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of Recording

21

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+ SMALL
STUDIO
TIPS**

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**DJ/rupture
NEAL POGUE
BOB MOOG
BOB BULLOCK
DAVE CARLOCK
TRAVIS BARKER**



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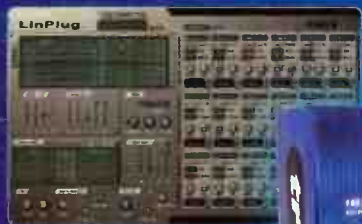
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SampleTank SE



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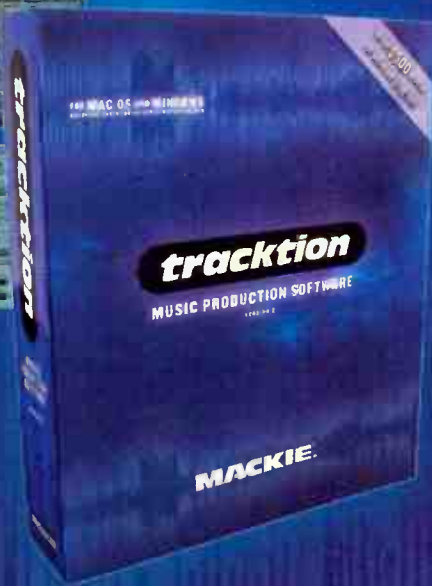
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11/05

FEATURES

38 **EQ STYLE GUIDE: PROPER**

From Rockabilly to Country with stops along the way in our Classical Corner, we kick off screeds by PETER MILLER, BOB BULLOCK, RAY CHEW *et al* on HowTo slap the switch up straight to Easy Street.

38 **THE ELEMENTS OF STYLE**

Matching music to the gear that made it great, EQ's CRAIG ANDERTON runs a *rondede* of significant styles and what makes them so . . . significant.

45 **ROGUE POGUE**

Ted B. Kissell stumbles over the mad science at work on NEAL POGUE's rendering of the new TRANSPLANTS record with DAVE CARLOCK and crew. Punk rock meets hip-hop? Do tell.

62 **TOP 10 SURROUND SOUND PRODUCTION TRICKS**

You ever hear of the book *Pro Tools Surround Sound Mixing*? Well the cat who wrote it? Yeah, he wrote this too. Genius? Just maybe.

96 **BOB MOOG**

Man, oh, man. Our tribute to a great one who *will* be missed.

CONTENTS

DEPARTMENTS

- 4 Talk Box
- 6 Punch-In
- 14 Tool Box
- 80 EQ Fun Facts

GEARHEAD

- 56 Soundelux e49 + Drawmer 1968 Mercenary Edition
- 58 Want A Free Dual Monitor Setup?
- 64 Make Mine A Mindprint DTC
- 66 Not-So-Quick Picks: Millennia HV-3D Mic Pre
- 68 E-mu + Aphex + Rode NT + Inspiron
- 72 Cameleon 5000 + The UAD-1/UltraPak

SOUNDS

- 80 Sony Cinemascope

POWER APP ALLEY

- 85 Banning Boring Loops In Acid
- 86 Pushing the MIDI Envelope

Style Super Sonic

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- 96KHz mode, 32 bit processing



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Talk Box



LOOKING GOOD VS. FEELING GOOD: A TREATISE

"I've met more dogs with style than men with style."

—Charles Bukowski

In the midst of the muddle of mics, meters, knobs, sliders, detents, rooms, reflections, and 1,000 other things backward, forward, coming, and going, it may just so happen that trees, what we gladly seem to miss the forest for, exert a mighty distracting influence to those prone to being distracted by trees, forests, and the mesmerizing magic of the job at hand.

That is: riding a board frontside through a session that'll last a lifetime.

That is: all of youse feeling guilty for even reading this far because you GOT WORK TO DO ("go out to a club or have a studio soldering party? Is this a trick question?").

Work that, if you were to think about it very, very carefully beyond the god and the details therein, you might realize has everything (almost) to do with the art sublime: music and its making.

And so it is that we find ourselves knee deep in a meditation on STYLE, or that which distinguishes music from, say, *field hockey*. Or rockabilly from IDM (intelligent dance music. I kid you not). Or country from classic(al). Or corporate hip-hop from corporate punk rock. It's not so much what you do, but how it's done which, in total, is the *sine qua non* of style.

So whether it's hearing from the horse's mouth, BOB BULLOCK, on southern frying your Country, or PETER MILLER on Rockabilly, or NEAL POGUE and DAVE CARLOCK on mixmatching the TRANSPLANTS Punk Rock with much more than just a Hip-Hop "sensitivity," we got it. "It" being specifically what you didn't even know you wanted.

Like *The Wire* magazine's boy wonder DJ/rupture on his award-winning *Minesweeper Suite*, 10 of the world's best surround sound production tricks, and our GEARGANZAMATIC coverage of over 15 products, big and small, that found their way into our greedy little hands this month of giving thanks (we do) and full-on Fall fashion fever.

So pull tight your Chenille blanket, your hot toddy, and your worsted woolen smoking jacket to settle in for an anxiety-ridden five minutes broken up by a drummer complaining about not hearing enough bass in his cans before leaning back for yet a few more stolen moments until they're complaining about too much bass, with this, our November issue.

Enjoy yourself and look good doing it, too.

Cheers,



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Editor in Chief: Eugene "Stunt" Robinson, erobinson@musicplayer.com
Managing Editor: Debbie Greenberg, dgreenberg@musicplayer.com
Editor at Large: Craig Anderton, canderton@musicplayer.com
Technical Editor: John Krogh, jkrogh@musicplayer.com
Group Copy Chief: Kevin Owens, kowens@musicplayer.com
Contributors: Scott Colburn, Barry Conley, Dan Daley, Greg Davis, Lee Flier, Lynn Fuston, Mitch Gallagher, Gary Garritan, Joel Hamilton, Dendy Jarrett, Steph Jorgi, Ted B. Kissell, Jason Lally, Mel Lambert, Tom Mallon-McCorgray, Pete Miller, Bart Thurber, Jeff Touzeau, Rich Tozzoli, Monte Vallier, Sam Wheeler

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

Publisher: Valerie Pippin, vpippin@musicplayer.com
Director of Sales: Steve McGill
Tel: 650-513-4502, Fax: 650-513-4646; smcgill@musicplayer.com
East Coast/Europe Advertising Sales: Joe McDonough
Tel: 212-378-0492, Fax: 212-378-2158, jmcDonough@musicplayer.com
West Coast Advertising Sales: Pete Sembler
Tel: 650-513-4544, Fax: 650-513-4646; psembler@musicplayer.com
Advertising Sales Manager/Northwest Sales: Derick Joy
Tel: 650-513-4403, Fax: 650-513-4646; djoy@musicplayer.com
Manager of Specialty Sales: Joanne McGowan
Tel: 650-513-4376, Fax: 650-513-4646; jmcgowan@musicplayer.com
Specialty Sales Rep: Christine Vela
Tel: 631-223-3562, Fax: 631-673-5955; cvela@musicplayer.com
Specialty Sales Asst.: Darlene Labrecque
Production Manager: Amy Santana
Imaging Technicians: Joe Ging, Martin Ruiz

MUSIC PLAYER NETWORK

Vice President: Louise Rogers
Editorial Director: Michael Molenda
Financial Analyst: Bob Jenkins
Marketing Manager: Laney Erokian
Sales Administration Manager: Lauren Gerber
Sales Assistant: Molly Corman
Circulation Manager: Heather Harmon
Newsstand Sales & Marketing Manager: Pam Santoro
Assistant Circulation Managers: Rosario Perez, Maribel Aleman
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Web Editor: Max Sidman
Graphic Designer: Damien Castaneda
Reprint Coordinator: Cindy Zauss, Tel: 909-698-1780

Corporate

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

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World Radio History

Punch In

TIPS & NEWS YOU CAN USE
BY THE EQ STAFF

LISTEN HEAR

ANNIE: DJ KICKS (Compiled by Annie)

First off: These are not record reviews. We could *hate* your music, but *love* your production. Second off: These are not production reviews. We're just talking about, love it or hate it, stuff we love. Or hate. Or hate so much we love it. Or love it so much we hate it. And so it is with ANNIE . . . her *DJ Kicks* mix record is a record that we love, because it reminds of us of when we were kids. Which is also why we hate it. But pulling stuff from ALAN VEGA and GUCCI CREW II, Annie mixes her mix with her own stuff for a wholly heady affair that recalls nothing if not rollerskating at the Empire Rollerdrome in 1978. Club sound for the club footed. And that's a compliment.



HOW THE HELL THEY DID IT

DJ/rupture on the

One of *Minesweeper Suite's* most difficult mixes was the first one.

It sounds relaxed; the mix is so subtle not everybody notices it. The CD begins with Mahmoud Fadl's Nubian drumming and airy vocals, which slowly morph into a dub-hop tune by J-Boogie. When I beat-matched the records — adjusted their playback speed until the tempos matched and blended seamlessly — they also became perfectly pitched to each other. A Holy Grail of DJing: the mixtape blend where different tunes actually harmonize. It sounded great. But the problem lay in the beats: Fadl's human drumming versus the computer-precise regularity of J-Boogie's mellow backbeats.

From techno to hip-hop to reggae, the vast majority of the records DJs spin contain music made using computers, samplers, and drum machines — so the beat holds perfectly steady at a fixed bpm. This consistency makes intricate beat-matching and beat-juggling possible. Trying to blend together two non-quantized beats can be tricky indeed. Fadl varied his tempo to bring out song dynamics, so even when I got them in time, the Fadl record would quickly drift out of sync with J-Boogie's regular bpm. The solution was to memorize Fadl's subtle shifts. I learned every tiny pause and acceleration in his song. I got to the point where I was "playing" the pitch-adjust of the J-Boogie vinyl so it never lost sync with the Fadl's flow.

Technically, the studio setup for *Minesweeper Suite* was relatively simple — three turntables and a mixer, a sluggish old laptop, flimsy first-generation USB soundcard, and a stereo line in. For years I'd made mixtapes directly to cassette. I'd practice for hours and try to nail each tape side in error-free 30-minute chunks. So recording direct from turntables and mixer into a PC running SoundForge was a technological leap for me.

Nowadays there's a lot of laptop DJ software — including Ableton Live, which allows you to quantize acoustic beats so you can blend a Johnny Cash ramble with, say, house — but I don't touch any of it. You don't have to be an analog junkie to recognize that vinyl's immediacy and raw physicality makes for a world of possibilities that software can't match.

The second half of *Minesweeper Suite* gets dense with drum and bass, hip-hop, and reggae mashups, noise, and R&B a cappellas holding it all in place. One of the techniques I use to blend together two different beats and an a cappella at the same time is to have a flexible reference beat. With two turntables mixing, you use the beat on one turntable as a steady reference while adjusting the beat on

the other deck. With three turntables, there is one reference beat and two variable beats. In other words, the opportunity for a horrible "trainwreck" mix is much higher. So as I move through a mix, I shift the reference beat around, adjusting one record against another, then suddenly focusing on a different beat as the reference and manipulating the others so they go in time with it. When three sound sources play at once, the out-of-time drift can happen anywhere.

So making all these different beats combine without chaos requires technical precision, but more than anything else, my style of mixing requires *space*. If I'm layering three records at once, no single tune can be too full, or the mix will overload into murkiness. Heavy-handed EQing can help, but it's a drastic solution. The hottest tracks can often stand on their own, so I'm always searching for beats with space. Of course, sometimes I *wanted* apocalyptic walls of sound. So I'd cut in records from groups like noise-jazz trio Borbetomagus into an already-crowded mix, and watch the overtones explode.

When I used sounds that didn't need to be synced on beat — like, say the Armenian duduk flute — I made sure to match the pitch before dropping it in the mix. A little roughneck musicality can go a long way toward making a mix gel.

The turntables I used were Technics 1200s. No surprise there. Some DJs go under the hood and adjust their 1200s so that the pitchbend range becomes greater than the standard +/- 8%. This allows you to beat-match a wider span of tempos: Every DJ has had the experience where a perfect mix is *almost possible*, but one record goes a little too fast. . . . I would have happily tweaked my decks for +10 or 12 pitchbend, but that leaves you with banging blends at home that wouldn't work on the clubs' non-adjusted 1200s.

These days my mixer of choice is the Pioneer DJM-600: flexible on-board FX, massive amounts of levels-in-the-red overhead, assignable crossfaders with various curves, the whole deal. I've gone through a handful of cartridges over the year, but *Minesweeper Suite* was mixed on my favs, the functional-rather-than-fancy Stanton 680s.

For years I monitored my mixes by sending a weak line-level signal through the mono mic input of a battered boombox.

Minesweeper Suite was no exception.

If a mix sounds good over a junky stereo, high-end studio monitors, *and* the car, then it's unstoppable.



LOOK SEE RUSSELL LONG'S GUIDE TO NASHVILLE RECORDING

This professional, clear, and well-thought out DVD covers the tracking and mixing of two songs in a Pro Tools equipped studio. And as a treat, the first song is recorded with expensive mics and preamps, while the second song is tracked with Shure SM57s and a Mackie board. A great comparison of price vs. performance. Excellent! Russ gives us a lot of useable information on the different mics he likes, the best way to place them, and the EQ and compression settings he normally uses. During mix down, different reverb tricks are demonstrated to make various tracks jump out. There's also a great bonus chapter on tuning drums that I really liked.

On top of this, you get a second DVD that contains all the mix info so that you can dump it into your DAW and try mixing the songs yourself.

Verdict: I loved this DVD! This guy really knows what he's talking about, and he takes the time to walk you through the process.

P.S. The two songs presented are really more about modern rock than Nashville. [audioinstruction.com]

—Bart Thurber



Minesweeper Suite



DJ/rupture
and friend

AND NOW FOR THE 64-BIT QUESTION: Does 64-bit tech make a difference?

We thought you'd want to know so we asked Bill Paschick, he of the Rain Recording (rainrecording.com) Paschicks and president, and he said . . . breathlessly, eagerly. . . .

"The most notable breakthrough of the 64-bit platform is that the 4 Gig memory limit will increase to at least 128 Gig and may go upward of half a terabyte! Recording directly to and playing directly from static RAM will be fully viable. Virtual orchestras that needed five computers to run will be able to run on one. Sample playback performance will be greatly enhanced as an enormous amount of sample files can be stored in static RAM and hard drive streaming will become a non-issue. 64-bit also promises to reduce latency to almost zero, eliminating timing issues with overdubbing and synchronization.

But what makes a system 64-bit?

Well, both the processor and operating system must operate at 64-bit. Although 64-bit hardware has been out for about a year, Microsoft Windows XP 64-bit Edition did not officially launch until April 2005 and was released only to computer manufacturers. The 64-bit edition of Windows XP will not be supplied directly to customers as an upgrade or full package. It will only be available on a new system.

On the processor side, Intel has the EMT64, and the Pentium D, which is 64-bit capable AND a dual-core processor consisting of two processors on a single chip.

But if you're asking if you should BUY a 64-bit system *now*?

Know that it's important to consider the benefits of 64-bit and honestly evaluate how important they are to you. For the majority of professional users, current 32-bit systems are extremely stable and powerful. If you don't need more than 4 Gig of memory (which most applications still can't address), you may have difficulty justifying the extra cost and limited availability of hardware and software for 64-bit at this time. Even though it has been officially released, Windows XP 64-bit is still early adopter technology with only a handful of manufacturers supplying software, hardware, and drivers for this new 'ground up' OS.

Another consideration is backward compatibility. Although Windows XP 64-bit can emulate a 32-bit operating environment for legacy software applications, it does not support 32-bit hardware drivers, which means that manufacturers must choose to provide new 64-bit drivers for their legacy products in order for them to work at all."



LOVE LETTERS FROM FIGHT FANS

WE DON' LIKES MIC SO MUCH

A couple of things about September's *EQ* bugged the shit out of me. And one seems like a move in the right direction. I thought I'd point them out to you. (You DO want to hear my opinion, right? . . .) First off . . . I am disappointed at the magazine's tendency lately to take pieces of old interviews with different folks and blend them into a "new" article. It suggests a lack of budget, at the least . . . and possibly a lack of imagination as well. Boring, and disjointed. Doesn't work. Then there's that review of the Heil sound or40 mic by Monte Vallier. Did anyone edit that? Let me quote here: "the frequency response is from 28Hz and stays perfectly flat to 18kHz with mid-range rise that gives it great natural articulation. . . ." Bad grammar, followed by a non-sequitur. "Perfectly flat with a

mid-range rise?" Your audience IS recording people, but even those with no understanding of the subject will know that is illogical.

Now, the good move is to have real guys reviewing gear and willing to point out its shortcomings. Takes me back to the good old days of *Studio Sound* magazine, whose reviews pulled no punches, and were therefore actually useful. We all know that you are reviewing equipment from your advertisers, so you have to be concerned about dissing them too hard, lest they pull their ads. But a magazine like *Mix* has no credibility due to the fact that they love everything. So letting someone like J.J. Blair speak his mind (more or less) is a good step. The only problem with the mic reviews is comparing \$2,500 mics to \$250 mics. Not only isn't it fair, it isn't really meaningful. I mean, if *Car & Driver* compared a Mercedes to a Hyundai, you'd scoff, right?

For awhile *EQ* was the best recording mag out there, but lately it has really slipped. I now find more of interest in *TapeOp*, which surprises me, since I've been in the biz for 30 years. You have the beginnings of something good . . . just don't drown it in laziness.

Gary Mankin

Garymankin.com

Monte Vallier responds: *Gary Mankin whilst technically correct in regards to my review (EQ ed. informs me that this mag, however, recycles nothing) is still an ass.*

BUT WE LIKE MICI! WE REALLY, REALLY DO!

Hi guys. I just wanted to tell you I have been waiting for years for an issue like this. As an avid mic collector for about 10 years now I found this issue of *EQ* [September 2005] to be superb in every way. It is so great to read all the little insights from the great engineers on their mic techniques and to see images and

Now you can sound like all the voices in your head.



Introducing **AVOX**, the Antares Vocal Toolkit.

From the company that revolutionized vocal production with Auto-Tune, comes a suite of five new state-of-the-art plug-ins that open up an entirely new world of creative vocal processing.

AVOX includes:

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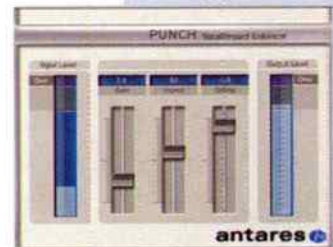
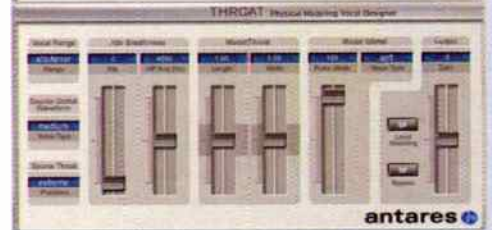
timing and vibrato variations. Assign instances of CHOIR to voices singing harmony and *voilà*, instant choir.

PUNCH Vocal Impact Enhancer: As its name so ably implies, gives your vocal more dynamic impact, allowing it to cut through a dense mix with clarity and power.

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You know what you've got to do.



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read random shootouts. To me this enormous article feels like the most "real world" comparison and opinion piece on microphone usage ever written. It is very inspiring to me and I can imagine very useful for any engineer just getting their feet wet in microphone recording techniques. This issue is a definite saver for years to come. Thank you very much! I have also attached a .jpg image of my decent growing collection for you to view! Cheers! Rob King

greenstreetstudios.com

You implied that September was a "bitch" to put together. Well, it looks seamless from here and terrifically comprehensive.

Supercalifragilisticextralidocious, indeed. David (by email)

My jaw dropped on the floor.

I don't know if you have above expression

in English but the Mic issue of *EQ* magazine is simply incredible. Congratulations!

Now, are you going to continue doing Madness Issues around one specific never-ending topic?

Antoni Ozynski
PSPaudioware.com

Our mouths are saying YES. Our sanity is saying NO. So, yes, of course, we'll be doing at least one more in 2006. Topics are open for suggestion. Make yourselves heard America!!! —Editor

I just got the Mic Issue of *EQ*. Great job! I really like this one. And thanks so much for the Heil write-ups. We think this microphone line has a great future (and a great personality behind it!). One thing ended up looking somewhat confusing, and I would like to clarify. In the "Quick Pick," your writer said that the PR40 "streets" for \$200, and in Russ' "Desert Island" part he says it is \$325. It is correctly \$325 MSRP. Several months ago, it was available for \$200 from the Heil website as an introductory offer. Unfortunately, that price is no longer available. We still feel, however, that at \$325 it sounds as good as or better than microphones of twice the price! All the best,

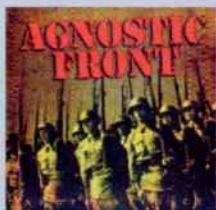
Todd Peterson
TransAudio Group

Just a quick note with some additional information on the CAD m177 and m179 microphones that were reviewed in the *Ultra Mega [OK] Mic Madness* issue. The reviewer noted that the biggest drawback he found with these mics

was the lack of a good shock mount, but that CAD probably had one on their drawing boards. I checked their website recently, and found a listing for the MZM-5 shock mount in their Accessories list. BSW USA also offers the shock mount in a package with the mic. Just thought I'd mention it. I'm not affiliated with CAD, by the way. Just interested in these mics, especially the m179. Nice to have a U.S. alternative to the Chinese mics in this price range. Especially with such good features and performance. Phil Raymondo (by email)

I've just finished John Payne's article about Bruce Swedien in your September *EQ* Magazine. If possible would you pass on to Mr. Payne what a great article it was about a great guy. Having been in Chicago some 40 years, Bruce's path and mine crossed on several occasions. I watched the installation of Bruce's original design console in Dick Marx's music studio. Not only that but I believe they had Chicago's first 8-track tape recorder. I'd never seen anything that amazing. At the time I worked at WCFL, a Chicago radio station, and if you're old enough that's where I produced Dick Orkin's very popular radio series Chickenman. All my work was done on Ampex 440 mono recorders, so Dick Marx's 8-track was like a gift from heaven. Well anyway thanks for giving a very special man the credit he deserves and has worked a lifetime to achieve. Many Thanks,
Mike King
aruchicago.com

LISTEN HEAR



AGNOSTIC FRONT: ANOTHER VOICE (Produced by Zeuss, Jamey Jasta)

Production? Quite good, here. See, the thing about hardcore music is that if the production gets too slick it ruins the effect. The production is smart for this kind of music with Roger Miret's vocals right up front so you can feel his voice; he doesn't so much sing as just put

every bit of air and spit he has into each word. Steve Gallos double kick drum rattles your head around while Mike Gallos subsonic bass makes your nose itch. And the dueling guitars, courtesy of Mssrs. Vinnie Stigma and Matt Henderson are *nah-nah-nah nasty*. This CD is a tribute to a long-standing love affair that Agnostic Front has had with NYHC. Real hardcore for real hardcore fans. Would I hang out with these guys? Hell no. I would, however, listen to this before telling my psycho neighbor to turn down his Eagles record. —Jason Laffy



PELICAN: THE FIRE IN OUR THROATS WILL BECKON THE THAW (Recorded/mixed by Greg Norman)

The coolest thing about recording stuff at Electrical Audio in Chicago is that Albini makes sure that he's got the top-flight talent in house to take care of all of your recording needs. And at the helm on this gem is professional golfer Greg Norman. (Full disclosure: Not only do we have a close and personal recording history with the estimable Mr. Norman, but we've also shared stage space with the mighty Pelican. Cronyism at its best.) So it's not every day that pro golf and



heavy "InstruMetal" worlds are joined but so it is here with a rollicking and seasick swing that bears almost what might be considered that signature Electrical Audio sound, a pummel, a mugging, and a masterful display of audio-pyrotechnics. We like.

