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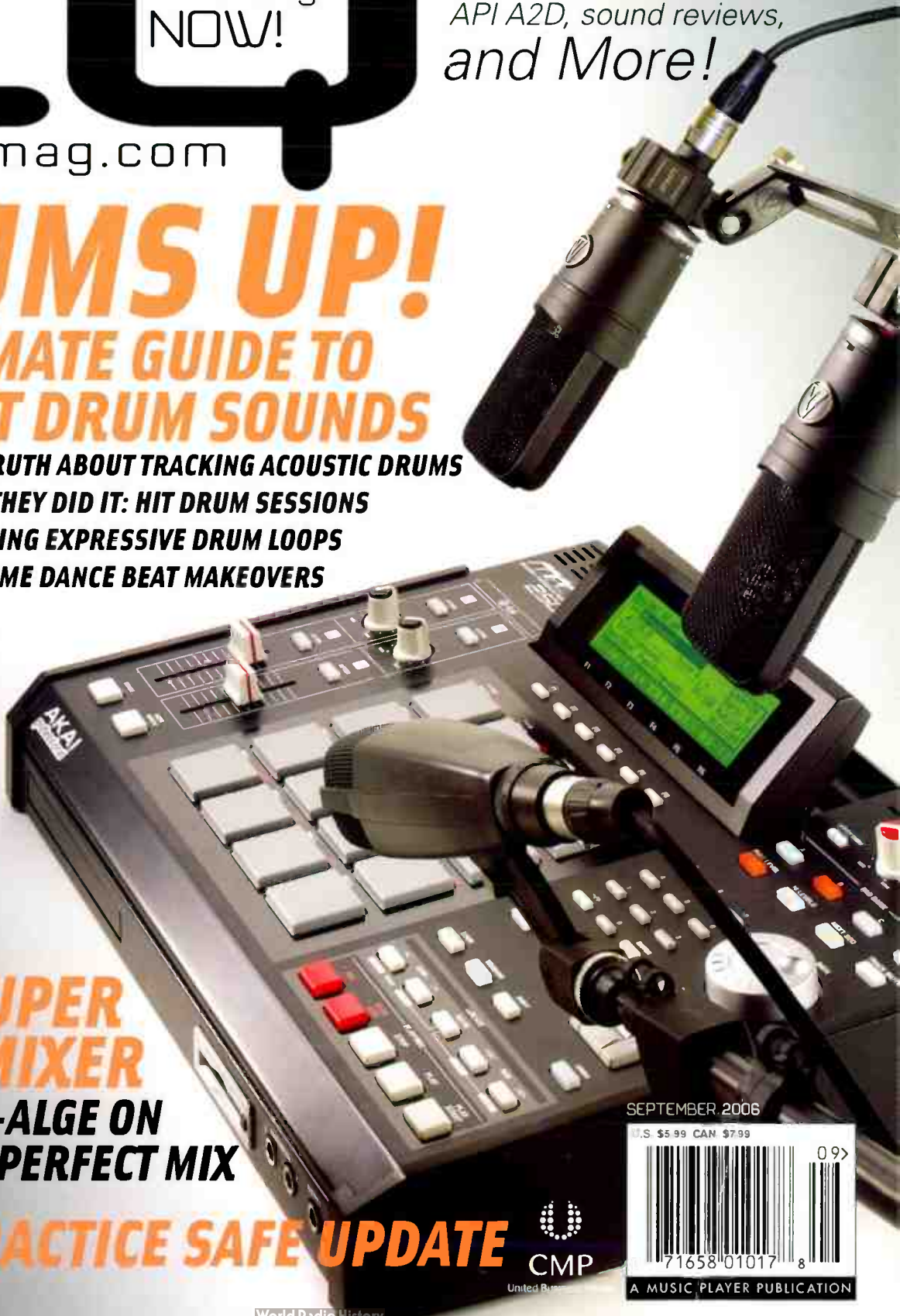
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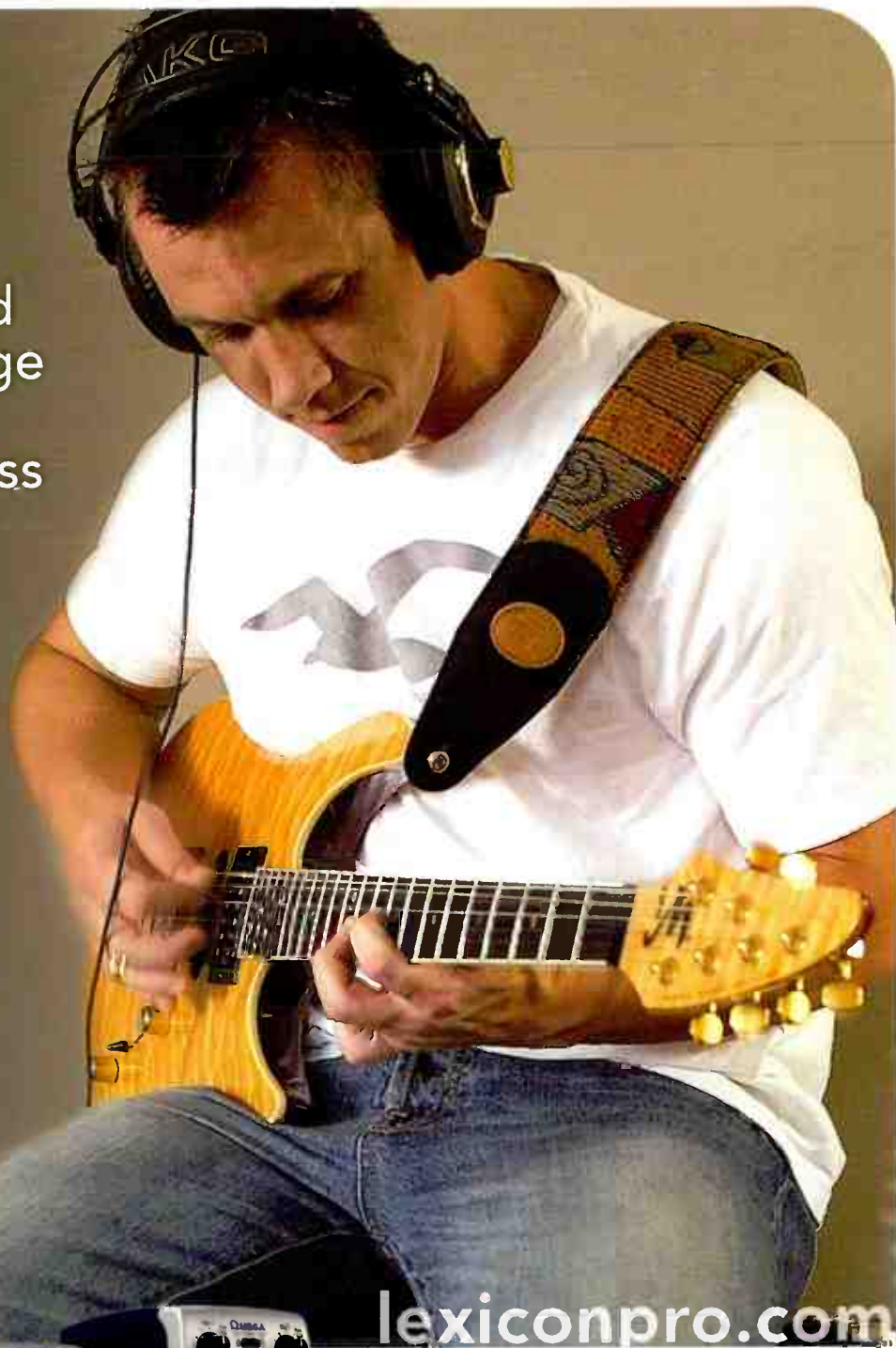
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Talk Box



DARE TO FAIL

There's a part in the movie *Dumb and Dumber* that to me, encapsulates one aspect of the music business. Lloyd (played by Jim Carrey) is finally face-to-face with Mary, the woman of his dreams. He asks "What do you think the chances are of a girl like you and a guy like me ending up together?" Mary is obviously thrown by the question, then replies, "Not good." Lloyd says "You mean not good, like one out of a hundred?" and Mary answers "I'd say more like one out of a million." Lloyd at first looks discouraged, then brightens: "So you're telling me there's a chance?"

The odds of making it in the music business aren't quite as bad as one in a million, but they're not good. Still, there's always that chance, and that dream drives lots of people.

But what can you do to increase your odds of success, whether at the local level, or as a worldwide superstar? Here's my advice: *Dare to fail.*

You don't reach stardom by analyzing what others have done and calculating a path that will take you there. The big stars are those who have been true to themselves and true to their vision, and more than likely, failed so many times they have pretty thick skins. The odds are remote that the public will love the "real you" — but the odds are even more remote they'll love a fake you.

Your only real option is to throw away the safety net, strike out in a direction where others haven't gone, and stake your claim to an original statement. Make the music *you* want to make, and which resonates in your heart. If you're really persistent, the stars are in alignment, and luck is on your side, it just might sync up with the public. If it does, great: Stardom awaits.

Realistically, though, maybe your music isn't suitable for a mass audience. Maybe it's best served by playing for a more select group of people; but there's nothing wrong with that. Even if you don't reach superstardom, you'll have the satisfaction of making the kind of music that is not only honest, but expresses what you're all about . . . and that's its own reward.



Executive Editor: Craig Anderson, canderton@musicplayer.com
Managing Editor: Debbie Greenberg, dgreenberg@musicplayer.com
Associate Editor: Matt Harper, mharper@musicplayer.com
Technical Editor: John Krogh, jkrogh@musicplayer.com
Contributors: Jeff Anderson, Moses Avalon, Dan Daley, John Davis, Lee Flier, Jay Graydon, Mark Howard, John Dylan Keith, Gus Lozada, Roberto Martinelli, Lily Moayeri, Michael Molenda, Phil O'Keefe, Will Romano, Jeff Touzeau, Dr. Walker, Sam Wheeler

Art Director: Doug Gordon, dgordon@musicplayer.com
Staff Photographer: Paul Haggard, phaggard@musicplayer.com

Publisher: Vicki Hartung, vhartung@musicplayer.com
Senior Account Director/West Coast: Mari Deetz
Tel: 516-562-5076; Fax: 516-467-8286; mdeetz@musicplayer.com
East Coast/Europe Advertising Sales: Joe McDonough
Tel: 212-378-0492, Fax: 212-378-2158; jmcDonough@musicplayer.com
Account Director/Midwest: Jessica Sullivan
Tel: 516-562-5086; Fax: 516-467-8369; jsullivan@musicplayer.com
Manager of Specialty Sales: Joanne McGowan
Tel: 650-513-4376, Fax: 650-513-4646; jmcgowan@musicplayer.com
Specialty Sales Rep: Christine Vela
Tel: 631-223-3562, Fax: 631-673-5955; cvela@musicplayer.com
Specialty Sales Asst.: Darlene Labrecque
Production Manager: Amy Santana
Imaging Technicians: Joe Ging, Martin Ruiz

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Please direct all advertising and editorial inquiries to:
EQ, 2800 Campus Drive, San Mateo, CA 94403
(650) 513-4400; Fax: (650) 513-4661; eq@musicplayer.com

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Punch In

TUNE IN, TURN ON, PUNCH OUT BY
THE EQ STAFF

NATHANIEL STREET WEST BY MARK HOWARD

Nathaniel and his family have a huge, beautiful house. So I told him that I wanted to take over the main floor of his house and record there. The living room has 20-foot ceilings and big windows that look out over the ocean; a really inspirational setting. So that's where I set up my rig: an Amek Media 5.1 console, two iZTechnology RADAR 24 systems, and my two speaker systems — one small and one big. When I recorded Tim Easton in this little desert house at Joshua Tree, we just used the small system — a pair of Westlake BBSM-5s, which are great for mixing, and a pair of Dynaudio BM 15As, which give you plenty of power in a small environment. Nathaniel's place had a bigger layout though, so I also brought in the big system with its pair of Westlake BBSM-12s, a pair of 18" subs for an extra kick, and a pair of 24" subs below that for a huge low end.

The big system was really to keep everyone enthusiastic. In some studios, listening through headphones, things can start to sound dull pretty quickly. But when you hit them with the big rig, it's like, "Wow!" It's enough to get them re-energized and go back in to cut another track right away.

I even went so far as to bring my own furniture in — huge Indian rugs and lots of cool lamps — to help set an atmosphere. I also brought in some of my backline: a beautiful Gretsch drum set and some truly wonderful vintage amps (Vox AC-30 and an old Fender Tweed Deluxe). I get great tones out of those amps. We ran a 1964 Fender Strat with the Vox and the Tweed, an amazing tonal combination. For some tracks, we used an old Martin O18 and a newer Les Paul, run through the same amp configuration. In addition, we used a new Asher lap steel guitar for the slide performances.

Capturing Nathaniel's vocals properly could be tricky, but I ended up using a Shure Beta 58A for most of the vocals. Though we were going for a sound not unlike Bob Dylan's *Time out of Mind*, on which I had used a Sony C37A for Bob's vocals, I was afraid that, as the band was tracking together in this room, the C37A might pick up too much "band sound" and bleed into the vocals — which is something I really wanted to avoid. With the 58A, there was hardly any "leakage"; and when I ran it through a bunch of Neve pres and into a couple of choice tube compressors, the vocals came out really big, really warm. The way

I looked at it, we just needed to capture a clear, isolated vocal — we could color the sound with the pres and the outboard effects.

I approached the tracking sessions the same way I always have by employing an ethic, a tactic I think is immensely beneficial to bands of this ilk: Don't isolate the musicians, isolate the amps. If you put everyone in the same room, in a circle around the drummer, you foster eye contact and communication — which allows for really strong takes.

For Nathaniel's project, I isolated all the amps by placing them in various closets throughout the house. All the musicians could hear what they were playing, exactly how they wanted to hear it, by just running them through their own separate headphone mixes (with those integrated Pioneer and Marantz amps from the '70s that have built-in receivers). Therefore each musician had his own volume and tone control for total independence. It was like they were each playing to an amazing record — tailored to their personal preferences — and it really helped them throughout the tracking process.



DEBATE: THE LARGE

For the past four years I've owned and operated a large format, vintage console (a Neve 8108, to be exact). Handmade in the late '70s, this desk has the vintage quality, the character, that appeals to me in a way that is directly analogous to how a guitarist may view an old '58 Les Paul. While there may be more efficient tools, the romantic studio guy in me looks at owning this monster as one of my life's biggest accomplishments. But, it's also been quite the challenge — there's a price to pay for having these great channels that are so "characteristic," that add a certain gloss and polish to my signal.

Relatively speaking, I spend nearly as much time tinkering with this damned thing as I do with my wife. Lovingly, I refer to it as "my baby" or "you bitch," depending on the time of day. Given this emotional roller coaster, I find myself oftentimes wondering: Are large consoles really worth it?

It's obvious that, nowadays, you do not need a 1600-pound console to make a great recording. Even with all its charm, I see a lot of people bypassing the signal path of their console for the sounds of their external pres. There are, undoubtedly, many good options for the modern recordist, thanks to the spoils of technology. With every passing day our gear becomes more compact and, arguably, more versatile and efficient.

With a large console comes the advantage of a flash factor when dealing with prospective clients, an aesthetic lure that a virtual mixer just doesn't have. There's a sense of mystical power as they watch the moving faders running, the plasma meters glowing. I'm certain that having a nice console draws business to a studio, especially if you are working with a Neve or an SSL — as people in the industry trust that certain brands lend themselves to big hits.

And that attitude can work well for you, if you actually have a client base that can support you financially, as it takes a lot of money to run a large format vintage console — along with a lot of patience. Through spending many years, in many studios, working with varying budgets, I've learned one thing: If you don't have a full-time tech on staff, there will never be an instance where every channel on a board is working properly. It just doesn't happen. Lack of serious money is almost always going to materialize as lack of full function.

Fortunately, most of these vintage bad boys are modular, so if you find yourself in the aforementioned position, you can physically move EQs, pres, auxes, or filters to any channel on the console. But, after two or three channels go bad or, God forbid, something in the master section screws up (which is semi-regularly, up to three times a year in my case) you end up dropping big bucks on console repairs, as well as the cost incurred from not having your studio fully operational.

And from a business model standpoint, the logistics of console

VINTAGE CONSOLE



maintenance become even more impractical as the majority of us are forced to let studio time slip to under the \$50/hour mark just to survive, what with all these legions of competitors arising, setting up digital studios on virtually every street.

If you are using external preamps, dynamic processors, and have a decent control surface for your DAW, you are able to make a comparable product. And in foregoing the cost of a large console, you open up your budget to buying lots of really cool pres that allow you to get a lot of raging tones. If you're going for that great, crystal-clear pop vocal, you may be better off buying one of the many external pres that are much cleaner and quieter than what you can get with the elevated noise floor of many consoles.

But there is something to say for not only the "coolness" factor of having a large console, but for the fact that you can only synthesize sound with plug-ins and cool, modern, outboard gear. There's a reason people stick by their old favorites. Outside of habit, they produce unique sounding recordings that have a character that the emulators have yet to nail perfectly.

Sure, digital studios take up far less space and are totally modular. As technology advances, you see less outboard gear in some studio racks, and more processing power on our computers. But that fact, in and of itself, does not necessarily equate with large, vintage consoles being obsolete. The practices of many great producers/engineers who still swear by their old trusty behemoths point in the opposite direction, and that's one path I'll probably always follow.

Now if you'll excuse me, channel 12 is making that "screeching noise of doom" again. . . . —Jeff Anderson

METAL KICKS

Frederik Nordstrom on getting the metal kick sound.

"If the drummer is playing a lot of double kick drums, and wants that standard death/black metal drum tone, I'd recommend just straight triggering. If they're not playing so much double kick drums, I would keep the outer head on, and use an old tube mic in the hole, like the Neumann U 67, for instance. But, if you want your bass drums very clicky, but natural like on Metallica's *Black Album*, the Shure SM 91 is the mic to use. Raise the treble around 10kHz, and raise the bass around 100Hz. It sounds very nice at a high volume but, be forewarned, it can sound weak when you play it at lower levels." —Roberto Martinelli

EXCERPTS FROM MAKING TRACKS

Can you give me a visual tour of Allaire?

Basically, there are two main wings to this place, the north and the south wing. The north wing contains the Great Hall Studio, while the south wing contains the Neve Room. In each wing there are a number of bedrooms as well. This is a lot more than a studio; it's like a hotel. There are about 14 bedrooms and there's a kitchen that sometimes operates all day long.

What kind of construction issues were you dealing with when Allaire was built?

The infrastructural issues were immense. In order to have proper sound isolation, they had to build a room around the Great Hall to protect it from outside noise and to keep noise from getting out, so they wrapped the whole building in scaffolding to do the work.

The fellows who were supervising the construction started calling me and asking me questions from afar. "Should we do this, or should we do that?" "People have told us we should have these monitors, what do you think?" I was answering questions for three months over the phone until they finally asked me to get involved in a more serious way. I drafted Ken McKim, who had been the very respected Chief Technician at Bearsville, since I knew that I couldn't tackle this thing alone. Ken and I basically walked the process through from the blueprints. They hired John Storyk, the renowned architect and acoustician, and I felt it was important to have George Augspurger

involved, too. George's philosophy has seeped into just about every good studio in the United States. He's a really capable guy and has got it all together on the theoretical end and the practical end. He used to be a speaker designer at JBL, and he's the person responsible for the sound of the control room.

So you got the best of both worlds . . . John Storyk and George Augspurger.

It works, because John was in charge of the entire architectural operation. He has a big office with a very capable staff; there's a lot of detail in those plans. It contrasted with Albert [Grossman]'s approach, since when I worked for Albert, Albert would sit down . . . he wouldn't even sit down. He had a contractor or a builder working for him all the time, and he would draw something on a napkin and just say, here . . . and the guy would do it [laughs]. John Storyk's work was really specific, you know, with hundreds of detailed Auto Cad drawings.

Did you spec out the Neve? You have very nice SSL and Neve consoles.

Well, we didn't really plan it, frankly. I suggested that we get a small analog console for the project studio. It would make a lot of sense because people could use the mic inputs and all that. And the fellow who was the supervisor at that time said, "Why don't you see if you can find a Neve?"



JEFF TOUZEAU INTERVIEWING MARK MCKENNA FROM ALLAIRE STUDIOS

So you found one. Can you tell me about it?

It's an 8068 with 32 channels that came from a commercial studio in Miami. We did it just as a very informal way to get things going before the Great Hall studio was ready.

So the Neve Room was always an "open-air" studio with the artist and control room in the same room? Why did you take this approach?

It's just a really easy way to work, and you don't have to build a control room. One of the most interesting aspects of that development is that people would come up and have to adjust to it or relate to it. Some people are quite happy to do it. Steve Lillywhite and U2 and others have done it countless times.

Has this approach worked particularly well for certain kinds of artists?

I don't know, I don't think it's discriminatory in any way. Psychologically, it's nice because it doesn't feel so imposing; there are literally no walls. There's sort of a mythical and a real aspect to that. When you take the walls out, you do put the engineer at a slight disadvantage because they can't monitor exactly the way they might be accustomed to, but it also makes it easier to communicate. At the end of the day, you're trying to put some energy into the record and this approach just

helps make the energy happen. All the electronics and all the recording gear is still really first rate: the Neve console, the API outboard, the really nice limiters and EQs and compressors and stuff like that are all there. We try to give our clients the best of everything.

Jeff Touzeau's new book, the beautifully assembled Making Tracks, gets deep into some of the world's most interesting recording facilities, and is available at many a fine literary establishment. Check it out — it's cool.

DOUBLE THE AMP, DOUBLE THE FUN

BOY KILL BOY'S CHRIS PECK ON KILLER AMP TONE

"I primarily use a '72 Fender Telecaster Thinline running into two Marshall JCM 800s, with 1960AV cabinets. There is what I describe as a 'sultry' gain level set on one head and a 'bite-y' gain on the other. Because there's quite obviously a clean channel and a gain channel on both amps, I set them up like this:

- Amp #1's first channel is clean, with the second channel having a bit of a boost in the gain (~3), but still relatively clean and smooth sounding.
- Amp #2 is set to a more "gritty" clean, upping the presence moderately from the second channel settings on Amp #1. Amp #2's second channel is absolutely cranked in both gain and presence — it's quite filthy.

"I don't do much in terms of processing; I'm into capturing the real sound of the amp. I A/B the two amps and, in the studio much as live, I mic them up and activate both, which creates a much broader, stereo sound." —*Lily Moayeri*

TOOLS OF THE TRADE

MARTIN BUTTRICH GEAR CHOICES FOR TIMO MASS' PICTURES

"For the vocals, most of the time I used a CAD e300 mic, which is nice and warm. But sometimes I had to break out the Brauner for the 'duller' voices. The signal was run into either the Universal Audio M610 or 2108 preamp, going into a Denmark 2402 digital audio converter directly into Pro Tools. For pre-EQing purposes, I'd pull out the Neve 1073.

