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CONTENTS

FEATURES

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COLUMNS

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REVIEWS

SOUNDS

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A MOVING EXPERIENCE

At some point, you'll probably move you and your studio — complete with rare musical instruments, computers, invaluable backup data, hard drives, recorders, financial records, pictures, and more — from one place to another. You'll essentially be moving your entire professional life up to that point.

But if you're doing an interstate move, you better know about the Carmack Amendment, as it dramatically limits the liabilities of movers. Although the movers are theoretically liable for damage done to your shipment, just try collecting: They'll hire their own appraiser, and if you want to contest their claims when they say something like "Your Honor, it's just a guitar; I can buy a guitar for under $179 at Wal-Mart," expect to spend thousands on lawyers and appraisers to fight their conclusions.

Keep reading, though, because it gets worse. A moving company can commit the types of acts that would normally lead to lawsuits on the state level — including fraud, bait-and-switch, overcharging, willful destruction of property, even threats and harassment — without being accountable, because the Carmack Amendment is Federal law that trumps state consumer protection statutes.

I learned about this the hard way, through an experience with North American Van Lines that would not only keep me from ever using them again, but cause me to recommend that no one ever use them for anything, *ever.* Sure, many people complete moves without problems. But *before* you move, do some research. When you see names like "North American Van Lines" crop up time after time as defendants in litigation, think twice.

Also, google "Carmack Amendment" to find out what few steps you can take to protect yourself. Get your gear appraised *and* photographed before it's packed, and provide a written statement of these appraisals to the company as a basis for insurance coverage — then don't move until it's acknowledged. When unpacking, have witnesses *and* a video camera to document any damage you discover.

Problems with movers represent an alarming and rising tide of consumer complaints . . . you might be the next one to say "My gear melted because I was promised an air-conditioned moving van and it wasn't." (By the way, thanks to the Carmack Amendment, movers are not liable if they make promises, *even if they're in writing,* but don't deliver.)

You've been warned. In fact you should probably just rent a U-Haul, invite a friend as a co-pilot, and move yourself.

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Punch In

TUNE IN, TURN ON, PUNCH OUT BY
MATT HARPER AND THE *EQ* STAFF

by Shane Mehling

SHITAKE MONKEY

Shitake Monkey are clearly insane. And if you don't believe us, then just try them. After all, what less than the purest mental illnesses would cause three seasoned producers to attempt to start a band together? Having known each other from working under the Sony umbrella, producing acts such as Destiny's Child and Brian McKnight, members Chuck Brody, Electric Pete, and Johnny Rodeo decided to give a shot at putting an album together themselves, and what they've turned out in the form of *Street Beef* is nothing less than, well, weird: Thousands of random noises and twisted effects converge with pop hooks for what could well be one of the most eclectic song collections of recent years. So we decided to corner them (but not to make extended eye contact) and get the scoop on the making of *Street Beef*. This is what we found.

EQ: ***Elaborate on these "15,000 vocals" you supposedly tracked for the album.***

CHUCK BRODY: The 15,000 vocal stacks came from hours and hours of loop recording. The only way we could think of having the Madison Square Garden crowd singing along in "Baby Baby" was to actually record the part over and over for as long as we could. We looped the section for hours and went and found people around the studio to come join us in nauseating sing-alongs. With that, and the sing-along at the end of "Two Dudes" where we forced every person who came in the room to sing, we estimated about 15,000 vocal tracks.

ELECTRIC PETE: We were on Pro Tools TDM at that point and had to bounce down huge sessions of overdubs. It would take an hour to pan the whole stackapillar.

JOHNNY RODEO: Blend and bounce, blend and bounce.

EP: We also recorded about 180 tracks of harmony vocals on "Come On." Again, we made a separate Pro Tools session for the basic overdubs and bounced them all down to incorporate in the master session.

EQ: ***You guys manage some pretty off-the-wall sounds. . . .***

JR: We really do go for sounds that are original — nothing stock, particularly with synths. A lot of times we send MIDI to three to five keyboards and then blend their sounds. Excess is Pete's meditation mantra.

EP: My favorite is the vocal sound in the chorus to "Come

On." We threw Chuck in the vocal booth with a [Shure] SM58 plugged into his vintage Vox AC30 amp, cranked to 11. It started squealing like crazy. We miked the amp with the [Shure] SM7, gave Chuck some in-ear monitors, covered his ears with a pair of blastcan ear muffs made for lawn mowers, and then had him sing the hook with all the feedback in the room.

CB: We then put my vocals through the AC30 in the bathroom, on top of the toilet, and then threw a pair of Royer R-122s in Blumlein in front of it to record the room's reverb.

EQ: ***What pieces of gear played the most crucial roles in the recording of* Street Beef*, and how did you apply them?***

CB: We got a spring reverb unit that we took out of a Farfisa organ that was a lot of fun. We also had a couple of dbx 160xs and a 166 that we used for the guitar sound on "Maybe Lady." We just went in one to the other, and then from one side of the 166 into the other side.

JR: We also found four consumer-grade stereo graphic EQs that we chained together inline with one another that Chuck's megaphone solo on "Happens To Me" ran through. I'd like to challenge anyone to beat him in a megaphone shred off.

CB: Pete built a cool distortion pedal called "the Distorto" that was mounted to a piece of cardboard. It sounded beautiful with the array of red Squier guitars and basses we had.

EQ: ***Do you cut to tape, or did you keep everything in Pro Tools? Do you have a preferred approach?***

EP: We cut our drums to tape, then throw them into Pro Tools when we get the opportunity. I have a TEAC 1/2" 8-track that was aligned by Kim Stallings from Sony, who is a badass. I don't know how he did it, but he calibrated it at +9. We were using GP9 tape, but now we don't know if we'll get to so much. . . .

JR: One thing I always hear people say about tape is that it takes too much time. But one thing I find about cutting drums, bass, and guitars to tape is that it actually takes me less time in the mixing process. Tape just sounds more like the records I like; it smoothes out the transients in a way that Pro Tools just doesn't. Since I don't get to use tape as much these days, I have to make sure that I have the time to really check the sounds I'm getting to tape. If I'm working on limited time or with an annoying client, Pro Tools is definitely the answer. I can record a full band and read a magazine at the same time.

Amon Tobin on-site for the recording of *Foley Room*.

Amon Tobin

by Richard Thomas

Since his first release on Ninja Tune nearly 10 years ago, Amon Tobin has continually elevated the art of sample-based production, forging a darkened downtempo hybrid that draws heavily from drum 'n' bass programming, jazz improvisation, and Brazilian rhythm. But in all his years of sampling, he'd never picked up a microphone. That all changed with the creation of *Foley Room*, his newest and most inventive studio album. For seven months, Tobin and a small team of assistants recorded a wealth of source material on miles upon miles of quarter-inch tape — from beetles and tigers to assembly line machinery, wind-up toys, and the Kronos Quartet. Tobin then spent eight months pitching, twisting, and inflating the high-fidelity field recordings before sewing them into a vibrant quilt of handpicked melodies. Intrigued by this, *EQ* decided to sit down with the Montreal-based beatsmith to find out the answer to that age-old question: How do you capture the sound of one ant clapping?

EQ: ***Your field recordings are the cornerstone of this album. What did you go with, in terms of mics, to capture your sources?***

Amon Tobin: Earthworks M50 high-definition mics. The choice to go with them was based on a few things: One was that I could actually hold them in my hand without any handling noise, which was really important because I wanted to do a lot of moving around with headphones on and hear exactly what I was getting. Also, the frequency response is very broad and the noise floor is very forgiving. I could record very quiet things or very loud things with the same mics and the response was always very neutral. What they're famous for is for not coloring the sound at all. The whole idea with the recordings was to try and get as neutral as possible a sound so that afterwards I could apply environments or effects.

EQ: ***Why go with a quarter-inch Nagra IV-S instead of a more portable DAT?***

AT: I'm not one of these purists that are all about that tape sound or anything, but I knew I wanted to do extreme pitching with a lot of the recordings. When you slow things down a few octaves with hi-res digital recording, you start to hear the gaps between the samples and you get that digital alias thing. I wanted the flexibility to be able to slow the tape almost to a halt and still have a smooth signal. The second reason is that the Nagra has very nice built-in pres. It would have been really difficult to have lugged around microphones, pres, the tape machine, and then have the converters as well.

continued on next page...

Photo by Julien Elie

MOSES EXPOSES
Is The Music Business Dead?

by Moses Avalon

I'm not a big fan of repeating myself, but sometimes it's necessary. In last month's column I outlined exactly why all the swill about the "decaying music business" was an exaggeration spouted by people who've been downsized from their cushy label jobs. Needless to say, this sparked a bit of insider, and outsider, controversy. One of the responses that I received pointed me to a link on *The Chronicle Herald* where an article read: "Legendary music producer Bob Ezrin says the much talked about imminent demise of the record business is already here. People are not going to the record store and are not paying for downloads," says the man who discovered Alice Cooper, produced Pink Floyd's *The Wall* and worked with David Bowie, Peter Gabriel, and KISS, among other superstars.

Now, I am a fan of Ezrin's important contributions to the world of music. I mean no disrespect in rebuking his comments. In fact, if I'm to be honest, I should be so lucky as to accomplish half as much as he has professionally. But these are not the words of an economist.

I'm not even sure what marketing reports are feeding their conclusions. But my guess is that the main source for these doom-and-gloom viewpoints is their personal royalty/commission checks — a diminishing asset, I'm sure. After all, when you're a manager of mega-groups like Floyd or Gabriel and have grown comfortable seeing commissions in the form of six figures a month and suddenly those numbers start dropping down to $50,000 a month, then it's easy to start thinking the world is coming to an end.

But over 2 billion downloads on iTunes, Yahoo, e-Music *et al* (and the sale of over 500 million confirmed domestic CD sales in the last year alone) does not seem to jibe with the assertion that "People are not going to the record store and are not paying for downloads."

I think that what Ezrin really means is this: The music business that he and others of his kind once understood is changing so fast that they must feel like high-school guidance counselors slammed in the whirlwind of a moshpit. In their day they argued with labels over things like tour support and mechanical royalties, while today's major label negotiation involves nomenclature like cross-aggregation, tethered downloads, ethereal DRM, merch-cooping, and Web rights. I kid you not when I say that many industry veterans don't know where to start when it comes to finessing those points.

It's likely that those who prospered in the '70s and '80s may no longer pay their $10,000 per month mortgages or their $1,200 per month car payments solely from more passive incomes, such as those derived via CD royalties. So, it must be pretty hard for them to reconcile the fact that the business they grew up in, the business that they helped mold, has metamorphosed and their place in it has receded into the penumbra of its progress.

But while things may not be so hot for the Bob Ezrins of the world, for the independent musician who dreams of making $75,000 a year by doing something he loves the biz is far from dead. To the groups that are able to support

continued on next page...

***EQ:** The samples are incredibly lucid. What A/D converter did you use?*

AT: I used an Apogee Rosetta 800. It was a big decision at the time because I'd never really worked with analog tape before, so I wanted to make sure the chain was as clean as possible.

***EQ:** Talk to me about the drum programming on "Ever Falling." There's a lot of interesting processing going into the high end of the spectrum.*

AT: I put the drums through a DeNoiser, but the particular one I used has a feature on it where you can listen to just the sounds that were extracted. So I took those artifacts and put them through a GRM multi-band resonant EQ. There are about 30 or 40 bands of EQ on sliders, and when you move them they don't just take out the band, they also leave a harmonic resonance that you can make little melodies with. It provided this real sheen that was leftover from the drums. Then I'd re-transpose them onto the drums themselves.

***EQ:** Do you still program all your drums in MIDI?*

AT: For sure. All the drums on this record were edited inside Kontakt and then programmed in MIDI. It's programmed in MIDI first, then bounced to audio. It's really flexible and I find it's a really nice way to work with drums. I definitely didn't use any drum machines or synths, but I did use a lot of outboard effects. There's a Chandler TG1 compressor and an API 2500 compressor that I used a lot. I've also grown to love the Manley Massive Passive EQ. But the biggest change for me was getting rid of my Mackie D8B and instead using the mixer inside Cubase. I just put everything through a Chandler Summing Mixer, which I found worked a lot better for what I needed as far as giving some depth to the overall mix instead of bouncing and summing everything within the computer. I can do all my levels on the DAW mix. I don't really need an outboard mixer to set my faders, and my EQs are all outboard anyways. Really, what the hell do I need a mixing desk for?

***EQ:** Your production has always been very consistent and trademarked, but there's much more of a noticeable theme running through* **Foley Room**. *Certain sonic threads will appear on multiple tracks, but in slightly different forms.*

AT: You've hit it on the head. The thread throughout the whole album is to try and get sounds that share common ground, even if they come from very different places. We mixed the wasps with surf guitar that was run through a spring reverb, and the motorbike recordings have qualities to them that reminded me of certain synth-based sounds. Some drum 'n' bass records have what they call a re-space — a sub-bass sound that's very synthy as well. Those top frequencies are the nice ones, and when you high-pass those sounds you get these really nice crunchy parts on the high end that flutter a bit. I've always tried to find that, and I looked to motorbikes for that for this record. There are lots of people doing field recordings — there have been for decades. I'm much more into what happens when you transform them. It's always been about the transformation for me.

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1999 WavePipe technology for low latency audio streaming

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1997 1st native DAW for Windows NT, 1st with real-time DirectX FX; StudioWare introduced

1995 Cakewalk Pro Audio: 1st native 32-bit MIDI & digital audio workstation for Windows 95

1993 Real-time MIDI editing introduced

1991 Cakewalk Professional for Windows: 1st sequencer for Windows 3.1, CAL (Cakewalk Application Language)

1987 Cakewalk for DOS introduced, 256 tracks

Punch In

their families by grossing a mere $300,000 a year, sans a label's support (and I have several clients who are doing just that right this moment), the biz is far from dead. To the guy who made a cool 20-second loop in his garage and is getting $1,000 a month in extra dough from ring-tone sales, the biz is far from dead.

The old-timers can't seem to reconcile these paltry numbers. To them it must seem ridiculous that today's emerging artists aspire for things other than major label contracts. How can they prefer to make 100,000 friends on MySpace? To revel in getting a local sponsor for the $50,000 it takes for the jump-start instead of signing a million dollar deal that will make them pimps for Pepsi? To be happier making a $7.00 profit *today* from a CD they sold off the side of the stage than in taking $0.94 at a time two years after a label liquidates their reserves and drops them due to "only 1,000,000 units being sold"?

But to the old-timers this all sounds rather low-res. Where is the guarantee of $50,000 a night for a 15-city tour (that I can commission)? Where is the $1,000,000 advance for five albums (that I can commission)? And how about a seven-figure publishing deal (that I can commission)?

See, that all-you-can-eat buffet has been subjected to a Balsamic reduction. It's now a pre-fixed menu of grinding out a decent, proletariat living from the making of great art.

No. We are very much alive. Like the medical and legal industries, recent changes in economics have forced many to re-think why they are interested in becoming doctors or lawyers. You must now love what you do. The money alone cannot be the driving factor anymore. And when it comes to music, shouldn't it always have been like that in the first place?

Perhaps, amidst all the buy-outs, golden parachutes, and mergers, some people have forgotten that.

Just the opinion of one man. ■

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.*

Wax Tailor

Photo by Xavier Jacques

by Jeff Anderson

Debate: Vintage vs. Re-issue

Last week I was sitting in on a mix at the world famous Chicago Recording Company — an enormous studio that has been used to record tons of hit records and has become a favorite workspace for both seasoned producers and budding engineers alike. During a break from my session, Bruce, CRC's head tech, came in to calibrate the 1/2" mix down deck, and I decided it would be a great time to pick the brain of a studio vet about a subject that has been the basis of great debate in our little trade: Do vintage predecessors really produce better sounds than their re-issued brethren?

Back in the Sept '06 issue of *EQ* (which can be found in our online archives at www.eqmag.com), I sat down with Chris Lord-Alge and got his take on this very matter. I'd always been impressed with the vocal sounds that he achieved in his mixes, so I asked him what compressors he suggested in hopes that I could go home and apply the knowledge gained to my own projects.

Unfortunately, that wasn't so much of an option, as while I have my own 1176s, his arsenal was a bit more, shall we say, customized. "I have a couple old blue face 1176s," he told me. "One in particular is wired all wrong inside. It's perfect."

But surely there is some way to emulate that sound, especially with all the technological leaps and bounds that have occurred since that particular unit first came out of the box? "It's not about kHz and bits," he concluded. "It's about distortion, bending and rounding, and character . . . and tinted windows."

So is it the imperfect nature of vintage gear that produces the sonic qualities that lead many people to conclude that they are just plain better? What about the fact that a lot of the re-issues of famed gear are meticulously crafted, oftentimes molded exactly after the original's specs? Is it the years of wear, tear, and abuse that changes the character of the units into something so incredibly desirable?

One factor to consider is how the role of the recording engineer in regards to the tools he/she uses has changed over the years.

Punch In

by Merrick Angle

Something rumbles on the shadowy outskirts of Paris; Wax Tailor, a.k.a. JC Le Saout is cooking up another installment to his downtempo, hip-hop *œuvre*. Like a film producer with his very own take on European rap, he blends unlikely collaborations with snatched dialog, weaving it all into a flow so atmospheric, so slinky, it is easy to see why 2006's breakout single "Our Dance" was a favorite with *Playboy* magazine. Think DJ Shadow doing Jean-Luc Godard and you are almost there. But we wanted to get *all* the way there, so we sought out the influential DJ/producer for a quick chat about the making of his new album *Hope & Sorrow*.

EQ: ***You say you work with a very simple setup. . . .***

Wax Tailor: I have a Technics SL1200 turntable and a Rane Mixer that I use for vinyl sampling. Sampling is done with an Ensoniq ASR-10 sampling keyboard, and all the vocals are recorded with a Neumann TL103 running into an Avalon 737SP.

EQ: ***And yet you have quite a polished, full sound, particularly for hip-hop.***

WT: I work with my sound engineer Laurent Collat (Laurent Garnier, Snooze, P18) for the final mixes. We both use the Universal Audio UAD-1 Ultra Paks, which allow us to upload the projects from my studio to his studio.

EQ: ***Which plugs from the Ultra Pak are you using most often? I noticed the nifty pans on*** **Hope & Sorrow.**

WT: Mainly the Fairchild 670 and the Pultec EQs; the LA-2A to compress the vocals, and the 1176 for single drums shots. The Cambridge EQ and the Dimension D are also pretty efficient tools for spreading the stereo image.

EQ: ***You say that you find sources from other albums and then sequence them to make your own loops. A lot of hip-hop producers seem to be doing that lately, moving away from the big recognizable loop to more refined, subtle hooks. How do you get those initial ideas down?***

WT: It depends on the tracks. Sometimes I just find a small element but one that I feel is strong enough to be a kind of backbone. I begin to work around that element, writing arrangements with other small samples and textures. Most of the time I don't use a sound to play a melody, I search for a melody to fit the sound I want to use.

EQ: ***The song "Ungodly Fruit" sounds really warm and smooth. What went into achieving that sound?***

WT: I began the track a long time ago around a loop that was kind of minimal. I built the drums around that, but I didn't really feel it; it was just too loud. I went back to it later and rebuilt the drums with tabla elements that made it feel smoother, and then worked the arrangement to match that with horns, strings, etc. All the samples were chosen for that texture.

EQ: ***Dialog samples also seem to play a huge part in creating your own sonic world. Which comes first, fitting the sample to the music or fitting music to the sample?***

WT: I usually sample old movies, and then organize them. First I collect the samples and then I note them each time I watch the movie. At the end, I dig though my database and then start from there. Sometimes a part of a single sentence can be strong enough to inspire the whole track.

Forty years ago, an engineer's job involved just as much tech work on the actual gear as it did hitting the record button. In today's world, studios have changed from having a fleet of full-time techs on staff in their engineers to many more "passive" soundsmiths. Why is this? Because the availability of gear is much greater (as it's produced in higher numbers) and the relative price of gear is lower. If your $800 compressor starts to experience problems, you are probably more likely to throw it out or simply return it to the manufacturer with your warranty card than you are to crack open the box and get to work on it yourself.

So maybe the lack of these "unconscious upgrades", of having our gear constantly manipulated, is what makes the difference? Does every replacement, every pass of the soldering iron, make a unit that much more special?

There are certainly signs that point to that. In my personal experience, having heard the sounds of the components wearing in and out every time an old console I once owned got worked on by a tech, I have learned that the capacitors and transformers passing audio sounded their best right before a "fry." And not only that, the board itself sounded completely different than the same model desks I've encountered. Perhaps it's because these consoles were "hand made by a bunch of drunken Brits in the '70s." Or maybe it's a combination of both: Just as a tube on a guitar amp sounds better burnt in and running hot, so do the little errors and inconsistencies brought by the hand of man result in the subtle changes that really make the tone of a piece of equipment special.

Even if that's the case, today's manufacturing technology produces some incredible results when it comes to reissued units. Oftentimes being made to the exact specifications of the originals, reissues reproduce intended sounds very accurately. Also, one thing reissues absolutely trump their original counterparts on is that they tend to be much more consistent — you know exactly what sounds to expect when you plug a reissue in, and that can definitely be an advantage in formulating your own signature sounds. Plus, reissues tend to be much less finicky, and having solid components in your studio can make your life as an engineer much less dramatic.

So when the question arises as to whether or not that "new" addition to my studio is going to be a vintage piece that may, or may not, produce the sounds that I'm looking for (or may totally fall apart a week after it arrives to my studio) or if it will be a reissue that comes with a much more solid guarantee and allows me to feel confident and secure in my decision, which am I going to opt for?

That depends, because while there are pros and cons to both types, they each make sounds that are unique to one another.

continued on next page...

Debate:

What is going to work best for you is contingent on what sounds you are trying to get, and there are often many ways to achieve those sounds outside of simply getting a magic box that was once used on your favorite album. Recording equipment is just like the recording process: Once you come to a certain point, there really is no right or wrong way to do it. As long as it sounds good, then that is all that matters.

That, and for the life of me I just can't find Chris Lord-Alge's blue faced 1176 on eBay.■

PATTY GRIFFIN

by Heather Johnson

Partly due to the area's abundance of limestone bedrock that makes digging a basement next to impossible, many Texas homes rest on what's called a pier-and-beam foundation, which entails sturdy brick or concrete blocks spread about 8 to 12 feet apart that support large wood beams, which support the floorboards. This creates a crawlspace below the house, which makes it much easier to install electrical wiring and ductwork, but hell to record drums.

Producer/engineer Mike McCarthy (Spoon, And You Will Know Us By The Trail Of Dead, Sound Team) overcame that obstacle when he teamed with singer-songwriter Patty Griffin and band to record *Children Running Through*, her stellar new album on ATO Records.

Rather than work in a conventional recording studio with conventional day rates and conventional atmosphere, the artist chose to work in a near-empty house across the street from her own in Austin, Texas. McCarthy moved in equipment from his studio/rehearsal space nearby and oversaw the arrival of a Steinway Grand Piano, among other items. The piano/vocal and guitar/vocal sessions McCarthy recorded during preproduction went off hitch-free, but when drummer Michael Longoria showed up with his kit during basic tracks, they knew they had a problem.

"I was standing in the [control room] and underneath my feet I could just feel this boom-boom-boom of the bass drum," says McCarthy. "Every time you soloed Patty's microphone and hit the bass drum, her mic stand would shake. I thought, 'Oh no. This isn't going to work.' But my assistant, Steve Squier, found some rubber-bottom carpets. We put those underneath the drums as a shock mount, and that pretty much took care of it."

With that problem solved, the remaining sessions went off smoothly — save for the occasional noisy bird and the humid, 100° summer temperatures. McCarthy decorated one bedroom with his Calrec mini mixer, Studer A827 24-track analog machine, and an assortment of classics such as Langevin 5116s, Telefunken V76s and V72s, Universal Audio 1176s and 175s, and Siemens and Neve EQs. Colorful tapestries chosen by Griffin and Traci Goudie, who designed the album art, hung behind the console and speakers to help deaden the room.

The kitchen housed J.D. Foster's bass guitar amps, while Foster, guitarist Doug Lancio (who produced her third album *1,000 Kisses*), and Glenn Worf, who played acoustic, electric, and/or tic tac bass, stood in the second bedroom. An adjoining bathroom held the guitar amps. Patty had the front room to herself, which gave her space for her guitars, the Steinway, and her powerful, expressive vocals.

McCarthy usually miked those signature pipes with a pair of Neumann M49s, with M7 and K47 capsules, respectively. Griffin intended to keep her voice and the lyrics at the forefront on this album. "The aim," Griffin stated earlier, "was to strip everything down and just give it a few brushstrokes here and there, to come up with something that's quiet but powerful. I wanted to be a little less wordy, but I also wanted to make a record where I didn't hold back, and could let myself sing as loud as I wanted to."

For Griffin, however, singing loud doesn't mean screaming into the red. Taking advantage of her skillful mic technique, McCarthy ran the M49s through the V76 preamp to a Universal Audio 175 tube limiter, with touches of a UA 1176 or Neve 2254 compressor here and there. "I wanted to maintain the dynamic as much as possible," he says.

Griffin's acoustic guitar was captured with a Neumann U67, and piano came through with a Neumann SM2 and a pair of AKG C12As. Drums were recorded by a setup of Sennheiser 421s, a pair of Neumann U64s, a KM56, and a Shure 55S, among others.

Keeping Griffin's goal of a stripped down sound with strong vocal presence in mind, the band either played with Griffin or added their parts after she had nailed her vocal take. The band sorted out their parts almost intuitively, with Lancio handling the charts and McCarthy making subtle suggestions. "The challenge was to add everyone else's part in a way that was complementary and not get in the way," McCarthy says.

After tracking the album to two-inch tape, McCarthy transferred the tracks to Pro Tools|HD, then handed them off to engineer Jim Vollentine, who handled some overdubs and much of the editing. From there, the crew traveled to OceanWay Nashville for horn and string overdubs, as well as to mix on their prized Neve 8078. "I don't know what Alan Sides and Sal Greco did to it, but that's the most wide and open-sounding Neve I've ever worked on," says McCarthy. During the mix, he fine-tuned Griffin's vocals with a Fairchild 670 and added trace amounts of reverb, courtesy of the EMT 140 plate reverb. Stephen Marcussen mastered the record at his Marcussen Mastering in L.A.

While McCarthy did notice that Griffin was "pretty enamored" with OceanWay's spacious digs, it was important for her to record her latest batch of songs in a low-key environment, and her house across the way — piers, beams, and boiling temperatures aside — provided that.

"I was more relaxed than I've ever been making a record," Griffin reported, "and I had a lot of confidence in the material. But there was also a lot of tension, and there were definitely moments where we didn't think we were gonna get it together. But we did."