LISTEN HEAR



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SO YOU WANNA BUILD A PROJECT STUDIO?

by Mel Lambert

We got some key parameters . . . pay attention. And no one will get hurt

1. Good soundproofing is pretty simple: If you can keep your sounds inside the space, there's a good chance that outside noise won't find its way to your mics.
2. If you can, avoid parallel walls: Flutter echoes and other anomalies are a bitch to eliminate!
3. Hire a competent electrician: This isn't an area where you want any surprises. And double check for ground loops.
4. Determine where sound will bounce off the walls and ceiling: Make sure to add absorbent material there to prevent splash back into the mix position.
5. Spend dollars on good mics and DI boxes: Remember, "Garbage In/Garbage Out!"
6. A-to-D and D-to-A converters have personality: Listen to a bunch and go with what sounds best; no ringing, harshness and other funnies; trust your ears.
7. Borrow a number of monitor loudspeakers: Listen in your studio to commercial CDs; neutrality is the target.
8. Don't be surprised if mixes sound different at the end of a tracking or mix session than they did at the beginning: It's called ear fatigue, especially as you start jacking up playback levels. Start again fresh in the morning.
9. Always lay down a guide vocal no matter how basic: Overdubs are so much easier if you know where the song is going.
10. Subtractive EQ works just as well as additive: Try backing off frequencies around the ones you would normally boost; the results will surprise you.
11. And, finally: Bucks spent on having the finished room measured by an accredited acoustician is money well spent. It sounds great . . . but does it translate to other rooms?

Need to know more? Check out an AES Workshop that covers the important facts — not myths — of outfitting a studio in a spare bedroom, a garage, or a temporary environment.

When: Saturday, November 19, 9AM – 6PM

Where: Beverly Garland Holiday Inn, Vineland Avenue, North Hollywood, CA.

More: aes.org/sections/la



Jim's Project Studio, in the Hollywood Hills, was designed and acoustically treated by Steven Klein; it's based around Pro Tools|HD with ProControl, and equipped with Spatial One monitors. (Photo: Robert Knight)

LISTEN HEAR



JUDD AND MAGGIE: SUBJECTS (Produced by Lenny & Joey Waronker)

Brother and sister folk pop duo Judd And Maggie's *Subjects* was produced by father and son team Lenny and Joey Waronker. Isn't that cute! Oh yes it is. . . . Yes,

yes, yes. . .

What the hell is wrong with me?

Anyway the production is slick but not too slick. (Well duh. Joey Waronker has done Beck, REM to name but a couple slick-but-not-too-slicksters.) The drums are tight with a fantastic thump of the kick and the warm smack of the snare (Joey done played them drums too). The bass is all warm and fuzzy and there's lots and lots of cool but laidback instrumentation, piano, acoustic guitar, fantastic organs, and so on. And the best thing about this production? It's smart, as well. It never strays too far from center giving it that "this is time ess" feeling that so many productions seem to be lacking these days. And Judd's and Maggie's voices are not perfect, and that my friends is what is perfect about them. The vocals are blended and the harmonies are sweet and plentiful. The songs are well constructed, honest, and heartfelt, refreshingly not clever and well, just kinda nice. Which for a change is . . . nice.

I think you guys owe me a foot rub. —Jason Lally



GENTLE GIANT: THE POWER AND THE GLORY (Produced by Gentle Giant)

Perhaps you haven't been able to tell but here, down this'away, we have a predilection for the underdog. We'd be hardpressed to call any band with sales of over 3 mil or more, The Underdog, but when compared to how much juice ELP or Yes get, well it seems warranted. You see, this is prog at its best. Now while underdog doesn't ever imply "any good" necessarily, the corollary is that because no one cares what's there frequently does strange and wonderful things. Like this record. Sure these guys have tarried with the likes of Tony Visconti but on this release of the unreleased the brothers Shulman go nuts. Nuts. Thirty different instruments (including the Shulberry. Yeah, exactly.) We love this. Prog production at its best.



LISTEN HEAR

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For more information visit www.cakewalk.com/SONAR

Tool Box

BY KEVIN OWENS



01

02



03

04



01 M-AUDIO MICROTRACK 24/96 (\$499.95)

This rechargeable lithium-ion-battery-powered two-channel digital handheld records WAV and MP3 files to CompactFlash cards or microdrives and supports drag-and-drop transfers via its USB 2.0 mini connector. Other features include phantom-powered mic pres, balanced 1/4" TRS, S/PDIF, and RCA inputs, and Mac and PC compatibility. And we're reviewing it next month.
m-audio.com

02 AUDIO-TECHNICA MB/DK6 (\$449)

This drum mic pack consists of two MB 4k cardioid condenser overhead/hi-hat mics, three MB 5k snare/tom mics, one MB 6k kick drum mic, and three low-profile drum-rim mic mounts that offer flexible positioning. The MB 4k has a frequency response of 80Hz–20kHz, –46dB sensitivity, and a corrosion-resistant XLRM-style connector.
audio-technica.com

03 KLEIN + HUMMEL O300 D (\$3,395 each)

Engineered to deliver an extremely flat frequency response, this three-way, active studio monitor features three magnetically shielded drivers — each powered by a high performance amplifier exactly matched to its technical requirements — that are mounted in a front baffle of low resonance integral molding (LRIM). U.S. dist. by Sennheiser,
sennheiserusa.com

04 STUDIOMASTER CX AND CX3 (\$TBA)

The C3 and C3X single-rackspace mixers feature 12 inputs, including four balanced XLR/phone jacks for mics or line level gear. Both models feature stereo output with LED metering, master volume control, and 2-band EQ and level controls for each input. The C3X (pictured) has a DSP section that includes a variety of delays, reverbs, and effects.
studiomaster.com

05



06



07



08

05 ANTARES AVOX (\$599)

AVOX is a vocal toolkit for Mac and PC that includes five of Antares' vocal processing plug-ins, including the Throat Physical Modeling Vocal Designer, a new tool that lets you process vocals by stretching, shortening, widening, and constricting a physical model of a human vocal tract. Simply put, Throat is deep, yo.

antarestech.com

06 SONY DR. FINK'S FUNK FACTORY (\$99.95)

This Acid-format sound library is loaded with two CDs worth of 24-bit, royalty-free polyphonic analog synth themes, clav licks, vintage drum machine beats, and old-school leads and riffs that showcase the keyboard and synth wizardry of Matt Fink (he of the Prince and the Revolution Finks).

sonymediasoftware.com

07 GEMINI IKEY (\$229.99)

This portable recorder captures audio, converts it to MP3 (128, 160, or 256 kbps) or WAV format, and lets you transfer it to a computer or other storage device via USB. Features include gold-plated RCA inputs, a level control, and a level clip LED. Gemini claims the iKey can record up to 8 hours of 256k MP3 audio on a single 1GB memory stick. It also mows your lawn. [PS: Well not really.]

geminidj.com

08 MXL IBOOSTER (\$29.95)

Designed primarily for GarageBands and podcasters, this signal compatibility device is designed to raise any low-level input signal — such as those from cardioid condenser mics or electric guitars — to better interface with the audio input level of Apple computers. No preamp necessary. Works with iMacs and Power Mac tower systems.

mxlmics.com

Tool Box

09



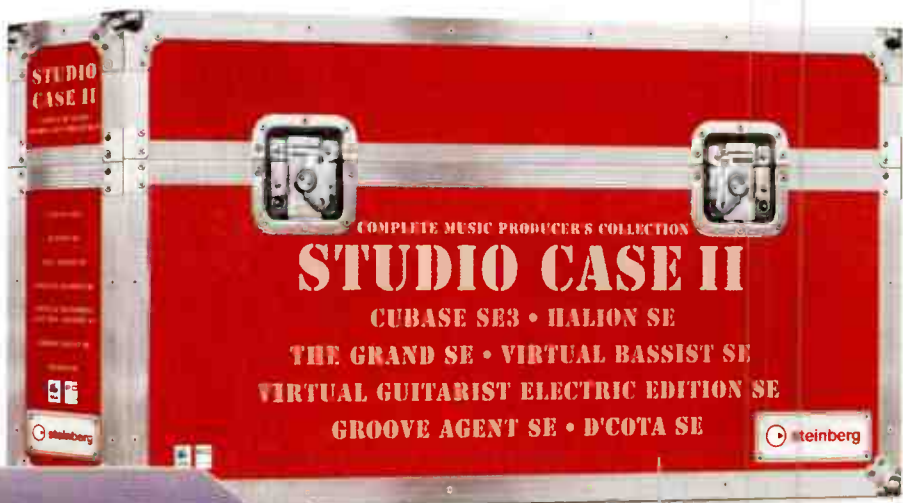
10



11



12



09 CAKEWALK SONAR 5 PRODUCER EDITION (\$799)

Featuring a powerful double-precision floating-point mix engine for increased dynamic range, this updated version of Cakewalk's recording/editing/mixing software adds a host of new instruments, effects, and editing tools. New features include Roland's V-Vocal VariPhrase technology and enhanced envelope automation drawing.

cakewalk.com

10 MOOG MUSIC MF-1042 (\$729)

This new Moogerfooger supports delay times ranging from 50ms to a full second. It features front-pane Delay Time, Mix, Loop Gain, and Feedback controls, and its rear-panel controls include Audio In, Mix Out, De ay Out, Loop In, and Loop Out. Feedback control, delay time, and wet/dry mix are controllable via the optional Moog Expression Pedal (\$40).

moogmusic.com

11 RUPERT NEVE DESIGNS PORTICO 5042 (\$1,435)

This two-channel, all-analog tape emulator uses tape drive circuitry to simulate the rounding and compression usually attributed to tape, letting you add old-school flava to digital recordings. When the tape circuit is not engaged, the 5042 can be used as a transformer-coupled line amp with a gain range of +/-12dB.

rupertneve.com

12 STEINBERG STUDIO CASE II (\$299)

Created as an affordable, entry-level option for aspiring recordists, Studio Case II features a new version of Steinberg's Cubase SE music production software and "special versions" of six of the company's VST instruments: Groove Agent, HALion, The Grand, Virtual Guitarist, D'cota, and the spankin' new Virtual Bassist.

steinberg.com

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C. K. Talbot - musician/engineer



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World Radio History

On with the motley, the silver-fluted champagne glasses and the greater glory of gargantuan genius it is, indubitably

THE EQ STYLE GUIDE

... wherein *sonicistas* sound off on the idiosyncratic nooks and crannies that make their style, *their* style. Indeed.

LET'S GET REAL, REAL GONE

RECORDING ROCKABILLY

by Pete Miller

Out of the illegitimate shotgun marriage of Rock 'n Roll with its 13-year-old cousin, Hillbilly Milly, a fevered fertility occurred. The issue from this un-condoned glorious union was the bastard child Rockabilly. Throw in a dash of rhythm-and-blues, a peppery trace of Tex-Mex shoes, and a smack of jazz juice, then spice to taste with stinging slapback sauce. Rock-Ola!

Gene Vincent's guitarists (Cliff Gallup/Johnny Meeks) brought country western swing. Bill Haley's guitarist (Frank Beecher) brought swing-blues jazz. Chuck Berry picked double stop. Charlie Christian style-slurred horn stylings.

I mean Elvis was originally called The Hillbilly Cat. He combined the acoustic guitar and acoustic bass with electric guitar and heavy

backbeat drums. The most common lineup for a rockabilly band is vocal, drums, bull-fiddle bass, rhythm guitar, and lead guitar. Sometimes a piano, tenor sax, steel guitar, vocal backing group, and a pair of clapper boys would augment this.

But recording rockabilly is (arguably) one of the easiest genres of music to capture. It's all about simplicity, not mind-numbing computer programming setups. It requires a knowledgeable, intelligent, fast setup, and a confidence to catch performances on the fly.

You see, Rockabilly has to *groooooove*. Not like the unfaltering clock of an impotent drum machine, but with the unheard tempo fluctuations of a lion in heat, as the drummer speeds into a multi-triplet roll elevating the band into the chorus or bridge of a song. To

get this groove the whole band should perform simultaneously in the same room. Even the singer can do his thang at the same time.

Preferably in a room no smaller than 30' x 20' x 10' where the walls and ceiling add sonic reflections. What about bleed, you ask? Bleed is good. Don't be afraid of bleed. It fattens the sound as long as all the mics are positioned correctly. Strategically placed mics (of the appropriate model) should require a minimum of EQ at the board. Reverb — nah. Compression — yeah. Cool!

Note: Compression was used in order to accommodate the erotic peaks that the pickers produced in the exuberance of flesh-chilling excitement when they got "real gone". It contained the dynamic range within the limited range of 1/4" analog recording tape, and also the even smaller range that vinyl records could cope with.

But the definitive sound of rockabilly is recognized by the liberal use of slap-back echo on the vocal, the lead guitar, and



The many faces of rockabilly lunatic Big Boy Pete.



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Harry Gregson-Williams, film composer

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Original score by Harry Gregson-Williams

www.steinberg.net www.steinbergusers.com



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THE EQ STYLE GUIDE

sometimes even on the entire band. Half a century ago, this was produced via the heads of a tape recorder. (Remember them?) Usually an Ampex 350 mono machine (Remember mono?) The 1/4" tape traveled past the heads at 15 ips. The distance between the record head and the playback head was approximately 1.5", and the time taken for the tape to bridge this space was approximately 115 ms. This time lapse produced the slapback echo.

Today, a digital delay unit will manufacture this delay for you, but to emulate the old tape slapback, roll off your highs, especially on repeats and add a smidgen of smut (unheard modulation) to simulate instability from tape flutter. The old machines were less than sonically perfect. If you're using a DDL, don't get smart and adjust the delay time to

Sam Phillips declared in a recent interview that he did not use a mic on Scottie Moore's lead guitar amplifier – the sound was actually picked up by Elvis' vocal mic. He just got the amp to sound good in the room and placed it in the right place so Elvis' mic would pick up the guitar sound at the right level!

concur with the rhythm bpm of the song. Although speed adjustments may have been available, they didn't do that. Maybe it was luck, but many rockabilly classics did in fact sync to the speed of that 115 ms delay.

And you gotta use the right gear man! Plywood, 3/4-size upright basses are fine. You don't need a full sized German mahogany bulldog. Drummers — throw away yer toms. Bass drum, snare, hi-hat, and cymbal will cut the gig. And don't forget to bring your brushes. The tone of a heavily picked Martin flat top snarls through the midrange nicely, while the lead guitar ain't no hi-fallutin, active pickup, traumatized transvestite. It's usually a Gretsch (with De Armonde pick-ups), an archtop hollowbody Gibson with P90's or PAT humbuckers, or yer good ol' unadulterated basic Tele; or maybe a funky old Silvertone from Sears. Bigsby's permitted, nay mandatory. And the guitar amp — gotta be tubes Daddy-O! No chips — just fish.

Engineer be quick. Set up fast. We don't want no two hours getting a snare drum sound. The boys will just get Oprah-sedated and this don't bring forth no magic lightning. If you're producing, don't pull the band out of the studio and into the control room to evaluate every performance. Only when they've done something listenable and kissable, otherwise you'll hex their lava flow.

The first take is often the greatest. Never ever throw it away even if a player glitched with a bum note or two. The first take you play from your soul. The second take you play from your head, and it could be downhill from there on. Don't be afraid to edit portions of one take into another. Sam Phillips and Jack Clement did this at Sun Studio — with great success, and mostly inaudible splices.

Incidentally, Sam Phillips declared in a recent interview that he did not use a mic on Scottie Moore's lead guitar amplifier — the sound was actually picked up by Elvis' vocal mic. He just got the amp to sound good in the room and placed it in the right place so Elvis' mic would pick up the guitar sound at the right level! Wow! The Sun Studio was 18' x 33' with an eight-foot high

V-shaped ceiling. The walls were covered in 12" asbestos square acoustic tiles that gave the room sound. Louder playing levels resulted in more midrange compression to the sound. In effect, the room itself acted as a compressor. The mixer at Sun was a simple RCA 76D console with six mic preamps and no equalization. The mics Sam used were RCA 77DX (ribbon), RCA 44BX (ribbon), Shure 55 ("the Elvis mic"), and an Altec Lansing pencil mic.

It's all acoustic. Everything is miked. Nothing goes direct. No plug-ins except for the electric guitar cord. To really get that authentic sound, try using just two mics — one on the singer and one on the band. Choose mics with directional capabilities, then move the mics (and musicians) around until you get the required blend and balance of sounds. Eye contact is essential, but keep the players distanced where necessary.

If you decide to go for a more contemporary sound, put up some accent mics and use semi close-miking techniques, but don't totally eliminate the room sound from the ambient mic. Augment it and fatness will remain.

Less can be more. You can make great rockabilly with just eight tracks. Vox, rhythm guitar, lead guitar, bass, stereo overhead drums, kick, and snare. If you're really good,

you can also simultaneously record the performance "as-is" straight to two track. Yup — no mixing. And forget the pan pots (except for the drum overheads). For authenticity, keep it all straight down the middle. Remember to allow for excess headroom at the console/recorder, and set your gain levels accordingly. Then just sit back, quiff your hair, snap your fingers, nod your head, and let that Billy rock!

Pete Miller (aka Big Boy Pete) is the founder/director of The Audio Institute of America recording school audioinstitute.com.

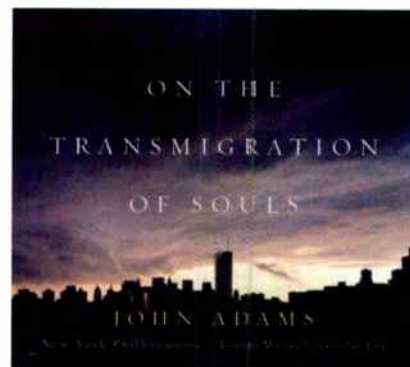
SOUL POWER

CLASSICAL ROCK

by Mitch Gallagher

From the New York Philharmonic to the Grammys, LARRY ROCK rolls into A-List contention as the man most likely to make classical music sound the way it's supposed to: grand.

Listening to the New York Philharmonic's recording of John Adams' *On the Transmigration of Souls* is an intense experience. The 25-minute composition superimposes text drawn from missing persons posters, memorials, and first-hand accounts on a large orchestra, combined with spoken names of victims, haunting solo trumpet, and pre-recorded sound — the overall result is decidedly powerful, evoking clear images of loss and anguish, and pushing the boundaries of "traditional" classical orchestral performance. The piece, which won the 2003 Pulitzer Prize, was commissioned by the Philharmonic to honor the victims, heroes,



and survivors of the September 11 attacks.

And in addition to capturing Best Orchestral Performance (for the New York Philharmonic) and Best Classical Contemporary Composition (for composer John Adams) awards at the 2005 Grammys, the recording of the live performance won the Best Classical Album Grammy for John Adams and New York Philharmonic Audio Director

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THE EQ STYLE GUIDE

Larry Rock, who engineered the recording and co-produced with Adams.

On The Transmigration Of Souls is a massive performance featuring the New York Philharmonic, solo trumpet, New York Choral Artists adult chorus, the Brooklyn Youth Chorus, six men and women speaking the names of victims and other phrases, and an electronic "soundscape" recording of street noise from New York City (which was presented in surround in the live performances). Capturing the premiere performances of the work for CD release presented a unique challenge for Rock, who drew on years of experience recording classical music in numerous venues to ensure the final outcome.

EQ caught up with the Grammy-winner as he prepared dinner for his son prior to baseball practice.

You started . . .

I began in radio, and spent 13 years at WFMT in Chicago, a classical station that syndicates the broadcast of orchestra concerts. So I got a lot of my experience in recording and production there. After that I worked in a production company, and eventually went freelance. From there I was hired by the Philharmonic. My title is "Audio Director" — I'm not sure exactly what that means. [Laughs.] But basically I'm both an engineer and producer. I spend most of my time engineering and recording concerts each week. Then I'm the producer for record releases, and I produce the weekly radio series music.

I studied electronics and music; I played trumpet. With recording you can only study so much, then you have to hear it and experience it. Radio work is great because week in and week out the quantity of repertoire is so vast. It would take years and years of record work to get that amount of experience — to end up with that big of a catalog of knowledge of how to record a given piece — it really is sort of like building a repertoire.

But my job now covers everything from miking to recording to editing to CD production. I started in 1997 as an independent contractor with the Philharmonic, then I became a full-time employee, which is a testament to their commitment to this — to my knowledge, no other orchestra has a full-time engineer/producer. Usually recording is done on a subcontract or radio station basis. But the Philharmonic has a strong a commitment to it.

But why classical music?



John Adams and Larry Rock (right) at Avery Fisher Hall, Lincoln Center.