"This time we put a lot of emphasis on the guitars. For 'Like Siamese,' in the beginning there was a beat with a lot of industrial noises, mostly samples from other records, drum machines, from our library of the last eight years. It was very hip-hop-y . . . and then the guitar came. We used a Line 6 POD to emulate most of the amp tones, but a few times we went with the whole Marshall/SM57, for that classic tone. This would then run into a Millennia Media HV-3 or Neve 1073. Most times, however, I'd EQ with a GML 8200 and then go real hard on the compressors." —*Lily Moayeri*



SESSION FILE: DUB TRIO

Deep inside the walls of Studio G with producer Joel Hamilton and Dub Trio for their second offering, the much-anticipated *New Heavy*

by John Dylan Keith

Ever since the inception of the subgenre known as dub (a sprout from the main trunk known as reggae or perhaps better yet, the heavy-handed producer's reaction to reggae), the relations between the recorded product and the live performance have, historically, been a bit of a blur of head-chasing-tail. Why? Many of the main players of this musical microcosm have recognized the satisfying meta-process of applying their numerous studio tricks (dub's traditional realm) to the live domain in attempts to recreate their often times sonically surreal records. But New York's Dub Trio has switched this process around 180 degrees, and in the process, have reinterpreted the

DUBBING LIVE IN STUDIO G

In the case of their sophomore release, *New Heavy*, Dub Trio convened with Joel Hamilton at Brooklyn's infamous Studio G. Hamilton, who had previously recorded their first effort (the critically applauded *Exploring The Dangers Of*), pulled out his trusty Studer two-inch deck and the band proceeded to lay down 11 tracks in just under three days. Much of the album was recorded using the same tricks they employ on stage. As Hamilton attests, "They had a pretty good idea where the 'dub stuff' was going to happen, as they already *play* a lot of it that way. It's not like anybody ever missed the break — so we don't just cut some crappy fill and apply a delay to it. From this side of the glass, it sounds like the song when it was being tracked."

"But since it's dub," adds Tomino, "the music is only partially done once it's recorded. There's so much in post-production that we do to it, but it's not a deconstruct/reconstruct situation. Nonetheless, I want to be able to hit a crash and hear that crash stopped by the board, by the mute button."

It's an odd play: There's no clearly defined split between tracking and processing for the Trio. The sonic tricks discovered in pre-studio session rehearsals clearly inform the tracking itself. As an example, Holmes says, "Joe was in the live room while I was playing guitar, circling the room with a microphone in hand, so that the guitar track had a weird phase-y sound to it. The guitars on 'Sunny I'm Kill' that go [*mimics sound of a phase sweep*]? That's Joe actually physically turning the mic 360 degrees."



traditional approach to creating dub music in the studio.

You see . . . Dub Trio is a bit anomalous, as they perform all their dub effects live. "For instance, Joe [Tomino] mics up his drums and runs them directly to my pedal chain," says guitarist Dave Holmes. Playing what's become affectionately referred to as the "sleight-of-hand drum set," Tomino manually passes the mic around the set while playing with one hand, at times doing some impromptu EQ filtering by squeezing over the top of the mic underneath the hi-hat. Holmes adds, "I route my guitar, a keyboard, a sampler, and the drum mics [into a looper and a delay] to create the dub effects live."

But to what extent do they take employ their show tactics in the studio? Surely there is a much easier way to synthesize these effects. . . .

WHAT'S THAT DRUM? TELL ME WHATSA HAPPENIN'!

On first listen, one of the most immediate impressions results from the literal battery of drum tones. Experimenting with tuning his drums in key with songs, Tomino removed the bottom heads from the toms — a classic dub tactic in which the immediate decay of the drum leaves plenty of sonic room for the various options of delays and post treatments.

Conversely, the kick sound on "Table Rock Dub," one of Tomino's favorites on the album, was created by taking a single-ply head on the beater side, tuned very loosely, with no hole in the front. Captured with a low-passed room mic running into an old ADR expander/limiter, the end result is a kick with an explosive, yet floppy,

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resonance — almost like a giant heart beating in a subterranean dungeon. “Every time the kick is hit it blossoms, because the expander release time determines the kick drum’s note.” Pointing to the unit in a wall of Studio G’s vintage outboard gear, he comments, “I don’t know what they *expected* it to be used for — all it seems to do is make things sound like explosions.”

LONG DISTANCE LOVE: ENTER MIKE PATTON

There’s a lot of room for such odd sounds to breathe, as the Trio’s music is mainly instrumental, save for “Not Alone” — a track that features the chameleonic, and ever-virtuosic, Mike Patton of Faith No More, Mr. Bungle, Fantomas, and Peeping Tom fame. It’s an interesting collaboration, considering Dub Trio hasn’t yet met Patton, who agreed to lend his talents after they had e-mailed

The first section grew from a sort of “test-tone jam,” as Hamilton explains it. “We each had tone generators mapped to faders, turning the console into a kind of synthesizer.”

him cold. “We vibed well, cross-continentially,” says bassist Stu Brooks, “It was a shock how great it was. We felt like we sent a finished song, but he found a place to fit in. He really brought the song to him.”

Hamilton mailed a Pro Tools data disc to Patton, with a stereo mix which “turned out to not be the final mix, but it was what the headphone mix would have been, had he been here.” Patton then sent back a plethora of tracks, some processed and some dry, which Hamilton lined back up in the multitrack session and “mixed from the ground up. We ended up using the ones with effects, not just because it was Mike Patton, but because it was aesthetically matched with the intent of what Dub Trio was already doing.”

METAL OCCURRING

New Heavy turned out to be quite a departure from their more traditional-sounding debut, adding influences from Meshuggah, Refused, Bad Brains and Slayer to King Tubby and Lee Perry. Though it is both new and heavy, in many ways the band prefers to look at it as qualitatively innovative. Hamilton describes the difference in the two albums this way: “We didn’t have to break out any tricks that work within the genre confines of metal, where the goal sonically is to get something cartoonishly gigantic and aggressive, both in the performance and the mix.”

AMP-PLAY

Surprisingly, the frequency range of latter-day metal guitar makes a good neighbor to the ultra-low dub bass. Holmes, fluent in the various tonal idioms, switches between the harder-rock sounds and the reggae, but not without effort. On the recording, for maximum flexibility

in the post stage, they tracked the guitar through five amps simultaneously: “I used my Ampeg V4 head through a Marshall cabinet, plus three other little amps — an old Moviola ‘squawk box,’ a Fender, and a Gibson GA15RV.” Likewise, Brooks was also something of an amp scavenger when it came to tracking the album, taking his trusty Atelier Z bass and using a variety of head and amp configurations — SWR and Aguilar heads, paired with Studio G proprietor and bassist extraordinaire Tony Maimone’s custom EV 15” cabinet, which is similar in design and tone to an Ampeg B15 Porta Flex. Typically, Brooks will “keep the bass and low mids cranked, everything else turned back to 0, but kicked up in the mids for the rock stuff.” He uses a SansAmp in the chain to achieve this mid range drive without having to change his amp settings — a technique indicative of the band’s live approach aesthetic to the studio.

WHAT THE F\$%& ARE THEY YELLIN’?

“When we have ‘conversations’ going on between the live instruments, and the dubs — and the dubs within each other — that’s when we’re like, ‘this stuff’s happening,’” says Brooks. From various knob tweaking to actually manually filtering the spring reverb live; playing the tape echo to draping tape loops on mic stands around the studio (such as on “Not Alone,” when Holmes had played a chimey guitar arpeggiation, and Hamilton put just the guitar to tape and made a spontaneous loop), the studio begins to look more like a Montessori School playroom than a standard tracking environment. A more concrete expression of this approach is found in the album’s final track, “Lullaby for...,” which punctuates the final downbeat of the previous song’s metal riff with a trailing, meditative cloud that morphs over the course of five minutes from a buzzing hive of tinnitus-afflicted bees playing tiny feedback loops to a hovering, jettisoned-from-the-spacecraft tableaux. The first section grew from a sort of “test-tone jam,” as Hamilton explains it. “We each had tone generators mapped to faders, turning the console into a kind of synthesizer,” which they all played together and mixed with another Hamilton idea, a tape loop of an antique Dutch music box: “The kind with paper belts that you punch out melodies and feed into the box — we placed it on a conga, using the head as a sounding board.”

DELIVERING THE GOODS

To Tomino, the final result is an album that maintains the integrity of songs, but augments the spontaneity in a unique snapshot of a recurring event. “It’s as different as if we had tracked the album on two different days, it’s like doing a jazz record. Every night is different, but there are themes, and these are meant to be interpreted as songs.” **EQ**

John Dylan Keith is a freelance writer and musician vibing mostly within Brooklyn, NY. He’s a regular EQ contributor and has appeared everywhere from the New York Press to TapeOp, and many publications in-between.

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SUCCESS STORY: RED SPYDA

Keeping the spirit alive

by Dan Daley

George "Night of the Living Dead" Romero might want to meet Red Spyda — the hip-hop producer/beatmaster who has a knack for resurrecting the careers of deceased rap stars, bringing them back from "gangsta heaven" and into your speakers. Spyda's 2002 underground phenomenon "The Realest" (a track that paired a previously unreleased NOTORIOUS B.I.G. *a capella* vocal and a patented Spyda-beat with the voice of then-up-and-comer 50 Cent) rocked the hip-hop world. But it also makes a direct connection to the bizarre 2005 commercial for Motorola's ROKR iTunes-connected phone in which a bunch of music stars cram into a phone booth as a Biggie look-alike strides towards them and Madonna, face pressed to the glass, cries out, "Biggie, no!"

Two years later, Spyda did it again with the track "Realest Killers" by marrying an unreleased Tupac Shakur vocal with a newly produced beat, and adding a duet with the artist that everyone was just calling "Fifty" — who was riding large on the multiplatinum success of

Get Rich Or Die Trying. Result: another hit, spiking radio waves nationwide.

The tracks generated a lot of heat — when Innerscope Records and the Shakur estate got wind of the Tupac track, Red Spyda had cease-and-desist missives flying at him left and right. But Spyda isn't the type to get ruffled. He came up through the ranks of the rough-and-tumble Miami rap scene as a bassist and programmer in the mid-1990s, when the Slip 'n' Slide Records crew were giving the city an expletive-laden voice as hip-hop's Third Coast. "I got my first [beat] placement with Trick Daddy on www.thugs.com," he recalls. "They slapped \$2,000 cash in my hand for that and that's when I said 'I got to do beats.'"

ON 2 NEW YORK

Spyda was working with a basic, but powerful, setup — a Roger Linn-version MPC-60 and Ensoniq ASR-10 ("The best filters in the world — I still use it every day") — which he packed up and took to New York City in 1999 to hook up with DJ Stretch Armstrong, who began getting his beats circulated throughout the scene. The move to New York was initially lucrative (beats were selling for as much as \$10,000 a piece), and he began getting dub work with everyone from Macy Gray to Ruffenz. The relationship with Armstrong eventually faltered, but his foot was in the door in New York's hard-to-crack rap landscape.

"The hardest thing to get is placements when no one knows you," says Spyda. "But a beat on a record is a credit and a credit is like a Grammy. Record labels read those credits. You get a credit on a 50 Cent album, your email is going to blow up."

Spyda soon connected with Whoo Kid, who was commissioning mix and beat tapes. Soon Spyda was honing his Pro Tools chops editing and mixing beats for Whoo's releases. "We worked out a deal: I'll engineer and edit for you, and you let me freestyle my beats behind the vocal tracks," he explains.

BUILDING THE GROOVE

Whoo slipped him the Biggie vocal in '02, and using the same MPC-60/ASR-10 combination, Spyda created a beat for the track. "It came in on an audio CD," he says. "I transferred the file to Pro Tools and looped the first eight bars of the verse. I was listening to his flow, the words. I wanted to make it sound like Biggie, to sound current. There was a Biggie track that DJ Premiere had produced — "I Put A Spell On You" — which I looped into Pro Tools, took an ASR-10 French horn sound, and made a staccato pattern that matched the one on that track. Then I recorded that to an MPC-2000, along with Biggie's eight bars.

"I had to build the groove. I hate drum machine hi-hats. But I had this typewriter sound someone had sampled for me; it had this 'chk' sound instead of the usual 'tk' you get off a drum machine. It inspired me to make the





beat sound like Biggie was typing out a letter to his fans. Like, 'Hey, I'm back!'"

Spyda took the track to Whoo, who checked it out in his primary monitoring environment — a Lexus LS400. Within hours, Whoo had the track at 50 Cent's manager's home. Within minutes of that, 50 was in the studio laying down a rap, and within days "The Realest" was all over New York radio, with DJs scrambling to cover it. It was then that Spyda's beats became in high demand.

WELCOME TO THA SPYDADOME

One of Spyda's moves was to build his own studio, the Spydadome, in a room that's part of an artist/engineer collective in SoHo. The gear is representative of the musician in his "inner engineer": a Line 6 Bass POD, various versions of MPC samplers, classic Yamaha NS-10A speakers, and an SSL AWS-900 console. "I have a way of working," he says. "I'll lay out beats on the MPC, play a live bass to that and use the POD to get a 'Bootsy Collins' or other cool bass sound, and run it into Pro Tools HD. Most of the work really goes into editing the loops; that's what I build tracks from. That combination of being a musician and being an engineer is what sets my beats apart."

GETTING SOUNDS

Once the basic beat track is built, Spyda resorts to the huge range of samples he collects on an ongoing basis. ("One of my things is that once a month or so I stop producing and just spend a few days, or even a whole week, just sampling and editing.") In addition to the usual break CDs and samples traded amongst friends, he keeps an MPC-4000 constantly connected to the output of his TiVo. "The secret is, television commercials have the best sounds, especially car commercials," he says conspiratorially. "TV is moving to high-def, so the quality of the

sound, and the samples, keeps getting better and better."

Working these samples is the thick of what Spyda does. He prefers to lift percussion samples from vinyl versions of beat recordings, such as the Vinylistics series. "For the kick, you have to find one in the open," he says. "If the hat is on there with it, it adds high frequencies you don't want. I take the kick and put it in the MPC and use the filter on the filter page to muddy it up, and pitch it down to add more bottom. Then I run it through a JBL or Manley compressor with the threshold set up about halfway. The more you process a sound, the more of the original sound you lose, so I use the compressor to tighten what's in there."

Spyda collects many of his snare samples from rock records. "Most of the big-sounding snares you hear on hip-hop records are from rock records," he says. "They're hard-sounding. But rock music loves to put the guitars up front, and hip-hop has the drums up front, so the rock snare samples usually need more bass and low-mid EQ to thicken them up." And noise — Spyda will not trim the noise in a snare sample. "That's part of the 'dirt' you need to give it presence and help it sit in the track."

THA PAST, PRESENT, AND FUTURE

Spyda and Whoo Kid remain partners; the pair also were responsible for the release of "Realest Killas." By the time it came out, the number of Tupac bootlegs rivaled that of the Beatles. They include *Death Row Presents 2Pac Nu-Mixx Klazzics* and one iteration of the *Rap Phenomenon* CD series. "The pressure was on for that one because the Biggie mix had been so huge," Spyda recalls. Pressure from Shakur's estate began even before the record was done. "I'm like, this is a mix tape, not something that's going to be sold in stores," he says, defending the concept as one that acts purely as an homage within the industry. It could be argued that Spyda benefited from the acclaim and notoriety the mixes had brought him, but self-promotion is a survival tactic he says Shakur would understand well. "I feel a kind of bond with him," he says.

In fact, Spyda originally flew to Miami to bring his Tupac track to 50 Cent. There, the playback at Circle House Studios revealed a dark beat, knocked out at 6 A.M. the previous day. "I popped the CD in and Fifty drops his food and runs into the booth, ready to rap on the spot," he remembers. "Tupac can still inspire."

Red Spyda's dance card is full these days — tracks are ongoing for Kelly Rowland of Destiny's Child, Lil' Kim, and others. He's taking a break from deceased artists for now, but is unapologetic about the phenomenon he helped kick off. "They were well known and loved for a good reason," he says. "If you can find a way to keep that going, all the better. People get attached to artists they love and they want to remember them only as they heard them. But they can still evolve . . . with our help." **EQ**

Dan Daley is an author and journalist who covers entertainment technology for publications including EQ, Wired, Fast Company, and the London Daily Telegraph. He lives in New York, Miami, and Nashville.

TECH BENCH

Avoiding Update Perils

by Craig Anderton

Updates are great, right? You get new features and fixes, often for free. But unlike updating a computer OS (see last month's "21st Century Recording" column), updating a product can contain some pitfalls that at worst, could leave you with a non-functioning device. As you probably don't want that, let's cover how to avoid the various issues that could cause problems during the update process.

THE THREE TYPES OF UPDATES

There are three main types of updates:

- **Chip updates.** This is a physical process, where you remove one or more chips and replace them with updated chips.
- **Firmware update.** You don't need to take off the cover for this one; you may need to run a program while the device is connected to a computer (e.g., via USB), or load firmware in from a CD if the device has a CD drive. In this case, you're generally rearranging the memory of a chip deep within your product's innards.
- **Software revision update.** With this type of update, you upgrade an existing version of a software application with new features or bug fixes by running an executable program.

For each of these types, the first and most important rule is to read any documentation that came with the update (piece of paper, "read me" file, whatever). One wrong move during an update could lead to real problems. If there's something you don't understand in the instructions, contact the company's tech support and make sure you know what you're doing before you proceed.

CHIP UPDATE ISSUES

- Chips are sensitive to static electricity. Wear a grounding strap (available at electronic supply stores) and connect it to a metal part of the device being updated.
- Make a special 3-conductor IEC line cord that has the hot and neutral prongs cut off, but the ground prong intact. With AC-powered gear, use this so that the unit is grounded to the wall socket ground but doesn't have power going to it.
- The chip will likely come in a protective package. Leave it in there until the very last moment. When you pull out the old chip, rest its pins on a metal surface (e.g., a piece of aluminum foil), then after removing the new chip from its packaging, put the old chip in it. You may need to reinstall the old chip at some point, so keep it protected.
- Line up the pins on the chip before inserting it into its associated socket. One of the biggest problems with chip updates occurs when a pin gets folded under the chip instead of getting into the socket.
- If the chip doesn't show update information, put a removable label either on the chip or in the unit itself. Write the update revision and date of installation on the label.
- When inserting a chip, apply even pressure all the way around as you work the chip into its socket. Make sure that the pins remain straight at all times.

FIRMWARE UPDATE ISSUES

Of the various update options, this one is by far the most dangerous. If the chip update fails, you can just put the old one back in, and if a software revision update fails, you can re-install the program. But if a firmware update fails, the device may be left in a state where it is not only non-functional, but can't even "boot" to attempt another update or reinstall the old firmware.

Reading any instructions is, once again, crucial. But re-read them as well. Then, make sure that the device being updated and whatever is doing the updating (e.g., your computer running a program) are both running from an uninterruptible power supply. The most common causes of a firmware update failing are not reading the instructions, or having a power failure occur in the middle of the updating process. Also make sure that if a cable is involved (like a USB cable that shuttles data to the unit), it's not intermittent and is plugged in firmly.

If the firmware update involves loading data from a CD, do not use a rewritable one, and burn at a relatively slow speed.

SOFTWARE REVISION ISSUES

- Do "due diligence": Check the company's forums for discussions about updates. Sometimes there will be incompatibility issues that mostly likely won't affect you . . . but they might.
- It's prudent to wait a week or two before installing an update just to make sure no important issues arise; you then need to judge whether the updated features are worth the potential pitfalls. However, bear in mind that some Internet forums do not always have accurate information — the problem might be that someone didn't read the instructions.
- If you are updating a Windows program, most updates set a system restore point "just in case." But not all do, so before making any changes, set a system restore point (Start > Programs > Accessories > System Tools > System Restore).
- It may be necessary to uninstall the previous version of a program for the update to "stick." The documentation should tell you whether this is necessary.
- When updating a software program, always copy any custom patches, files, etc. to a separate location. Usually you'll be warned if an update will modify these, but it doesn't hurt to make sure.
- With downloadable updates, create a folder that contains all updates. If you later need to reinstall a program from scratch (e.g., hard drive crash), you may need to install the original program then follow the "update path" through the various revisions — you can't always update a version 1.0 to a version 1.2 without going through version 1.1 first. In that same folder, keep any serial number or activation info.

Okay . . . now you'll have a successful update. Enjoy the new features! **EQ**



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WaveLab Studio 6 (\$399) is a streamlined version of its industry-standard WaveLab 6 audio editing/mastering application. Tailored for project studios and professional musicians, WaveLab Studio 6 offers stereo and multi-track editing along with CD burning features. www.steinberg.net

Ableton Live 6

The latest version of Live (\$599) offers Quicktime video support, an 8GB multisample library, customizable racks of instruments and effects, multicore support, enhanced project management tools, the ability to edit "frozen" tracks, and improved MIDI control. Sampler, Ableton's new optional multisample instrument, is also available. www.ableton.com

Yamaha GO46 FireWire Audio/MIDI Interface

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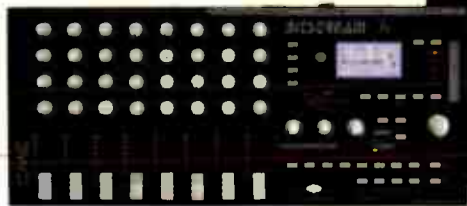
New Book on Home Studio Acoustics

Acoustic Design for the Home Studio, by former *EQ* editor Mitch Gallagher, is a guide to making any space sound better. Whether bedroom, garage, basement, bonus room, or closet, this book shows how to optimize the space acoustically. It's jargon-free, easy to understand, and helps improve your studio regardless of your budget. www.courseptr.com

Line 6 TonePort KB37 Audio/Keyboard Interface

The cross-platform compatible TonePort KB37 audio interface (\$414.99) delivers Line 6 guitar, bass, and vocal tone via GearBox software, with the added convenience of an integrated 37-note keyboard controller (including expression pedal input) for controlling GearBox's wah and volume pedal effects. www.line6.com





CME Bitstream 3X 3-Axis MIDI Controller

This compact desktop controller (\$399.99) for virtual instruments, DAWs, and other MIDI hardware is the only 3 axis (X,Y, and Z) controller on the market. It includes 35 knobs, 8 sliders, 16 buttons, joystick, cross-fader, and infrared controller. The joystick controls the X and Y axis while the infrared beam controls the Z axis. www.cme-pro.com

ADAM Sub8 Powered Subwoofer

The Sub8 compact subwoofer (\$699) extends the low end of any near field monitoring system. It houses an 8" woofer with a large 50mm voice coil and is driven by a 160W ICE power amp. The front baffle features two remote-controlled, motorized knobs that tailor input level and crossover frequency settings; the unit also provides onboard 2.1 bass management. www.adam-audio.com

ALTO Digan Series Digital Equalizers

The Digan Series of digital equalizers consists of the Digan 2.7 (2 x 7 bands, \$149), Digan 2.14 (2 x 14 bands, \$189), and Digan 2.30 (2 x 30 bands, \$269). All models work like traditional analog equalizers; for further convenience, a USB port



provides digital interfacing and the unit ships with a Windows PC Editor, so you can edit the curve from your laptop and save your settings in one of the resident memory presets. www.altoproaudio.com

Audio-Technica Next-Generation Artist Series Mics

A-T has added new mics to the line, while upgrading classic models for a comprehensive selection of vocal, instrument and drum mics. The series consists of the ATM410 Cardioid Dynamic Vocal Mic (\$169), ATM610 Hypercardioid Dynamic Vocal Mic (\$249), ATM710 Cardioid Condenser Vocal Mic (\$299), ATM250 Hypercardioid Condenser Instrument Mic (\$329), ATM250DE Dual-Element Instrument Mic (\$549), ATM350 Cardioid Condenser Clip-on Instrument Mic (\$449), ATM450 Cardioid Condenser Side-address Instrument Mic (\$369), and ATM650 Hypercardioid Dynamic Instrument Mic (\$169). www.audio-technica.com

DUY Magic Spectrum Mastering Tool

Available for TDM, RTAS, Audio Units, VST, and MAS/MOTU for Mac, DUY Magic Spectrum is a mastering tool that allows spectrum matching (where the spectrum of one

song can be superimposed on another), but also offers an advanced mode that allows graphic editing of a song's spectrum. www.duy.es

CEntrance Releases Free ASIO Latency Test Utility

CEntrance's ASIO Latency Test Utility (LTU) is available as a free download. This precision Microsoft Windows tool measures the true round-trip latency of your computer audio setup, from input to output via an ASIO driver. You can use the LTU to test different hardware, drivers, and applications. Accuracy is within 0.5 ms. www.centrance.com

Cakewalk Releases Free Expansion Packs

Rapture Expansion Pack 1 and Dimension Pro Expansion Pack 1 are available now to registered customers at the Cakewalk website. Each pack includes 350 new programs and hundreds of new samples and wavetables. www.cakewalk.com

Sonic Reality Releases Sonic Reality Rex Paks

Offering different combinations of drum and percussion grooves, fills and variations, instrument riffs, construction kits and other production elements, Rex Paks (\$79) are

designed to be easy to use and universally compatible. Initial releases are Vintage Soul Grooves, Hip Hop: Dirty South, Electronic: Drum n Bass, Sixties MTown Grooves, Vintage Rock Grooves, and Nashville Pop Grooves. www.sonicreality.com

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The AudioSkin (\$16.99, distributed by FMI Wholesale) collects loose cables and zippers them into one snake with a twist of the wrist. Great for both studio and stage, you can say goodbye to spaghetti cable messes. www.audioskin.net

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DRUMS UP



RECORDING ACOUSTIC DRUMS

by Jay Graydon

You'll definitely want to save this for future reference . . .