All 4 YOU

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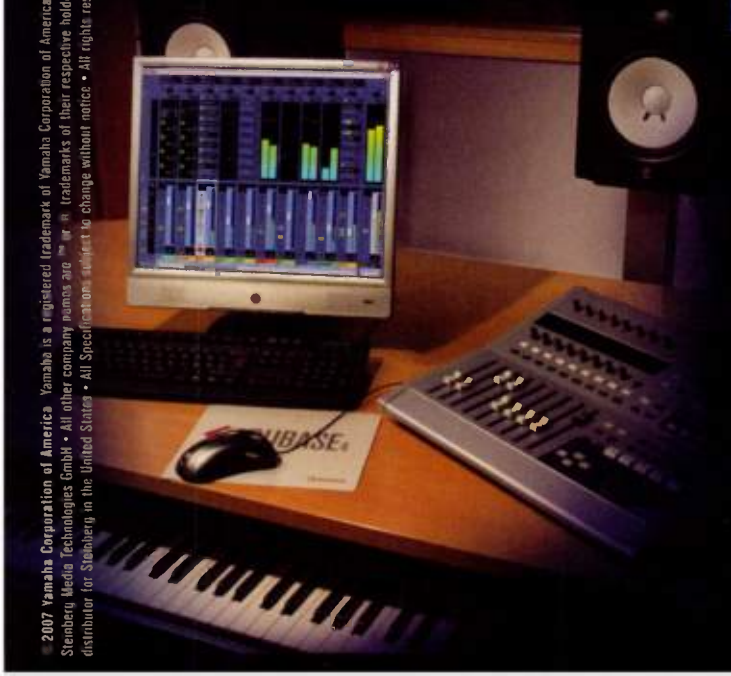

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SESSION FILE: KID606

Mixing Moogs and Macs to keep the music above board

by Heather Johnson

Kid606, a.k.a. Miguel Depedro, one of the more prolific trailblazers in the electronic and IDM worlds, has toyed around with "virtually" every soft synth and sampler known to man — but all he really wants now for his studio is a sippy cup. With technology moving faster than the speed of light, he believes that electronic musicians can get so caught up in updating their workstations that they forget about the all-important task of using them. Depedro, however, has all of the gear that he needs in his Oakland, CA, studio — which he uses constantly, and updates only when absolutely necessary. But if someone made a helmet with a straw that he could drink from so that liquids wouldn't spill onto his vintage keyboards, then he'd be set.

Having made his name as a laptop musician (albeit a restless, unpredictable one whose aural scope has ranged from understated electronic pop to hardcore dance to jungle/breakcore), Depedro's refusal to stagnate translates to his recording methods, which he says vary with each album. And for his latest, *Pretty Girls Make Raves*, the man behind the mix says he has returned to form in a sense, revisiting some of the analog components and old-school approaches from which he originally launched his career.

A REMIXING RETROSPECTIVE

From the critically acclaimed *Don't Sweat the Technics* (concocted solely with a Macintosh and a Kurzweil J2000 sampler) to the *über*-processed breakbeat noise fest *Down with the Scene*, Depedro has taken equal inspiration from punk, funk, techno, and hip-hop while maintaining musical independence from any of his influences. Becoming well-known for his own work, and numerous collaborations with a host of renegade acts, it was Depedro's bootleg remixes of Missy Elliott's "Get Ur Freak On" and other tracks by Elliott and NWA that are credited for the nearly unlawful amount of attention directed toward him — publicity which Depedro says in many cases was unwanted, simply because the work wasn't truly his own.

"I was doing that right when it became really easy to do with DJ mixing software like Ableton," he says. "I wasn't doing it all by hand on tape, but I was doing it all by hand on a computer. It got so over-hyped, but it helped me so much at the time, and I never really got in trouble for it, which is pretty amazing. I was just young and didn't care what happened. It was more about making a statement than trying to be on the cusp of some trend."

For better or worse, those ripped up versions of rap and hip-hop caught people's ears, which led to legitimate work for Kid606 as a remixer. He contributed to *Reich Remixed*, a collection of DJ remixes of original recordings by composer Steve Reich, before Mute Records contacted him to re-work some songs from Depeche Mode's *Exciter* album in 2001. "It was insane," he recalls, "I spent half of my time on remixes back then. It was wonderful to work with all of these individual parts of a song, to listen to 32 audio tracks and discover, 'wow, there's an organ hidden under the hi-hat.' It taught me a lot about production, and helped me get where I am right now."

GEAR UP AND DANCE

"I'm used to making really un-danceable music and really noisy, experimental art music, and this record is the most danceable thing I've done in some time," Depedro says. "Lots of people think dance music is just made for DJs, or for dance mixes, and the songs don't stand on their own. But most music now, if it's not DJ'd or listened to as an album, is being mixed by other people . . . or you hear one song on a blog or something. So the actual setting is less important, and it's more acceptable for dance music to serve as a tool."

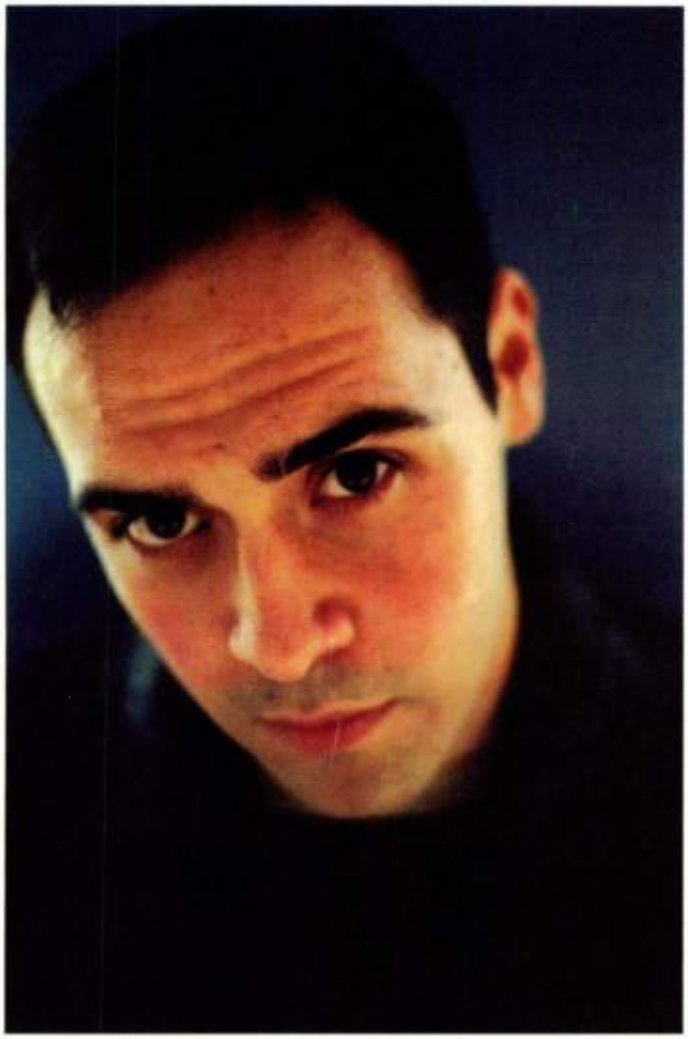
But when it comes to the tools that drive the tools, Depedro works on three Macintosh computers: A dual processor desktop, 17-inch Powerbook, and a MacBook — running Logic Audio Pro 7.2 as his main platform. "It works seamlessly with my external hardware," he says. "I've been using Logic for years, and I'm still discovering new things." But despite Logic's seemingly infinite capabilities, the creative opportunities that exist outside of the box presented more of a challenge. "I spent so much time in front of a computer as a composition tool, I became less interested in using it as an instrument," he says. "If I'm using the computer as a studio, I'd rather use external instruments, like guitar, bass, and analog synth."

Save for his Dave Smith Evolver synthesizer, Depedro got rid of most of his MIDI gear, but hung on to most of his analog synths and drum machines — this time around, at least. For *Pretty Girls*, he turned to vintage synths such as the Korg MS-20, ARP 2600, and Roland TB-303, as well as a Roland TR-606 drum machine — a near-relic. "This forced me to put in a little more work," he says of his analog toolbox. "Computers allow you to be so lazy."

Depedro employs an Encore Expressionist eight-channel MIDI-CV converter, which works in conjunction with Logic's automation system, to control his pre-MIDI synths via computer. Rather than rely on Logic's vast assortment of effect plug-ins, he tends to work with guitar amps, delay pedals, homemade distortion boxes, and random "old stuff" borrowed from friends. "With all of the plug-ins that come with Logic, people can go crazy processing music. I took the more conservative approach."

WE'RE ALL ANALOG ON THE OUTSIDE

On "Let it Rock," one of eight densely layered tracks, he runs electronics through a ZVex Fuzz Factory guitar pedal,



which, combined with the computer, creates a pounding rhythm that's far different than anything ever created with an electric guitar. For other grating blips and ricocheting synth lines, he uses the Sequential Circuits Pro 1 and/or the Korg MS-20. "The oscillators drift and they have their own tone," he says. "I'll record a track that's just clean, then I'll record another track on top of that that's panned to the other side, where I'm turning the knobs and changing the settings of the synthesizer while the song is going. You can do that now with automation, but I still think it's more fun to use the actual synthesizers."

GOING BACK IN

Depedro also takes a less traveled road when building loops and samples, shying away from Logic's audio library and instead creating his own sound beds. "I modulate loops a lot — I'll create [a loop] and then subtract elements so that it's not so repetitive."

Another authentic (and rare) addition to *Pretty Girls Make Raves* is in the assignment of vocals. Depedro has recorded his own voice only a handful of times in the past, but would never call himself a singer. Rather than belting out any sort of traditional verse/chorus/bridge, the voice in this case becomes just another sound to twist and torture, often distressed to resemble the distorted punk sound of Skinny Puppy's Dave Ogilvie or Ministry's Al Jourgensen — an effect he says is accomplished by running an old '70s vocoder shifted internally in Logic. The vocals are then processed (along with all the drums) through the ARP 2600 filters, as well as a Sherman Filter Bank. Of course, the secret weapon for warmth, as Depedro confesses, comes in the form of the Avalon VT-737 channel strip, which he runs "just about everything through" before getting totally in the box . . . and out of his mind.

I spent so much time in front of a computer as a composition tool, I became less interested in using it as an instrument.

AN (IM)PERFECT CIRCLE

Along his way to *Pretty Girls Make Raves*, Depedro says he's learned the importance of the human element in various stages of the recording process, even in a medium that relies so heavily on machines. "It's much more about what you put in the box than what you get out," he says. "People have the idea that they can put together some quick song in Garageband, and it can be a single. Obviously, for Apple's marketing purposes, they want you to think that. But at the same time, even with these professionally-recorded loops and all these preset sounds, you still have to find a way to mix them. The most important thing is to not get lazy with any material you're recording."

For an artist such as Depredo, who has enough stiff competition from himself alone, going back to the basics without becoming basic is what it took to keep him, and his listeners, from feeling lazy when listening to his music. "This record was really just about putting the fun back in electronic music, doing things quickly, and having less song structure, more repetitive elements. There's definitely a lighter way to make this music, and a more scientific and professional way; I think it's best to explore both because, after all, not all people like perfectly recorded music." EQ

Heather Johnson is a San Francisco-based independent journalist. Pay her a visit at www.out-word-bound.com.

SUCCESS STORY: IAN CATT

What have you done today, Dr. Catt?

by Jeff Touzeau

Ian Catt — musician, producer, creative consul — has been churning out productions regularly described as mood-evoking, ambient, and imaginative from his South London Cat Music studio for the greater part of 20 years. Working closely with everyone from the Trembling Blue Stars to Nosotrash, Catt has become well known for his incredibly collaborative production style, seamlessly switching roles from engineer to performer — often in the middle of single sessions.

Perhaps most widely credited for his decade long, genre-defining work with UK-based electronica ensemble Saint Etienne, Catt has once again stepped up to the plate to produce the group's newest release: the soundtrack to their critically-acclaimed short film *What Have You Done Today, Mervyn Day?*, the followup to 2003's *Finisterre*. Though working expressly for film scores is a relatively new pursuit for Catt, it just seems to make sense that he would eventually wind up producing music for the screen, especially considering the naturally atmospheric, dare we say "filmic," quality of some of his past collaborations (*e.g.*, Northern Picture Library, Trembling Blue Stars, and The Occasional Keepers). "[Producing for] a film involves a very different discipline," Catt relates. "When you make an album, all you are concerned about is what the music alone is saying to you. For a film, there is the old adage to abide by which says 'If you're aware of the soundtrack it's not doing the job — you should just enjoy the film as a whole.' You find that, for a film score, some traditional music production approaches end up being too intrusive."

TO CONVERGE AND COALESCE

Whether working on an album or a film score, Catt finds that the artist must lead the process: "I don't impose my working methodology on people, because that never ends well," Catt says. But, thankfully, for both Catt and the band, the process of working on the film score for *What Have You Done Today . . .* was a natural extension of past Ian Catt/Saint Etienne collaborations, one where a clearly understood artist-to-producer framework has evolved naturally. "We have a defined language now, and I know how to get the things they're hearing. Quite often Bob [Stanley, keyboardist] will come in with something, and say 'How do we get this sound?' And we'll get it pretty easily. Pete [Wiggs, keyboardist] will also produce some basic ideas; the title track is a good example of that. When the idea came in, it was pretty well formed. The only real work was in overdubbing additional sounds, getting real drum sounds, and making the track sound deeper, fuller."

Wiggs works, at first, in Apple Logic Pro using Spectrasonics' virtual instrument Stylus to trigger his loops and samples. These sounds are then brought into Cat Music studio, where most of the live instrumentation is added before the components are mixed and all sonic undesirables are massaged out. "Quite often we'll keep the original sounds and the sequenced parts because they are defining characteristics of the piece," Ian says. "But what I can offer is a more physical, live sound. We overdubbed drums and guitars here, for instance, which certainly lends to a more organic feel." Though traditionally Saint Etienne has programmed many of their beats, using MIDI sequencing and then dropping in "natural" sounds afterwards, for the *What Have You Done Today . . .* sessions Catt decided to outsource the rhythms and hire a studio drummer. "It was so refreshing to be able to concentrate on the feel and artistic side of [the drumming] rather than obsessively asking ourselves 'Is it sitting on the click?' We got a better sound because we didn't get to listen to 900 kicks before making a decision."

Ian Catt, mixing Saint Etienne's *What Have You Done Today, Mervyn Day?* in the control room of the famed, if not slightly clustered, Cat Music studio.

SMALL ROOMS/BIG DRUMS

Cat Music studio is by no means a huge work area, but the lack of large

spaces to record in doesn't strike Catt as a hindrance: "I recorded the drums in a booth, which is very small. The walls were so close to the mics that I didn't think I'd get a good room sound, but they ended up sounding great. My setup was pretty standard, and I wasn't going for a particularly huge stereo spread." And traditional it was: Catt claims that the standby Shure SM57 was placed on the top head of the snare, and the old faithful AKG D112 was stuck in the bass drum, about six inches back from the beater head. As tracking in a vocal booth is hardly a scenario conducive to huge sound, Catt decided to mic each piece of the kit individually, minus the crashes: "I used a couple cheap AKG [D220s] on the toms, a Beyerdynamic MC740 on the hi-hats, and put up a matched pair of [AKG] C 451Bs as overheads."

IT'S A MIDI WORLD

Catt's clients regard him as an incredibly efficient engineer, and he attributes his ability to streamline a project to a case of gear xenophobia — he avoids integrating new gear into his workspace, or even updating his software, at all costs. "I am very difficult to seduce with new technology," Catt confesses, "so I don't just run out and get the next new, great thing. In fact, I've just bought another Atari! I found this guy in the north of England who is Atari mad, and he rack-mounts old Atari STEs. When all I need is a MIDI sequencer, I'll still use an Atari."

Catt's tracking platform of choice is Soundscape. "I've been working in Soundscape on a PC for years, and it is absolutely reliable. Hand on my heart; it has never crashed on me. The converters in Soundscape are really good," he observes. "However, there is no MIDI sequencer in [Soundscape], which is a bit of a nuisance. If the tune is a sequence-based thing, I'll usually start in Cubase."

Catt has been working with MIDI sequencing for much longer than many of his peers, and having programmed most of the parts in real time in the past, a sense of programming danger is a cornerstone to his style — and he does everything to retain that urgency in spite of technological leaps. "One of the techniques I use now, which I never used to do, is to print the MIDI parts as audio first, then work with audio entirely. I just find it's quicker that way. I used to keep things off tape until the bitter end, and if I had a big arrangement going with lots of MIDI, I would just save it and make it recordable later. So if I'm happy with a sound now, I'll put it on Soundscape and forget about it."

REMIXING EXTRAS

What Have You Done Today . . . was originally mixed in stereo rather than in 5.1, as originally proposed by the band, solely because Catt doesn't currently have the facilities at his studio to accommodate a full surround mix. However, the band rectified this situation during a live performance at London's Barbican Hall, in front of a sold out audience, by tracking the entirety of the soundtrack live and then remixing the soundtrack to allow for two rear channels — channels Catt tells us were used almost solely for the effect of increasing ambient space.

But whether it's a standard album, a film soundtrack, or a remix of a live performance married to an existing recording, what is most evident in all of Catt's productions is an extraordinary sense of space and depth. As all producers know, dimension can be the most difficult aspect of a band to translate into a recording. When Catt's is posed with the question "How do you get your albums to sound so deep?" he doesn't have to ponder for long, as he swears the secret lies first in the construction of the song and, secondly, in not going overboard with overdubs: "If the arrangement, the performance, is right, getting a good mix becomes much, much easier. When things start sounding crowded and have difficulty breathing it's usually because there are too many things going in the mix." EQ

BEING IAN CATT: A BEGINNER'S GUIDE

RECORDING ACOUSTIC INSTRUMENTS: **"If you're having trouble getting a good sound to translate from the acoustic guitar, but the artist thinks it sounds good to you when they are playing it, try putting the mic where the player's nearest ear is [right ear for the right-handed guitarist]. It looks weird, but it's quite logical if you think about it. I often combine this with another mic in a more 'conventional' position. But be wary of phasing problems though, as the two mics aren't coincident. Once you get them in phase, you can often get the tonal balance you need just by balancing the two mics in the mix, without needing EQ."**

SEQUENCING: **"My DEF file in Cubase has a muted track which contains a library of useful 'stock' parts; *e.g.* a click track (I find this more useful than the standard MIDI click, as you can engage it just where you need it), looped trigger parts, and 8th and 16th note sequences (just copy and transpose for instant electronica bass lines!). This helps keep me from being redundant in my programming."**

MIXING: **"When mixing a band which wasn't tracked 'live,' but for when you want to give that impression, I find it helps to imagine the space in which you are trying to create the illusion of the music occurring. What kind of room is it? Is it a concert hall or a small, intimate space? How far away are the musicians from one another? Building a picture of the group in the room can help you make informed decisions about everything from EQ settings to panning to the amount of reverb you need to add for the right kind of ambience."**

TECH BENCH
Bending Basics

by Flaaaps, Dr. Walker, and Craig Anderton

Intrigued by bending? Thinking about adding some totally new dimensions to your recordings? It's not really that difficult, and it can be a lot of fun. Here are some tips to get you started.

Fig. 1: It's important not to overheat the circuit as you work, so use a 40 watt soldering pencil.

Fig. 2: Push down the plunger on a solder sucker, hold it over the connection, then heat the connection: Pushing the button creates suction that pulls the solder into the barrel of the sucker.

Fig. 3: Typical components used for bending.

■ When you go to flea markets or used equipment shops to get new toys and instruments, always bring fresh batteries of all sizes and types. That way you can check all instruments on the spot, and you don't end up buying broken crap.

■ If you see corrosion around the battery terminals, be careful. Battery leakage on to a circuit board can destroy the traces and kill the circuit. On the plus side, it might make some very strange noises as it begins its descent into a slow, chemical-induced coma.

■ Never bend an instrument that's connected to the AC wall voltage! Be patient enough to turn the instrument off, make your modification, then turn it back on again.

■ Use the right tools for soldering (Figure 1): a soldering pencil, not a soldering gun, and *thin* 60/40 rosin core solder. Acid core solder is for plumbing only, and will destroy your circuit.

■ Semiconductors are more sensitive to heat than other components. If you need to remove solder around an IC, use a solder wick or solder sucker (Figure 2). Do one pin at a time, and wait a couple minutes between pins.

■ Take instruments apart carefully. Don't force connectors, and note that some have little tabs that secure the connector in place; you may need to apply pressure to the tab with a small screwdriver to "free" the connector.

■ When you find connections where interesting things happen, use different elements to connect the pins: pots, LEDs, photoresistors, diodes, and the like (Figure 3). You can also bring these connections out to jacks, creating a little patchbay, which will give you more options than just adding a knob or switch.

■ Websites are great for finding instructions on how to do particular bends, but don't copy too much from other people. Be unique!

■ Take your time with the bend. There is no reason to hurry; think of what the final design will be *before* you start to drill additional holes in the instrument's housing.

■ A lot of boxes generate radio frequencies. If you hold them up to an AM or shortwave radio, push buttons, and turn knobs, some very strange sounds may come out of your radio.

■ Do a search on the web for service manuals for your instrument, as you never know what you'll find. For example, the cheap Casio M-10 keyboard used the same soundchip as much more expensive models. By simply grounding a few pins with switches, you could get all the additional voices of the expensive keyboards!

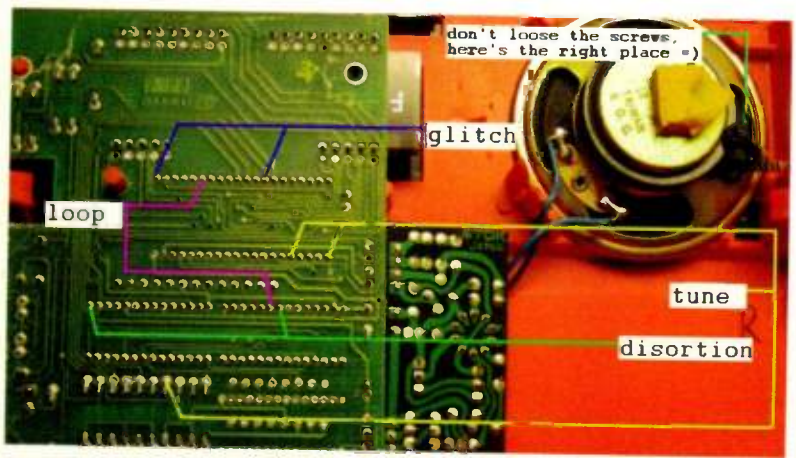


Fig. 4: Some strategic connections for bending a Speak 'n Spell.

HERE ARE PLACES ON THE WEB TO FIND MORE TIPS ABOUT BENDING:

www.anti-theory.com
The site from a godfather of bending

www.casperelectronics.com
Some very cool bends

www.sailormouth.org
Teach & Tell mods, how to add oscillators

www.burnkit2600.com
News, bent gear demos, festival coverage, and more

stormscorner.com/ewb
Lots of resources, including service manuals

www.gieskes.nl/circuitbending
How to bend Casio, Gameboy, and other gear

www.blankstare.biz
Bending basics, events calendar, music, links

www.cosmods.de
Check out "Noisemakers Bends" and the parts finder search engine

billtmiller.com/circuitbending
Web site about different bending artists and bended toys

www.f7sound.com/circuitbend.htm
Much cool stuff, and a free bended soft synth for Reaktor

www.kpsec.freeuk.com/solder.htm
Very useful basic tips and tricks

www.flaaps.com/bent/tippsundtricks.jpg
Flaaps' tips for bending a Speak 'n Spell; Figure 4)

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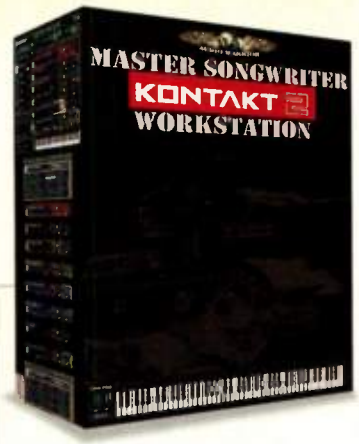

Master Songwriter Workstation Library

This Kontakt 2-compatible sound library ($149) includes a large selection of instruments and multis with guitars, pads, bass, FX, drums, choir, 30 acoustic and electric drum kits, world percussion, organs, pianos, and two Rex2/MIDI Drum Track Builders — one from Queensryche's Scott Rockenfield and one from Bryan 'Brain' Mantia (Primus/Guns-N-Roses), each with corresponding MIDI files.
www.audiowarrior.com

EK 3421 Portable Receiver

Sennheiser's **EK 3241** true-diversity portable receiver is designed specifically for location sound recording. It uses a 36MHz switching bandwidth that can generate 7,200 frequency options, making it the ideal partner for the Sennheiser SKM 5200 and SK 5212 transmitters. It can be powered from a camcorder or via a rechargeable battery that delivers between 9–18 hours of continuous operation.
www.sennheiser.com

Transducer Analog Guitar Speaker Simulator

A joint project of SPL and guitar amp specialty firm Tonehunter, **Transducer** ($1,500) connects and operates like any guitar speaker box; it provides greater sonic flexibility compared to fixed box/mic gear, independence from room acoustics in recordings, and eliminates phasing problems thanks to latency-free design. Switchable functions emulate alnico or ceramic speakers, closed or open housings, condenser or dynamic mics, and adjustable miking distances.
www.soundperformancelab.com

PreMaster CD Software V2.0

PreMaster CD 2.0 ($495) for the Mac adds more background processing, control, and functionality. A new Master Section, with large, adjustable metering, a master fader with dim, and convenient management of re-dithering parameters, offers centralized command and control. Other additions include export to BWF and AIFF, along with optimized processing of waveform metadata.
www.sonicstudio.com

Expanded Capabilities for Altiverb 6 TDM

Broadening its support for Mac Pro Tools|HD systems, **Altiverb 6 TDM** now allows owners of the most recent Digidesign Expansion|HD Chassis to load Altiverb on HD-Accel chips inside their computer and in their Expansion|HD Chassis. The update from Altiverb 5 HTDM to Altiverb 6 XL, which includes the TDM plug-in, costs $100 or $129, depending on when Altiverb 5 was purchased.
www.audioease.com

Digidesign 003 Family

The 003 family includes **003 Factory** ($2,495) and **003 Rack Factory** ($1,695), which offer I/O, Pro Tools compatibility, and a bundle of up to 80+ instrument and effects plug-ins, compatible applications, and sound libraries (including the new Pro Tools Ignition Pack 2 software collection). The 003 Factory provides hands-on Pro Tools LE control via its integrated control surface; the 003 Rack Factory features the same capabilities as 003 Factory, but packages everything in a 2U rackmount chassis.
www.digidesign.com

AudioTools Batch Pro Processing Software

Minnetonka Software's **Batch Pro** is an automated processing tool for audio assets that converts, transcodes, encodes, and applies plug-ins to sets of audio files in a batch mode. Users specify input files, configure a chain of processors, set parameters for each processor, and run the job. Integrated access to vintage analog processors and external digital processors, Minnetonka Audio's Surcode encoders, and VST plug-ins including stereo and surround is also possible.
www.minnetonkasoftware.com

Dan Dean Solo Strings Advanced Sample Library

This DVD-ROM library ($199) in Kontakt 2 format features chromatically sampled violin, viola, and cello in both solo and ensemble configurations. There are three main instrument groups: All-In-One Instruments, which feature all articulations of each solo instrument; Voice Control instruments, which use a proprietary ensemble building technology; and Legacy Programming, which are standard plug and play/drag and drop instruments.
www.dandeanpro.com