Photo by Chris Lee

I was exposed to classical music at an early age. My mother played violin as an amateur, and there were records as I was growing up — not to date myself, but starting with 78 records. [Laughs.] I remember my fourth grade music teacher played Beethoven's *9th Symphony*, which gave me the bug. Then my grandfather gave me a recording of Beethoven's *9th* by the New York Philharmonic, of all things. So I was accustomed to hearing a lot of classical music.

Of course, I went through the '60s rock 'n' roll period, but as a serious pursuit, classical was it. Part of it came from a technical aspect — the idea of recording an event in an acoustic space, rather than creating a studio production, which is a very different activity. I was always interested in the activity of capturing a live event. Actually we're creating an illusion, not really capturing reality — capturing reality is a difficult proposition.

Is it harder with classical? If so, how so?

The logistics of setting up mics. A given week's program will have several different pieces that will be totally different. The first part might be Bach with a half-dozen instruments, while the second half has a huge orchestral piece. So being able to set things up to switch gears fast is important.

It's a concert hall and the mics can't be too apparent, so small mics are better than large-diaphragms, because large-diaphragms are too visually intrusive. I work hard to minimize any need for processing or EQ by concentrating on mic selection and placement. I try to use the right mic so it doesn't need EQ or processing.

Part of what you do when you record multiple performances of a piece is to make them as identical as possible for editing later. I do record multitrack, but I rarely have time to remix. Typically we record 24 tracks, occasionally a big theater production will have up to 64 tracks.

I usually record straight to 2-track, using hard disk recording, and also burn a CD too. I'm using a TASCAM MX2424 as the converter after the preamps, mixing on a Yamaha DM2000, then going back to the TASCAM and to a PC with Nuendo.

The nice thing about doing it this way is that if I do need to remix, I can just push stop and it's all set up. I don't have to change modes or anything. Digital mixer scenes are used for each piece or even each movement of each piece. This saves writing down everything

I do, from rehearsal to performance or to revisit from an earlier time.

What mics are you using to record the Philharmonic?

For the overall sound I use four omni microphones: two Neumann KM130s and two Schoeps MK2Fs, placed right in the boundary between near-field and diffuse-field, right about at the edge of the stage. So I'm getting a blend of the orchestra before the hall has too much effect on it. I can alter the color by adjusting the balance between the two pairs of mics; the Neumanns are transparent, and the Schoeps are warmer. It acts as a sort of "organic" EQ — I think I just invented a new term there: "organic EQ." [Laughs.]

For woodwinds I use the Neumann KM140. Generally I use all Schoeps and Neumanns. When clarity is the priority, it's Neumann, when warmth is what I'm after, then it's the Schoeps.

On percussion for instance, even though it's fairly loud, with the reflections off the wall and so on, you still have to help it out. So for that I use Neumanns for clarity.

For string spot-mics I use the Schoeps, the MK21, a sub-cardioid, which is a pattern halfway between omni and cardioid. I try to keep it to one overall mic per section — one mic on first violins, one on second violins, one on cellos, and so on.

I also use an MK21 as a solo spot mic because it works on everything — violin, voices, everything. Because it's a sub-cardioid it blends with the omni sound quite well. I generally work from less directional mics at the front of the orchestra to more directional mics as I go upstage.

I'm using Millennia Media HV3D, John Hardy M1, and Benchmark mic preamps.

How hard was it recording John Adams's *On the Transmigration of Souls*?

Our setup was slightly different since that was recorded a few years ago [in 1992]. We used the TASCAM DA78HR 8-track

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THE EQ STYLE GUIDE



The Moravian Philharmonic Orchestra on an amazing simulation.

would do in a club. Arif, and some of the other people she works with, are able to play up to her level and capture it, without 'making' it anything."

Jeff Touzeau is a freelance writer and owner of New York-based Hummingbird Sound. His new book, *Making Tracks: Unique Recording Studio Environments*, is scheduled for a Spring release on Schiffer Books.

MAKE YOUR A MIDI

FROM MIDI-MOCKUP TO REAL ORCHESTRA: IT'S A TRIP

GPO founder Gary Garritan takes a walk on the wild side of Moravian MIDI mock-down madness.

Most digital orchestrators know how to do an orchestral MIDI-mockup. The process of taking an orchestral score and creating a MIDI sequence of it using orchestral samples is no bit of rocket science: The goal is to make the MIDI version, or mock-up, sound like the real thing. But we had a brainstorm and instead of the usual going from orchestra to MIDI-mockup realization, we decided to go from a MIDI-mockup to a real orchestra. We called it a MIDI mock-down and liked it so much that we had a competition to see who could do the best one.

Some may wonder "isn't it the goal of some sample developers to 'replace' an orchestra"? Not so! My goal is to point people to the real thing and to real players and demonstrate how orchestral tools can facilitate the move to live orchestra. And soonoring a competition would accomplish this goal.

Why? How? What?

Well it all started with an idea. A desire to do something special for musicians. Many musicians were buying orchestral libraries but few would have experience with a live orchestra. It'd always been a dream of mine to have my works played by a real orchestra. What if

we could give musicians the opportunity to work with a real orchestra in the form of a competition?

So we ran the idea by the Moravian Philharmonic Orchestra and Petr Pololanik, who graciously donated the services of the orchestra, and a date was set for the performance. Emmy Award winning composer Hummie Mann, composer/conductor Andy Brick, *Film Music* magazine editor Mark Northam, well-known arranger David Maddux, game composer Doyle Donehoo, Frank Spitznagel, well-known New York theater musician, film composer Jonathon Cox and percussionist Michael Salamone all piled on.

Winners were chosen, fun was had by all but what about . . .

Going from MIDI to Orchestra: How To . . .

Many composers and orchestrators today work on their computer and make their music using MIDI files or sequencer files (such as Cubase, Logic, Cakewalk, Digital Performer, or other programs). Going from sequencer or notation programs to a playable score can be a daunting task. Ideally you want a separate individual track and/or channel to represent an individual instrument. It's important that when you import a MIDI file that each person in the orchestra has their own staff.

But the first step in going from a MIDI rendition to a real orchestra is to prepare the sequence file for the conversion to notation. When I work I have a sequence file, an export file, an import file, and a notation file. The export file is the file in which you quantize all the note on/off durations and split out any multi-instrument tracks. It's quite a process, but in the end it saves you an enormous amount of time if you do this step correctly. This is the step where you actually undo most of the tricks you used to make the score sound good.

The next step is to prepare a score.

There were a number of scores, in a number of different styles written by a number of different composers in different countries using different sequencers and notation programs. Whereas each and every score may be a perfectly acceptable in and of itself, it's critical that we made every effort possible to standardize the scores that will be represented in the concert. And the lack of proper score preparation can spell disaster for a successful performance.

Now although some of the winning competition pieces were done in sequencers — like Digital Performer or Sonar — proper preparation involves a lot more than just importing MIDI files into a notation program and printing. What is involved then, in preparing a work for rehearsal and public performance? If you've ever built a piece of furniture from IKEA, or put together a bicycle, or model ship you will know it is best to follow the instructions.

The Conductor's Big Score

Before you begin it's important to know your orchestration. This is the most important thing to begin with. Before you can begin entering your music, you have to set up your score. This would include adding the correct number of staves, setting the clefs and braces, adding measures, and displaying instrument names.

The next thing to do with any score is to analyze the separate parts. The conductor should have a clear idea of the phrasing and articulations for each instrument. Study each separate part and think like the instrumentalist. MIDI-sequenced renditions don't indicate to the player where to phrase nor give them time to do necessary things. It's important that winds and brass have time to breathe, percussionists have time to move to other instruments, doubles have time to switch instruments, and brass instruments have time to have mutes placed. Look for awkward fingering problems, difficult intervals, breath marks, and turns; and, if necessary, simplify them for the players. Try to anticipate any problems the individual players have. Check for markings. It's important that each instrument plays in its range. Some of the submissions had parts beyond the typical range of the players and they had to be modified accordingly. Also, knowing the limitations of the instruments is important. For instance, making sure there is no unplayable chromaticism in harp.

Unfortunately, just because you can finesse a library to execute a difficult passage doesn't mean that an actual player can execute that same passage. It's unrealistic to expect virtuosic performances by nearly every member of the orchestra.

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Breathing is always an issue with composers going from MIDI to live, as well. Nothing like the endless single-note sample loop to mislead a composer. Similarly the various legato tools out there are lovely but they don't tell you how long the bow is. Few know that at any dynamic level, basses can play a longer slurred passage than violins. The reason is simply that the bow is longer and the player can therefore spend more time before changing bow direction and thus breaking the slur. String phrasing is critical and is another sure bet for problems in a score coming from a composer new to the transition from MIDI to live.

Dynamics is another issue when going from MIDI to live. Many scores from MIDI composers transitioning into live often consider dynamics something that is static or virtually static — rather than ever-changing and flowing. This ever-changing dynamic must be set forth in the score.

The harmonic and rhythmic structure may also need clarification. Check to see if any harmonies clash with the main lines or whether some lines need to be enhanced with *espressivo*. The score should be checked to make sure the rhythm is clear and ascertainable. No instrument should play a wrong

rhythm. Are tempi markings clearly marked?

The conductor's score helps the conductor familiarize himself with the music and provide the big picture of the upcoming performance as a whole. A good conductor thoroughly analyzes and studies the score. He internalizes it, becomes intimately familiar with it, and immerses himself so that the music becomes a part of him. The conductor then has no doubt how the music will go, or how to direct the members of the orchestra.

Parts is Parts

After the conductor's score is analyzed and checked, the next step was to break out the individual parts for each player. Whether the instruments in the conductor's score are written in "concert" pitch or "transposed" pitch depends on a number of things. Many Hollywood guys use concert scores. And some prefer transposed. With transposed scores it's easier to talk to the players in their language.

Regardless of whether the conductor's score is concert or transposed, the individual players must get their parts transposed into the key of their particular instrument. The trumpet, for instance, is in *B \flat* and must be transposed a whole step. The horn is in *F*, and so on.

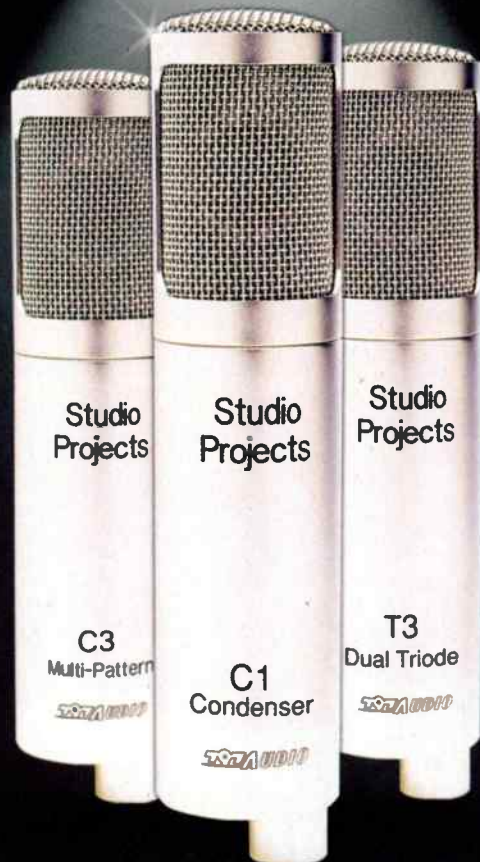
Some of the winners prepared their own

parts, which were very good, and others needed help. With the deadline rapidly approaching and much work to be done, we simply could not get all the parts done in time. Four different works for 65 individual players is a lot of pages. Toward the end we needed help on a couple of pieces and turned to a professional score preparation service. We used the services of Robert Puff of RPM Seattle Music Preparation (musicprep.com). RPM took the notation files in Finale and Sibelius and converted them into separate instrument parts.

With both the conductor's score and the player parts, it's essential that you have a uniform system of numbering bars and measures. The conductor must have a clear and unambiguous way to direct everyone to specific places in the music where they may need to re-start.

Practice + Perfect

After putting in a great deal of time and effort into preparing the conductor's score and the individual player parts, it was time to rehearse. Just as one has to manipulate MIDI data to get the right performance out of a computer and samples, a conductor has to rehearse multiple times to get



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the right performance from the orchestra.

The first day of rehearsal we didn't know what to expect. The orchestra began by running through each piece without stopping, then rehearsing the rough spots. The stop-and-start detail work for the rough spots seemed tedious. The players were very helpful during rehearsal. They chimed in where they thought something could be notated or phrased better and they seemed to be genuinely interested in the success of the performance.

Too often it is natural to react too quickly to the first run through because it doesn't sound just like the MIDI. Many are accustomed to hearing a MIDI version where every instrument is in perfect tune and every player intonates perfectly, where dynamic ranges are compressed, and mistakes are never made. Prolonged exposure to MIDI produces an affliction known as "MIDI-itis": Imperfections and humanness were apparent during the first rehearsal. The real orchestra did not sound exactly like the MIDI-mockup, and I had some unrealistic expectations. But listening to all those players, what made it great is that nobody was perfect — but when it was all put together — it was great.

And despite our best continuing efforts to prepare, there were errors in the score that became apparent. For instance, in winner Richard Birdsall's "Knights and Magic," the horn was not transposed, which was obvious on the first take. Also, the second horn was struggling with a very high part not normally in the range. When we transposed the part down an octave, it worked much better.

And then as the first note sounds then bursts into glorious orchestration the night of the performance I knew then that all the effort was worth it. The concert thrilled, and will remain an unforgettable memory long after the passing of the one-time moment of the performance.

GOING DOWN TO THE COUNTRY

BOB BULLOCK ON SOUTHERN FRY

by Dan Daley

Bob Bullock made hit records for Shania Twain, Reba McEntire, and George Strait. But when he came to Nashville from L.A., where he had done the rock and jazz thing, he learned the cardinal rule of genre-shifting: "Learning to record different types of music is all about understanding and respecting the genre," he states. What he's learned about making country records since then makes for a concise primer on exactly how the hell to do so.

Preproduction: At heart, country records are live performances, and assembling the group of musicians best suited for a particular project is "not unlike casting a movie," says

Bullock. "What you're doing in essence is taking a singer and a song and trying to create an identity for them, a context for them. That context is the musicians."

There's no trick to this — you need to know the nuances of particular players. "Most of the session players in Nashville are very versatile, but you listen to the records they play on (fortunately, country records are fairly scrupulous about crediting musicians) and you get a sense as to how they lean, toward pop or toward stone country or bluegrass," he says. "I'm con-

stantly taking mental notes on drummers and guitar players. I'd much rather call a player who intuitively knows the style I'm looking for than have to try to explain it to someone who's just as good a musician but doesn't have that same feel."

Basic Tracks: A hallmark of country records is that they need to get done quickly. This is partly a function of economics — having six or seven musicians sitting there at a time at union scale or more costs over \$1,000 an hour — and partly the inherent

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nature of the music, in which ensemble playing of mainly acoustical instruments makes for a sound that's highly organic, intimate and immediate.

Country sessions typically start the morning of the day the musicians are scheduled, to allow time to set up as many as 30 microphones for a basic track date. (Bullock will "cast" the studio in much the same way as he does the musicians, looking for smaller, funkier places for blues-tinged projects, and larger, slicker studios for pop-oriented ones.) He'll be in at 9 a.m. to place microphones, with the drummer arriving around noon to help get drum sounds, and the rest of the musicians scheduled for 2 p.m. Presenting the song "cold" to the musicians helps. "You don't want to overthink country," he says.

Seasoned session players expect the engineer to have the entire setup ready for them at downbeat. But you will also rely on the musicians to create their own sounds more often than not. Many guitarists will



Scofflaw Bob Bullock ignoring all posted signs.

typically bring two or three amp heads. "So I'll have already set up two or three microphones — usually a Royer 122, a Shure SM57 and a Sennheiser 421 — so they can put the amps down and check them quickly in succession," says Bullock.

On the drums, if the track is stone country, Bullock will go for a darker sound, with an AKG D-112 on the kick, 421s on the toms, a 122 on overheads and just one

SM57 on the top of the snare. A pop-oriented country track will get a second SM57 on the bottom of the snare and a 421 in the kick along with a Yamaha Subkick to catch more low end. "Tighter miking gives you more of that old '70s studio sound," he explains. "If you want a more contemporary sound with bigger drums, you add some room mics."

There are default settings for most instruments — country is less about creating distinctive sounds than it is capturing the familiar ones faithfully. Bullock will have a pair of AKG 451 microphones set up in an X-Y pattern for acoustic guitars; the bass almost

always goes solely direct; the fiddle has a Neumann tube U-67 through a Daking mic-pre waiting for it.

In placing mics, the country music engineer is also positioning the musicians as though they were playing a live show. "They have to be able to see each other, to give each other cues," Bullock says. "In the control room, I'm tracking them with the thought that what we hear today will be

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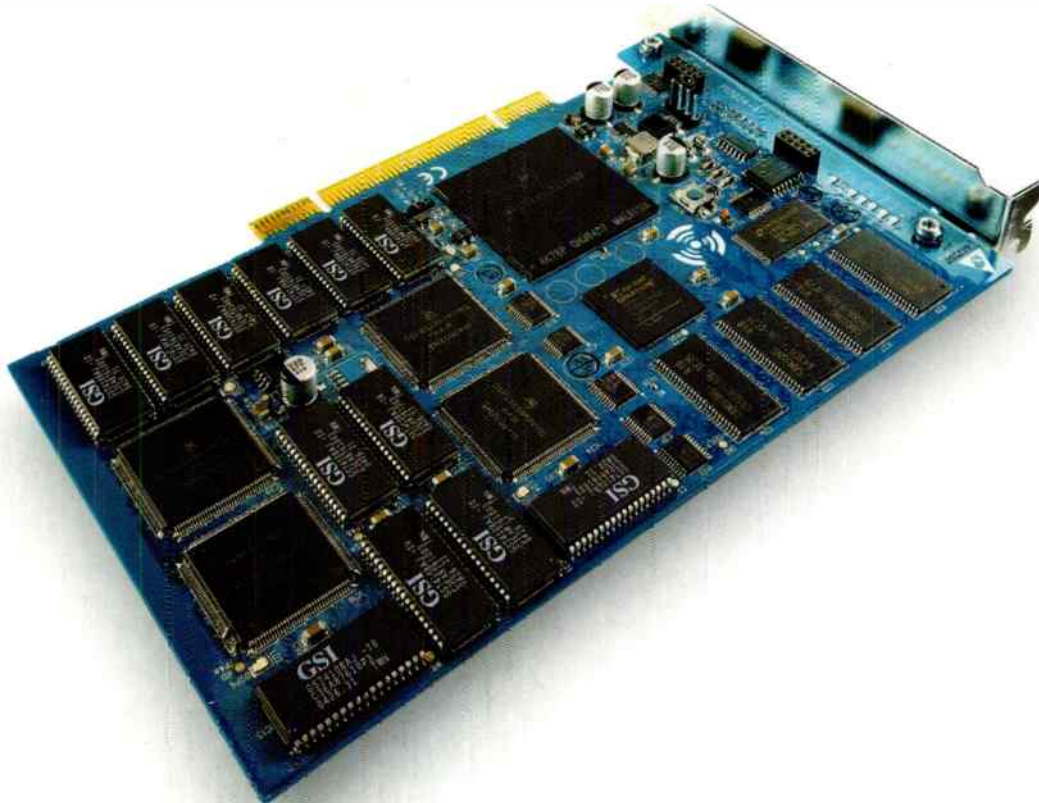






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pretty much what everyone will hear when the record's mixed."

On a country session, the guitarist sits next to the amp — it's not usually placed in a separate iso booth. "Some leakage is simply part of the sound. I have a lot of tricks I can use to increase the separation, like phase cancellation or low baffles that don't interfere with sight lines. But as long as they're playing in a tight group, there's no delay between the instruments. Drums leaking into the piano is only a problem if they're 30 feet apart."

Overdubs: It's critical to keep the sessions moving, almost following the progression of a live show. Thus, overdubs and fixes get done quickly and usually on a break in between songs (a break for everyone but the engineer, that is), so that the sound of the overdubbed instrument is perfectly matched to the rest of the track. "If we want to add a B-3 to the track or double the acoustic guitar, we'll do it right then, in the heat of the moment," says Bullock. "In pop music, the challenge is all about creating an illusion; in country, you're capturing reality. It's not that you don't know

how to do the big audio tricks, but rather that that's not what the audience is expecting. They don't want to be distracted from the vocal or the lyrics. In rock, they expect the big guitar in their face. The challenge in any genre is to achieve what the audience expects in an entertaining and musical way. That's not stifling creativity — that is creativity."

Vocals: Country is all about the voice and the lyrics. So are the sessions, so don't treat the pilot vocal as a scratch track — it's likely to be a keeper. "The musicians look to be inspired by the phrasing and the emotions of the lead vocal," says Bullock. "Never think of the pilot vocal as a scratch track — think of it as the first pass of the final vocal."

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"The challenge in any genre is to achieve what the audience expects in an entertaining and musical way. That's not stifling creativity — that is creativity."

Comping vocals is standard operating procedure because there's a lot of them, from the basics on forward. Bullock recommends using a microphone/mic-pre combination and sticking with it throughout the project because vocals will pass through several studios.

Make comps of comps as you go along. Pro Tools and Nuendo, which Bullock uses, make this easier to manage by creating playlists of vocals that can be assembled automatically.

Mixing: If you've been following the Nashville rules, you've got most of your record already together by the time you're ready to mix. The sounds were created on the basic track and the pan positions still reflect a live stage. The vocal will ride louder on top of the track than in rock or pop to emphasize the lyrics. Country music is story-telling, and the mix is a lyrical narrative supported by the track and gilded by the interspersed licks (which never step on a lyric). "The essence of a good country mix is that there is a three-dimensional image of every instrument — clear and well-defined — and never overprocessed," says Bullock. "Keep the emphasis on realism and you can't go wrong." **EQ**



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THE ELEMENTS OF STYLE

STYLE CAN BE ABOUT A LOT OF THINGS — LIKE GEAR. YES, GEAR!

by Craig Anderton

"May you never hear surf music again"
—Jimi Hendrix (in "Third Stone from the Sun")

Maybe you *won't* hear it again. But whenever a spring reverb goes BOINNNGGG, some elemental part of your musical DNA will think "surf music." Whether it's the Chantays doing "Pipeline," or any of those surf groups from the '60s that hit the stage with their Fender Jaguar and Mosrite guitars, the use and abuse of spring reverb became so associated with surf music that it became part of the surf music style.