If you're looking for a "one size fits all" solution to recording acoustic drums, forget it! When it comes to miking and EQing drums or anything else, every recording engineer has different opinions and techniques. While that may seem chaotic, it's also liberating: Never be afraid to experiment in your quest for the ultimate sound, as there are no rules . . . and if there actually are, maybe you'll discover some new ones.

BUT FIRST, SOME PROBLEMS

Recording acoustic drums defines the meaning of "give and take." A common technique is miking each drum, so all the mics will pick up leakage from each drum/cymbal but with a slight time delay. This delay can cause "comb filtering" (phase cancellation and addition), which alters the miked signal's tone. The less leakage the better, but it's impractical to baffle other drums and cymbals within the set. A work-around to cut down on leakage is to use fewer mics, and try to capture the set with a couple mics on the set itself, and maybe some room mics.

Another problem is that the drum head tuning will likely change over a relatively short period of time, due to the constant hitting of the drums as well as temperature changes within the studio environment. Keep lighting and air conditioning consistent, as they're the main causes of temperature variations. Remember to check tom and snare tuning throughout the session.

Also note miking the full set leads to lots of mics, booms, and cables running around your studio. This multiplies the chances of an accident, like the mic stand falling over and killing your oh-so-expensive vintage tube mic. We'll address this topic as well.

ISOLATION AND AVOIDING REFLECTIONS

Isolate the mics from the floor as much as possible so that they don't pick up any rumbling noises. If your studio was not built with a floating floor (a second foundation over the first supported by rubber and styrofoam, as used in most pro studios; see Figure 1), a drum riser will help isolate the mics. Even if the studio has a floating floor, a drum riser may still be helpful. (When constructing a drum riser, make sure that it is solid and includes some type of rubber on the bottom of all surfaces that rest on the floor. Cover the platform with rugged, indoor/outdoor carpet.)

If the drums will be set up on the floor itself, a carpeted floor cuts down on reflections; a hardwood floor will allow sound waves to bounce back up into the drums, possibly causing phase cancellations. Consider a floor tom mounted in a standard vertical orientation: With a hardwood floor, when the player hits the drum the bottom head vibrates sympathetically. This directs a waveform toward the floor, which bounces back up

and interacts with the vibrating bottom head to cancel or emphasize certain frequencies.

To minimize this problem, angle the floor tom slightly by lowering the triangular height rod (the one nearest the drummer) to taste; see Figure 2. This causes the waves to scatter somewhat.

MIC CONSIDERATIONS

If the drums will be hit medium to hard, you'll usually want to enable the mic's built-in attenuation ("pad") switch. This helps minimize the chance of distortion.

Some condenser mics offer pattern choices. With an *omni* response, the mic hears everything — the front and back as well as on the sides. The *figure 8* response allows the front and back of the diaphragm to be active but not the sides. *Cardioid* is directional on one side only, and is typically used for drums. Other patterns include "super cardioid" (very directional), which may be useful if you want to tighten up the sonic picture.

Note that all of the following mic placement positions are my starting positions. When listening to the mics to dial in the sound, always move the mic around a bit to find the best sound.

Regarding mics, there are so many, and the landscape has changed so much in the past few years with the advent of budget mics, that we won't even attempt to recommend possible mics; I'll just mention a few personal favorites and deal in generalities. One strategy for getting pointers on mics is reading interviews with producers and engineers whose work you admire, as they will often mention which mics they use for specific applications.

INITIAL MIC SETUP: ONE OVERHEAD MIC

Once the drums are set up, start by using *one mic only* — preferably a large capsule, wide-range condenser mic. Otherwise, use your best-sounding dynamic or ribbon mic.

With the mic placed on a boom stand, position the mic about two feet above the drummer's head, and point it straight down at the bass drum pedal's inner edge. But positioning the mic is not enough: It has to be *stable*. Most mic stand bases can tip easily; if a mic hits the floor, it may be permanently damaged. The bigger the mic stand base, the better.

Anchor the mic stand with sand bags or any stable, heavy object that will not slip or rattle (three sand bags in a triangular position works for me). The best weights have a handle in the middle for carrying.

Now that the stand is solid, while positioning the mic, wrap the mic cable around the boom stand arm a few times and leave a little slack at the back of the mic so the cord doesn't pull at the mic and change its position. To keep the cord from moving, tie the cord to the stand using removable cable ties (available at most electronic supply stores). Put a few cable ties on the boom and a few on the main mic stand, all the way down to the base.

Avoid permanent cable ties, or you will have to cut the



Fig. 1: Floating floor construction. Note how the spacers ("U-Boats" by Auralex) are placed to isolate the floor support boards from the "real" floor. (Photo by Jeff D. Szymanski)

cable tie and throw it away when putting away the mic and stand. Velcro cable wraps, available from most pro and consumer recording supply companies, are costly but are also the best choice as they are easy to set up and remove. In a pinch, you can use something like Scotch tape.

Even though we've secured the mic stand and cable, someone could still trip over the mic cable and knock over the mic. But there is a solution.

With wood floors, use duct tape to tape down the mic cable on the floor, from the mic stand base to the mic panel or recording console. There should be a very little mic cable slack at the mic stand base.

If you are low on duct tape, cross the cable in one foot strips about every two or three feet. Artist tape or any thin tape will *not* do the job. Keep the tape down tight, with no slack between the tape strips. In areas where there will be foot traffic, cover the cable totally with duct tape.

With carpeted floors, avoid duct tape (which leaves glue residue) and put something like throw rugs over the cable. Bathroom rugs will work in a pinch. Get some carpet remnants, and cut them up to suit your needs. If you use carpet on a wood floor, make sure it won't move (*i.e.*, has a rubber underside) if someone walks across it.

Now that the mic stand and cable are secure, and the cable is taped down, plug the mic cable output into the appropriate mixer or audio interface channel. As there typically will be some cable slack at this end, "cable tie" after plugging in, then tape this down if someone could trip over the mic cable.

GENERAL TWEAKING WITH EQ

When you're satisfied with the mic position, experiment with the EQ. For more "bottom end" with the bass drum, toms, and snare, try boosting the low frequencies (*e.g.*, +2dB at 100Hz). Experiment with other frequencies (from 50 to 150Hz or so) to discover the best area for your particular mic setup. Typically, 50Hz will not do much with distant miking, but 150Hz may be better than 100Hz in this situation.

Experiment with the midrange EQ. 2kHz through 4kHz will make the snare "bite," and the toms will have more of an attack sound. However, the cymbals may start to sound painful with this added EQ. As mentioned, recording drums involves tradeoffs.

For the high frequencies, start with a very slight shelving boost at 10kHz. You'll notice an added sheen; the cymbals will get louder, and all drums will sound brighter and more open. Careful, though — your ears can get used to the extra high frequencies, which means you'll want to add more, but your ears get used to that, so you add more . . . a little high frequency boost goes a long way.

A typical setting (Figure 3) for one drum overhead mic would be adding at least a few dB in the low end (100 to 150Hz) and a few dB at 10 to 12kHz.

KICK DRUM MIC/PLACEMENT

A dynamic mic, which can handle loud sound pressure levels, is the typical choice. The Sennheiser 421 is popular, but try all the dynamic mics at your disposal. Some people use the Neumann 47 FET (condenser) mic. If you use *any* condenser mic, it is crucial to realize that the sound pressure may hurt the fragile condenser diaphragm. The rule of thumb regarding condenser mics is "use it only if you can put your ear in front of the sound source you will be miking without hurting your hearing." Because the kick drum sound pressure and transient is strong, I highly recommend a dynamic mic.

If the mic you choose has a bass rolloff switch (bass attenuation), don't use it! The rolloff (low end filter) might have choices like "music" and "voice" or "M" for music and "V" for voice. There may be more than these two options, like Voice 1&2. The voice mode is surely a low frequency rolloff, so use the lowest number music mode. When dialing in the sound, experiment with any switches to make sure that you are getting the mic's full frequency range.

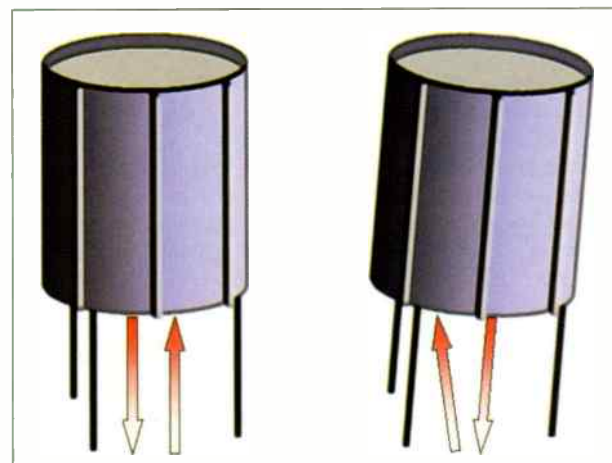


Fig. 2: With the tom set up vertically, sound waves hit the floor and bounce back into the bottom head. Angling a tom slightly causes sound waves to scatter, and diffuses them.



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Fig. 3: This EQ shows a +2.1dB boost at 115Hz, and a +2.1dB boost at 10.5kHz. There's also a slight boost at 3.7kHz, and a very slight dip at 410Hz to reduce a bit of room "mud."

Kick options fall into three categories:

- If there's no front kick drum head, position the mic inside the bass drum about a foot back from the point where the beater hits. Now move left half way to the side, and angle at 45% towards the left rim.
- If the kick has two heads, with a hole for miking, place the mic about one foot in and angle slightly toward the left rim.
- If the kick has two heads and no hole for miking, place the mic about 6" back from the center, and slightly to the left.

All starting positions are just that. Finding the best mic position involves finding the best compromise between getting as much "natural bottom end" as possible without losing too much of the "point" (beater attack). Some like a boxy or boomy sound with or without "point." For less point, move the mic farther

away from the beater, meaning near the side of the shell and pointing away from the beater.

But also note that in these days of unlimited tracks, it's very common to place more than one mic on the kick, and you'll usually find a hole in the front head where you can stick a mic. Steve Sykes (a brilliant engineer) uses a dynamic mic inside the kick basically pointing at the beater. He also uses a Neumann U47 FET on the outside head a few inches back, and a Yamaha NS 10 woofer speaker as a mic! This adds the real lows (around the 60Hz range) in this era of home and car playback systems with extended low frequency response. He positions the woofer to taste on the outside head in which the low frequencies are thick — simply move around until you hear the most natural low frequencies.

When using multiple mics, though, slip the track for any mic set at some distance from the head so that its phase lines up with the dynamic mic inside the kick. This is important to maintain the fullest possible sound.

After experimenting with the kick drum mic placement, when you feel that it sounds good, reset the levels (if needed) and EQ to taste. Try adding around 60–100Hz to bring up the bottom end. If the sound is kind of "boxy," try cutting the EQ response a bit at around 300–500Hz. To add more point, add a boost at 5kHz or so.

The kick drum may have a pillow resting up against the inside bass drum head. Typically, the pillow rests equally between the bottom of the bass drum and the inside head. This stops the bass drum from ringing (reverberating) like a tom. The amount of pressure of the pillow against the head defines the sound's "dwell." During the '70s pop music era, the pillow was packed against the head but these days, there are no rules — the kick sound can go from a totally dead sound to wide open, with no pillow or padding. When using padding, anchor the pillow down with a sand bag or a non-reflecting heavy object so it doesn't move.

Drum tuning is crucial. If using padding, pull back the padding and ask the drummer to get the tuning "even" and as low as possible without making the head too loose for the beater. This is a touchy area. The drummer needs to be comfortable with the feel of the beater hitting the head. The experienced drummer should know the sweet spot for the tuning. The room sound may help dictate the best tuning if you don't use a pillow.

If the kick drum has one head, after getting the kick drum sound to taste acoustically, put a packing blanket or any thick

TYPICAL DRUM RECORDING ROOMS

There are three main categories of studio recording rooms.

THE DEAD ROOM: This has major padding on the walls and ceiling, with a carpet floor. There are very few "live surfaces," so this type of room does not generate natural reverberations as the surfaces absorb the sound. The 1970s pop and R&B (rhythm and blues) era favored this type of drum sound.

SEMI OPEN-SOUNDING ROOM: This has some reflective surfaces, such as wood wall panels and a hard wood floor, with a few "soft spots" like a carpet border around the hardwood floor or padding on a few walls. The ceiling may have wood reflectors, or a few boxes filled with environmentally-safe fiberglass material may hang from the ceiling to stop any ringing caused by the ceiling. If you can only have one big room in your studio, this is the best option. You can change it into a dead room by adding foam, packing blankets, or commercial frequency absorbers. For any music other than hard rock, this room style is a happy medium.

OPEN-SOUNDING ROOM: This type of room is usually quite large and is the key to a big, exploding drum sound. The surfaces are typically cement and plaster; non-reflective surfaces are rare. When recording drums in an open-sounding room, you'll generally use room mics (mics distant from the sound source), so it is best to put only the drums in this room and all other instrument amps in other rooms for isolation.

blanket over the bass drum's outer shell. This helps isolation. Tape the blanket on the drum near the center of the shell with duct tape or any strong tape, and let it hang on the floor over the outside of the kick. If you're not using a pillow, and will be using room mics, you may not want to use the packing blanket.

SNARE DRUM MIC/PLACEMENT

Typically, a dynamic mic (like the "old standby" Shure SM 57) does the job. There are many options to explore, as most dynamics will sound anywhere from usable to great on a snare. Condensers are used sometimes, but watch out regarding mic placement. If the drummer accidentally hits an SM 57, this is a drag but the replacement cost is cheap in comparison.

My favorite condenser for snare is the Sony 37A tube condenser mic. Yes, this breaks the rule regarding sound levels with condenser diaphragms; but if this mic sounds best after trying many mics, I cross my fingers and hope it survives the session.

You'll need a mic "boom stand" for the snare. As with all mic stands for the drum mics, a big base or triangular base (three legs) is best. Position the mic stand between the hi-hat and kick drum, with the boom extended to the nearest edge of the snare rim. Now move the boom in order to position the mic about 2" over the rim edge, and move in about 2" in toward the center of the snare head. Adjust the mic capsule to point at a 45° angle toward the drum head (Figure 4).

Ask the drummer if the mic is in the way, *i.e.*, it would be possible to hit the mic when playing. If so, back it up until the drummer feels the mic is out of the way.

Moving the mic closer to the drum head picks up more low end. The '80s-era mic placement was around 1" away from the head to get the "proximity effect." Around 3" is typical these days but as always, move and experiment. If the mic has a bass rolloff, don't use it — you can always trim the bottom later with the console EQ.

Some people mic the snare on top with something like an SM 57 and use another mic (typically a dynamic or small capsule condenser) on the bottom to pick up more of the "snare rattle." Start by pointing the bottom mic up to the center of the snare drum bottom head, about 4" under. If the mic is a condenser with pattern selection, use super cardioid or cardioid.

This is a good place for a short mic stand, as fitting a boom stand in the area of the other stands will be tight. Small stands usually have a small base, so secure it with sand bags and maybe duct tape too. A gooseneck stand adapter may work — but the gooseneck will move easily if the mic cable pulls on it.

When using a top and bottom mic, note that when two mics face each other so the top mic diaphragm sees the air moving away when the snare is hit, while the bottom mic sees the air coming toward the diaphragm. This causes phase cancellation. The fix is to reverse the phase on one of the mics. In this case, reverse the top mic. (Note that you should also reverse the phase of all mics on drums that are miked from the top of the sound source — the only mic that sees correct phase is the kick — air moving towards the diaphragm at initial attack.)

HI-HAT MIC/PLACEMENT

Many condensers will work. Small diaphragm condenser mics are the usual choice. The AKG 451 or 452 are both fairly common. If the mic has a low end rolloff filter, you may want to use it as you do not want bottom end (low frequencies) from the hi-hat mic. If you will use something other than a condenser mic, use a mic that sounds "small," "tight," and bright.

Set the mic boom stand so the mic is directly above the shaft of the high pedal, then back away from the drummer half way to the outer edge of the hats. The mic should point straight down and about a foot above (Figure 5). As always, you will want to move this mic around while dialing in the sound.

TOM MICS/PLACEMENT

This is an area where dynamics and condensers are used about equally. With dynamic mics, use ones with a fair amount of low end response. The Sennheiser 421 is a good choice but watch out where you place it, as the mic is large and may get hit by a drum stick or wobbling cymbal. SM 57s are a possibility, as are

many others. I like small capsule condensers (AKG 391 or 451/452) on rack toms, and large diaphragm condensers (AKG 414 EB) on the floor tom(s) for a smooth, big response. For the high and mid toms, it's best to use the same model mic.

Set the boom stand for the high tom on the floor in front of

the kick drum/tom; position the mic about 2" above the tom, and about 1" in from the rim away from the drummer. Same for the mid tom. Position the floor tom mic stand on the floor and set in the same manner. One reason for setting the mics fairly close is that the "proximity effect," which accentuates the low end, will be a good friend if you want a full, deep tom sound.

The only mic that sees correct phase is the kick — air moving towards the diaphragm at initial attack.



Fig. 4: Typical setup when miking the top and bottom of a snare drum.



If the drummer has the cymbals positioned low and close to the toms, grab each cymbal and move it on its axis to see if it will hit the mic or stand. If there's no way to avoid the cymbal hitting the tom mic stand or mic, as a last resort you now have to ask something drummers usually don't like to hear: "Please move the cymbals up a taste." An experienced player will adapt if necessary.

CYMBAL (OVERHEADS) MICS/PLACEMENT

Condenser mics are the norm. I like AGK 414s, but most any good condenser pair will do the trick. Neuman, Telefunken, and AKG are typical brands of this era as well as past eras. Avoid mics with a built-in 2kHz bump (build up) like the SM 57; this is one application where this mic is not recommended. If you must use the SM 57, when "dialing in the sound," use the EQ to roll out a few dB at 2kHz or so.

When positioning the two overhead mics, be very careful that they don't fall down as the booms will generally be extended to full length. Secure the mic stands as soon as you've set the position.

As mentioned previously, I look at drums from the audience perspective (floor tom at the left, hi-hat on the right). In this case, position the left overhead boom mic between the center of the ride and crash cymbal about 2-3 feet above. Start by pointing the mic straight down.

Position the right overhead over the crash on the right side, with the same basic placement. If there's more than one crash on this side, go between the cymbals as on the opposite side. Position the mic stand on the floor near the hi-hat mic stand.

If the drummer hits the crash cymbals hard, and they're fairly loose on the cymbal stand, they will wobble and you will hear this wobble in the mics. A little wobble sounds natural, but extreme wobble will sound like the cymbal is almost canceling out during the travel when the cymbal edges get near 90° away from the mic. A possible fix is to angle the mics at about 45° in

towards the center of the cymbals, but this may not totally fix the problem and is not a good position for the overheads in general. The best fix is to ask the drummer to tighten the cymbal nut to cut down on the wobble.

If the drummer uses more than four cymbals, and if the ride cymbal is used instead of the hi-hat as the constant time keeper, you might need to add another mic for the ride cymbal if it's not loud enough in the overhead mic compared to the crash cymbals. Again, a small diaphragm condenser works well.

Position the mic above the center of the ride cymbal, looking straight down and about a foot above. Move in half way between the center and the inner edge of the ride if you want more "ping" (drum stick sound).

Which is the main overhead mic? Typically the one with the ride cymbal, so let's say left overhead. Take a piece of string (or a mic cable, whatever) and hold it against the center of the main overhead mic diaphragm. Put the other end of the string in the center of the snare head. Now that you know the distance of the left overhead in relation to the center of the snare head, use that same measurement for the right overhead mic, meaning move the right overhead mic up/down, or slightly change where the cymbal is miked, to achieve the exact same length to the center of the snare head. This will minimize snare comb filtering/phase cancellation in the overhead mics.

ROOM MICS/PLACEMENT

This area is tricky. Room frequency "build-ups" and "suck outs" have a major influence. Condensers are the typical choice but each room sounds different, so try every mic that's left over. It's a good idea to use two of the same model with the overheads.

You might think an omni pickup pattern would work well, meaning the condenser mics would hear behind as well as the sides. Maybe, but I use cardioid most of the time. Start by placing the mics about 15 feet in front of the drums, about four feet above the floor. Spread apart the mics around eight feet or more, using the bass drum as center.

This is what works for me in my studio, but every studio will have "sweet spots" so experiment! Even a "semi-dead room" might like room mics.

It is possible to use more room mics, especially if the room is big with high ceilings. If this is the case, for high distant miking, try the Neumann M50 (nickel capsule is best) which is designed to be a room mic. This mic sounds bright even when distant from the sound source. It's a hard mic to find, but it's great for this application. [EQ](#)

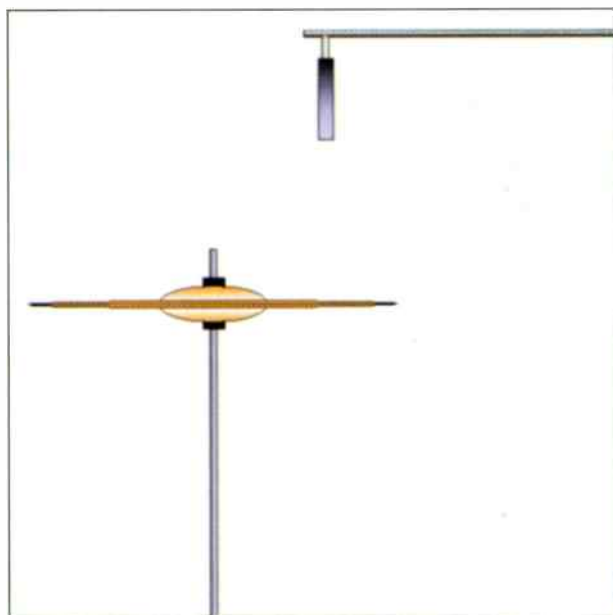


Fig. 5: Miking a hi-hat.

Jay Graydon is a Los Angeles-based songwriter, recording artist, guitarist, producer, arranger, engineer, and more, with two Grammy awards and 12 top five Grammy finalist nominations, including the prestigious title "Producer of the Year" and others such as "Record Engineer of the Year." Some of Jay's greatest hits include the Grammy-winning "Turn Your Love Around" with George Benson, many songs co-written with David Foster (e.g., the Grammy-winning "After The Love Has Gone" — a huge #1 hit with Earth, Wind & Fire), and several hits with Al Jarreau, DeBarge, and Manhattan Transfer, to name a few.

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DRUMS UP

by Dr. Walker

MAD BEATZ

Give your beats an extreme — and we do mean extreme — makeover

Beats are the most important element in dance music: Without that foundation, nothing else works. With a massively fat and funky beat, you already have your ticket to a rocking club track or hip-hop masterpiece or — if you're performing live — a direct connection to the hearts and hips of your audience.