Quantum Leap SD 2 Virtual Percussion Instrument

Featuring approximately 10GB of

percussion, **SD2 — The Next Generation** ($495) draws from the collections of three world-class percussionists. All recordings were made with vintage Neumann microphones in East West's Studio 1, and include reverb impulses; the collection is not loop-oriented, but instead provides MIDI performances that are pre-mixed, panned, and produced for quick use.
www.soundsonline.com

Furman Updates Elite Series Power Conditioners

The new designs feature smooth contours of black steel with clear blue LEDs. In addition to the technologies that popularized the originals, such as Linear Filtering Technology (LiFT) and virtually non-sacrificial surge suppression, the **Elite Series** now adds 12V triggering for remote control.
www.furmansound.com

ReflexBlu Blu-Ray Tower Duplicators

Disc Makers' **ReflexBlu2** ($2,999) and **ReflexBlu4** ($4,999) let users create, edit, and duplicate customized Blu-Ray discs (BD-Rs), DVD-Rs, and CD-Rs. The ReflexBlu2 has a throughput capacity of two BD-Rs per hour, four DVD-Rs per hour, and seven CD-Rs per hour; the ReflexBlu4 doubles those figures. Each unit also includes a disc creation software suite, USB connectivity, and a 250GB hard drive that can store up to nine full BD images.
www.discmakers.com

R-09 Digital Recorder: New Accessories, Colors

The **R-09W** (in white) and **R-09R** (in red) both retail at the same price as the original black version. New accessories include a carry case for the main unit and an earphone set with carry case. The unit uses SD data cards to store audio; recordings can be backed up to your computer via USB.
www.rolandus.com/edirol

Rapture 1.1 Update

This free update to Cakewalk's **Rapture** wavetable synthesizer provides Vista support, Universal Binary support for Mac Audio Units/VSTi/RTAS (Pro Tools 7.3 compatible), stand-alone mode, engine optimization, new DSP and filter routings, tempo-synced envelopes, improved program browsing, enhanced MIDI modulation matrix, and 50 new Rapture programs (by ProSounds and B Rock) that highlight 1.1's new features.
www.cakewalk.com

PowerFX Sample Libraries

Street Cred is a hip-hop library with over 320 beats, basses, keys, guitars and FX. **Pop Tools** comes with over 330 loops of guitar, bass, drum, percussion, synth pads, and ambiences. **Breakdown Beats** is a construction kit-style collection consisting of 452 loops: Do-it-yourself beats, vocal FX, guitars, basses, synths, turntables, percussion, and more. All employ Acidized WAV files and are available as digital downloads for $49 each. Breakdown Beats is also available in Rex2 format.
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Klein + Hummel M 52 and M 52 D Active Monitors

The **M 52** is a small, lightweight, portable control monitor featuring a 3" driver and built-in amplifier capable of producing over 100dB. It can be AC powered (85–230V) or DC-powered by a 12–20V battery. The **M 52 D** is identical to the M 52, but adds S/PDIF and AES/EBU digital inputs that synchronize with any signal between 32kHz and 48kHz at 24-bit resolution.
www.klein-hummel.com

MXL Cube Cardioid Condenser Mic

Featuring a 1-inch gold sputtered diaphragm, FET balanced output, six micron pressure gradient capsule, and internal Mogami wiring, MXL's new **Cube** ($199.99) is a cardioid condenser mic designed for vocals, acoustic instruments, and percussion.
www.mxlmics.com

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

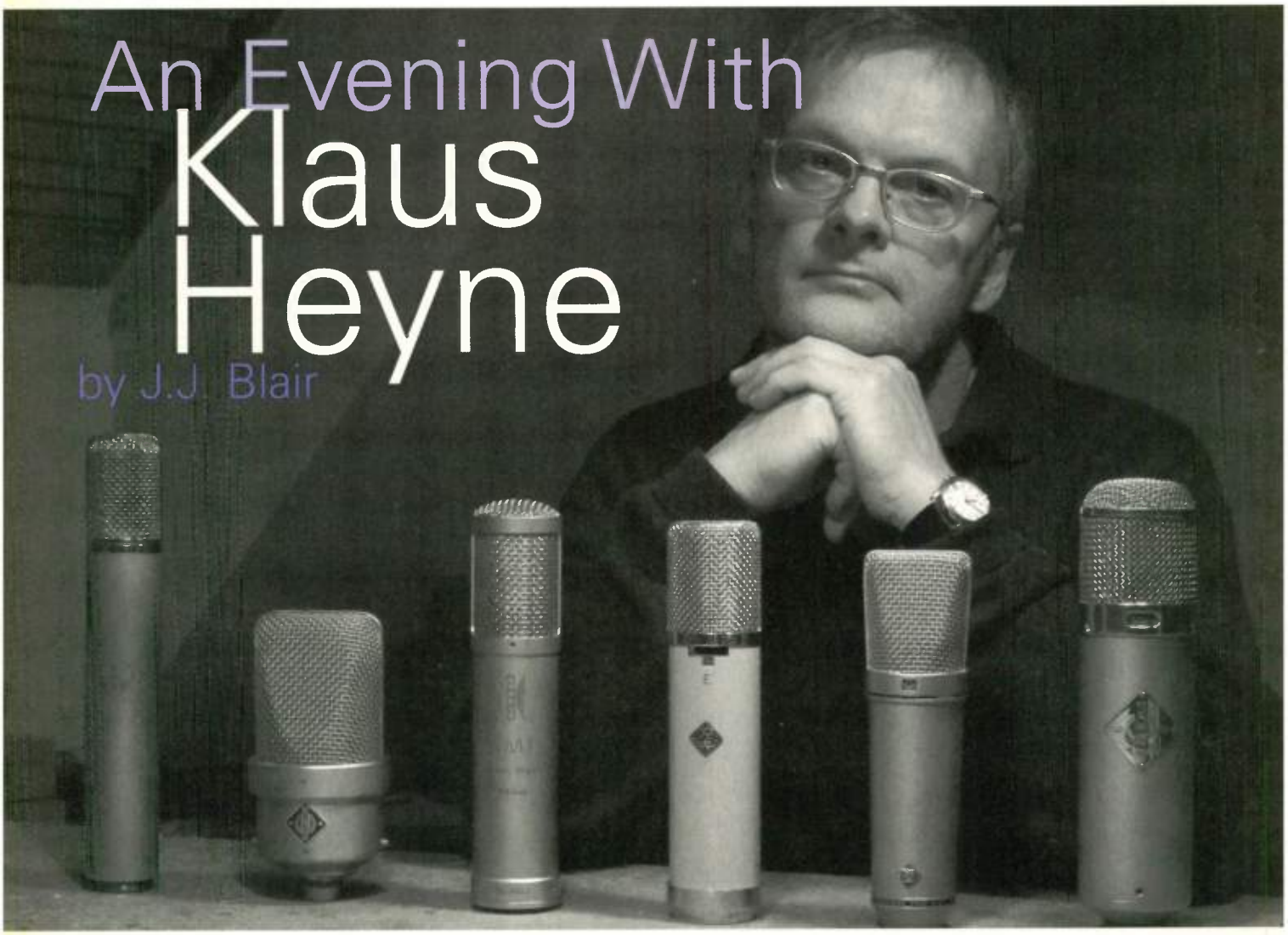
Whether or not you've actually heard of **Klaus Heyne** is of little consequence, because you've certainly heard his work. Most famously known for the **Brauner VM1 KHE** (a $10,000 jewel of the most coveted mic lockers), Heyne has spent the last couple decades modifying high quality microphones for some of the most prolific artists and engineers in the music business.

But how does he do it? Where is the magic in Klaus Heyne's Midas touch? How does someone make the jump from a mere tinkerer and hobbyist to, arguably, the most renowned and revered mad mic modifier — the go-to gear guru — for ensuring sonic success in studio sessions worldwide?

Don't worry, you can thank us later for what we brought him here to tell you. So kick back and relax, crack open your prized U87 (or maybe not), and join us as we sit down the man, the myth, and the mystery in . . .

An Evening With Klaus Heyne

by J.J. Blair



EQ: How did you end up in the field of building specialty microphones?

Klaus Heyne: You have to go back to the '60s when I witnessed the first refinement of good sounding guitar amps. There was magic when sounds *sounded* good — it touched you. When sound didn't sound good, it went to your brain to analyze, to appreciate on a cerebral level but not on a visceral one. I was playing in bands, and any time I would make a selection of an instrument, of an amp, a speaker, a cabinet, it became clear to me that there was a hierarchy of quality. Not a bandwidth of taste, but clearly an absolute vertical hierarchy. A Celestion Blue Cone sounded absolutely better to my ears than an Eminence or a Jensen, and sometimes you couldn't tell by price alone.

I did an apprenticeship as a luthier and, later, I started my own little repair shop out of my apartment where I did mostly electric guitars, and I realized the same differences: I got to play with a Schaller copy of a Gibson humbucker and I said, "What is the point of issuing this thing?"

During the Frankfurt music show, in '72 or '73, I wandered through the aisles

Photo by Klaus Heyne

and saw this '53 Goldtop leaning against an amp. There was nobody [in the booth], so I walked in and started doodling. I don't know what happened but [inventor and luthier] Dan Armstrong walked in and grabbed a bass. Maybe an hour later, I looked outside of this window and there's a wall of people watching us play. It was one of those key experiences in life. We instantly became friends.

We recognized many similarities in our loves and dislikes of music and instruments, and he offered me the opportunity to be the importer for his instruments in Germany. At the time he was still issuing those Boosey & Hawkes amps where you supposedly could model any kind of different amp with some kind of bogus graphic EQ thing. I said, "You know that still has the Boosey & Hawkes tone, no matter what you do." He said, "I like what you're saying. Come to England with me. I'm starting a new project."

EQ: How old were you at this time?

KH: 22 or 23. And in walks Keith Richards, Ronnie Wood . . . everybody who was anybody walked in and out of his place. They were all friends. He was in the middle of finalizing his new Dan Armstrong London Instruments guitar and bass line. So I helped with a few things, because I had always been interested in the principles and mechanics of sustain.

I went back to Frankfurt and became the exclusive importer for his instruments in Germany. But it was tough going. The early '70s were not a good time for introducing Dan's innovative concepts in Germany. People barely got over the shock of crappy Stratocasters, and were trying to figure out what to do with that.

So that didn't last long. I got the fever and went to San Francisco and got a job at Don Wehr's Music City — the biggest music store in the world at the time. I worked there for a couple of years and then started my own shop in Bolinas, taking the best clients with me like Santana and Journey.

I would go back to Germany to visit and would read Funkschau magazines that had surplus mic ads. I had a 1967 Neumann U87 from my recording days with a German band, and it worked really well as it complimented anything I wanted to record. Then one day I saw an ad for an auction in Köln where I bought a Neumann KM54. I took it with me to America, plugged it in, and said, "This can't be true." This little thing had this sound, this sex appeal, that the U87 didn't quite have. It was $50 there, and here they were selling them for $500!

That's when I started going to German Public Broadcast System auctions. I would bring back all these mics — M49s, M50s, U47s they didn't have — because at that time they only used broadcast models, including SM69s and the KM25x.I fixed them up enough so they would work, but then realized that the broadcast chokes and impediments to good sound didn't make sense. So I took them, and my customers would say, "This sounds great." Anything I did with mics from then on was guided by my ability not only to discern differences in sound, but also to make a qualitative judgment on a vertical scale. Give me three capacitors, and I will tell you which I think is better. And my customers would agree. That's why I keep coming back to absolutes. It is not a matter of taste. There are absolutes involved.

I think I stayed true to this principle through time. A major manufacturer approached me last year and asked me to design a $1,000 mic. I told him that I couldn't do that; it's impossible. He said, "Make a few compromises, it will still be better than any other kind of microphone in this price class." But I cannot live with that. I must be able to plug it in and feel good about what I hear. I can't say, "For what it is it sounds pretty good." That's not how I live my life.

EQ: How exactly did the Brauner VM1 KHE come about?

KH: I'd always wanted to serialize what I knew and put it into a production microphone, so I scanned the Internet for manufacturers of condensers' design philosophies. There was this mission statement on Dirk Brauner's website along the lines of "We don't do negative feedback. We only do tubes." So I thought I should meet him.

At AES in '99 there was a fortuitous coming together, another crucial moment in my life. On the exhibition floor, we had Brad Lunde [Transaudio], Dirk, and the guy who brought Audio-Technica to the U.S. who had sent me an AT 4033 that I made sound pretty good — he was real happy about it. So I asked Dirk if he would let me take one of his mics and see what I could do with it. I took the VM1 back home, threw a lot of circuitry and components out, and started almost from scratch. . . .

EQ: So what is the nuts and bolts approach to your modification on those mics? What modifications are you doing to the capsule? Are there circuit modifications, component modifications. . . ?

KH: I need to preface by saying that the final, production version of the KHE is so very different from the VM1 that it is impossible to convert a VM1 to a KHE. Lots of VM1 owners keep approaching me about that, but it would be cost prohibitive to even try.

In the case of the VM1, there were circuitry, component, and acoustic areas that I recognized as bottlenecks for good sound. The basic architecture was very simple — almost ideal, but not quite. He could have made a few different decisions, but he came upon a brilliant acoustic principle with the capsule that he was using for the VM1.

EQ: He designed the capsule, but MBHO manufactured it?

KH: No. First of all, there are no new capsules under the sun. There are exactly three families of large diaphragm condensers, no matter who manufactures them: K47, K67, CK12. Dirk chose the K67-type as the basis for his capsule.

EQ: A dual backplate?

KH: Yes. Two backplate halves, chambered and [the holes] offset to each other: Great for high and high-mid frequencies, but phase problematic. That design gets really edgy if you don't do it right. He had the idea to use the best features of the K47 and the K67, to make a compromise of the two, but he could have taken it further.

I started with my drill press to perfect the backplate design. About the time the KHE was in the planning stage, Dirk went with a new type of machining for the diaphragms and the sputtering. I didn't know why it didn't sound as good anymore, but I didn't want it for the KHE. So Dirk had Haun [MBHO] make a backplate and diaphragm that's used only on the KHE. There was reluctance to accommodate me, as the capsule making was very labor-intensive. But there are idiosyncrasies in the world of sound, where it doesn't matter whether I know how it exactly works, but I know right away whether or not it works.

EQ: Aside from changing out certain components, did you modify the circuit at all?

KH: Yes, I modified the circuit. Changing components is ground floor work — everybody can do that, and I often chuckle when I take in a mic from a repairman and find the exact duplication of a component or circuit modification of something I did at one time but have abandoned since — like piggy backing capacitors!

So that's how it started with Brauner. We formed a great symbiosis. Nobody messed around in the others' territory of competence. Of course, there were issues, where I would say, "The voltages are off on the latest batch. Can you fix that at the factory?" There were some tube problems as well, so I would go to my stash and take new old stock European tubes and replace factory ones. Then again, at times, Dirk would deliver really beautiful-sounding, everlasting tubes. Regardless, I would burn in every microphone for a week, get rid of any questionable tubes or issues, and make sure everything was solid, so that the mic wouldn't come back [for repair].

EQ: So what's your process in personalizing? You said you personalize or custom-tailor each KHE mic.

KH: I'll give you two extreme examples: John Fogerty has a very unusual voice — one can't say he sounds like a regular singer. He wanted a replacement for his old U47, which really sounded perfect for his style; his voice was the perfect complement to this one-of-a-kind U47 sound. He and I talked a lot on the phone about how to proceed, and decided to find a capsule for his new KHE that was the closest I could get to his U47 sound — where the raspiness of this voice wouldn't be ear-shattering, but it would still be highlighted in the sense that's his signature. . . .

EQ: One mic of course never fits all, and some people will sound brilliant on a C12 and awful on a U47, or vice-versa.

KH: Choosing the right mic is always the absolute first decision to make in the fine-tuning process. A few years back, I went through this with Barbra Streisand. She used to be a U47 woman, but it didn't work in my opinion. It was not the right complement. It was almost like the not-so-hot features in her voice were boosted, and the things that were really good and authoritative were suppressed. So you have to start with the right microphone. And then you dial it in within that sound range of that microphone, approach it from your aural and mental discretion. You take a chance, send it out, and get feedback.

"It is not a matter of taste. **There are absolutes involved."**

Andy Warhol once made a multiple print series of Marilyn Monroe and Elizabeth Taylor photo portraits. They were all silk-screened — all supposedly the same — but they all looked slightly different. With Marilyn, you look at them and get the feeling she looks depressed in one frame and happy in the next; these seemingly identical prints somehow had slight variations creating varying expressions. That is also our saving grace in the mic business. Many of the automated, machine-made microphones have very, very high quality control with literally identical sonic results, but that's not really what people want, I think.

I came in on BART [San Francisco's Bay Area Rapid Transit] to the AES, and I looked around at the passengers. Blue jeans are still it, because of the ever-changing shadings and hues. Someone may want a cobalt shade today, but a slightly greener one tomorrow. That is the secret to desirable microphones as well. You keep that variation; you appreciate it in the serial product. You don't suppress it. It may be a little brighter here, but that might work well with an old MCI 24-track. And if you're using 16-bit DAT then you go to a slightly darker shade of sound in the mic. You work with these variations.

Thank God for handmade capsules. Thank God that nobody can manufacture them identically by the millions. Look at AKG in the '70s: With new machining processes they were reining in the extremes in sound that were common with the old CK12 capsules. The complaints from the Austrian broadcasters who couldn't use CK12 equipped stereo mics for the Vienna Orchestras, because left and right was never the same on them, stopped. But now, with these automated, identical-sounding successor capsules, those once imperfect CK12s have become Holy Grails.

At times it can get really complicated. There was this case of Phil Collins needing one KHE at his home studio in Switzerland and one in L.A. for his film work at Disney. And I had to make two that were supposed to sound identical. It's not easy to find two capsules that sound halfway alike. It's harder to make two mics sound the same, rather than take advantage of the fine points in each capsule and refine that sound.

EQ: Which speaks to the myth of the matched stereo pair. . . .

KH: For our matched stereo ears or our matched stereo eyes! Have you noticed that if you look at a white wall with one eye, and then with the other, you see completely different hues of white? But the combination, of course, makes the music.

EQ: So who are some of the notable people that you have made custom mics for?

KH: You name it. Neil Diamond, Huey Lewis, Julio Iglesias, Steve Perry. I recently started to work with Jon Brion. . . .

EQ: You once told me you did a 414-EB for . . .

KH: For Whitney Houston. But I "ELA M'ed" it.

EQ: Really?

KH: It's a royal pain to modify because there's so little space. But what a killer mic! It's using a real CK12, but then a very simple, straight out FET design with not so much circuit redundancy.

EQ: What exactly is the ELA M circuit? [*Editor's note: As found in the Telefunken ELA M-251*]

KH: What the ELA M circuit does, in comparison to the C12 (which shares the same

capsule, tube, and transformer as the ELA M-251), is that it has a direct wire connection between the capsule and input of the impedance converter, whereas the C12 has a coupling capacitor in between — which is already one level of sound degradation. The way the tube is biased is also different in the ELA M and the C12, so you can adapt the better-sounding system, even when you have an FET (Field Effect Transistor, a solid state amp). An FET is nothing else but a silicon triode. It's almost the same thing, sonically. Only when it get really loud does the FET show its ugly face. If you stay within moderate SPLs, it's really hard to tell the difference between FET and tube circuits, if they are otherwise identical in design. Except, there's no noise in an FET. It's only the poor implementation of FET circuitry that has given FET mics a bad rap.

EQ: But at that time everyone was so happy they didn't have to bother with tubes!

KH: I will always be looking for the Holy Grail, for the mic that simulates best the thrill of hearing. A mic is incredibly primitive compared to our ears, and the best mics work not by being the closest to how our ears work but by having the best euphemistic additions/alterations that make us feel good about what we hear. No mic is realistic. It is way too complicated to recreate with a mic how hearing works. So, in my mind, the best microphones are the same as the best loudspeakers — like a good Blue Cone Celestion. It is not necessarily reality, but it is passable enough, and it gives you pleasure in the process. One of the biggest mistakes I think many manufacturers make is thinking that they can approximate reality by comparing frequency curves or designing along static measurement criteria. It doesn't work.

I think when we hear something through a mic, we unconsciously know that it's not all there. But if the mic gives a certain trigger to a certain pleasure center in our brains, we are satisfied with that — even if objectively not all frequencies are represented accurately. We say, "That's cool. I want to listen to that orchestra or to this opera singer or to this standup bass through *that*, because it rekindles the information that is important to get the imagination going, to get the pleasure of the essential experience back into the mix."

Some [mics] may be incredibly accurate, but for me the right artifacts are missing that translate the sound with enough euphemistic additions that allow me to feel like I'm there. My definition of a good mic is: The musical experience never wanders away from my pleasure center to my intellectual side, to where I might think "Oh yeah, I can really hear the cymbals, they're right over here. I can hear the second violinist tapping her foot." I regard that as intellectual wanking. I don't want that. I want to be there. I don't even want to think. I want to be in the music, so I can have the experience of dreaming and imagining, rather than analyzing how the setup is. EQ

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– *Sound On Sound* Magazine

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audioGroup Ltd. - Tucson, AZ
audioMIDI.com - Chatsworth, CA
Bailey Bros. - Birmingham, AL
Bananas at Large - San Rafael, CA
Big Dude's Music City - Kansas City, MO
B&H - New York, NY
Candyman Ltd. - Santa Fe, NM
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Full Compass Systems - Madison, WI
Gand Music & Sound - Northfield, IL (Chicago area)
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Music Mart USA - Solana Beach, CA
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Musician's Advocate - Las Vegas, NV
Nova Musik - Milwaukee, WI
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Petosa Music - Seattle, WA
Pianos n' Stuff - Pittsburgh, PA
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Strait Music - Austin, TX
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WHAT'S THAT THING?

Adventurous engineers **share their secrets** for recording obscure objects

by Will Romano

Confronting sonic strangeness and exotic musical objects that few have heard, let alone recorded, is the pinnacle of artistic experimentation — not only for the musician, but the recording engineer. Just how do you go about recording experimental textures and instruments while faithfully capturing their "proper" intonation and natural resonance? Is there really a "normal" or "correct" way of utilizing and interpreting these odd sounds on the road to exploration? Let's find out.

BACK TO THE FUTURE

How does a musician, living in the year 2007, interpret, conjure, and capture the ancient world? Composer Tyler Bates (*Dawn of the Dead, Rob Zombie's Halloween*) was faced with just such a question when he was asked to compose and record the score for Zack Snyder's historical film *300*.

A successful score filtering the aggressive, cutting-edge sensibilities of modern rock through Asiatic and Mediterranean motifs required a kind of virtual (and musical) time travel. "I needed to create a kind of rock, with textured layers and rhythmic counterpoints, that would embrace the heaviness of modern bands out there today," Bates says. "But I needed to relate that, musically, to 480 B.C."

Bates was able to slide through a sonic wormhole of sorts by tapping an arsenal of experimental and rare instruments. At his disposal were a Bulgarian woodwind called a kava, detuned guitars, a Chinese xaphoon, a broken piano (which was used in the writing of some of the more obtuse melodies of the score), and a variety of other instrumental oddities.

"It was a challenge to capture some of the instruments, because they are sharp and transparent," says engineer/mixer Robert Carranza (The Mars Volta, Los Lobos). "If you can't capture the instrument's resonance, you've completely missed the point. You are only getting the attack. That's why with something like the taiko drum, for which the sound envelope seems to open something like 12 feet from the drum, we had to use three mic setups: a close perspective with Sennheiser 421s; mid-range with Neumann 269s; and omni [Neumann] U47s for the room."

Fittingly, Bates re-imagined both a classic and modern rock sound. Snare drum-like cracks were actually produced by goat nails slamming up against a frame drum with the help of percussionist Greg Ellis; Led Zeppelin-esque kick-drum thumps were remodeled via Japanese taiko drum thunder; and catchy themes typically found in today's Hollywood movie scores gave way to rhythmic-based cues elevated by the evocative vocals of Iranian/Indian singer Azam Ali. Bates added an extra sonic dimension by employing an obscure custom instrument called a GuitarViol, a hybrid viola-electric guitar designed by luthier Jonathan Wilson. Like the score itself, the GuitarViol is a marriage of contradictions: It's fretted, yet it can be bowed, and its onboard electronics (EQ, preamp, and BOWD Horizon bridge/pickup system with adjustable string saddles) are sensitive to glissando runs yet offer guitar-hero vibrato. "I looked at it and said, 'What is that thing?,'" says Carranza. "After hearing it, I thought it was mid-rangy, like a guitar, but generated low-mids on the order of a traditional acoustic instrument, like the viola."

"There's nothing fancy about the recording process in my studio," Bates admits. "I recorded the GuitarViol and all of the standard electric guitars with a (Shure) SM57, played through a Peavey Classic 4x10 combo, a Marshall half-stack, or a Z.Vex Nano Head amplifier — which is a pretty cool character. The guitars were all played through an Electro-Harmonix POG (Polyphonic Octave Generator) to help create a primitive sound."

"Nuance seemed to come from Tyler's fingers," Carranza says. "Tyler took [the GuitarViol] in another direction. He treated it like a hybrid guitar synth."

"The GuitarViol was recorded without preamp distortion of any sort, but, honestly, on occasion I'll use a tiny Guyatone analog delay pedal," Bates adds. "I applied a generous amount of rosin to my bow, coupled with some fairly dodgy bowing technique to create the distressed sound of the GuitarViol. Every signal passes through either a [Universal Audio] 610 preamp, or API 512C preamps harnessed in a Lunch Box."

Bates further experimented by mutating and synthesizing sound textures and then formatting them for his EXS24 sampler. "I will look at anything for its sonic potential," Bates says. "Texturally, almost all of the sounds in the movie are handcrafted — they don't exist anywhere else.

Ganesh Anandan simultaneously tracking his Shruti stick and metallophone.

Of course, a lot of those textures were performed and they became collages of performances. Sometimes I will send some sounds through a Distressor or use Serato [Pitch 'n Time], and pitch something down to give it a little more depth. It is really about experimentation."

"My job as a mixer is to create a hybrid score that works," Carranza adds. "I wanted the mix to be aggressive but not too sharp. I like to use compression, so I used a Boiler Ultra Compressor from Ridge Farm, which is really more of a Distressor than compressor — it's like a compressor on '10.' It is one of my secret weapons. The other is the [Thermionic Culture] Culture Vulture — a serious distortion box. You add that kind of distortion to a percussion instrument, and you have one hellacious sound."

Ben Neill showing off the infamous Mutantrumpet.

Tyler Bates' GuitarViol — a hybrid creation melding guitar with viola.

IMPROMPTU EXPERIMENTATION

Montreal-based percussionist/multi-instrumentalist Ganesh Anandan dabbles in recording what he calls "comprovisation" (a hybrid approach of composition/improvisation), only nominally framing his music before hitting the studio, and thus chooses instruments that allow his music to be composed largely by chance. "[Chaos] is not a bad thing," Anandan asserts. "That is kind of the point of this music."

