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# MASTODON

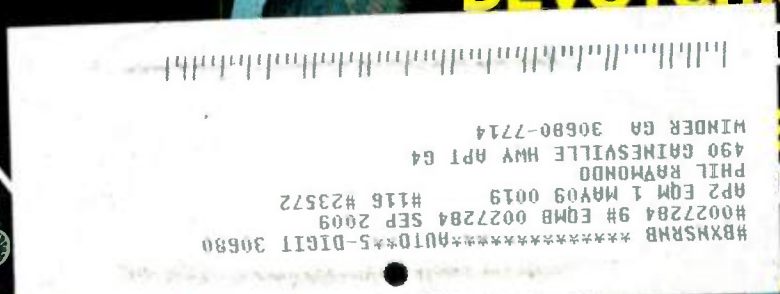
## Making Crack the Skye

**DEVOTCHKA**

MAY 2009



A MUSIC PLAYER PUBLICATION



# ON THE EQUILIBRIUM OF A MIX

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JAMES MINCHIN

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Cover Photo by James Minchin

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## DOES QUALITY MATTER?

DVD-A and SACD never caught on. Consumers listen to data-compressed audio over earbuds, or in a noisy car environment. "Mastering engineers" squash the dynamics, while shrugging their shoulders and saying, "It's what the label/artist/producer wants" . . . which is probably true.

So why should we worry about that last dB of noise floor? Who will care if we take 15 minutes instead of 30 setting up a mic? In today's competitive environment, we need all the help we can get: If no one else cares, why should we?

Well, I can think of several reasons.

The most practical one is that with a compromised playback medium, the quality going in is more important than ever—because for a given amount of degradation, material that starts out at a higher level of quality will end up at a higher level of quality.

Also, digital data lasts a long time and if there's one thing I've learned over my career, it's that older material has a strange way of re-surfacing from the archives. Maybe in a few years tastes will change, a new data compression standard will emerge that's outstanding, music will be re-issued, and you'll be able to hear *all* the care you put into a recording.

But perhaps the most important reason is your own satisfaction. Many years ago I did some MIDI consulting for Paul Reed Smith while his company was still fairly young, and in return he offered to sell me a guitar very inexpensively as a "backup guitar" for taking on the road. I said the guitar was worth far more than the time I put in, but he said it was a cosmetic reject and he was just going to cut it in half anyway—while it played perfectly, he didn't want it ending up in a store.

I billed him for my time and got the guitar, but never could figure out what was wrong with it. I saw Paul at a trade show a year later, and asked him what the problem was; he explained there was a blemish in the wood. But the guitar was *painted* with a red finish . . . I said "Paul, I didn't notice that, and no one else would, either." And he said, "Yeah, but *I* noticed it."

Point taken. If you do anything less than the best you can, you'll regret it every time you hit playback—even if no one else notices.

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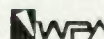
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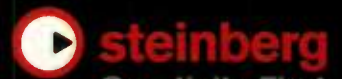
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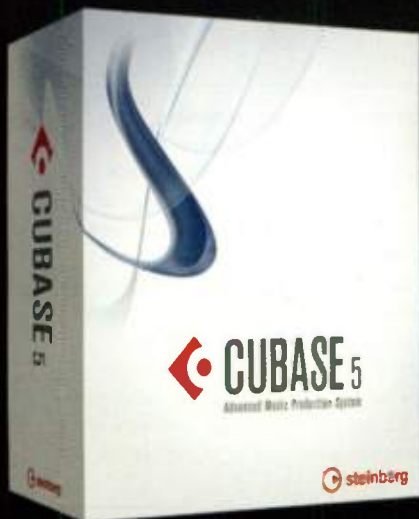
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# SOUNDING BOARD



## HEY! WHAT ABOUT THEFT?

Your Talk Box (03/09) discussing who might be to blame for the atrophy of the music industry was quite telling. Nowhere did you mention the rampant theft of intellectual property by countless millions of greedy consumers, which was the primary culprit in the crippling of the industry. This from a magazine whose primary demographic are the creators of the very intellectual property stolen.

The word theft was not even used! Is the editor so afraid of upsetting the rebel apple cart that proffers that big business is "bad" and therefore any behavior to punish it is justified? Or does the editor agree with behaviors that decimated our industry? Are record companies responsible for not giving consumers what they wanted? Absolutely. Are consumers responsible for rampant theft of intellectual property that has irrevocably crippled our industry? Most certainly. Does record company stupidity justify theft? You tell me.

K. Wesley Patten

## Executive Editor Craig Anderton responds:

The very first potential target of blame I mentioned was Napster. If the original Napster doesn't exemplify music theft by consumers, I don't know what does.

My stance on the value of intellectual property has been consistent for decades. In fact, in the previous issue's Talkbox, I stated that "Piracy—with its attendant disrespect of the value of the artist—runs rampant."

Besides, the March editorial wasn't about theft, but as the title indicated, transitions: "Why bother assigning blame? That doesn't solve anything. The physical is transitioning to the virtual, and there's no turning back." I didn't

want to write (yet another) "theft is bad" editorial; everyone knows that. I prefer to move forward, look to the future, and discuss possible solutions—which if you read the editorial, encouraged figuring out new and better ways to sell music, so that artists can get paid.

## DIGITAL KILLED THE AUDIO STAR

In Talk Box (03/09), I appreciate Mr. Anderton's idealism when he says "Rather than deny reality, we need to embrace it. Someone will figure out a model for selling music in the virtual world that will make CD sales look like a blip. . . ."

Unfortunately, he's wrong. When music became digital, it became copyable, and therefore, stealable. People can't resist the temptation to avoid paying if they can get something for free. No copy protection scheme is unbreakable. Just ask the Pentagon.

I would be very curious what model for digital music distribution could possibly allow artists to make money from that distribution.

Will Kuyper

## Executive Editor Craig Anderton responds:

There will always be some people who have no qualms about stealing digital data, and I doubt we can do anything about them. The answer may lie in "bundling"—for example, buying a CD or paying for downloads might let you receive concert ticket discounts, the opportunity to participate in a password-protected chat room with the artist, and obtain periodic emails of unreleased or rare material. There are also the "all you can eat" options, like XM Radio or Rhapsody, where you pay for the right to listen to unlimited amounts of music, and royalties go to artists. People are willing to pay for convenience and perceived value; we just need to come up with a model that's ultra-convenient, while delivering value that stolen files can't duplicate.

## IT'S THE DJS!

One overlooked factor that could hurt the industry is that the radio DJ no longer announces the song being

played. Millions of opportunities to make a sale have been lost because of this. I've bought many records because in the past, the DJ identified that great song I heard, as well as the artist.

Another issue is lack of diversity. Only the "big names" get played now. Not too long ago, as an underground new wave artist, I started a viable recording career just from mailing a demo to radio stations, and getting played. Try doing that now.

When I was a radio disc jockey, I would gladly take in those demo tapes, CDs, and one-off white-label records and play them. I would always tell the listeners the artist and the song. Today, even most college stations don't do that.

And here's a message to program directors: The "cookie-cutter" same music/different station "McRadio" franchise format has to die. Use local programming, with real records and CDs, instead of streamed computer playlists with a fake DJ pretending to be playing the music.

Rus Stewart,  
Robotique Records

## OUR READERS KNOW WHAT THEY LIKE . . .

Thanks for reviewing our Chirp Virtual MIDI keyboard—your reader base has been flooding me with demo download requests as a result. Sheesh, I'd better get the engineers to add the "mouse can control velocity" suggestion ASAP!

Scott Bausback,  
Tanager AudioWorks

**Got something to say? Questions, comments, concerns? Head on over to [www.eqmag.com](http://www.eqmag.com) and drop us a line in our Letters to the Editor forum, send us an email at [eqeditor@musicplayer.com](mailto:eqeditor@musicplayer.com) or snail mail c/o EQ Magazine, 1111 Bayhill Dr., Suite 125, San Bruno, CA 94066 for possible inclusion in the Sounding Board.**

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# PUNCH

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## STYLISTIC MELTING POT



DeVotchKa (left to right)—Nick Arata, Jeanie Schroder, Shawn King, and Tom Hagerman.

## DeVotchKa's Flair for the Ethnic and the Extraordinary

BY CONTESSA ABONO


Denver's DeVotchKa ain't your typical indie-rock band. Fusing elements of Slavic, Greek, and Latin styles with punk—and wielding instrumentation that includes bouzouki, sousaphone, violin, accordion, and guitarrón—the quartet sounds as if it just arrived off a ship from the Russian Federation after making several port stops throughout the Mediterranean.

"We try to borrow a lot of things to make our songs more interesting and to keep us entertained," explains DeVotchKa's Jeanie Schroder.

The musical endgame of the band's "wandering ears" has caught the attention of not just music fans, but also people who need unique soundtracks to capture a viewer's imagination. DeVotchKa songs have graced film trailers (*Everything Is Illuminated*), television commercials (*Gears of War 2*), and the multiple Academy Award-nominated 2006 film, *Little Miss Sunshine* (where the soundtrack was also nominated for a Grammy).

From a production standpoint, however, there is a wonderfully organic process to crafting such a

blend of idiosyncratic sounds.

"It's all trial and error," admits Schroder. "We have this weird and magical chemistry that helps us come up with unusual parts. For example, we might start off a song with a 4/4 rock feel, and then Shawn [King, percussionist] will suggest a Latin beat. That's how our song 'We're Leaving' was transformed into a Mariachi-style waltz. We try out a lot of ideas, and nobody tends to poo-poo anything, so we end up with a fusion of very strange motifs that somehow blend together into a cohesive band vision." 

# TOBACCO ROAD

## Black Moth Super Rainbow's Frontman on Merging Lo-Fi and Hi-Fi

BY PATRICK SISSON

Most musicians don't enter a recording studio for the first time to collaborate with Dave Fridmann, the producer known for his work with The Flaming Lips. But that's the unlikely scenario that Tobacco, enigmatic frontman and songwriter for the sugary but sinister Black Moth Super Rainbow, encountered when he entered Fridmann's Tarbox Road Studios in Western New York last November to record his new album, *Eating Us* [Gravface].

A certain amount of mystery hangs around Tobacco and his band's true composition. Mostly a vehicle for music he writes and records at home—which is augmented with other musicians when touring—Black Moth Super Rainbow is known for warm, overripe synthesizer lines and hazy, vocoded vocals that exuberantly burst into multiple hues, and yet maintain a creepy, paranoid undertone. On *Eating Us*, Tobacco—along with bassist Ryan Graveface and drummer D. Kyler—trekked out to Tarbox with home recordings that would form the template of the new album. Tobacco had already recorded a complete version of the album at home on his Akai MPC2500, and he wanted to fuse his lo-fi style with Fridmann's lush production.

"I was too scared to make the full jump into hi-fi, spend a month tracking everything, and then have Dave produce everything," Tobacco says. "We wanted to see what we could do by mixing our two styles. He was the perfect guy to do things I never was going to do myself, but as it was *him* doing it, I was able to trust it. If I had done some of the things he did on my own, I would have been constantly second-guessing myself."

In addition to maintaining the sound of previous albums *Dandelion Gum* and *Start a People*, Tobacco wanted to challenge the perception of people who think his music is "just hippie music." In fact, when Tobacco started performing



Black Moth Super Rainbow (left to right)—Father Hummingbird, Seven Fields of Aphelion, Power Pill Fist (standing), Tobacco, D. Kyler.

in high school in Pittsburgh, he was more entranced by the music of Boards of Canada. The Scottish band's album, *Music Has the Right to Children*, and its use of warm analog synths, was a major influence. A similar arsenal of old-school synths saturate *Eating Us*. Old

mono synths are used throughout, an Omnichord is featured on "Twin of Myself," and a Yamaha CS-60 from Tarbox gets a lot of play—especially on the opening two tracks, "Born on a Day the Sun Didn't Rise" and "Dark Bubbles." But one of Tobacco's key pieces of gear

Continued

SARAH CASS

is his "secret synth"—a monophonic synthesizer he's loath to identify. He's so protective, in fact, that he doesn't bring it on the road—he programs the synth's notes into an MPC. The secret synth also plays a key role in Tobacco's signature vocal treatment—a heavily altered speak-sing process, which he originally adapted because he's "embarrassed by singing." He runs his MXL 960 Tube Condenser mic through his secret synth, an Electrix WarpFactory vocoder, and a Maestro Echoplex tape delay.

"Even when I was making really

happy stuff, I always like to have that undercurrent of creepiness and paranoia," he says.

Fridmann's main contribution to the album was his work with the drums and bass. They used an old Fender Musicmaster bass that Fridmann got in a pawnshop for next to nothing, and the drum kit was a leftover item used by Stephen Drozd of the Lips. Fridmann also introduced Tobacco to the Korg Kaoss Pad. There's a breakdown in the middle of "American Face Dust" that utilizes the device, as well as a part during the bridge of "Gold Splatter"

where the sound starts bubbling.

"The Kaoss Pad throws your sounds all over the walls and splatters them and bounces them," says Tobacco.

The music on *Eating Us* suggests Tobacco and Fridmann discovered common ground, and merged home recording and studio techniques without sacrificing style or sound.

"Dave has a lot of stuff in his studio that's pretty good stuff, and a ton of stuff that's pretty crappy," Tobacco says. "But I think what makes Dave so awesome is that he knows how to find that one really awesome thing in the *bad* gear." **EQ**

## WALKING THE LINE

### Bob Mould Strikes Precarious Balances in Dense Mixes

BY KYLEE SWENSON

After writing hundreds of songs over the course of three decades, most songwriters would burn out of fresh ideas. Not Bob Mould. This year marks the 30th anniversary since he formed the seminal post-punk band Hüsker Dü, as well as the 20th anniversary of his first solo album, *Workbook*. But his latest, *Life and Times* [Anti-], proves he can still write catchy songs with emotional punch. For Mould, it was all about putting lyrics first and *thinking* last.

"Let's say I have 60 lines of text," he says. "None of them rhyme, and none of them are in the same meter. I sit down with a guitar—perhaps with a capo on the second fret—and strum, like, an E5 chord. My eyes will fix on a line, and I just go. When it's over, I really have no idea how the song happened. It's not something I should think about, and *nobody* should think about it. That's the problem. People are thinking too much about writing."

While Mould leaves songwriting to the unconscious muse, the recording process is more concrete. He recorded and mixed everything but the drums (which were played by Jon Wurster of Superchunk, and recorded with help from Mould's live sound

engineer, Frank Marchand). For a second opinion, Mould sent his mixes to mastering engineer Jim Wilson before doing final mixdowns.

"Jim would say things like, 'You are so close, but lighten up on the compression. I'm losing the bass right here.' So I would just go back and recompress the bass, or tighten down whatever was loose. Then, I'll send it back to him, and he would be like, 'Yep, that's it.'"

Some years ago, Mould also learned a valuable lesson from mastering engineer Howie Weinberg to help him avoid bass buildup in his tracks.

"He would hone in right around at 165Hz on a recording, look at what was happening in that area, and, a lot of times, he would find a build-up of low energy that was unnecessary," says Mould. "It might sound good when you hear it on a snare drum and bass guitar, but when you start to get that additive effect when there's so much information in that area, the mix will get really puffy and indistinct. So when I'm going through tracks, I click on a RNDigital Labs Inspector spectrum analyzer, and if I see too many things competing for that area, I have to make some decisions about what goes there to make the entire mix push just right."

Back in the '80s and '90s when Mould's bands Hüsker Dü and Sugar were recording, labels had big recording budgets, and Mould cared more about purist production methods. Now, it's about the quickness of setup, and getting out ideas efficiently.