While it's easy enough to load a loop or punch up a preset, all that will give you is a beat. But what *you* want, and what your *fans* want, is a mad beat! Something interesting, extreme, novel, and capable of making even the dead want to get up and dance. So . . . here we go.

CREATING MAD BEATZ

My favorite tools for dropping beats are hardware machines. I love knobs, pads, and buttons that I can really *play*. Of course, this is important for live use, as your audience will have more action to watch than just a guy moving a mouse and staring at a laptop's TFT screen. But in the studio, think *performance* as well. If you want to capture something special in the studio, don't try to perfect a part over and over and over until all its life is sucked out. Improvise and perform, and always be in record mode. When you're really grooving with the music and performing, you'll get some fantastically mad takes. And when you play with others, *jam* with them — don't act like you're overdubbing.

The step sequencers in machines like the Roland TR-909, TR-808, Korg Electribe MX, Electribe SX (Figure 1), Jomox xbase09, xbase999, and many others make it really easy to program the machines on-the-fly, which is always more fun than just playing back pre-programmed patterns. With live programming, every performance will be different, which will not only be exciting for your audience, but for you as well! And if you're excited, that will show in the music.

With sampling drum machines like the Akai MPC, E-mu

SP1200, and Korg Electribe SX, you aren't limited to just drum samples. You can load entire loops, or crazy sounds like white noise, radio waves from a short wave radio, little parts of record hiss/scratches, or chopped up guitar noises to make the beats more alive. Of course, you can use this technique with software drum machines (like Reason, Project5, etc.) too.

My favorite gear combination is the Jomox xbase for kicking bass drums and aggressive hi-hats, Electribe SX for fun noises and distortion/lofi effects, and the Akai MPC for atmospheres and drum loops. This setup is enough to perform live for hours; in the studio, you'll get plenty of raw materials and live, you'll have your audience dancing to the beats and screaming in the breaks.

By the way if you use mostly hardware live, it's a temptation to just bring that into the studio for recording and let it go at that. But don't overlook all the software tools you can use in the studio. For example, the great thing with software drum machines is that you can easily morph your own drum sounds out of a couple of existing samples, and create entirely new sounds in seconds. Also you don't have to mess with cables and rewiring between takes or songs, and some software effects are more sophisticated than what you can find in hardware. You may even be able to trigger them from your hardware so you get everything you want.

MULTIPLE OUTPUTS

One major key to mad beats is don't be lazy and just pull a stereo output from your drum machine or audio interface. Use all the outputs! First, you can feed them into a mixer and "rock the mixing board" like a musical instrument. Push the levels, add dynamics, solo, mute — all of these make the sound come alive. Remember, samples tend to be pretty "flat" in terms of dynamics; it's up to you to add the color and interest.

The other cool thing about multiple outputs, whether hardware or software, is processing. You can add colors and textures to percussion and other sounds while keeping a rock solid beat driving the track. If you have a hands-on MIDI controller for altering the effects processors in real time, that's even better.

THE PROCESSING PARADE

Effect processors are a big part of making mad beats. It's big fun to destroy beats on the run and reconstruct them at a later time. You can distort them, fatten them up with EQs and compressors, tweak them with wahwah effects, lower the bit rate with a bit reducer, use flangers and phasers, make them more "dub-like" with delays, and more.

Here are some cool toys which can be useful to create madder beats.

Equalizers: Okay, you know how to use an EQ, so I'll give two cautions: Don't push too much bass in your beats, and keep the highs under control. Bass takes up a lot of bandwidth in a master recording, and live, there are limits to what a sound system



Fig. 1: Korg's Electribe SX-1 is a popular sampling drum machine.



Fig. 2: Reason's Scream 4 module is called a "sound destruction unit," which it is. It even has a preset for drums called "LoopSlammer."

can handle. As to highs, with digital recordings it's hard to get a "sweet" sound with lots of highs, and live, you don't want to hurt your audience's ears.

Distortion: My favorite tools to distort beats are the Electro-Harmonix Big Muff and the Craig Anderton QuadraFuzz. But there are a huge range of distortion pedals and plug-ins; Reason's Scream module (Figure 2) has lots of distortion options. While recording, try the whole range from soft distortion on beats that make the sounds warmer to heavy distortion for nasty rocking underground sounds. Also try distorting individual sounds, like snare, congas, rides, and claps to make those sounds more aggressive, but leave the kick and hi-hats undistorted to keep the drive. You also can also distort your drum sounds in the mixing board by overloading the preamp; it gives yet another type of distortion.

Bit Reducer: Nothing sounds more hardcore on a beat than a bit reducer, which simulates what a beat sounds like in lower



Fig. 3: Project5's "Aliasfactor" plug-in can change sampling rates and bit depth, but also throws in a filter too so you can mess up the frequency response.

resolution, like 8 or 4 bits, and can often reduce sample rates as well (Figure 3). It's a must for all Commodore-64/Atari/Gameboy-music junkies like me. On our last few records we used the Alesis Bitrman and the Electribe SX bit reduction effect, but there are also lots of bit reducer plug-ins, including some freeware.

Compressors: They can make your beats louder, *but they also can destroy your rhythm very easily*. Be careful when using compressors! Most studios and clubs have excellent compressors, so a lot of times it's best to retain the drum's natural dynamics, and add compression later if needed.

Flangers/Phasers: These are fun to hear on a drumbeat, but use them sparingly. The effect easily gets annoying; processing a kick drum will "steal" its energy. Flangers/phasers are perfect for

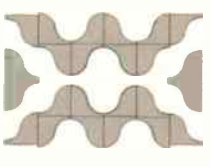

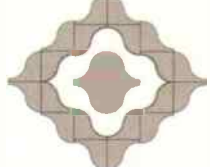


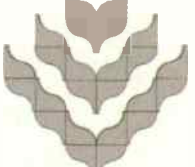
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Fig. 4: Guitar Rig 2's Loop Machine is the software equivalent of products like the DigiTech JamMan, Boss RC-50, etc.

little breaks in the flow or on single instruments like ride, crash, or claps.

Auto Wah: This is a great effect for breaks, but gets old on a whole track.

Looper: If you use your mixing board for beat arrangements and breaks, sample some of your beat arrangements live into a looper to bring back in later. In addition to DJ loop players that autosync to the beat (beat detection), there are also more expensive, musician-oriented devices like the Lexicon/DigiTech

JamMan, Electro-Harmonix 2880, and the Boss RC-50.

Delays: These are essential for beat design, as they make the rhythms deeper and more dub-like. Try bpm delays on the whole beat (for breaks) or on single instruments like snare drums, congas, rimshots, and so on. But bpm delays aren't the only ones worth trying: Non-synced delays can add polyrhythmic effects, and complex delays like Native Instrument's Spectral Delay are very cool. Other favorite "dub" delays are the famous Electro-Harmonix MemoryMan and their 16 Second Delay, the Roland RE-201 or 301 tape delays, and TC Electronics' multi-tap delay. Of course, you can combine all these effects for more complex beats and sounds. And don't overlook guitar processing software, like Native Instruments' Guitar Rig 2, for complex processing of rhythms.

IT'S UP TO YOU

It's been said before: "Machines don't kill music, people do." Beats can be the most boring, dumb things in the world and make you wish drum machines had never been invented — or they can be totally cool and exciting if you throw your personality into them. Saying "drum machines suck" is like saying "paint sucks." Well of course paint sucks, you have to get a brush, squeeze the paint out of the tube, and put it on a canvas before it gets interesting. Drum machines provide only the raw material, you have to provide the rest. Experiment with your own sounds, be true to your own style and heart, and use the best combination of hardware, software, and whatever else you can to build your own Mad Beatz! ☐

Dr. Walker (Haraklion, Crete, Greece) has worked as a beat programmer, producer, studio musician, and remixer on more than 700 dance music productions, and has performed more than 1,000 live performances all over the world. For more info, surf on over to www.dr-walker.com and www.myspace.com/dr-walker.

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by Will Romano

DOING DRUMS

From fusion-heads to the metal maniacs; prog rockers to pop stars, *EQ* catches up with some of the most exciting drummers of the past 30 years — and the people who help shape their sound — to delve into the underlying philosophies behind why, and how, they record drums the way they do.

KEEPING IT REAL

Donning dark shades and flashing a million-dollar smile, Taylor Hawkins struts into the New York offices of Red Distribution like a star. The drummer for the multi-platinum band Foo Fighters is rock-star royalty but his recent solo debut, recorded with his band the Coattail Riders, is a garage band tour de force. "When you are making a Foo Fighters record you know it's going to be on the radio," Hawkins tells *EQ*. "Everything is 'bigger.'"

From classic Genesis/Latin-influenced ride cymbal patterns, layered percussion, to cowpunk country backbeats and bubbling, close-miked toms, Hawkins' performance might shock Foo fans. "You can hear everything," says Drew Hester, co-producer and engineer. "It is a very organic, warts-and-all record."

The lo-fi recording allows us to hear Hawkins' raw ability. "The drums were literally set up in my garage," Hester says, who explains that most of the songs were completed in a day (with eight drum inputs via Digi 002). "We didn't do this record in a big studio with a lot of gear," adds Hawkins. "It didn't even feel as though we were even making a record. It was just [like] demoing."

Hawkins tackled one song at a time — which is not the way he is used to recording with the Foo Fighters, but he didn't care. "Otherwise you lose perspective," says Hawkins. "You go in the studio for two weeks to work on getting the perfect drum tracks, then we're on to the guitars. The process gets too long."

"If you get one of the top mixers to do your record, they'll get it done, but the drums will be completely artificial," says Taylor Hawkins. "It's like, 'Why do you actually spend time getting drum sounds the way you want them if they are just going to get sampled and compressed?'"

PERSONALITIES SHINING

Message to engineers: Don't bury a drummer's identity. Drummer Mike Wengren, of the band Disturbed, wanted to retain the primal, dry, thunderous tone of the band's debut for the band's latest record *Ten Thousand Fists*. "We experimented with the birch shells in the beginning, but we just kind of gravitated back to my 6-ply maple Pearl Master Custom drums," Wengren says. "I hit hard and that thickness has become part of my sound."

John Novello, keyboardist and B3 organ player for instrumental fusionist band Niacin, captured drummer Dennis Chambers in Novello's converted triple-car garage studio (2B3). "Dennis wanted the drums to sound the way he hears them when he

plays," says Novello. "We retained the 'crashy, bangy' natural sound of his drums through close miking."

"People always say to me, 'I love your snare sound. How did you get it?'" says Bill Bruford (Yes, King Crimson, Genesis). "What is heard on a record, especially a live one, has almost everything to do with what the musicians actually played, and almost nothing to do with pushing faders up and down and altering balances artificially." Robert Frazza recorded Bruford's "mini" big band — the Earthworks Underground Orchestra live in New York. "I did not close mic any of the drums," says Frazza. "I put a little air in between the drums and mic, which retained the 'woodiness' of the kit."

"My general feeling about drum kits, particularly when you are recording a drummer who does not have a 'production' drum sound, is to simply capture what they are doing," says Paul Northfield, who engineered and mixed Neil Peart's instructional DVD: *Anatomy of a Drum Solo*. "The starting point is always how Neil sounds when he plays," says tech Lorne Wheaton. "That tonal ring is part of Neil's character on the drums."

OPEN MIND, OPEN SOUND

Carl Palmer, former Emerson, Lake, and Palmer drummer and now with the Carl Palmer Band, comments on his two new live records, *Working Live — Volume 1 & 2*, produced in collaboration with engineer Paul Kennedy. "By using Paiste metal alloy drums, because of the 'liveness' of the metal shell, the drums had extra zing" (Palmer was using 57s on the toms, an AKG D12 in the kick.) "I have some of my drums flat so I can hit rimshots," Palmer says. "I am a kind of balls-to-the-wall prog drummer. I am very un-English when it comes to that. So, we kept the tuning as I liked it, and where the drum would ring we would just gate it."

UNEARTHING MIC SETUPS

Terry Date, known for his work with Pantera, Prong, and many others, offers a view into mic techniques for the latest Unearth offering, which has a notably "boomy" drum tone. "The kick mic was inside the drum, just off-center from the beater, about 4" inside the front head. The snare mic was just a Shure 57, about an inch off the rim, with the back of the mic pointed at the hat for as much isolation as possible. There was no bottom miking; toms were ATM 125s placed, once again, to maximize isolation from the cymbals. It was a km84 on the hi-hat, 451s on the overheads,

four 87s spread around the room, and a couple of trash mics, heavily compressed, for the kit. We also used a Yamaha NS10 woofer in front of the kick to give it a little more sub."

BUILDING THE PERFECT BEA(S)T

While recording the follow-up to the multi-platinum *Pyromania*, Def Leppard was served a near-fatal blow when drummer Rick Allen lost his left arm in a car accident. Thanks to the vision of then-Leppard producer Mutt Lange, the concept of mapping out songs with drum programming became essential to the recording process for *Pyro's* successor, 1987's *Hysteria*. For the recording of the band's new record, *Yeah!*, producer/engineer Ronan McHugh and drummer Allen followed Lange's philosophy and mapped out songs with the help of BFD — the digital sound library of acoustic drum set samples.

McHugh recorded Allen semi-live onstage to achieve the correct tempo for each of the tracks. Once in the studio, McHugh would continue to chase snare and floor tom samples (which were eventually stored in Allen's Akai sampler for use in Allen's studio performances), as the drummer recorded in waves: the drums in one pass, the cymbals in another. "The only thing with that approach is you really have to nail both aspects, otherwise it would sound like two people playing," says Allen.

SECOND SKINS

"Second Skin," the opening track of Widespread Panic's latest CD, *Earth to America*, engulfs with its backbeat. Recorded at Compass Point Studios in Nassau, Bahamas, by producer Terry Manning (ZZ Top, Led Zeppelin, Shakira), *Earth To America* marks the 20th anniversary of the band, and first time Panic has recorded outside of John Keane Studios in Athens, GA. With seamless rhythms of percussionist Domingo "Sunny" Ortiz, drummer Todd Nance, and bassist Dave Schools, Panic

has rarely sounded so coherent and soulful.

Nance set up in Compass' Studio A live drum area — the same room that brought us the incredible drum sounds of "Back In Black," "Addicted to Love," and "Start Me Up." The double percussion effect is heard (and felt) on Bob Dylan's "Solid Rock," "Second Skin," "When the Clowns Come Home," and "From the Cradle."

Manning's unconventional recording approach contributed to the drums' booming sound. "I set up Todd's kit in the Rec Room and used a long snake to extend the mic input cables and headphones," says Manning. "Mics were placed in a different way from the main tracking room to conform to the space and sound of the Rec Room. I also put a mic about 35 feet away, down one hallway, and up another, and made sure that the building was

The very distant room mic was two rooms away, and the entire sound wave journey was along concrete hallways.

quiet when tracking. The very distant room mic was two rooms away, and the entire sound wave journey was along concrete hallways. The hallway mic was absolutely *crushed* with the Lucas compressors." "Terry gave it that John Bonham reverb effect," Ortiz says.

The basic mic configuration for Nance's drums was as follows: an AKG D-112 (through API 512c preamp) for the kick drum; an AKG C12VR and a modified vintage Shure 545 (with the internal transformer removed) for Nance's snares; a C12 about a foot away from the snare; an AKG 451 on the hi-hat; a Røde NT-6 using gooseneck attachments on the toms; two NT-2000s as overheads placed in an X-Y configuration (at a 90° angle) and centered on the snare; and an MXL V6 room mic placed on the 14-foot ceiling.

Ortiz, for most of the record, was isolated from the band in the Rec Room at Compass. "I couldn't see anybody. It was a little strange," Ortiz says. "The mic [we used] was a Rode NT-4 stereo mic, placed back about two to three feet away, centered on his conga setup midpoint," says Manning. **EQ**



Recording Peart's closed-head kick was achieved via an adjustable mic-mounting device. "With a double-headed drum you'll want to get three inches from a head," comments engineer Paul Northfield. "The drum has enough natural resonance that you'll want a bit of closeness."



Recording Neil Peart's expansive kit was a balancing act between the practical, technical, and aesthetic. "We didn't want to be tied up with cables and mic stands, so we used a lot of clip-on Shure mikes," says engineer Paul Northfield.



EXPRESSIVE DRUM LOOPS

by Craig Anderton

Drum loops: Boring. Repetitive. Yawn.

Or at least, that's the cliché. But there are lots of ways to make drum loops expressive, interesting, and anything but a yawner.

A TOUCH OF REALITY

One technique is to use drum loops without cymbals. Then mic some cymbals, set up to do an overdub, and play the cymbal part. Not only will the cymbal's sound provide a richness that's difficult for a sample to provide, you can add variety to the loops by using real cymbals.

HIT ME BABY, ONE MORE TIME

There's a reason why drum loop libraries often include individual drum hits: Set up another track adjacent to the track containing the loop, and drag in some additional snare or kick hits. The occasional off-beat hit can liven up a part by adding an element of surprise, or increasing emphasis as needed.

USE MULTITRACK DRUM LOOP LIBRARIES

Multitrack drum libraries, such as those from Discrete Drums, require a little more work to apply than standard drum libraries — but the results are well worth it. One of the biggest advantages is that because individual drums are on separate tracks, it's easy to add dynamics to just one sound. You can also add timbral changes, such as pulling back a bit on the snare's treble during quiet parts, then increasing it a shade when you want the part to cut a little more.

Another option involves altering the room mic levels to complement the song. To make the sound bigger, bring up the room mic tracks a bit; reduce them for a more intimate sound.

Furthermore, you can use a program like Drumagog 4.0 (www.drumagog.com) to replace particular drum sounds, such as the kick or snare. Drumagog works by detecting when a drum hit occurs, then generating a trigger to play a different drum sound. Assuming separate source tracks, replacing sounds is usually easy.

Finally, you can shift track timing: Lag the snare track a bit behind the beat to create a more loose, laid-back vibe, or push the snare a bit for a more insistent "feel."

REMOVE, THEN REPLACE

Programs like Adobe Audition and Wavelab 6 can cut specific frequency and amplitude ranges. Use this function to remove the kick part from a loop while retaining the other drum sounds, then overdub a kick part with more variations and interest. I've also been able to remove some percussion sounds, like triangle and clave — you'd never know they were ever there.

This technique is not a panacea; it pretty much demands a dry loop, as reverb is such a diffuse sound it's hard to pin down and remove. Otherwise, this type of editing can be extremely effective.

Do "Expressive" and "Drum Loop" belong in the same sentence? Keep reading. . .

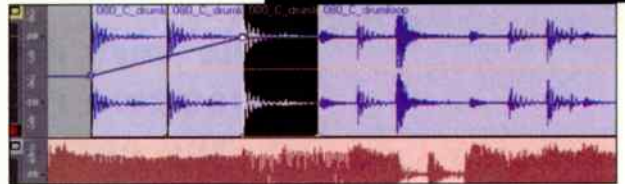


Fig. 1: The loop beginning (highlighted in black) has been copied and pasted twice just before the loop, providing a cool lead-in.

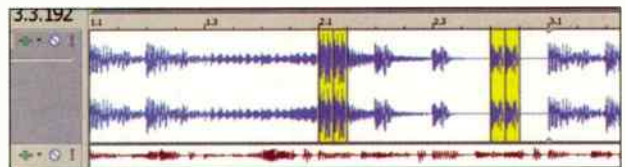


Fig. 2: Cut up a loop, then rearrange the pieces to add variety and interest (the cut and copied pieces are highlighted in yellow for clarity).

CHOPPING ISN'T JUST FOR FIREWOOD

Chopping a loop into pieces and rearranging them can work wonders. For example, cut a 16th note from the loop's beginning, then paste it in for the two 16th notes that precede the loop. While you're at it, draw in a level curve so they build up to the loop itself (Figure 1). The end result is a seductive lead-in.

You can also chop internally to the loop; for example, swap the 2nd and 3rd beats to add some variation. Or, "intensify" a part by chopping an eighth note hit in half, throwing away the second half, and repeating the first part twice (Figure 2). In this example, you get two 16th note hits instead of a single 8th note hit.

CHANGE THE TEMPO

If you're using REX or Acid-compatible loops (and their "stretch markers" are placed properly), you're in luck because they'll follow reasonable tempo changes. Real musicians simply do not maintain a rock steady tempo — not necessarily because they can't, but because they manipulate the "groove" to add emotional impact. Pulling back the tempo a bit can help emphasize the vocals in a sensitive verse, while speeding up a little bit provides the rhythmic equivalent of modulating upward by a semitone.

THE VIRTUES OF AUTOMATION

Dynamically varying the drum loop levels and timbre via host automation can help restore some of the dynamics that are taken away by repeating a loop over and over again. Even better, assign some of these parameters to a hardware control surface so you can manipulate the dynamics in real time, and do a "performance."

So are we grooving yet? You should be if you've taken the above tips to heart. It takes some extra effort to make a loop really shine, but when you hear how these techniques can make a tune come alive, you'll make that effort. EQ

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AN EVENING WITH CHRIS LORD-ALGE

by Jeff Anderson

Chris Lord-Alge, you say? Gazing at his discography is akin to reading a telephone book — one that would have only the numbers of some of the most important, genre-defining artists and albums of the past few decades. We could rattle off his credits, from Green Day to B.B. King, Eric Clapton to Bad Religion, and The Black Eyed Peas to H.I.M., for the rest of this article. And while we could give just the laundry list of doings, maybe drop a gear sheet or three on you, we figured it a much better use of our resources to catch up with him, pick his brain, and run off with a proverbial boatload of cool tips ranging from throwing huge drum tracks around to breaking into the business the right way. He was only too happy to oblige us, so read on as the man himself gives you an exclusive EQ tutorial on mixing for the masses.

EQ: So, when starting a mix, how do you initially approach a project?

Chris Lord-Alge: The most important thing is laying out your console properly. It doesn't matter if you do a lot of mixing, or if you're just some guy trying to get a quick mix of what you've been working on, it's all about how you lay your stuff out, level-wise, to get optimum control. It's all about organization: Setting up clear areas on the console that are all guitars, drums, or vocals — looking at the arrangement of the song and organizing accordingly. I know that, for all the drums, I have to comp down to have it on 16 or 20 faders. For guitars, I go through the song; put all of the guitars up and see which way they're going to work in terms of panning and, if there are 16 or 20 of them, I have to really decide which way I can comp them down.

EQ: You're mixing *everything*, an incredibly diverse array of stuff. How ready are the files when you get them?

CLA: I have two assistants, Keith Armstrong and Dim-e. They get the files

on whatever format — DVD-R, hard drive, CD, or even a hard drive that's in 17 different pieces! That usually comes in a box with a power cord with a case that's falling apart. About half the time there are files missing, or the session file won't open, even when we've sent out a letter to make sure all the files are good. That's why we like to get them as soon as possible. Face it, if you're picking Mario Andretti to drive your race car, you let him see the car way in advance — let him test drive it, let him make sure that he has everything he needs in that car before you send him out to race, or you will lose. . . .

My guys have a template — whether it's screaming punk, rock, hip hop, R&B, or country — our guys know where to park the audio on my Sony PCM-3348 digital 48-track. Before I even start the mix, they prep the files. They know what I like. They go in and clean it up as best as possible, prepare the drums the way I like them, then go through the vocals and erase all the crud. The audio maid comes in and gets out her duster. Sometimes it takes her an hour; sometimes it takes her six. They prep it, transfer to the 48, we make a comp master, and I mix from that. No matter how large the file is, we get it comped down to 46 tracks.

We always have the rough mix in sync for reference. My guys know how I'm going to want the tracks to be comped — I train them very well, and give them plenty of leeway on making comps that work. If it's over 100 tracks, then I will end up getting involved in the comping process. *Sgt. Peppers* may have been done on a couple of four-track machines, but there's no one trying to make a record in that fashion anymore. If we have to do a little comping, it's probably going to help the big picture. *Manageability* of the mix is way more important than spreading it out over some 112-input console. It all goes through the same funnel — and the smaller the funnel, the punchier the sound. The less you have to worry about reaching and grabbing, the more you can worry about important things like the

record's overall vibe. Because that's all that really matters.