On his 2006 solo release *doUble IdenTity, DoUbLe IdeNtiTe*, Anandan hammers a two-octave metallophone (pitched aluminum slabs encased in a resonating box) while plucking, picking, and striking his custom Shruti Stick — a 12-string, 22-fret instrument outfitted with two piezo pickups, tuned to a Gamelan mode. Because these unconventional instruments produce unexpected rebounding tones, micro textures, and gong-like sustain, they can easily become unruly. So how does engineer Dino E. Giancola harness this?

"I'm not afraid to use a piece of foam or tape to balance out the instrument, to help dampen it," says Giancola. "The problem is: You want all of the attack of the instrument, but you can't get too close to it either . . . especially with the Shruti stick, as the piezos alone, while sensitive to the string vibrations, don't do the instrument justice. So I put two stereo mics up in front of the metallophone, spaced a good distance from the instrument and apart from one another — you want to get in there without impeding the movements of the musician."

"When we had a slight phasing problem, the decision had to be made whether to switch the phase on a channel or readjust the mic placement to correct any anomalies," Giancola continues. "You can correct any sounds later, but this deteriorates the sound quality of the metallophone. For instruments like this, I try to keep the recording chain short to preserve the integrity of the signal — which for these instruments was from the preamp directly to disk using SAWStudio."

ROBOT BRAIN, HUMAN LEGS

Matt Hales, the mastermind of British band/one-man project Aqualung, uses the studio as his experimental instrument. For his latest record, the subliminal sci-fi inspired *Memory Man*, Hales transformed himself from a mere piano man into a knob-twiddling, multi-instrumentalist who managed to complete the entire project in his personal studio, with a live room that is barely the size of an isolation booth. "It is small — the size of an average downstairs cloakroom," Hales admits. "You could just fit a small drum kit — a kick, snare, and two toms, if they were small enough, and maybe one cymbal."

Despite the squeeze, Hales constructed an expansive, oxymoronic distant-yet-emotionally complex pop record of cinematic proportions. Rousing melodies, delicate tickling of the ivories, experimental atonal undercurrents, and Hales' forlorn voice combine to make deceivingly complex ear candy that falls somewhere between The Beach Boys' *Pet Sounds*, Coldplay's *X&Y*, and David Sylvian's *Secrets of the Beehive*. "I decided early on that the album would be based around piano and voice," says Hales. "But I was asking myself, 'How far can this music be taken and still be recognizably me?'"

To help create the "noisy" atmosphere of *Memory Man*, Hales relied heavily on the Electro-Harmonix Memory Man (hence the record's title). "[*Memory Man*] is sort of a cybernetic record," Hales says. "It has a robot brain with human legs. When I was doing a song called 'The Lake,' I was re-amping the unfinished tracks, as they were, through the control room monitors, placing a mic in front of them, which generated an eerie feedback-laden drone that could be tuned by adjusting the delay time on the Memory Man. There are a variety of sounds that I made through re-amping and adding the Memory Man to the signal."

Through further effects processing, Hales turned even the most prosaic, commercial instruments into something virtually

Pete Lockett with various customized percussion instruments at Landsdowne Road Studios in London.

unrecognizable. On tracks such as "Pressure Suit" and "Garden of Love," Hales designed and engineered such sonic vehicles as "ghosts" and "pretend orchestras" (a tapestry synthesized via Native Instruments' Kontakt). "Noise, in general, is significant to the atmosphere of the record," says Hales, who in addition to his studio explorations, plays such off-beat instruments as the glockenspiel, vocoder, and a broken synthesizer. "I found that there was an awful lot of potential to be had from recording something and then processing, and reprocessing, that sound through several generations of manipulation."

BEING IN CONTROL

Jazz-trance-jungle artist Ben Neill plays a triple-bell, acoustic/electronic hybrid horn instrument of his own creation, appropriately dubbed the Mutantrumpet, which triggers stored tones (AIFF files that are then imported into Ableton Live so tempos and pitches can change when necessary). Neill elaborates: "I use my pitch-to-MIDI device to play soft synths and samplers I've in Ableton from the Mutantrumpet. [Live's] MIDI 'scale' and 'chord' effects are very useful for modifying the MIDI input — particularly the 'scale', which prevents triggering unwanted notes. I use continuous MIDI controllers to process the audio tracks that are playing back. My MIDI notes also trigger MIDI sequences, which are usually audio control, but also video control that is sent to Modul8 (a VJ software application) running on another computer. I process the acoustic sound of the Mutantrumpet through various plug-ins that I've set up in Live as well, and use the MIDI controllers to vary and tweak the plug-ins."

But doesn't Neill get lost while recording? "Getting all of these matrices going, where I can get all of these software applications doing different things and, in some cases, doing things that I don't know absolutely what the outcome will be, is where it is at for me," Neill says. "I'll use Logic for sequencing and Live to re-time and quantize audio tracks because it seems to handle that job better than Logic. I also like some of the native sounds from Ableton, such as the resonators, so I use Rewire to patch those back into Logic."

Engineer/producer Eric Calvi (Miles Davis, Tommy Boy Records) works closely with Neill to shape his recordings. "The Mutantrumpet is a beautiful acoustic instrument first and foremost," Calvi says. "To make sure that his expressive playing comes through we record him with a [Neumann] SM69, which is a cardioid stereo mic I set to mono, then feeds into the pres on a Neve 1073 console. I use only one mic so I can avoid phase problems, especially because the instrument has many different sound sources; you want to avoid as much sound cancellation as possible. Above that, the key element is compression, as it fuses all three frequencies [emanating from the three bells]. We also use the 1073's EQ, which gives a wider body in the broad lower [end]."

EXTENDED CONTROL

Futureman (*a.k.a.* Roy Wooten; RoyEl), drummer/percussionist for Bela Fleck and the Flecktones, has been playing his custom, guitar-shaped synth (dubbed the Drumitar) for over two decades. The Drumitar features a number of brightly colored trigger pads that activate stored percussion samples, and, as engineer Robert "Bert" Battaglia (Wall of Voodoo, Kenny Loggins) tells us: "He blends [samples] ahead of time, so the snare

WHAT'S THAT THING?

sound, for example, comes from several [synth] units."

Futureman adds to his palette by playing an acoustic drum kit in the studio. "For the band's latest record, *The Hidden Land*, Futureman actually sat behind his kit with one hand on a stick and the other on his Drumitar," says Battaglia, who earned a Grammy for the record. "For the kick, we'll have two mics inside his custom-made shell, and one on the outside away for the room, all running through airy, earthly pres like Millenias and APIs. We were going direct to Pro Tools, so I wanted to go into mic pres that had some fidelity in the electronics."

And for tracking the Drumitar? "There are 16 stereo outputs [on the Drumitar], so [Futureman] was employing a 24-pair snake cable, 2" thick, for all of that information being sent in direct."

MIC TIPS FOR MIND TRICKS

"One technique that Bill Porter (the famous RCA house engineer) teaches [when recording experimental instruments] . . . is to actually put your head down where you want to place the mic and move your head around until you hear what sounds like the best location to you," says Nashville engineer/producer Neal Merrick Blackwood.

"One of the things I learned was to get the right mic in the right place, rather than trying to dial it in with all of this gear," says drummer/producer Russ Miller, who recently tracked percussionist Pete Lockett in his Chatsworth, CA, studio. "When you get a look at Pete's homemade bottle cap instrument or some of his other assorted percussion, you just say, 'What is this thing? How am I going to [record] this?' What I did was just put up a mono mic in the front. It is always better to have the mono signal than to try to stem something out of that stereo pair. I put up two room mics, which were Shure KSM 44s. Everything goes through API 312 mic pres into the original API 550a EQs that I have here; room mics go into 560as, which are graphic, while the 550s are parametric. I also have a pair of Empirical Lab Distressors, just to get some kind of compression. But if a percussion sound is not real loud, I roll back the compression and just let the percussionist fill the room with sound. Because, a lot of times, with these weird instruments, you have to stand back five feet to hear what it is doing in the room." EQ

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MIKING MANIA, MIKING MADNESS

EQ readers share their **favorite techniques** for getting **moonstruck with microphones**

compiled by Craig Anderton, Matt Harper, and Jeff Anderson

We conducted an open call: "Come one, come all. Impart upon us your wisdom, your wackiness. Plug in and unhinge. Check your levels . . . and check your head while you're at it." And here's what we got — the cream of the crop of the cracked, the crazed, and the cuckoo. Oh, and we got some practical tips too while we were at it. Don't believe us? Read 'em and weep. . . .

LARGE ROOM/LARGER ARRAYS

"I once heard of a multiple mic trick that supposedly David Bowie used once for his vocals that I decided to try to translate over while recording a whole choir in a large room. To start, I put a matched pair of cardioid condensers approximately 5–7 feet away from the source, set up in a U-shape, in an ORTF setup (*Editors note: Roughly 20cm apart at a 110° angle*). Behind that, about 15 feet from the choir, I placed a figure eight and a condenser in an M/S (mid/side) matrix. And, finally, behind the M/S mics, I placed two Omnis, each in the farthest opposite corner of the room from one another, in order to get the max reflections.

"The M/S and omni mics were then gated so that when the choir sang softly only the ORTF mics picked up the vocals, making for a very intimate sound. As the choir would gradually grow louder, the M/S mics would open up, giving a bit more depth to the sound. And when they got really loud, the omnis would finally open up to give a huge sound. This worked really well, and gave two whole natural extra dimensions to the vocal tracks." —*Billy Hickey*
www.studio8121.com

SINGING IN KEYS

"I was recording a very eerie, minor-keyed song called 'In All,' for an artist named Ryan Wilkins — a song based around just vocals and guitar — that demanded some extra texture but didn't need any extra instrumentation *per se*. So, in order to get some extra overtones, we decided to have him sing into the piano and to place some mics strategically around the instrument to get some extra sounds for the mix.

"Using a Matchless amp to hold down the sustain pedal, we had Ryan bend down practically into the piano, putting a Neumann UM57 tube mic close to his mouth, a KM84 down at the sound hole, and a [AKG] C12 aimed off at the low strings. As he sang the track, different notes affected different strings, to different degrees, giving us many extra overtones and harmonics. In the mix, we ended up boosting the hell out of the low end from the C12 to make certain lower notes rumble, and compressed the snot out of the ambient mics to bring it all together. It was exactly the sound we were looking for." —*Michael Seifert*
www.anteupaudio.com

WIDE LOAD

"While there are various methods of filling the stereo spectrum with a single take of acoustic guitar, namely with different delays and reverbs, I've found a great miking technique from working with Duncan Sheik that makes a single acoustic guitar sound huge.

Michael Seifert setting up an AKG C12, a Neumann UM57, and a Neumann KM84 for the old vocals through the piano trick.

Photo by Matt Curry

"With only two mics, the setup is simple (simple = best). Mic #1 (a small diaphragm condenser if it's a delicate player, large diaphragm — classically, a U87 — if the playing is of a higher dynamic) is placed in a standard position anywhere from 12–16 inches from the guitar, pointing at the 12th fret. Mic #2, preferably a large diaphragm condenser, is placed to the strumming side of the artist, about six inches above the edge of the shoulder, angled down towards the body of the guitar. This mic is meant to capture the instrument as the player hears it. *[Note: As both mics are placed at near right angles from one another, phase issues would be a natural worry. However, I've yet to really encounter any great phase problems with this placement.]*

"I let the natural sound pressure dictate the gain, in terms of recording levels. Mic #1 (front) will generally have maybe 10–15dB more than Mic #2 (above and side.) Panning Mic #1 at either 3 o'clock or 50–60% to one side and Mic #2 either all the way or nearly all the way (90%) to the other side will spread the guitar sound so wide you could swear that you could drive a truck through it." —*Michael Tudor* www.mtudormusic.com

RUMBLING DEEP

"This is what we like to call 'The Subsonic Boom': Take a mic with a good deep low end (think: Electro Voice RE20, Sennheiser 421, AKG D20) and wrap it thickly in a blanket. This way, the mic will not hear any mids or treble — just subsonic rumble. All you have to do is put the 'blanket' anywhere near the kit. The mic will pick up the low impact from any element of the drums — kick, snare, toms . . . even the room. Make your own special sub/rumble channel and record the blanketed mic to it. This will help add some real fatness to your drums, without having to touch a single EQ." —*Brian Kehew* www.recordingthebeatles.com

BREAKING THE ROOM

"Here's a cool drum trick: Start with a pair of omni mics. If you have the Earthworks or the Avenson Audio STO-2s that's all the better, but even the $40 Behringer ECM test mics will work for this. Place the mics in phase less than 1/4" off of the reflective wall, with the capsule right up on the barrier, creating a pseudo-PZM out of the wall.

Next, mic the opposite left and right walls of the kit, slightly skewing the kick and snare so the centerline of each drum falls on the centerline of the room. Imagine the walls as big ears, and imagine that you are miking the kit with these huge wall/ear/mic-hybrids. This can really help open up a boxy sounding room by, in effect, removing the side walls." —*Lee Knight* www.foureyesmusic.com

PIANO TRICKERY

"Once upon a piano overdubbing session, in which the piano in question was horribly out of tune and no piano tuner was in sight, I found myself in a situation where a Korg Triton was the only thing available for which to finish the tracks. Now, nothing against the Triton, it sounded perfect — too perfect, in fact. For the very natural sounding rock band whose album I was cutting, this super clean Triton sound just wouldn't do.

"But I had no choice other than to improvise, so we cut the overdub tracks on the keyboard, and then took to the piano to cover up our cleanliness. Placing a Neumann U47 in the piano, and a U87 down on the pedals, I had the pianist operate the pedals while monitoring the playback of the keyboard take, recording only the sounds of the pedal squeaking and dampering. This proved to add just enough realism to the sound to get us off the hook, and leave most listeners none the wiser." —*Jeff Anderson* www.soundlogicrecording.com

SHELL SHOCKED

"I wish I could remember where I first heard about it, but I'm a big fan of the 'mic the snare shell' approach instead of the usual 'from the top' approach, with or without the second mic underneath. Just watch out for the vent holes in the snare — if you position the mic right on axis with the vent, you'll get a nasty blast every time the drummer hits it. But I think this technique really does give a good balance of snare rattle, attack, and body, without having the hassle of working with two mics on the same drum." —*Phil O'Keefe* www.philokeefe.com

THE WAH BOTTLE

"I wanted to come up with a groovy new analog effect for a guitar solo — something similar to a wah pedal or talk box, but with its own unique sonic characteristics. So I wired up a sort of hybrid gizmo that's essentially a microphone container than operates similarly to a trumpet plunger mute and produces a 'wah' sound.

"First, I gathered an old 3" car speaker, an empty shampoo bottle, an 1/8" jack, and some leftover cabling from a pair of cheap headphones (Figure 1). Then I cut a hockey puck-sized part off the bottom of the shampoo bottle, about an inch up, wired the speaker as a mic, and inserted it into the hole, securing it with tape, before taping the bottom part of the bottle back

Fig. 1: Rough materials: Car speaker, shampoo bottle, recycled cable, and a 1/8" jack.

Fig. 2: All taped up and ready to go.

Fig. 3: Behold! The mythical Wah bottle.

MIKING MANIA, MIKING MADNESS

on (Figure 2). Finally, I cut a slit 95% of the way around the top of the bottle, just under the shoulder, leaving around 5% as a plastic hinge (Figure 3).

"To record this effect, I re-amped the signal of the guitar solo, while 'playing' the lid of the mic-gizmo just like a trumpet mute." —*Bunny Knutson* www.bunnyknutson.com

UNDERWATER PIANOS

"I was working with a very Tory Amos-esque singer/songwriter who had a piano-based piece that was thematically dark and very eerie sounding. We had tracked the song a couple times using some conventional miking techniques — putting two [AKG] 414s in the piano, near the strings — and it sounded fine . . . but it was a little too normal.

She told me 'I really wish we could make the piano sound like it was drowning.' This inspired me, so I went back into the room, took the 414s out from under the piano lid, placed them *under the piano,* and had her play.

On the first playback, I patched this muffled, bass/mid heavy piano into a Lexicon PCM60 patch that had a reverb with slight tremolo/rotary speaker effect. She absolutely loved it. It was like the poor piano was coming up for its last breath. —*Jeff Klopmeyer (*www.klopmeyer.com

RE-MIKING STRINGS

"While working on an album for rapper Jahari, we ended up mixing at Sound Station Seven in Rhode Island — a converted fire station from the turn of the century. Next to the live room, they had a three-story tower previously used for hanging hoses to dry, complete with a rope and pulley system still in place. With a bunch of stacked synth strings that were made running a Kurzweil K2000 into various E-mu outboard processors that we weren't exactly happy with, we decided to take advantage of this enormous tower and see how we could spice things up.

"We ran the signal out into the tower,

THE M/S DEGREE

"Phasing issues are one of the biggest problems experienced by engineers when they start working in the realm of stereo recording for single sources. Of course, the best way to avoid these ugly little issues is to mic a source using a coincident stereo pair. And while many engineers will rush to the scene ready to record in X/Y or Blumlein patterns, it seems that many overlook the virtues of employing the M/S (mid/side) mic configuration. So, if you're one of those engineers who haven't done their homework with M/S, it's high time you do so. Here's how:

"Start with two mics. The first should be a figure eight and the second, typically, should be a cardioid (though this is variable.) The figure eight will serve as your S (side) mic, and should be pointed at a 90-degree angle away from the source. The second mic will be used for your M (mid) application, and should point directly on axis toward the source, at a right angle to the figure eight mic. The figure eight signal should then be multed to two channels, panned hard left and right. ***[Note: On an analog mixer, this should be done by multing the incoming signal, or busing the signal to two channels. If you're working in a DAW, you can do this by recording the figure eight signal and then copying that track to a second channel where you then reverse the phase, panning both channels afterwards as you would if you were working on an analog mixer.]***

"Once the figure eight is in place on your mix as the left and right sides, introduce the mid mic on a separate track, panned up the center. Set the levels of the side signals identically, and raise the mid signal to your liking. I recommend mixing the level of the mid mic so that when summing to mono, and the two side channels phase cancel, the level stays audibly consistent between mono and stereo. Some may find a prominent side signal to give a more 'psycho-acoustic' stereo image, and that's fine, but doing this may result in a loss of balance in the mix when switched to mono, so I advise against it.

"Using an M/S technique gives excellent left to right separation — which I think makes for better stereo imaging than what X/Y or Blumlein provides. Plus, with M/S you don't need a matching pair. Figure 1 shows an M/S piano technique I'm fond of (AEA R84 for sides, Neumann CMV563 w/M55K omni capsule as the mid). M/S also works really well for drum overheads, or for miking the horn of a Leslie cabinet (especially when using condensers or stereo condensers.) In Figure 2 you can see a typical M/S array for condensers, with the top mic in cardioid and the bottom in figure eight.

"So if you haven't ever used the M/S technique, you should give it a try and have fun with it. And if you need any help, visit us over at the *Use Your Ears* forum at www.eqmag.com and ask for some pointers. We'll be happy to help." —*J.J. Blair* www.foxforce5.net

Fig. 1: An AEA R84 and a Neumann CMV563 placed in an M/S configuration.

Fig. 2: Two condensers set up in M/S array.

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Wanna weigh in with your favorite recording tips and tricks? Visit www.eqmag.com, hop on our forums, and share your most off the wall stories with us. Who knows? You may just end up a star in next month's issue.

blasting the synth tracks through two Fender amps, and hoisting two U87s almost 70 feet up in the air with the old pulley systems to grab the room sound in stereo. Needless to say, J.J., the owner, was freaking out.

"You know the tones that you can get in a bathroom? Well just think of the tones you can get from a concrete room that is 70 feet tall. It was really cool, producing almost a sympathetic tone that really added a natural character to the strings. The natural reverberated sounds took up probably 40–50% of the final mix, but it was so big that we had to nudge the effect back, sort of a time delay, so they would match the original tracks. To give the right stereo image, we panned the original tracks at 3 and 9 o'clock, and then the re-miked tracks fully to the right and left. It really thickened up the string sections." —*Michael Seifert* www.anteupaudio.com

ANTS MARCHING

"Last summer my band was hired for a project that was recorded at the Chicago Recording Company. We had a pretty big-time engineer/producer, who I'll leave unnamed, but suffice to say I'm sure you would know him or at least know the projects he's worked on. Anyhow, something he did really left me scratching my head: He placed what he called 'Ant Mics' in front of the drums.

"Basically, he put two SDCs about three inches off the ground, on both sides of the kick drum, about eight to 10 inches off the drum. He was kind enough to share his philosophy on the technique, telling me that he thought of all the mics as cameras taking pictures of different areas of the drum kit. The 'Ant Mics,' he said, gave the mix the perspective of an ant, making the kit look (sound) huge.

"I'm not sure how much of the 'Ant Mics' made it into the final mix, but during the tracking he iso'd those mics and I could definitely hear how they added to an overall huge drum sound." —*Rob Potvin*

IN THE PRESSURE ZONE

"For those working with an open-back guitar combo amp: Mic the front of the speaker in a standard fashion, and then mic the back with a [Crown] PZM to get that extra 'thrust.' *[Note: For some reason, the PZM doesn't seem to cause any of the phase issues that one might ordinarily encounter while doing this with any other mic.]* You can ride the PZM track up in the mix as you wish. I've found that pushing up the fader for the PZM track during choruses really adds to the sound. It may not be totally off the wall, but it sure sounds cool." —*Ken Lee* www.blueberrybuddha.com

TRUE PERSPECTIVE

"Want to try a different approach towards drum overheads for a session? Tape two small cardioid mics (for the situation I am referring to, we used Neumann KM84s) to the rim of a baseball cap and have the drummer wear it. Each mic will 'hear' the left or right side of the kit. This is especially cool because the mics are close in, and will shift with the drummers movements to pick up whatever section of the kit he/she is focusing on (such as following a tom fill).

Of course, as the drummer moves his/her head, the stereo image will move as well, panning around wildly. This isn't something that works for a 'typical' section, but it creates a truly weird, psychedelic effect." —*Brian Kehew* www.recordingthebeatles.com

. . . AND YOU'RE MARY TYLER MOORE

"Here's a technique that it is rumored Buddy Holly used:

"When recording an electric guitar, set up a standard close mic on the amplifier cabinet. Next, face the guitarist towards the amp, leaving a good bit of distance between the two or, ideally, isolating the amp entirely. Now, take another mic (perhaps a cardioid condenser) and mic the strings of the electric guitar. This is where good isolation, or keeping a good distance between the guitarist and the amp is crucial. You want to capture as little of the amp source signal as possible.

"Send the signal of the strings to a separate channel, mixing it in to whatever degree sounds best with the signal from the amp. This results in a really nice, snappy transient from the strings — almost a percussive sound — and it gives you some very nice articulation of the total guitar timbre." —*Jeff Klopmeyer* www.klopmeyer.com

HALL OF HORNS

"I used to have a production room in the old TMF Studios in New York. One day, in the Studio A live room (which was about 50 feet down the hall and around the corner from my door), a horn session was booked. For some reason they had left the door open in the live room, and it sounded beautiful carrying into my space, so I grabbed an AKG 414, armed a track in Pro Tools, and shot for a cool sample. But what I got was far more interesting than I what I had hoped for: The sonic quality of the horns seemed to hold on to its close proximity over a long distance, mixing in with the natural reverberation of the hallway.

"After placing a liberal amount of compression on the track, I ended up with one of the most intriguing and musical horn sounds I've ever recorded — it was fat and the EQ occurred naturally and perfectly, fitting easily into a mix.

"Soon after, I tracked a horn session of my own and incorporated the long distance miking technique with some close mics, balancing the close and the far sounds equally with great results. If you do something like this, it's really fun to play with delaying the distant mic tracks forward. This reminds me of the sounds from John Bonham recording down stairways, or Bowie's vocals on 'Heroes.' Sure, it's not the most uncommon technique, but it could be used more often, and it makes for some orgasmic sounds" —*Michael Tudor*
www.mtudormusic.com

BIG DRUMS

"If you've ever tried to get percussive sounds by using a water bottle as a kick — miking the hole and lightly tapping on the bottle *[Note: Do not choke the 'ring' of the bottle]* — here's a trick that will take this technique to the next level.

"Take an empty five gallon water bottle and hang a mic into it by wrapping the cord around a drum stick so the mic is hanging, not sitting on the bottom. Then place the whole works right in front of your kick drum. This makes a sound that's a cross between a log drum and a [Roland] TR-808 —big yet natural . . . and a great alternative to the whole [Yamaha] NS10/Subkick technique." —*Lee Knight*
www.foureyesmusic.com

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HOW TO PROCESS AND RECORD A BENDED INSTRUMENT

When recording a bended instrument, choose the **right context**

by Dr. Walker

It's always more fun to abuse things instead of using them as expected: Just think of the Who smashing their instruments, stock car races, rap guys with TR-808s, or beating the crap out of tape to make it distort. So it's not surprising there are some phunkee, crazee music nerds who are modifying electronic toys and cheap instruments in a kind of babaric way: The more the object of their desire gets tortured, and the more extreme the transformation from toy/trash to a piece of art and noise machine — the better. Welcome to the world of circuit bending.

But bending is also a philosophy that has a lot to do with recording. Think of those amazing analog effects from the '60s, when engineers used Variacs and power amps to create flanging with multitrack recorders — sometimes burning up a motor in the process. Some people think that in this digital age, you can't really do those kinds of crazy things any more. But you can!

Bended toys and techniques don't have to sound "good;" they have to excite and surprise people with unknown functions, sounds, and looks. When a talking Barbie doll becomes an ambient synthesizer, a Fisher-Price music toy morphs into an industrial noise generator, or a Suzuki Omnichord is reborn as a heavy metal weapon, that's "bending." Almost everyone can do it; worst case, you destroy the machine/toy. And even then, you still can use the parts for bending the next one.

You can carry the bending philosophy to effects, whether recording bended or even traditional instruments. If you haven't discovered what cheap effects and pedals can do to *any* recorded sound, dive in — and bended instruments are a good place to start, as they mate well with weird effects.

For example, if your bended instrument has an internal speaker, use it. You can record the direct out *and* the internal speaker via a mic on two different channels. Try extreme left and right positions in the mixdown, and totally different EQ settings on the two channels. The EQs should feature the two characters of the channels: The direct out signal will be more "solid," clean, and will contain more bass frequencies. The internal speaker signal will be more nasty/distorted, and contain much more high mids than the direct out.

Fig. 1: Zoom's processor can fit on your belt, and add highly unusual textures to instruments.

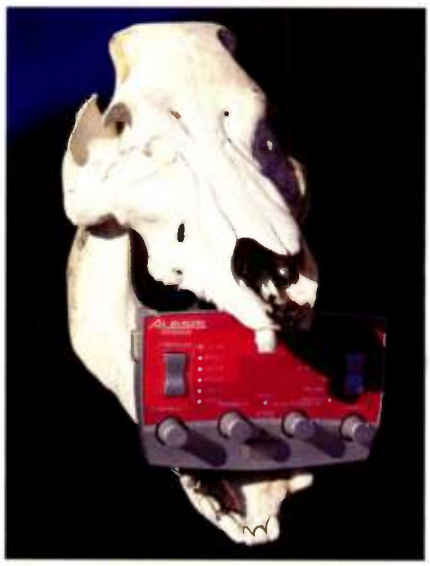


Fig. 2: This relic from Alesis is hard to find, but makes some truly wild sounds.