"Sadly, I've gotten really good at getting guitar tones out of boxes—such as Line 6 Pods, Tech 21 SansAmp pedals, and an Aphex 1404 Punch Factory Optical Compressor," he says. "I know the purists get really crazy about it. But I'm not recording to tape, and I don't have a big room to mic a big wall of amps from 34 feet away. But, you know, if you see a really nice late-'60s Mustang tearing down the street, you think, 'Wow, that's a really great car. I would love to have a car like that.' You don't go, 'I can see one spoke in the hubcap that is not original—it's *new*.' But that's exactly what those purist guys do—and that's okay because *somebody* has got to do that—but the average person only cares about how the song resonates in his or her head, and how it makes them feel at the end of it. They're not trying to determine if the guitar amps are miked or modeled."

Although Mould uses soft synths such as Propellerhead Reason for supporting sounds, his mid-'80s

Fender American Standard Strat Plus, 1929 Gibson acoustic, and Line 6 Variax Acoustic are the focus of his productions.

"I like guitars to be very upfront and present and sitting pretty far on the edges of the mix," he says. "Then, if you're going toward the center, there's the drum imaging, and then other secondary events such as strings and things like that. Vocal and bass are center. Sometimes, I'll shift the bass guitar and bass drum slightly off center because it tends to open up a lot of space."

That space is opened for Mould's alternately smooth and raspy voice, sung through an AKG C414 B-TL II mic and a Joemeek twinQ preamp/EQ/compressor. Occasionally, he'll sing only an inch from the mic (as on "The Breach").

"When engineers hear that vocal sound, they cringe," Mould says. "But, on occasion, I like it as an effect. I'm trying to make it sound as if I were whispering in someone's ear."

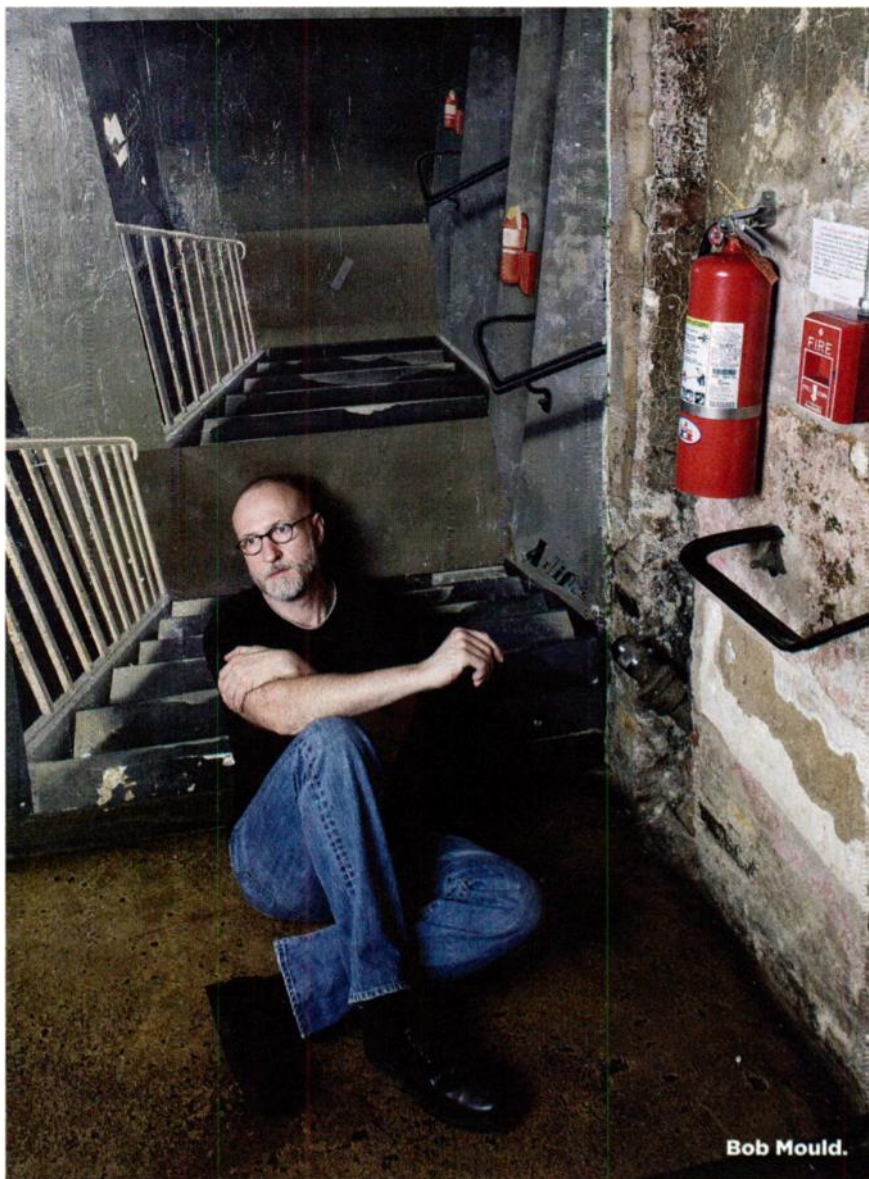
Meanwhile, Mould keeps background vocals away from the lead by panning them wide, thinning them out, and adding subtle chorus and heavy compression.

"I tend to thin out the body of them—shelving at 180Hz—so there's no depth," he says. "I let the lead vocal take all the density of the chest voice, and the background vocals are more like they're coming out of the sky."

Once in a while, Mould gets a little carried away with overdubbing parts. One song that teetered on the edge was "City Lights," which includes multiple guitars, xylophone, synth pads, vibes, drums, and a busy bass line. But he knows when he's gone too far.

"When I'm up to my 11th version of the mix, then I've sort of wrecked it," he admits. "I shouldn't have to

fight that hard to balance out things to get the point across. So I go back to the original guitar and voice, listen to it with all the other stuff gone, and I think, 'What am I really missing here?' Sometimes, it's just going back in order of how you created things, and you can see the moment when you put one too many things on." **EQ**



Bob Mould.

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# CLASSICAL GAS

## Dana Leong Employs Pure and Mutated Cellos to Create Electro-Jazz Rap

BY PATRICK WONG

Cellist, multi-instrumentalist, composer, actor, and hybrid jazz, electronica, and hip-hop stylist Dana Leong has worked with Ray Charles, Kanye West, Yoko Ono, Ryuichi Sakamoto, Diddy, Wynton Marsalis, and others. Currently fronting Milk & Jade by Dana Leong—another genre-bending project that recently performed sold-out shows in Serbia, Sweden, Germany, and Finland—the classically trained Manhattan School of Music alumni creates spellbinding textures by subjecting his cello to amplification, software plug-ins, and other electronic abuse. His most recent CD release is 2007's *Anthems of Life* [Tateo Sound], but live and studio albums from Milk & Jade are on the way, and, this April, Leong debuted a multimedia show, *Life After Dark*, at New York's Apollo Theater.

**How is your personal recording facility, *Life After Dark Studios*, set up?**

It's hidden away at the border of Harlem and Morningside Heights in Manhattan. I have three tracking areas and a control room. There's a small collection of Neumanns and other mics that I route into Vintech 473 and Universal Audio 4110 preamps. All AD/DA conversion is via an Apogee Rosetta. In the live room, I keep a few drum kits, a Fender Rhodes, loads of horns, my cello, and a couple of electric

basses. I have a love for low end, so I also keep three different Epifani bass cabinets on hand.

**You've certainly pushed the traditional boundaries of the cello.**

Strings can absolutely bring a certain fluidity and sense of class to a recording, but I view the cello not just as a classical string instrument, but also as an incredibly *versatile* instrument. For me, the cello can go beyond the purely melodic to become a percussive device, or even deliver a screaming, amped-out solo.

**How do you usually mic your cello?**

For a close-miked sound, I like to position a large-diaphragm condenser a few inches below the bridge. Other times, if I want a little more space in the sound, I will move the mic out in front, at about shoulder's height from a player's seated position. If I'm layering a lot of overdubs for textural stuff, I often keep the mic stationary, and then move around the room for different takes.

**Do you use any effects?**

I used to collect pedals constantly, but when the plug-in world started to boom about four years ago, I switched to software models. For example, I was extremely excited when the first version of Native Instruments Guitar Rig came out. Right now, I run about four full pages of virtual effects, including amp sounds, delays, compressors, reverbs, and wah-pedal emulations—and that's just for starters.

**Everything is digital, then?**

Well, no. I think most of today's great recordings find the perfect marriage between vintage analog gear and modern digital tools. I tend to keep certain things *out* of the digital domain, such as pitch shifters, preamps, and octavers. I play a lot of bass lines on my cello, so I have tried a lot of octavers, but I always go back to the Electro-Harmonix stuff because they produce a great analog sound, and they deliver the best tracking response.

**You play trombone, as well. What setup do you use to record it?**

I found that to get a loud, punchy brass sound—especially for trombone, tuba, and sousaphone—it takes a kick-drum mic, such as an AKG D 112. I even use that mic when playing live. However, if we're doing a brass session that's not loud or aggressive, I might switch to a mic with a little more fidelity, such as a Neumann TLM 103 large-diaphragm condenser.

**Are there any sonic limitations to putting trombone and cello into hip-hop music?**

There *are* obstacles to deal with while creating music for a group lead by a trombone and cello. Obviously, you want to ensure that neither instrument competes with the vocal. In my case, this was more of a mindset shift than a technical matter. I wanted to combine the sounds of my instruments with the poetic acrobatics of an MC, so I found that I had to think like a vocalist while



Dana Leong.

playing. I had to *play* the lyrics. In other words, the production approach was like two singers playing off each other, except, in my case, one of those singers happens to be a trombone or a cello.

**Do you have a typical approach to composing, or does the fact that you play many instruments influence your creativity?**

My creative process is flexible. Every

instrument indeed requires a unique approach, so what you write while playing one instrument, probably wouldn't be exactly the same if you had been composing with a different instrument. You won't go to the same phrasing or tonal colors or whatever. Sometimes, I even sit with nothing but a pen and paper with which to write music. I like to switch it up and work with whatever

inspires me. But, however you choose to create music, I've found it's most productive when you think of yourself as a very concise speaker. You want your melodies, hooks, and solos to be fluid and memorable, and get straight to the point. **EQ**

**For more on Dana Leong, go to [www.danaleong.com](http://www.danaleong.com).**

# TOOLBOX

by Jimmy Leslie

All prices are manufacturers' suggested retail price. Toolbox material is provided courtesy of Harmony Central, Inc., and is used with the express written permission of the publisher.



## Rain Recording Livebook Diablo Quad Core Mobile Audio Workstation

**What** Notebook computer.

**Why** Features high performance components engineered specifically for demanding digital audio production.

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**Price** From \$3,999 retail

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## Glyph GT 050Q

**What** External hard drive.

**Why** Glyph Technologies and Blastwave FX have partnered to offer hard drives pre-installed with HD sound effects libraries and search software.

**Specs** Effects libraries Sonopedia, The BlastDrive, and TitleWave delivered on 250GB and 500GB Glyph GT 050Q drives. Libraries also ship with Blastwave FX Search Software, enabling users to search, audition, and drag and drop into most applications on MAC or PC.

**Price** \$359 (250GB), \$409 (500GB) retail

**Web** [www.glyphtech.com](http://www.glyphtech.com)



## Moog Etherwave Plus

**What** Theremin/control interface.

**Why** Extends the Theremin's gestural playing technique to the world of analog synthesis and beyond by allowing the user to control synthesizers and effects with the wave of a hand while playing the Theremin. It's also a stand-alone CV (Control Voltage) controller.

**Specs** Pitch & volume CV outputs facilitate control of different CV parameters with each hand. Gate output for triggering envelopes and other events. Pitch preview/headphone output with separate volume control lets you hear your note before the audience does.

**Price** \$519 retail

**Web** [www.moogmusic.com](http://www.moogmusic.com)



## Akai Professional Vintage Beat Machines Sample Pack

**What** Sample library for MPC series music production workstations.

**Why** An extensive collection of common and uncommon beats, rhythm generators, and other synthesizers from the 1980s in a single, affordable download.

**Specs** Works with all MPC models, and contains samples and analog synthesis-based sounds from nearly all well-known units dating back to the 1960s. More than 55 different beat machines' sounds included.

**Price** \$29 retail

**Web** [www.akaipro.com](http://www.akaipro.com)





### Rivera Amplification SilentSister Isolation Cabinet

**What** Speaker cabinet for recording guitar.

**Why** Get great amplified guitar tones at low levels.

**Specs** Air labyrinth in rear attenuates sound level while relieving sealed compartment air pressure drawbacks. Inside panels designed to relieve standing waves and reflections. Two goosenecks wired with Neutrik XLR connectors. Celestion G12T-75 speaker. Rugged hardwood-core plywood finished in black Nyflex carpet. Built-in casters.

**Price** \$999 Pro-user net

**Web** [www.rivera.com](http://www.rivera.com)



### KEL Audio HM-3C

**What** Mid-diaphragm condenser mic.

**Why** Affordable. Clean, open sound, and premium circuitry.

**Specs** Features a specially tuned version of the popular HM-1 mic's capsule with a tighter pattern and rising response for a cleaner, more open sound. Transformerless linear circuitry features high-grade brand name components. Recommended for all stringed instruments, percussion, ensemble recording, and select vocals.

**Price** \$199 retail (includes aluminum flight case, custom shock mount, and shipping)

**Web** [www.kelaudio.com](http://www.kelaudio.com)



### 2CAudio Aether 1.0 Auto-Randomizing Algorithmic Reverb

**What** Reverb software plug-in.

**Why** Ultimate fidelity auto-randomizing algorithmic reverb plug-in available in Windows VST, OSX VST, and OSX audio unit formats.

**Specs** Extreme precision floating-point engine. 33 space type models, and over 250 professionally designed factory presets. Reverb decays from 0.10 to 120 seconds, plus Infinite Decay mode. True Stereo and Hybrid Stereo modes. Supports sample rates up to 192K. Intuitive GUI design.

**Price** \$349 retail (\$249 introductory price until April 2009)

**Web** [www.2caudio.com](http://www.2caudio.com)

### Kaces Rack Gear Line

**What** Laptop/rack cases.

**Why** The laptop is becoming a live music mainstay in 21st century performance, and Kaces is catering to digital musicians.

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**Price** \$129-\$229 retail

**Web** [www.kaces.com](http://www.kaces.com)



# DOUBLE



ADVERSITY DRIVES MASTODON TO

# FANTASY



## NEW HEIGHTS OF CREATIVE ESCAPISM

by Ken Micallef

Photographs by James Minchin

# DOUBLE FANTASY

After southern doom rocker Mastodon completed its 2006 opus, *Blood Mountain*, the Atlanta-based quartet knew they wanted more. Drummer Brann Dailor wanted a bigger, fatter, beefier kit sound. Guitarist Bill Kelliher envisioned the songs of Mastodon's eventual fourth album as having a greater sense of continuity. Dailor dreamt of Bonham. Kelliher imagined a magic man who would propel the band into the next phase of their career without tampering with their core metal-prog attack.

But before they could get busy with that, all hell broke loose. Much of what would become *Crack the Skye* [Warner Bros.] was inspired by a beat down (and the resulting vertigo) that guitarist/vocalist Brent Hinds experienced while attending an MTV Music Video Awards after party in 2007. And, before the album was finished, Kelliher had developed a

mysterious stomach ailment, his aunt died, and his wife was hit by a car. Not to be outdone, Dailor's mother was evicted from her home, and her husband died. Talk about a bad day at the office.