EQ: How long does it take you to mix the average song?

CLA: I usually do one or two a day. That doesn't take into account the time my guys spend doing the prep work.

EQ: Where are you doing most of your work?

CLA: We just built a new studio in Burbank called Resonate Music. It has a completely open architecture. Very modern — it's a big, giant, open space. The control rooms are like pods inside an open landscape. Real clean lines, lots of windows, and lots of light. You can actually tell what time of day it is. We're here usually during the days only. We're not really night guys. Generally, when you're doing a couple of mixes a day, or even one, you're rolling out like a banker. You hear how our origination skills work? All of the guesswork has been taken out by that point. The only hitch is when a band guy comes in wanting to take a little time, to get used to everything, to get the vibe.

EQ: I was up until 4:30AM with a band last night working on a mix. I know, at that point, there's no way that they could have had any kind of a positive input. By then, it's so late. Everyone is so burnt out. . . .

CLA: If the stuff comes in prepared, and you have the rough mix for direction, then you eliminate all of the questions. Here's your big problem, and why you were there until 4:30AM: If they are ready to mix, then they are *ready*. All of their arrangement questions need to be answered, to be addressed, *prior* to the mixing.

If not, what's the point? You're not hiring me to arrange your song. That kills my creativity. You're hiring me to put my *spin* on it. I don't want to have to put my spin on it while you're still deciding what parts I *should* spin.

EQ: So how do you get that out of the way before...?

CLA: That's one of the rules. If you are not ready to mix, I am not ready either.

EQ: You ever had an instance come up where you had to do some arranging?

CLA: Very minor things will come up from time to time, "Mute that one part, or mute this part," or I will get a song that is in total disarray, arrangement-wise, and I will just put my fist to it and make the arrangement work. There are times that my clients go, "you just pick what you think works." It's not as if I'm going to discard half of what they put on there, but I'm going to weed it out, make it grow — to make it do what it's supposed to do. It's all for them [the client] to win. They always win. You're not going to want me to come to bat unless you really have it together. If

you don't — you're wasting the spark. The spark happens when it's ready. It's on the console and it's like, "here we go." Then, we should only be worrying about fixing the audio quality in the mix. That's the *only* thing to fix in the mix.

EQ: So let's dig a little deeper and talk about drum tones. Are you triggering a lot of the drums?

CLA: We've been known to have some snare and kick drum "helpers" to bring it all together. It's all about character.

EQ: When you say "helper," do you mean that you're having the real and triggered tracks playing at the same time, and using the trigger as an addition to the original sound?

CLA: Yeah. Give me the original drums, and then let me help the snare drum. If

you're replacing the snare drum completely then it's a drum machine, or it's a BFD [Expansion's drum sound software module]. They're fine if the song is the kind to use a BFD sound. They kind of sound like live drums because they have the leakage and everything, but it doesn't take long to figure out that they're not. If it's BFD, let us know so that we can think along the BFD lines not only with EQing but also with prepping. The BFD thing has like zero character — it's so hard to make them feel right. It's fake. I don't care how you sample it. It's the same deal with plug-ins: Certain gear cannot be recreated well by a plug-in. It may look like it, it may have a big old meter on it, it may move around the same way, but it's generally not going to have the character

EQ: I work on an old Neve 8108. That's what I've learned to appreciate about it. All the inconsistencies give it character.



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AN EVENING WITH CHRIS LORD-ALGE

CLA: Yeah, it's not about kHz and bits — it's about distortion, bending and rounding, and character and . . . tinted windows.

EQ: So what types of gear are you using to get your drum tones?

CLA: As far as gear goes, I've got the old [Universal Audio] 1176s, 1178s, and I've got a whole rack of Neve limiters. I've got two to four of them since the 2252s. The drums are getting a lot of Neve action and Pultec for the EQing. It's tubes and Class A Neve limiters, then Neve EQs, then even adding some plug-ins. A lot of stuff comes in a little too dark, so we used plug-ins for the EQ department — just to get the tracks a little brighter on the way in.

EQ: How do you get the drum tones to sound so "wide"?

CLA: It's all about the balance. I'm not pummeling the tracks with compression. Use the compression for character, not pummeling. Like guys that pummel with Distressors on the tracks, I'll turn them back. Don't do that to me! Make your nuked room tracks and then leave them on the side — give me the un-nuked room tracks so maybe I can do my own thing with my \$8,000 limiter. I think the biggest problem that I run into with drums is that tracking engineers get heavy-handed. They build it in, it's too late to make changes, and it's not good. I would rather have 16 extra tracks where you didn't mangle it so I can maybe use your mangling with my mangling and make it all work together. I came across an instance where there was only one drum room track and it was nuked, when the chorus hits it drops in level, and I have one mono drum room that you nuked. What do you want me to do with that? Thanks! Where's the original? Oh, we consolidated it?

Occasionally I'll run the snare drum through the half-inch machine and back, then just slide it in Pro Tools and fix it. We use that to take the front end off. We do experiment with that a lot.

EQ: When you're mixing overheads, how much are you riding the faders?

CLA: Well, you know, you're going to have to do it. You can't get away with it; you're going to have to ride the faders. If the drummer doesn't balance well, or

you're missing cymbals . . . you have to do something.

EQ: So are you using compression on the overheads?

CLA: It all depends. If it's already come to me mangled, I have no choice but to use the console [SSL compressors] a little bit. If it's completely un-mangled, I might use the 1178s and then use the line trims to adjust how much spank I'm getting. If the cymbals start going away too easy, then I'll just back it off. It's all about how much character I need and how much control I'm going to lose. Once you start compressing the overheads too much, you lose the crashes — they just fold right in. It's tricky, and it does vary widely from album to album.

EQ: What are your favorite compressors and tricks for the bass tracks?

CLA: The [Universal Audio] 1176. I have various years of them, and some are more aggressive than others. The biggest problem with bass is the amp, phase, or delay. It's all about the phase and delay issues. If I can't get the amp phase to feel right with the DI, and if the DI sounds really good, the amps are gone. I'll bring the DI up on two faders for level.

EQ: What do you mean two faders for level?

CLA: Well . . . just bring it up on two faders. Why push the fader through the roof? Put it on two channels. The guy who trained me, Steve Jerome, he'd print the kick on channel one and two, and the bass on 23 and 24, and then he made me listen to the difference. The two faders just sounded better. It's just two parking spots. If you have an open fader on the console, put the bass on two channels and the faders at 0, not +5. The fader sounds better at 0 than +5. The problem with the bass phase is that some guys get it, and some guys don't. Sometimes I can't get the phase right between the amp and the DI tracks, or the sub and the SansAmp tracks. I think they should just put a sync pop at the beginning. When you're recording the bass, make sure you record the guy plugging in. You know, that snappy sound or transient? When you line it up, it will be perfect. Makes too much

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Alan Says



We just wrapped up *Pirates of the Caribbean: Dead Man's Chest*, and there are Royer R-122V tube ribbons all over the score. I used three R-122Vs on the decca tree, and also extensively on the woodwinds.

There's something going on in the mids with Royer's tube ribbon mics that's hard to explain; there's a reach and depth and lushness that sounds magical to me.

For some remote island cues that needed a cannibal vibe, Vinnie Colaiuta, Abe Laboriel Jr., and JR Robinson played drum kits simultaneously on the Sony scoring stage. I captured each kit as a mono setup - panned left-center-right - using a single R-122V over each kit. It sounded amazing.

Alan Meyerson

(Scoring Engineer & Mixer - Hans Zimmer, James Newton Howard)



See photographs of Alan's "Pirates" sessions at royerlabs.com - Session Photos

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AN EVENING WITH CHRIS LORD-ALGE

sense, doesn't it? All you gotta do is plug the cable in.

EQ: Kind of like old movie clapboard. . . .

CLA: Well they did that for a reason. It's right there in your file: Just move the audio file, or whatever it is, and then check it out. You might like it, or it might suck, but it gives you a shot.

EQ: Back to time alignment. How much time do you, or your guys, spend getting the drums in time and phased correctly?

CLA: I don't have them touch that at all. Let me deal with that. I'll hit mono and start phasing myself out. I'll have a phase festival. It's just force of habit from years and years of doing this. You know what it

When mastering engineers get mixes that are L1'd ["over-finalized" by the Waves L1], it's a real drag. When a client leaves here with a mix CD, it's exactly what came off the console — no bumping or tricking.

is? You just put the whole drum kit in mono and start listening, flip the kick and snare out of phase on the console and say, "OK, does the snare have more bottom now? Does the kick feel louder? Did the toms vanish all of the sudden during a tom roll?" Another thing is: So you have the kick and snare in the room mics, right? Flip the phase. Did the room just get more kick or more snare? I'll always lean toward the snare popping more. Sometimes it's just the snare you have to flip out of phase. Then you have the snare top and snare bottom . . . well that's obvious, that's the real easy one to pick. Generally it just takes a phase button on a console. Time alignment only really comes into play with audience mics on live recordings. On the Woodstock show in '94, the freaking crowd mics were like 800 milliseconds late! It was cool, but when I aligned them I could use the roar

from the back and it wasn't this big echo.

EQ: What about guitars? What's your favorite gear and what problems do you run into the most?

CLA: [Universal Audio] LA-3s or some old tube inward connection limiters. They're kind of like old Fairchilds. They have two knobs and one setting: stun. You just insert and go. They are tube limiters. I run into acoustic guitars having the fret slide louder than the guitar.

EQ: So do you still compress as normal, then automate? What do you do?

CLA: The sound of the guitar is more important than the artifacts coming from it. It just means you've got your hand on it, riding those tracks. Or sometimes we just have to get rid of some of the crud in Pro Tools. Also, with the amount of tracks that guys are using, there will be a guitar chord that just hangs over to the next section as the song changes and that's really bad — you have to get rid of that overlapping. By getting rid of that, you just make it sound like it was one part. It's intuitive musical knowledge. Just think about the song, and use the tools in front of you.

EQ: What dB range are you mixing at?

CLA: I don't have an exact range, but it's quiet enough that I can hear the fans in the hard drives. I use a boom box a lot of times, and that's pretty quiet.

EQ: Do you use a stereo bus compressor on your two-bus?

CLA: I use a Focusrite Red 3. I'm not pounding it all — just breathing on it. It's more for the color, and to compact it a little bit. When mastering engineers get mixes that are L1'd ["over-finalized" by the Waves L1], it's a real drag. When a client leaves here with a mix CD, it's exactly what came off the console — no bumping or tricking. It is a good device. Look, it's an effect. I think guys who make CDs with that are tricking the client. You have to stand by your mix file. What you deliver should be a flat copy. Now you can normalize it, so that your peak is the roof (or zero.)

EQ: Are you mixing down to half-inch?

CLA: Yeah, we use half-inch. Ampex at +6 . . . and we're hitting the needles usually one or two dB over zero, depending on the song. Then it all goes on the HD file at 96kHz, 24-bit. We have one Pro Tools rig just for the two-track. I want all my versions in sync with the master so that you can go between any of them and they are all in sync.

EQ: So do you A/B them?

CLA: You *could* do that, but the purpose is to have all of the versions and edits in sync. Here's an example: You're like, "ah crap, a clean version. I forgot that song has [a non radio-friendly word] in it, you gotta make a clean version." Well, the instrumentals are in perfect sync — just flip it in, and flip it out. Everybody wins. Or here's another example: Your favorite limiter made a crunchy noise at the beginning of the song. Well, since it was first pass, it had cleared its throat by the second pass. You can fix it — all of the different versions are in sync, so just use the intro from the vocal up version. You can't guarantee that 100% of your files leave without a speck of crud on them, because of an old piece of gear. It's tough enough getting the files in and out of here in perfect order.

The whole key is in documenting. I learned that from Bob Clearmountain — he documents everything perfectly. He came up with this great program called "Session Tools." Our track sheets are typed, every CD is printed on, we have backups upon backups. It's audio. It's our lives. Sure, no one's gonna die if a mix is lost, but it won't if you're into the discipline of organization. . . .

EQ: So . . . vocals. Do you have any standard gear or tricks that you use?

CLA: I have a couple old blue face 1176s, one in particular that's all wired wrong inside. It's perfect! The key to vocals is prepping the track before it hits that limiter. We pre-EQ it. We will cut up the audio files sometimes to levelize it. We'll use a couple of plug-ins. We'll always experiment with vocals 'cause, hell, even transferring to analog doesn't work sometimes.

EQ: How much are you compressing and automating the vocals?

CLA: Oh, we're hitting them with a

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baseball bat like three or four times over. I'm not using the compression to save myself from having to ride the fader; I'm trying to put some character into it. I want it to sound like it was recorded on a 16 track, with a Fairchild, hitting the tape nice and hard, adding all of that color and character into it — making that in your face sound. We're trying to pull together a rack mount 2" machine that we just XLR in and out and to use as an effect. The half-inch doesn't emulate a 24-track vocal sound, and that's what I'm after . . . like a 30 or 15 ips Dolby vocal track sound. The half-inch is too clean; it distorts before it bends. Well, what's the tape width of a 24-track? It's like a 12th of an inch per track with the gap. There's not much room there. You just can't emulate that.

EQ: You're immensely successful in this field. How do you recommend that people break out of the hobbyist stage and into the big business?

CLA: There's only one way to get in the business, I believe. Find the nearest recording studio that has somebody cool in it, and beg, beg, beg to make the guy behind the board coffee. Beg to clean the toilet, beg to work there. Be a fly on the wall, be in the room with the guys who make hits like Bob Clearmountain, or Tom Lord-Alge. Be in the room with Andy Wallace. Do whatever you can do to get in the room. Take note of everything they do, and find a way that you can do it for yourself. And do it better. Learn the techniques of the vanishing art of recording from the guys that really know how to do it.

When you are starting out you are in the prime time to absorb, to discipline yourself. If you're a slob, it's not going to work for you. Be ready to work 15 or 16 hours a day. Make friends, and do it all for nothing. Get up off your ass and put down the bong; get your hands out of your pants and head to the studio. I was 12 years old when my mom took me to the studio and I wanted to be there every single day. That's the love for it. All the stuff you need to learn, you really need to learn while you're young. Listen to the music — don't just look at it. Nobody cares what the impedance is; all they care about is when you can walk into the room, set up a mic, turn the knobs, hit record, and make everybody go "wow." **EQ**



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M-AUDIO BLACK BOX RELOADED

It's a computer interface *and* the key to rhythmic guitar parts

by Craig Anderton

So what's a guitar recording interface with a bunch of amp models doing in here, given the drum/rhythm-oriented theme?

Simple: It fits the theme.

The Black Box (BB for short) is ideal for EQ's style of applications-oriented reviews, because just saying what it *is* doesn't help much in understanding the way it can *applied*. The BB is a indeed different from the norm, because it doesn't follow the traditional interface/processor paradigm.

What's more, M-Audio recently relaunched the BB with Version 2

First, do some homework: Surf on over to www.m-audio.com/products/en-us/MAudioBlackBox-main.html for the details, so we don't have to waste space here on repeating the specs. You'll also find info there on the Black Box Pedal Board accessory, which has an expression pedal and two footswitches.

SO IS IT A POD OR AN ADRENALINN?

Neither. The BB was designed in conjunction with Roger Linn (the drum machine/MPC guy), and borrows liberally from his outstanding AdrenaLinn guitar processor. But what many people don't

- It's a recording interface. So if you're working with a host program, you can catch any inspiration and blast it into a track.
- There's a mic input *and* a guitar input, which can record simultaneously (with direct monitoring, which means you're monitoring the processed signal going into the computer — not the one coming out of the computer, which is subject to latency).
- Pretty much everyone agrees it's more inspiring to write to drums than a metronome, and the BB includes some fine "load and go" drum patterns for its built-in drum machine.
- There's guitar processing, because like having drums, a good guitar sound will inspire you as well.

The other main application is more specific: The BB provides unusual, tempo-synced effects — perfect for any kind of highly rhythmic musical genre, like hip-hop, trance, techno, etc., but which can also add a new dimension to pop and rock parts. You can put the drums and mic through the effects, as well as delay and reverb, which can be especially cool for drum overdubs.

This is the AdrenaLinn part of the equation; overall, BB is slightly more limited in terms of tweaking, but includes more amp models and is easier to use.

WE ALL WANT A NO-BRAINER INTERFACE

One of the requirements for a songwriting tool is that it have a no-brainer interface, so I did the "musician reality test" of trying to make it work without reading the manual. I/O is obvious: Four knobs on the right control levels for the mic in, guitar in, output level, and a control for mixing the direct monitoring inputs with playback from your host. Simple enough.

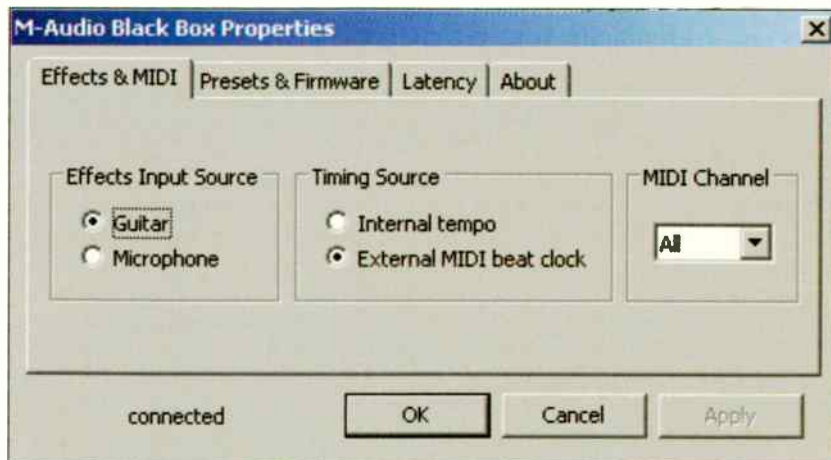
Ten buttons access the various editing functions (drums, amp type, effects, etc.). These take a little bit of thought, but not much. When you call up a function,



The Black Box interface is simple, so tweaking parameters is simple too.

firmware, which alters its personality even further. Aside from adding features, the BB is now compatible with M-Audio's Pro Tools M-Powered software, which is also somewhat misunderstood (see sidebar).

know about Roger is that he's a songwriter with a few hits under his belt. So it's not surprising that perhaps the primary BB application is as a *songwriting tool* for guitarists — just scan the feature set, and you'll see what I mean.



The control panel applet is where you choose the Black Box effects input and timing source, adjust latency, update firmware, and the like.

four related parameters show up in the display, and each has an edit knob. For example, if you call up the FX function, one knob chooses the effect. The other three choose effect parameters (e.g., for chorus they're FX speed, which can be tempo-synced, FX depth, and FX wet/dry). Bottom line: Upon installing the drivers, I had no problem getting audio in and out of the host, choosing effects, and editing them.

However, the latest firmware adds a "Shift" function to some controls, where you "double-click" a button to access a different function. This is not obvious, so check the updated manual or manual addendum (both available online). For example, the original BB amp models had bass and treble parameters. In the update, if you double-click the "Amps" button, the bass control does double-duty and affects

the midrange. Similarly, double-click on the dedicated Delay button to access parameters for the reverb that's new to V2.

Incidentally, BB V1 owners can grab the update for free. And yes, it's worth the download time — even if you're on dial-up. **EQ**

Product type: USB interface with built-in guitar processing, tempo-synced effects, and drum loops

Target market: Guitarists, particularly those into songwriting, who need innovative effects and computer I/O.

Strengths: Novel, inspiring effects. Pro Tools M-Powered compatible. Includes drum machine and mic input. Easy to navigate. About half the price of an AdrenaLinn but has more amp models and the same effects pedigree.

Limitations: Can't monitor drums while recording stereo processed guitar without recording the drums as well (you can do this with both in mono). Can't mix and match amps and cabinets. No software editor/librarian.

Price: \$329.95 list price

Contact: www.m-audio.com

M-Audio Black Box: Conclusions

Few products combine guitar processing and a USB interface in a package specifically for guitarists; the main competition for the BB in this price range is the Line 6 TonePort UX2 interface (doubling your budget puts you in reach of the AdrenaLinn — which doesn't have a USB interface — as well as the DigiTech GNX3000 and Line 6 PODxt Live, which do).

Let's get the main BB limitation over with first: routing when recording. The drums and guitar share the same stereo feed to the computer, so if you want the drums to be a scratch track that you hear in your phones, but also want the processed guitar to go to the computer, the drums will be recorded in the same track as the guitar. There is a workaround where you can split the guitar into

one of the stereo channels and the drums into the other, but then you lose the benefits of any stereo effects on the guitar (such as tempo-synced panning). Also, I wish there was a stereo line in for processing other signal sources, and a software editor/librarian. However, one cool routing feature is that you can record simultaneous dry versions of the guitar and mic signal, which is very useful if you're into re-amping. (Note that the latency for my system was below 6 ms, but the direct monitoring means that's not much of an issue anyway.)

Compared to the UX2, the UX2 has more versatile models (e.g., you can mix and match cabinets) and offers a stereo line input for processing gear like keyboards, drum machines, etc.

It also offers mic preamp modeling, extensive software-based editing, and is supported by a ton of free patches.

On the BB side of things, though, you get some very cool beats for the drum machine, and of course, the tempo-synced effects are the BB's outstanding feature that, so far, no other hardware device can touch. These really are something special; as a "techno guitarist," I find that adding beat-synced effects to guitar gives a synth vibe but retains the guitar's organic quality. You can also tap tempo, so you're not restricted to being tied to the host's MIDI clock. For live performance, though, there's no hardware MIDI in jack if you want to sync to something like an MPC.

While the drum machine may seem conceptually more like a glorified metronome, processing it through the effects and laying down some drum tracks can give truly unusual, and very commanding, drum sounds. It's a nice bonus, as is the "lite" version of Ableton Live included with the package.

Another very important point is that BB is approved hardware for Pro Tools 7 M-Powered software (\$299.95), so it opens up the Pro Tools world without having to go the Digi hardware route.

The bottom line is if you want to hook into a computer host with a guitar and mic, while taking advantage of truly innovative effects and some inspiring drum loops, Black Box wants you. And vice-versa.

PRO TOOLS M-POWERED: THE GUITARIST'S PERSPECTIVE

A little history: For years, Pro Tools required using Digidesign's hardware DSP cards and interfaces, which upped the price considerably. As native apps starting chipping away at the Digi dynasty, though, Pro Tools LE appeared — you still needed a Digi interface, but all DSP was now handled by the computer.

Today we have yet another variation: Pro Tools M-Powered (PTMP for short). Somewhere along the line, people got the idea that this was somehow a "lite" version of Pro Tools that lacked the capabilities of a "real" version of Pro Tools LE. Upon further inspection, though, PTMP is pretty much Pro Tools LE except that it works with any of several hardware interfaces made by M-Audio, including the Black Box.

So what are the differences? Basically, they involve options. PTMP does not support DigiTranslator, the DV Toolkit, Digidesign's Ethernet-based control surfaces, and Avid video peripherals. Otherwise, the specs are familiar: up to 128 audio tracks, 256 MIDI tracks, 24-bit resolution, up to five RTAS plug-ins per track, and the like.

PRO AND CONS OF PRO TOOLS

With Pro Tools now more affordable, it's worth examining where it fits into the world of software hosts. First off, Pro Tools 7 is a major departure from previous versions. MIDI is more sophisticated, and the inclusion of Instrument Tracks makes it easier to deal with virtual instruments. There's also support for the

"Acidized" file format (which made its debut in Sony's Acid) and Propellerheads' REX file format, both of which allow for relatively painless time- and pitch-stretching — at least in theory. Problems arise if the files were not edited properly for stretching, because they may stretch over only a narrow range, and there's no way to edit the "stretch markers." (To date, the only multitrack hosts that can edit Acidization markers are Sony Acid and Cakewalk Sonar, and only Propellerheads' ReCycle can edit REX files.)