To make this stereo effect for recordings even more funky, change the stereo positions of these two signals by panning on the beat. You can do this via hardware autopanners like the ones from SPL and the built-in functions of signal processors like the Yamaha SPX90, Roland RSP-550, and similar devices . . . or use autopanning plug-ins, or panning envelopes, in your host software.

FUN WITH EFFECTS

With the above scenario, one of my favorite setups is a guitar multieffects with distortion, compression, and short delay on the mic channel, and a warm, long dub delay on the direct out channel. Some mad effects I always use on my bended instruments that can also make amazing sounds with just about anything are:

- **Electro-Harmonix Memory Man Deluxe.** This brings some warm, "dubby" flair into the sound . . . Jamaica here we come! Also great: The Line 6 Analog Delay Modeler, Boss Analog Delay, and the Danelectro Vintage Delay Pedal.
- **Zoom PFX-9003 Multieffect.** This small guitar multieffect processor (Figure 1) has insane delay, distortion, reverb, and flange effects. I stuck it on the top of a bended Casio keyboard with gaffer's tape . . . looks cool, sounds great.
- **Electro-Harmonix Loop Player 2880.** This effect is "killer" to jam with yourself for hours and hours. You play an atmospheric sound and loop it, then play some crazy click 'n' cuts sounds, and loop them. Then play a solo noise/melody on top, and so on. You can create an entire CD with a good looper and one or two bended instruments. Other good loop players are the DigiTech Jamman and Boss Looper. You also could build your own looping tool in Native Instruments' Reaktor, but I prefer easy, low tech solutions for bended instruments. Remember the equation: (lots of knobs) + (lots of buttons) = lots of fun.
- **Alesis Ineko.** This is a crazy experimental multieffect that they don't make anymore. It joins the Alesis Bitrman (Figure 2), a bit reducer that generates a very rough and nasty low tech sound, in the Alesis Hall of Fame of Discontinued But Wonderful Stuff.
- **Low tech reverb effects.** Check your local flea market or Internet auction site for small reverb pedals. There are cool pedals from Boss, E-H, Ibanez, Marshall, and many other companies. I've found several for $10–$35. Ironically, they can make sounds that even expensive reverb processors can't make.
- **Guitar synth effects.** The Electro-Harmonix Microsynth or

Hog, Korg X911, Boss Bass Synth, and the like *try* to create a parallel signal to fatten the incoming sound; but as a bended instrument mostly produces crazy noise, the synth effect pedals will freak out because they don't "know" how to handle these signals.

- **Subharmonic synths/octave divider.** There are a couple of older pedals from Boss, Ibanez, MXR, Paia, and the like that add a sub-bass component to the incoming signal. If the bended instrument signal is clean, you will get a more powerful sound; if your instrument makes insane noise, the octave pedals will also freak and make your sound even crazier.
- **Parallel effects.** There are little boxes for guitarists and bassists that split the incoming signal so that the input provides 4–8 output signals. This lets you feed the signal from your bended instrument into multiple effects at the same time, which can make your instrument sound like a whole orchestra of psychedelic noise.

CONGRATULATIONS: YOU'VE MADE AN INSTRUMENT!

Whenever I find the "perfect" set up for an bended instrument, I stick everything together with gaffer's tape in a dedicated case, together with other crazy stuff. This is because I always take some bended instruments on my tours; I don't like rewiring my setup for every gig, and I can bring the whole mess into the studio, no problems.

Once you've found a perfect setup, you need to learn how to perform on this instrument! All boxes, toys, wires, and pedals are together now as one instrument — your individual unique instrument, which needs special treatment and training. As always when you start to learn a new instrument, don't expect to be a virtuoso performer after one day: Learn all the wonderful little details that make the difference between a knob tweaker and a *performer*.

Go to ambient bars, experimental music festivals, and bending meetings. Show others what you're doing, and exchange bending tricks and hints. Help make this unique method of music creation, art, and performing more popular . . . and if you come visit us at Liquid Sky Crete, I'll buy you a beer for your efforts! EQ

Dr. Walker has been involved in more than 700 record productions, movie soundtracks, and remixes, and performed in over 1,000 concerts all over the world. He's lived on the island of Crete since 2005, where he runs an artist hotel and ambient bar. Info: www.dr-walker.com *and* www.myspace.com/dr_walker.

Luke Reddington: Going On a Bender

Behind that smiling face is the brain of a major circuit bender.

Luke Reddington has become one of the go-to circuit benders, having made instruments for several prominent artists. Here's his story. . . .

EQ: Where did your love for bending toys and instruments start?
LR: I was at my girlfriend's house, and her friend's boyfriend had a Speak 'n Spell that he circuit bent . . . I thought, okay, I need to learn how to do that! Ever since then, I've been hooked on buying things and bending them.
EQ: What are your favorite objects to bend?
LR: I enjoy working on Vtech Talking Whiz Kid Plus toys, there's lots of versatility in them. I also really enjoy bending the Yamaha PSS-460 keyboards, they have the most unreal sounds in them. But really, there are too many to have a favorite.
EQ: What's the most extreme bend you ever did?
LR: I would have to say the Casio MT-240 keyboard, it just does some of the craziest sounds ever.
EQ: Do you have other bending heroes? What's your favorite "bending" music?
LR: I don't really have any bending heroes; basically I enjoy what I am able to do, so can I say I'm my own hero? [*Laughs.*] As to bending music, for now, I would have to say Vinetian Snares. He uses some unreal sounds and it inspires me to make more interesting instruments.

Reddington likes working with the Talking Whiz Kid Plus toys due to the many ways they can be bended.

EQ: What's your bending philosophy?
LR: Philosophy? Hmmm . . . bend an instrument, then another one, and keep going until my storage unit is empty!
EQ: Do you own a studio, and write music with your modified instruments?
LR: I do own a studio; I love to collect synths and hear new noises. But unlike what I planned, I do not use any of my modified instruments; I know what they are capable of doing, but I can't find the time to make myself sit down and actually make music for myself. For now it is just musical instruments for other people.
EQ: Who are the most famous musicians who use your bent instruments?
LR: Mark Mothersbaugh of Devo, Buckethead, Trey Anastasio of Phish, Venetian Snares . . . I am sure there are many other artists using them I'm not aware of at the moment. I have sold to a lot of different musicians on eBay.
EQ: Any hints for bending newcomers?
LR: Go to a lot of thrift stores, use good test leads otherwise you will be frustrated . . . but don't go overboard! And you will . . . don't buy too much crap!
EQ: What is the difference for you between "bending" and "modding"?
LR: I would say bending is straight anarchy to the circuit chip; modding would be creating modifications to an already finished machine. With bending, you are morphing an instrument into something it is completely not at all.

TAMING CIRCUIT-BENT (AND OTHER) INSTRUMENTS

Use **Ableton Live** to change out envelopes and slice samples

by Chachi Jones

As a musician and a circuit bender, I've struggled for years trying to reconcile my love for the unpredictable, bizarre sounds of my bent gear and the real-life, practical world of recording and composing music. Except for those into experimental noise and drones, recording this gear straight into your songs can be disappointing. But by using a few tricks I've learned for Ableton Live, you can rein in some control on your circuit bent gear (or any exotic instrument), and finally use those amazing sounds quickly and painlessly.

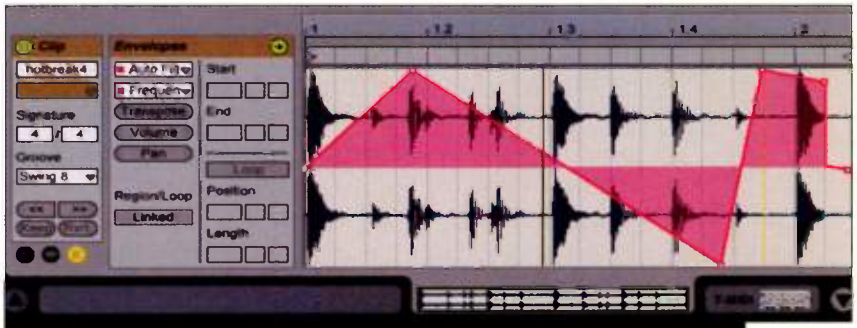


Fig. 1: Live's clip envelopes let you substitute audio while maintaining the original envelope automation.

Fig. 2: Slice as you like, and use the "Split" command to help glitch out your beats.

CRAZY GEAR & DUMMY CLIPS

My favorite Live function is the ability to swap out a clip's audio and still maintain all of the original clip's envelope automation. If you haven't explored Live's clip envelopes yet, here's your chance.

First, bring an audio loop (short or long, it doesn't matter) into the Session View. This will be your "dummy clip," so the audio will be replaced eventually anyway (I keep a stash of dummy clips in a folder, ready to go for any occasion). Next, check out the clip's envelope settings; if you can't find them, click on the little button in the bottom left marked "E". Your audio will turn bright pink with a red line on top — that's your clip envelope (Figure 1).

For every interesting way you can mangle and process audio in Live, there's a clip envelope setting that can automate it. Want a low pass filter to sweep your loop every two bars? Or transpose a loop up and down every bar and a half? By drawing in envelope settings for your clip and inserting effects, you can turn a one-bar loop into an automatically evolving filtered, stuttered, effected, transposed monster.

After dialing in all the clip envelope settings you want, replace the audio with something much cooler (like the sound of a circuit-bent "Speak 'n Spell" glitch meltdown) but maintain the existing envelope settings. To do this, drag an audio clip onto the white title box of your dummy clip (found under the word "Clip") or directly onto the dummy clip's waveform window.

My favorite use of this technique is for live performance improvisation. I'll record a short burst or drone from some odd piece of gear, drop it onto a dummy clip with some automated filtered delay, and kick off the song. It makes every set unpredictable, but imposes enough structure and movement to keep things under control.

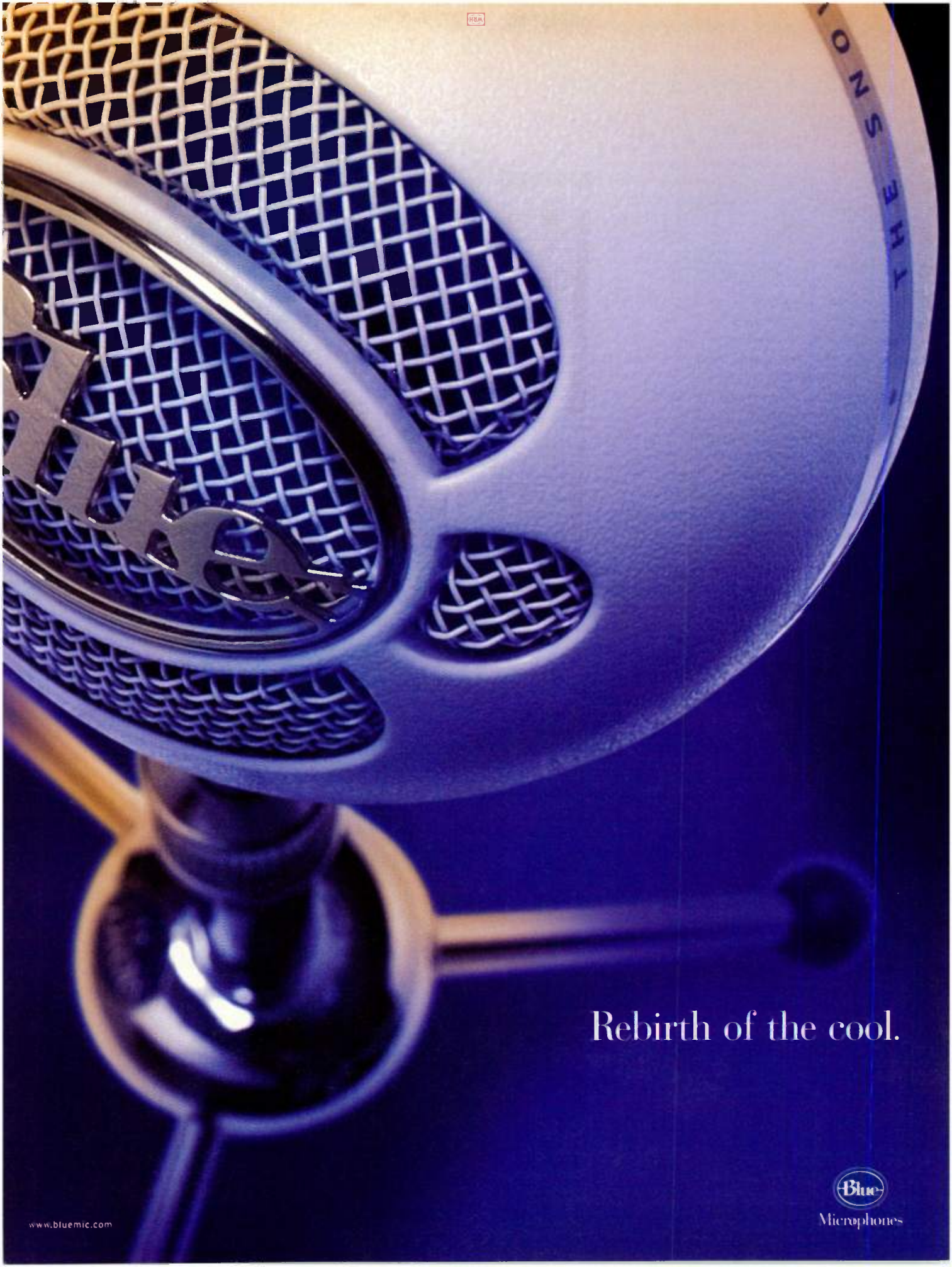
BENT BEATS

Most circuit-bent gear is really well suited to generating beautifully odd percussive sounds. Putting these into a sampler used to required the somewhat painstaking process of recording, slicing, and individually saving each sample in one program, then loading the files into the sampler. But with Ableton Live you can record, slice, and load your glitches into Live's Impulse drum machine in under a minute.

1. Record a short (under five seconds) improvisation of your gear's glitchiest garbles into Live's Arrangement View.
2. Unfold the track to see the waveform you recorded.
3. Zoom in so you can make nice, precise edits.
4. As your circuit-bent "Tickle-Me-Elmo" probably can't slave to MIDI clock, turn off "Snap to Grid" in your options menu so that you can slice your audio however you like.
5. Chop your glitches into little beat-sized pieces (Figure 2) by clicking within your recording and using the edit menu's "Split" command, or typing Ctrl-E (a keyboard shortcut worth remembering).
6. Drag Live's Impulse beat sampler into an available MIDI track. You'll see eight empty slots ready to be filled by your samples.
7. Drag each slice you've made onto an open slot, and you're ready to start playing your glitch-filled drum machine.

Also note that you can use this same technique to drop an improvised drone or noise into Live's melodically-oriented "Simpler" instrument.

Chachi Jones lives in Oakland, CA, and runs Robotspeak *magazine. His latest album* Dymaxion Daydream *is available on Lunaticworks.* www.ChachiJones.com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THE SKINNY ON SKINNING

Make software look the way *you* want

by Craig Anderton

Hardware modifications, sure . . . but what about software? Although it's difficult to get in there and hack code, some programs offer the option to create custom "skins" that change the overall graphic look.

This is possible if the programs' graphic resources are bit-mapped graphics files. They're usually collected together in a folder called Resources, Skins, Default, or something similar; when you load the program, it loads the various resources, locating them by file name. So you can pretty much change the graphics however you want, as long as you keep the same pixel size and don't change the file name.

IT'S NOT JUST ABOUT THE LOOKS

So why would you want to do this, anyway? Part of it is the "hot-rodding" mentality and the desire to put our own stamp on things, but there are other reasons as well, such as increased legibility or functionality. For example, Figure 1 shows the original skin for Cakewalk's Session Drummer 2. The contrast is relatively low, and while it has a suitably muted look, I have too many instruments with a muted look and wanted something brighter.

Figure 2 shows the same screen after re-skinning. Not only is the overall look brighter and colorized, but there are some other details as well. Note that each pad now includes the MIDI numbers to which it responds — now I don't have to look this up in the online help each time I want to know this information. Furthermore, each drum pad actually has *three* different graphics: No drum loaded, no MIDI note being received, and MIDI note being received. I added the note numbers only on the "no MIDI note being received graphic" as it seemed that would be the only time I'd really care about the note numbers. If there was no drum loaded, it didn't matter; and if it was receiving MIDI notes, I must have figured it out already!

Also, check out the red MIDI note: This is the icon you drag to bring MIDI files into a track. As that's a pretty important function to me, I wanted it to stand out more.

These are fairly conservative modifications, of course. There are other, more involved skins for various products that seem more like a labor of love; redoing skins is not easy if the set of graphics is complex. For example, there have been several skins done for E-mu's PatchMix DSP. Many people feel the original look is hard to read (Figure 3), and have come up with new versions. You can find a bunch of skins to try out at www.productionforums.com/index.php?f=30, an unofficial E-mu forum on modifications and skinning.

However, my favorite is the skin that's downloadable from www.fierytrance.ru/skins7.htm. Check out Figure 4: To my eyes at least, this is a much "cleaner" and more readable skin, and it's now my default skin for PatchMix DSP.

Another program that allows some degree of re-skinning is Reason, as you can make your own Combinator panels. The only requirement is that the graphic be 754 x 138 pixels. Once you have your background, just choose "Select Backdrop" from the Combinator's Edit menu, navigate to a suitable graphic, and it will load. Figure 5 shows a custom Combinator backdrop on the top, and the default one on the bottom.

Again, although the issue of looks comes into play, so does functionality. If you have multiple Combinators in a Reason rack, giving them distinctive looks makes them much easier to parse.

SKINNING TIPS

Once you've located the folder with graphic resources that you want to modify, begin by copying the entire folder. Suppose it's called "Resources." Change the name of the copy to "Resources_original;" now you have a backup folder in case your experiments don't pan out, so you can work on the files in the "Resources" folder as much as you want. If you ever want to revert to the original files, just change "Resources_original" back to "Resources," and rename "Resources" to something like "Resources_modified."

Just about any decent graphics program can do simple tweaks like altering the brightness and contrast, changing saturation (increasing saturation makes colors "pop" more), and adding colorization (*e.g.*, change a blue tint to a red one). And sometimes you might want to go in the other direction, converting something overly colorful to a sedate gray scale. You can even redo labels so that they're a different typeface or point size to increase readability, add your logo to the graphic, or go nuts with a pseudo-grafitti kind of vibe. It's your call.

Do realize, however, that all your work may be for naught when a new version comes out. If a screen gets moved around, or parameter fields get changed around, you'll probably have to redo at least some of the graphics.

But we'll cross that bridge when we come to it. If you're ready to get started, in addition to the software mentioned so far Cakewalk's Rapture, Dimension Pro, and Pentagon are all easy to re-skin. So get out that paint program, and get creative!

Fig. 1: The original screen for Session Drummer 2, an instrument bundled with Sonar 6.

Fig. 2: Session Drummer 2, re-skinned using Paint Shop Pro.

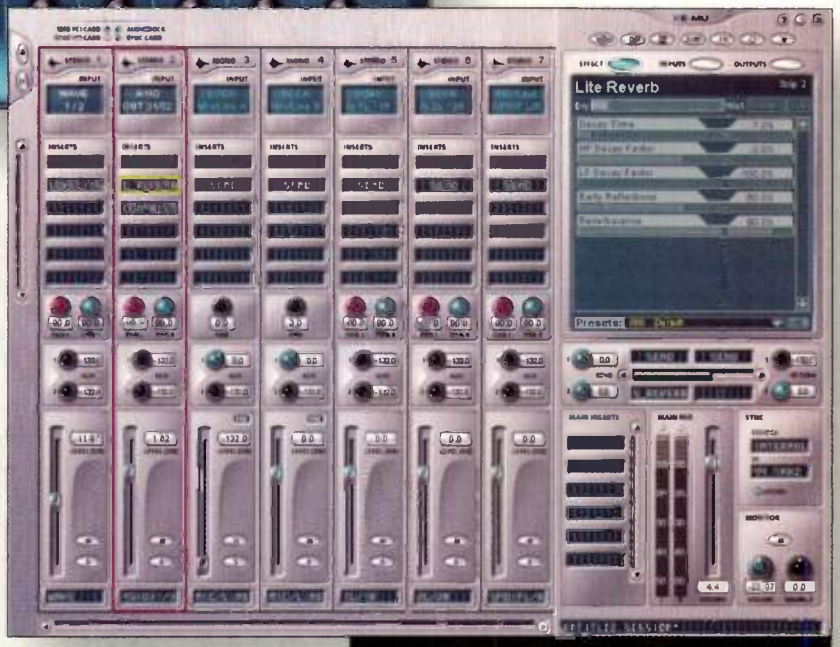


Fig. 3: The original E-mu PatchMix DSP screen.

Fig. 4: The FieryTrance skin for PatchMix DSP.

Fig. 5: Reason makes it easy to add your own backdrops to the Combinator.

MAKING DRUM SAMPLES SOUND LIKE REAL DRUMS

A little sleight of hand can convince listeners they're hearing **the real thing**

by Glenn Bucci

Back in the Sept. '06 issue of *EQ*, there was some extremely useful advice by Jay Graydon on how to make your acoustic drums sound great in your studio. But as many studios don't work with "real" drums, I'd like to address sampled drums and tips on getting good results with them. So, here are 16 sweet tips on getting groovier drum sounds.

USE THE RIGHT CONTROLLER

It's great that you can trigger drums via MIDI, as you can manipulate the data in terms of timing and "feel" after the fact — something's that difficult (although certainly not impossible) to do with digital audio. But if you're playing beats from a MIDI keyboard, although some people are pretty good at this technique, you're better off using a real, human drummer who can lay down sequences from a MIDI drum controller (like the Roland V Drums and Yamaha Extreme 3 kits). However you don't have to spend $1,000 or more to trigger your drum software; less expensive options include the Alesis DM5, Yamaha DD55, and some of the "finger drummer" units like the Korg PadKontrol and M-Audio Trigger Finger. These all encourage you to play in a more drummer-like way than keyboards.

LET IT BLEED

Many higher-level drum programs let you control the amount of "bleed" between mics. When you send some bleed to a direct mic channel, it can really add a cool effect when you compress and EQ the direct channel.

LET IT BLEED MORE

If your drum program doesn't let you mix in bleed, make your own. Play the drum tracks back through your monitor speakers, stick a couple of mics in the room, and record a track of real-world bleed. Mix in as appropriate.

IMPROVED SNARE TRIGGERING

Simpler drum software usually maps a single key or trigger to the snare, but drummers use both hands to play a real snare, and each hand gives a slightly different tone. If you trigger the drums from a keyboard, go to the key mapping page, and assign a second key to the snare so you can play rolls by hitting two separate keys. Or, assign the snare to a separate slot in the kit, and trigger that with a second key. If you detune one snare *very* slightly compared to the other one, you'll hear less of a "machine gun" effect — with real drums, hitting a drum with alternate hands makes successive hits sound slightly different.

Toontrack's dfh Superior not only lets you play back drum sounds, but create your own kits and control the amount of inter-drum leakage.

Stylus RMX combines drum sounds with groove generation, and offers expansion packs to expand on the basic sound set.

A GREAT BIG KICK

If you want a really big kick sound, double one kick drum with another one, and mix the outside mic of the second kick in with the first. Also consider detuning the second kick a little. The same basic principle works well with snare, too; you'll probably want to double with a different snare, or at least, a somewhat detuned version of the primary one. And while you're at it, adjust the second drum's velocity range so that it responds only to higher velocity levels (*e.g.*, between 120–127). This will give a major boost to the hardest hit sounds. Note that you may need to trim the volume of the doubled drum a bit to keep it from jumping out too much.

GET DAMP

It's very important to dampen the drums, otherwise they can sound too boomy. In particular, damping the toms can give a punchy, crisp sound. If your drum software doesn't have a damping parameter, a dynamic range expander can do much the same thing: Set its threshold just above where the decay starts to flatten out, and expand downward with a relatively gentle ratio (2 or 3:1).

LIMITING *À LA* MIDI

So why do you add limiting, anyway? Most of the time it's to cut the highest peaks down to size, and bring up the lower signals, so there's less of a dynamic range difference; the sonic artifacts that come from limiting aren't always wanted, but they're accepted as "part of the deal." With MIDI sequences controlling drum sounds, though, that doesn't have to be the case: You can "limit" the MIDI data itself by selecting all the data in a track, then adding a constant amount of velocity. For example, suppose the lowest hit in a drum part registers with a velocity of 34, and the highest, as 127. If you add 30 to all velocity values, the lowest one will be brought up to 64, yet the highest one will remain at 127 because it can't go any higher than 127 regardless of what you do.

COMPRESSING *À LA* MIDI

You can also compress by manipulating MIDI data. For example, suppose you want to compress a drum track by 2:1 with the following velocities: 60, 74, 90, and 126. Use your MIDI editing functions to divide all values by 2, so now the velocities are 30, 37, 45, and 63. Next, add a constant to bring the highest value up to 127, which in this case, is 64. Now your velocity values are 94, 101, 109, and 127 — instant compression, without the artifacts!

MASTER DYNAMIC CHANGES

Many times on a song, you want the drums to sound stronger on the chorus. To do this, use the drum software's master dynamic trim control (assuming it has one). Pull the velocity back a bit for the verses, and when the song goes into the chorus, push the velocity up to maximum to give the drums more energy. You can automate this easily within DAWs. If the drum unit itself doesn't have a master dynamics control, the host software's MIDI track probably does.

COMPRESSION TIP #1

Route the toms, cymbals, and kick together on a drum bus, then apply a nice compressor that will gently even out the drums and control their peaks. As the snare needs more attention and you don't want the compressor to be affected too much by the snare's attack, keep this on its own bus. You can add more reverb to the snare, and use gates and EQ, to get the sound you want.

COMPRESSION TIP #2

When using compression on the drums as a whole, as the resonances from a real drum kit aren't present, you may need to use a little more compression than you would on a real-world drum kit. Another trick is to compress the room mic(s) to get a nice "pump" going. You can also use "warming" plug-ins, like the UAD Fairchild or Waves Renaissance Compressor, to liven up the room sound.

BETTER CYMBAL MIXES

To make the cymbals sit better in the mix, try using less direct mic signal and more signal from the overhead and room mics. This will increase the spread and imaging, and give a more realistic sound. However, with the ride cymbal, you may want more direct and *less* room mic for better definition.

KEEP YOUR GROOVES SIMPLE

BFD, RMX Stylus, and EZdrummer come with drum grooves. Inexperienced users may want to show off all the grooves and great fills that are in the program; but in general, simpler is better. With Stylus, you don't *need* to use all 8 tracks. In BFD, when you select a folder of a particular style of grooves and move it over to the main menu by dragging it with your mouse, note that many grooves from a group are very similar. By switching among them during the verse, you'll add useful differences throughout the song; to build the song, you can add fills between verses or before the chorus.

MORE EXPRESSIVE SNARES AND HATS

Snares have different hits (normal, flam, sidestick, and drags), as do hi-hats (closed, open, half open, shank, etc.). Switching among these various articulations can add more life to the drums, as well as create a more realistic part. With drum programs that don't offer different hi-hat hits, sometimes working an amplitude decay control in conjunction with the open hi-hat sample will give some of the sounds that lie between open and closed hi-hat.