For Joe Average, this amount of mayhem would be a perfect reason to escape, and Dailor, who doubles as Mastodon's lyricist, is no different. *Crack the Skye's* resultant themes involve amputation, astral projection, time/space travel, wormholes, and 1800s Czarist Russia. Mastodon's new music propels Dailor's fantastic imagery into the great beyond and the greater unknown. Tapping into their influences—King Crimson, Metallica, Melvins, and Frank Zappa—Mastodon (which also includes bassist/vocalist Troy Sanders) succeeds in creating a true landmark recording and undoubtedly one of the great albums of 2009.

As it turns out, Kelliher's vision of a magic man appeared in the form of producer Brendan O'Brien, who saw a little of himself in Mastodon's retro-riff monster fest. Recorded at Atlanta's Southern Tracks Recording, *Crack the Skye* benefited from an incredible array of analog gear, including a Solid State Logic 4072 G+ console, dozens of Telefunken and Neumann microphones, an EMT 140 plate reverb, Neve mic preamps and EQs, Fairchild 670 Stereo and Urei 1176LN compressors, and other outboard options too numerous to list. Tweaked and treated by O'Brien's platinum-selling approach, Southern Tracks' main live room became Mastodon's phantasmagorical express to another dimension.

Here, four of the men behind Mastodon's latest epic—O'Brien, Kelliher, Dailor, and engineer Nick DiDia—discuss the various



Mastodon (left to right)—Brann Dailor, Bill Kelliher, Brent Hinds, and Troy Sanders.

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# DOUBLE FANTASY

processes, concepts, and techniques that brought *Crack the Skye* to life.

## THE PRODUCER: BRENDAN O'BRIEN

"As a producer, your main job is to make sure that the music and the groove is doing what it's supposed to do, and if it's not, to try to help everybody figure out how to make it work," says Brendan O'Brien. "There is a prog element of Mastodon that I like, but their records didn't connect maybe the way they could. I felt like I could help them to do that."

### Your drum sound is almost legendary. How did you place the drum mics for *Crack the Skye*?

For this band, I felt it needed to sound a little more human. Brann wanted to serve the song more, so we adjusted the sound to relate to that. Also, there is less individual separation between the drums, and more of a centered sound—more like one thing, than having it be so specifically defined.

### Are you okay with bleed through on the drum mics, or do you prefer isolation?

I don't care about that at all. If you get a lot of cymbal in the kick drum, that is just part of the sound. Sometimes, you can't get the kick drum to sound good if the mic is shoved right into it—you might have to pull it back a little bit. If there is a lot of cymbal in the drum sound, you work with it. You figure it out. That is part of your sound.

### Do you favor heavy tape saturation in the drum sound? Is that part of the fatness?

Some. We do track to tape. If the snare and kick are hitting hard, some of the attack will get knocked off, which I like. That is one of the main reasons I still use tape—I just like what it does to drums. Tape hasn't gone away, and we love it.

### True or false? You apply heavy doses of Empirical Labs EL7 Fatso to the drums.

[Laughs.] I do use that as an addition when I am mixing, for sure. It was designed for something else altogether—to make a mix sound more like tape. I put it on drums, and it was like, "Wow." However, it does tend to make the snare and kick disappear, so you have to address that.

### Similarly, you're a fan of the SPL Transient Designer for compression?

I love them. Generally, I put it on kick, snare, and toms. It is cheating a little bit. If the toms are giving you a lot of trouble for whatever reason, and you put that on them, they sound pretty damn good. I don't know how it works, but I am a big fan.

### The vocals on "Ghost of Karelia" have a weird, watery pitch.

Sometimes, we do the old trick of running vocals through a Leslie cabinet. We didn't use plug-ins very often. We used mostly outboard analog effects. And we used the Electro-Harmonix Holy Grail Reverb—a \$100 guitar pedal—for vocals and outboard stuff.

### How do you approach mixing?

Whatever we start tracking with is not drastically different from what we end up with. I am always tracking and listening in mix mode. As we are doing overdubs, I am still in that mode. When I do mix, I just want to make it blend better—there is no real dramatic difference. I am just refining it.

### Nick DiDia implied that your EQ changes at the mix stage.

EQ in the mix is just a matter of addressing the excitement level. If I do have to EQ something, I don't use the same EQ I recorded with. I will use the SSL EQs in the mix because we almost never use them while recording.

### Do the drums change at all in your mixes?

They are the exception. The drums go to tape very EQ'd. I get in trouble putting drum compression to tape. I may compress the overheads and the room mics, but the kick, snare, and toms we don't really compress. Those are being addressed as we mix with Transient Designer, EQs, and that kind of stuff.

### Bill Kelliher said you were eager to produce the band. What did you hear in their demos that you liked?

I couldn't hear anything at their first couple of rehearsals, because it was so loud and crazy. But then I'd hear bits and pieces that I knew we could grab and make happen, and that is how we did it.

## THE ENGINEER: NICK DIDIA

You could say that engineer Nick DiDia is Brendan O'Brien's right-hand man, and he wouldn't disagree.

DiDia aided superstar producer O'Brien for Pearl Jam's *Vs.*, Bruce Springsteen's *Working on a Dream*, Rage Against the Machine's *Evil Empire*, and many more.

### Did you use the SSL 4072 G+ console at Southern Tracks as a tracking or monitoring board?

We always track to tape, then transfer to Pro Tools HD—which is running on an Apple Mac G4 933MHz—to do most of the overdubs.

### Did the sessions for *Crack the Skye* consist of live band performances?

It was all tracked live to a Studer A827 24-track 2-inch machine. A lot of the record is the result of Mastodon tracking live in the studio, and I think it sounds like that. It has that vibe. Of course, if you can spend more time on the guitars later, and track the players while they stand in front of the control-room monitors, you often get a better performance than if they were recording live while wearing headphones.

### What was the signal chain for recording the drums?

I placed an old AKG D30 on the outside of the kick drum, and a Sennheiser MD421 in the soundhole. I probably used the SSL preamps for the kick drum, routed to an Audio Design Recording F769X-R Vocal Stressor—an old piece of gear that has an EQ side and a limiter side. I use the EQ side on the kick because it has a certain sound I like. That goes to tape. The snare drum would be a Shure SM57 and an AKG C451 B on top, taped together and pointing at the top of the head. That signal goes through an SSL preamp and a Pultec EQP-1A.

### How do you balance the two snare mics?

The 451 gives a little more low-end thud, and the 57 is the traditional high-end snare sound. The bottom of the snare is another 57 or a SM58. The overheads are a pair of Neumann KM 184s through two Teletronix LA-2A compressors, or a Summit compressor—but they are first routed through a pair of Neve preamps, like the 1073s. Generally, I try to make the overheads sound like the whole kit—not like cymbal mics. Then, I add everything in around that.

### Were the toms close miked?

Yes. A Sennheiser MD421 was on top, and a Shure SM57 was on the bottom. We use a phase cable between the top and bottom mics so we only have to use one mic preamp for each tom. The hi-hat mics were either a Shure SM58 or a Neumann KM 84. For a more midrange sound, I use a SM58. And I also use a mic between the kick and snare that we call the "kick-snare" mic—a technique was shown to me by Alex Gibson at A&M studios. It's just an AKG C 414 B-XLS that sits on the beater side of the kick drum. You put it in a figure-8 polar pattern, and it catches the bottom of the snare and the front head of the kick to produce this amazing low end. The room mics are typically a pair of Coles ribbon mics, or maybe a stereo pair of Neumann M 49s.

### How did you mic the guitars?

With heavy guitars, I will put two Shure 57s on one cone. Andy Johns showed me that trick. You put one mic right on the cone, and another

one at a 45-degree angle pointed at the same spot. Then, I'll position a Neumann KM 86 on another speaker in the cabinet, or, sometimes, on the same speaker. We will listen to see which one we like best. Mic preamps will be Neve 1081, 1066, 1079, 1089, or 1073 for guitars, bass, and vocals. The guitars are either Neve 1073s or 1076s. I occasionally use a room mic on the guitars, as well—an AKG C 414 or another KM 86.

### Did you DI the bass?

We used a D.W. Fearn VT-3 Dual-Channel Vacuum Tube DI that sounds awesome. And we probably used an Ampeg SVT-CL Classic amp through an 8x10 cab. Troy had a Mesa/Boogie amp and cab, and we used that setup for the more distorted tones.

**There are a lot of lush vocal harmonies on *Crack the Skye*. How were these typically recorded?**

The main vocal mic for Troy was the Shure SM7—a glorified SM57. Often, we would track where the guy has to sing in the live room, and the SM7 sounds

great. Brent used the Telefunken Ela M 251. It just depends on the singer, and what sounds best. Neve 1073 peamps were used for the vocals.

### RHYTHM GUITARIST BILL KELLIHER

Mastodon rhythm guitarist Bill Kelliher collects Gibson guitars, and his favorite 1979 Les Paul Custom is all over *Crack the Skye*. A Marshall JCM800 Reissue head provides his clean signal, and a Marshall 2203KK Kerry King Signature JCM800 head and Ibanez TK999HT Tube King pedal handle the overdrive tones. Both heads run through Mills Acoustics Afterburner 4x12 cabs.

**When speaking with engineer Nick DiDia, he mentioned that a lot of the wild sounds we're hearing on the album originate with your pedals.**

We used an Electro-Harmonix Holy Grail and a POG, an MXR Custom Audio Electronics Boost/Overdrive MC-402, and some Moog Moogerfoogers—like the MF-103 12-Stage Phaser and MF-104Z Analog Delay.

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# DOUBLE FANTASY

Behind the guitar solo in "Divination," there's a shrapnel-like, shredding effect.

That's Brent. He was playing a Telecaster with a lot of reverb on it, doing a surf-guitar tone. His basic setup is a Gibson Flying V and a 30th Anniversary Gibson Les Paul goldtop. Brent pretty much runs everything through a Monster Effects Mastortion Overdrive pedal. His main rig is a Marshall JCM800 and a Marshall 2466 Vintage Modern head.

"Ghost of Karelia" has a spiraling tone at one point.

That was this weird keyboard that Brendan had—like a kid's thing from the '50s. It made some weird sounds. In "Ghost," I played a First Act 9-string guitar with the Moogerfooger delay.

**What overall production approach did the band discuss with Brendan?**

We wanted a lot of continuity in the songs, as well as in the whole structure of the record. We didn't want too many effects, and, with

Brendan, that organic sound really shone through. It also helped that we got to use his billion-dollar guitar collection!

## DRUMMER BRANN DAILOR

Mastodon's principal lyricist, Brann Dailor, was responsible for the album's title (Skye is the name of his late sister). And, as the band's drummer, Dailor nails Mastodon's overcharged prog-metal rhythms as if his life depends on it. Playing a bastardized kit of a Slingerland bass drum (owned by engineer Nick DiDia), Fibes toms, and Tama Warlord and Ludwig Black Beauty snares, Dailor realized his goal to sound like the thunder gods of yore.

**Did you have an iconic album reference for the drum sound of *Crack the Skye*?**

I wanted to hear my sound put through that John Bonham/Alex Van Halen filter—that beefier sound. In the past, my drums sounded really close together. I wanted more room sound, and a more bombastic sound—that classic-rock drum sound.

**Did you use a click track?**

Yes—it was my first time. I always looked at the click as something scary. I associated it with being super schooled, which I am not. But Brendan said, "Let's just put it up and see how you do." I did it, and I really liked it. A lot of the newer material has moments where the tempo really fluctuates throughout the song. Without the click, I would be thinking, "I will have to reel it in, but I don't know if the tempo I'm playing later in the song will match the tempo at the beginning." That was an issue on *Blood Mountain*, so the click alleviated a lot of stress on *Crack the Skye*.

**Mastodon was enveloped in turmoil during the recording of this record. How did all the havoc affect the recording sessions?**

You have to put it on the side, and carry on and do your thing. Then, you deal with it when you are out of the studio. Luckily, we had time to deal with it all. But I definitely feel what was happening around us gave a little bit of fuel for guitar solos and lyric writing. We have enough living under our belts to supply any Mastodon record. 🐉

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PHOTOS BY DUSAN RELJIN

# Fischerspooner

## on Hybridizing

### Arty and

### Mainstream

## Dance Music

Last time, there was pain . . . and verbal abuse. The pressures of delivering a big second record on a major label almost did in Casey Spooner and Warren Fischer. But while they weren't having the best time working with each other, the duo weathered the storm and released *Odyssey*. From conflict comes creativity, right?

But Fischerspooner's troubled time in the studio paled in comparison to the problems their label, Capitol, would face after *Odyssey* came out in 2005. First, the iconic Capitol Records Tower was sold. Then, Capitol reorganized (letting go of president Andrew Slater and many others), and Capitol and Virgin merged to create Capitol Music Group.

"So now the Capitol building, rather than being a physical embodiment to the success of the music business, is a monument to the demise of the music business," Fischer laments. "We live in crazy music-industry times."

But huge major-label changes didn't deter Fischerspooner from marching on. The duo met up with producer Jeff Saltzman (The Killers, The Sounds) and built a Pro Tools HD studio in Brooklyn at their drummer Ian Pai's studio. Leaving Capitol, Fischerspooner's own label FS Studios partnered with World's Fair (in North America) to release the band's latest, *Entertainment*.

#### BUILDING BLOCKS

Saltzman comes from the rock world, which gave Fischer the space to be the electronic "programming guru." But Saltzman was a big help in the song-writing department.

"I would say, 'The song is great, and it's working, but it's just a little bit too *there*,'" Fischer admits.

Fortunately, Saltzman knew just what Fischer meant.

"Warren would write pretty lengthy pieces that didn't necessarily come back to particular parts, and so a lot of what I was initially doing was looking for the hook and making sure that got repeated because there would be some really amazing melody, and then you would never hear it again," Saltzman says. "The idea was to give it some song structure, but then having defined that, we would want to throw in some surprises because it keeps people listening. So the listener is expecting the chorus, and then you don't give it to them for an extra few seconds—you throw some little loop in there. Or maybe the second prechorus is a lot shorter than the prior one, so you weren't quite ready for that chorus to hit you in the face quite yet, and it does."

Fortunately, Fischer didn't let his ego interfere. "He earned my trust and my appreciation enough that I would really take that advice and not say,

"You don't know what you're talking about. It's my record. Back off,'" Fischer says with a laugh. "I would say, 'Oh, sh\*t!' Because I'd want everything to be done. But he would push, 'No, no, five more minutes on this.' And it's a tedious process. It's not the head trip the last one was, but it's still a total pain in the ass. It's not smoking pot in Jamaica with your friends playing live instruments—which is what album production always seemed like it should be to me. This is—I call it knitting."

There's always the danger of being swept away with minutiae in the studio.

"It's easy to build up a string section, or some freakish digital sound that you're all the sudden attracted to, and lose sight of the overall picture," Fischer says. "You can spend a day or two or three on it, and then realize it's not helping at all. It's a lot about persistence of perspective to me."

Therefore, the guys would often step back to hear the music with fresh ears. (For Fischer, it's "first thing in the morning when I've kind of forgotten that I'm a musician.") And they also kept some raw moments in the tracks (less polished vocals, for example) to avoid getting sucked into a production vortex.

#### WE GOT THE BEAT

On Fischerspooner's first album, #1,

by **Kylee Swenson**

## BALANCING ACT

the production was “100 percent synthetic,” Fischer says. For *Odyssey*, Fischer wanted to pay homage to the classic-rock bands in Capitol’s history, including Pink Floyd and the Beatles. This time around, he wanted to work with acoustic sounds, but with a twist.