It's significant that Pro Tools (like Samplitude) started off as an audio program intended to replace the traditional multitrack recorder/mixer-based hardware studio. MIDI was never its strong point, nor was it intended to be. Programs like Performer, Logic, Cubase/Nuendo, and Sonar started as MIDI programs and added audio, so their current MIDI capabilities exceed that of Pro Tools, even with version 7's

enhancements. One side result is that PTMP doesn't do notation or tablature, both of which depend on strong MIDI foundations.

However, Pro Tools' workflow is natural for those used to recording audio. It can look like a mixer, with inserts where you expect them to be. People who cut their teeth on Pro Tools can fly around the user interface, and if their main orientation is recording and editing audio, many of the bells and whistles offered by other hosts — while essential for some musical applications — aren't that relevant to the Pro Tools experience.

SO YOU JUST GOT A BLACK BOX...

...and you wonder if you should go the Pro Tools route. If you plan to do extensive MIDI work, I'd recommend you keep looking. But if you're mostly into recording your guitar, your band, vocals, etc., Pro Tools has a lot going for it. For one thing, it's a standard; I'd guess there are more file

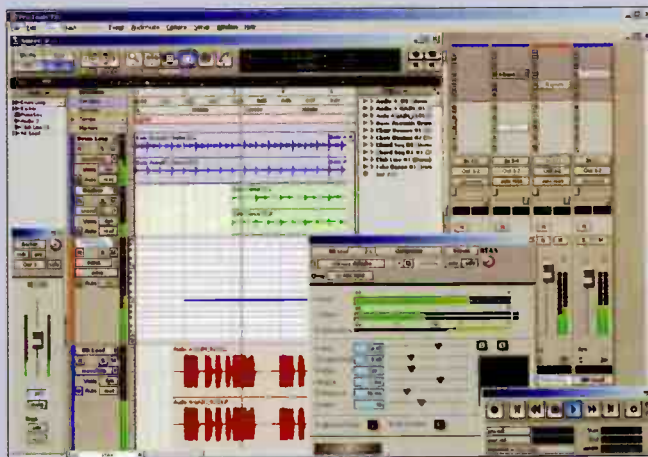
exchanges done with Pro Tools sessions than for any other host. Second, it has a huge amount of third-party learning support in terms of books, courses, and tutorials. Third, in recent years Pro Tools has become far less insular. You can rewire programs like Reason and Live into it to gain the benefits of additional recording options, and much Digi hardware is ASIO-compatible so that a device like the Black Box works with *any* ASIO-compatible host, not just Pro Tools.

Nor are you forced

into using plug-ins and instruments compatible with Digidesign's RTAS format. Expansion's VST-RTAS Adapter (for Mac and Windows) opens up the wide world of VST plug-ins to Pro Tools.

Compared to its main competitors, Pro Tools is less feature-rich; for example, there are fewer advanced MIDI features, and fewer bundled plug-ins (although the ones that *are* included are excellent). But also consider that PTMP is under \$300, which is relatively inexpensive compared to some other programs.

A lot boils down to the type of music you do. If you're into highly electronic musical styles, then it's worth considering the many hosts with feature sets that fit these genres like a glove. But for straight-ahead audio recording, it's hard to go wrong with Pro Tools and its intuitive workflow; Pro Tools M-Powered makes it just that much more affordable.



If you can't tell the difference between this Pro Tools M-Powered screen and Pro Tools LE, it's because there are hardly any differences at all.



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High-quality reverb can restore a subtle realism to acoustically dead studio tracks or digitally generated sounds, as well as warp and bend a sound beyond recognition — if that's your thing.

It can also cost a lot of money.

Pro-quality hardware reverbs can soak up well over \$1K at checkout; high-end software is generally not cheap either, and it still might suck (CPU power, as well as eggs). IK Multimedia neatly addresses all these issues with their Classik Studio Reverb plug-in, which packs some serious algorithms and delivers them with a detailed, yet facile interface that mimics the vintage hardware units the software emulates.

THE INTERFACE

CSR includes four separate plug-ins: Hall, Inverse, Room and Plate. Each plug-in has its own interface, with an Easy mode that puts all the major controls on one screen, and an Advanced mode (spread over several pages) for precise control over all plug-in parameters.

Very cool: Four assignable macro controls provide simultaneous control of up to eight destination parameters via one manual control. You can have each macro set value limits for each parameter, as well as choose a linear, logarithmic, or exponential response curve. This is extraordinarily useful and highly entertaining, as you can shift on-the-fly between different acoustic spaces with one fader.

What's more, two LFOs and two envelope filters provide additional modulation sources, and you can automate up to eight parameters per modulation source. (Interestingly, a key to the vintage hardware reverb sound was modulation, which added complexity to the simpler algorithms of the day.)

APPLYING CSR

The sound, by the way, is fantastic. But let's get this straight: CSR is not a convolution reverb, it's an emulation reverb.



The Plate algorithm's Advanced mode has buttons to select various editing screens.

The program emulates the sound of the classic 'verbs you've heard on records, rather than using algorithms sampled from actual acoustic spaces. This frees the program from having to sound like a cathedral in France or a bathroom stall at Wendy's, and also frees the CPU from having to calculate the convolution algorithms. It can instead focus on providing more control over more parameters of the classic reverb sound components.

This kind of control can be almost frightening. You can still construct virtual spaces by tweaking parameters in Easy mode for a classic sound, but you can also wave your freak flag high in full psychedelic regalia by getting really weird in Advanced mode — where I suspect hardcore reverberites will spend most of their time.

I opened CSR in Acid 5.0 on my 3GHz laptop with an RME interface, then set up all four plug-ins in Advanced mode. Unfortunately, the Hall plug-in had a couple of freakouts and locked up on me. Reloading seemed to solve that issue, but this particular plug-in has issues with noise when manipulating controls. [Editor's Note: We were not able to duplicate this on our system.] If you get your settings, then leave it alone. The Hall works well, and creates acoustic spaces very easily. The other three plug-ins were rock solid no matter what I did to them, whether inserted alone on a bus, or assembled to warp and mangle a single track.

CONCLUSIONS

The Plate plug-in is fantastic for vocal tracks and drums — I like tight reverb on vocals, and this 'verb is certainly tight. I don't really get into the Inverse

style all that often, but modulation control of the buildup and cutoff can get you to a very dreamy place. Hall is fine, but the Room plug-in is my overall favorite. The sound is so detailed that you can almost feel out the space with your ears. It is also one of the easiest ones to mess with, as the parameters are pretty straightforward.

The down side? Actually, not much. I would have liked to be able to warp the Hall plug-in more, but it certainly performed its standard duties well. The gorgeous, large screen kind of clogs up the interface in most DAWs, but there are workarounds (like two monitors or screen layouts). My only real complaint is the USB dongle key, which takes up a precious laptop port and is an accident waiting to happen while mobile. Oh well, I guess these are dangerous times.

All in all, CSR delivers a whole lot of reverb — with a great interface, useful automation, and terrific sound — without brutalizing your processor or cleaning out your bank account.

Sam Wheeler has been creating and recording his own music since before he was 10. As a player of various stringed instruments, he irritated the eardrums of many unsuspecting New England rock aficionados in various group and solo performances toward the end of the last millennium. He currently resides in Cambridge, MA, but may return to his home planet any day now for a long overdue extreme makeover. EQ

Product type: Plug-in for VST/RTAS (Mac, Windows) and Mac AU; Windows XP/2K, MacOS X 10.3 or later.

Target market: Those who want the sound of classic hardware reverbs.

Strengths: Great sounds. Versatile. Extensive modulation options. Easy and Advanced interfaces.

Limitations: USB dongle used for copy protection.

Price: \$339

Contact: www.ikmultimedia.com

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CAKEWALK KINETIC 2

A/K/A "the needledrop music plug-in"

by Craig Anderton

"It's not what you think . . . really . . . I can explain. . ."

Aside from being a staple in any romance movie or soap opera, that line also applies to Kinetic 2. No, EQ hasn't changed its focus to consumer-oriented software. Sure, in theory that's what Kinetic 2 is all about; but play with it for a little bit, and you'll find the Secret Hidden Application that's of interest to far more than consumers.

KINETIC HAS POTENTIAL

Kinetic 2 is a Windows-only application that some people have referred to as "Reason lite." Going from foundation to finished tune, you first create or load "parts" (like drums, bass, pad, etc.). These are Kinetic 2's individual loops. Up to 16 parts make up a "groove." There are 64 total grooves in a song, and there's a cute little grid for picking the groove you want to play at any given moment. At the highest level, there's a song track where you can string these grooves into a sequence.

Parts can be soft instruments triggered by MIDI, or WAV files. If acidized,

the WAV files will stretch with tempo. Instrument-wise, Kinetic 2 includes the Psyn II (sophisticated, highly editable virtual analog synth), Roland GrooveSynth (lots of different sounds

Play with it for a little bit, and you'll find the Secret Hidden Application that's of interest to far more than consumers.

with decent editability), and the DropZone drag-and-drop sampler. For effects, you have the Alias Factor lo-fi processor, PowerStrip (yet another incarnation of Cakewalk's X-Y processor), HF Exciter, ModFilter, Chorus/Flanger,

Para Q (EQ), Classic Phaser, Compressor/Gate, Tempo Delay, and Reverb. Many of these are borrowed from Project5.

But before going any further, let's look at the real reason why we're here.

APPLYING KINETIC 2

One cool thing about Kinetic 2 is it's a perfect laptop program. There's even a "grid" controller that lets you tap out rhythms or melodies using your QWERTY keys. But what's really special about Kinetic 2 is that it can be a ReWire client.

When you're dealing with software DAWs, like Sonar, Cubase, Digital Performer, Logic, etc., you never really forget that they're based on the linear recording paradigm. A few programs have broken out of that mold, such as Acid, Live, and Project5. Even so, they're still designed to record music rather than be songwriting tools (although they can provide that function quite well).

Kinetic 2 makes no apologies for it's *raison d'être*: As it says on the manual's cover, "Produce Your Own Beats." But what I'm finding is that it makes a great companion to more traditional host programs. When rewired into the host, I can come up with a slamming rhythm track within seconds that puts click tracks and metronomes to shame — and makes far more inspiring noises. And of course, one thing Kinetic 2 can't do is audio overdubs: vocals, guitars, etc. So after getting the groove together, it's a simple matter to switch over to the host, add some ear candy, and — done.

In some ways, I'm seeing Kinetic 2 more as a sound library. It sort of fits in the slot between eJay's "sound-library-plus-sequencer" approach and something like Reason or Project5, in the sense that it produces canned beats, but ones that you can modify to a great extent if you want.

So the bottom line is these days, I'll use Kinetic 2 while I'm on the road to cook up some nice beats, then rewire them into my host when I get home and



The top strip is the groove mixer, where each channel hosts a part. Note that the mixer settings can be totally different for each groove. Below that is the MIDI editor, and at the bottom, the song arranger. Toward the right is the Grid note entry interface, which can be triggered from a QWERTY keyboard.

do the overdubs. But I've also used Kinetic 2 to come up with some cool tunes when chilling back at the hotel — it sure beats watching yet another rerun of *Back to the Future III* on HBO. Sometimes those tunes even turn into something.

And when I'm home, Kinetic 2 has served as a great "idea kickstarter." Sure, it's a program in its own right, but I suspect the *EQ* crowd will see it as a writing module you can rewire into your host of choice.

CONCLUSIONS

I suppose I should also talk about its intended application. Okay. The MIDI editing is excellent and simple — it reminds me a lot of the way Live does MIDI, which in turn reminds me a lot of how Project5 does MIDI. You can use a standard piano roll grid, or more of a step sequencer approach, and automation (of the mixer, parts, or even the song arrangement) is drop-dead simple as well.

The key to Kinetic 2's speed is the browser that appears when you want to

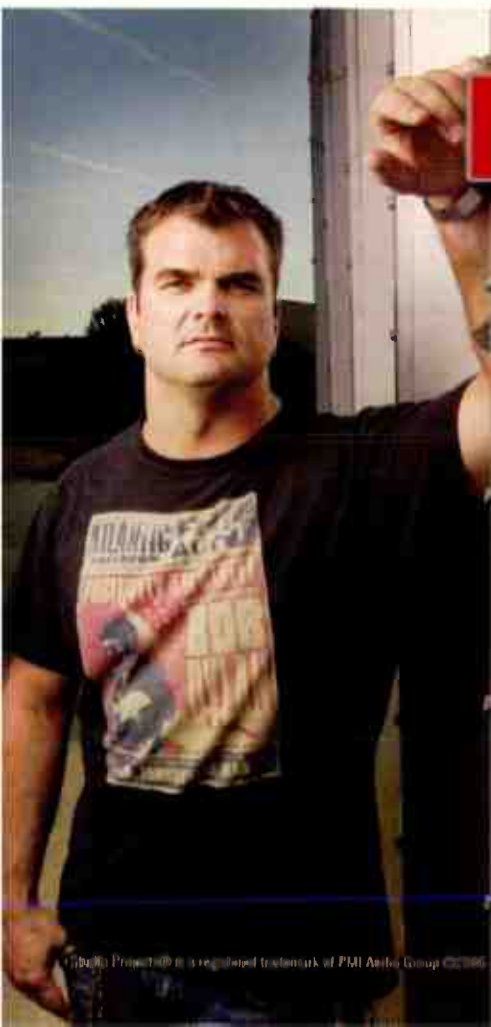
load or create a part. You specify the type of sound generator you want to use (audio loops or various broad categories like drums, pads, bass, etc.), then a particular style of music, which then reveals a selection of possible patterns or loops. If you choose a MIDI device, you can then use the browser that shows an instrument, style, and device chain. Device chain? Yes, you can save combinations of instruments and effects. Without the browser, Kinetic 2 wouldn't be the high-speed groove generator it is.

Given the price, I didn't expect Kinetic 2 to offer as many sound-warping features as it does. The mixer for the various parts in each groove includes two aux sends and a master effects chain slot, so yes, you can slam a compressor in the output to beef up the sound a bit. There's even a "MIDI learn" function so you can use an external control surface, but in an inexplicable *faux pas*, the mixer channel solo buttons can't be controlled via MIDI. Huh? If you want to do a break-

beat kinda thing, you need to create a separate groove with just that channel, and trigger it (which can be instantly, at the next measure, or at the end of the current groove).

Bottom line: I've found Kinetic 2 to be surprisingly useful, and if you have a penchant for grooves, you might too. **EQ**

Product type: Beats/groove creation program that's also a great "host accessory."
Target market: DJ/groove musicians, but it's more versatile than just that
Strengths: Rewires into hosts. Nice selection of content. Put grooves together really fast. Surprisingly sophisticated editing functions and feature set for this type of program. Useful selection of instruments and effects. Hosts third-party VST and DX instruments/effects.
Limitations: Can't control mixer solo buttons via MIDI. Instruments aren't VST, so you can't use them in other programs.
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API A2D

Yes, they shrunk the API sound into that little box

by Jeff Anderson

API is marketing their new A2D as “ear candy” — and that slogan nails it. The A2D contains a pair of preamps for raising mic-level signals to workable line levels. These preamps feed analog XLR outs, as well as a digital converter, which provides AES and S/PDIF digital outs (this is the first API device with digital outs). The A2D handles all common samples rates from 44.1 to 192kHz.

The 24-bit converters have discrete analog op amps on the front end, and there are two level controls

to adjust the digital output volume. These controls have come in very handy during my mixing sessions; you

can control the amount of signal running through the unit, which affects the overall tone, as well as the amount of signal leaving the unit.

The A2D can run from an external clock source via SuperClock, accepted from a BNC cable; a front panel light indicates an external sync source. By using a 9-pin D-sub connection, you can even link multiple A2D units together so that they all run off of the first clock in the chain. (At our studio, we slaved the A2D unit up with an Apogee Big Ben, so every digital piece in our studio was running from the same clock source.)

Normally, I wouldn't take the space to give props to meters, however the 20-segment LED meters on the front panel are incredibly vibrant. There are two complete sets of meters; on the input side they range from -30dB to +27dB. On the digital side, they display -56dB to 0dB. Even if you are using the unit as an analog preamp, the digital meters indicate the current levels.

APPLYING THE API

After using the A2D for both tracking and mixing, I couldn't help but notice

how clean and warm the sound was. The 312 mic preamps are the same used in API consoles, as well as their 3124 quad mic preamp. As you raise the input level, you can hear the transformer saturating — a huge part of that glorious, classic API sound.

On the analog side, this unit covers all the bases. Over the past few months, we've used it on everything from bass, vocals, guitars, overheads and even keyboards at line level. It has XLR analog ins and outs for each channel on the



back of the unit, and line level TRS (balanced) high impedance inputs on the front. Additionally, the back has balanced TRS inserts before the A/D converter. These allow inserting analog processors into the analog chain prior to conversion; an obvious application is a limiter to prevent overloading the converters.

You can handle pretty much any signal, as there are switches for polarity, phantom power, a -20dB input pad, and mic/line select. An additional 2:1 transformer switch provides -10dB of attenuation by selecting a different tap of the preamp output transformer. By attenuating the output with this switch, you can “hit the unit harder” or pass more signal through the A2D to get more color, yet still be able to turn down the preamp output so that you have a manageable line level signal to send to your recorder.

One other nice feature: During my mixing sessions, I've been sending our console's analog signal to the A2D, and then using the AES port to send the digital out to an Alesis MasterLink. Thanks to the A2D's volume trims, it's possible to control both the left and right levels going to the MasterLink ins.

CONCLUSIONS

Last month, I used the A2D on quite a few sessions. When overdubbing, I routed the signal straight from the mic, to the A2D, then digitally through an XLR cable into our DAW's AES port, bypassing the console. The presence of an API was very apparent. I usually prefer to hit gear hard to get the most color out of it, so the 2:1 transformer routing switch rocks! By attenuating the levels at both the input (pad) and output, you can really hear the saturation and

color that the A2D adds to your sound. This unit is extremely quiet, but even when you're running it hard, the sound remains noise-free, pristine, and full of color.

The A2D is so versatile and has so many features that relate to so many applications, I consider it an exceptional value. Personally, I feel getting “that API sound” alone is worth the cost — especially because it works in an all-analog or analog in/digital out context. We even used the A2D as in insert from our analog console on a vocal track as an effect to “jam it out” and get that API sound. It makes a great front end for your DAW, thanks to clean analog engineering and solid digital conversion — and more importantly, because it sounds crisp, clean, warm, and fat. That little rack box really does contain the famous API sound. **EQ**

Product type: Rackmount stereo preamp with digital and analog outputs.

Target market: Higher-end studio and stage applications.

Strengths: Can color the sound in a very desirable way. Lots of interfacing options. Gives the “API sound” at a lower price point.

Limitations: No significant limitations.

Price: \$1,995

Contact: www.apiaudio.com

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MOOG VOYAGER RACK SYNTHESIZER

There's a reason why so many studios have a Minimoog around somewhere . . .

by John Davis

The Moog Voyager is the greatest analog mono-synth ever made. There, I said it. Now that's out of the way, I can explain how and why I came to that conclusion . . .

I've spent a lot of time with classic and not-so-classic analog synthesizers, from original Minimoogs and Korg MS-20s to the Yamaha CS series and my prized Octave CAT synth, as well as spending time on one of the largest fully functional modular synths in the world (a 200+ module hybrid of Polyfusion, Moog and MOTM modules). Every synth has its own personality and set of idiosyncrasies, at times both charming and frustrating. In a recording situation, analog synths — monosynths in particular — are great fun, allowing for hours of tweaking and making cool, unique sounds . . . but this *sucks* when it's time to take those songs on the road and perform them.

The Minimoog Voyager answered everyone's prayers when it was introduced by offering the legendary Moog sound and style with full digital recall of all parameters and some new features, such as additional LFOs and routing flexibility (for all the specs, go to www.moogmusic.com; under Minimoog, choose "Rack Mount Edition").

I always wanted a Voyager, but the price was too high for me, and I always thought that the little touch pad thing would probably break in a few years, and act as a magnet for any objects like microphone stands to fall into it. So I was excited to hear about the introduction of a Voyager Rack.

THE VOYAGE BEGINS

I immediately pulled the Voyager Rack out of its box, turned it on, and stared at the glowing blue backlit panel. This feature, which almost seems like a gimmick at first, turned out to be a life-saver on the road. All the knobs have an incredibly smooth and substantial feel to them, and instill a feeling of confidence in the



craftsmanship. Pretty soon I got tired of looking at it, and realized the only convenient MIDI controller was my ancient, dawn-of-MIDI E-mu Emulator II. I figured if I could get the Voyager Rack to work with that, it would probably work

with anything.

While testing this synth, I made a deliberate decision not to open the manual, as I figure a monosynth should be the epitome of user-friendly synthesis. I was not disappointed. After plugging in the MIDI controller, I browsed through the Edit menus and found everything I would ever want to change, from note priority (cool for making it respond like an old mini with low note priority, or a Yamaha with top note priority) to MIDI channels, to additional modulation routing and filter modes. Saving patches was easy, but naming them was as tedious as on any synth where you have to write with cursor keys. Once I had figured out these few things, I figured I knew enough to make all the sounds I needed.

APPLYING THE VOYAGER


I wanted to re-create some of the glitchy, sample-and-hold type sounds I made with my Octave CAT synth for my band Phonograph's LP. It was easy to "zero" the synth to give myself a clean slate, and then I set about making a percussive glitch type sound that could be manually manipulated with the knobs: A combination of hard sync between two of the oscillators, and modulating the other oscillator produced a sufficiently weird timbre, so I then started tweaking the envelope to get the right percussive "click." Setting the LFO to trigger the envelope was simple, and tracked extremely well; the option to sync the LFO to MIDI is great if you need to trigger the envelope from, say, a drum

machine. The envelope is extremely tight, capable of such fast attack times that it can click at the beginning of notes.

This review came at a perfect time for me, as my band was getting ready to open for Wilco on the southern leg of their spring tour. As the Wilco tour grew closer, I had a hefty arsenal of sounds ready, and was amazed at the ergonomic nature of the panel, which was incredibly easy to get around. At every show we played, the Voyager Rack performed flawlessly. Even during a five-minute blackout on stage (due to a lighting computer crashing), the backlit panel let me keep playing as usual.

CONCLUSIONS

The sounds, construction, and interface of this synth are all top notch, and the only thing that I found the least bit annoying was the need for an "Accessory Port" to access all the CV features, as I really wanted to try and interface it with more of my gear — like clocking the envelope on my Moogerfooger lowpass pedal off of the LFO, or slaving another synth to it for additional oscillators and envelopes. [Editor's Note: Moog Music has just introduced the VX352, which provides control voltage and gate signals for control of the MMV Rack's synthesis circuits.]

But the bottom line is I think that the Minimoog Voyager is the greatest monosynth ever made, and is an artful mixture of tradition, technology, and musicality. Moog's legacy lives on. 

Product type: Monophonic rack mount analog (not virtual analog) synth.

Target market: Synth fans who want *the* Moog sound.

Strengths: Well-crafted. Easy to program. Makes high-quality analog synth sounds. More affordable than the keyboard version.

Limitations: Optional accessory port required to access internal CV functions.