We tend to think of style as *musical trademarks*. But in today's techzone, gear can be a part of style. A big part, in fact — in some cases, gear has *defined* a style. Would "electro" music be the same without the Roland TR-808 that powered Afrika Bambaataa's "Planet Rock" (which is also claimed to be the most sampled record in hip-hop)? Would Hendrix have been the Jimi Hendrix *Experience* without that stack of Marshalls? Would "acid house" even *exist* without the TB-303?

To answer my own questions, no. So when you're working in different styles — because you're into the music, you're doing a commercial ("gimme that '50s kinda rockabilly sound"), or it's time to score a video and you need to recreate a particular moment — there's an "Element of Style" that can help you put it across.

Let's look at the gear that became synonymous with various styles. And because we're not into just giving history lessons here, we'll tell you how to cop those styles today.

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Originally, Marshall amps weren't that different from vintage Fender amps, although Marshall favored closed-back cabinets and Fender, open-backed. As the years progressed, though, Marshall ditched 6L6-family output tubes in favor of EL34 types with comparatively high plate voltages, which gave a different, more aggressive type of characteristic when overdriven. And when Marshall switched from tube to solid state rectification, the amps gained a "stiffer," faster response with cleaner transients. Marshall also favored using more gain stages, along with passive EQ stages that didn't offer as drastic a tonal variation but weren't as "lossy" as others; as a result, there was more signal to overdrive subsequent stages. The bottom line was a tougher, crunchier, yet also more defined sound that seemed tailor-made for a big, "reach-the-last-row" rock guitar sound whose growth paralleled that of Marshall.

Copping that style today:

Marshall amps are still being made, and Jim Marshall remains actively involved in the company — so unless you're a hardcore purist, trips to eBay aren't necessary. But also, modeling hardware (Line 6 POD, *et al*) and software (Native Instruments Guitar Rig) have emulations of Marshall amps. Whether they "nail" the original sound or not is a matter of open debate, but no one would deny that if they don't, they at least provide cool noises in their own right. And when recording Marshalls, remember it's not just about distortion, but a defined, "tuff" sound. To preserve that sound, if you're using any kind of compression or limit-





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World Radio History

THE ELEMENTS OF STYLE



ing, dial in several milliseconds of attack time to let the transients “speak.”

STYLE: DANCE

GEAR: ROLAND TB-303 BASS LINE

Why: The TB-303 (for “Transistor Bass”), invented by Tadao Kikumoto and released in 1982, was a companion to the TR-606 (“Transistor Rhythm”) Drumatix drum machine. The pair was supposed to provide a robo rhythm section for songwriters; while the TB had typical synth controls, it was meant to be more of a set-and-forget device. However, what happened when you *didn’t* set-and-forget — but twisted the knobs in real time, preferably jacking up the resonance while sweeping the cutoff and adding glide — became the foundation for acid house, techno, jungle, and a zillion other variations of dance music. (Go to The Prodigy’s website at theprodigy.info/equipment/tb-303.shtml for their love letter to the TB-303.)

What separated the TB-303 from other synths was the lack of slavish devotion to the 24dB/octave low pass filter. It instead had a three-pole filter, with a very distinctive resonance compared to “normal” filters. It had other quirks, too; the “Accent” option influenced several aspects of the sound, not just volume. And the “slide” function provided a liquid, ever-changing element to otherwise static patterns.

When it was introduced, the TB-303 was a commercial flop. But now, whenever you want to add some dance music style, the TB-303 sound is the foundation.

Copping that style today: Good luck on finding a TB-303. Instead, grab Propellerhead ReBirth 2.0 (recently discontinued, but now available as a free download from

propellerheads.se), which stakes its own claim to fame by being the first vintage instrument emulation. Its realization of the TB-303 (and TR-808) is uncannily close; however, the program works only under Windows and Mac OS 9.x (no OS X). Another software option is the TB-303 refill for Reason, also from Propellerhead. But why not go to the source? Roland has re-introduced the TB-303 sound

What’s harder to replicate, though, is the “sample-skipping” technology E-mu used to change pitch, which was very different from other pitch transposition schemes of that time. . . .

with their MC-303 groove box and also as a plug-in for their VariOS system. And finally, the Alesis Ion synthesizer has a great emulation of the TB-303 filter. It doesn’t emulate any of the operational aspects, but it does deliver that sharp, biting, totally off-the-wall TB-303 filter quack.

STYLE: OLD SCHOOL RAP/HIP-HOP

GEAR: E-MU SYSTEMS SP-1200 DRUM MACHINE/SAMPLER

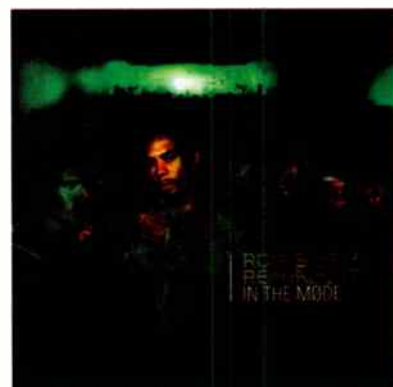
Why: A 1987 update of the SP-12 (released in 1985 and itself an update of

the Drumulator), the SP1200 was a drum machine/sampler combination that let musicians put *phrases* into the rhythm, not just drum sounds. But what made it a trademark sound for artists from Freddy Fresh to Roni Size is generally agreed to be the 22kHz sampling rate and 12-bit resolution, coupled with E-mu’s unorthodox sampling mojo. The resulting dirty, gritty sound provided the perfect bridge between vinyl and digital audio technology. The SP1200 was used on hundreds of hit records, including those from mainstream artists like Phil Collins.

Copping that style today: Despite numerous re-issues, in 1998 E-mu ran out of the SSM chips needed to make the SP-1200. But the availability of “low-res” plug-ins means that you can dial in a 22kHz/12-bit sound and (at least on paper) get some of the “grit” that made this unit a staple. What’s harder to replicate, though, is the “sample-skipping” technology E-mu used to change pitch, which was very different from other pitch transposition schemes of that time; no current plug-in or processor emulates this effect.

Interestingly, the other huge kingpin of hip-hop, Roger Linn’s MPC60, also featured 12-bit resolution, although the sampling rate was bumped up to 40kHz (its predecessor, the Linn9000, featured 8-bit technology).

And let’s also give a nod to the Roland TR-808, which like the TB-303, was



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another product that ended up getting used for purposes other than its original intention. It's pretty easy to get an 808 sound; just about every sampler has a set of 808 samples, and ReBirth (see above) includes a model of it. But what made the 808 special was trimpots you could adjust by taking the cover off. Much of the 808's "hum drum" sound was created by upping the kick drum resonance to the point where — well, let's just say that if you're at the light next to a car and all you hear is a low sine wave rumble, odds are that's from an 808 kick drum set for the maximum possible resonance.

STYLE: PSYCHEDELIC ROCK
GEAR: "BACKWARDS" ANALOG TAPE



Why: Backward tape effects weren't new in the '60s — they were a staple of *musique concrète* — but as bongos lit up all over the world, doing things like reversing guitar solos, vocals, and other sounds fulfilled the desire for "trippy" sounds. Whenever a band these days wants to either make fun of the '60s or pay tribute to it, backward tape effects are sure to be part of the mix.

Copping that style today: If you still have an analog multitrack, it's easy: Flip the reels over so they run in reverse, do your overdub, then re-flip. But you probably don't have an analog multitrack, and backward effects can't really be done in real time. So take your DAW, and bounce a quick premix to one of the DAW tracks. Use DSP to reverse the track (most DAWs can reverse a

AND WHAT ABOUT DRUMS?

by Dendy Jarrett

There is currently no particular defining element that relates particular drums to particular playing styles (aside from the obvious, such as timbales and salsa), as drum companies are pressed hard to capture any part of the market. However, that has not always been the case. Studio great Hal Blaine had a specific niche recording AM radio hits, and is one of the most recorded drummers in history. He became known for taking the bottom heads off of double-headed toms to get a real boxy sound (this really defined AM hits regarding drum sounds).

Around 1975, his sound became so popular that Ludwig and Slingerland both introduced single-headed drums that they dubbed Concert Toms and/or Melodic Toms. This trend lasted until about 1979/1980, when double-headed toms came back into vogue.

Another trend that really defines drumming styles is "power toms." These drums (also called square toms, as their head diameter and depth were usually the same) became the defining element of "power rock" and "heavy rock" in the 1980s — "more is more" was the feeling. Double bass drum kits also defined this era and style of music, but then again, renegade players like Louis Bellson had been using double bass drums since the late 1950s.

And of course, who can forget the Sydrums electronic drums era . . . on second thought, let's forget it! Sydrums and Synare were two of the first, but everyone remembers (and most will swear at the mention of) Simmons drums. These electronic drums, with their "dwee — doo — doo" type of sound, set the tone not just for disco, but for early '80s pop/punk/rock as well.

Thanks much to the "article research online posse": Lee Flier, Phil O'Keefe, Lee Knight, Dean Massalsky, Paul Hoffman, Bill Leigh, Ted Hoffman, Jason Zotos, and David Charles.

track; if not, import the premix into a digital audio editor, reverse, then re-import back into your DAW). Now play your part along with the reversed premix. When you're done, reverse the overdub and, if necessary, slide it to fit in best with the song.

The only realtime option that comes close is that some delay lines can buffer your sound and spit it out in reverse (for example, the Psychedelay module in Guitar Rig does this). However, there will always be a delay caused by filling up the buffer, so unless timing isn't crucial, the off-line DSP reversal route rules.

STYLE: ROCKABILLY, '50s ROCK, COUNTRY
GEAR: SLAPBACK ECHO

Why: In the '50s, multieffects didn't exist — but tape recorders did. And the easiest way to get an echo was to feed some signal into

a spare two-track, three-head tape recorder. You'd roll tape in record mode, the signal would get recorded at the record head, and play back from the play head. But the play head was physically a few inches from the record head, so it would play back later — instant delay. If you mixed this in with the main signal, you'd have a quickie slapback echo.

Adventurous engineers sometimes took this a step further and created a feedback path, so the signal from the playback head would recirculate back to the record head, and create another echo. With enough feedback, you

could get multiple echoes — and with even more feedback, there would be weird sci-fi sounds generally used in movies to signal the arrival of alien invaders.

You didn't have much choice of delay times; typically the tape speed was set to 15ips, although



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sometimes 75ips would be used for slower echoes, or 30ips for faster ones. The delay time was typically in the 50–70ms range or the 100–140ms range for slower tape speeds.

Copping that style today: Of course, you can insert a two-track/three-head analog recorder in your mixer's inserts, and do things the old school way. Don't have a tape recorder? Well, don't think you can just set up a digital delay with the right delay time and be home free. We're talking *analog tape* here; one option is the Roland RE-201 Space Echo, which uses actual tape and can be found second hand without too much difficulty. If you want to use an effects box, then all the elements of trying to create an analog tape sound rear their oxide-addled heads: subtle distortion, a more muffled sound with subsequent repeats, and the like. Many delay boxes include a high frequency rolloff control to reduce highs, particularly in the feedback path that creates multiple echoes; trust me — you want this switch turned on.



STYLE: NEW AGE, '80S POP
GEAR: YAMAHA DX7 SYNTHESIZER
(AND OTHER FM SYNTHS)



Why: Analog synths ruled — until Yamaha's DX7 became the first hugely successful digital synth. It was under \$2K, had velocity, lots of voices, and a unique, clear sound that analog just couldn't do. But it was also a bear to program, so musicians kept relying on the same factory presets: the complex electric piano sound, the wimpy sorta brass sound, the killer bass line, and others. These became so overused that Congress passed a law levying a \$1,000 fine on anyone using the ersatz-Rhodes preset in New Age music. Well not really, but it just goes to show how easily overexposure

can turn a lovely sound into the Kenny G of the synth world.

Copping that style today: Yamaha hasn't forgotten what put their digital keys on the map; if you have a Yamaha S80 or Motif series synth, you can expand it with the PLG150DX FM synthesis plug-in board. Or look around for the DX200 (released in 2001) or the classic TX802 FM synth. In software-land, Native Instruments FM7 is like a DX7 that went on to graduate school.

Don't have a tape recorder? Well, don't think you can just set up a digital delay with the right delay time and be home free.

But truthfully, certain DX7 patches have become so universal you'll find some of the faves in virtually all sample-playback synthesizers and samplers — particularly that love/hate electric piano.

STYLE: PROGRESSIVE ROCK
GEAR: MELLOTRON

Why: The Mellotron was basically a tape-based sampler that played *big* sounds: choirs, strings, flutes, and so on. And Prog Rock acts liked big sounds, so they liked Mellotrons; who can forget those pitch-bent strings in the Moody Blues' tunes? Well, probably a lot of roadies would like to forget it: The Mellotron was heavy and difficult to maintain. But groups from the Beatles to Yes couldn't live without it.

Copping that style today: The Mellotron Mk VI is an actual production Mellotron; for more info check out mellotron.com, which also offers sample CDs, spare

parts, and more for older Mellotrons. Speaking of samples CDs, check out Ilio's *Legendary M400*; for virtual instruments, GMedia's *M-Tron* (distributed by M-Audio) is the way to go.

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STYLE: PRETTY MUCH ANYTHING GEAR: MINIMOOG

Why: The Minimoog was the “breakthrough” synthesizer that brought synthesis to the masses. The Moog Modular was too big and expensive, Buchla’s synths weren’t mainstream enough for pop, and the dawn of inexpensive digital technology was still years away.

What made the Minimoog unique was its Zen-like simplicity compared to other electronic instruments of the time, and its chameleon-like abilities to fit in anywhere — from Emerson, Lake, and Palmer’s bombastic progressive rock to the Mahavishnu Orchestra’s fiery fusion to thundering techno bass lines to rock, new wave, pop, jazz — you name it. The Minimoog was an instrument that could go from delicate subtlety to in-your-face aggression. Even more remarkably, it had no memory — you had to dial in the sounds you wanted from scratch — and only one voice.



Copping that style today: Minimoogs are rare, although Moog Music’s Voyager is basically a 21st century version of the Minimoog. Fortunately, despite Bob Moog’s recent death, the company has said it’ll continue producing his instruments. But the Minimoog is also the most emulated vintage synth in history.

Creamware, Arturia, Steinberg, GForce, and many others have tried to capture the Holy Grail in a plug-in, and while nailing the real Mini sound is tough, they do a good job. I’m particularly fond of Creamware’s Minimax, which is available as a plug-in for their SCOPE systems, as well as a hardware tone module. **EQ**

OTHER DEFINING MOMENTS IN STYLE HISTORY

'80s Synth Pop: LinnDrum. It was the first, but not the last, time that Roger Linn changed the musical landscape. When Human League went onstage without a drummer and their beats came out of a box, the die was cast for a new kind of stage act.

Country: Fender Telecaster. Okay, it’s great for rock too; just ask Jimmy Page or Bruce Springsteen. But it’s hard to imagine country without the venerable Tele.

Hard Rock: Gibson Les Paul. It weighs a lot, and sustains like a mother. The Les Paul is another one of those incredibly versatile instruments that found multiple niches. But rock is the one for which it is most famous.

TV commercials: Propellerhead Reason, Sony (née Sonic Foundry) Acid. And how many commercials have you heard based on Reason’s ReDrum, Subtractor, and Matrix step sequencer, or the content that came with Acid 1.0?

Jazz/R&B: Fender Rhodes piano. This smooth, smoky piano can coo and bark, sometimes in the same song.

Old School R&B: Fender P-Bass. And of course, with flat wound strings. James Jamerson, anyone?

Folk/folk rock: 12-string guitar. Meaning Martin for folk, Rickenbacker 360 for folk rock. They’re still hard to keep in tune, though. . . .

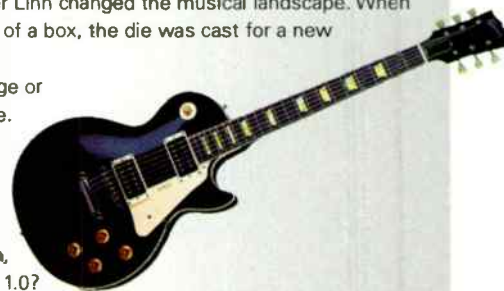
Garage Rock: The Farfisa and Vox Continental organs. From ? and the Mysterians to the '80s “new wave” sound of Elvis Costello and Blondie, the wheezy, reedy sound of the combo organ has become synonymous with Cheapo Keyboard Sounds.



Science Fiction Soundtracks: The Theremin. No self-respecting galactic invader would appear without the tremulous strains of the Theremin playing eerily in the background.

Industrial: Distorted voice. Yup, run those vocals through distortion for some real angst.

Funk: Hohner Clavinet. Both with and without wah-wah, the clav is one of the funkier sounding instruments on the planet.



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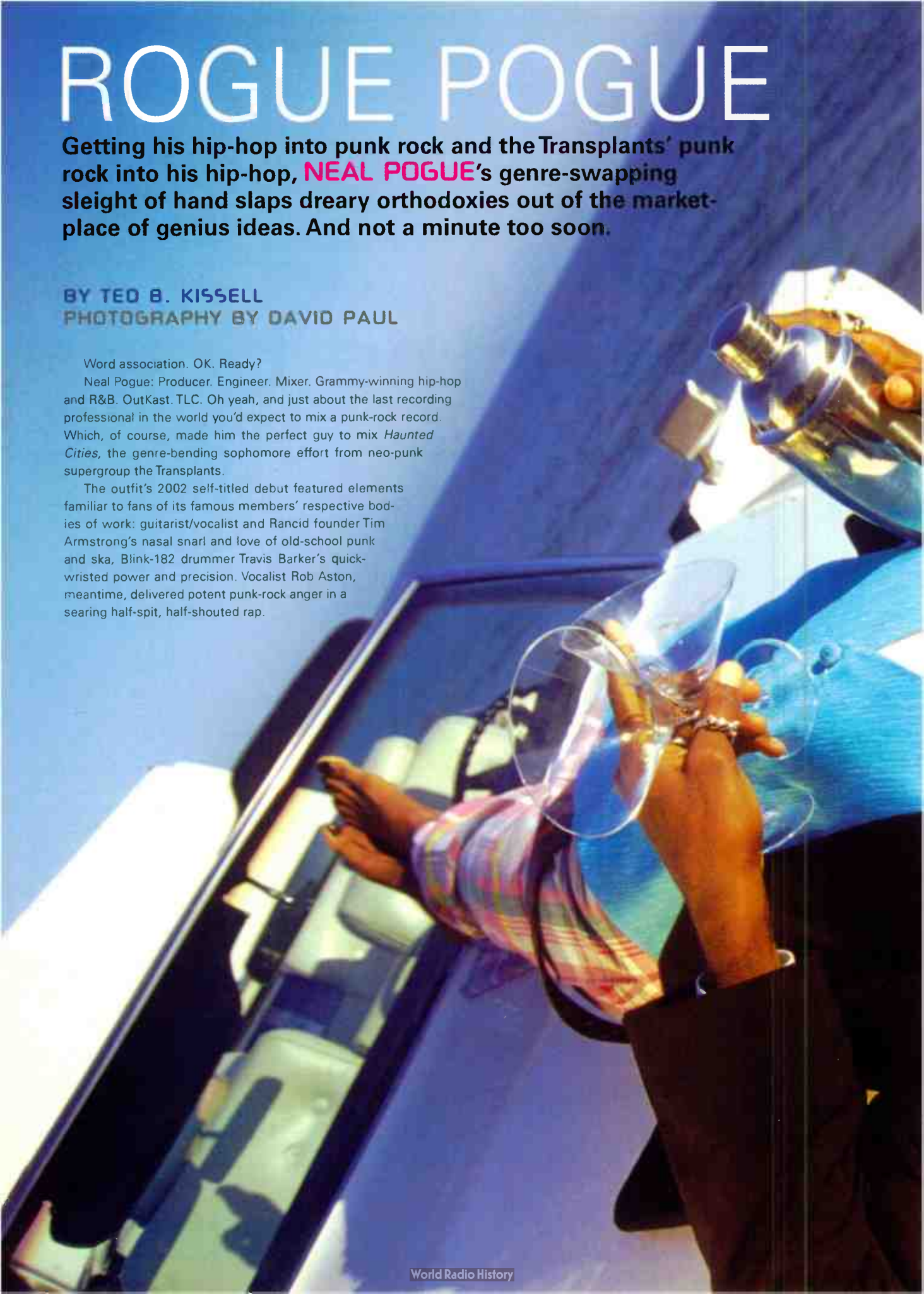
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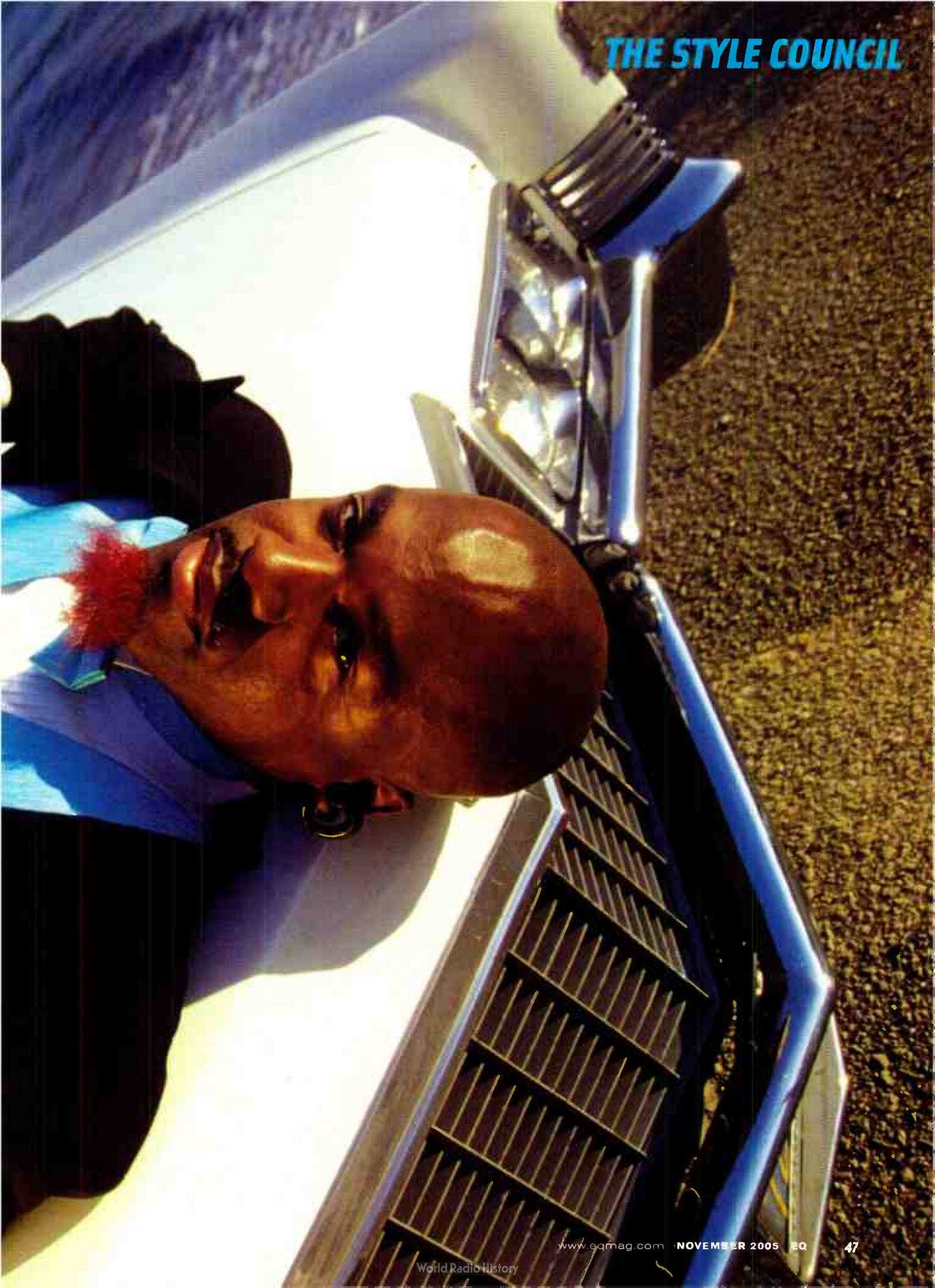
PHOTOGRAPHY BY DAVID PAUL

Word association. OK. Ready?