“I wanted to deconstruct them a little bit more, and turn them into more elements,” Fischer says. “So we did things like record whole drum-kit passes and turn them into microsamples by Strip Silencing them [*in Logic, or by using Beat Detective in Pro Tools*], and creating a more jagged, gated-drum approach. You can hear that on ‘Infidels of the World Unite.’ So it would be a real drummer, and then we would turn all the pieces into little sliver samples, reorient them, snap everything to a grid, and do programming on top of it.”

Another rhythm experiment was with the panning on “We Are Electric.”

“It’s two drum machines going, and they’re both panned hard left/hard right,” Fischer says. “You can hear the combination of them at the beginning. One of them has a bigger kick drum, so the whole mix is a little bit askew, but it never bothered me.”

“I don’t know if this came out of that, but I was always interested in how Phil Spector tracked drums,” Saltzman adds. “He would have his main track, and then he would have the drummer play the whole song again. It’s like when you double guitars, you have to actually play it again. Drummers had to be really good to pull that off without getting flamed.”

### THERE’S A REASON

There are “real” instruments on *Entertainment*, including guitar, a pocket trumpet, alto sax, and live drums, which supplemented Fischer’s programming. And the guys also used a Moog Prodigy synth, a Farfisa organ, an upright piano, and a Hammond organ. But the star role on the album was played by Propellerhead’s Reason 4 soft synth. The Thor synth is one of Fischer’s favorites.

“I like that the bass sounds are really full,” he says. “It generates complicated sounds that can be really satisfying. And it has a step sequencer built into it, too, which can be useful at times. I find it really deep. In fact, I would say I am only 30 percent of the way through understanding how to

fully manipulate it.”

In Reason, Fischer will tweak the hell out of the parameters on each sound he likes, and then he also layers a lot of sounds.

“I find sounds I react positively to and then find other sounds that feel good to me, and then I combine them,” Fischer says. “‘Dance en France,’ for example, that ploddy bass sound that’s going through the verses, that’s a combination of about four or five synths.”

To make the sounds even more unique, Saltzman runs them through EQ and outboard compression. And then he’ll re-amp them through an old Fender Bandmaster head into a Marshall cab and then mic the room.

“You get things more of a spatial quality, so the end results are definitely not Reason presets,” he says.

### VOCAL ARRAY

Although a Neumann U87 and a Sennheiser MD 441 played bit parts on the album, a Microtech Gefell UMT70S was the main mic for Spooner’s vocals. Stepping into the vocal booth, Spooner didn’t know his parts verbatim, and that was a good thing.

“It often would be the first or the third take that we would use, when he hadn’t really practiced the song,” Saltzman says. “His initial reactions are really good and interesting. And, to me, what defines him as a singer—other than the sound of his voice—is his very unique phrasing.”

After comping three takes into what Saltzman calls their “hero” take, Spooner would then do a double of that. But given Spooner’s unusual phrasing, it would take some work to get it right. Next up, Spooner would sing different dynamic versions of the vocal to balance the lead.

“We would often do what we would call a hard one—two of those—and then we’d do two that we called soft, so it was just him singing more aggressively and then more breathily,” Saltzman says.

Lead vocals would go through Saltzman’s favorite Neve Melbourn 3119



or 33114 EQ modules and a UREI 1176 compressor. But he wouldn’t stop there.

“Once the lead vocal got into Pro Tools, I would compress a lot more,” Saltzman says. “I usually have two 1176 plug-ins on top of each other. The first one is set for light compression, and the second one for really heavy compression. That’s so the signal is already limited when it hits the second compressor. And it just sounds better to me that way.”

On top of that, he’d generally use a Line 6 Echo Farm delay plug-in (the model based on the Maestro EP-1 Tube Echoplex), set to the BPM of the song and set to a long delay.

When it comes to secondary vocals, Saltzman holds back on processing.

“The main double would be kind of close, but less compressed, and all the other ones would be maybe even no compression and more of a washy reverb rather than a delay,” he says. “I would use a reverb so the lead vocal would stand out in terms of its compression and the specificity of the delay.”

### WHAT THE HELL IS “WARMER”?

After a year and a half of writing, tracking, and tweaking, Fischerspooner and crew brought in mixing engineer Dave Way (Shakira, Sheryl Crow). Although some mixers would prefer to

work alone, according to Saltzman, Way enjoys the back-and-forth with the artist. The only problem is that sometimes it takes a while for Way and the artist to get on the same wavelength—a situation Saltzman knows all too well.

"When two musicians start working together, they have a hard time communicating, because somebody will say, 'I want it warmer,' and they're not really using the same adjectives, so it takes a while," Saltzman says.

And what does "warmer" mean in audio terms?

"It doesn't mean anything," Saltzman says, "So you just start twisting knobs. I'll just play with some of the most obvious things like EQ or compression, and once they say, 'Yeah, that's what I'm talking about,' then you're getting closer to knowing what they mean when they use a particular term."

Once everyone is on the same page communication-wise, there's compromise.


"There were constant discussions and some heavy-duty arguments, as well," Saltzman admits.

Case in point, Fischerspooner is not your standard four-on-the-floor dance music—especially if Fischer has anything to say about it.

"I would often go nuts on the bottom end of everything and just trying to beef it up as much as possible, and making the bass and the kick a lot louder, or changing the sound of the kick so it wasn't as 'clicky,'" Saltzman says. "And then Warren would often come in and roll some of the bass off everything."

Even far down the road of the mixing process, Fischer and Saltzman discovered a few unhappy surprises.

"It's interesting, because by the time you've heard the song the 30 zillionth time—and especially in the mixing room when you've heard it over and over—it occurs to me that, 'You know what, that part is just boring!'" Saltzman says.

"We've been sitting in the mixing room trying to make it sparkle and come to life—whether it's a little prechorus or an instrumental break—and after a while you go, 'You know what? It's just not an interesting part.'" 

## WHAT'S WOOSTER?

While still in the studio working on *Entertainment*, the band got together with The Wooster Group theater ensemble to put together an arty live show that would complement Fischerspooner's love of both the experimental and the mainstream.

Meeting with Wooster, Fischerspooner brought diverse influences to the table, including Japanese dance and the '60s space program.

"I brought in a Nova documentary called *To the Moon*, and they instantly transcribed it, turned it into dialog for us, and had it [as well as Fischerspooner's music] played back on actor monitors that would go into the in-ears of their theater company and our performers onstage," Fischer says. "They have this really crazy tech-heavy process where they have video monitors facing the performers that are portraying things like Japanese dance, and so nobody in the audience can tell, but the performers are mimicking these monitors so everything's really synchronized and perfect."

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# PUT A HEX ON YOUR MUSIC



**Fig. 1.** This setup, based on Ableton Live as a host, layers and splits the six guitar strings to create a huge sound. The Waves GTR Solo patch shown toward the right provides octave division; using compression and EQ conditions the signal to deliver the cleanest possible octave division effect.

by Craig Anderton

For decades, the conventional guitar pickup with its mono output has served us well. But today, hex pickups that generate a separate output for each string are starting to crawl out of their guitar-to-MIDI conversion ghetto—they're not only in Roland guitar synth products, but also in the Line 6 Variax, Roland/Fender VG Strat, and others. And while sending hex outputs directly into a mixer or recorder remains rare, that's starting to change too. Gibson's Digital Les Paul and Dark Fire guitars output the six strings individually as audio; and Keith McMillen Instruments' StringPort processes the audio outputs from a Roland synth-compatible guitar.

## GETTING STARTED

Dark Fire conveniently uses a standard stereo (TRS) cable to plug in to a custom FireWire interface. The interface provides individual string outs (as well as a mono magnetic pickup out and mono piezo pickup out) to your host program. If you're a DIYer and want to pull out the individual strings from a Roland 13-pin connector, pin 1 is the first string output, pin 2 the second string, and so on up to pin 6; pin 12 is +7V and pin 13 is -7V. But regardless of what kind of hex system you use, here are some ways to take advantage of all those outs.

## SPLITS AND LAYERS

Hex setups allow doing split and layering techniques formerly reserved for keyboardists. Check out the setup in Figure 1:

- Each of the bottom three strings goes through its own octave divider to give massive bass lines.
- The top four strings feed an aux bus with a chorus.
- The mono magnetic pickup output for all strings goes through heavy distortion.

This produces a huge guitar sound, with thundering bass, shimmering highs from the chorusing, and an overall layer of distorted guitar.

## PSEUDO-BASS LINES

Octave-dividing each of the guitar's strings gives bass sounds that are quite different compared to a traditional bass; mixing in some of the fundamental string sound produces an "eight-string bass" effect.

## "CLEAN" DISTORTION

Feeding each string through its own distortion plug-in avoids the intermodulation distortion of conventional fuzz. The sound is almost synthesizer-like because each note of a chord, although distorted, sounds distinct. With Guitar Rig 3, I often follow the distortion with the Pro Filter lowpass synth filter module, and trigger its cutoff from the string's envelope. It doesn't sound like a Minimoog...

but it doesn't quite sound like a guitar, either.

## THE GORGEOUS CHORUS

Applying a chorus effect to each string can produce a lush, shimmering sound (try using a random LFO waveform) that's more intricate than just putting the overall guitar output through a chorus unit.

## POLYPHONIC PHUNK

Having a separate envelope follower on each string goes beyond the usual "funky filter" effect, as each note has its own separate, filtered attack. Strumming a chord while you hear all those filters rippling and popping is very cool.

## PERVERSE PANNING

While I'm not too much into panning strings in the stereo field, I do like using this effect with "acoustic" sounds (*i.e.*, piezo pickup-based rhythm guitar parts that are normally panned to the center). I place the high and low E strings in the center, with the A, D, G, and B strings panned from center left to center right. This gives the guitar a bit of a spread, but doesn't sound gimmicky. Busing all six strings to a bit of stereo reverb provides some life-like "leakage."

Hex processing opens up so many possibilities, but unlike MIDI guitar, you never lose the "feel" or vibe of the guitar—and of course, there are no tracking worries either. I'm hooked! **EQ**

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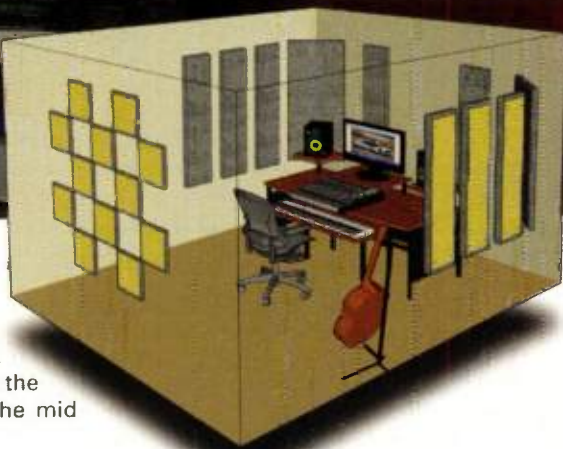
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# COMPRESSION DO'S & DON'TS

by Michael Molenda

Compression can be like a mischievous god of Greek mythology. It can bestow upon you a bounty of grace, riches, and stature, or it can wave a dismissive hand and transform you into a turnip. And, as with dealing with those bipolar deities of Mount Olympus, the key to happiness is always keeping well within compression's favor. Using too much—or too little—compression on a bass track can absolutely affect the quality of the instrument's tone, vibrancy, and drive. You can enhance the player's subtle performance gestures, or you can ruthlessly destroy all evidence of musical dynamics. And here's the kicker: In these endeavors, you control your own fate. You can't blame Zeus for your mix misfortunes if you're the one squashing the life out of a once-fabulous bass performance.

Here are some templates for keeping the compression gods on your side.

## BUT FIRST, SOME BASICS . . .

I've always been the guy who doesn't read gear manuals. I just dive right in, spin knobs, and take my lumps for dialing in crap, or bask in the wonderment of some surprising and cool sounds. You can certainly take this approach with compressors, but I'd recommend a quick get-to-know-you session with the basic parameters.

**Attack:** This control sets the time it takes for the compressor to react to the input signal and reach its maximum processing level. Fast attacks can catch percussive explosions, slap them down, and let you crank up the overall level of the track.

**Release:** Once the compression is activated, this control determines the amount of time the compressor keeps working on that input signal.

A long release time can goose sustain considerably.

**Threshold:** This is the point—measured in decibels—where the compressor is activated.

**Ratio:** Don't be frightened—it ain't algebra. This control simply determines how much the input level is smacked down in favor of the output level (or amount of compression). For example, a 2:1 compression ratio means that for every 2dB of input you'll get just 1dB of output. A 10:1 ratio gives you 1dB of output for 10dB of input, and so on.

**Output:** Okay, I'm aware you know what "output" is, but in the world of compression this is also referred to as "make up gain." The grooviness of this control is that it allows you to compress a signal to taste, and then raise the level of the compressed signal as desired without slamming your channel faders. **ea**

## Rockin' Pulse

**Effect:** A meaty and consistent throb that can move SUVs, aircraft carriers, and small mountain ranges.

**Basic Settings:** Ratio at 4:1, fast Attack, medium-long Release, Threshold at -6dB.

**DO:** If you want the groove of a rock or dance track to explode out of the speakers to get booties shaking.

**DON'T:** If you want the player's touch and dynamics to be experienced by the listener.

## The Girdle

**Effect:** A subtle tightening of the low end.

**Basic Settings:** Ratio at 3:1, fast Attack, short Release, Threshold at 0dB.

**DO:** If you want some relatively consistent thud, but also wish to spotlight the player's phrasing and dynamics.

**DON'T:** If you tend to get all sweaty and nervous when the low end isn't pounding as forcefully as a mammoth taiko drum.

## Freedom!

**Effect:** The low end ebbs and flows with the gestures and attack of the player.

**Basic Settings:** Ratio at 2:1, medium-slow Attack, fast Release, Threshold at 3dB.

**DO:** If you're tracking jazz, world music, or any other genre that depends on the musicality of the performer to deliver a journey through the low-end dynamics.

**DON'T:** If your track requires a consistent and forceful low end.

## Funky Stuff

**Effect:** Pop and slaps move the groove, while the low end stays consistent and solid.

**Basic Settings:** Ratio at 4:1, medium-slow Attack, medium-slow Release, Threshold at -2dB.

**DO:** If you want those barrages of funk wonderfulness to dance around your track.

**DON'T:** If you feel the pops are too distracting. In which case, you may want to switch to a faster attack and a higher threshold in order to tame to dynamics more aggressively.





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# REALISTIC GUITAR EMULATIONS



Fig. 1. Chord voicings on guitar are quite different compared to typical keyboard voicings; this shows an E major.

by Craig Anderton

Once while doing a seminar in Nashville on synth programming, someone asked how to get a convincing guitar sound. After thinking about it, I suggested that hey, you're in Nashville — hire a guitar player!

Seriously, there's nothing like a guitar. But there are also many ways keyboard players can add a guitaristic element to their music.

## RHYTHM GUITAR

There are two main flavors of guitar playing, rhythm (chord-based) and lead (single note-based). Rhythm guitar is harder to emulate not just because it's strummed, but because guitar voicings tend to be "wider" than piano voicings. Figure 1 shows where the notes from an E major chord on guitar would fall on a keyboard. The first step toward emulating guitar parts is to avoid playing keyboard voicings.

Furthermore, rhythm guitar often combines open strings that have a long decay with fretted strings, which have a shorter decay. And as the strings are strummed, they don't all hit at the same time.

One option for a convincing rhythm guitar part is to forego the keyboard and use sound libraries or virtual instruments, such as Big Fish Audio/Vir2's *Acoustic Legends* or the

Strum Acoustic GS-1 plug-in from Applied Acoustic Systems. These map strums on the keyboard in such a way that with practice, you can create convincing acoustic rhythm guitar parts.