DON'T FORGET ABOUT MUTE GROUPS

Mute groups are groups of related drum sounds that are mutually exclusive: In other words, hitting one drum in a mute group instantly mutes all other drums in that group. This is used primarily with hi-hats, as you obviously can't have an open and closed hi-hat play at the same time. But another use is with toms, to help control ringing if some toms are decaying while another one is being hit.

LOSE THE CYMBAL SAMPLES!

Drum samples have never been more realistic, but there's something about a real cymbal that just plain sounds better in a track, assuming it's properly miked. Consider laying down a drum part with cymbals on a separate track, overdub real cymbals as you monitor the sampled cymbals, then mute the sampled cymbal track. You can even make people think cheezy drum machines are real if the cymbals are real . . . try it!

These are just some general concepts that you can use to make your drums sound better. Hopefully these ideas will help you to get the sound and feel you want for your drums. EQ

FLAVORS OF DRUM SOFTWARE

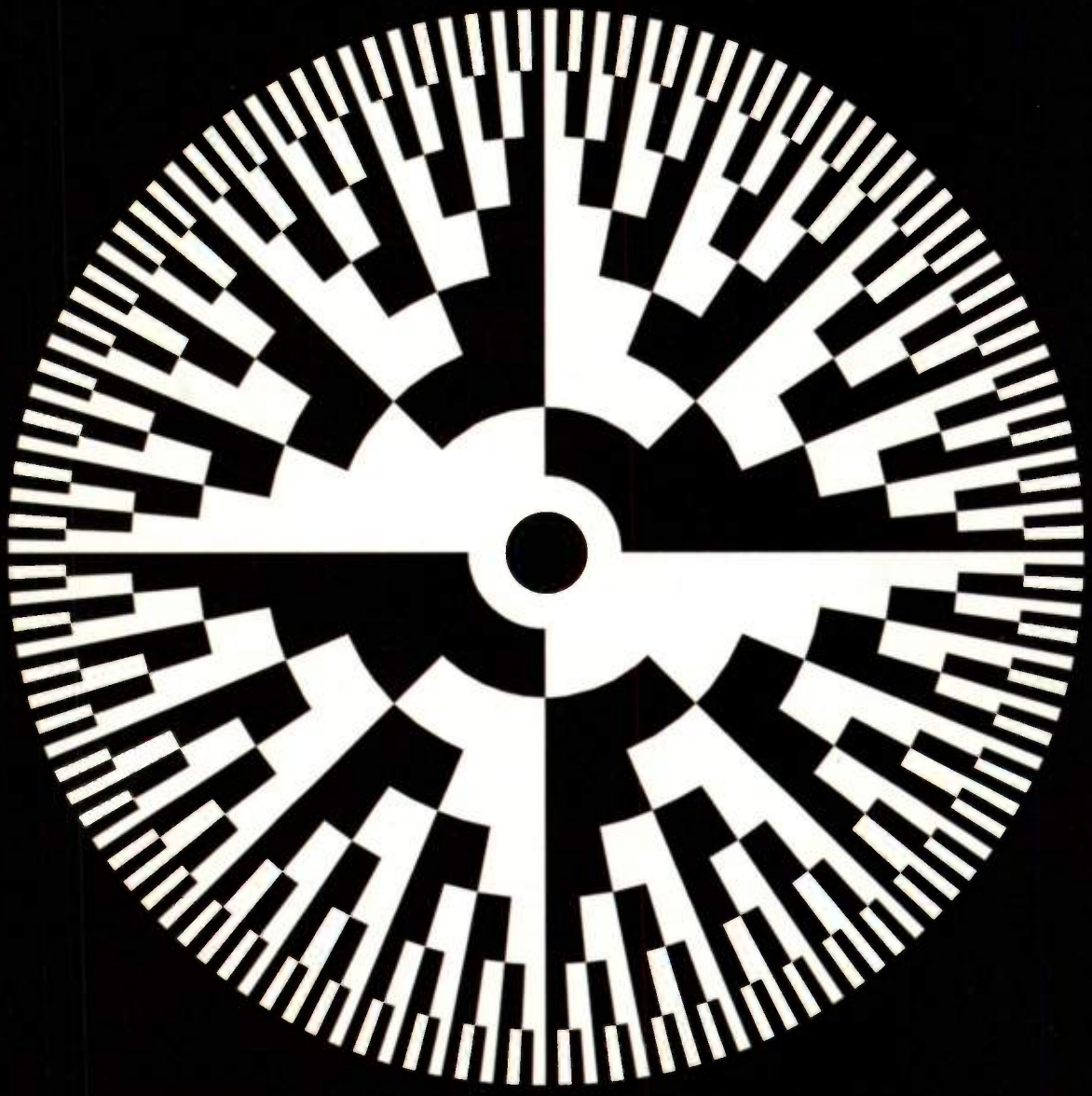
There are two main types of drum sound software. Programs like Stylus RMX, Toontrack EZdrummer, and Steinberg Groove Agent 3 all offer excellent processed drum sounds; many rap and hip-hop songs you hear on the radio use these sounds. These products also include more traditional-sounding, but still processed, drum kits for those who don't want to spend hours getting drums to have that polished sound — the company already did it for you. Most companies have demos on their websites so you can hear the drum sounds before you buy them. Besides using a little EQ, these programs don't need much help with reverb or compression.

Other drum software specializes in dry acoustic drum sounds. These programs take up a lot of hard drive space because they use tons of samples for each drum. Toontrack's dfh Superior, Propellerheads' Reason Drum Kits, and Fxpansion's BFD sound like you're in the recording studio control room with the drums on the other side of the glass. These sounds are unprocessed in order to give more flexibility when mixing the drums so they will fit your song. They allow you to pick different types of drum kits, or build your own from the different snares, cymbals, and toms.

However, even programs within this camp have differences. For example, BFD adds drum grooves and fills, while dfh Superior doesn't; and Reason Drum Kits takes advantage of Reason's Combinator module to provide "produced" drum kits from name producers in addition to the raw sounds.

Yet another option involves samplers, whether traditional (MOTU MachFive, NI Kontakt, E-mu Emulator X2, etc.) or dedicated to drums (*e.g.*, NI Battery).

Today's drum sounds are the result of meticulous recording. As just a couple examples, Fxpansion used API preamps with a quite the mic locker for the close mics: Neumann KM81 and M49, Sennheiser MD421, Electro-Voice RE20, AKG C451, and Shure SM57. For overheads, they used AKG C12s with Summit MPC 100A tube preamps; Neumann U87s were used through Avalon preamps to pick up the room ambience. The drum kits were recorded at multiple velocity levels in the same room using the same mic setup, and 14 mics were put around the kit with controls to allow a balance of the various mics. Toontrack used Royer Labs, Neumann, AKG, and Earthworks mics at 13 positions, along with preamps that were custom built for recording drums.



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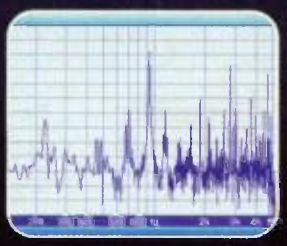

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LANGEVIN MINI-MASSIVE

Massive-Passive Sound in a Mini Langevin Box?

by Glenn Bucci

With frequency bands identical to bands one and four of Manley Labs' highly-regarded Massive Passive EQ, the same passive components (resistors and capacitors) and incredibly similar circuits, the brand new Langevin Mini-Massive is a two-band solid state "kid brother" stereo EQ that's generating quite a buzz. But while Manley claims that the main difference (besides number of bands) between the two boxes is that the four-band Massive Passive uses tubes for gain while the two-band Mini uses solid state Rapture gain blocks, I wasn't content to just take that word as gospel. So I requested a unit to investigate if that is where the similarities really begin and the differences end . . . here's what I found.

INSIDE THE MINI-MASSIVE

Is the Langevin Mini-Massive really a Mini-Manley Massive Passive? Yes and no. Many of the same components are used in both, and the Rapture amps, while solid state, are super clean and fast (more akin to a GML, in terms of speed and neutrality, than a Langevin PEQ-2 or Pultec EQP-1A3.) Furthermore, the Mini-Massive is as meticulously constructed as its big brother — you won't find any cheap circuit boards here.

The Mini-Massive boasts a triple option toggle per band: boost, out, and cut. Another toggle selects between shelf or bell curves. A Bandwidth control alters the area and shape of each EQ curve-response. Having a shelf with the ability to control the slope is a great feature, lending the Mini to more flexible applications. With the Q control you can adjust the band to be wider or narrower. (Tip: A boosted signal generally sounds nicer with a larger Q, but when removing certain frequencies a smaller bell is more desirable. The reason why is that when you have a frequency that needs to be reduced, you don't want to alter the neighboring frequencies; instead you want more of a "concentrated" reduction. But for boosting, the larger bell definitely sounds more natural.)

On the high bands, there is a second Bell shape for the four highest frequencies — a feature that can be of great use as the bell is more concentrated on certain frequencies. "Bell 2" is not found on the Manley Massive Passive, but it is sure a welcome feature here on the Langevin unit. Another difference compared to the Manley Massive Passive: The four lowest shelf curves were reshaped for extra fatness, depth, and punch on the Langevin Mini-Massive.

A transformer switch on the back of the unit allows you to bypass the output transformer in the down position. In the middle position, the signal goes through the transformer, giving a slightly warmer and smoother color, while the upper position exaggerates the transformer by increasing even order distortions, meant to simulate some Class A British console circuits for a grittier sound. The difference between using the bypass or the transformer, at first, is subtle. But though the results may be minor on one track, when applied across, say, ten or more tracks, the effect can be cumulative.

APPLYING THE MINI-MASSIVE

In a perfect world, we would all have a Massive Passive and a Mini-Massive in our studios. I say this because I've found that the Massive adds an almost supernatural color and touch to every signal that goes through it, whereas the Mini-Massive really excels at bringing out punchier, cleaner sounds while still resembling the crisp qualities of the Massive. As both boxes have their own separate personalities, I decided to use the Mini independent of the Massive in my chain . . . with the following results.

For a session where a bass guitar was recorded through a Mesa/Boogie amp with a BLUE Blueberry, going into a Langevin DVC and experiencing about –3dB of compression (courtesy of a Focusrite Compounder), I sent the signal through the Mini before A/D conversion. A gentle boost at 66Hz and 220Hz resulted in a much fuller, punchier, and three-dimensional sound. As the strings on the bass I recorded were getting a little old, I found that employing the Mini really helped restore the high end life to its sound. And while I've managed some good results for EQ plug-ins (namely Waves and UAD products), the clarity and berth afforded by the Mini was unlike anything a plug-in could synthesize. Where many EQs (especially plug-ins)

QUICK EQ TIPS FOR THE MINI-MASSIVE

In order to get the best mix possible, many times you have to apply EQ to some degree on your tracks. However, no EQ should be treated as a magic fix: If there is a problem at the source it needs to be addressed at the source. If your acoustic guitar track has too much low end, try positioning the mic so that it's above the guitar to combat that. And if your vocalist is sounding too high and thin, try moving him or her closer, taking advantage of the proximity effect. Don't just run to your EQ.

It's wise to avoid EQing and compressing during the tracking process. However, I recommend adding a 1 or 2dB boost around 12kHz if you need more air in your tracks right away, or boosting around 100kHz to add weight to a track. This has always struck me as safe enough during the tracking.

But once you get to the mix, try not to boost all your frequencies and work down. Boosting reduces headroom, and you can get great results by reducing your frequencies initially as well.

Make sure to review your mix regularly, and make sure that instruments needing separation from one another aren't fighting for the same frequency space (*i.e.*, keyboard vs. guitar; kick drum vs. bass). If you're getting a clash, try cutting one source back while subtly increasing the other. By doing this, you'll retain headroom while adding clarity to each individual instrument in your mix.

tend to give the impression that they are merely layering a separate signal on top of a track, the Mini managed cohesion, sounding like part of the original signal.

On a stereo piano track, I boosted a tad at 3kHz and reduced a bit at 680Hz, resulting in a more even sound that made matching the left and right sides pretty easy. For some 2-bus mixes, this technique added more weight in the low end and a little more sparkle in the top. On other mixes, reducing some of the low mids with the Mini reduced clutter. However, there were times when the Massive Passive, or any more flexible EQs, made for a better choice (such as an Empirical Labs Lil FrEQ, which is both clean-sounding and allows for more precise surgery.) But make no mistake, for 2-bus mixes where the top end needs enhancement and the lows demand more control, the Mini did a great job. Furthermore, if you have a single track that requires a more flexible EQ, combining the left and right channels will give you four bands with which you can work. I recommend trying this (except in the case of a 2-bus mix, or going through a stereo keyboard). This kind of enhanced control keeps the Mini from coming off as too limiting with its lack of continuous sweep control; and the fact that there are 48 frequencies per channel to work with is just awesome.

CONCLUSIONS

There are hundreds of EQs out on the market, and there is no magic box for every studio application. If you're looking for extra iron and punch, a Great River or Neve Portico may be a better choice than the Mini due to their more aggressive treatments. But for gentle signal adjustment — to add more sparkle and fullness while still retaining the original sound — the Mini is a great choice. It adds punch, reduces harsh frequencies, and aids in allowing your tunes to breathe better. And while it's not as "colorful" as a Massive Passive, it's a great complement to the aforementioned unit, and a good option for those who are looking for a cheaper alternative without sacrificing that Manley touch.

Are there any major minuses to the Mini? As said before, having four bands for each channel would be nice, but besides that I can find nothing to complain about. The Mini is a high quality unit with enough flex room between ultra clean, gentle color, and the grittier British console EQ sounds we all love. It doesn't look like Manley is getting this one back from me (time to talk to my checking account); it's racked right under my Langevin DVC . . . and it's looking (and sounding) quite happy. EQ

Product type: Single rack space, two-band solid state stereo EQ.
Target market: Pro-project and professional studios.
Strengths: High quality components. Great sound. Unique character.
Limitations: Two-band design can be a bit limiting at times.
Price: $2,800 (list)
Contact: www.manleylabs.com

NO TOASTERS NICE PAIR

Old school ethos/new school sound

by Jeff Anderson

For the past two months, I've been in a state of limbo as a new console has been in the process of being assembled and installed in my studio. Without a fully functional desk, I'm in the position of running all of my sessions relying solely on external pres.

And I've been digging the sounds I've been getting. So I decided to follow the buzz surrounding the Nice Pair pre, the product of a little start-up company called No Toasters, and see if this was for me. With an offer (and this applies to all interested readers) to try out a unit for free for 30 days, I figured I had nothing to lose.

OVERVIEW

The Nice Pair is a hand-wired, two-channel microphone pre using fast-acting JFET technology and a Jensen input transformer design — factors that contribute to a high gain circuit that produces many transients and harmonics.

Solidly built, with an aesthetic that screams "vintage" (check out those knobs), the Nice Pair is all substance, no flash. Offering standard controls (gain, impedance selector, phantom power, pad, phase reversal, and level), the Nice Pair also features a saturation setting for producing a distortion that works great for exaggerated vocals, fuzzed out bass (assuming you aren't running direct), and dirty guitar sounds.

But while that's all well and good, the real question remains: How does it sound?

APPLYING THE NICE PAIR

The first patient was an old Gretsch kit. For the overheads, I put up two Neumann U87s in a standard stereo position, running straight into a Focusrite Octopre, and then to tape. This resulted in a very shimmery sound — really clean, but not exactly what we were going for.

So I ran the same chain, substituting the Nice Pair for the Octopre, and there was an immediate, obvious difference. As the gain was increased, the "color" of the unit increased exponentially — a color that can't be likened to an API or a Neve, as it's a bit glossier and more modern-sounding (more flexible as well). No, the Nice Pair really has a sound of its own.

However, as the pre was really colorful even at a low gain setting, the U87s had to go. Two matched Shure SM81s were put in place of the Neumanns, and we finally achieved the tone for which we were searching. Setting the gain at around 2 o'clock, with the output level at 9 o'clock, added a great deal of color and what almost sounded like a light compression that was very flattering to the kit.

Next up was a vocal overdubbing session. The vocalist had a very rich, warm voice — so much that mic selection proved to be tricky. So I conducted a shoot-out with a Neumann U87i, a U47 FET, a Groove Tubes GT40, and an AKG 414. With the Nice Pair set at high gain/low output, the U87i was colorful yet accurate. With the U47 (and the Nice Pair's gain and output at around 12 o'clock) the sound was incredible — all the transients were apparent and the track sounded thick yet glossy. Still, we decided to continue to work down the line.

The singer's voice ran through the GT40 into the Nice Pair was a bit too bassy and exaggerated even at the lowest gain setting. This could be attributed to the natural low register of his voice, but it was enough to discourage me from using this chain were the ghost of Barry White to ever pop in for a take.

So it was time for the 414 — a mic known for its accuracy and flat frequency response. Engaging the pad, pulling back the output, and cranking the gain 100% yielded a nice little surprise: A goodly amount of bending and distortion effected the voice, giving an almost SansAmp'd sound. This wouldn't be appropriate for the main vocal track, but it's something I've since started applying to backing vocals to add an extra cool dimension to a part.

A very useful feature of the Nice Pair is in the input gain being selectable in steps, which makes it easy to switch volume settings accurately during takes. For example, as the aforementioned vocalist grew louder during the chorus, I would turn the input gain down a click and knew that when it came time for the verse, I could click right back up to my previously set volume. Handy.

CONCLUSION

The Nice Pair produces incredibly colorful tones and really has a unique character. So while it's not applicable in every situation, it produces a certain sound that isn't achieved easily elsewhere, and the amount of control it provides keeps it from being of singular utility.

Solid in both design and sound, the Nice Pair is a real "down-to-business" box, designed with functionality in mind and utterly devoid of unnecessary bells and whistles. And it's priced well at that. Homemade and boutique-y, the Nice Pair is a great addition for that tone collecting producer who's into having a veritable arsenal of outboard pres . . . and it comes highly recommended. EQ

Product type: Two-channel, solid-state mic pre.
Target market: Mid- to pro-level studio owners searching for a pre with a broad spectrum of color.
Strengths: Utilitarian design. Brilliant color. Tonal flexibility.
Limitations: No direct line input.
Price: $1,495 (list)
Contact: www.notoasters.net

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PRO TOOLS MUSIC PRODUCTION TOOLKIT

Beef up Pro Tools LE/M-Powered without breaking the bank

by Phil O'Keefe

Pro Tools comes in two basic flavors — the full-blown HD systems and the somewhat limited LE and M-Powered (for use with M-Audio, as opposed to Digidesign hardware) versions. While the LE versions offer many of the features of the more powerful HD software, some important features are missing, and some users have longed for a version that sat between the two.

Music Production Toolkit closes that gap somewhat. Part plug-in bundle, part upgraded software features, MPT offers increased production power, speed, and functionality for users of standard LE software. Installation was a snap (the software requires a user supplied iLok for registration and copy protection); once it's installed, you can take advantage of . . .

MORE TRACKS

While you can have up to 128 audio tracks in a standard Pro Tools LE session, only 32 "active" tracks can be enabled at once (stereo tracks count as two tracks) — which cannot be disabled or re-enabled "on the fly" during playback. While you still can't change the active tracks on the fly, MPT ups the maximum active track count to 48 mono *or* stereo tracks (if you use only stereo tracks, that's 96 channels of audio). Granted, many other DAW software programs do not place any limitations (other than the capabilities of your computer system) on the maximum amount of tracks; regardless, the increased track count should suffice for all but the most gluttonous track users, and should be easily attainable with most reasonably modern DAW computer rigs.

MORE EDITING

LE and M-Powered include a "lite" version of Beat Detective. While useful for editing mono or stereo tracks, you have to resort to work-around tricks to edit grouped tracks, such as a multi-miked, multi-tracked drum recording. (Check out Rick DiFonzo's article in the Jan. '07 *EQ* for details on how to do this.) MPT adds the full version of Beat Detective, which works with grouped tracks and is not restricted to single mono or stereo tracks. It really is an incredibly powerful tool that can save you considerable time and effort in editing performances: You can then extract the groove of a performance and apply it to other tracks, slice the selected region into individual regions, quantize them . . . and after you cut things into regions and quantize them (please use this feature responsibly!), you can adjust the region start or end times to fill in any "gaps." There's lots of power here, and it's easy to learn.

One command I wish it did have is the ability to edit or adjust the start times of all selected regions by a user-determined amount (Digi says this may be part of a future update). The bottom line is that if you do a lot of editing, the "full" version of Beat Detective alone is worth the price of MPT; edit jobs that used to take hours or even all day can normally be done in a fraction of the time with this tool.

MP3 EXPORT

You can now convert your final mixes to MP3 format, which are useful for uploading to online sites, as well as for long-distance mix "progress reports" and approvals. (While some users feel this should be a standard Pro Tools feature, Digidesign would then have to pass on the cost of the Fraunhofer Institute license, even to those who prefer to use a third-party converter utility.) Being able to produce files in the MP3 format is a nearly daily requirement in

Fig. 1: SoundReplacer can replace weak drum sounds with better ones.

Fig. 2: TL Space is an excellent convolution reverb.

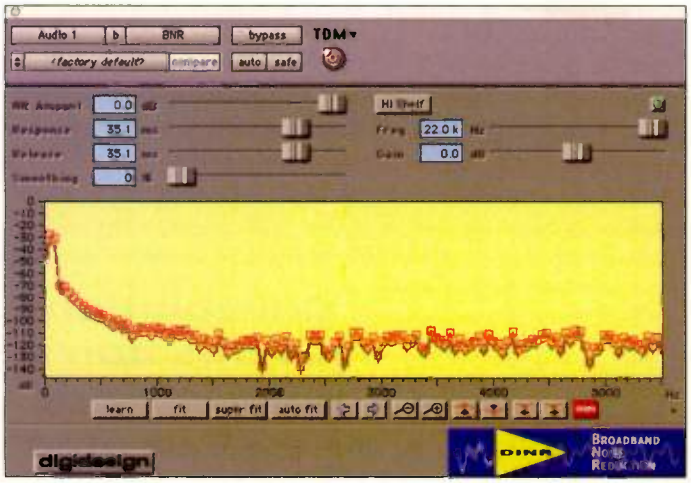

Fig. 3: The Broadband Noise Reduction (DINR) plug-in, while showing its age, does an effective job of knocking back some types of noise.

Fig. 4: Smack! LE will indeed smack your dynamics into place.

a modern production studio, so thumbs up on the MP3 option.

STILL M.I.A.

There's still no notation display in any version of Pro Tools. That's an important production tool for printing out lead sheets, as well as for composers and producers who are more comfortable with editing MIDI notes on a staff than they are using a piano roll editor. While Pro Tools has greatly improved its MIDI features in the last few versions, I still hope to see an editable notation display within the program.

A pretty large gap on the hardware side remains between the LE systems, with their maximum of 18 simultaneous I/Os, and the HD systems, which in addition to their number-crunching DSP cards, feature easy expansion just by adding additional I/O interface units. While I really like my Digi 002, it isn't expandable in terms of audio I/O; if you're into recording at the higher sample rates, the maximum 10 channels of I/O can be a little restricting for some types of music production (you can easily use more than that for rhythm section tracking on a rock recording).

Additionally, some people prefer to mix to an external board; the maximum amount of channels you can output at once with Digi or M-Audio hardware is 18 at 44.1/48kHz, which is fine for "stems" (stereo sub mixes), but not enough for sending most of the individual tracks to the board on larger productions. I'd like the option to add a second Digi or M-Audio interface to my existing setup to increase the I/O capabilities, but MPT doesn't allow this. Alternatively, a new interface that would allow for at least 18 inputs and 32 outputs at all sample rates would be a welcome addition to the LE or M-Audio hardware lineup. Again, most DAW software lets you use whatever interface you want; while I understand the compatibility advantage to Digidesign's proprietary approach, music production sometimes benefits from more channels of simultaneous I/O than is currently available with Pro Tools LE/MP hardware systems.

Fig. 5: The Hybrid synthesizer complements Digi's Xpand! sample-playback instrument.

BUT YOU DO GET . . .

Plug-ins, and a pretty good selection at that. First up: Sound Replacer (Figure 1), the classic drum replacement plug-in. You select the track or region you want to process, open Sound Replacer in AudioSuite, then import up to three replacement samples. Each sample has a user adjustable threshold, so it's possible to set up replacement tracks with multi-layered tones. For example, you can select a lightly played snare sample for the hits with the lowest threshold, a firmly played snare for the average hits, and a heavy snare sample for the loudest hits.

You can replace the existing recording with just the samples, or select a percentage of your choice for them to be blended into the original track. While SoundReplacer is reliable, easy to use, and useful, the on-screen waveform redraws are pretty slow even on a fast host system, and it's starting to show its age compared to newer programs such as Drumagog and TL Drum Rehab, which offer more extensive feature sets. But it certainly can be useful for smoothing out the sound of a consistency-challenged drummer, or for replacing a weak recording with sounds you like better.

TL Space (Figure 2), a convolution reverb plug-in, includes an extensive library of spaces, with additional impulses available at Digi's website. Halls, rooms, plates, office and industrial spaces, hardware units, studio rooms, and even post-production sound ambience effects are all well-represented. I particularly

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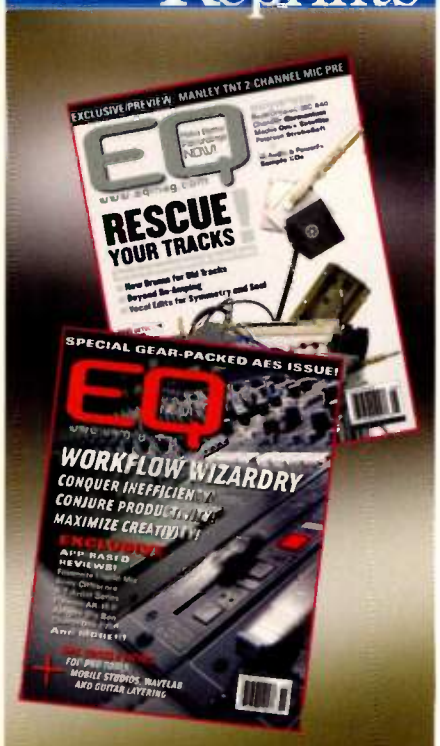

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like the United/Western Plate reverb and concrete stairwell impulses, but many of the other presets are also quite good. While not as extensive as the tools you usually find available on a high quality algorithmic reverb plug-in, TL Space does offer a solid collection of user adjustable parameters (decay time, predelay, EQ, wet/dry and early reflection ratios, etc.). Convolution reverbs don't always work as well as algorithmic reverbs for an over the top "effect," but for a wide variety of acoustically realistic spaces, they're currently unbeatable. TL Space sounds as good as, or better than any other convolution reverb plug-in I've used, and can do an outstanding job of simulating "real" acoustical environments.

The Broadband Noise Reduction (DINR) plug-in (Figure 3) is also included; like SoundReplacer, BNR has remained largely unchanged for a few years, and while it does a fine job knocking back noise levels, I could hear it working once it got past about 6dB of reduction. If you need more than that, two or more passes through with modest reduction settings works better than a single pass with a high amount of reduction.

