEL MOLENDRA

WHETHER IT'S fair or not, commercial musicians don't typically hit the top of the pops solely because they are extremely talented instrumentalists or singers. The "x-factor" for fame (apologies to Simon Cowell) is as brutally simple as this: The audience has to like you. A lot.

Getting a career-making number of people to notice you, remember you, and develop a jones for constant "you" updates is a mysterious and often-treacherous dance that has eluded even the smartest entertainers and managers since the dawn of celebrity. No music-biz svengalis are ever 100-percent successful at churning out superstars, and if there was a foolproof formula, we would all be uber-rich and fabulously famous.

But there are some elements you can consider to determine if you're on the right track to making yourself a seductive, bigger-than-life you. Of course, the next sucker-punch of unfairness is that some artists are naturally charismatic, and you should hate them if you're not one of them. Happily, vast lineups of bona-fide superstars were not "naturals" either, but they worked intensely to construct a superstar façade. Here are a few suggestions to kick off your journey to legendary status.

**Know Yourself** Eric Clapton barely moves a muscle when he performs, while Eddie Van Halen used to whiz around stages like a Tasmanian Devil. Likewise, Frank Sinatra kept his stage presentation tuxedo-cool, while Lady Gaga employs outrageous costumes, phalanxes of dancers, and massive video screens to help present her songs live. There's no right or wrong to any approach—simply that the persona that works for you is golden. What usually *doesn't* work is when you try to be someone you're not. Eventually, audiences tend to see through the phoniness.

**Be Cool** Coolness is linked to pop culture, and there is a definite "cool factor" for every age group. Study it. Know it. Embrace it. And then mold it to your particular style. You don't have to rock tattoos, goth makeup, and piercings if you're an artist of a certain age, but if you're playing, say, a blues club wearing a

**The goal is to keep the audience energized and engaged from first note to last note.**

Hawaiian shirt, Dockers, and Birkenstocks, you're going to have a hard time convincing the audience that you're cool enough to be star material.

**Command Eyeballs** Not to get overly woo-woo, but you need to expand your delivery to reach every audience member and resonate through every inch of the venue you're playing. Shoegazing had a short lifespan, because audiences usually feed off being surprised, enchanted, and conquered. Jim Morrison read books on crowd psychology—a genius move. Actors perform bigger on stage than when making films. Want to ensure people can't stop talking about your shows? Study everything (and everyone) you can to learn how to zap your stage persona into each spectator's eyeballs, heart, and mind.

**Feed Their Heads** Scripting your set can help you distance yourself from boring acts, mediocre performances, and various other also-rans. You should control the energy in the room with a savvy set list full of emotional ramp-ups, cool downs, and crescendos. Production elements (video, lighting, set design, etc.) must support and even amplify your show's dynamics. The goal is to keep the audience energized and engaged from first note to last note. Terminate distractions (dead spots when no one talks, tuning moments, etc.) until no one even dares go to the bathroom for fear of missing something transcendent. ■



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# Six Social-Networking Essentials

BY BROOKLYN ALLMAN

**SOCIAL NETWORKING** is the most indispensable tool that an artist can use to maximize exposure, build a fan base, and capture the attention of the industry. The era of the major-label showcase that wins an artist a record deal is pretty much over and done. Today, it's all about your number of Twitter followers, Facebook fans, and YouTube views. So here are a few tips and tricks for skyrocketing your online fan base.

**Join Everything** It is crucial to create a profile on every social-networking site where users are eager to find new music. This includes Twitter, Facebook, Purevolume, Stickam, Formspring, Reverb Nation, etc. Each site allows for its own style of interaction with different types of fans. Twitter delivers frequent updates, Formspring is a great tool for answering individual questions, and Stickam is a live video chat environment where fans can interact with you in person. I'll also let you in on a little secret: Industry insiders often employ NextBigSound.com to compile and track your fan base through all of the sites you're utilizing.

**Seduce** Although your music is obviously the most important element for your success, your image is an attention-grabber in today's Internet-dominated music scene. Potential fans are more likely to stumble

**Fans don't like to be ignored. To build up your audience, you must reply to every comment and message with a genuine response.**

across one of your videos or photos before they even hear your music, so make sure your image content is high-quality, unique, attention-getting, and regularly refreshed. You want people to keep visiting your site for new content, and, hopefully they'll stick around to hear your tracks.

**Organize** You have one shot to capture potential fans when they click on your page, so don't blow it with a sloppy profile. Arrange photos into albums ("Roxy Gig, May 2010," "Photo Shoot for *Revolver* magazine, October 2010," and so on), clearly label all videos and songs, and make sure your biography identifies what you're about in less than 30 seconds.

**Respond** Fans don't like to be ignored. To build up your audience, you must reply to every comment and message with a genuine response. Users typically seek personal interaction when they visit a social-networking profile, and if you give it to them, they may come back again and perhaps even spread the word about you.