## LEAD GUITAR

Lead guitar lends itself well to synthesis, because the gestures involved in creating a single-note solo—pitch bending, vibrato, and sometimes, rapid-fire licks—are part of a synth's standard repertoire.

Pitch manipulation, either by a vibrato tailpiece or finger vibrato, is a guitar trademark. With synths, use the pitch wheel for bending: A mod wheel controlling LFO vibrato produces a periodic effect that isn't at all guitar-like. When imitating tailpiece effects (like "dive bombs"), remember that these primarily bend pitch down, and can bend up over only a limited range (e.g., a half step).

Another common lead guitar effect is holding a note so that it sustains, during which time the timbre changes. Emulate this effect by changing a waveform's duty cycle (e.g., change a square wave into more of a pulse wave) during the sustain. While this isn't exactly how a guitar sounds, the effect can add interest.

Or, create a layer with a sine wave an octave or octave + fifth above the fundamental to simulate the "whine" that feedback produces. Tie this to



Fig. 2. iZotope's Trash is a multiband distortion plug-in dedicated to creating distorted sounds, and features several cabinet models.

the mod wheel (or a footpedal) so that increasing the mod wheel toward the tail end of a note's sustain adds in the pseudo-feedback.

Aftertouch can also work to bring in feedback or add pitch bend, but satisfying results require good aftertouch resolution (it needs to be smooth, not "stair-stepped").

## EFFECTS

Sometimes a guitar sound depends on effects (chorus, flanger, wah, etc.). In fact, the wah-wah sound is so associated with guitar that adding a good wah effect can help compensate if the guitar samples themselves aren't that great. However, the main "effect" with guitars is an amp that creates distortion, along with a speaker cabinet (which is actually a very complex filter). Running your synth through a guitar amp is one possibility, but there are some great guitar amp simulator plug-ins such as Peavey's ReValver Mk III, IK Multimedia AmpliTube, iZotope Trash (Figure 2), Native Instruments Guitar Rig, Waves GTR, etc.

Sure, you'll get more authentic results with a Real Guitarist . . . but not always *better* results. Even though I play guitar, sometimes I break out a synth or sampler to do a "guitar" part because it has more of a synthetic vibe that happens to work well for a particular tune. Don't you just love options? **EQ**

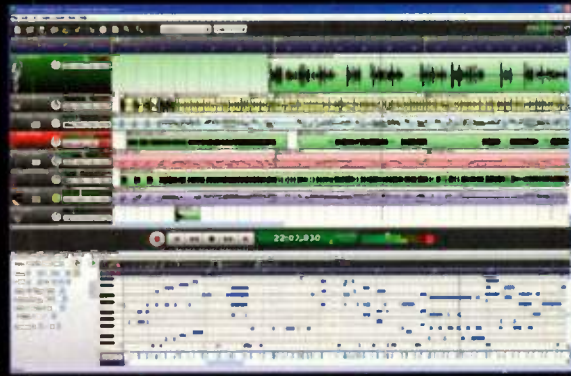
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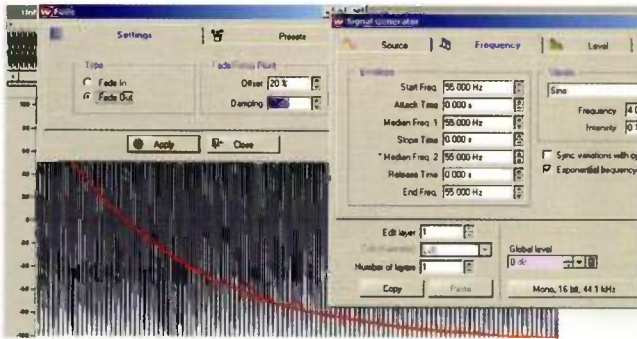


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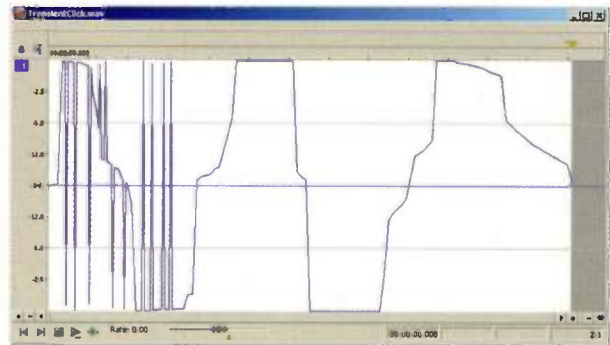
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# THE POWER OF LAYERING



**Fig. 1.** This shows how Steinberg Wavelab can create a 55Hz sine wave (in this case, it's pitched to A), and add a decay (the red line) to synthesize a TR-808-style "decay tail."



**Fig. 2.** Here's how to create a nasty transient attack click in Sony Sound Forge—layer this with drum sounds to give them more presence, and to cut through a track better.

by Craig Anderton

With electronic drum sounds you don't have to *settle* for a sound, because you can *construct* one if you don't like what you have. I'll often find that a drum hit is just what I want, except for some small characteristic that wasn't present in the original. In that case, I come up with a sound that contains the desired characteristic, and layer it with the existing sound. Here are some examples (note that you'll need a digital audio editor to do this kind of surgery).

## FIXING THE TR-808 "HUM DRUM"

The Roland TR-808 kick drum has powered a zillion dance and hip-hop tunes. The original hardware had a trim pot that allowed changing the sustain, and some sample libraries turn up the sustain as much as possible, giving that long, sustaining "hummmmm" sound that fills up a track . . . and also makes the doors of cars with loud sound systems come off their hinges when they're stopped at intersections!

However, the tail might not be at the right pitch for your particular tune. Or, what if the sample was taken without the sustain set to max? Or

you'd like an acoustic kick drum to have the same kind of cool decay tail?

Boot up a digital audio editor, which will likely have a function that lets you create test tones (Figure 1). Create a sine wave at the desired pitch, then add a fade as desired. Layer this with your kick, or for a more permanent solution, mix it with your kick and generate a new waveform that contains the decay. (If the original kick has a long decay but it's the wrong pitch, then truncate it to the initial transient, and layer that with your new decay.)

Digital audio editors typically include some kind of "paste special" function that allows you to mix two files, as well as adjust their balance. For example, if you want the "hum" in the background, you can set the mix levels with the original at -6dB and the "hum" at -12dB. This insures that mixing the two doesn't cause clipping. You can then normalize the mixed result for the maximum possible level.

## THE INSTANT TRANSIENT

Need a more aggressive attack to make a drum stand out better in the mix? It's easy to make your own custom attack if your digital audio editing program has a "pencil" tool

for drawing waveforms.

Figure 2 shows a transient being drawn in Sony Sound Forge. Open up a blank file, grab your pencil tool, and draw a bunch of short pulses over about a 10ms range. The more pulses you draw, the more "bright" and "clicky" the transient will sound. Save this click file, and mix it in with your drum sound to give it some real snap. As with the previous example, you'll want to adjust the mix of the two; the click works best when it's not mixed too high.

## CONVENTIONAL OPTIONS

Layering two conventional drum sounds can often work well too. I give cymbals more "gravitas" by mixing a cymbal sample along with a different cymbal pitch-shifted down a semitone or two—the composite sound is bigger and deeper. Or, try adding a short white noise burst to an acoustic snare for a more "drum machine"-type sound.

And of course, save all the composite sounds so you have them in the future. As always—have fun! 🎧

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# BANISHING HEADPHONES

by Michael Molenda

Frank Sinatra was a tough customer in the studio. He wanted to sing in the room with the band, and the musicians had to be on their game. This was the era of capturing transcendent live performances from exceptional players, so there was no doing 20 takes to acquire "audio data" for comping, no isolation booths, and no headphones. Yeah, Clyde, it was Frank's way or the highway.

But, even though many recording types are currently under the spell of DAW editing, this doesn't mean vocalists must sacrifice their "inner Frank" by jettisoning personal comfort in favor of the supposed requirements of technology. For example, if you hate wearing headphones while singing, you can dropkick those puppies—just make sure you are aware of what you may gain or lose by such an action.

## THE PRO/CON GAME

The main drag of wearing headphones for some singers is the weird feeling of being isolated from the fury of sound produced by the band. This distraction can sometimes result in a stiff performance that doesn't match the energy or vibe of the track. Even the slight physical impediment of having foam pads pressing against your ears and a cable dangling from head to toe can be enough of a bother to prevent a vocalist from really letting go. On the other hand, a clear benefit of wearing headphones is that the direct-to-ear sound source can often help pitchy singers find their notes more easily. Likewise, singers who exhibit difficulty with phrasing might lock in better by having the groove pounded directly into their ears. The trick is determining whether

headphones are truly one of the obstacles to capturing a great track.

## THE SANS HEADPHONES SETUP

If a set of headphones proves to be your "poor-performance culprit," tracking without them is pretty simple from a logistical standpoint. Drop your mic stand somewhere near your speakers, stand in front of the mic, roll the track, and sing. Some professional recording engineers diminish signal leakage into the vocal mic by wiring the playback speakers out-of-phase and positioning the singer in a "sweet spot" where the mic hears almost none of the backing tracks. It can work, but it can also be too much trouble wiring your monitors one way for tracking, and then switching the wiring for listening back. (I'm assuming most home studios are working with one set of monitors.) The easiest move is to experiment with mic placement and playback volume until you're happy with the balance of source sound (the vocal) and signal leakage (the track). Choosing a microphone with a cardioid or supercardioid polar pattern that "hears" less sound from directly behind it will also help diminish leakage. I stand a bit to the side of the monitors and keep the volume at a low, but comfortable playback volume that allows me to hear everything I need to find my pitch and deliver the proper energy and phrasing. I also play back the entire mix, rather than select just drums, bass, and guitar to minimize the number of instruments sneaking into the vocal mic. I figure, why go the "I'm free" route in order to cut a more amped-up vocal if you're only going to delete some of the elements that make your rhythm tracks rage? The goal here is to deliver a thrilling vocal performance, so give yourself a



mix that fires you up and triggers all your rock-star neurons.

## AH, THE GLORY . . .

The genius of tracking without headphones is only proven by a vocalist delivering a brilliant take that leaves you stunned, excited, and shivering with bliss. You'll know it when you hear it. 'Nuff said.

## OOO, THE AGONY . . .

The *downside* of singing without headphones has already been revealed—it's the resulting signal leakage. What this typically means in a practical sense is that you may not be able to bathe the vocal in massive reverb, long delays, and other aggressive processing, because whatever other signals appear in the vocal track will be effected, as well. For example, if you want a specific line to echo-echo-echo, you might hear the drums and guitars echoing, too. Of course, a lot of leakage never hurt Phil Spector's "wall of sound" productions, so, once again, it's your personal concept of the final mix that will likely determine your comfort level with signal leakage. **EQ**



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World Radio History



Hmm, why does Metallica's *Death Magnetic* sound so much better in *Guitar Hero* than on the CD?

## FROM A WHISPER TO A SCREAM

by Scott Matthews

Dynamics. When you look up the word in a dictionary, you'll find it is of Greek origin, and means "powerful." Today, when you see how many meanings and applications that particular word has, it is pretty amazing. And when you hear what dynamics do to music, it is even more amazing. In the musical context, it obviously means the combination of quiet and loud notes being played and/or sung. Taken into a music-production context, the actual meaning of the word does not change, but it becomes a function of mixing, as well as performance.

I don't believe I have ever heard a classical piece where dynamics were not a central point of the construction of the work. Dynamics are critical to the emotional impact that any style of music delivers to its listeners. The difference between loud and soft is perception, and because of this fact, sound can only appear to be

loud when there are other elements that are quieter before or after the loud section. This is just like visual art, where the use of shadow and light makes all the difference in one's perception of the piece.

### DYNAMIC EXAMPLES

Let's take Nirvana's signature sound to illustrate this point in music. Kurt Cobain often said they stole their style of "soft/loud" from the Pixies. When you hear most Nirvana songs, the formula is soft introductions and verses, and then the band goes to "11" on the choruses. There are many prime examples of this technique. Take the Led Zeppelin classic "Stairway to Heaven." The first half of the song is melodic and soft, and the second half blows the roof off.

Another dynamic tactic is illustrated by Kelly Clarkson's "My Life Would Suck Without You," where an instrumental breakdown occurs before the final chorus. That breakdown makes the power of the hook

stand out a whole lot more than if the final chorus came in the same way as the previous two. Perhaps her producer knows that listeners really do have the attention span of a gnat, and that you have to keep things fresh all the way through a song—even if that song is only three minutes long.

I recently had a production project where the first song was very strong and loud, and the introduction to the second song was a giant guitar riff, but coming on the heels of the first song, the riff didn't quite have enough power. I did not want to compromise the first song by lowering the apparent level, and there was no way to raise the level of the guitar riff on the second song without the rest of instruments in the song sounding too small. I decided to take the lead and background vocals on the second song's chorus, throw a ton of strange effects on them, and make an interesting sound collage. Then, I mixed the collage at a very low level,



and tacked it onto the front of the song before the guitar riff. So now, the first track plays loud and proud, and the beginning of track two is this wild soundscape that relates to the song, but is very abstract. By mixing this new section very low, it gave the punch to the guitar riff that we wanted all along, and it also produced a much more interesting intro.

#### THE CULT OF LOUD

In the world of mastering, there is a lot of noise these days about how "loud" is winning the war over dynamics. The controversy over Metallica's *Death Magnetic*, and its ear-fatiguing lack of dynamic range caused quite a ruckus with fans and music-industry professionals. People complained the sound was so compressed and pumped up that it became loud for loud's sake, and that there was little to no music left in the music. Where is the tension and

release when it's all tension? To use the shadow/light analogy, the sound they put out was 100 percent light and zero percent shadows, and nobody wants to stare at the color white for too long. I thought the group's decision to present the sound as a 'flat line' with nothing softer or louder than anything else was a desperate move to prove they were strong (which I am not denying), but I thought they chose the wrong way to show it. The real proof came in the form of the band's tracks for *Guitar Hero*. The mastering for the popular video game was completely different than the band's official release, and the audio quality was heads above the CD. It sounded great! Dynamics—what a concept.

#### MAKING MOVIES FOR THE EARS

As a musician, you have the power to manipulate a listener's experience with the use of dynamics. Don't be shy to

use that power, because people *do* burn out on constant loudness. I mean, why not go all the way, and play every song in the same key and in the same tempo? How about playing just one chord in a song with a melody of one note? You get the idea.

Creative use of dynamics can have a dramatic effect on your productions. Think about how movies use this effect. Let's take a thriller as an example. Scenes are often built very quietly, and when the big event happens, it's as loud as hell. As a viewer, your senses are picking up on these dynamic shifts, and they provide the big payoff for any climactic scenes. I encourage you to experiment with dynamic range as much as possible, and see where it takes your music. After all, songs *should* be mini movies. **EQ**

For more info, click to [www.scottmathews.com](http://www.scottmathews.com).

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# NATIVE INSTRUMENTS GUITAR RIG 3

by Craig Anderton

*Cheat Sheet delivers concise, explicit information about specific recording/audio-related tasks or processes. This installment describes useful techniques for Guitar Rig 3.*

## BETTER SOUND QUALITY

Enable the HI-Q button in the upper right corner to increase sound quality dramatically, especially with distortion and amp effects. However, this increases the power required from your CPU.

## SET OPTIMUM LEVELS AUTOMATICALLY

Overloading the internal signal path produces “nasty” digital distortion, unlike the pleasing distortion created within amp modules. There are three places in the signal path where GR can optimize levels automatically to prevent this.