Smack! LE (Figure 4) is a very cool-sounding "retro" compressor. Rockers are going to like this one, as it leans heavily towards the "attitude," as opposed to "neutral" side of the fence. It has three compression modes — normal, warm and optical, as well as ratio, attack, and release controls. There is no threshold control; the threshold is preset and you hit the compressor harder by, uh, "smacking" the input knob harder. This works fine, but a threshold control would make things easier and more flexible, as would having the attack and release times displayed in milliseconds instead of on a 1–10 scale.

But where it counts, Smack! LE delivers. It works great for drum bus duties (check out my column in the Jan. '07 issue of *EQ* for more on this technique); however, it requires some manual latency compensation to get things back in phase when used this way. Still, the results are worth the extra effort, and Smack! LE works great for punching up drums and adding beef and impact. It also works very well for bass and vocals, and I have to admit that on one song it gave me some of the best squashed acoustic guitars I've ever printed. It's become one of my favorite compression plug-ins.

The one "production" plug-in addition I would like to see added is a good modulation effect. While the DigiRack delays are useful and have basic modulation capabilities, a variety of good modulation-based effects are crucial tools for many types of music production.

AND YOU ALSO GET . . .

Instruments! While Pro Tools still doesn't offer the sheer numbers of virtual instrument plug-ins that some competitors do, the ones they do are quite good. BFD Lite, which currently comes bundled with all LE systems, provides a solid virtual drum plug-in, and Xpand!, a free ROMpler plug-in instrument that was added last year, is a very cool instrument for common sounds such as pianos, percussion, basses, strings, pads, and so forth.

Convolution reverbs don't always work as well as algorithmic reverbs for an over the top "effect," but for a wide variety of acoustically realistic spaces, they're currently unbeatable.

Now MPT adds a new synth called Hybrid (Figure 5). It has a similar "look and feel" to the Xpand plug-in, but instead of being sample playback-based, this is a feature-rich, three oscillator (two primary, one serves as a modifier), virtual analog/wavetable synth. The user interface is easy to navigate; it works very well for fat buzzy leads and synth bass, but less well so for reedy and atmospheric sounds. There is a good selection of waveforms, as well as 100 single cycle waveforms available in the wavetable menu.

For those who produce music with synthesizers, Hybrid adds another synth that sounds good and is easy to program; and this single item retails for about half the price of the entire Music Production Toolkit bundle.

CONCLUSIONS

If you're doing traditional multitrack recordings of full bands and ensembles, and need more software "horsepower" than the standard version of Pro Tools LE/MP offers, I'd say it's a no-brainer. Even solo recordists working alone will find plenty to appreciate in this bundle. With over $2,000 worth of bundled plug-ins included, and additional features that have not been available to LE users previously at any price, it's hard to argue with MPT's value.

Of course, if you already own some or all of the bundled plug-ins, MPT may be less attractive; but even setting aside the plug-ins, the full version of Beat Detective and the increased track count will make it a "must have" purchase for many users. And if you don't already own a good convolution reverb, TL Space (which normally sells for the same price as the entire MPT bundle) is a worthwhile addition — as is Hybrid, one of the better-sounding analog synth emulations I've heard.

I use an LE system as the main DAW in my studio every day, and you can definitely get professional results out of an LE/MP system if you do your part. But adding MPT increased the capabilities of my system, while improving my production speed and efficiency. The Music Production Toolkit may not offer every feature you've been dreaming of, but it is definitely a cut above a standard LE system, and it comes in at an attractive price. Check it out; I'm sold! EQ

Product Type: Pro Tools LE/M-Powered plug-in and feature enhancement bundle.

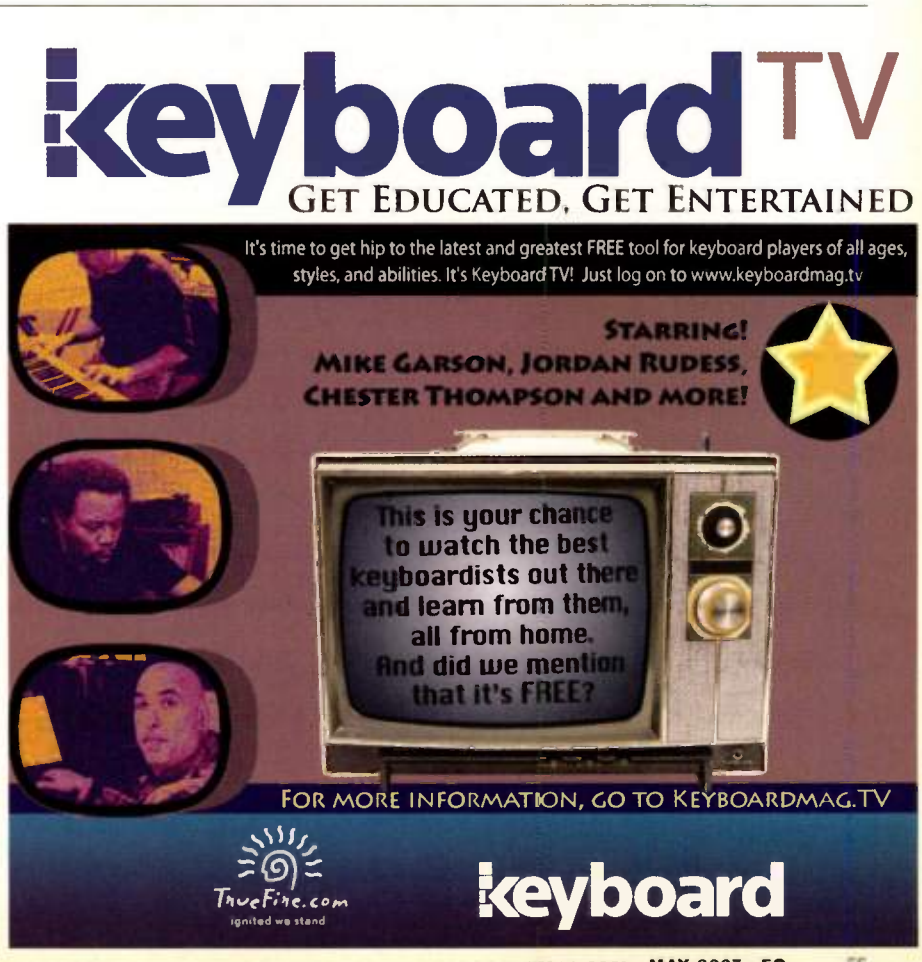
Target Market: Pro Tools LE/MP users who want increased software capabilities and a software plug-in bundle tailored for music production.

Strengths: Increased track count. Good value, especially if you do not already own most of the bundled plug-ins. Least expensive way to obtain full Beat Detective functionality. Dramatically increases editing speed and efficiency. Smack! LE is an versatile compressor. TL Space offers excellent, realistic sounding reverb.

Limitations: Still no MIDI notation in Pro Tools. Limited to the current M-Audio and Digidesign audio interfaces, with no I/O expansion capabilities. Broadband Noise Reduction and Sound Replacer could use some feature updates.

Price: $495 list

Contact: www.digidesign.com



GIBSON HD.6X-PRO DIGITAL GUITAR

Prepare to be surprised

by Craig Anderton

So what is a Les Paul guitar doing in *EQ* magazine? Sure, you can play it live. But what interests me is how it fits into the modern, computer-based studio.

First things first: Yes, it's a Les Paul. It's not a MIDI guitar or a modeling-based guitar, nor does it replace them; it uses digital technology to network the guitar over Ethernet (you can have a *300* foot cable without signal degradation), and to provide six individual string outputs, suitable for (among other things) feeding into a computer's audio interface. You can create true stereo mixes, and use plug-ins to process the strings individually, do surround effects, and warp the sound beyond all recognition.

This shot shows the jackplate, which is not the same as your father's Les Paul, and the traditional set of controls.

The package — and it's a classy one — includes the full edition of Sonar 6 Producer Edition, a very sturdy case (padded inside and out) with roller wheels, breakout box, and snake with eight balanced phone jack leads.

MAKING THE CONNECTION

The guitar has a standard mono analog output from the two humbucker pickups; you can treat it just like a standard Les Paul. What's more intriguing is the Ethernet connector, a mic input, and a headphone output. The Ethernet connection is truly a network, and carries the mic signal to the breakout box as well as routes monitor signals back into the headphone out on the guitar. It seems sacrilegious to have a headphone out and mic in on a $5K Les Paul, but guitarists who use in-ear monitors and headset mics will likely embrace this concept.

The other end of the Ethernet cable connects to a breakout box that provides mono, stereo (strings 1-2-3 and 4-5-6), and six individual balanced outputs, which come from the hex pickup located between the bridge and treble pickup. (There is a little inter-string leakage, but sonically, this can be a plus as well as a minus.) And of course, you can layer these outs with the guitar's "classic mode" mono out.

To take full advantage of the hex output in a computer environment, you'll need an audio interface with eight ins but these don't have to be "instrument" inputs; line ins will work. I would love to see a way to hook the computer directly into a computer's Ethernet port, or if that's not possible, an Ethernet card designed specifically for the MaGIC interface. That would sure simplify the cabling and interfacing. On the other hand the current hardware-oriented breakout box is essential for live use, if you want to patch (for example) an AdrenaLinn on each string, or use any other kind of hardware-based hex processing.

SO HOW DOES IT PLAY?

Like a Les Paul. It also looks like one, but the blue metallic finish with silver top binding is stunning. Guitar geek data: 24-3/4" scale length, ebony fingerboard with 22 frets, mahogany neck, stopbar tailpiece, Tune-o-Matic bridge, speed knobs, and platinum plated hardware.

SO HOW DOES IT SOUND?

Like a Les Paul. . .

That is, until you start applying creative computer mojo or hex signal processing. Put distortion on each string for a beautiful, laser-clean distortion with minimal intermodulation issues. Patch an envelope follower or light chorus on the top three strings. And when you pan strings in interesting ways, add pitch transposition for cyber-12-string sounds or NIN-type basses, or start overdubbing multiple layers with this degree of processing, you're in totally virgin sonic territory. It's a fun place.

CONCLUSIONS

Let's get real: The HD.6X-PRO is expensive. It had a long and difficult gestation, as pickup designs were tried and discarded, network issues had to be resolved, and the concept was greeted with skepticism both from within and without Gibson (myself included). And coupling the term "digital" with "Les Paul" was seen by many as, well, heresy.

But you don't get anywhere by standing still, and the Les Paul digital guitar is proof. Forget pre-conceived notions: Send each string to a separate channel and throw on your favorite plug-ins. Get sounds that range from filthy raunch to sweetly angelic. Have pitch-transposed sounds fade in from the background while the main out screams out of your favorite tube amp. Listen to some of the audio clips at www.eqmag.com. Then — and only then — will the digital Les Paul truly make sense: Hearing is believing. EQ

Product type: Les Paul guitar with digital and analog outputs.
Target market: Guitarists who want to take the traditional guitar's sonic possibilities further.
Strengths: Make sounds you've never heard before. Feels and plays like a Les Paul. Includes the full Sonar 6 Producer Edition. Comes with breakout box, snake, and case. Innovative.
Limitations: Can't connect digitally to computer. Some leakage between strings (not always a bad thing, though).
Price: $4,999 (list)
Contact: www.gibson.com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PSP VINTAGEWARMER 2

More than a mere tape emulator

by Garrett Haines

Now available for hosts running Mac OSX (PPC or Intel) or Windows, VintageWarmer 2 offers a slew of formats, including VST, RTAS, DX, MAS, and AU. Foregoing the mere graphic interface overhaul and instead refining the sound as compared to the original, VW2 boasts numerous updates including PSP's FAT (Frequency Authentication Technique) double-sampling algorithm, optional brickwall limiting, and several enhancements.

THE LOW DOWN

PSP's FAT processing gives the updated version gobs more room to do internal calculations. The tradeoff: One instance of VW2 with FAT enabled requires more than double the CPU power of two FAT-free instances. Still, it makes a huge difference. Flip the FAT switch and it sounds like someone lifted a veil from the audio — highs are much smoother and the overall soundstage seems to have more front to back depth. Drums have a very convincing "2" at 15 ips" feel to them — there's a more controlled "thwack" to the snare, and the kicks punch right to the gut. At times I was reminded of the Empirical Labs Fatso tape emulation. And this is a good thing.

Be careful, though: The "warmth" feature is easy to overdo. Like the ear-candy days of aural exciters, it's tempting to slap an instance of VW2 on every track. But by the time the mix makes it to your mastering engineer, the buildup of this processing can sound more like crud than warmth, so those who use many instances should monitor the drive and saturation settings, and apply sparingly.

UNTAPPED POWER

VW2 is more than a "color generator" — there are some real flexible, useful features inside this thing, so just choosing a preset and adjusting the gain or output fails to tap its full potential. For example, there's a switch for single-band or multi-band operation. In "Single Band" mode, the processor functions across the full frequency range, providing tape simulation effects combined with shelving equalization. In "Multi Band" mode, the processor acts as a three-band, soft-knee limiter with pre-limiter level adjustment and hard limiting for the combined output.

However, the GUI doesn't change for Multi Band, which may confuse some users. Some controls change duty in Multi Band mode; specifically, the High Freq knob normally sets the high-shelving equalization frequency, but in Multi Band mode, this knob sets the high band's crossover frequency. Similarly, the Low Freq knob sets the low band crossover frequency in Multi Band mode instead of the low shelving equalization frequency.

There are also powerful metering functions. Real-life VU meters have to fight inertia and gravity to move the needle, causing a delay (typically about 300ms) from the time a sound hits the meter to when the needle can actually ramp up to display the level. However, VW2 allows adjusting the meters' ball stic response. Additionally, the meters' reference level can be adjusted to improve their ability to track peaks. This is incredibly useful, as "real" VU meters have a fixed reference of a -14dB value relative to peak value. While they help evaluate average or sustained responses, they can fail miserably as peak detectors.

Fortunately, VW2 allows peak program metering (PPM). This mode has adjustable attack and release integration times, just like the VU meters, with default values of 10ms integration time and 1,000ms return time to emulate most real-world PPMs. Users can adjust to taste. PPM meters are pseudo peak meters and show the level value very close to digital peak values, but tend to be more practical than digital peak meters themselves. This feature is great on individual tracks where setting the attack to 0ms gives a perfect digital peak meter.

CONCLUSIONS

Fans of the original VintageWarmer will find that VW2 sounds even better, making the nominal upgrade fee almost a no-brainer. And even if you aren't into saturation plug-ins, the compressor and limiter stand on their own as solid applications. Add the metering and tweak-ability of other parameters, and it looks like PSP has regained its crown among vintage emulation plug-ins. EQ

Product type: Analog tape simulation plug-in and more.
Target market: Users who are seeking "in-the-box" solutions for tape emulation.
Strengths: Great "warming" emulations. Flexible metering configurations. Single and multi-band compression available in single application.
Limitations: Not backward compatible. FAT processing requires more than double the CPU of base plug-in.
Price: $149. Upgrade: $49 (free for users who purchased VintageWarmer after 03/13/06)
Contact: www.pspaudioware.com

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Sounds

BIG FISH AUDIO

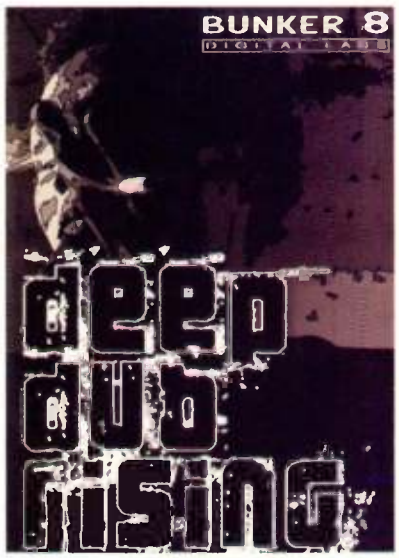
DEEP DUB RISING

Contact: Big Fish Audio, www.bigfishaudio.com
Format: DVD-ROM with construction kits duplicated as Apple Loops and Acidized WAV files; 24-bit/44.1kHz
Price: $99.95 list

If you're expecting Burning Spear's "Garvey's Ghost"— the archetypal example of old school Jamaican dub — *don't*. This is modern dub; sometimes psychedelic, sometimes verging on a slow dancehall vibe, with a healthy dose of electronics and a taste of hip-hop. Thankfully, it generally eschews the deep echo and other effects characteristic of dub, so you can apply effects as you see fit.

This DVD-ROM has two folders of the same material, in Acidized WAV and Apple Loops versions. There are 28 sub-folders (27 for Apple Loops; I think they ran out of space on the DVD-ROM), each of which contains a construction kit that has a mixed file, individual files, and occasional "stems," like all drums or all melodic instruments. They're organized by tempo, although of course, both Acidized and Apple Loop formats are stretchable — except that the Acidization isn't very good. You'll need to tweak markers, and the nine lowest-tempo construction kits (65–85 BPM) aren't acidized at all.

Still, those are technical complaints. Artistically, the loops are innovative, with a wide variety of parts (drums, percussion, guitars, synths, keys, etc.) that occupy a niche not found in other sample libraries. To hear what I mean, check out the audio example I threw together in about 30 minutes at www.eqmag.com. It's not your father's reggae. . . . —*Craig Anderton*



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Andrew Schneider - Cave In, Unsane, Blue Man Group, Pelican

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M-AUDIO

ANTONIO DILILLO ELECTRO PATTERNS VOL. 1

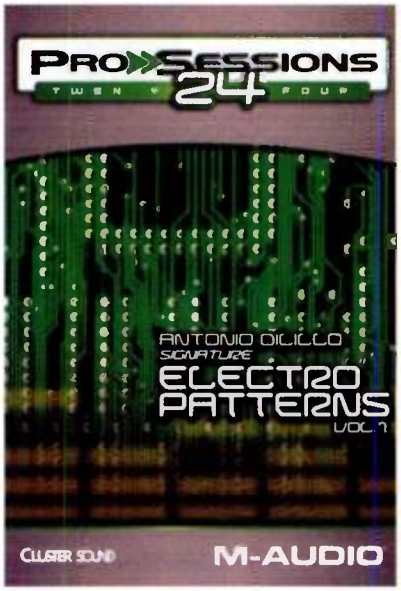
Contact: M-Audio, www.m-audio.com
Format: DVD-ROM of loop files: 201 WAV, 201 REX, 100 MIDI (50 drums, 50 synths), and 103 one-shots (about 1GB total); 24-bit/44.1kHz
Price: $49.95 list

I expected something harder, like Detroit-style classic electro: This is more like electro that's matured over the years, and traded in robot regularity for smoother flow. Most of the loops are beats-oriented, but don't just "hit default;" they're inventive and intriguing. Two folders even have the electro equivalent of hand percussion — high- and low-pitched little noises you can mix in with the main beats. Additional folders cover bass, digital, and hybrid synths. These sounds are actually far more interesting and complex than the relatively simplistic names would suggest.

My biggest complaint: The cover claims the WAV files are Acidized, but they aren't; there's no Acid chunk in any of the files. To do stretching, either use the REX versions, do your own Acidization (it's not hard, given the rhythmic nature; just drop markers every 1/16th note), or process with some kind of DSP.

Musically, it would be easy for a disc like this to take the easy way out, but *Electro Patterns* pushes the envelope further than most. And while some loops might fit your needs better than others, there's no filler.

As usual, the best way to get across what these sounds can do is with an audio example — check out www.eqmag.com. Note that this example uses one of the MIDI files to drive some standard drum sounds, and also includes a few fun one-shots. —*Craig Anderton* EQ



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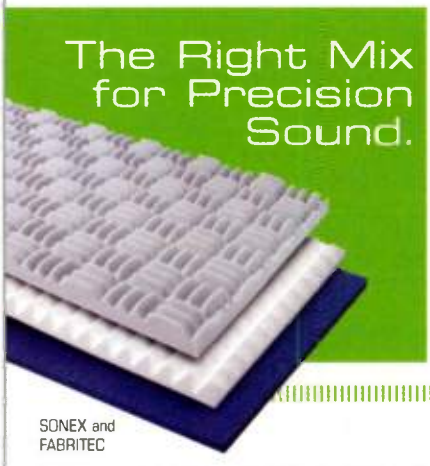

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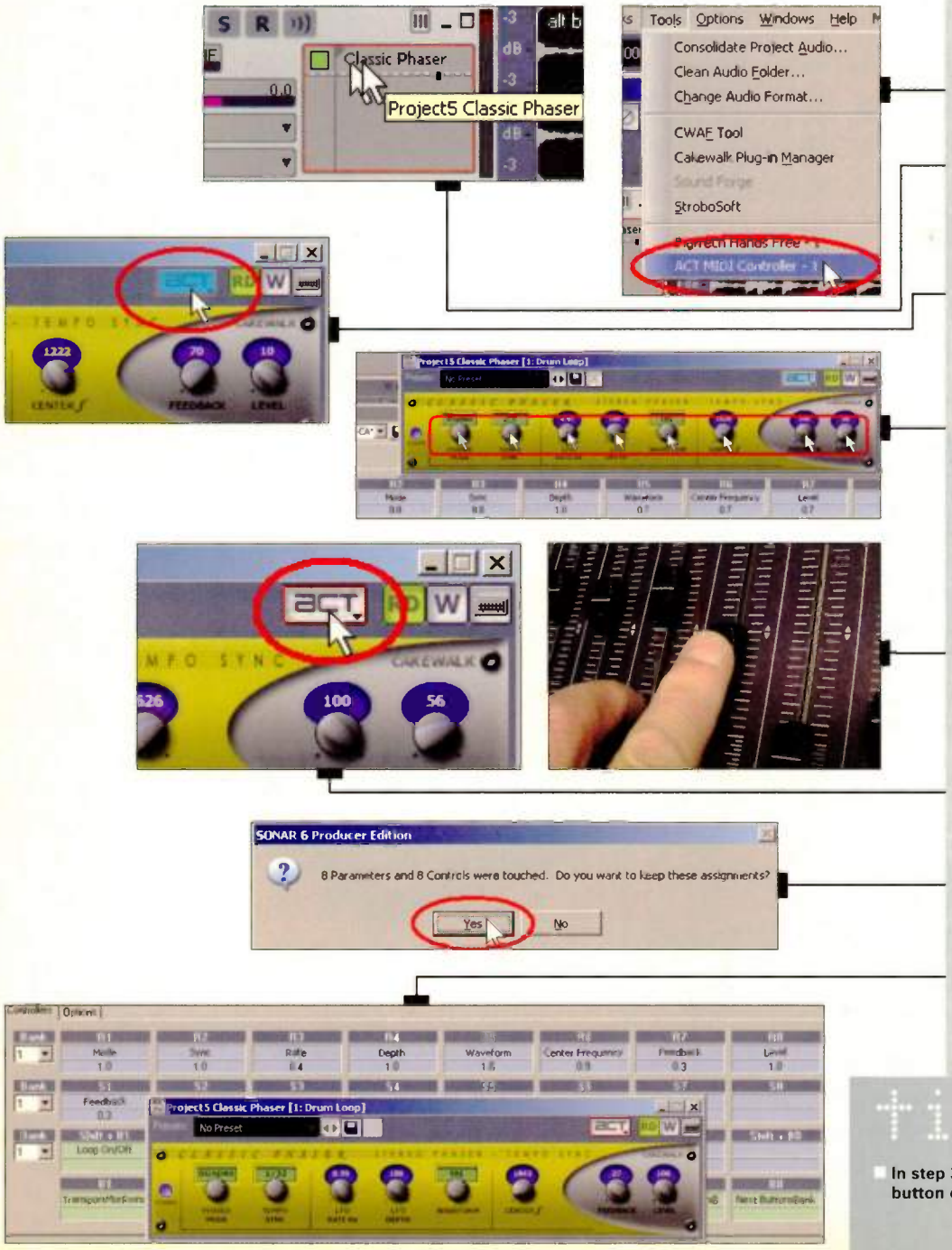
Power App Alley
by Craig Anderton

CAKEWALK SONAR 6

Personalize ACT for more fluid hands-on control

OBJECTIVE: Change ACT's default mapping of plug-in parameters to hardware control surface knobs and sliders.

BACKGROUND: Sonar's ACT feature makes it easy to control plug-in parameters with hardware controllers, but the default mappings may not always be what you want. Fortunately, it's easy to change these to something that works for you. We'll assume you already have a control surface set up as an ACT MIDI controller.



steps

1. Go Tools > ACT MIDI Controller to call up the ACT MIDI Controller plug-in.

2. Double-click on the effect you want to modify so that its interface appears.

3. Click on the plug-in you want to modify to give it the focus, then click on the effect's ACT button in the upper right corner (it turns blue and flashes). The ACT plug-in will show which controls are assigned to which parameters as defaults.

4. Move each effect knob in the order you want to map it to your controller. For example, if you want to assign these to eight slider controls, first move the effect knob you want to assign to slider 1, then the effect knob you want to assign to slider 2, etc.

5. After moving all the knobs you want to assign, move each hardware controller (*e.g.*, rotary control or slider) in the same order you want parameters matched to the controllers (*e.g.*, move slider 1 first, slider 2 second, etc.).

6. Click on the ACT button again to disable it.

7. A dialog box appears that tells you how many parameters you moved and how many controllers you moved. If this is correct, click on Yes.

8. The ACT MIDI Controller plug-in displays the assignments you made. This example shows them assigned to eight rotary controls.

tips

- In step 3, you could also click on the ACT button on the ACT MIDI controller plug-in.