Price: \$2,395

Contact: www.moogmusic.com

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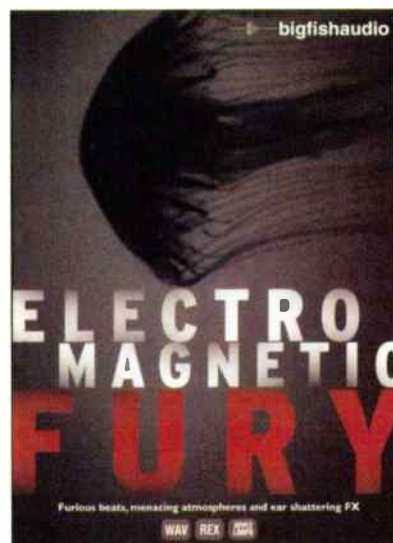
From the title, I was expecting some seriously ugly noise, like what you might get from a bunch of avant-garde "artists" who feel sorry for you because you can't appreciate the beauty of their intense angst. Nope. This fury is a controlled, mysterious fury, the kind you'd get from a dragon who'd been sleeping for centuries, and you had the bad luck to trip over on the way back to the time machine.

In typical Big Fish fashion, you get lots of construction kits (95 plus a folder of "atmospheres," for a total of 705 unique files), which averages about seven files per

kit for each of the three file types. The first file is a mix of all parts (except in the REX folders, which omit the mix due to difficulty in REXifying this type of file). This makes for easy auditioning. Each kit indicates the "native" key signature and tempo, most of which hover in the 100–140 BPM range.

Some of the kits would fit right into the Zion party scenes in the Matrix; other beats sound like the Chemical Brothers in a nasty mood. But they're not just about noise — there's an intensity and sophistication to these sounds that raise them above the usual "hardcore" loops.

I've put some files on www.eqmag.com because a sound is worth a thousand words. If you're in an industrial/soundtrack frame of mind, this DVD-ROM delivers in spades. —Craig Anderton *EQ*

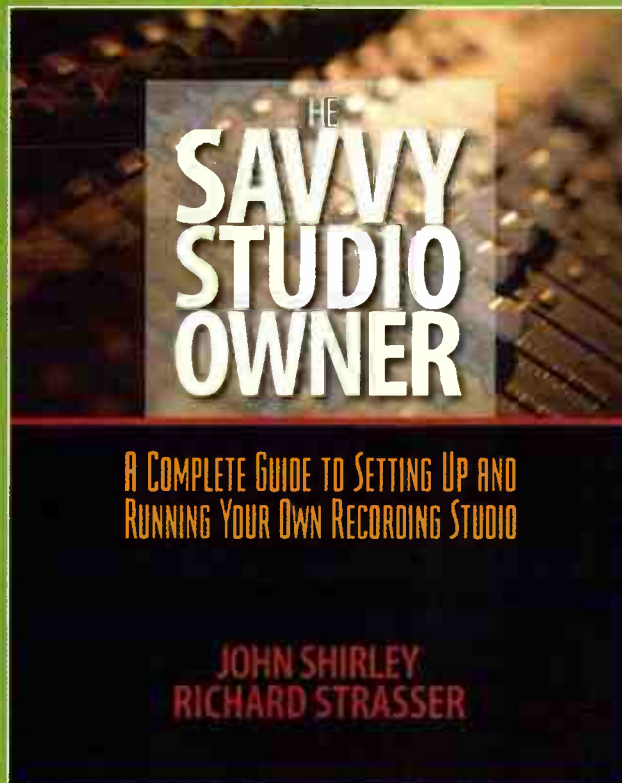


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JOHN SHIRLEY is a composer, professor, recording engineer, record producer, author, and studio owner. He holds a PhD in Music Composition and is a contributing editor for *Recording Magazine*.

DR. RICHARD STRASSER is coordinator of the Music Business program at the University of Massachusetts-Lowell. He earned a Master of Music and a Doctor of Musical Arts at the Manhattan School of Music.

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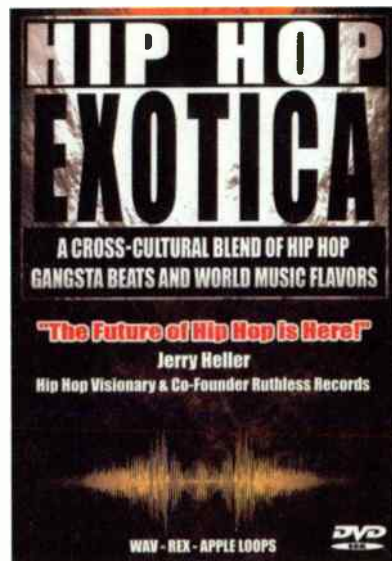
And now for something completely different: Are you ready for Dubai hip-hop? And maybe some Bhangra and Latino hip-hop as well, because this DVD-ROM throws hip-hop beats against a map of the world, and sees what sticks. Interestingly, most of it does, yet doesn't seem forced.

The 55 construction kits (with 966 unique files, except for the REX versions, as hits and mixes don't translate well to that format) each have the usual mix-of-all-elements and the constituent elements, but also include folders of the drum tracks

broken down into individual loops, and another folder of hits. This allows customizing your tracks to a greater degree than most libraries, as you can drag the hits over to create rhythmic variations.

Most tempos are in the hip-hop/rap sub-100 BPM zone. Unlike some sound reviews, where I feel a product has multiple applications, this one zeroes in specifically on hip-hop and doesn't let go. What adds the flavor is the exotic character of the ethnic instruments and scales sitting side-by-side with more traditional hip-hop elements . . . if only the real world could be so neighborly.

One heads-up: You can't use these sounds in music libraries. Oh well. It's still an innovative collection that will inject freshness into hip-hop projects; check out the audio examples at www.eqmag.com. —Craig Anderton **EQ**



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THE FUTURE OF MUSIC DISTRIBUTION: YOUR COMPUTER

Is it twilight time for CD Baby, The Orchard, and Amazon?

by Moses Avalon

Only a few years ago, signing a deal with a major label in order to get your CDs distributed *en masse* started to seem like "old think." But who would have thought that the idea of pressing CDs to reach the masses may become outdated? Imagine being able to run your entire independent music distribution empire without printing a single CD or licking a single stamp: These days, it's simpler and cheaper than ever to be a successful indie.

New models are emerging that eliminate the need to press CDs, deal with e-tailers, hunt down money, hand over exclusive rights to masters, or give up a large cut of profits just for the luxury of having your songs on iTunes. In terms of both Physical Media and Digital Distribution, today's options will make producers, and artists re-think their entire career plan.

PHYSICAL MEDIA

Physical media is being re-shaped by a concept that has been around for years in

the book publishing world: "on-demand printing." The term says it all. Instead of printing hundreds to thousands of units that then sit in your garage, you can have the exact amount of units printed *after* you sell them, at which point they're sent directly to the buyer.

Several companies have offered this type of service for musicians, but for reasons of cost and convenience, it hasn't been met with great enthusiasm. "Truth is, today most artists are doing their on-demand burning themselves," says Tony van Veen, an executive to Discmakers, one of the country's leading CD manufacturers for indie artists. But pressing CDs on your home computer not only means inferior quality to mass-produced product; there is still the matter of selling them, fulfilling the orders, tracking the sales, and getting paid. A lot of those headaches were handled by the likes of Amazon or CD Baby, but that may soon be changing.

Meet Jeff Price and his small company TuneCore, out of Brooklyn, New York. Price

is the co-founder of SpinART Records, a hip New York indie label that actually turned a profit in the 1990s with acts like the Pixies. In 2004, Jeff looked at the landscape of independent music distribution and saw two huge flaws:

- Artists and small labels need to go to too many places to fill out their distribution team and most importantly. . . .
- They were assigning very important back-end rights to their music exclusively, and paying high percentages, just for the privilege of getting their music on iTunes or not having to deal with fulfillment.

CD Baby is the leading fulfillment company in independent music, being responsible for about 25% of the titles available in the independent music market. Using them as a comparison, we see that the e-tailer charges an average of 30% for fulfillment of physical product (\$4 a unit), along with outside expenses that bring the unit cost up to over \$6.

COMPANY	THRESHOLD	VIG	OPT OUT	LENGTH	EXCLUSIVE
AWAL awal.co.uk	\$50	15%	30 days	30 days	maybe
IRIS irisdistribution.com	\$200	15%	no	3 years	no
DRA digitalrightsagency.com	\$250-\$500	TBD	no	2-3 years	TBD
IODA iodalliance.com	\$25	15%	1 month Complex but doable.	perpetual	yes
The Orchard theorchard.com	\$50	TBD	6 months	1 year	no
CD Baby cdbaby.com	Adjustable starting at \$10. \$20 is the default.	8%	30 days Complex but doable.		yes
TuneCore tunecore.com	\$0 (money held for 15 days)	\$0 (fee of about \$7 a year per album)	Fire at will.	6 months	no

- Cost of CD: \$1.50 (assuming an order between 500–1000 units)
- Shipping to CD Baby: \$1 per unit (five unit minimum)
- CD Baby's fulfillment fee: \$4
- **Total cost per unit: \$6.50.**

On top of this, CD Baby's startup fees of \$35 plus \$20 for a bar code (which is a "sub-code," not an actual, entire UPC code) put the client into a scenario where they have to sell about 10–15 units of a particular title just to break even. Think that will be easy to do? Here are some statistics to consider.

Neilson SoundScan — the leading company that tracks retail CD sales — reported in 2004 that out of the 4000+ CD Baby titles they tracked, only about 700 titles registered more than 12 units sold on the popular service that year. CD Baby claims about 70,000 clients, which means about only 1% of their clients are in the black. When you add the cost of printing the physical media, the losses become even more extreme.

In companies like TuneCore, a client sends only one CD (the master) and they can even email it to save on postage. TuneCore sends it to their strategic partner, Digital Catalog Service (DCS), a company with several major label accounts. They oversee the on-demand producing of the CD — in full glass-master quality — and print the artwork using a professional offset process that ends up costing the

client about \$6 a unit. They ship it, collect the money, and the client can withdraw their profits at will from their TuneCore account. They take no fees for warehousing or shipping, so this strategy makes it virtually impossible for a new artist/label to lose money.

How does the old guard feel about this new solution? CD Baby and their main competitor, The Orchard, have not announced plans to partner up with any on-demand pressing services. However, DiscMakers Executive VP, Tony van Veen, who has enjoyed a very comfortable place in the existing model, says they are stepping up their on-demand services. "It's a small but growing part of the landscape. In fact, DiscMakers already offers a short-run duplication service where you can order CDs in quantities as low as one disc." Cost is about \$4 per unit, a price that compares well to newcomer TuneCore.

DIGITAL DISTRIBUTION

On the digital distribution side of the fence, the main "aggregators" for indie artists thus far have been CD Baby, The Orchard, IRIS, AWAL, and DRA (apologies to any I left out). All offer to get your music on iTunes and other download services, like Rhapsody, Napster, e-Music and others. But not all their contracts are created equal. Many have confusing clauses with terms like "underlying compositions" to describe the type of rights that an artist must convey in order to utilize their service. This has

some industry lawyers nervous about what actual role the aggregator assumes.

Many also have "payment thresholds" that seem reasonable at first, until you do the math. A "threshold" in this context is a financial goalpost that a client has to reach in order to trigger a cashout. In some cases it can be as high as \$200 a month, and this is *after* the aggregator takes their 15% vig. That nets out to about 336 downloads *per month* before you get paid — not 200 downloads, as you might initially assume if you are thinking in terms of about \$1 a sale. (Example: For a 99¢ download on iTunes, about 29¢ goes to Apple, leaving about 70¢ that is passed on to the aggregator. Then the aggregator takes its 15%, leaving 59.5¢. Divide that into \$200, and the result is about 336 downloads.)

Jeff's premise with TuneCore is that digital distribution should be a "flat fee," pay-as-earned service — not one that keeps a hand in the artist/label's pocket for months or years at a time, or creates difficult thresholds in order to qualify for payment. "You walk into FedEx and ask them to deliver a package to iTunes. FedEx charges you \$15 and that's it," says Price, "They do not say 'OK, that will be 20% of the revenue for the next three years.'"

A good point. In TuneCore's contract for digital distribution, there is no payment threshold, no exclusive rights granted, and no grab is made for back end rights either. They take 0% of revenue and, best of all, you can fire them at will, leaving the client

FULFILLMENT	PRINTING ON DEMAND	MARKETING	COMMENTS	OVERALL 5 STAR RATING
no	no	yes	Contract straightforward but leaves out many contingencies. However, short terms and low threshold keep it a contender.	***
no	no	no	Some elements are exclusive, but not master recordings. High threshold and long terms require careful consideration.	**
yes	no	yes	Deals mostly with artists that have a lot of activity, therefore all points are negotiable. Points herein are a range.	** 1/2
no	no	no	Caution: Uses the term "underlying compositions" to define rights granted. Will negotiate.	**
yes	no	yes	Spotty rep but under new management that is eager to repair mistakes of the past. New contract a vast improvement over the old one. Will negotiate. Short terms fetching.	***
yes	no	no	Caution: Uses the term "underlying compositions" to define rights granted. Will <i>not</i> negotiate terms. Variable threshold is troublesome	** 1/2
yes (partnered) On-Demand	yes (partnered)	no	In theory, best deal in town for the emerging artist. Although run by industry veterans with good reps, the company is still very new. Worth watching.	****

THE FUTURE OF MUSIC DISTRIBUTION: YOUR COMPUTER

free to make deals with larger major labels should the situation arise.

So how do they make money? TuneCore charges 99¢ per song as a one-time fee, and 99¢ as another one-time delivery fee of the entire album to iTunes and any other digital store of the client's choosing. So, a 10-song album delivered to iTunes US and Rhapsody, for example, would be \$10.89, and each store after that would be another 99¢. An annual storage and maintenance fee of about \$8 an album is then applied, resulting in a total of about \$18 to get set up on two stores. Compared to the leading competitors with almost double the setup fees and back end rakes of 9% to 30%, the TuneCore model seems highly competitive.

Then there is the matter of how long you are locked in to some aggregators. Most insist on commitments that last from six months to three years. Not only is this a lifetime in a recording artist's emerging years, it's a lifetime in the world of digital technology. New formats are opening up every month: satellite radio, internet radio, podcasting, streaming into restaurants and arenas.

Although some companies advertise "non-exclusive" deals, giving the impression that you can have several aggregators who specialize in different areas, they are hoping you ignore an important point: *Many legitimate labels won't sign an artist if that artist has already given away the rights to distribute their music on any mass scale, even if they are "non-exclusive" rights.*

To ease your apprehension about all this, some offer "30 day opt-out" clauses. This also sounds appealing until you look carefully at the reality: Since the advent of digital distribution, many people have tried "opting out" of old deals in favor of newer, better ones only to find that months later, there are multiple copies of their same masters on download services, each paying different royalty rates.

Reality: In general, "30 day opt-outs" are fallacies. No company can really get you out of the entire digital network with 30 days notice once you are loaded into iTunes, Napster, etc. and I suspect that you'll see mention of this feature start to fade away from legitimate aggregators' advertising, as

it can not really be fulfilled reasonably.

So to whom does the future belong? Will we start to see those who take back-end rights fall behind in market share? Are we at a tipping point where granting rights in exchange for an opportunity seems like "old think?" I for one am keeping a close eye out for a reverse bidding war between the old bosses and all-in-one companies that espouse a more liberating philosophy. **EQ**

[Editor's Note: More information on the companies mentioned in this article and their practices can be found on the author's award-winning website, www.MosesAvalon.com.]

Moses Avalon is the author of the new book, Million Dollar Mistakes: Steering Your Music Career Free of Lies, Cons, Catastrophes, and Landmines, and the classic best seller, Confessions of a Record Producer, now in its third printing and required reading in over 35 schools. He is an artists' rights activist and runs one of the nation's leading music business consultation companies.

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BREATH-taking changes are transforming the music business. While these changes may be smashing traditional business models, eroding CD sales, and creating havoc among the major record companies, they are also providing new opportunities for unsigned artists, independent labels, and music entrepreneurs.

The Future of the Music Business provides a legal and business roadmap as well as practical tips about how to sell music online, develop an online record company, take advantage of wireless technologies, open an online music store, and much more. This book details the latest legal developments, chronicles the major labels' battles with peer-to-peer services, and proposes solutions for the industry's woes. *The Future of the Music Business* also features interviews with artists and entrepreneurs who are creating the future with the latest digital technologies.

The accompanying CD-ROM includes a two-hour seminar, additional interviews, and hundreds of active links to legal, business, and technical resources—plus links to Web pages updating the book—so that it will never be out of date.

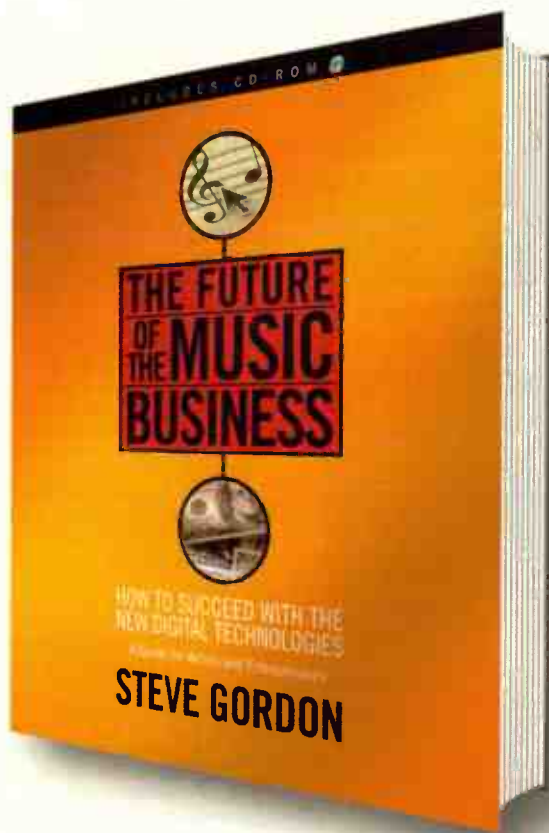
An entertainment attorney and consultant based in New York City, Steve Gordon writes on entertainment and copyright law for Entertainment Law and Finance and serves on its board of editors. www.futureofthemusicbusiness.com

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**—Paul Resnikoff, founder and editor,
Digital Music News (digitalmusicnews.com)**

NATIVE INSTRUMENTS GUITAR RIG 2

Create dual-band distortion for more flexible sounds

OBJECTIVE Split the guitar signal into high and low bands, then process each one individually.

BACKGROUND Guitar Rig 2 added a Crossover Mix module, capable of splitting an input into two separate bands. This allows techniques like choosing a chunky distortion for lower frequencies, and a more intense, sustained distortion for higher frequencies.

steps

1. In the Components section, click on the Tools tab and drag the Crossover Mix module between the Input and Output components.

2. Click on the Amps tab in the component section, and drag over the Amp that will process the low end (Gratifier is a good choice). Drop it between the Crossover Mix Low and High modules.

3. Set the Crossover Mix Crossfade control to 100:0 (all lows) and crossover Frequency to taste (try 600–800Hz). Now tweak the Gratifier controls for the desired low band sound; the preset “Punchy Clean – Bass” is a good point of departure, maybe with a bit more Bass and a little less Treble and Presence.

4. Click on the Amps tab in the component section, and drag the Amp you’ll use for the high band Amp between the crossover High and Crossover Mix modules. Lead800 (Distorted 800 preset, with Boost enabled) works for me.

5. Set the Crossover Mix Crossfade control to 0:100 (all highs) and tweak the Lead 800 amp for the desired high band sound.

6. It’s time for the finishing touches. Adjust the Crossover Mix’s crossfade slider for the desired balance of the high and low sounds; also experiment with the Frequency parameter, and you might want to spread the two bands a bit in the stereo field using the Pan controls. Rock on!



tips

- Patching the Tube Compressor between the Crossover High module and the high band amp can give a smoother, more sustained high end.
- Enabling High Resolution mode (in the Control Center section) doubles the hit on your CPU, but also doubles the sound quality — highly recommended.



The John Lennon

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CIRCLE ONE (IF PAYING BY CREDIT CARD): VISA _____ MASTERCARD _____

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180 Brighton Road Suite #131
Clifton, NJ 07012

Each entry must consist of:

- Completed and signed entry form (or photocopy). All signatures must be original.
- CD(s) or audio cassette(s) containing one song only, five (5) minutes or less in length.
- Lyric sheet typed or printed legibly (please include English translation if applicable). Sheets not required for instrumental compositions.
- Check or money order for \$30.00 per song (U.S. currency only) payable to John Lennon Songwriting Contest. If paying by credit card, \$30.00 per song will be charged to your account.

Please read all rules carefully, and then sign your name in the space provided. If entrant is under 18 years old, the signature of a parent or guardian is required.

1. Each song submitted must be contestant's original work. Songs may not exceed five (5) minutes in length. Songs may have multiple co-writers, but please designate one name only on the application. Contestant may submit as many songs in as many categories as he/she wishes, but each entry requires a separate cassette, CD, or MP3 file, entry form, lyric sheet, and entrance fee. One check or money order for multiple entries/categories is permitted. (Entrance fee is non-refundable. JLSC is not responsible for late, lost, damaged, misdirected, postage due, stolen, or misappropriated entries. The JLSC is not responsible for faulty file uploads accompanying online entries.)
2. The John Lennon Songwriting Contest is conducting 2 separate Contests during 2006 - Session I and Session II. Twelve (12) Grand Prize winning songs from each Session (one from each category) will receive \$5,000 in project studio equipment from Roland/Edirol, Audio-Technica and Brian Moore Guitars and a \$500 gift certificate from MusiciansFriend.com. The 12 Grand Prize Winners in each Session will go head-to-head in an online voting

competition to become the Lennon Award Winner in their respective category. The 12 Lennon Award Winners will receive a \$5000 EMI Music Publishing Contract, and 1,000 CDs in full color, premium 6-panel Digipaks, worth \$1,990 courtesy of Discmakers. Thirty-six (36) Finalists from each Session will receive \$100 gift certificates from MusiciansFriend.com. One (1) Lennon Award winning song will receive an Apple Power Mac G5, Cinema Display and \$20,000 for the "Song of the Year" courtesy of Maxell.

3. Contest is open to amateur and professional songwriters. Employees of JLSC, their families, subsidiaries, and affiliates are not eligible.
4. Winners will be chosen by a select panel of judges comprised of noted songwriters, producers, and music industry professionals. Songs will be judged based on melody, composition and lyrics (when applicable). The quality of performance and production will not be considered. Prizes will be awarded jointly to all authors of any song; division of prizes is responsibility of winners. Void where prohibited. All federal, state, and local laws and regulations apply.
5. One (1) band will be selected by WARPED TOUR '07 organizers to tour and perform for one week on WARPED TOUR '07. Performance will be considered.
6. Winners will be notified by mail and must sign and return an affidavit of eligibility/recording rights/publicity release within 14 days of notification date. The affidavit will state that winner's song is original work and he/she holds all rights to song. Failure to sign and return such affidavit within 14 days or provision of false/inaccurate information therein will result in immediate disqualification and an alternate winner will be selected. Affidavits of winners under 18 years of age at time of award must be countersigned by parent or legal guardian. Affidavits subject to verification by JLSC and its agents. Entry constitutes permission to use winner's names, likenesses, and voices for future advertising and publicity purposes without additional compensation.
7. CDs, cassettes, and lyrics will not be returned.
8. **Winner Announcements:** Session I announced on September 1, 2006. Session II announced on March 1, 2007. Announcements will be posted on jlsc.com.

I have read and understand the rules of the John Lennon Songwriting Contest and I accept the terms and conditions of participation. (If entrant is under 18 years old, the signature of a parent or guardian is required.)