**Input module:** Click on the left Learn button and strum your guitar at the loudest possible level. GR will adjust the level automatically to avoid distortion at the input, then turn off the Learn function.

**Amplifier modules:** Once the Input level is optimized, to prevent overloading an amp module click on the amp cabinet’s Learn button, then play at the loudest possible level.

**Output module:** The Master Volume retains its existing level when you switch presets. The Output module Learn function adjusts the Preset level (which controls the level of individual Presets) automatically for a consistent output level. As with the Input module, click on the Output module Learn button, then play at the loudest possible level.

## OPTIMIZE THE NOISE GATE

While not playing your guitar, click on the Input module’s right Learn button. This sets the gate threshold above the guitar’s quiescent noise level.

## PREVENT SPIKES

Engage the Output module’s limiter to tame any possible spikes or transients. However, this does not substitute for proper level-setting as described above.

## CHOOSE DIFFERENT SETS OF PRESET BANKS

You might want completely different sound Banks: for example, a set for

playing live through a conventional cabinet, and a set for use in the studio. Put the Banks in separate folders, then in GR, click on *Options > Preferences*. At the bottom of the Preferences section, browse for the desired Bank.

## MINIMIZE AND MAXIMIZE BUTTONS

If a module shows a + (maximize) button, click on it to reveal additional parameters. When fully maximized, the - (minimize) button has two states: Click once to hide additional parameters, and again to reduce the module to a size where no controls are available

## EASY PARAMETER TWEAKING

Can’t tweak play guitar and tweak at the same time? Show Tape Deck 1, record your playing, then loop what you played so you can tweak controls while you listen to your guitar. Note: Set the Play switch to “At Input” so your signal goes through the various modules.

## TUNE TO ALTERNATE TUNINGS

In addition to Guitar Bass and Chromatic, the tuner provides Open D, Open G, Open A, Open E, and DADGAD tunings. Use the drop-down menu under the Tuner label in the module’s upper left.

## PRACTICE TO ALTERNATE TIME SIGNATURES

The Metronome module has 28 different time signatures with different accents. Access them from the Metronome’s “Signat” drop-down menu.

## FUNCTION KEY SHORTCUTS

**F1:** Toggles between standard and “Live” view.

**F2:** Show/hide the “sidekick” (the left section with Browser, Components, Options, etc.).

**F3:** Show/hide Rig Kontrol in standard view. In Live view, hit F3 to switch GR back to standard view and show the Rig Kontrol.

**F4:** Hides everything except GR, and stretches it to fit the full available vertical space. This is great for Live view.

## CREATE SNAPSHOTS

*Snapshots* let you create up to four

different sound variations within a single Preset and map them to Rig Kontrol 3 (virtual or physical) footswitches 1-4. Set up the controls the way you want, then right-click on the desired footswitch and select “Set Snapshot.” Before doing anything else, you can type in a name. To change the name later, go *Options > Controller* tab, and locate the switch you want to rename. The field underneath the switch will show Snapshot. Double-click on the field to the right and type in the new name. Note: Snapshots are saved with a Preset.

## ASSIGN PARAMETER TO MIDI CONTROLLER

Right-click on the parameter, select Learn, then move the controller you want to assign (physical, or virtual—e.g., the virtual Rig Kontrol pedal). Assignments are saved with the Preset.

## WHERE’S THE ENVELOPE FOLLOWER?

Under *Components*, select the MDF tab. The modifier called “Input Level” provides the same function as an envelope follower.


## ASSIGN A MODIFIER TO A PARAMETER

Click on the modifier’s Assign button, and drag it to the parameter you want to control (e.g., Pro Filter cutoff frequency). A modifier can affect multiple parameters if desired.

## CHANGE MODIFIER AMOUNT AND POLARITY

Use the modifier’s “Targets” drop-down menu to choose a particular parameter being controlled by the modifier. A slider appears; moving it to the right from center increases the modifier’s positive amount, while moving it to the left from center increases the modifier’s negative amount.

## PARALLEL EFFECTS

Use the Split component (found in the Tools tab). Drag effects for one parallel chain between the Split A and Split B sections. Drag effects for the other parallel chain between the Split B and Split Mix sections. The Mix section lets you pan the chains, as well as crossfade between them. 





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# THE GREAT BIG DAW ROUNDUP

**Who would take on the task of covering all the major available DAWs? EQ, that's who.**

by Craig Anderton

It seems crazy: Contrast all the major DAWs. After all, they've acquired their own fan base, and few musicians are likely to throw away an investment in the learning curve to switch to a new program. Besides, the major programs have reached a level of maturity where if all of them disappeared tomorrow except for one, no one would be too bent out of shape; you can make great music with any of these.

So why a roundup? Well, each program has its own "special sauce." There are compelling reasons to expand your horizons to become proficient at more than one DAW—and it needn't be an overly expensive proposition, as many have "lite" versions that contain the most crucial differentiating features. As someone who has used all the DAWs mentioned in this article (the advantage, and burden, of being a reviewer!), I find myself reaching for different programs for different tasks. Furthermore, as someone who does mixing and mastering, I often receive files that need to load into various programs, so I need to be familiar with all of them.

But what about the learning curve? Over time, workflows and GUIs have become more standardized, as programs take their cue from the Mac or Windows operating environments. Programs also borrow liberally from the competition, producing a certain level of similarity. It's not that hard to learn a new program these days, particularly if you use other programs from the same company (perhaps Sony has taken this the furthest: If you

use, say, Acid, you're 80% of the way toward learning other Sony programs like Vegas and Sound Forge). Some programs even make the transition simpler; for example, Sonar, DP, and Cubase let you select keyboard shortcuts that are mapped the same way as Logic, Pro Tools, etc.

And let's be frank: You may want to switch. Programs change and mutate over time, and one might go in more of a compatible direction with your needs than other programs. Platform support comes into play as well; when Logic was no longer supported on Windows, PC fans had to switch, or buy a Mac. Conversely, with Boot Camp, it's possible to use Windows programs on a Mac—Cakewalk even supports Sonar running under Boot Camp.

## MEET THE MOVING TARGET

Before proceeding, though, there's a major caveat: All these programs are moving targets. Just as this article went to press, Steinberg came out with Cubase 5 and Cakewalk released Sonar 8.3, a fairly significant update compared to Sonar 8. Some of the limitations mentioned below may be fixed by the time you read this; some may never be fixed.

And there's the matter of copy protection, which is an important factor for some people. Pro Tools uses the iLok dongle; Cubase uses the Syncrosoft dongle, which used to be a major pain—but I now find it far easier to deal with than iLok. Samplitude uses yet another dongle type (WIBU CodeMeter), whereas the other programs use some combination of

registration, online activation, or both. (Although DP merely requires entering a code; you don't even have to connect to the Net.) These often let you do multiple installs, for example, on a laptop and desktop; with the dongle-based programs, you can pretty much run them anywhere—as long as you have the dongle.

## GIMME SUPPORT—PLEASE!!

There's also the question of support (bear in mind that a lot of the following is anecdotal; there are no real "stats" on support). Cakewalk's "official" support is average, but the support you can obtain from their forums (some of the best for any host) is outstanding. Other companies, like Steinberg, make it easy to find answers via online documents and FAQs; Sony has options for free and paid support. But remember that all companies have limited tech support resources, so if you can solve a problem without contacting the company, it's much easier for them to handle the truly tough cases. Bottom line: With rare exceptions, don't expect to call the company, have a tech pick up within a few rings, and then get walked through your problem. In my experience, the first line of defense is the online help and manual. Next comes forums, which if you state your problem clearly and concisely, can often get you a solution within hours, if not minutes, from someone else who's gone through the same problems.

Ready for the roundup? Let's start (note that all prices are MSRP). They're in no particular order, other than what our layout artist felt worked best.

# DIGIDESIGN PRO TOOLS LE 8

(MAC, WINDOWS)



**The backstory:** Pro Tools, originally for the Mac, was an early entry in the world of digital audio recording (although Opcode's StudioVision was the first to combine hard disk recording with MIDI sequencing). It took a straightforward approach that mimicked the typical 2" 24-track tape setup of that time, with separate recording and mixing windows that looked respectively like the tracks on an analog tape machine, and a typical hardware mixer.

Over time, Pro Tools became a standard, much like IBM used to be for office equipment. However, they started to lose their edge as companies like Emagic, Steinberg, and Cakewalk took advantage of virtualization to go beyond hardware emulation. But recently, Digidesign took several steps designed to make the program more of a compositional as well as recording environment. Two particular landmarks were the introduction of "elastic audio" to accommodate loops and remix applications—one of the last main applications to do so, but they did it *really* well—and the acquisition of Wizoo's instrument designers (some of whom had formerly worked at

Creamware), and transforming it into Advanced Instrument Research. By writing one check, Digi acquired a powerful, in-house design team whose instruments meet or exceed anything else out there.

With Pro Tools 8, Digi has continued onward with a more customizable look, and streamlined interface. Although some aspects still seem behind the times—the inability to do faster-than-realtime bounces, and no path delay compensation in Pro Tools LE—Digidesign has done a credible job of enhancing Pro Tools, without taking away from the straightforward operation that caused it to be so widely adopted in the first place.

**What it does best:** Digidesign remains at the top of the DAW heap; any pro studio has to have Pro Tools if for no other reason than file exchange. Many still feel it has the cleanest, most straightforward interface, and the level of integration with their new instruments is outstanding. Pro Tools is the safe choice; you know Digi will be around, there's lots of third-party support for RTAS plug-ins (a proprietary format, though), the

program is both reliable and predictable, and Digi is not sitting on its laurels; it's meeting increased competition head-on. Even MIDI, formerly a weak spot, is now up to par.

**Main limitations:** Pro Tools won't run without Digidesign interface hardware, or the M-Audio interfaces that also work with Digidesign's "M-Powered" versions of Pro Tools software. So if you don't like their interfaces, forget it. VST instruments require a wrapper (not a big deal), and overall, Digi takes a proprietary approach to Pro Tools that chafes those who want greater freedom of choice. There are still some annoyances, like arcane file management and clumsy crossfading, that persist even in the latest revs; there's also no provision for MIDI effects, and notation is good but not great.

**Pricing:** \$279 gets you the simplest Digidesign interface and Pro Tools LE 8 software, but there are bundles with varieties of interfaces (including a control surface with moving faders) and software add-ons, with prices running into the thousands of dollars for the "high-price spread."

**Contact:** [www.digidesign.com](http://www.digidesign.com)

## CAKEWALK SONAR 8

(WINDOWS)

**The backstory:** Cakewalk was already well-established with their Pro Audio DAW software when in 2001 they introduced Sonar, which was a clean break from the past. As a PC-only company at the time, Cakewalk had mastered high-performance audio under Windows; Sonar was the only program capable of deep MIDI editing, serious hard disk recording, and Acid-style time-stretching. That alone caused some people to ditch their existing host and switch, putting Cakewalk on the map as more than just “that company that makes PC stuff.”

Coming from an underdog position in a Mac-centric world, Cakewalk worked aggressively to update Sonar. They supplemented proprietary protocols like DXi and WDM with VST and ASIO support, acquired the Sonitus line of plug-in effects and rgc:audio (whose outstanding virtual instruments are also sold independently of Sonar), added a superb surround implementation, and kept bundling more processors and instruments, coupled with aggressive pricing. Every update kept upping the ante, eventually establishing Sonar as one of the leading DAWs.

A long-standing Sonar mantra is workflow, and after becoming linked with Roland, we saw the first results of that collaboration with the V-Studio. Basically, Roland has given Cakewalk the hardware muscle it never had,

while Cakewalk brings software with a track record that Roland can't match. The V-Studio bundle consists of a control surface, audio interface system, Fantom VS hardware synth, and of course, Sonar.

Sonar has also spawned a lite version, Sonar Home Studio, which in itself is a surprisingly capable program. In eight years, Sonar has gone from the red-headed stepchild of pro audio to one of the industry's leading programs.

**What it does best:** Workflow is huge—functions that require multiple mouse clicks in other hosts typically take fewer mouse clicks with Sonar. Extensive customization options allow for more personalization than anything else; this isn't cosmetic, but improves workflow (add the V-Studio controller, and the workflow becomes even more transparent). Sonar supports 64-bit Vista, and the bundled effects and instruments form a complete working environment. Sonar also recently revamped MIDI editing and the audio engine, making both more efficient; surround support is outstanding, and video support is solid—it's a major all-in-one solution.



**Main limitations:** The Acidization hasn't changed since Sonar 1.0, and Acid 7 does a better job of parsing a file for stretching. REX file support is deep, but with the tradeoff of extra complexity. And while Beatscape is a good attempt at a groove instrument, Cakewalk still hasn't nailed it in the same way as, say, Live's Session view. Finally, sometimes you get the feeling that Cakewalk ran out of resources before the deadline hit, but they usually make up for it in later revs. For example, Session Drummer 2 had a limited set of drum sounds, but Sonar 8.3 expands that with many more options.

**Pricing:** Sonar Studio Edition \$369; Producer Edition (with more instruments and enhancements) \$619; Sonar V-Studio \$4,195

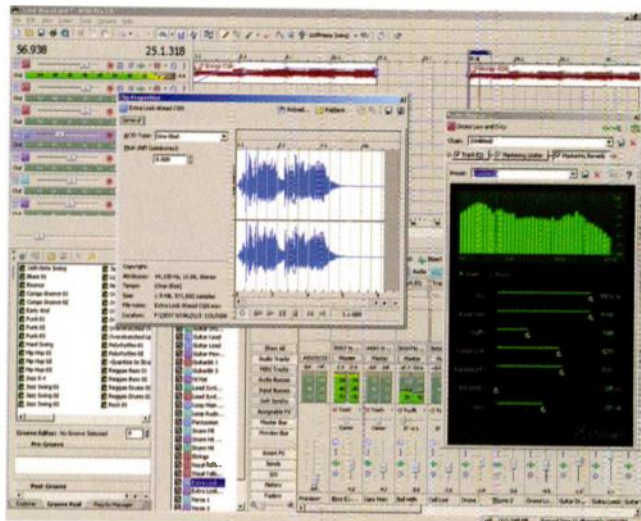
**Contact:** [www.cakewalk.com](http://www.cakewalk.com)

## SONY ACID PRO 7

(WINDOWS)

**The backstory:** In 1998, Sonic Foundry introduced Acid to great acclaim. Acid could take files and stretch their tempo as well as transpose pitch, giving a powerful, innovative tool to DJs and groove-oriented musicians. Prior to Acid, those using loops had to trim them carefully, and/or apply non-realtime DSP-based time-stretch algorithms, to get loops to match up. Acid did all this, and more, in real time.

But it didn't do MIDI, and hard disk recording options were very limited. Although updates continued and Acid remained popular, an attempt to add MIDI editing as a plug-in was a major misstep, with buggy and slow operation that only served to show how limited Acid was compared to other hosts. While the time-stretching maintained its lead over the competition, in all other respects Acid fell behind.





When Sony purchased Sonic Foundry, there was cause for optimism. Their Vegas video editing program was picking up more and more fans, Sound Forge for digital audio editing continued to be updated, and Acid became more of a DAW (including virtual instrument support) than just a "loop" program. But with Acid Pro 7, the program has matured into a contender on the same level as any other host, with sophisticated MIDI editing, multi-track hard disk recording, a separate mixer window, and tweaks to the stretching algorithms that made a great thing better.

Acid Pro is a bit of a dark horse: Old reputations die hard, and some still think of it as "that program for DJs that fell into disrepair." But today, nothing could be further from the truth.