Neal Pogue: Producer. Engineer. Mixer. Grammy-winning hip-hop and R&B. OutKast. TLC. Oh yeah, and just about the last recording professional in the world you'd expect to mix a punk-rock record. Which, of course, made him the perfect guy to mix *Haunted Cities*, the genre-bending sophomore effort from neo-punk supergroup the Transplants.

The outfit's 2002 self-titled debut featured elements familiar to fans of its famous members' respective bodies of work: guitarist/vocalist and Rancid founder Tim Armstrong's nasal snarl and love of old-school punk and ska, Blink-182 drummer Travis Barker's quick-wristed power and precision. Vocalist Rob Aston, meantime, delivered potent punk-rock anger in a searing half-spit, half-shouted rap.





ROGUE POGUE

For the 2005 *Transplants* release, the job of capturing and tracking these disparate parts (and more) once again fell to producer/engineer Dave Carlock, whose other credits range from Blink-182 and Bad Religion to Eric Clapton and Dolly Parton. Between himself and Armstrong, who executive produced *Haunted Cities*, he knew that there wouldn't be any problem making this album punk enough.

But the *Transplants* are about a lot more than Doc Martens and liberty spikes. Having worked with Pogue on a couple of projects for an artist called Cherokee, Carlock knew that when it came to blending the *Transplants'* sonic smorgasbord into a cohesive whole, Pogue was the best mixer for the task. After Barker and Armstrong spotted Pogue in a studio when they were there on unrelated projects, the *Transplants* guys made sure that they brought Pogue on board.

"It was surprising that Tim was a fan of mine," Pogue says. "It's sometimes weird knowing that people in certain genres are really listening to what you're doing. It tells you that we all listen to each other's music.

"Some people want to separate us as far as genres, but now all of us are out of the closet," he adds. "Before, when I was coming up, if you listened to hip-hop, you didn't admit to listening to rock. And if you listened to rock music, you didn't admit that you listened to hip-hop or per se, 'black music.' Now, kids listen to everything."

For Carlock, the choice was easy. "Neal is an excellent mixer, and he brought a very good outside perspective, which is lacking when you're doing everything yourself," Carlock says. "He wasn't married to all of these songs for all of these months. I knew he would bring that real deep bass and ensure that what was there wouldn't come off too light."

So, after the *Transplants'* people talked to Pogue's people, this

odd coupling came to be — with impressive results. In a blur of mouse clicks and knob twiddles in March, April, and May of 2005, Pogue put a bass-thumping hip-hop polish on the *Transplants* mosaic of sparkly oi, dub, and salsa nuggets.

The final product, Pogue says, "is heavy, bottom-heavy, but at the same time, you have the guitar, top-heavy too. I wanted to mix both worlds, keeping that [punk] edge, while keeping the hip-hop bottom, making sure the drums are in your face."

Pogue adds that he really didn't concern himself too much with what was happening technically in the tracking, preferring just to listen to what he got and let his ears and instincts be his guide. "They came to me for a certain reason: to add that hip-hop edge," he says. "I guess I'm pretty much known as the *OutKast* guy, you know what I mean? I've done other things, but it's OK. Give 'em what they came to me for."

Did they get it? Damn straight. "Neal is a real bad man," Barker declares. "The record is just *big*, it hits you *right* in your face — and at the same time, you can hear every little thing crystal-clear."

ENGINEER SURVIVALISM

The tracking was up to Carlock, who also played keyboards, bass, and sundry other instruments on the record. The whole idea of the *Transplants*, and that first album, he says, was a "total experiment," growing out of Armstrong first getting his own Pro Tools rig, and beginning to collaborate with his pal Aston. Pretty much all of the debut was recorded on the Pro Tools setup Armstrong had in his house.

For the follow-up, Carlock says, "We had more of a budget." The recording schedule included stops not only in Armstrong's "basement" — notably for the four tracks recorded for Aston's Warner Bros. project that fell through — but at such locales as Conway Studios, the Steakhouse, Carlock's own 27 Space,



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Ameraycan Studios, and an "undisclosed recording location."

Because of Armstrong's prolific songwriting (of more than 40 songs written for *Haunted Cities*, only 12 made the album) and the band's improvisational nature, Carlock says he didn't have a lot of time to meticulously plan out any sort of elaborate mic or effects setups at most of these sessions.

"Transplants is not an exercise in engineer thinking, it's an exercise in engineer survival," he says with a laugh.

When drums were involved, as in the Conway sessions, Carlock used his typical drum setup. Inside-out kick mic, and then either a far kick mic in the "Andy Johns, Led Zeppelin technique," 10 feet back from the kick ("to give it a room-ish perspective," he says), or what he did in this case: using a hotwired Yamaha NS10 woofer as a mic element about two feet away from the kick. "You can capture really low things," Carlock notes. "It's a tighter sound, and Tim prefers tight rather than garagey. You can blend it in with a little extra 'whoomf.'"

He did top and bottom snare, all tops for the toms and cymbals. "I'll do an individual mic on a ride, and usually end up not using it, but sometimes I'll blend it in on low, intimate moments," he says.

Though Carlock tries to be adaptable when it comes to mics — "I usually go more with mic types, rather than specific mics," he says — he does have a personal collection of favorites, such as the discontinued Electro-Voice ND868 inside kick mic that he takes with him wherever he goes.

For the Transplants, he used 421s and RE 20s — "Nothing too rocket-science," he says. "I had 421s for the toms, an SM57 for the snare top, and an SM7 for the bottom. Sometimes, for a more top-endy sound, I use a pencil-type condenser mic, and then blend in the bottom mic to get more top end from the snares." For chinas, he likes ribbon mics or a Sennheiser 409. "To take the edge off the bite of the china," he says.

Armstrong has a secret, favorite vocal mic that Carlock isn't comfortable revealing to the public. "It is a condenser mic, I'll say that much," he teases. "It sounds great with his voice." For everybody else's vocals, including the various guest rappers, he used the Telefunken U47 from his home studio. Only on "Apocalypse Now" did Armstrong use the Telefunken — with some sick distortion,

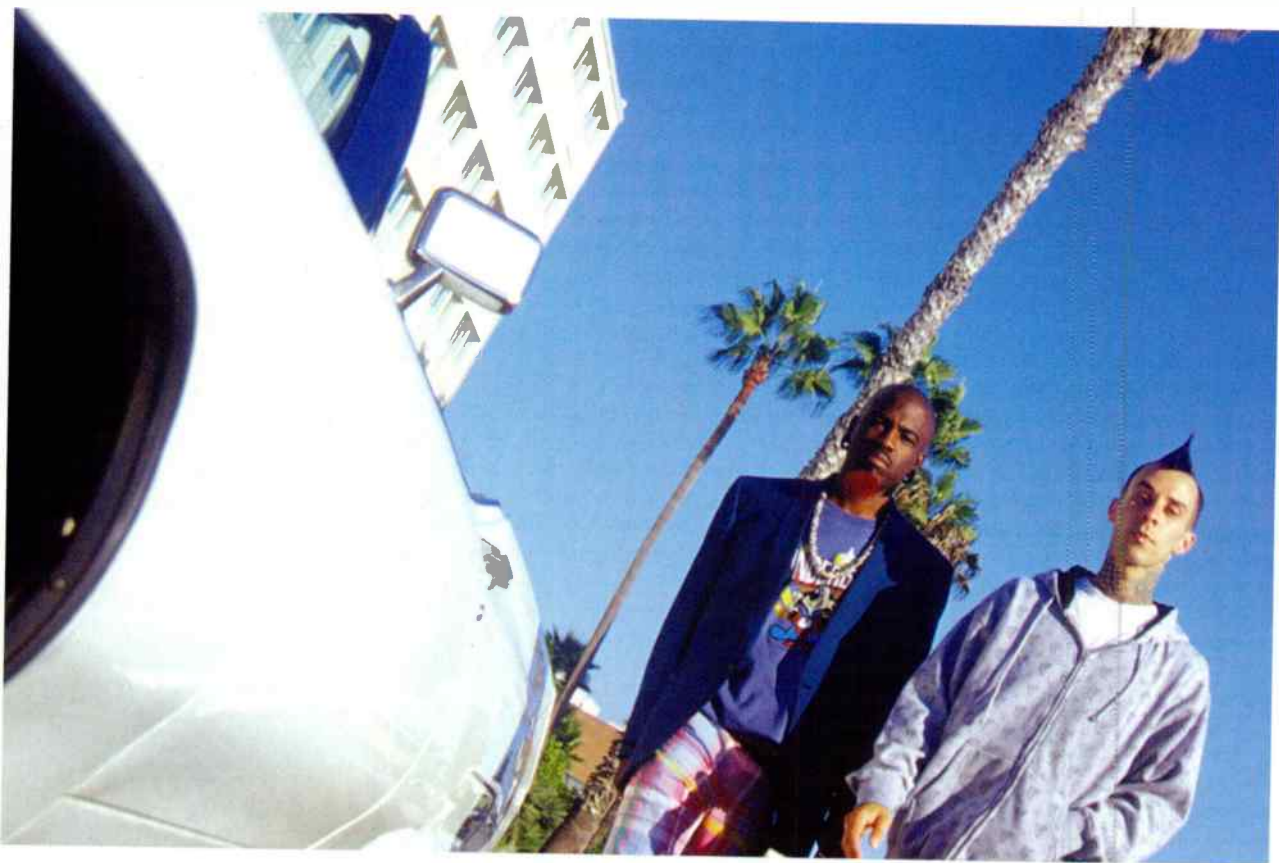
"What we did was overdrive the [Requisite Audio] preamp, using what they call the Beatles' 'Revolution' effect," he explains. "There just isn't time to say, 'Oh, let me go get my favorite distortion pedal.'"

Armstrong plays two guitars on *Haunted Cities*: a hollow-body Gretsch — "a rich tone, a great punk-rock guitar," Carlock says — and a Schechter SG-type solid-body. Most of the guitar tracking was done with a Standel Switchmaster 30 head — "all-tube, Class A, a wonderful handcrafted guitar head," he purrs. That ran through a couple of 2 x 12 cabs, one with a vintage 30 and a greenback, the other with two Alnico Blue speakers. "That's very similar to what you'd find in an old Vox cab," he says. "A classic tone."

For his main vocal and instrument mic chain, he used Requisite Audio Y7s and a Requisite stereo tube preamp running into a Requisite L1 Tube Limiter.

For the basses, Rancid's Matt Freeman came in and laid down most of the tracks with his Fender Jazz. The amps? "Ampeg, Ampeg, Ampeg," Carlock chortles, "with big SVT cabinets." He adds that he recorded three bass tracks: DI, a straight amp track, and a fuzz track.

He also had some fun with Pro Tools during the tracking, and not just with creating loops. "For breaks and intros, like the intro for 'Apocalypse Now,' I do the sound combining I do with Roland modules," he says. "Sometimes I'll create soundscapes with Pro Tools, and manipulate and change things around, as if it were a synthesizer. In that break in 'Gangsters & Thugs,' I was able to





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manipulate the drum stuff in a dub way, with lots of delays."

TURN IT 'TIL YOU HEAR IT

For all the Pro Tools goodness involved, Carlock's professionalism is pure old-school: "I always deliver a MIX Prepped Master to mixers to allow them a clear starting point to begin to work their magic," he says. "It starts things off on the right foot. These days, you're seeing a lot of craziness when people deliver a session to somebody. There isn't a lot of engineering discipline out there. It's like, 'OK, here's my 172 tracks!' That's like bringing a bag of receipts to your accountant and saying, 'OK, do my taxes!'"

Even so, when the mixing process began, Pogue guesses the masters were only three-quarters finished. "It was pretty much like General Motors, you know: They'd finish the tracking, come over here and give me a Pro Tools file, and that's how we would do it."

Carlock says Pogue was often too efficient with the 80-input SSL J9000 he used to mix the thing at Hollywood's Paramount Studios. "I thought I was ahead for a while there," Carlock says, "then he'd get caught up, and he'd call me up, taunting me, like, 'Hey man, I'm almost done.' And I'd be like, 'You need to take Saturday off!'"

That's not to say that Pogue didn't face any challenges along the way. "They had a live set of Travis, then they had an electronic



"Transplants is not an exercise in engineer thinking, it's an exercise in engineer survival."

—Producer Dave Carlock

Photo by Arden Ash

set, too — drum machine, loops, what have you," he says. "Loops on top of live drums will sound like a lot of clutter if you're not careful." Pogue's goal: "Making sure that everything is right there in your face."

Barker notes that pretty much every song on *Haunted Cities* has a Pro Tools-captured drum loop running through it, either from his real kit or VDrums, with a full, live drum set playing over the top of it. "To mix that together, and make it sound like one kit, that's crazy," Barker gushes. "Everything I wanted to come across on this record came across."

Though he was happy with the tracks, not everything sounded just so. "Tim's setup is not perfect, so most of the stuff sounded clanky," Pogue says. "A lot of high-end, a lot of high mids, but it was kind of cool for that certain song. That's what makes songs great.



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ROGUE POGUE

That one sound. 'How'd you get that sound?' Sometimes you gotta fake it: 'Oh yeah, we worked that sound,'" he says with a laugh. "'Some things are just magic, man!'"

To make everything come out right, Pogue just followed his ears. "You can't really hone in on a frequency. You just have to turn it 'til you hear it, rather than say, 'Oh, this right here's 8k, and this has gotta be 10k! You can't approach it like that. Especially with the guitars, because some things are gonna mask other things. It's all about balance."

"Music to me is in colors," Pogue says. On his mixing-board tape, he uses different colored pens for different instruments: "I have my drums in black, I have my bass in blue, my keyboards in green, my guitars in orange, my vocals in red, my background vocals

in purple. That's how I see things, in colors. So I approach every song like a painting, and that's how I paint, just how I hear it."

He doesn't normally go in for tons of effects to shade those colors. "I don't just throw an effect on to throw an effect on. I use effects if it's needed, if it's something that's going to enhance the song."

Example: On 'Gangsters and Thugs,' the last word of the chorus, "Some of my friends sell drugs," soars off into a sweeping breakdown, courtesy of Pogue's Yamaha SPX 990 delay set to repeat "drugs-drugs-drugs" on a quarter-note delay.

"If I put something in your face like that, I want you to visualize it," he says. "With that one word, I want you to feel high. My mixes can be dry until that one moment where I think that something has to come out at you."

His repertoire of effects — "my trusted friends" — includes a lot of "the older gear," like the PCM 42 Lexicon for delays. "I'm a Yamaha fan," he says. "I love the Yamaha SPX II, the Eventide DSP 4000, the DSP Real Chorus for spatial things. I'm into the Eventide D3000. I'm into my micro pitch shift for vocals. Like, I might pitch the left side down a little bit, and pitch my right side up a little bit to offset the pitch, which widens the vocal once I put it on there. I use very light compression. I like the old units like the DVX 160, the VU version, and the DVX 900 series de-essers.

"I'm not into complicated gear," he stresses. "I like to keep things simple so I can get to them quickly and get back to mixing."

The SSL J9000 board Pogue used helped him get into that in-the-moment Transplants vibe. "I can automate EQ and inserts, I can automate my sends, do everything right in front of me," he says. "If you want to do a certain filter, sometimes you don't want to go to an outboard EQ or some Pro Tools plug-in — you can do it right there on the board."

When it came to the *Haunted Cities* mix, Pogue says it wasn't just about the tech stuff. "I fell in love with it," he says of the record. "To me it was just the energy. With Travis playing, how they mixed the samples in with the live drums, and Rob's voice. It made a great mixture. It felt fresh, it felt new."

Carlock, for his part, is thrilled with the way "the OutKast guy" made the record sound. "Neal really got some of the tracks to open up," he says. "We gave him a bunch of headaches, but he really gave us his best."

"It's like, if you're painting a car, then the mix is the clear-coat," says Barker, who clearly needs to lay off the *Pimp My Ride* reruns. "We gave it to Neal with a matte finish, and he made it like candy. He brought it even more to life." EQ

Ted B. Kissell is a writer and editor in Los Angeles.

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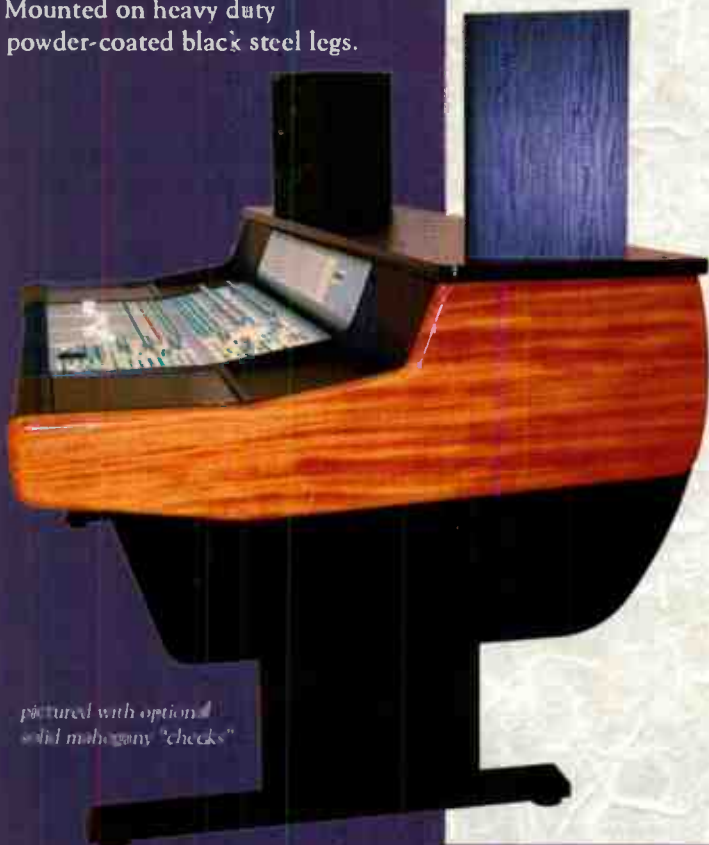
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IT'S FREEDOM ROCK. TURN IT UP!

Soundelux e49 and Drawmer 1968 Mercenary Edition

1 Rock Band ISO Classic Sound Seeks Chain That Delivers Same

by Lee Flier

I play in and record an indie rock band, and when we started our second CD in my basement project studio, we needed to make some gear choices that'd help capture our *vintage-rock energy*. So when I got wind that the Soundelux e49 large diaphragm tube mic and the Drawmer 1968 Mercenary Edition dual-channel compressor were up for grabs, vintage gear snob that I am, I jumped at the chance to put this chain through the ringer.

THE PLAYERS . . .

Soundelux has built its reputation on replicating many of the classic studio mics that are no longer in production, as well as having developed an impressive line of unique mics of their own. The e49 falls into the former category, being ostensibly a reproduction of the venerated Neumann M49.

So does the e49 really sound like the M49?

Well, having used both mics I'd say: not entirely.

Will you care?

Probably not.

This mic has a character of its own that just screams "classic tube mic," and presumably that's what you're looking for if this mic

interests you. And to that end? It delivers. With none of the hyped high mids or "presence bump" of many of today's mics, this mic is probably NOT the best mic for modern dance-pop vocals. Think rich, creamy, full-throated and meaty. In many ways it has the sonic character of a ribbon mic, yet with all the openness and extended top you'd expect from a high quality large diaphragm.

Drawmer, meanwhile, has long been associated with quality compressors. According to Fletcher at Mercenary Audio, who was a design consultant on the 1968, it's based on Drawmer's 1969 circuitry (on which he also consulted) and is sonically nearly identical. However, the mic pres were not included, which enables the 1968 to fit into a rack space. Space saving was a primary concern for Fletcher, who like many engineers these days, carries his own mobile rig to lots of different locales. This makes shipping charges a *big* concern for this vagabond class of engineers. My own band also sometimes records at remote locations if we find a room that has a sonic character we like — so the compactness of the 1968 appealed to me, too.

. . . IN ACTION

We cut right to the chase in testing this

chain: recording vocal tracks. I often like to compress vocals quite a bit going into an A/D converter, but I don't like to hear the compression. If I want "character," I usually prefer to add it in the mix. Give me transparent compression going in, please, even if there's a lot of gain reduction.