**Engage** Posting fan contests, daily music-related questions, or anything else that encourages people to comment or become involved is a great way to increase activity on your profile pages. My band will often hold "art contests" where fans will submit edited photos of us, as well as sketches of our band members. Not only is this a great way to get people involved, but, in the end, we have tons of fan-made artwork to post and show off our dedicated audience. Another example is when we let fans do their own cover versions of our songs on video. Soon, we had all of these videos of our songs floating around YouTube for people to stumble upon.

**Collaborate** Reach out to other bands and artists who are also trying to build their fan base by doing a "status swap," where you share links to Facebook and Twitter pages, websites, and so on. It's mutually beneficial to open up your communities to promote each other's gigs, songs, and videos to potential new fans. ■



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# Cakewalk Sonar X1

## Emulate phase-shifter effects

BY CRAIG ANDERTON

### OBJECTIVE

Re-create the sound of vintage phaser stomp boxes using equalization

### BACKGROUND

Phase shifters create peaks and notches in the frequency response; sweeping these notches produces the characteristic phaser sound. It's possible to emulate these effects through parametric equalization, grouping, and automation.

### TIPS

■ If you're using the ProChannel for track equalization, the Sonitus:fx Equalizer can create the same effects.

■ Step 1: Experiment with three or four notches, and with different Qs.

■ Step 1: To emulate the sound of phase shifters with strong positive feedback, create narrow peaks (preferably three or four) instead of notches.

■ Step 5: For periodic modulation, use Sonar's Draw tool to draw triangle, sine, saw, etc. automation envelopes.

### Step 1

Enable the ProChannel EQ's two middle bands, then set the Q to around 8.0 and Level to minimum.



### Step 2

Set the Freq controls so they're about two octaves apart (e.g., 500Hz and 2kHz).



### Step 3

Right-click on each Freq control and assign it to a group (e.g., group X). When grouped, moving one control causes other grouped controls to track each other.



### Step 4

Right-click on each Freq control and select Automation Write Enable.



### Step 5

Start playback. Move the Frequency controls for the desired phaser "motion," and Sonar will write automation data to the track.





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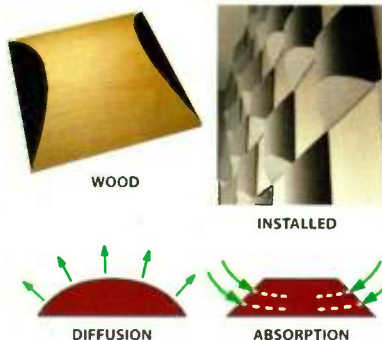
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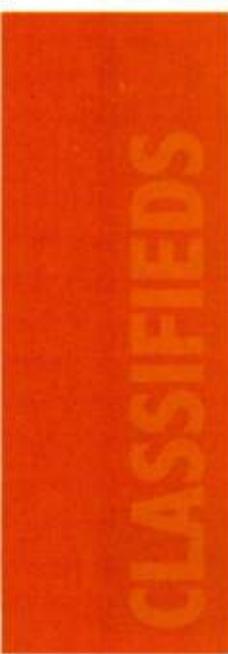
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## MOTU UltraLite-mk3 Hybrid Studio-grade I/O with mixing & FX

Thanks to MOTU's hybrid interface technology, the UltraLite-mk3 connects to any current Mac or PC via FireWire or high-speed USB 2.0. Connect your mic, guitar, keyboard, and digital input, and you are ready to make pro-quality recordings in your personal studio or mix live inputs on stage.

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1

## Five Things We Can Learn From DJs

BY CRAIG ANDERTON

**Be open-minded.**

Good DJs are musically open-minded, ready for anything, and have an encyclopedic knowledge of all kinds of music.

2

**The audience is *all* that matters.** DJs live and die by the reaction of the crowd, so they're constantly reading the mood of the audience and adjusting their tracks accordingly.

3

**The big picture is crucial.** When a DJ has to keep a crowd happy over two or more hours, the focus is less on individual cuts and more on overall flow. Bands should pay as much attention to their set lists.

4

**Hands-on control is essential.** Computer-based recording fans, pay heed. DJing is about control and feel, and, similarly, hands-on mixing gives you a mix that's more of a "performance" than just setting static levels.

5

**Music gets people high.** In the club scene, the music isn't just a listening experience for individuals, but the glue that holds the tribe together. DJs never lose sight of the fact that they're trying to walk that fine line between trance-like repetition and the "shock of the new." The music becomes a shared, communal, and almost religious experience. ■



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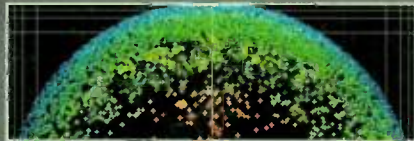


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