There's still no program that handles looping as elegantly as Acid, or lets you throw together loop-oriented music faster.

**What it does best:** Acid remains the standout program for handling loops with efficiency and fidelity. Furthermore, Sony has improved the Acidization process so that stretching works better without editing than any other program, including those that support Apple Loops. It's also a complete program; if you want to add virtual instruments or do hard disk recording, you're covered—and it integrates perfectly with Sound Forge for deep digital audio editing. When it comes to loops and warping, the user interface is simple and obvious, particularly if you've used other Sony programs; and the clean

look is conducive to productivity.

**Main limitations:** The MIDI editing is not as deep as other programs (e.g., no MIDI effects, no notation). Also, the virtual instrument implementation seems tacked-on—it's functional and does the job, but is not as elegant as other programs. Some of the original plug-ins, which haven't changed over the years, are getting a little dated; while other hosts have spiffed up their selection with processors like vocoders, convolution reverbs, and extensive tempo-syncing, Acid's selection remains relatively conservative. Acid also remains Acid-centric: There's no support for REX files or Apple Loops.

**Pricing:** \$399.95

**Contact:** [www.sonycreative.com](http://www.sonycreative.com)

## APPLE LOGIC STUDIO 8

(MAC)

**The backstory:** Logic has its roots in C-Lab's Notator/Creator, an early MIDI sequencer that appeared on the Atari around the same time as Cubase. It was known for smooth, reliable operation, even doing the (at the time) remarkable feat of transforming incoming MIDI data into notation—in real time.

When Logic came out as a next-generation program, it had its own way of doing things. The object-oriented approach of the "environments" page was baffling to many back in the early days of sequencing, and as a result, Logic was often characterized as being powerful and efficient, but user-hostile. That was a bad rap, as a little time spent learning the "Logic way of doing things" made the program quite transparent—yet the reputation persisted long after it was no longer valid.

Logic was later distributed by Ensoniq, and parallel to Logic, the company developed virtual instruments (like the EXS-24 sampler, a breakthrough back then) and effects. At first available separately, the program bundled more and more of these over time.

When Apple purchased Emagic, Windows support was dropped, and Logic fans were apprehensive that Emagic had been purchased mostly to incorporate the technology into

products like GarageBand. But then Logic 6 and Logic 7 mitigated those concerns, and in 2007 Apple dropped a bombshell: Logic Studio, at under \$500, not only updated Logic but added the outstanding

MainStage program for live performance, virtually all of Emagic's virtual instruments and effects, Soundtrack Pro 2, and a ton of content. In one stroke, Logic became the Mac's definite price/performance leader. Logic fans were vindicated, and Apple showed a continuing commitment to the program.

**What it does best:** Value—probably the result of coming from a company that sells a gazillion iPhones, iPods, and laptops. The selection of plug-ins and virtual instruments is tough to beat, especially with new offerings like Sculpture and Delay Designer. The workflow has been cleaned up, making this by far the most accessible version of Logic; functions like comping, scoring, and loop handling (particularly "instrument loops") have all been dramatically upgraded, and



Logic 8 can also load GarageBand projects. Logic Studio is the most complete music-making environment currently available.

**Main limitations:** Logic users appreciate what Apple has done with the program, but regular users complain that fixes and updates are slow in coming, and that the biggest change in Logic Studio isn't with Logic Pro 8, but with the added value programs. Some still find Logic less, uh, logical than other programs, although I'm not convinced that's justified. There's no support for VST instruments (you need a wrapper), or ASIO; but realistically, there are few products that don't support AU or Core Audio. And some still fear that Apple might abandon Logic someday, but that seems unlikely for now.

**Pricing:** \$499

**Contact:** [www.apple.com](http://www.apple.com)

## STEINBERG CUBASE 5/NUENDO 4

(WINDOWS, MAC)

**The backstory:** As one of the early MIDI sequencers, Cubase and Logic had an intense rivalry that drove each other to new heights with each release. But whereas Logic had the reputation of cool Germanic efficiency, Cubase was considered a more daring, but less predictable, host. Steinberg continually pushed the envelope, inventing Virtual Studio Technology that put instruments, effects, and an entire studio inside the computer. Computers at the time had a hard time keeping up, but Steinberg was the company that put the handwriting on the wall: In the future, everything would live within the box.

Steinberg also introduced the ASIO protocol for low-latency audio streaming with hard disk recording. Like VST, this was an open standard and was immediately embraced by an industry that had been ignored by Apple and patronized by the PC. Logic's attempt at a competitive protocol was a failure, and until Apple came up with Audio Units and Core Audio in OS X, VST and ASIO ruled on the Mac—and are still an important element of Mac support. (Steinberg also introduced Nuendo, oriented more toward post-production; much of what's said here applies to Nuendo too.)

Steinberg prepared to go public just before the tech bubble burst in the early 2000s; that fell through, with adverse effects. Fortunately, Yamaha bought the company, kept Steinberg as a separate entity, and began the

process of rebuilding the Steinberg brand in earnest. The combined hardware/software expertise led to initiatives like Studio Connections, and devising "smart" ways to integrate hardware with software. With Version 4, Yamaha signaled that it remained committed to Cubase but with Version 5—an extremely stable and capable release—Cubase is back in a *big* way. Yamaha has shown how to acquire a fading company and bring it back to life.

**What it does best:** Cubase is a well-rounded program that pretty much does everything well—notation, stretching, MIDI, hard disk recording, you name it. And as the inventor of VST, virtual instrument support is primo; the MIDI editing is also outstanding. There are plug-ins a-plenty, many of which have been ported to the VST3 spec. The instruments are useful, and the inclusion of a basic version of HALion gives sampling capabilities that are arguably ahead of other hosts. Cubase also has deep integration with the MR816 interface. Finally, graphics are subjective, but I find Cubase's look elegant.



**Main limitations:** Cubase has a somewhat unwieldy feel compared to a nimble program like Live, or even Sonar, which implements some functions in a more obvious way. This isn't a deal-breaker, but be prepared to go through a few more steps to get where you want to go. On the upside, a lot of this involves setup, and once things are set up the way you like, you can get working very quickly. Cubase doesn't handle loops in as facile a way as Acid, however version 5 includes *extremely* cool beat-mangling options that break new ground for groove-oriented musicians. Other limitations are minor, and mostly relate to a x.0 release.

**Pricing:** Cubase 5 Studio \$399.99; Cubase 5 (with more plug-ins and virtual instruments) \$599.99; Nuendo 4 \$2,340.99

**Contact:** [www.steinberg.net](http://www.steinberg.net)

## ABLETON LIVE 7

(MAC, WINDOWS)

**The backstory:** Ableton came out of nowhere in 2001 with Live, originally created by musicians to solve their own specific musical needs, because nothing else did what they wanted. Live started as a cross-platform live performance program, and took a fresh look at computer-based recording. Its stark, 2D user interface looked more like a microwave oven control panel than a tape recorder; it also put everything in one window—an interface design that would later be adopted by many companies.

Ableton also created two totally independent views, Session View for songwriting and live performance, and an Arrangement view more like conventional programs. Some called it "Acid for the Mac" but that missed about





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70% of what the program was about: Live was simply a brilliant re-thinking of what recording and composition was all about.

Over the years, Ableton has walked the fine line between adding features and maintaining its elegant simplicity; rumors of passionate discussions at the company about how best to add new features are legendary. But whatever they're doing, it works. Despite being late to market, Ableton has acquired a huge market share that goes far beyond its original DJ/groove musician base; many users getting into computer-based recording for the first time choose Live. Over the years Live has added MIDI support, video, more DAW features, virtual instruments, and now, has partnered with Akai for a dedicated control surface, and Cycling '74 to include MAX with the program so users can create

their own features. Live is also embarking on an ambitious collaboration module. For many people, when asked which host they use, it's Live and one of the other hosts—it's that different a way of working.

**What it does best:** The Session view is without equal for live performance and writing, and has no equivalent in any other program. The "you don't have to think" stretching makes for the most transparent stretching process of any host, and the MIDI implementation—while basic (no notation, no advanced editing)—is totally in tune with the program's philosophy. Ableton is highly creative with their updates, adding unusual features and effects that go beyond the norm, and almost become instruments in themselves. Controller support is excellent, too. Ableton is also good about frequent tweaks and updates.

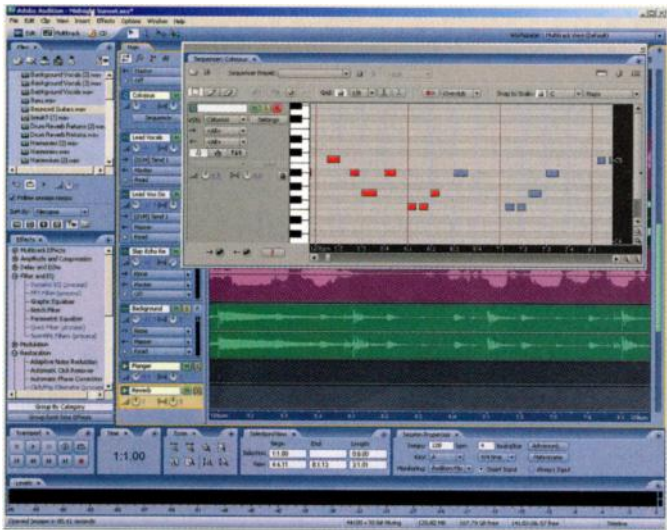
**Main limitations:** Many DAW veterans can't wrap their head around the totally different compositional paradigm, particularly Session view. While the stretching is good, the loops aren't as editable as those that use Acidization or the REX format (Live 8 will allow more loop editing options). The Arrangement view doesn't have a conventional "mixer" emulation (although you can switch over to Session view and use its mixer); I don't have a problem with that, but some traditionalists do. Some users feel updates are relatively costly compared to other programs, and that other hosts bundle instruments for free that are optional at extra cost with Live.

**Pricing:** \$599 standard version, \$999 Suite version with several bundled instruments

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## ADOBE AUDITION 3

(WINDOWS)



**The backstory:** Audition started as Cool Edit, a shareware Windows digital audio editor with serious bang for the buck. It eventually added a multitrack view and became Cool Edit Pro; the multitracking fell short of a full-fledged DAW, but provided enough functionality for many applications.

Adobe, needing digital audio editing to complement its line of video-oriented programs, bought the company and

changed the name to Audition, with version 1.0 appearing fairly expeditiously. However, it wasn't that different from Cool Edit Pro 2.1 aside from integration with Adobe Premiere Pro and After Effects. It didn't support VST plug-ins (DirectX only) or ASIO, and MIDI was limited to importing Standard MIDI Files; however, looping was (and remains) strong.

Version 2 is when the program

matured, with VST support, ASIO, ReWire, effects racks, and vastly improved multitrack operation. Version 3 is when Audition truly came into its own as a unique program, with added VST instrument support, MIDI recording with piano roll editing, additional audio editing options (such as improvements to the frequency space editing introduced in version 1.5 and iZotope stretching algorithms), lots of bundled content, an amp sim, phase

correction tools, and even esoteric functions like the ability to import/export a visual representation of the audio file, modify it in an image editing program, then import it as sound.

When this article started running out of space, I had to choose among Audition, Tracktion, and Reaper. While Audition doesn't provide the multitracking power of the other DAWs in this roundup, its combination of extreme digital audio editing with multitracking capabilities make it a unique program in its own right.

**What it does best:** Audition's digital audio editing capabilities are unmatched by any other DAW. While Samplitude bills itself as a mastering program (and it is), and Sonar includes mastering-oriented plug-ins, Audition can compete with dedicated two-track editors like Sound Forge, Wavelab, and Peak. The selection of plug-ins is excellent, and Audition has a tradition of superb sample rate conversion (although many other programs have caught up). The price is

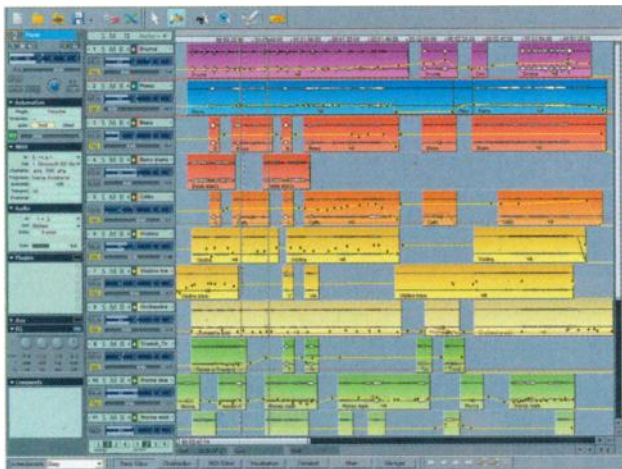
also right; if you need a digital audio editor and DAW, as long as your DAW requirements aren't too heavy, with Audition you don't need two programs. There's Vista-64 support, too.

**Main limitations:** MIDI editing is very basic, and the least sophisticated of any DAW. Nor is there any notation. The few bundled instruments are basic compared to the competition, although Audition does handle ReWire well, so adding a program like Reason is a good solution—although that diminishes Audition's cost-effectiveness somewhat. The preferred looping protocol is proprietary to Audition (although it can also loop Acidized or standard WAV files), and there is no REX file support. Finally, because of how the program has evolved, the workflow can be awkward, with features feeling tacked-on, and inconsistent graphics.

**Pricing:** \$349

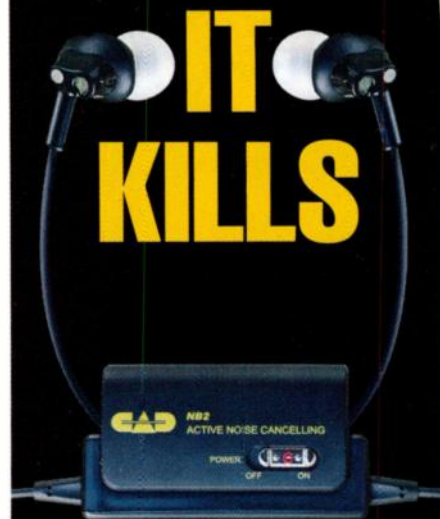
**Contact:** [www.adobe.com/audition](http://www.adobe.com/audition)

## MAGIX SAMPLITUDE 10 (WINDOWS)



**The backstory:** Samplitude's history goes back 15 years, starting out as digital audio editor for the Amiga and then Windows. It was licensed to a company that also licensed the name of the original developer, Sek'd (*Studio of Electronic Klangerzeugung [sound design] in Dresden*), whose unpronounceable name was matched only by the puzzling icons they used ("I think this one means spin your monitor, then shoot arrows at it"). The

engineering quality was never in dispute, but the GUI and documentation made for a steep learning curve. Nonetheless, it had a dedicated following among Windows users in Europe, as the Mac had much less market penetration at the time and Samplitude was very Windows-friendly. Part of this was due to Samplitude's one-stop approach, where you could go from recording, to editing, to mastering, to burning in one



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## GEAR HEAD

program—a rarity at the time.

Samplitude never made much impact in the USA, although things were looking up when Emagic announced distribution. But Emagic was acquired by Apple, and Samplitude was shown the door.

Then Magix, known for quality consumer software, took over marketing. Throughout all this the program kept getting refined, features like pitch correction were added, MIDI support went from sketchy to serious, and the program started sprouting virtual instruments. And it kept picking up more fans.

Samplitude comes in three flavors. Master does four channels and takes advantage of the excellent processors for mastering, while Classic is a lite version of Professional. Sequoia takes the Samplitude concept up one more notch with extra editing features, many oriented to broadcast. It's probably overkill for most musicians, but it's a beautifully crafted piece of software (at \$3,499, it better be).