Our singer is a low tenor and his voice can sound reedy if he's recorded with a mic that has too much high-end presence. I was hoping the e49 would bring out some sort of naturally pleasing resonance in his voice. We weren't disappointed. The sound was open, intimate, and detailed at all frequencies, the top end very natural sounding without being hyped. And I was astonished at how much compression I could apply with the 1968 without being able to hear it at all. So far, so good. (Aggressive rock singers should be very pleased with this chain, but it worked equally well for mellower music and female vocals.)

The one caveat when using this mic at close range for vocals is that the grille, like the original M49, is very open. The capsule being as exposed as it is can make it very prone to sibilance. A pop screen is a *must* at close range, and even then, I had to apply a de-esser in the mix to many of the





vocal tracks. At a distance, though, this disadvantage turns into an advantage, as the more exposed diaphragm can capture more detail from distant sources, as we were soon to find out.

Drum tracks were next. We had a need for a decidedly Bonham-esque sound on a couple of tunes, which meant recording in a reflective room and compressing the crap out of the room mics. So we set up the drums in an untreated cinder block garage and moved the mobile rack out there.

The 1968 features a unique "BIG" switch, which basically applies less gain reduction to the fundamental low frequencies. We found this extremely useful for the drum tracks, as extreme amounts of compression ordinarily tend to reduce the low end and also make the compressor work harder overall. This can make tracks with a lot of low-end content sound small and boxy. Hit the BIG switch and that all goes away. This switch is also featured in the Drawmer 1969, but it can only be applied to both channels, or none at all. With the 1968, you can use it independently on either channel. This was very handy as we found that the BIG switch helped immensely when applied to the e49 as "near room" or "front of kick" mic. But with another microphone placed farther out in the room, it was better to apply the compression to all frequencies.

In any case, for it being so transparent on the vocal tracks, the Drawmer gave us all the "instant attitude" we needed for the

drums. You want that "When the Levee Breaks" drum sound? If you can't get it with this chain, well, I can't help it if your drummer's not Bonham. The e49 also performed wonderfully in this application, capturing the thick, aggressive tone of the drums across the whole frequency spectrum. The e49 also has dual shock mounting — internal, as well as external — which makes it less prone to picking up unwanted vibrations from a hard hitting drummer.

And we even used the Drawmer in a more conventional fashion on kick and snare too, on other tracks where such extreme compression was not called for. It delivered in that context as well. The 1968 definitely lives up to its billing as a versatile chameleon, transparent enough to strap across a stereo mix at one moment, aggressive enough to melt your face off the next.

From there, we were gaining enough confidence in the e49 to start trying it out on lots of other instruments. On a Leslie cabinet it was astonishing. An organ through a

Leslie is often a difficult instrument to record and capture accurately, often requiring at least two mics, but the e49 alone had no difficulty at all — we just stuck it about halfway up the cabinet about five feet away in a sort of halfway point between cardioid and omni (the e49 has a fully sweepable pickup pattern), and the character of the Leslie came through in all its richness. Instant goosebumps. We also loved the e49 on a horn section, even though we had access to other mics more typically used for horns. Djembe and other percussion were fantastic with this mic too. In fact, our standard miking technique for this record quickly became "throw the e49 in front of it and hit Record."

Surprisingly, the only application for the e49 that I wasn't wild about was electric guitar. It wasn't bad when used as a second mic, placed at a distance from the amp in conjunction with a close mic. But there are still other mics I'd prefer for this application. It's quite possible that it would do well on modern hi-gain amps, which I didn't try. But

QUICK PICK

NEUMANN BCM 705

Awesome. This mic is really, really cool. The first dynamic mic by Neumann. Weird green badge and all! I couldn't wait to get into this thing. First thing I tried it on was some rock bass, in front of a custom made 1x15" cabinet, with a weird little 35-watt tube head (think B-15, cranked hard). Awesome. The mic TOTALLY gave me what I was looking for, wide open top, tons of growl, enough low end to complement the DI and stay barking through the federal AM864/U I was using for some compression. Really great tone. Has that classic great mic attribute: present, without too much high end. My favorite.

Next thing I put this mic in front of was a Gibson Goldtone 1X12" combo guitar amp. Again: awesome open top, not TOO much top though, great mid/low mid detail, appropriate low end. I am really loving this mic now. I then kept it on the stand and threw it in front of a Leslie 147 (near the bottom) with some other mics for the top rotor. After backing this mic up about 3 feet from the bottom rotor, the full, roaring, Deep Purple-ish Hammond part really came to life. Great transient detail for the bass, guitar, and organ. Still awesome. I wound up really digging this mic in front of any electric instrument I threw at it. This is a dynamic mic fully worthy of the Neumann badge. I am not letting this mic go out the door. A great one, my favorite new Neumann in years (I have used or own all the old ones at this point). Worth every penny. This mic would be an amazing step up from old stand-bys like the RE-20, or SM7 in many cases. I have a bunch of mic choices for the instruments above, and I can see this mic working with a variety of styles, on a variety of sources. That, in my opinion, is another true mark of a classic microphone. — Joel Hamilton



for some reason, it didn't quite do it for me on my vintage Fenders and Ampegs. Acoustic guitars, on the other hand, sounded great with the e49, although I never did manage to dial in a compression setting that I liked on acoustic using the Drawmer; I preferred recording with no compression.

THE RESULT

Bottom line: If it's classic sounds you're after, it's hard to do better than this chain. You probably wouldn't want the e49 to be the only large diaphragm condenser in your locker, as it definitely has a sonic signature that differs from many others in its class.

And as for the 1968, you can vary the amount of "character" as much as you like: It's a true workhorse compressor in a small space. This chain helped us capture the vibe of our music without ever getting in the way, and that's about all you can ask of any audio gear. **EQ**

WANT A FREE DUAL MONITOR SETUP?

There's a slight catch, but this utility program is amazing

by Craig Anderton

With today's programs, a dual monitor setup is almost a necessity — if you've used a dual monitor setup, you know how hard it is to be stuck with a single screen.

But not everyone has the cash, or the space, for two monitors. And if you have a laptop, carrying around an external monitor sort of defeats the advantage of a portable computer.

Fortunately, there's a really clever solution for Windows called "DoubleDesktop" (from Fat Free Software, fatfreesoft.com). It's even free for non-commercial use with

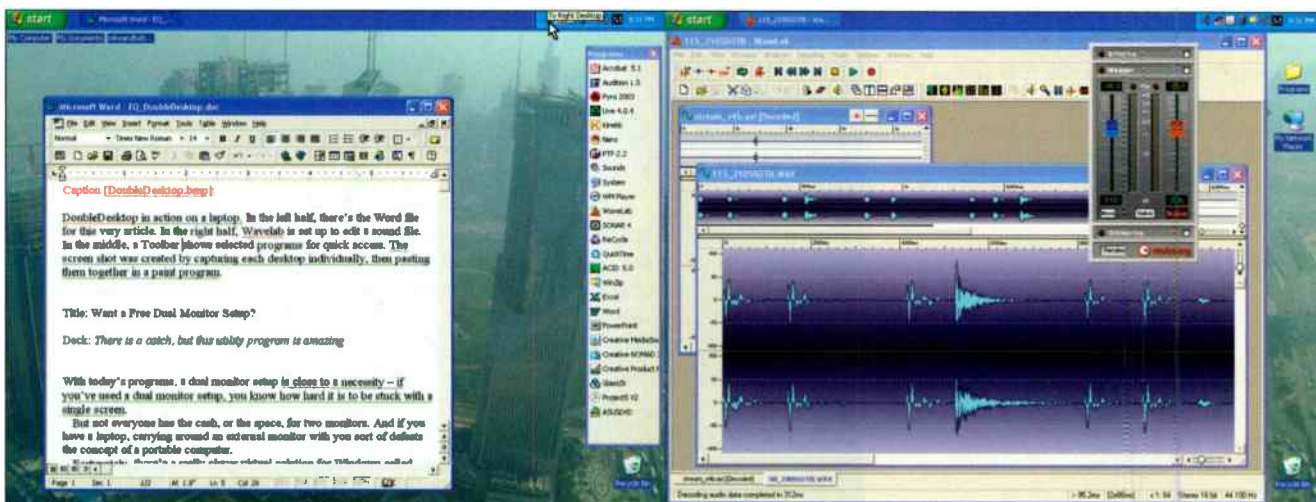
home computers. (If you do use it in your business, do the right thing and pay the modest license fee.) It works great with Windows XP, 2K and NT; the company claims it works with Windows 98, but I've had mixed results with 98SE and don't recommend it. Then again, if you're using Windows 98SE for serious music work, we need to have a talk. . . .

WHAT IT DOES

DoubleDesktop basically creates another desktop and places it side by side with your

standard one; you switch between the two halves of the "mondo virtual desktop" with a user-definable hot key, or by clicking on an arrow in the taskbar. A typical use would be to show a DAW's virtual mixer in one half, and the track view in the other half. Or, you can stick your virtual instruments in one half, and jump over to them when you want to tweak 'em.

The one thing you can't do is stretch a single window to cover the doubled desktop width. You can move a window anywhere you want in your new virtual desktop, but a window's



DoubleDesktop in action on a laptop. In the left half, there's the Word file for this very article. In the right half, Wavelab is set up to edit a sound file. In the middle, a Toolbar shows selected programs for quick access. The screen shot was created by capturing each desktop individually, then pasting them together in a paint program.

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maximum size will always be limited to the normal desktop size.

Another consideration is that if you have icons on your desktop, they'll appear in both halves (although toolbars and any other floating windows are associated with only one desktop). Actually, I think this is an advantage, because you can access your important shortcuts from either desktop. Furthermore, you can set the title and background color independently for the desktop icons in the two halves. So, it's easy to tell at a glance which desktop you're on just by looking at the desktop icons. And it's even easier if you choose the option to display a different wallpaper for the other desktop.

Note that the taskbar shows only those programs you can see on the current desktop.

However, if a window straddles the two desktops, both taskbars show the associated program's name.

IT GETS BETTER . . .

If you already have a dual monitor setup, you're probably thinking "okay, that's clever, but it doesn't mean anything to me." However, I've saved the best until last: With dual monitor setups, DoubleDesktop doubles the desktop on *each* monitor — you essentially have a *quad desktop display*. Is that way cool, or what? Yeah, it's cool.

For example, with Sonar 4, I usually have the track view in one monitor, the mixer in the other monitor, and the loop construction window stretched across both of them. But with DoubleDesktop, I stick all the soft synths and processor

plug-in interfaces in the other halves of the two desktops. In some ways, this is better than having four monitors because you don't have to keep swiveling your neck from side to side.

WHERE TO GET IT

Convinced?

Of course you are. Surf on over to fatfreesoft.com/2desk.php and download the program. Installation is simple, and you can enable/disable it at any time. To place a window in the other desktop, just drag it over partway, switch over to the other desktop, then drag the window the rest of the way and position it where you want it.

You gotta love computers. But you gotta love the brainiacs who came up with this kind of utility even more. **EQ**

QUICK PICK

LATCH LAKE MIC KING MIC STAND

(\$750, Xtra Boom sub arm \$100, latchlakemusic.com)

One of the most overlooked pieces of gear in our super studios of the future is the mic stand. Is it possible that there's no room for improvement for the lowly mic stand? Jeff Roberts of Latch Lake Music, while lifting a sagging piano mic off the strings, decided that there had to be a better way.

So he set out to design a better mic stand. One that would keep the mic where you positioned it without sagging. One that didn't take a lot of floor space. One that was heavier yet more compact. And one that would hold multiple mics securely. The result? The micKing mic stand. Perfect.

The first thing I noticed about it?

No thumbscrews. Using an ingenious locking Boom Clutch based on the disc brake concept, the boom arm holds heavy mics at long extensions. (Vertically, it adjusts from 4' to 10'4". The boom extends from 3.5' to 9.5'.) Each stand also uses seven Latch Lake Lever Locks to secure the extending three-piece vertical pole and three-piece boom arm. These both let me stabilize my adjustments and make them very quickly.

The base of the stand is a 29 lb. circular iron base designed so that multiple stands can interlock. Three micKing stands will fit in the same space as one folding tripod-base stand. And the base is designed to support the mic in a full 360° arc, not just over the legs. The Xtra Boom also lets you add extra sub-arms, 2' boom arms, to the main vertical or horizontal arms. I secured up to seven mics on one base this way. For miking drums or doing mic shootouts like we just did (*EQ*, September '05), this stand is a dream. Several sub-arms can be linked together to build Dr. Seuss-like creations for putting mics wherever you can imagine.

And making fewer compromises with mic positioning and keeping the mic where you put it is great. I mean you can put stereo mics on a piano or three mics on a singer with acoustic guitar and only use *one mic stand*. Though some may object to the price, it might just be worth it. — Lynn Fuston





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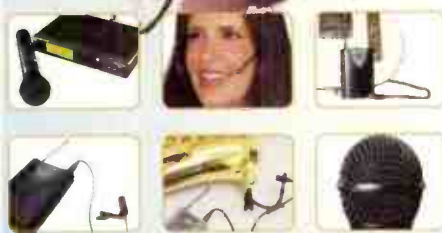
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WE GOT 'EM SURROUNDED

TOP 10 SURROUND SOUND PRODUCTION TRICKS

by Rich Tozzoli

It's been said about surround sound production that there are *no rules*. While that is basically true, there are a few fundamental tricks that can help take your mix to the next level. Whatever format and/or platform you choose to work with to get the job done, the principles, like the song, remain the same.

1 Think surround in pre-production:

Planning for a surround sound project is critical. First and foremost, make sure your client is ready for the extra time and budget needed. Try to get the best sounding room possible and check that the surround monitors work before you arrive.

2 You don't need multichannel mics to record surround:

Yes, higher quality mics are certainly better, but you can record with a bunch of SM-57s if you really need to. Try a quad array of decent omnis or cardioids around a drum kit, and pan each into the four corners of your mix. It'll sound like you're sitting on the kit.

3 Use the surround mics for stereo reverb:

Take those two rear surround mics behind the kit in the above example, and use them in your stereo mix. They can provide "real" reverb, and add a nice depth to your overall sound.

4 Center channel - Don't rely on it:

Some engineers don't use it at all. However, the consumer may feel cheated or that something

is wrong if they don't hear anything in the center channel. Try using divergence or Center % (for Pro Tools users), which will then spread the signal across adjacent channels. With a vocal, for example, it will be heard in the Center, Left, and Right Front channels. The amount in each is your choice, but I always check my mixes with the center channel muted to see if it'll remain punchy. You never know if that consumer at home — the listener we're ultimately mixing for — has that channel in the wrong place, or worse, not connected at all.

5 Use bass management:

Bass management on the consumer level allows those small satellite speakers to sound large — by routing the bass into the subwoofer where it can be reproduced properly. Usually in the 80-120Hz area (often selectable), the filter in the receiver cuts off any frequencies below that and sends the rest to the speakers. As surround producers, we should take this into consideration by checking our mixes as such. You can use hardware bass management systems that plug in before your studio monitors, or use software that works with your DAW — such as the Waves M360 Surround Manager. Whatever you choose, it's good to think like a consumer but mix like a professional.

6 Vocal delays in the surrounds:

Try taking a mono or stereo delay, placing it into the Left/Right Surrounds and sending some front positioned vocal to it. This will

help "pull" the vocal out of the front of the mix, creating additional depth and clarity. Try filtering the high frequencies in the delay to help reduce any sibilance and add warmth. Push the vocal delay send up to the point where it's audible, then back it down a pinch. When you mute the delay, you'll miss it — that means you've got it just right.

7 Use a piece of string to keep your speakers equal:

Good Surround Monitoring is critical and ideally the signal from all five (or more) speakers should arrive at the same time. While the angles and heights of the speakers may change with music or post-oriented mixing, the distance from you to the tweeter should remain the same.

8 Capture your finals at the highest resolution possible:

Whether the end product is DVD-Video, DVD-Audio, SACD, a video game or a TV broadcast, it's best to work with the highest resolution possible. Remember, it's easier to downconvert and lose a bit of fidelity than to upconvert, which can never sound better than the original source. Plan for the future now.

9 Prepare for the recall:

Recalls by the artist, producer and/or record company are a daily occurrence in the production world. With surround sound, things can get even more complicated. Whether you mix "in the box" or with a full-blown console, document your work thoroughly. The variables of a surround sound mix are enormous, from multichannel outboard gear to subwoofer crossover levels — so be prepared for that total recall when it happens, which it will.

10 Go for it:

Since there are "no rules," enjoy it. Take chances. Do something nobody has done before you. If it's wild enough, we'll all hear about it and you'll end up with a Grammy for Best Surround Mix. Hey, it could happen. EQ

Rich Tozzoli is the author of Pro Tools Surround Sound Mixing, Backbeat Books.

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OH YEAH

Make Mine a MindPrint DTC

by Tom Mallon-McCorgray



All of MindPrint's products are eye-candy, and the DTC — a dual-channel mic preamp, four-band equalizer, and compressor/limiter designed as both an

analog DAW front-end and as a standalone outboard unit — is no different. It's cosmetically beautiful — but there's more. Oooh, much, much more. I mean there's something medieval, even *ecclesiastic*, about it. The dried-blood red front panel and translucent, amber-colored switching. The small, round window etched with a leaded glass labyrinth design, edge-lit purplish-blue; the surrounding milled aluminum panel creates a *Cross Pattée* — it's a 21st century reliquary (but you see the soft glow of the two 12AX7 tubes instead of a saint's bone) From a sketch in Leonardo's notebook? Part of the 'Rambaldi' device? The control panel for an *Auto de Fe*? If the thing had been found in the Vatican basement I wouldn't be surprised. It's sensational looking.

Clever, arc-shaped metering circles the 'tube window' and takes a little getting used to — but seeing the level and gain reduction moving in opposite directions makes sense. It's quiet (there's no fan), and it runs warm (only slots on the rear panel). But not too warm. Three units high and about 22 cm. deep; at 6 kg. not heavy. On is down instead of up. You want to have it turned on. With even half of the switching in, it puts out more than enough light to scribble in a dark room. And, while its acronym stands for Dual Tube Channel, it's important to remember the tubes are used in the limiter circuit and are not part of the mic preamp.

MY UNSCIENTIFIC EXAMINATION

I plugged my beloved *Conqueror Bruno* (Hofner-copy) bass into the instrument input

on the front panel and soon found myself using the limiter much more than the compressor. The combination of the HF and HMF bands really worked well, adding edge to the string sound without making it 'clack.' Took only a minute or two to come up with something workable. Whiled away

a quarter-hour fiddling with a Les Paul, direct. A huge amount of high-end with the compressor maxed yielded outstanding results. Next, I ran a profusion of previously recorded program through the line inputs so I could experiment with the equalizer and limiter. Crappy keyboards, electric guitars, horns, room mics, snare; the DTC improved everything. EQ'd and squashed a kick drum for a pretty cool effect. But the biggest surprise was the way the equalizer-compressor combination works on vocals. I was able to take a shocking, single-track load of divergent, off-axis screaming, mumbling, whispering, and 'singing,' and turn it into something useable. I did notice some popping on the bypass switching, which can be aggravating if switching in and out during a mix.

It's a microphone preamp, right? It's very clean, low-noise and transparent. To make it more interesting, I thought I'd do a quick A/B: the DTC against the preamps in my old Mackie 24-8. I plugged in a general-use condenser mic (an AKG C414B-TL II, phantom powered from the DTC), split the output to both the DTC and the Mackie, and recorded to ADAT (levels matched throughout, of course) several minutes each of acoustic piano, acoustic guitar, and vocals. I switched mics to a dynamic (a 25-year-old Shure SM 57) and taped several minutes of snare drum being whomped by my smaller children. In every case, the DTC sounded quite a bit better: more defined, more open, and more 'punchy.' Most telling was the piano recording; the Mackie preamp didn't sound *bad*, but I could easily hear it coloring the sound, the lower midrange a little more pronounced and overall more 'closed' sounding; like the mic had been turned a bit off-axis to the

Type: dual channel microphone preamplifier, four-band equalizer and compressor/limiter
Price: \$2,398
Contact: MindPrint, www.mindprint.com

Channel Input Controls: mic gain, line/instrument gain; phase reverse; -20 dB pad; 48V phantom power

Equalizer: fully parametric 4 band EQ, parallel filter design; adjustable low and high cut

Dynamics: compressor/limiter with 'Adaptive-Response,' integrated opto-coupler and tube design; low-cut sidechain filter; link

Analog Inputs: two balanced XLR mic (HAUFE transformers), two Neutrik combo balanced line inputs; two 1/4" instrument inputs

Analog Inserts: balanced 1/4" TRS

Analog outputs: two balanced XLR; two unbalanced 1/4" line level

Digital I/O: optional Di-Mod 24/96 AES/EBU interface; 24-bit format with 44.1, 48, and 96kHz sampling rates; 113 dB dynamic range (\$xxxx??)

Frequency Response: 5 Hz to 127 kHz, ±3 dB (mic input)

Noise: -131 dB SNR (mic input); -106 dB SNR (line input)

piano. I thought it wise to repeat the experiment using the preamps of my MOTU 828mkII interface instead of the Mackie.

The A/B against the 828's preamps was an entirely different story. The DTC and 828 sounded almost identical, although I preferred the DTC on acoustic piano. To be perfectly honest, I thought the 828's preamp actually sounded better on acoustic guitar. But like I said, they are sonically very close. And that's why folks use different preamps. They sound different. Yes?

Geek note: With one microphone feeding two preamps (the DTC and the Mackie board preamp) panned right and left, I could achieve quite a nice 'stereo' sound — the small differences in the response complementing each other and almost no phase problems at all. This was all but impossible using the MOTU preamp and the DTC — with all manner of weird phase problems between them; switching the phase on one of the preamps only compounded the problem. Only with the channels panned hard did the source not sound like it was being recorded through a plastic tube. Why? I probably *should* know. But I don't.

I was able to take a shocking, single-track load of divergent, off-axis screaming, mumbling, whispering, and 'singing,' and turn it into something useable.

WHAT DO I THINK?

As a work-a-day product it's easy to use, easy to reset and it sounds very, very good. It is not an 'effect.' It's also not cheap, but getting a preamp of quality with an integrated EQ and comp/limiter for about \$1,000 per channel is a good deal. I enjoyed using it. For those recording by themselves, it has a 'set-and-forget' quality that is damn nice — especially for computer recording. Because of the simplicity of the limiter design, a few easily resettable settings work fine for direct bass, say, or vocals.