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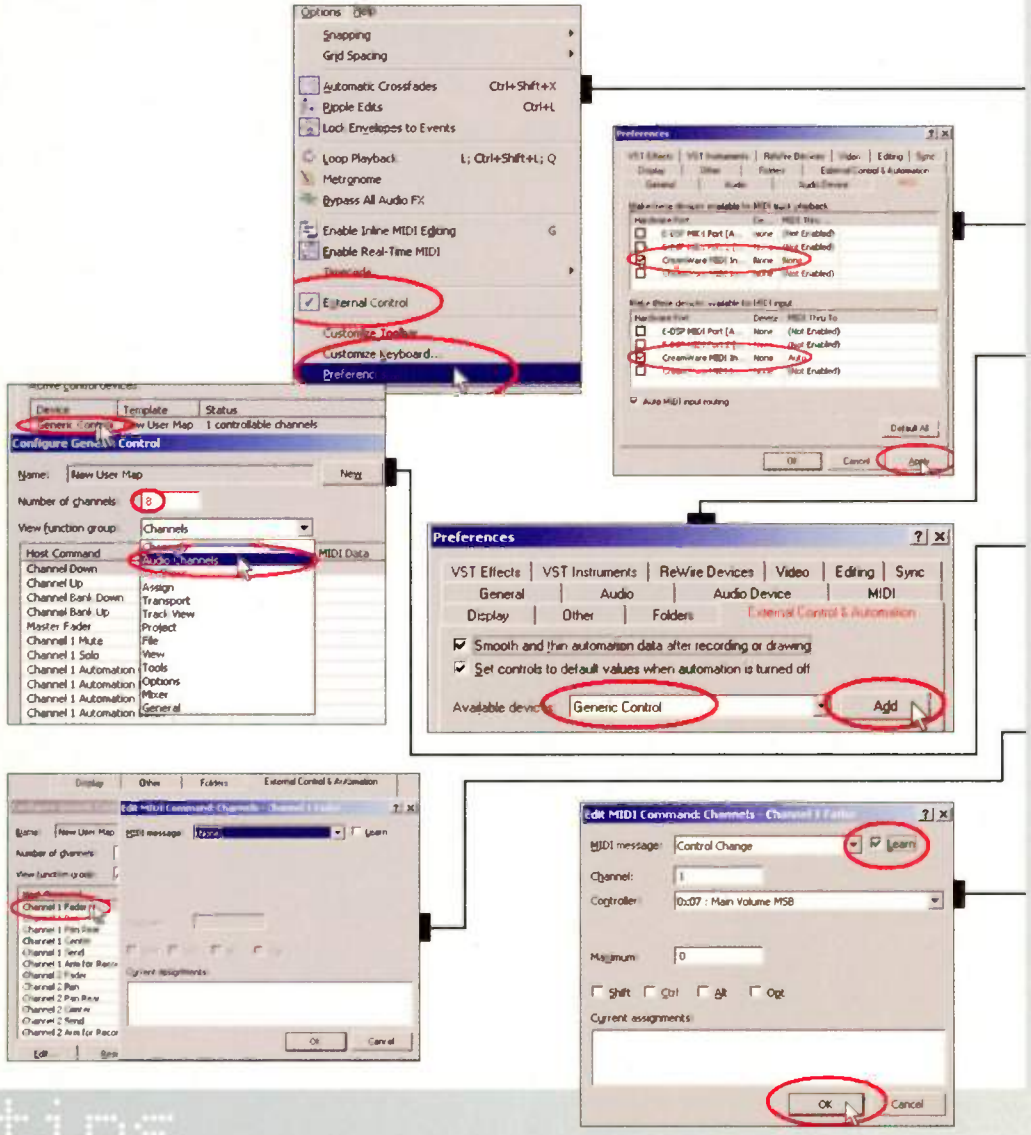
Power App Alley
by Craig Anderton

SONY ACID PRO 6

Add a control surface to Acid Pro for hands-on mixing mojo

OBJECTIVE: Use a control surface to provide physical control for various parameters in Acid Pro 6, such as mixing, panning, transport control, etc.

BACKGROUND: Acid Pro 6 has templates for the Mackie Control Unit and Frontier Design Tranzport, but also a "generic" template so you can use other controllers such as the Peavey PC1600x, the MIDI fader layer from a digital mixer, and the like. We'll assume your controller is hooked up to your computer via MIDI, and set up to generate continuous controller messages suitable for fader control (*e.g.*, fader 1 sends out MIDI controller 7 over channel 1, fader 2 sends out controller 7 over channel 2, etc.).



steps

1. Go Options and check External Control, then go Options > Preferences.

2. Click on the MIDI tab, and select the MIDI ports that connect to your control surface (or select USB Audio Device if you're using a control surface that sends/receives MIDI data over USB). Click on Apply.

3. Click on the External Control & Automation tab. Select Generic Control under Available Devices, then click on Add.

4. Double-click on Generic Control in the Device field; the Configure General Control dialog box appears. Enter the number of channels supported by your controller (typically 8 or 16). Then to configure the control surface for mixing, under View Function Group, select Audio Channels.

5. To "bind" a parameter to a fader, double-click on the parameter you want to control (in this example, it's Channel 1 fader). The MIDI Commands box appears.

6. Click on Learn, then move the fader you want to assign to the parameter. The Edit MIDI Commands box gives details about the data it received. Click on OK.

7. Repeat steps 6–7 until you've mapped the parameters you want to control to the physical controls on your control surface.

tips

- To bind Transport functions to buttons, in the Configure Generic Control window, under View Function Group select Transport. Then follow steps 5 and 6, except push the desired button instead of moving a fader.
- To control automation with the control surface, you must put the control surface into Automation mode. To do this, under View Function Group choose Assign, and bind Toggle Automation Mode to a button. This toggles between controlling just the faders (trim mode) and controlling the automation curves (automation mode).

AdIndex

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Illbruck Acoustic	800-662-0032	www.illbruck-acoustic.com/eq	61
John Lennon Songwriting Contest		www.jlsc.com	59
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Rock'n Roll Fantasy Camp	888-762-2263	www.rockcamp.com	71
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Steinberg		www.steinberg.net	13
Studio Technologies, Inc.	847-676-9177	www.studio-tech.com	37
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by Phil O'Keefe

MOVIN' IN STEREO

It's not just about panpots

I've always dug that song — probably because I'm a stereo freak! I love it when things fly around the stereo sound field (that is, as long as it's musically appropriate). So this month, let's look into various ways to place sounds within the stereo field.

PAN KNOBS

For stereo placement, many people reach for the pan knob first. While they're fine for positioning mono tracks, what about stereo tracks? Some musicians will take the left and right outs from a stereo keyboard and pan them hard left and right, and then do the same with the doubled guitar parts, and the drum machine tracks, and background vocal tracks . . . then wonder why their mixes lack clarity. It's because everything is stacked on top of everything else! Panning parts to the same spot can be useful when you're trying to blend sounds together, but counterproductive for stereo separation. It's better to find a separate location in the sound field for various musical parts, and limit how many parts share the same location.

You can use the pan controls to adjust a stereo track's location in various ways. Narrowing width via panning is relatively easy — instead of panning hard left and right, try setting the pan controls to 50/50, which will narrow the image but still keep it centered in the stereo field. 25/75 will be equally wide, but move the image toward the right. If you pan the keyboard 75/25, the background vocals 25/75, the drum machine 50/50, and the guitars hard left/right, the individual sounds will become much easier to hear than if you just panned them all hard left/right.

Fig. 1. Using delays and stereo-to-mono converters, along with judicious panning, can create new types of stereo placement effects.

ALTERNATIVES TO PANNING

Another way of manipulating stereo track width involves adjusting the relative levels of the left and right channels. Try gradually lowering the volume of a stereo file's left channel by 6dB, and observe what happens to the stereo image — it should move further to the right as you decrease the left channel level. If your software does not have individually adjustable level controls for the left and right sides of a stereo track, you can usually "split" the stereo track into two mono files. When working with Mid-Side (M-S) stereo tracks, lowering the "side" channels from the bi-directional mic will make the stereo image narrower, until you're finally left with nothing but the mono signal from the center cardioid mic.

Or, use delays to move the signal further left or right. If you insert a short delay plug-in in a stereo track's left channel, adjust it for 100% wet (full delayed signal), then set the delay time to 10–20ms or so, the image will appear to come more from the right side. The longer the delay time, the wider the image; but be careful, because at some point longer delays will start to sound like discrete echoes instead of a stereo image.

Short delays can also create pseudo-stereo from a mono source. Either use a mono-to-stereo plug-in and delay only one side, or use an aux send to route the signal from a mono track to a short delay; then, pan the aux return channel to a location other than the original source track's pan position.

However, it's vital to check the phase relationship of the straight and delayed signal by occasionally listening in mono. If the sound becomes thin or weak, try a slightly different delay time or hit the phase inverse switch on the delay plug-in's aux return channel. Other useful plug-ins for creating pseudo-stereo images from mono sound sources include modulation-type processors (such as chorusing or stereo flangers), as well as using different EQ filtering on the left and right channels. For example, copy a track, roll off the highs on one and the lows on the other, then pan them to different locations.

Combinations of these various techniques can work well, too. Figure 1 shows stereo acoustic guitar (tracks 1/2) panned to 75% to narrow the width a bit, along with a short 12ms delay on the right channel (track 2) to move the image to the left a little more. Some plug-ins, such as Voxengo's Stereo Touch (free from www.voxengo.com), use a combination of delays, EQ, and panning to create pseudo-stereo from mono tracks. Track 3 is a mono background vocal that has a mono-to-stereo instance of this plug-in inserted; the pan controls are set to 25/100 to put the image more toward the right, and thus into a different location in the sound field compared to the acoustic guitar. 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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by Michael Molenda

LAYER CAKES

Add textural sweets for bigger, badder guitar sounds

I've never paid much heed to rules and regulations, but throughout my recording career I've noticed that great guitar performances typically include five critical elements: formidable technique (both chops-based and purely emotional technicality), personality, rhythmic interest, musicality, and tone. Sadly, although a player with the right monk-like temperament and dedication can certainly hone his or her technique until it's downright mind-blowing, acquiring transcendent personality, phrasing, and musicality requires more than devotion. In fact, some argue that such things can't be taught — that great players somehow have those talents imprinted to their DNA, and everyone else just does the best they can with more limited skills.

This leaves us with tone — another hotly debated topic amongst guitar players. But while the definition of "good tone" bobs about in a gumbo of subjectivity, I still believe that no guitarist should suffer from "bad" tone. Even if you haven't found the perfect guitar, amp, and signal processing combination to render your guitar sound as majestic as the best of the best, cagey textural layering can help you construct some unique, ear-catching tones. Let's look at two layering strategies for constructing gargantuan and "animated" walls of guitar goodness. (*For those new to the concept of layering, check out the Nov. '06 Guitar Trax for basic tips.*)

ARTICULATION

Achieving the sonic clarity required for producing clear, articulate notes can be difficult when dealing with the saturated distortion beloved by many rock and metal guitarists. For hard-disk jockeys, an easy solution is to record the track totally dry while the player monitors his or her performance through a guitar plug-in tweaked to deliver the requisite overdrive and effects. Then, you can dial in all kinds of distorted craziness on a clone track, and mix in the original dry track until you reach a balance where you have that creamy sustain *and* clear, ringing notes.

If the player adores a specific amped-up and processed tone, then record it, but warn the guitarist it may be necessary to duplicate their licks on another track. For the overdub, plug the guitar in direct with its bridge pickup selected and the tone control full up. Now, bring up the two faders to evaluate the blend. If the two performances are tight, you should be able to produce enough punch and snap with a 70% distorted amp track and 30% clean direct track ratio. Cut lows (around 100Hz and 200Hz), and boost mids (1kHz to 4kHz) and highs (10kHz and up) to eradicate any muddiness or lack of "air." If there's some slop in the overdub performance that won't go away (despite numerous attempts), sneak in a touch of delay on just the clean track (a slapback with one to three repeats usually works well), and bring up the effect level to obscure any note clashes. Brave or crazy types can experiment with subtly mixing in an additional acoustic guitar overdub to add some more zing to the distorted sound.

WALL OF GUITARS

To unleash a tsunami of guitar power on a rhythm track, record two identical distorted tones (use the same guitar and amp, but bail on any signal processing — you're going for a ballsy, unaffected roar), and position these foundational guitar tracks hard right and hard left in the mix. Now add some punch and shimmer by recording an extremely clean and chimey guitar tone, and placing the track dead center. Blend the track until you can barely hear the ka-ching. You want the perception of something steely in the mix, but you don't want to diminish the power of the distorted stereo tracks too much. To accent rhythmic punches, record an acoustic guitar part, experimenting with simple chops and flamenco-like flourishes to see which part best propels the groove. Position the acoustic track hard left, and, once again, bring up the track until the part is barely audible (in effect, imparting almost a "feeling" of an acoustic).

To add the perception of movement to the rhythm track, route the clean electric guitar part *pre-fader* to your favorite reverb or delay program, and subtly mix the effect only (no hint of the source sound) hard right. If done correctly, a ghostly ambience should catch the listener's ear as it presents itself in the right channel *after* the main impact of the distorted guitars. There are five layers to this cake, and you've covered everything from impact to ambience to saturation and accents.

LAYER IT DOWN

As always, these two strategies are merely jumping-off points for your own layering experiments. The main takeaway from this column is to be open to the benefits of juggling disparate tones, musical parts, and signal processing. It's no different than cooking — a bad mix of ingredients will produce a truly wretched tasting experience, but the right blend of elements will send your synapses to pleasure heaven. So be fearless, critically assess (and learn from) your mistakes, and keep cataloging all the wonderful sounds available to create your own special concoction of tonal majesty. 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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FIRST LOOK AT A SECOND LIFE

Virtual reality offers new opportunities for performing musicians and studios

Tired of braving cigarette smoke, bad sound, and harsh DUI laws to hear live bands? Enter Second Life (SL), a virtual reality environment with over 4 million "residents." Second Life offers multiple opportunities for all types of artistic expression, education, and business. It's like the Web on steroids; nearly everything you see in Second Life has been created by its residents, who are represented by a customizable, cartoon-character-like "avatar." You can walk, fly, or teleport about to explore this world, and interact with other avatars.

People buy and sell virtual real estate (using either $U.S. or the world's virtual currency) and build houses, shops, nightclubs, hi-tech gadgets, etc. All creators retain the rights to their creations — you can give away freebie items, or sell them using the "in-world" currency. Some people simply sell enough stuff to entertain themselves within SL without having to spend any real money, while others are creating or supplementing real-life businesses.

Lee Flier, a.k.a. Leyah Renegade, performs with her band, What The...?, in Second Life.

Best of all for musicians, SL supports streaming broadcasts into the "world" from any Shoutcast or Icecast server — the same technology that enables Internet radio and podcasting. Musicians can actually perform live, at any number of existing virtual concert venues (or build their own), in front of an audience of people from all over the world — even though they appear to be in the same room. Lots of enterprising folks sell realistic-looking guitars, drums, light shows, and all the other trappings, complete with built in animation controllers, so you can get your rock-star moves on. And live music is extremely popular in Second Life.

HOW TO PLAY "VIRTUALLY" LIVE

The technology to stream live music into SL is common, and very similar to podcasting or running a Net radio station. You simply stream from your audio interface up to a Shoutcast or Icecast server, using WinAmp's Shoutcast plug-in or other third party apps such as SimpleCast (Windows) or Nicecast (Mac). You can run your own Shoutcast server from your own computer, but it's not recommended unless you're running a server farm — multiple listeners will eat up your bandwidth and computer resources quickly. Many companies rent Shoutcast servers, and there are even residents in SL who will rent streams to musicians by the hour for specific performances. Also, many existing virtual venues already rent their own streams.

Once your broadcast client is up and running, you then enter your stream's URL into the venue's "land" properties (each virtual land "parcel" can have its own audio stream), and everyone at the venue will now be able to hear your broadcast! Your avatar can stand onstage and strum a guitar while you play — most performers simply set an animation in motion, then forget about it so they can focus on playing.

While it's quite easy for a solo artist to broadcast a live performance or be a DJ in SL, it's trickier for a full band. You need a space to set up live, and be able to get a decent live mix going into your audio interface. And you need enough computers (with significant horsepower, including a good graphics adapter) to broadcast the audio, plus log in each of your band members' avatars.

HOW STUDIO OWNERS CAN BENEFIT

SL could also present an income opportunity for a project studio with a good live room, a well-equipped rehearsal studio with recording facilities, or even a small live venue, as these businesses could help bands facilitate SL performances. The performances could be recorded as they are broadcast, and downloads of the show made available to audiences. A coffeehouse in Atlanta even hosts a monthly Second Life simulcast, spearheaded by a singer-songwriter who performs at the coffeehouse while streaming into a virtual venue — which the real-life audience can see on a projector screen, and photos or video of the real-life performance are also broadcast into the SL venue.

To find out more, visit www.secondlife.com. It's free to join, unless you want to own virtual land. To attend a live music event, search on "Events — Live Music." We hope to meet many of you *EQ* readers in the virtual world!

Lee Flier is a guitarist, songwriter, engineer, and producer based in Atlanta, Georgia. Her band, What The...?, is a fixture in the Atlanta area and has released two independent CDs. Contact her via the band's website at www.what-the.com, or via her "Backstage With the Band" forum at www.harmony-central.com. In Second Life, send an instant message to Lee's avatar, Leyah Renegade.

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by Gus Lozada

SABOR!

Once upon a time, there was this Latino band and a mobile producer with a laptop and a small set of mics . . .

I guess most of us have recorded a full rock band. Maybe we've also recorded a good orchestra with brass, horns, and some percussion. But what happens when a touring band asks you to record them while visiting another city — and being in your studio is not possible?

Fig. 1: Two good-quality cardioids in an ORTF array are an excellent way to get a general take of the whole band performing in stereo, and for recording brass ensembles.

THE MAIN PERSPECTIVE

Recording Latin percussion is somewhat tricky; even though the number one audio rule is "there are no rules," recording and mixing good Latin ensembles requires some knowledge about the overall sound and a general perception about how to mix them stylistically. It's even more demanding when you can't be at your comfortable multi-channel studio, with a big live room that has space and mics for the whole band. You'll still need at least one general take of the band — or the percussion section with the bass — so the rest of the band can play over it to get their own tracks recorded individually; you'll also need a good set of mics, like a couple of ribbons, a couple of SM57s, and some condenser cardioids.

For the general take of the band, I place the band in a semi-circle and set a couple of mics in an ORTF (Office de Radiodiffusion Télévision Française, named after the developers of this technique) arrangement in the center so the distance to the mics is distributed equally. As this technique uses cardioids, try some M930s (Figure 1). The mics can sit further back from the source without capturing too much of the reverberation compared to other techniques, enabling you to use this in over-reverberant spaces where other techniques would capture too much of the acoustics.

LAS CONGAS

To get the most natural vibe, *don't* pan congas all the way to opposite sides. Actually, recording good congas — or bongos, timbales, zurdos, djembes, or any other good set of percussion — does not need to be done in full stereo, given they will sit better when they're together at the same side of the stereo field. Place a condenser-cardioid mic in the center of the two congas, at a 45° angle, one foot away of the set, and you are done (if desired, you could record them with separate mics to have extra control on individual channels for EQ). Replacing the 414s with SM57s is common, but that depends on the song's dynamics.

Record every set of percussions individually, then recreate that in your mix. Pan the congas slightly to one side, the smaller percussion in the center, and timbales to the other side. The "more cowbell" rule also applies; you can sit the set of cowbells to the same side as the timbales, as that's their natural position.

LOS METALES

You'll find too that the brasses are all at the same side of the stage, so panning the trumpet to the center, the sax to the right and the trombone to the left is highly unrealistic.

Recording the brass with a dynamic microphone could suck some life out of the performance, but combining it with a ribbon microphone can help to capture most natural brass tones. Don't close-mic the instrument; the mic needs to get some of the room sound. When recording trumpets alone, place the mic below the bell's line-of-sight, rotated at about 40° to avoid higher SPL levels and tilted upward, about 4–6 feet from the trumpet's bell.

To record a three-to-five piece brass section, I like using the ORTF technique too; but place the performers in the front of (not around) the mics, to capture the essence of a section of players in a stereo field without having them too far apart from each other.

Once the brass section is recorded, set them slightly to one side of the main mix. If there is a solo line, create some automation to send it to the center.

LA TECNOLOGÍA

These techniques are also very useful when doing Latin productions with virtual instruments instead of actual ones. Get those cheesy GM drumsets out of your sampler and pan the instruments the "right" way. For those samples of brass, record individual MIDI channels, one for each brass type (say, trumpet, sax, and trombone), then play each one individually and mix them like a real ensemble. Avoid quantizing for the brass, but you might need to do some micro editing of the length of every note to make sure all three "musicians" are playing to the same "tumbao." Where's my mojito? Salud! EQ

Currently touring as the frontman of the band WoM, Gus Lozada also hosts conferences and clinics in Latin America about music production, moderates the "Nuestro Foro" and "KSS — Keyboards, Samplers and Synth" forums at Harmony Central, and writes for EQ. *Send him some feedback to gus@guslozada.com.*

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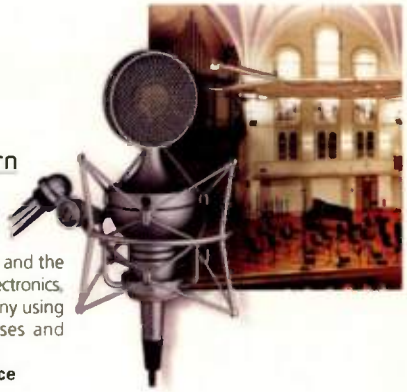

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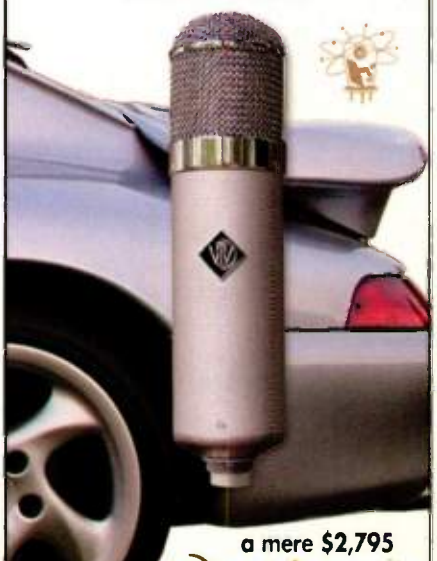

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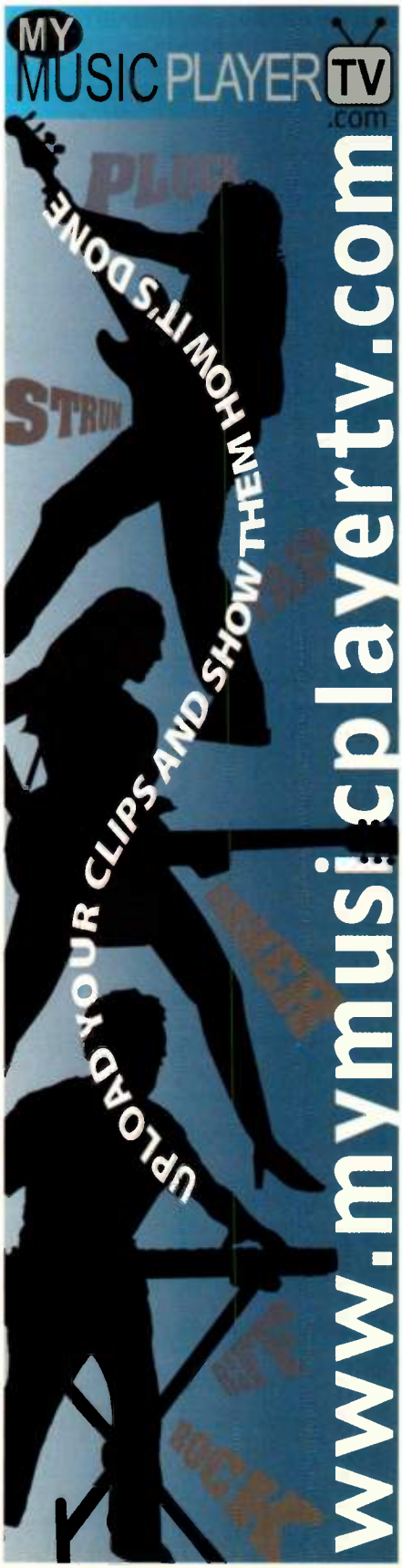

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STUDIO NAME: Treelady Studios
LOCATION: Pittsburgh, PA
CONTACT: www.treeladystudios.com
KEY CREW: Mark Dignam, Josh Gates, Garrett Haines, Dave Hidek, Andrew Morse
CONSOLE: Sony MPX-3036
COMPUTERS: (Tracking) Mac dual G4 running Pro Tools|HD3, Mac Pro running Pro Tools LE or MOTU Digital Performer 5 with UAD-1 PCIe cards; (mastering) Dell P4 running Sequoia; (restoration) SADiE PCM-8
ANALOG RECORDERS: Ampex ATR-104 with 1", 1/4", and 1/2" head stacks, Sony MCI-JH24 2" 24-track
MONITORS: (Tracking) JBL LSR4328P, Realistic Cubes, Samson Rubicon Ribbon 6e; (mastering) Dunlavy SC-IVs and subs
AMPS: (Mastering) Hafler 9505; Mark Levinson Model 336
PRES: API 212s (x8); Avalon 737 Mercenary Edition; John Hardy M1 (x2); Millennia Media TD-1; Peavey VMP2; PreSonus MP20; Sony MXP (x24)
MICS: ADK A-51 (x2); AKG 414-ULS, C1000 (x2); Astatic Salt Shaker; Audio-Technica AT2020; Beyerdynamic M130; Blue Bottle (with B4, B6, B7 capsules), Kiwi, Dragonfly (x2); Crown PZM; Electro-Voice EV RE-20; Karma K35; Korby KAT (C12); Microtech Gefell M930 (x2); Morse Labs Copper Pipe; Neumann U47 FET, U87 (1968); Rode NT-5 (x2); Royer 121; Sennheiser MD421; Shure B52, B56, Model 300, SM57 (x6); Yamaha SKRM100 Sub Kick
OUTBOARD: Alesis ML9600; Ampeg Tube Direct; API 2500; ART Pro VLA; BBE 822; Crane Song Avocet, HEDD192, IBIS; Digital Domain DD-2; Drawmer DL241; Empirical Labs Distressor; Ensoniq DP/4; Fairchild Spring Reverb; Furman HDS6; Joe Meek SC2.2; Manley Massive Passive, Vari-Mu (modified); Native Instruments Kore; Northern Electric Limiter; Peavey VC/L; SansAmp RBI; Summit Audio Neve EQ-200; TC Electronic System 6000 Mastering and Reverb Libraries; Universal Audio 1176; WAVES L2
NOTES: When Treelady Studios decided to move from a mastering-only facility to offer more comprehensive services, founding fathers Garrett Haines and Jay Marshall opted for a 6,000 square foot facility located nine miles from downtown Pittsburgh, PA. This new home was expanded to include two tracking rooms, a restoration suite, an in-house repair shop, lounge and gallery, and guest apartment including all necessary amenities — all that was needed to forge onward in their quest to provide multiple sonic options for an increasingly diverse *clientèle*.

The main tracking area, Studio A (informally referred to as The Jungle), is a unique room, built to satisfy the collective staff ideal. Featuring a 20-foot L-shaped storage unit covered by inch-thick green granite, and a mic locker custom-built by Gerald Marshall, Studio A is nearly 1,500 square feet of open space, as Treelady's tracking engineers ubiquitously prefer to operate in the room "live" with the musicians they service.

Of course, the issue of isolation was addressed before the first artist walked through the door — if smart baffling isn't sufficient, the three very different iso-rooms built from varying materials (pine, ash, and palm) will surely suffice. As Haines further explains concerning the philosophy behind Treelady's Studio A: "Bands usually put their guitar cabs in the booths, keep the heads near them, and get to play with the drummer. A few of us used to work in studios with control rooms. Of course, there are big advantages when it comes to getting sounds, but at the same time, it's too easy to get lazy and start trying to EQ your way to a good sound — the right way is get off your behind and go move the mic. Plus, being in the room also allows the engineer to catch problems, fix a falling cymbal stand, or untangle a cable. We've probably saved clients money because we're on the scene if something happens."

But Treelady's tracking and mixing facilities aren't really the half of it: From the famed mastering suite and the 5.1 outfitted Studio B (complete with an adjacent mahogany-floored live room for those who require a more traditional arrangement) to the mastering prep rooms to video suites, Treelady truly is a sight to behold. So give them a ring to arrange a visit — if nothing else, it's a phenomenon worth experiencing for the on-staff Primanti Brothers sandwiches.

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