**What it does best:** Samplitude is highly underrated. It's full-function, pro, deep, and each rev provides significant updates. Classy processing/mastering effects include an FFT-based phase-linear filter, stereo image

enhancer, noise reduction, vocoder, suite of "analog" processors (including amp simulation), and Melodyne-like pitch shifting. It includes the Robota Pro drum machine and (except for Master) Independence LE, with 3GB of content. The "one-stop" orientation now includes DVD-A creation, and the unique "hybrid" audio engine accommodates very low latency, but can switch to handle heavy loading.

**Main limitations:** While the two bundled instruments are very cool, they're all you get. Samplitude has a reputation for being weak on MIDI, but that's no longer true; there's score editing, for example, but you still can't insert MIDI effects. Samplitude is also not a beatmeister's dream. There's no support for REX or Acidized files, although the time-stretching works well with standard audio files. Finally, the learning curve is somewhat steep—not because the program is unfriendly, but because it takes many advanced approaches (e.g., object-oriented editing) that are unique to the program.

**Pricing:** Samplitude Professional \$1,249; Samplitude Classic \$649, Master \$349

**Contact:** [www.magix.com](http://www.magix.com)

## MOTU DIGITAL PERFORMER 6 (MAC)



**The backstory:** Several decades ago, a cigarette company put out a series of ads with people saying "I'd rather than fight than switch" to underscore the supposed loyalty of their smokers. While all DAWs have their partisan fans, Digital Performer users seem unusually loyal.

Digital Performer started in 1985 as

Performer, an early entry into the Mac MIDI sequencer market. MOTU did a smart move by "seeding" several pro studios with Performer, thus establishing both it and the Mac early on as the professional standard. Studios got acclimated to Performer, and stayed with it.

But software is a notoriously fickle business, and again, MOTU made a



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shrewd business move: branching out into hardware interfaces (PCI, FireWire, and USB 2) designed specifically for high-performance audio work. In the process, they ended up supporting Windows as well as the Mac; in fact, MOTU was one of the early supporters of 64-bit Windows Vista, and now supports Wave RT.

The company also created cross-platform instruments like MachFive, Ethno instrument, Electric Keys (an virtual encyclopedia of vintage keyboards), the BPM groove instrument, Symphonic Instrument, and others. At the 2009 NAMM show they introduced Volta, an extremely clever and creative plug-in that produces control voltages and gates via a DC-coupled audio interface—you can actually integrate vintage analog synths into a DAW's plug-in environment.

Despite stiff competition from Logic Pro, DP's continuing evolution has kept its fan base intact, while gaining new users. For many, it's an alternative to Pro Tools|HD at considerably less cost and without being locked into proprietary formats; and the drag-and-drop of AAF/OMF files simplifies working with multiple platforms.

**What it does best:** DP6 streamlines the consolidated interface introduced in DP5 even further; the

ability to host multiple sequences within a project, and stability, have made it a mainstay for touring acts. Audio-for-video users appreciate the smooth comping and scoring features, and direct integration and XML exchange with current versions of Final Cut Pro. DP's pre-rendering feature is also brilliant: It pre-calculates plug-in effects and instruments, thus saving CPU. The POLAR RAM-based recording anticipated cheap RAM long before other programs, and DP essentially builds in the equivalent of Soundtrack Pro.

**Main limitations:** DP doesn't deliver the same apparent level of value as Logic, with its wealth of plug-ins and additional programs. It arguably doesn't match Cubase or Live for groove-oriented remixing; however, DP does support Acidized loops (you can even edit the transient markers) and REX files, and even though it increases the total cost, the BPM instrument pretty much takes care of the groove crowd. Also, while the pre-rendering feature is incredibly useful, it doesn't work yet with soft samplers that have to pull data from elsewhere—not DP's fault, it's just something you need to be aware of.

**Pricing:** \$795


**Contact:** [www.motu.com](http://www.motu.com)

### CONCLUSIONS

If you got the impression these are all solid, high-performance programs . . . well, you're right. But there are some obvious factors that narrow the field. If you're into hardcore remixing and looping, Samplitude is not for you—but it could be if you're doing lots of mastering, as could Audition. Doing audio-for-video or live concerts on the Mac? Digital Performer is the program of choice. Looking for a really cool integrated controller to speed workflow? Then Pro Tools and Sonar V-Studio are your best bets, although just about everything is Mackie control-compatible. If beat-oriented live performance is part of what you do, you can't do much better than Live. And if you work a lot with other studios, odds are Pro Tools will be a requirement if you want to move projects back and forth. Serious value? Check out Logic Studio.

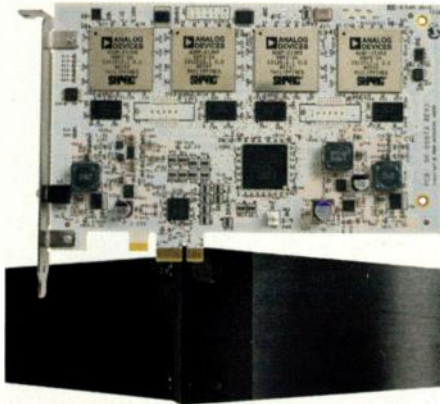
But those are just quick, shoot-

from-the-hip descriptions of possible deal-makers or deal-breakers. Many of these programs have trial/demo versions that let you check them out in your environment, doing your music, with your favorite plug-ins. The guidelines in this article should help you decide which ones are most likely to fit your needs, and then you can do the trial-by-fire of using the demo on a project to get a feel for how it works.

Finally, and most importantly, it's not all about specs or features. Just as some guitarists swear by their Strats and others won't play without a Les Paul, different programs have different feels and design philosophies: One might feel more like a comfortable old shoe that fits perfectly, while another just might not gel with your style of making music. Remember, specs don't necessarily show up in the music—go for the program that amplifies your art the best. 

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So you want more processing power: These companies are happy to oblige with hardware DSP, either on a card that goes into your motherboard or laptop, as a separate FireWire box that lives outside your computer, or both.

But which is best for you? Although you can't download demo hardware, you can narrow down your options until you find the right fit. And, the company websites will help explain the oft-confusing collection of bundles, upgrades, specials, and third-party support.

**Format.** A card eliminates FireWire fickleness, and also gives somewhat better performance—but FireWire is easily transportable among machines. If FireWire is a requirement, then it's TC or SSL. With a laptop, Universal Audio's ExpressCard is the most efficient choice (FireWire is still in the running, but a separate box and power supply works against the laptop's portable nature). All handle VST, AU, and RTAS except TC PowerCore, which is VST/AU only.

### What comes with the package.

Duende provides a very nice SSL channel strip with EQ, dynamics, and side-chaining, and up to 16 mono instances. PowerCore's Compact FireWire model includes 12 plug-ins; the "standard" versions come with 14, and there are more expensive versions that include more plugs. UA's cards have their "Mix Essential" plug-ins—a great deal (1176SE Compressor/Limiter, Pultec

EQP-1A EQ, RealVerb Pro Room Mod-eler, and CS-1 Channel Strip).

**Hardware expansion options.** All systems can be expanded via either hardware, software, or both. Expanding Duende Mini to 32 mono (16 stereo) instances runs \$399; more plug-ins are optional at extra cost. To expand the number of devices you can run on the UAD-2, you can add more cards, or buy a more powerful card initially—choices are 1, 2, or 4 DSP chips (\$649, \$1,149, and \$1,899 respectively). With PowerCore, the hardware upgrade path is buying another PowerCore.

**Software expansion options.** TC Electronic has the broadest range of optional-at-extra-cost plug-ins, including virtual instruments, amp sims, third-party options, and their own range of plugs. UA also has a wide variety of plug-ins, including significant third-party support. Duende is the new kid on the block; SSL offers five additional plug-ins, but there's no third-party support yet. For all three, costs vary considerably among plug-ins—check the web. Typically, they're considerably less than what you would pay for the hardware equivalent.

**Sound and character.** This is of course subjective—generalizations are risky, and as the old saying goes, "comparisons are odious." However, having worked with and used all three extensively, I feel there are some differentiating characteristics.

TC PowerCore has a precise, clean sound: It's what I reach for when I want to process a signal with as much transparency as possible. Of course, there are exceptions; for example, you can use tube emulators to "dirty" the sound. But even these have a certain precision.

UA's specialty is really nailing the sound of vintage analog gear. I'm not sure how they do it, but if you got laid off from your job and had to put your classic compressors and EQs on eBay, the UAD-2 will take away the pain. I know some very picky engineers who also feel that UA has the analog thing down.

Duende makes no secret of the fact that it's all about adding SSL's special "character"—and if you like that character, then Duende is the ticket to getting it. This isn't to say you can't get some fairly neutral sounds, but that's not what separates Duende from the pack.

**Conclusions.** You can't go wrong with any of these, but making the right choice involves a complex combination of factors: whether a particular unit gives what you want out of the box or whether you need to expand it, what type of sound you seek, and what best complements your existing gear. With any of them, though, you'll be able to push your computer a lot harder than if you tried to do everything "in the box." —Craig Anderton



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Start with DP6 running on Apple's latest Mac Pro towers, now with 8-core processing standard, then add BPM and the very latest in high-performance desktop studio technology.



## Euphonix Artist Series

### High-end console for your MOTU studio

**MC Control** and **MC Mix** bring Euphonix' high-end console technology to your MOTU desktop studio in a compact design that fits perfectly in front of your Apple Cinema display. MOTU DP6 now natively supports Euphonix' EuCon protocol for seamless, tactile control over almost all major functions.

## MOTU BPM

### Advanced rhythm production instrument

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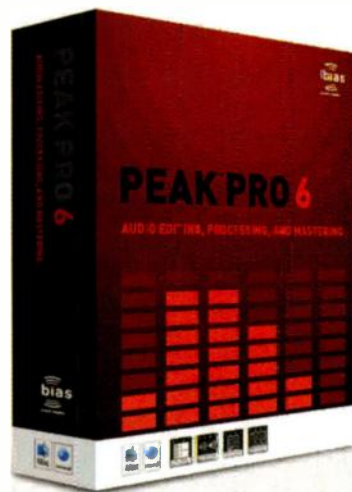


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The legendary RØDE NT2-A features a large-diaphragm (1") condenser capsule with switchable polar patterns (cardioid, figure 8, omni), highpass filter (flat, 40Hz, 80Hz) and pad (0dB, -5dB, -10dB). The all Australian-made NT2-A features incredibly low self noise and a wide dynamic range, and was the recipient of the MIPA "World's Best Studio Microphone" award in 2006. The NT2-A is the go-to mic for any musician and engineer that demands reliability, quality, and performance.

## BIAS Peak Pro 6 Evolution of an award-winning standard

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## Antelope Isochrone OCX Premier reference master clock based on aerospace technology

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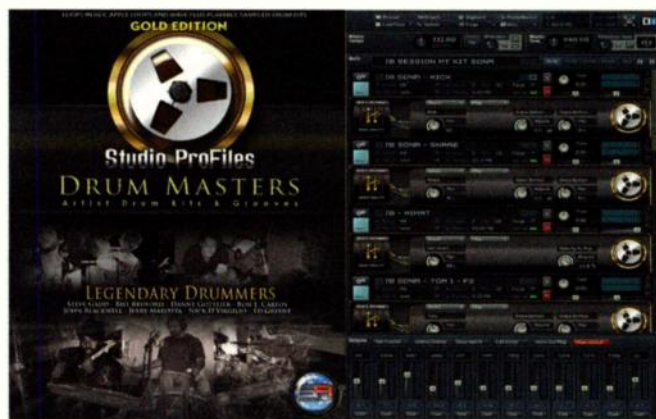


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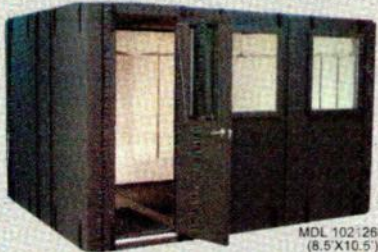
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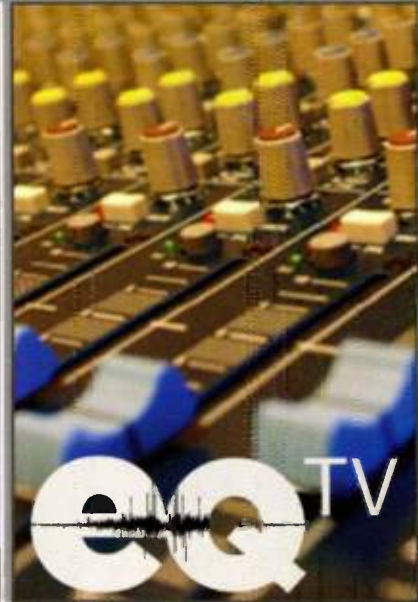
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by Angelina Skowronski

**STUDIO NAME:** Rare Book Room Studio  
**LOCATION:** Brooklyn, NY  
**CONTACT:** [www.rbr-studio.com](http://www.rbr-studio.com)  
**KEY CREW:** Nicolas Vernhes  
**CONSOLE:** Refurbished 1979 MCI JH-536  
**TAPE MACHINES:** 1973 3M M79 2" 24-track, 1981 Studer A80 VU 1/2" 2-track  
**MONITORS:** Adam S3A with matching subwoofer, Genelec 1030, Yamaha NS-10  
**MICROPHONES:** AKG C414 TLII and D112, Altec Saltshaker, Audio-Technica AT4047 FET and AT4051, Beyerdynamic M160, Beyerdynamic M500, Beyerdynamic M260, Coles 4038, Earthworks TC30k, Electro-Voice V-2 and RE-20, Lomo 19A19 (M7 capsule), Oktava MK219 and MC012, Royer R-121, Sennheiser MD441 and MD421, Shure SM7, Shure Beta 57, Shure VP-88, Soundelux E47 and U99  
**OUTBOARD GEAR:** Avalon U5 DI, API 4312 preamps, API 5500 stereo EQ, API 2500 stereo bus compressor, Eventide H910, HH Tape Delay, Lexicon PCM80, Maestro Echoplex, Manley ELOP compressor, Peavey VMP-2 tube preamp, Roland Space Echo RE-101, Symetrix 606 delay, Telefunken V 72 preamps, TL Audio stereo tube EQ and preamp, Universal Audio 6176, Vintech X73i preamp  
**NOTES:** Nicolas Vernhes was in a band called Baby Tooth. Baby Tooth put out a record called *Rare Book Room*. Baby Tooth broke up, Vernhes traded in his teeth for books, and slowly developed his own Rare Book Room Studio. Vernhes—like most musicians turned engineers—started

his studio as a place for his band and friends to record. The recording success of electroclash group Fischerspooner in 1998 opened the pages for Rare Book Room, and now Vernhes prides himself on being the Hollywood-style studio without the Hollywood price.

"Commercial studios buy big name gear all at once, and that's hard to compete with because you don't have the budget to buy all that gear," says Vernhes. "I bought everything in here piece-by-piece, and now I have a studio that was built over 13 years."

Though the gear is prized, the Brooklyn-based studio acclaims its sanctuary space for recording artists more than the equipment inside.

"The space is really crucial—especially the comfort level," says Vernhes. "Most commercial studios feel standardized. My studio feels like your own."

Animal Collective, Fiery Furnaces, and Black Dice are a few of the groups that have made Rare Book Room their own. Vernhes plans on creating a rapport with every band that nests in the studio, and says, "Building a really strong relationship with the people you are about to record is crucial. Opening your studios doors is not enough. Establishing relationships is very important. These are things that need to be folded in and created between the band members and the engineer." 🎧

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