But Tom, if the preamps in the MOTU 828mkII interface sound almost as good as the MindPrint's, why do I need it?

Because of the EQ and the dynamics processing, which are both fantastic. My old-school dictum: Make as many of your decisions up front as possible. Record it as it will be:

Sorting through tracks, fixing-and/or-futzing-with-everything-later is death. The DTC, with its kick-ass equalizer and worry-free limiter makes it effortless.

Finally, my kids and their friends all had to get down close and look in the 'window' — any device that inspires such interest has to be good! (it reminded me of that 1960's *Outer Limits* episode "Don't Open Until Doomsday," where the guy can't help himself from looking through a tiny window in *the box* — and a one-eyed, quivering pile of meat sucks out his soul. . .). Which brings us back around to the DTC's churchly appeal. You can peer through its window — yes, even metaphorically — and it leaves your soul intact. **EQ**

Strengths:

Sounds awesome.
'Idiot-proof' compressor/limiter.
Beautiful design.

Limitations:

Slightly confusing layout in the EQ section.
Digital controls on the back panel.

QUICK PICK

PHOENIX AUDIO - MICROPHONE PRE-AMPLIFIER DRS-2

(\$2450, independentaudio.com)

What they say: (from the website) "The DRS-2 Mic-Pre/DI uses Phoenix Audio's well proven and loved Class A output stage. It also incorporates the latest breakthrough in transformerless Class A, Discrete Mic Input Technology, which results in a "valve-like" sound."

What we found: It's hard to review mic pres because it's such a subjective affair. There really aren't any "bad" mic pres because even the dullest, cheapest pres have some merit sometimes. That said, an engineer will develop a "taste" for a particular type of sound they are looking for out of a piece of equipment. This results in language like "airy", "dark", and "transparent".

Me?

Well, I personally look for a mic and mic pre combo that gives me back what I heard in the room. I'm looking for accuracy first and foremost, then I look for enhancements that make me say "Ah yes! That sounds good!".

The DRS-2 and its brother the DRS-1 provide that "Ah yes!".

The man behind Phoenix Audio is Shaun Leveque who opened up shop in 1996 to provide service for British owners of pre-1980 Neve consoles.

Do you see where this is going? Good.

The DRS-2 is a stereo or dual mono pre and the DRS-1 is a single-channel version. The input knobs are dented, which makes recall a breeze but also makes it difficult to easy-off the pre while the take is still rolling if you're getting close to clipping. Buttons control phantom power, high pass filters, pads, and whether the input is coming from the mic input or the DI. LEDs warn you of impending doom.

In application, I was able to realize the performance in the room to a degree that the recording resembled that intimacy, but the DRS-2 went a little further in that it warmed everything up a bit. In the world of digital recording, anywhere you can pickup a little warmth will benefit the end product. I wouldn't call these pres dark, nor would I call them bright, "they are JUST right", said momma bear. —*Scott Colburn*



NOT-SO-QUICK PICKS

MILLENNIA MEDIA HV-3D HIGH VOLTAGE MIC PREAMP

(\$3775, 8 channels; \$2785, 4 channels) mil-media.com

The HV-3D comes with either 4 or 8 channels of fully matched HV-3 series pre amps with an option for 130 volt phantom power inputs for DPA (B&K) mics or DC coupled inputs for ribbons and dynamic mics. It has huge amounts of input headroom — +23dBu before clipping and powerful output headroom — +32dBu, and tons of gain. Clean, clear, pure gain. (36 steps at 1.5 dB per.) I made the bleeding headphones feedback on a poor singer. Oops. This is the most accurate, transparent, dynamic, and straight-forward microphone preamp that I've ever had the pleasure to be around.

The box that I was sent had 8 channels of the little beauties. Honestly, I may never be able to afford a box like this. This is what really sucks about this job — the teasing — the endless teasing. Seriously though, if you break down the cost — 8 channels of Millennia HV-3 series mic pre for \$3,775 (an online shop was selling this unit for this much) that's \$472 per channel! Of course you get the power supply, the box, and all the tight circuit

(the SOUND) of my mics. I learned much. I wish I could impart this knowledge unto you. Your ears would have to hear it to know. It has been a long time since I actually switched out mics to achieve a desired sound rather than just fixing it with filters.

The best session that I had to be able to test the unit was a recording of cues for a PBS documentary score. The instrumentation was perfectly matched to what I knew were the HV-3D's strengths. The main basis of the pieces revolved around a wide assortment of symphonic-pitched percussion instruments played by the amazing Mr. William Winant: timpani, bass marmba, glockenspiel, vibraphone, celeste, and various bells. I had such good luck during the microphone test issue period last month with the SE Electronics SE3 stereo pair of small diaphragm condensers that they became my go-to stereo miking choice for most of these instruments. I wanted to get the purest, cleanest, and most realistic recording possible, and this combination of mics and pre amps was right on.

composer Marc Capelle at the piano.

I tried a Microtech/Gefell UM 92.1S tube condenser on the cello. The combination of the detailed, smooth mic and the HV-3 preamp made for a strong match. The deep, long notes were captured beautifully. I used a channel of the Summit to control the dynamics. For the bassoon I used the AEA R92 ribbon mic placed three feet away from the middle of the instrument (you get lots of fingering clicks but the sound is more balanced than trying to mic the top of the horn) through the HV-3D with the +18dB gain button engaged. I also used a channel of the Summit to smooth things out and get a little bit of another gain stage for the ribbon mic.

On the piano I used a Microtech/Gefell UMT 70 set on omni sort of stuff inside the lid in the middle, and a pair of AKG 452s pointing at the meat of each register. The room was pretty small, so everyone was leaking into everyone else's mics. This made a room mic unnecessary. I was very pleased with the session. After doing some harmony overdubs, the pieces were complete. All of the articles I've read about the Millennia talk about how the transparency of the preamps are perfect for classical-esque recording. Well, they are right. I don't usually do this kind of recording. It felt very *Masterpiece Theatre*. Very snooty and PBS-y. But I must say that it sounded very cool.

I have been using John Hardy, Brent Averil, and Trident solid-state pre amps for a while now. I love them all. I need them all. But I now know what a transformerless, truly uncolored pre can do for any instrument that needs to shine in its purity. It's time to start saving up.

Strengths: Lots of pure, clear gain. Accurate, detailed, neutral, uncolored sound. The convenience of 8 channels in one box and quality workmanship throughout all aspects of the unit.

Limitations: No phase reverse. (I know that we should be able to figure that out for ourselves), but I like to have the option. Pricey. You have to wait for your supper. —*Monte Valier*

design, matched critical components, laser trimmed FET-based output, etceteras that make it a class A+ unit so there is no way they would ever be able to tell the pres that clean — but still, it is something to consider.

I'd been using the box for a couple months while we were doing the "Mic Issue" (*EQ*, September 2005). I used it with every mic that I had for review — and all the other ones in my cabinet and drawer. This is the Distresser that I truly hear the sound

The mobile setup that I brought to Willy's studio at Mills College in Oakland was simple: Digidesign 002 rack, a G4 PowerBook running PT 6.7 at 96k, a Summit DCL 200 2 channel compressor, and the Millennia HV-3D. Perfectly simple and efficient.

The eight channels of preamps in the Millennia box came in handy. I easily filled up most of them with Mr. Winant's vibes, the superb cello of Marika Hughes, the amazing bassoon of Jarrad Rossini, and





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GETTING MY E-MU TO GO

by Sam Wheeler

Laptop audio solutions that use the FireWire and USB connectivity offered with most notebook computers have been increasingly available for some time now, but rarely at the performance level of desktop PCI audio workstations. Despite the ubiquitous presence and high performance of the PCMCIA CardBus on many laptops, relatively few interfaces have been made to actually use that format. With the demise of Echo's Layla Laptop system, the only marketed pro audio interface for the CardBus, offered only 96kHz sample rate with a limited variety of I/Os, and often a high price-tag, as well. Fortunately, E-mu has come through with an audio interface that provides a high standard of sound quality (up to 192kHz sample rate) without breaking the budget: the 1616M Digital Laptop Audio System.

Overall, the 1616M is nicely laid out and easy to use. It's small, and lightweight, but it might have worked better as a rack unit with some small improvements. On the



output side, the array of connectors on the back may prove useful, but could have been trimmed down to make room for a pair of Neutrik outputs. More importantly, the onboard preamps lack any polarity switching and low frequency filtering. Most of my projects are based around live stereo tracks with serious bleed between the mics, which can lead to serious phase problems. I also live above a subway line, so LF filters at the inputs are a must.

Nonetheless, simply having phantom power at the inputs is a plus, given the fixation of competitive interfaces. A good external preamp (Aphex 207D) took care of all the bugs, however, and allowed the 1616M's converters to shine. According to E-mu, these are "Mastering grade 24-bit/192kHz converters — the same A/D converters used in Digidesign's flagship Pro Tools HD 192 I/O Interface delivering an amazing 120dB signal-to-noise ratio."

THE OBLIGATORY GOOD EXTERNAL PREAMP

Aphex 207D Two-Channel Tube Mic Pre

A good studio needs good mics, and good mics need good preamps. Tube preamps have retained their supremacy in this realm, but digital outputs are extremely helpful for digital recording apps. In this case, the Aphex 207D was brought in to substitute for the E-mu 1616M's onboard preamps, which lack three features found on the dedicated preamp: Polarity switching, low-frequency filtering, and a 20dB pad. The 207D's maximum sample rate is only 96kHz compared to the E-mu's max of 192kHz, and as such, it's been used primarily to feed analog signal to the 1616M, rather than the S/PDIF output from the 207D's converters. Aphex is known for the quality and consistency of their Reflective Plate Amplifier so it's no surprise that this unit sounds terrific. This unit offers features simply not found on tube preamps at this level, such as the digital output, making this an excellent value for home studios at less than \$500.



THE MIC AFFAIR

RØDE NT1-A Studio Condenser Microphone

According to RØDE, this is "the world's quietest studio condenser microphone" at only 5.5dBA. If only my studio was as quiet. Even so, this cardioid mic has changed my recording life. After using a 58 and a 59 (yes, a 59) for far too long, I started borrowing high-end mics from my more well-established friends a couple of years back in anticipation of a high-ticket purchase. I was expecting to have to shell out well over \$1,000 to get a microphone that sounded this good. Thankfully, the NT1-A lists for less than \$350 (frequently seen for less than \$200), and delivers much more value. On close-up vocals, it responds like an old U-67. It does need a little low-end roll off, especially when the train goes by, but the high-end responds beautifully. With a nice tube preamp like the **Aphex 207D**, this mic brings tears of joy to my eyes, especially when graced with a talented voice (not mine). With the NT-1A on the front end, there's no way to blame the mic. That's for sure.



In layman's terms, the sound is delicious.

The 1616M offers a wide variety of analog and digital inputs and outputs on the MicroDock M, designed in a svelte, breakout-box style. On the front: a pair of Neutrik inputs with pre-amplification and the option of phantom power. For digital sources, there are coaxial connectors for the S/PDIF input and output (switchable to AES/EBU),

and optical ports for both S/PDIF and ADAT. On the back, there are two pairs of inputs, three pairs of stereo outs and three 1/8" stereo outs. There is also a MIDI connector on the back (requiring a special breakout cable for two inputs and outputs) and even a dedicated turntable input, complete with ground. Not incidentally, the CardBus card performs beautifully as

a stand-alone unit through the single, 1/8" stereo output.

Creative's Patchmix DSP software also provides the mixer interface from the desktop. It has proved to be rather versatile, with a virtually infinite (or software dependent, at least) number of possible track designations, including WAVE and ASIO I/Os from the computer, in addition to the physical I/Os on

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THE SCENE OF THE CRIME

Dell Inspiron 9100 (Pentium 4, 3.2GHz with hyper-threading technology, Windows XP Professional, 1GB RAM, 100GB Hard Drive)



At almost 10 pounds, this is not a laptop, but a portable desktop. At \$2,500, it doesn't necessarily fit most people's home studio budget, either, but it illustrates the point that the computer is the most important part of the digital studio. It's well worth it to spend the money on the processor and lots of RAM. In both regards, the 9100 is ridiculously overpowered, and that's just great, except the thing has THREE fans, so it's not very conducive to delicate-mic recordings. A more stripped-down unit with no fans would be a better idea for greater portability, as well as quiet operation, but likely it would cost at least as much for a lighter unit. The Inspiron also came with a fairly unimpressive hard-wired sound-card, which has proven difficult to uninstall (instead, it is disabled, which seems to have done the trick). Otherwise, this computer rocks. With all that RAM, I can multi-track and edit very lengthy pieces rather quickly without over-taxing the hard drive. With an on-board CD/DVD burner, the possibilities are endless. Unless I find a faster, lighter laptop for \$500 (HA!), this will be my machine of choice for many years to come.

the breakout box. The interface is straightforward, resembling a basic mixing board with an array of inserts. ASIO capability allows for very fluid interaction with Cubase (the unit ships with Cubase LE, Cakewalk SONAR LE, Wavelab Lite and Ableton Live Lite 4 for E-mu), Acid (pre-4.0 versions still work by setting the host outputs to WAVE L/R instead of the default ASIO Out) and, of course, Pro Tools, even at high sampling rates. As promised, there is a vast array of

hardware-accelerated DSP effects that can be used even without the MicroDock M attached to the card. This allows for excellent compatibility with post-production audio editing outside the studio. And just for laughs, I took my latest project down to the local coffee shop and did a headphone mix with WaveLab, using only the DSP effects on the CardBus. No MicroDock? No problem. I was done before my first refill.

Ultimately, the 1616M delivers professional

quality A/D converters in an affordable, portable, and user-friendly package for home studios based around notebook computers. E-mu has delivered what they promised: "powerful DSP effects, zero-latency monitoring, and mastering-grade 24-bit/192kHz A/D and D/A converters," all at a price the workaday home studio enthusiast can afford.

Can I get fries with that?
Mmm. . . .



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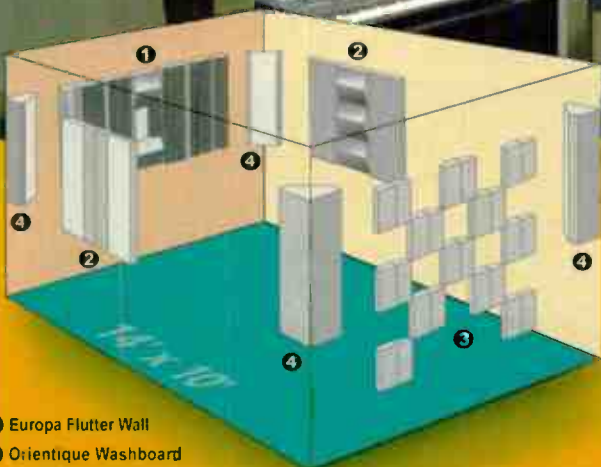
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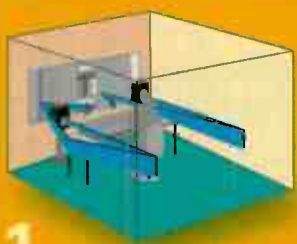
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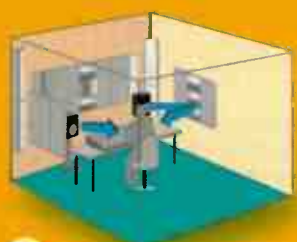


- 1 Europa Flutter Wall
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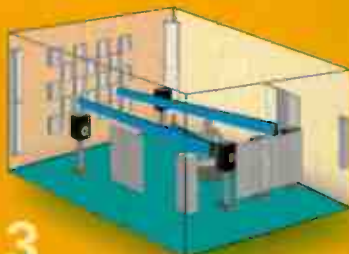
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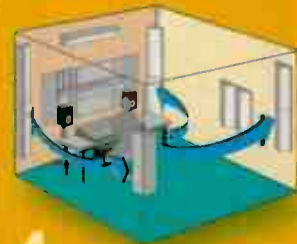
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Europa Flutter Wall
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3
Scandia Scatter Blocks
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4
Australis Bass Trap
 Effective down to 45Hz, tightens up bass and reduces smear. Can be used in corners or on walls. Prices at \$65 each.

Face it. Most project studios and post-production rooms are built in typical rectangular rooms. You spend thousands of dollars on gear, only to battle standing waves, flutter echo and all the hash that makes it difficult to get a good mix. Battle no more.

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DSP-CHARGED SOUND DESIGN

Cameleon 5000 + the UAD-1/UltraPak

by Steph Jorgl



Long a fan of sound design kingpin Richard Devine, I'd heard him speak at length about the beauty of sound design and spectral morphing apps like Composers Desktop Project, C Sound, and Super Collider, and I have long admired the patience that sonic architects like Richard and the industrious Brian Transeau (BT) behold to design sound at the code level. Yet, despite skipping two grades of math, I've concluded that I simply lack the mathematical patience to sit down and learn to design sound at the C:// prompt.

So I was delighted to test drive the Cameleon 5000, a software synth meets sound-design instrument. This puppy brings sound morphing to your fingertips, in one user-friendly interface — no hand-coding required.

SOUND DESIGN FOR DUMMIES

Instead of spending four hours weekly in sound design classes up at BT's house or some other school of audio learning, you can now just fire up the Cameleon 5000 as a software instrument inside of Logic, Pro Tools, Ableton, or any other computer-based DAW or host that is VSTi, AU, or RTAS-friendly, or use it as a standalone app.

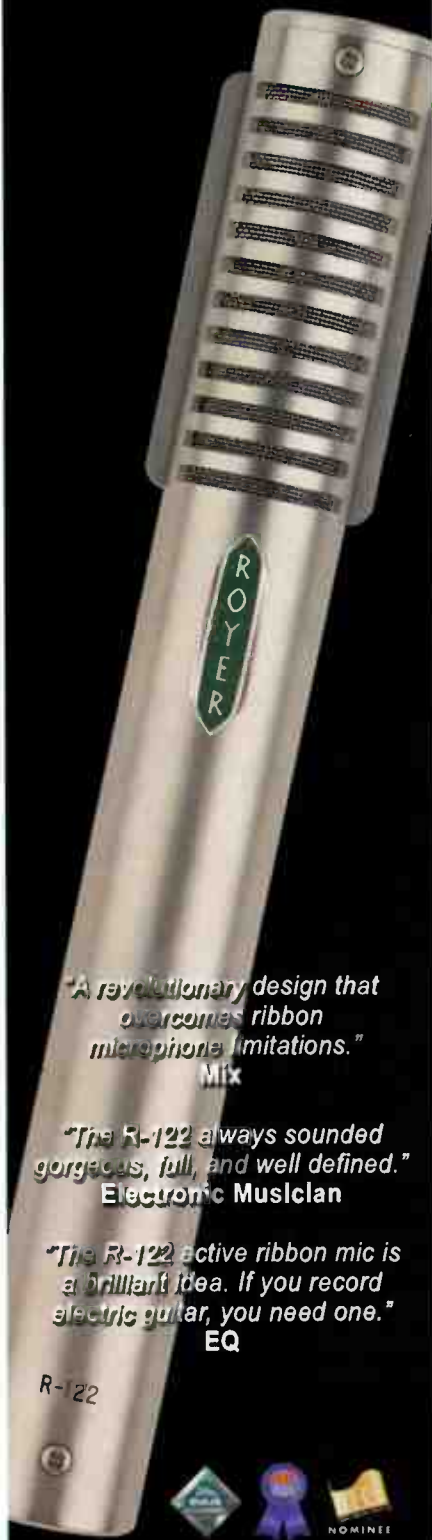
Once it's launched, you can choose up to four sonic elements to blend together on the basis of the sound's amplitude envelope, individual harmonics, or noise, and you can morph them along a timeline if you like to create sweeping rhythmic soundscapes. Like other apps like Reason, you can choose from some decent stock bass, pads, strings, synths, and other sounds that come with the app, or you can import your own sound



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files — Cameleon 5000 accepts either .WAV, .AIF or bmp files — to morph together.

Each imported sonic element can be further modified, based on its harmonics, before being blended into another sound, and the Cameleon 5000 also offers a kickass sounding Formant filter, which I found to be the coolest effect (other than the sound-morphing box) within the onboard effects palate.

The squash factor of the Formant filter alone was highly satisfying on pretty much anything I ran through it. This filter was intuitively designed and I found it was super easy to get a great sound out of it.

THE UNIVERSAL TRUTH

Outside of the Formant filter, the Morph box, and other Morph aspects of the Cameleon 5000 tool — which, by the way, are well worth the cost and convenience of the app — I wasn't that impressed by the built-in chorus, reverb, distortion, compression, or delays. A lot of the time, it seems that software instruments scream out for tube warmth, or hardware component processing.

Well, luckily, I didn't have to leave the box because my editor sent me a UAD-1 card to squash the Cameleon 5000 through. This

QUICK PICK

RADIAL J33

(\$200 list, radialeng.com)

DIARY OF AN ADDICT

Yeah, I am an addict.
Yeah, I am a fan-addict.
Yeah, I am a vinyl fanatic.

Last week me and Suicidal R.B. were lurking around Venice for some stuff. Looking to cop some Poly . . . that's Poly Vinyl Chloride. Yeah, we needed it bad. We scored on Lincoln and Rose at the Out of the Closet jumble store. Yeah, we got it from the Man. The Man was way gone, like dead, man. His mother left the "Closet" his stash. Yeah, she left his poly vinyl chloride wax stash. Fifty years of great records and we got to choose the best of the lot at 50 cents a pop. Sun Elvis, Mott the Hoople, Deep Purple, John Coltrane, Thin Lizzy, Dizzy and Bird, James Bond, Big Brother and the Holding Company, Lou Reed, Moxy, Les McCann and Eddie Harris, rare Hendrix, Canned Heat, and Blue Oyster Cult.

The fix was on.

Now to road test the rig. . . . I used the Radial J33 phono preamp direct injection. Feels like a brick, sounds like heaven. Clear and crisp, fat and tight. Who cares about the specs, anything these mofos make is great. Rock my world, rock it hard. Skip, pop, scratch, krang! Just like I want it. Wow. . .