Signature _____ Date _____

Make your check or money order for \$30.00 per song payable to:
John Lennon Songwriting Contest

Check one category only

- rock world gospel/inspirational
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- r&b jazz country latin hip-hop

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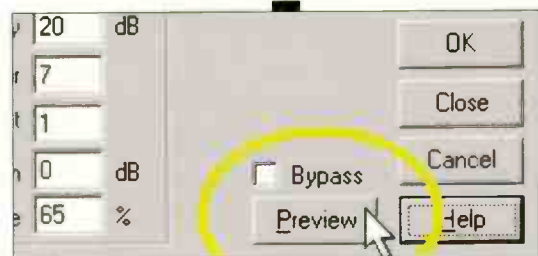
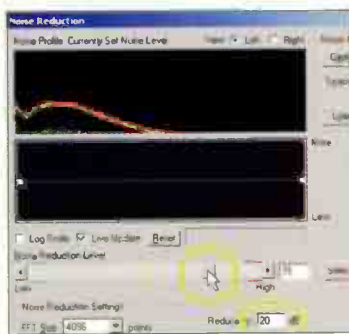
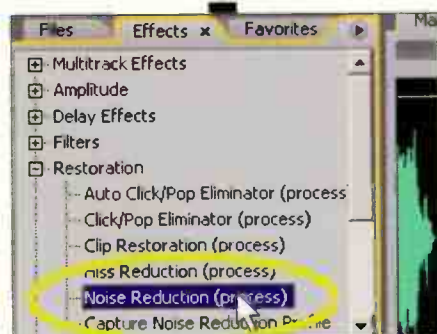
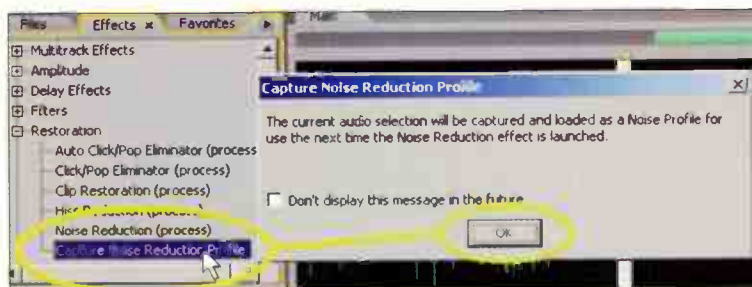
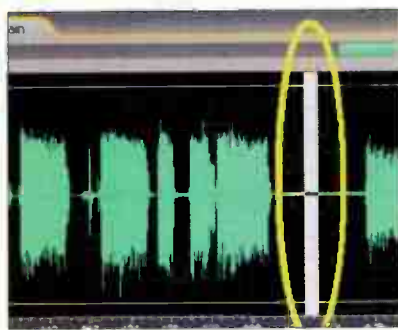
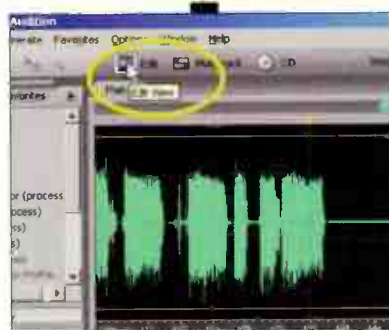
by Craig Anderton

ADOBE AUDITION

Improve the sound quality of your recordings

OBJECTIVE: Get rid of annoying hiss, hum, rumble, and other constant noise sources.

BACKGROUND: Adobe Audition has an outstanding suite of noise reduction tools. With the one described here, you "capture" a sample of the noise you want to remove, and Audition will subtract from your signal *only* audio that is identical to the sample.



steps

1. Select Edit View, then drag-and-drop the file that needs noise reduction into the workspace (or load the file with the file menu's "Open" option).
2. Click and drag over a region that contains only the noise you want to remove. Several hundred milliseconds should do.
3. Under the Effects tab, expand the Restoration tree. Double-click on "Capture Noise Reduction." When the Capture dialog box appears, click on "OK."
4. Again under the Effects tab, double-click on "Noise Reduction (Process)."
5. Adjust the noise reduction level as desired. Also enter a "Reduce by" setting, typically between 5 and 20dB.
6. Click on Preview to hear the effects of the noise reduction. Click bypass to compare.
7. If the amount of noise reduction is as desired, click on "Select Entire File," then click on "OK."

tips

- The defaults work well, but click on the Help button to learn how to get the best combination of noise reduction and natural sound.
- The blue line in the More/Less box is an envelope. Adjust it (add nodes if desired) to shape which frequencies are affected by the noise reduction.



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STUDIO SECURITY

How to help keep what's yours

If you value your gear and personal safety, you need to focus on studio security. For example, the owner of a local rehearsal studio had spotted a car with three men inside, loitering in front of his business late one night. One of the men got out and approached the studio's door with a pizza box, as if to imply he was there to make a delivery. But the owner observed it was just a box, and not being carried inside an insulated pizza delivery bag. So he told the man over the intercom they had not ordered a pizza, and were closed. After a few minutes, the man returned to the car . . . which flashed its headlights at a van parked down the street, and both vehicles left the area.

If the studio owner hadn't been paying attention, that close call could have turned into something far worse. Here are a few studio security tips that will hopefully keep you out of harm's way.

- Clear brush and anything else around your property where a burglar could hide and work unseen. Make sure the studio's perimeter is well-lit; the more visible and exposed a thief is when trying to break into your place, the less he's going to like it, and the greater the odds he'll look elsewhere. Motion-triggered lights add an element of surprise if the thief isn't expecting to have the lights go on suddenly.
- A centrally monitored alarm system usually costs under \$50 a month, and sometimes results in lower insurance rates. Consider wiring some select items of gear to the system so that removing them triggers an instant silent "panic" alarm. Harden the phone lines — either lock the box, or install a backup cell phone dialer in case the landline's cut.
- Dogs intimidate the bad guys and sound off when they see a threat or a stranger approaching. If you have a residential studio, consider getting one — but only if you're willing to care for it properly.
- Cameras, peepholes, and door intercoms allow you to see and communicate with who's out there without directly exposing yourself. Additionally, there are systems that allow you to visually monitor the activities inside the studio from anywhere in the world over the net, which can be great peace of mind when you travel. Even Target sells them now: Go to www.target.com and enter "Sylvania internet camera" in the search box.
- Know your neighbors, and ask them to keep an eye on things. If there's a Neighborhood Watch program in your area, get involved.
- Install heavy-duty, anti-tamper locks and strike plates.
- Get a security assessment from a qualified security company, but check them out with the Better Business Bureau and your local law enforcement agency before inviting them over. And get to know the local police officers; the better you know them, and more importantly, the better they know and like you, the better off you'll be if you ever need their help.



- Stay current on your local studio scene. Report suspicious activities to the local police and other local studios; encourage them to do the same.
- Get Caller ID on your phone. Screen clients and calls and make a note of phone numbers on all incoming calls.
- Meet with new prospective clients at a neutral location, such as a local coffee shop. Get their contact info and verify their identification (e.g., driver's license) before allowing them studio access. Background checks aren't too expensive, either.
- Referrals from people you trust are frequently less risky than new, unknown "cold call" clients. Encourage referrals and do what you can to develop repeat customers. It's not just good for security, it's good business.
- Balance your need to advertise with security. Large signs that say "recording studio" and gear boxes left in the trash let the bad guys know there's probably valuable gear on-site.
- Don't broadcast or announce all of your security measures. Any defense can be countered, and if the crooks know what your security measures are, they can plan how to overcome them.
- Limit the entourage. You're running a studio, not a clubhouse. Whenever possible, discourage people outside of the band from attending sessions.
- Beware of "inside jobs." Check the references of anyone you might hire to work at your studio, including cleaning companies, maintenance and repair shops, and anyone who will have access to your studio. If you have employees, re-key the locks and change any alarm codes whenever anyone resigns or is fired.
- Small, easily concealed items like stompboxes and microphones can "walk away" if you don't lock them up when unused. At the end of sessions, do a "walk-through" of the entire studio before the clients leave so that they "don't forget any of their stuff" — which also lets you make sure that all of *your* stuff is still where it should be.
- Keep your eyes open, and trust your intuition. When in doubt, pass on the prospective client. You don't have to be paranoid, but be aware of your surroundings and any developing situations. If you feel you're being cased, call the police.

It's never fun to think about these kinds of issues, but be careful — there are people who would rather steal what you have than work to earn it for themselves. And while insurance can replace stolen gear, you never know when the pizza box may have a gun inside of it instead of a late night snack . . . and your life can't be replaced. **EQ**



Phil O'Keefe is a producer/engineer, and the owner of Sound Sanctuary Recording in Riverside, California. He can be contacted at www.philokeefe.com, or via the Studio Trenches forum at www.harmony-central.com.

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PUNCH DRUNK

Monaural miking strategies for speaker cabinets

Depending upon your perspective, miking guitar cabinets can be a frustrating and hopeless activity, or a thrilling foray into experimentation, discovery, and bountiful shades of kick-ass tone. Defeatists typically bemoan their lack of high-end microphones, a dearth of mic options, the absence of a pristine acoustic environment, and various other woes such as crap mic preamps, semi-pro outboard gear or plug-ins, and limited inputs. Whaaa. Whaaa. Whaaa.

Let's cut to the chase. No one who really and truly aspires to make good recordings should subscribe to defeatist psychobabble, because any imaginative individual with an average work ethic can document fabulous guitar sounds with two microphones of any value (one dynamic and one condenser), two inputs, any old type of preamp, and zero outboard gear. The not-so-secret secret here is savvy microphone placement guided by the qualitative analysis provided by those two auditory devices on the sides of your head. Now, let's look at some common single-mic positions.

DEAD-ON

Mic Type: Dynamic.

Position: Point the mic directly at the center of the speaker. If the cabinet has a grille cloth, rest the mic right on the fabric. If not, place the mic about four inches from the speaker's dust cap or the middle of the cone.

Tonal Characteristics: Dry impact. Tight and punchy with meaty bass content. Excellent isolation.

Variations: For enhanced highs and a more dimensional sound, trade the dynamic for a condenser. You may have to pad the mic input if the amp is blasting to avoid unwanted distortion. If the condenser has multiple polar patterns, try cardioid first to maintain isolation. If bass is too pronounced due to proximity effect [a boost in the low-frequency response of a directional mic when the mic is placed very close to the sound source], switch to omnidirectional. This will diminish low-end mud, but it will also capture sound in a 360-degree field around the mic position.

Ear Training: Move the mic around the speaker — a little below or above the cap, over to the right and left edge, down to the bottom edge or up to the top — to audition how slight position changes affect the tone. If you stumble across a sound you love — freeze.

ROOMY

Mic Type: Dynamic.

Position: Place the mic approximately three feet from



the cabinet, pointing directly at the center of the speaker cone.

Tonal Characteristics: Natural roar. Enhanced mids and highs, de-emphasized bass.

Natural ambience.

Variations: To capture more sparkle — as well as a clearer and more dimensional room sound — use a condenser.

Ear Training: Try moving the mic

around the cabinet (and even behind it if it's an open-back cab), as well as increasing the distance between microphone and speaker. Look for a point where the source sound (the amp) and the room sound collaborate to produce an exciting and natural tone.

AMBIENT

Mic Type: Condenser.

Position: Place the mic at least ten feet away from the cabinet, at a height of at least five feet.

Tonal Characteristics: Wide-open spaces. Blossoming ambience with a midrange sting.

Variations: Move the mic around the room to find a sweet spot where the reflections and source sound congeal in an animated mixture of impact and expanse.

Ear Training: If your condenser is a multi-pattern model, switch between cardioid, omnidirectional, and hypercardioid to audition how each polar pattern affects the sound of the amp and room.

OFF-AXIS

Mic Type: Condenser.

Position: Switch the mic to its cardioid pattern, and place it approximately three inches from the speaker (or grille cloth) at a 45-degree angle.

Tonal Characteristics: Funky snap. Shimmering highs with a taut midrange and moderate bass response.

Variations: Slightly adjust the degree of the off-axis position, and trade the condenser for a dynamic or an affordable ribbon mic.

Ear Training: While maintaining the same off-axis position, move the mic to different areas around the speaker. Listen for those moments when the resulting sound causes the hair on your arms to stand at attention.

Next Issue: Stereo miking strategies. [EQ](#)



Michael Molenda is a seminal San Francisco punk, multimedia artist, and producer who has recorded tracks for everyone from NASA to Paramount Pictures to various major and minor labels to hundreds of bands you've never heard. He currently co-owns Tiki Town Studios with producer Scott Mathews, and is signed to MI5 Recordings.



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FINDING THE PERFECT GROOVE

What Makes Rhythm Come to Life?

Ah, the elusive *groove* — one of the most important elements (if not *the* most important element) in most forms of pop music. Yet the groove is also the most difficult ingredient to quantify, the most mysterious and primal.



Bands who get a great groove going in a live situation often find it tough to capture that same feel in the studio. Many of the factors that make it possible for musicians to find the groove make the engineer's job more difficult, resulting in concessions being made to the studio environment that often affect the performance. But it doesn't have to be that way! Here are a few tips and tricks to help create the right environment for great groove to happen.

Treat the rhythm section as the foundation. Often, an artist or producer will record bed tracks using a sequencer, or guitars and a drum machine, and overdub bass and drums on top of these basic tracks. This technique can detract from finding the right feel because the rhythm "specialists" — the bassist and drummer — are not in the driver's seat; they're following along with a canned "groove." If possible, lay the rhythm tracks down first and track them at the same time. The interaction between the musicians, and their ability to be spontaneous, is a huge factor in finding the right groove and feel for the song.

Make sure the musicians can see and hear each other. Try tracking the basics without headphones. Musicians usually find it more natural and inspiring to be able to hear each other directly in the room. If you do use headphones, many musicians (especially drummers) prefer to use sound blocking cans, such as the AKG Sound Isolating Headphones or "Superphones" and "Ultraplphones" from GK Music — these ensure the musicians aren't struggling to hear the bass and other instruments over the live drums.

Also, if possible, make sure the musicians are all in the same room together or at least can make eye contact with each other. Some studios have a drum booth, which forces the drummer to be isolated from the other musicians — I prefer to let the drums live in the main room and put guitar amps behind baffles or in small iso booths (and maybe not even that, if the room is large enough), letting the guitarists and bassist stand in the main room with the drummer. If I do use baffles around the drums for a tighter sound, I lay them on their sides so the drummer can see over them. If the musicians can easily see and hear each other, they can truly listen to each other and interact, and that's what makes the groove come alive.

Try losing the click track. Most pop music these days is cut to a click track, for many reasons: It ensures consistency in tempo (especially for inexperienced drummers), simplifies editing, and the click and tempo map can synchronize sequencers and time-based effects. But there are drawbacks, too: It usually forces the musicians

to use headphones; it again doesn't let the rhythm section be in the driver's seat; and that same "consistency" that keeps anything bad from happening tempo-wise can also prevent something great from happening. Most forms of music throughout history have used shifts in tempo, both dramatic and very subtle, as a form of creative expression. Many of your favorite classic rock and R&B recordings are nowhere near exactly consistent in tempo; there are subtle pushes and pulls that happened spontaneously and add to the tension and excitement of the groove. Aside from those who know how to build grooves and tempo changes into sequencers, subtle timing variations seem to have become a lost art since click tracks have become standard.

Even inexperienced drummers with tempo problems often have trouble playing to a click, and therefore have a better feel without one. I'm generally willing to live with a bit of inconsistency in the tempo rather than sacrifice overall feel or the musicians' comfort level. In fact, I don't know who made the rule that all music has to be exactly consistent in tempo, but it doesn't sound very rock'n'roll to me (or classical, for that matter, which uses lots of tempo variations). Most pro session musicians pride themselves on being able to groove even with a pre-recorded track or a click, and there's no doubt it can be done. But I've often heard even better results when they have the freedom to play with the tempo at will — so unless someone specifically asks for a click, or the groove just isn't happening without one, I avoid it.

So how to deal with editing and synchronization when there's no click? There are several methods. One is to overdub a track of quarter notes on a cowbell or other percussive instrument, and use that as a trigger or edit point. It's easy enough with modern DAWs to stretch phrases that don't exactly match in tempo when editing, or create a tempo map by using tap tempo. Tools such as Beat Detective can generate a tempo map *from what the drummer played*, rather than lining up the drums to a grid. And if you use loops, "acidized" and REX format loops can follow tempo changes, so no worries there, either.

This is all about using technology to serve the music, not the other way around. And once you try "thinking outside the grid," you may find the results so rewarding that it's easy to work around any pitfalls. **EQ**



Lee Flier is a guitarist, songwriter, engineer and producer based in Atlanta, Georgia. Her band, *What The...?*, is a fixture in the Atlanta area, has released two independent CDs and of late has been performing in other states and countries. She can be contacted via the band's web site at www.what-the.com, and also moderates the "Backstage With the Band" forum at www.harmony-central.com.

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VOCALS MEET SYNTHESIZER

Applying “synthesizer thinking” to vocals can give unique, signature sounds

Today’s sound tools can take vocals further than ever: You’re no longer limited to cutting your vocals through a vocoder, like Kraftwerk or Daft Punk, to sound “electronic.” Many processors can give your vocals a synth-like sheen that makes them more at home in electronic tracks; the point here is not so much to make the vocals “better” but to make them evocative and “different,” in a world where *different is good*.

TWEAKING TIME

Go to www.eqmag.com for two vocal examples that illustrate the processing described here. “VoiceClean.mp3” has my unprocessed vocals for a song called “The Sentinel.” The vocal is in Spanish, which makes it easier to focus on the sound rather than the lyrics.

I used a Groove Tubes GT67 mic, because it seems to like my voice; the preamp was nothing boutique, just the one in my ProjectMix I/O audio interface. The software was Ableton Live, with the plug-ins detailed below.

DYNAMICS CONTROL

One of the first steps for “synth-like” vocal tracks is to add heavy compression/limiting after recording the track. The object is not to suck the life out of the performance, but to make it fit well in the mix. I used a Waves C4 (Figure 1) throughout the entire track, but automated the dynamics so the chorus could have more natural dynamics. Because the C4 is multiband, you can apply the compression very precisely.

EQUALIZATION

Even if you’re adding a lot of processing, that’s no excuse not to record the best take possible. I avoid using processors to “fix” problems; I’d rather not have any problems in the first place, and use processors to enhance what’s there.

Sometimes I use two EQs for different purposes: One fixed EQ (in this case, Live’s “EQ Four”) to add a “global” effect to the track, and a second to enhance some specific parts. The second EQ (Ozone 3; see Figure 2) was automated to provide a temporary highpass filter when a loop



Fig. 1: These Waves C4 settings provide heavy compression for the entire track, except for the chorus.



Fig. 2: iZotope’s Ozone 3 serves here as an accurate automatable EQ and reverb processor. All other FX are off. Note that the EQ curve is gentle, with no radical EQing.

with heavy low-end content entered the mix.

A CHORUSED LINE

While “chorusing” doesn’t sound exactly like a backing chorus when applied to vocals, it does tend to thicken the sound. Furthermore, extreme settings can lead to extreme results, like creating a wider stereo imaging by panning the wet and dry sounds to opposite sides of the stereo field. I applied Live’s Chorus FX to the vocal track to create the same kind of effect as a synth patch’s “unison” mode, where you add extra oscillators.

REVERB

Use reverb with care, otherwise you’ll lose the intelligibility of the lyrics. Ozone 3’s reverb provides more of a subtle, “mastering” reverb instead of a big hall or plate. The result is a solid ambience that adds depth and space to a vocal.

DELAY-LAY-LAY

Electronic music loves rhythms: drum loops, synth drones, arpeggiators, and . . . delay lines. Today’s automatable and tempo-synced plug-ins are great for vocals, especially with “synth-pop” type music. This tune uses Live’s built-

in PingPong delay with automation, so I could have long tails when needed yet pull back to keep the verse understandable.

To hear the final result, download the file “VoiceFXFull.mp3” from www.eqmag.com. Of course there are more options: Reversing some parts, pitch-shifting, time-stretching, and beyond, like using some very specific plug-ins or recording techniques. Meanwhile, consider whether your vocals might benefit from some synthetic veneer — even if it’s not an “electronic” tune. **EQ**



Gus Lozada is a contributing editor to several magazines and websites. He fronts the band *WoM* (www.wom.com.mx), which recently debuted under the Universal Latino label in the U.S., hosts clinics around the world about music production, and moderates “Nuestro Foro,” *Harmony Central’s* Spanish-language community. His email is gus@guslozada.com.

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Room with a VU

by Matt Harper

Studio Name: Blue Ribbon Studios

Location: El Monte, CA

Contact: www.blueribbonstudios.com

Key Crew: Kent Verderico

Console and Pres: 84-input DDA-AMR 24-analog console with Uptown fader automation — highly modified with Inward Connections 690 discrete summing amps, 36 modified channel strips including mic pres, Summit Audio 2BA-221, Demeter H series, Calrec PQ-1347

Monitors: NHT M10 with custom crossovers, 75-watt custom reference amp, Mackie HRS120 subwoofer, Auratone clones

Outboard: Universal Audio LA2A, 1176LN, dbx 160XT, Calrec DL 1656, Alesis modified 3630, Drawmer Dual Gate DS 201, Lexicon MPX550, Yamaha SPX90, FX500, Sony modified CE-775

Mics: AKG 414 TL2, C451 EB, SE Z5600A, Marshall MXL-V77S, MXL-600, Shure Beta 52, SM57s, SM58s, Oktava MK319, Optimus PZM

Computers and Hardware/Software: Apple 2GHz Dual Processor G5, 19" Princeton LCD, MOTU 2408mk3, PCI-424 FireWire interface, Apogee AD-16X, DA-16X, Mini-DAC, Avastor HDX FireWire 800 drives, Unitor 8 USB MIDI interface, Apple Logic Pro 7, Pro Tools 7 LE, 40MHz PC running DOS for System 990 Uptown automation

Backline: Soundcraft 760B 24-track 2" analog recorder, 48-track E-mu Darwin System, Countryman type 85, Hammond T-200 with mini Leslie, 1974 Fender Rhodes Stage 88, Marshall JCM-800 100 watt (4 x 12 Celestion loaded), Roland A-33 MIDI controller

Studio Notes: Stashed away in the San Gabriel Valley, 15 miles east of downtown Los Angeles, sits a seemingly typical suburban house that just happens to be a studio oasis. Complete

with a 2" analog 24-track and a 9-foot DDA-AMR 24 console that resides in what used to be a living room, Blue Ribbon Studios is one of Southern California's more unusual operations — a professional home studio with a penchant for big studio sounds, that operates with an ear tuned towards independent artists. The goal is to offer dedicated service to those who can't necessarily afford the higher rates of similar facilities.

For projects that require live tracking, Blue Ribbon Studios is functionally a "weekend-run" studio, as studio owner and engineer Kent Verderico splits his time between his own operation and that of being chief engineer at Santa Monica's own Emoto — where his energy is expended primarily recording session musicians and mixing spots for television and radio commercials during the standard "workweek." Working in a field like commercial recording demands attention to detail, fast studio chops, and stylistic versatility; Verderico brings the lessons learned under pressure to the more relaxed, musician-friendly atmosphere of BRS.

The ability to get a killer drum sound is undeniably one of the more difficult obstacles facing any home studio, and one reason why many home studio owners do at least some tracks at pro studios. BRS took this into account and uses hardwood flooring, non-parallel room shapes, and custom acoustic treatment to avoid the "home studio sound." BRS overcomes another Achilles' Heel of the home studio by making the control room long enough to provide honest bass monitoring, resulting in mixes that translate well to the outside world.

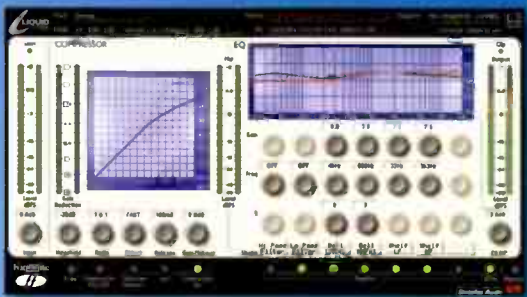
BRS's goal is to provide a relaxed environment without resorting to relaxed standards, and keep rates competitive while taking advantage of engineering experience. Their website is at www.blueribbonstudios.com. **EQ**

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