Like all good junkies, I lied. Here are the sobering specs. The Radial J33 is a RIAA phono preamp and active DI that lets you to connect a conventional turntable with magnetic cartridge to a recording system, hi-fi, or PA. system. The unit has unbalanced 1/8" (3.5mm), 1/4" TRS, and RCA stereo output jacks, and left and right XLR outputs powered by 48 volts from an external console or an included 15 VDC power supply. The J33 also has a LED power indicator, a rumble filter button, a ground lug, and a full-bottom no-slip pad to provide electrical and mechanical isolation. Whether you are going to drop your vinyl to CDs or take it to a gig and spin, the J33 is built like a rock and it is designed to be "plug-and-play" easy-to-use. — Barry Conley

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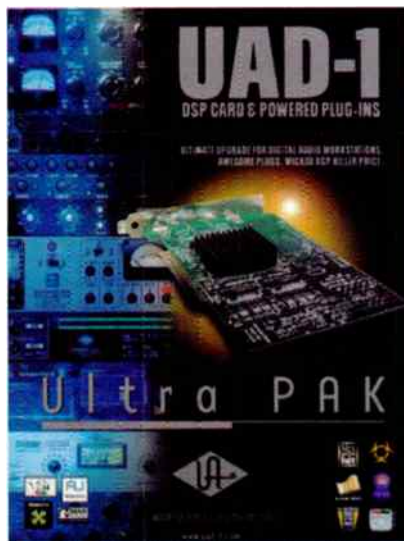
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smoking hot DSP card came with Universal Audio's full UltraPak set of plug-ins and made a huge difference in the sound of, well, *everything*. Also lucky for me, I had an extra UAD-1 card sitting around my house, so I actually got to test drive the Cameleon 5000 through twin UAD-1 cards *both* running the luscious Universal Audio UltraPak, which I've concluded is one of the most delectable, rich, megahuge DSP card/effects combos currently available for less than an HD rig itself.

The UAD-1 effects instantly *pumped up* the sound of the Cameleon 5000, like a Camel on steroids. The UAD-1 is virtually like a hit of crack for any virtual instrument you've got on your computer, it will get your plug-ins HIGH.

I'm convinced that this DSP card was designed to awaken the undead. Hence, please use with caution while mixing near cemeteries or mortuaries.

GOD IS FOUND IN THE UAD-1

The sound of the UltraPak plug-ins, like the rich, tough Fairchild compressor, megamanhandling LA2A and 1176, and the strangely real and creamy sounding RealVerb plug-ins soon drove me to lay the faith-healing powers of the blessed DSP engine upon every track possible.

How can plug-ins possibly sound this good?

Well, I've been told that it's because Universal Audio actually models the components themselves, versus taking the easy road and just modeling the signal or frequency response that comes out of the components. Whatever

it is, they're obviously doing it right because these plug-ins sound fantastic.

IMAGE IS EVERYTHING

That being said, I was completely happy with the Cameleon 5000's abilities as a sound morphing tool. And better yet, whilst frolicking about the app, I discovered a really cool additional feature: You can also import images as BMP files that will be converted into a sound file based on the pixels within the image. You can, in turn,

I decided to have some fun and import the mugs of some of my favorite producers: Trent Reznor, Butch Vig and Jack Dangers to see if their mugs sounded as good as the records they produce.

morph these sounds together with other sounds, stock sounds, or other imported BMP images turned sound files.

I decided to have some fun and import the mugs of some of my favorite producers: Trent Reznor, Butch Vig, and Jack Dangers to see if their mugs sounded as good as the records they produce. Not so surprisingly, Butch's mug emitted a soothing, yet spooky electronic tone, Jack's mug put out a crashing, dub-like percussive tone, and Trent's churned out a gritty, tinesque tone.

WARNING: Don't try importing any compressed BMP files into the sound morph tool in the Cameleon 5000 app. Those will only upset the stomach of your Cameleon 5000, and your attempts at BMP-sound design will be quickly squashed, and *not* in a good UAD-1 way. **EQ**

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QUICK PICK

R.E.T. PERCUSSION: THE RET-SNARE & CYMBAL (retpercussion.us/)

R.E.T. is attempting to solve the problem of electronic drums not having the "feel" of acoustic drums. How? By (not surprisingly) making their triggers . . . real drums, and cymbals (albeit laminated in a clear coating), that use real drumheads that let you "tune" the feel just like you would a standard kit. Well did it? I found they worked just as advertised with the cymbal being the more pleasant surprise of the two, doing a very good job of "tricking" me into believing it was resonating, and having a nice, natural stick feel. The trigger was also tough to fault, reacting to changes in stick work just like a real cymbal should with the rimshot response being the high point. And the drum itself? Well, the drum worked well and can be "tuned" to change the feel (this, of course, does not change the sound) like a real drum. Though it never felt as lively as an acoustic drum, I got it very close. Kind of cool. — Greg Davis



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Sounds

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Doing audio for video? Cinemascape has folders with loops that serve different purposes (complete beds, textures, string lines, thematics, and so on).

Most are slow, long, languid loops. Used alone, they're ideal for the scene where the Jonathan sits alone, staring into his drink, reflecting on life before Yvonne went mad after the incident in Venice . . . or for that matter, the scene in the sci-fi movie where the hero



seeks clues among the ruins of an ancient alien civilization.

However, they are also excellent for providing sustained voices over hyperactive backgrounds. I slipped some of the string phrases and pads on top of your basic ethnic

percussion+tympami car-chase type music, and the combination worked great.

The Piano Phrases sound like they're going to float away, sort of like Debussy meets processing. I was less impressed by Field Manipulations — eight environments that seemed out of place with the other material.

Overall, I'd classify these as laid-back, quality loops for dramatic moments. If you're into psychological dramas, romances, flashes of blissful transcendence, or are planning to remake "Last Year at Marienbad," Cinemascape will hit the target. *Cool bonus:* You can download 20 free Acid-compatible projects based on these files from Sony's web-site; more are forthcoming.

—CRAIG ANDERTON

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Cakewalk	888-CAKEWALK	www.sonar4.com/mix	13
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Conservatory Of Recording Arts & Sciences	800-562-6383	www.audiorecordingschool.com/eq.html	52
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Digidesign	650-731-6300	www.digidesign.com	11
Disc Makers	866-294-8825	www.discmakers.com/eq	32
E-MU	888-372-1372	www.emu.com	63
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IK Multimedia		www.ikmultimedia.com , www.amplitube.com	81
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Mark Of The Unicorn	617-576-2760	www.motu.com	C4
Marshall Electronics	800-800-6608	www.MX.Mics.com	33
Millennia Music & Media Systems	530-647-0750	www.mil-media.com	17
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Omnirax	800-332-3393	www.omnirax.com	55
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Primacoustic	604-942-1001	www.primacoustic.com	71
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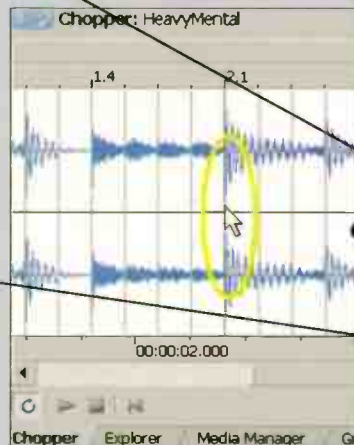
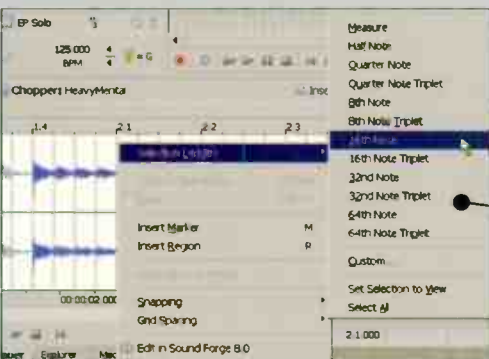
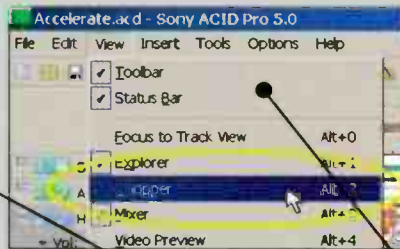
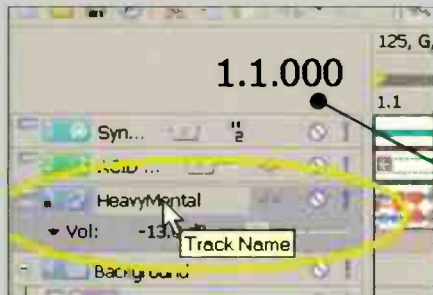
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BACKGROUND: Acid can display loops in a "Chopper" window. Here, you can select certain portions of the loop, and transfer these selections directly into your project. For example, isolate a 16th note snare drum hit, and transfer it over multiple times to create an "instant snare drum roll."



steps

Go View, then drag down to Chopper and click on it to open up the Chopper window (or type Alt+2).

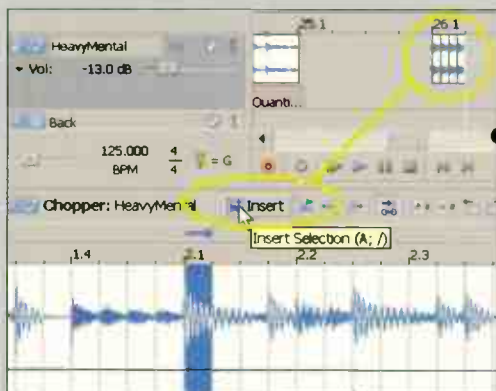
Click on the track name containing the loop you want to chop.

Click at the beginning of the section you want to chop.

Right-click in the window, and choose the desired selection length (e.g., 16th note).

With Acid stopped, place the cursor where you want the chopped signal to start.

Click on the Insert button to place the chopped section on the track; the edit cursor will jump to the end of the section. If you click again, another chopped section will be added to the current edit cursor position. This shot shows a 16th note snare hit inserted four times.



tips

- Click on the button to the right of the Insert button to insert the selection at the play cursor (you can even insert when the program is running). The selection will snap to position if snapping is enabled; toggle snapping on and off with F8 key.
- The "divide by two" and "multiply by 2" buttons halve or double the selection length, respectively.

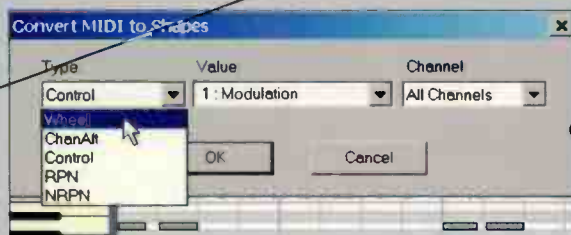
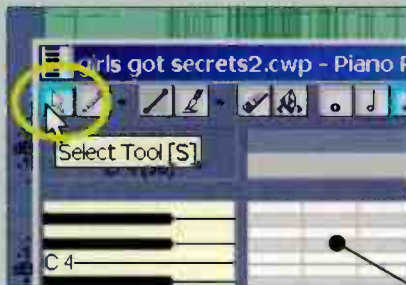
Power App Alley by Craig Anderton

PUSHING THE MIDI ENVELOPE

Convert MIDI controller signals to envelopes

OBJECTIVE: Convert a controller (in the Piano Roll view) that wasn't created by an envelope into a track envelope.

BACKGROUND: You can create MIDI controller envelopes directly on a track, but you can also convert external controller signals (such as signals from a mod wheel, foot controller, data slider, and so on) to track envelopes. These can sometimes be easier to manipulate than equivalent data in the Piano View's controller strip.



steps

[In the Piano Roll view, click on the Select Tool (or type "S").

Select the controller data you want to convert into a track envelope by dragging a rectangle around it.

Go **Edit > Convert MIDI to Shapes**.

The "Convert MIDI to Shapes" dialog box appears. Enter the type of controller, controller number, and channel of the selected data. Then click on "OK."

The MIDI controller data disappears from the Piano View MIDI controller strip, and appears as an envelope within the corresponding track.



- You can reassign a track envelope to a different controller by simply right-clicking on the envelope, choosing "Assign Envelope," and filling in fields similar to those in step 4.
- To hide a track envelope, right-click on it and select "Hide Envelope."

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The Presonus ADL 600 Tube Mic Preamp

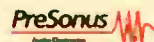
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In large-scale multitrack recording systems, it is good practice to offload plug-in processing to your host computer. The **Waves APA-44M** delivers on-demand Waves processing to your MOTU native desktop studio via standard Ethernet. Open your existing Waves plug-ins usual in Digital Performer via the new Waves Netshell™. But now you can run up to 8 Waves IR-1 Convolution reverbs at 44.1kHz at once, and save your CPU power. Need more Waves processing? Just add another APA-44M with the snap of an RJ45 Ethernet cable. It's that simple. For extreme processing needs, connect up to 8 units to your network. The APA-44M is equally at home connected to a laptop, desktop or both. Just transfer your Waves processing to an authorized iLok. You can even share a stack of APA-44M's among several computers on the Waves Netshell network. The APA-44M ushers in a new era of state-of-the-art, distributed-network Waves processing for your MOTU multitrack studio.



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A large-scale multitrack studio is an investment. Protect that investment — and get the best possible performance from it — with the **Monster Pro 2500** and **Pro 3500 PowerConditioners**. Much more than just a "surge protector", both devices use Monster's patented Clean Power™ filter circuitry (U.S. Pat. No. 6,473,510 B1) with separate noise isolation filtered outlets for digital, analog and high-current audio components. The result is high quality sound that's free from hums, buzzes and other power line artifacts, revealing all of the rich harmonics and tone in your recordings. Get All the Performance You Paid For™. Get Monster Pro Power.



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The groove.

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The controller.

Digital Performer captures every nuance of your MIDI performance. The M-Audio **Expander Pro** is an 88-key hammer-action USB powered MIDI controller delivers fine-tuned response to satisfy even the most demanding players. Add four zones, a stunning set of MIDI-assignable controllers all in a compact 40 pound package, and you have the most comprehensive product of its kind!



The control room.

The PreSonus **Central Station** is the missing link between your MOTU recording interface, studio monitors, input sources and the artist. Featuring 5 sets of stereo inputs (3 analog and 2 digital with 192kHz D/A conversion), the Central Station allows you to switch between 3 different sets of studio monitor outputs while maintaining a purely passive signal path. The main audio path uses no amplifier stages including op amps, active IC's or chips. This eliminates coloration, noise and distortion, enabling you to hear your mixes more clearly and minimize ear fatigue. In addition, the Central Station features a

complete studio communication solution with built-in condenser talkback microphone, MUTE, DIM, two separate headphone outputs plus a cue output to enhance the creative process. A fast-acting 30 segment LED is also supplied for flawless visual metering of levels both in dBu and dBfs mode. Communicate with the artist via talkback. Send a headphone mix to the artist while listening to the main mix in the control room and more. The Central Station brings all of your inputs and outputs together to work in harmony to enhance the creative process and ease mixing and music production.



Mastering & restoration.

Your DP mastering and processing lab awaits you: **BIAS Peak Pro** delivers award winning editing and sound design tools, plus the world's very best native mastering solution for Mac OS X. With advanced playlisting. Superb final-stage processing. DDP burning. Plus PQ subcodes, DDP export (optional add-on), and other 100% Redbook compliant features. Need even more power? Check out our Peak Pro XT 5 bundle with over \$1,000 worth of additional tools, including our acclaimed SoundSoap Pro, SoundSoap 2 (noise reduction and restoration), Squeeze-3 & 5 (linear phase multiband compression/limiter/upward expander), Reveal (precision analysis suite), PitchCrave (super natural pitch correction/transformation), Repli-Q (linear phase EQ matching), SuperFreq (4, 6, 8, & 10 band parametric EQ) and GateEx (advanced noise gate with downward expander)—all at an amazing price. So, when you're ready to master, Peak Pro 5 has everything you need. It's the perfect complement to DP. Or, perhaps we should say, it's the perfect finishing touch.

Call the MOTU system experts.



The faders.

Imagine the feeling of touch-sensitive, automated Penny & Giles faders under your hands, and the fine-tuned twist of a V-Pot™ between your fingers. You adjust plug-in settings, automate filter sweeps in real-time, and trim individual track levels. Your hands fly over responsive controls, perfecting your mix — free from the solitary confinement of your mouse. Mackie Control delivers all this in an expandable, compact, desktop-style design forged by the combined talents of Mackie manufacturing and the MOTU Digital Performer engineering team. Mackie Control **Delivers** brings large-console, Studio A prowess to your Digital Performer desktop studio, with a wide range of customized control features that go well beyond mixing. It's like putting your hands on DPitself.

The monitors.

The Mackie **HR Series Active Studio Monitors** are considered some of the most loved and trusted nearfield studio monitors of all time, and with good reason. These award-winning bi-amplified monitors offer a performance that rivals monitors costing two or three times their price. Namely, a stereo field that's wide, deep and incredibly detailed. Low frequencies that are no more or less than what you've recorded. High and mid-range frequencies that are clean and articulated. Plus the sweetest of sweet spots. Whether it's the 6-inch HR-624, 8-inch HR-824 or dual 6-inch 626, there's an HR Series monitor that will tell you the truth, the whole truth, and nothing but the truth.



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World Radio History



Bob Moog: 1934–2005

by Craig Ainderton

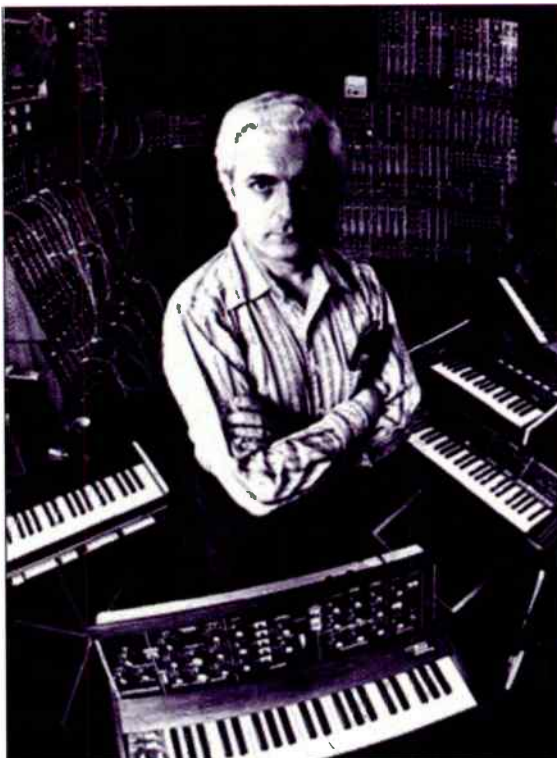
This isn't going to be a maudlin obituary: In case there *is* life after death, I don't want to piss off Bob. See, Bob defined the polar opposite of "inflated self-importance." For a long time, I was kind of bothered that he didn't seem to really grasp the extent of his contributions, and the massive amounts of respect and love that was felt for him throughout the industry. "Hey, I'm just an engineer, I make tools."

While he didn't invent synthesis, Bob's unique talent was the ability to cut through the equations, and make *musical instruments* — ones that sounded *really good*, had the richness and character of acoustic instruments, and felt warm and organic instead of cold and technical. Bob himself was so human that it rubbed off on the instruments he made. Thanks to his inventions, synthesis connected to musicians and the public: Wendy Carlos' masterpiece *Switched-On Bach*, Emerson, Lake, and Palmer's Moog-drenched version of rock, Beaver & Krause's ambient excursions, the Beatles, the Byrds, and so many others (and unfortunately, a zillion best-forgotten *Switched-On* copycat albums).

Bob got it right the first time. *Half a century* after its introduction, his 24dB/octave lowpass filter design remains the sonic standard by which all filters are judged. The patch cords on his modular gave the name "patch" to any sound, even if it had nothing to do with cables. The normalized collection of modules that made up the Minimoog have been duplicated time and time again, not just in Minimoog emulations, but in most subtractive synthesis designs. And let's not forget his love affair with the theremin, which kept its flame alive through the years.

Bob's creations have touched everyone in this industry. I have a ton of Bob Moog stories: The time he stayed over at my house and signed my Minimoog (which he hated to do, but he was a good sport about it), how uncomfortable he was when people came up to him and said "You're Bob Moog!" or "You changed my life," and the time I hosted the "Afternoon with Bob Moog" at the 2004 AES in San Francisco, where a long with the audience, I was completely mesmerized by Bob's recollections, humor, and warmth.

But my favorite was at Summer NAMM a few years back Bob had been deep into designing the Voyager, and wasn't aware of Reason. So I pulled him away from the Moog booth, and took him over to Propellerheads. Of course, they were



thrilled to have him there, but then came the moment during their demo I was waiting for: When they hit the Tab key, and Reason flipped around to show the virtual patch cords, swaying ever so gently. Bob laughed his head off, with that trademark Bob Moog Huge Smile, and found the whole thing absolutely delightful — his patch cords lived on, implemented by people who hadn't forgotten the heady, early days of modular synthesis.

Okay, so Bob was cool. But there's more to it than that: If you

were born after 1960, you've never really known a world without synthesis. So it might be hard to imagine what a bolt of lightning it was when the first Moog modular synthesizer appeared. I tried to capture a bit of that feel in the intro for a review of Arturia's Moog Modular V in *Keyboard* magazine:

"You wake up in a world where Elvis Presley and Louis Armstrong are still alive, and AM radio is a vital part of teenage life. Sony's Walkman hasn't been invented yet, because the newly developed Compact Cassette exists solely for dictation. You are up on the latest technology, though; you have a transistor, not tube, radio and your turntable — which of course, has an option for playing 78 RPM records — has just been upgraded to stereo.

You leave your apartment, and get on the subway for the 1964 New York AES Convention. And there you see something that stops you in your tracks: a box set up in an unused booth, that looks more like a telephone switching station thanks to the cables that obscure the prototype's front panel. But it's making sounds — sounds you've never heard before — and the young inventor is actually constructing sounds with this machine. You're blown away, and while some shake their heads, you've seen the future: the commercial introduction of the Moog Modular Synthesizer. And from that day on, music would never be the same.

And indeed, it wasn't. Bob gave us all so much and materially, didn't really get all that much in return. But what he *always* did get was a flood of respect, appreciation, and love from the myriad people whose lives he touched — and in the process, transformed.

Thanks again, Bob. Maybe it made you uncomfortable to admit it, but you really did change our lives. Big-time. **EQ**

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