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Into Project Post Production

THE PROJECT RECORDING & SOUND MAGAZINE

1997 • ISSUE ELEVEN

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Dust Brothers

John King (left) & Mike Simpson reveal their smokin' techniques

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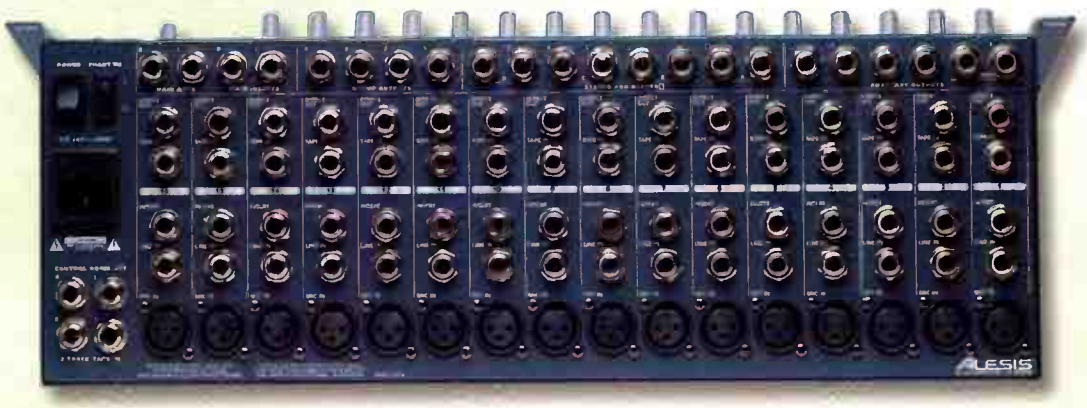
The Recording Console That

The Studio 32's inline design gives you balanced XLR mic inputs and balanced 1/4" TRS line inputs, channel inserts, tape inputs and direct outputs on each channel. Four group outputs, six aux sends (four pre-fader and two post-fader), phantom power for every channel and separate control room outputs are also provided. And since all of these connections are on the rear panel, your studio stays neat and professional-looking.



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Looks Sixteen but Acts Thirty-two

The world of small-format consoles seems to be suffering an identity crisis. After all, most of them look alike...and also act alike.

Where can you turn to get the advantages you need?

Introducing the Alesis Studio 32™ Recording Console with Inline Monitoring

The Studio 32 offers 16 hybrid/discrete mic preamps that combine extremely low-noise performance (-129dB E.I.N.) with a wide 60dB range, making them perfect for driving digital recorders. In fact, the Studio 32 offers a wider dynamic range than all of the currently-available "affordable" digital consoles (and it's a whole lot less expensive).

Audio sources in your studio multiply quickly. Instruments, miked drums, vocals, and stereo signals from synth modules keep adding up. Fortunately, the Studio 32 has twice as many inputs as an average 16-channel mixer, so simultaneous recording or mixdown of multiple sources–live or in the studio–is no problem.

It's the world's most affordable 16-channel console that offers inline monitoring capability. Inline monitoring means that each channel can send signals to a recorder and receive signals coming back from tape...*at the same time.* So, unlike your average mixer, the Studio 32 can hook up with sixteen tracks of ADAT® (or any other recorder), instead of just eight. That's *double* the tracks you can access.

Other stuff that makes the Studio 32 stand out from the crowd: fully-parametric midrange EQ and super high-quality mic preamps that are more comparable with the consoles you see on magazine covers than on other compact mixers. 40 inputs available at mixdown...again, twice as many as most other small consoles. All at a price so low that you can afford to get that second ADAT (now that you can use it).

▲

Above: a 16-track digital recording studio that can fit into a corner of your living room. Centered around the Studio 32 and a pair of ADATs, this setup is a professional-quality, low-cost solution for serious recording.

The Studio 32's EQ section provides more than just high- and low-shelving EQ. You'll also find a fully-parametric midrange EQ with individual gain, frequency sweep and bandwidth (Q) controls.

The Alesis Studio 32. The console that acts a lot bigger than it looks. At your Alesis Dealer now.

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For more information on the Studio 32, see your Authorized Alesis Dealer or call 800-5-ALESIS.

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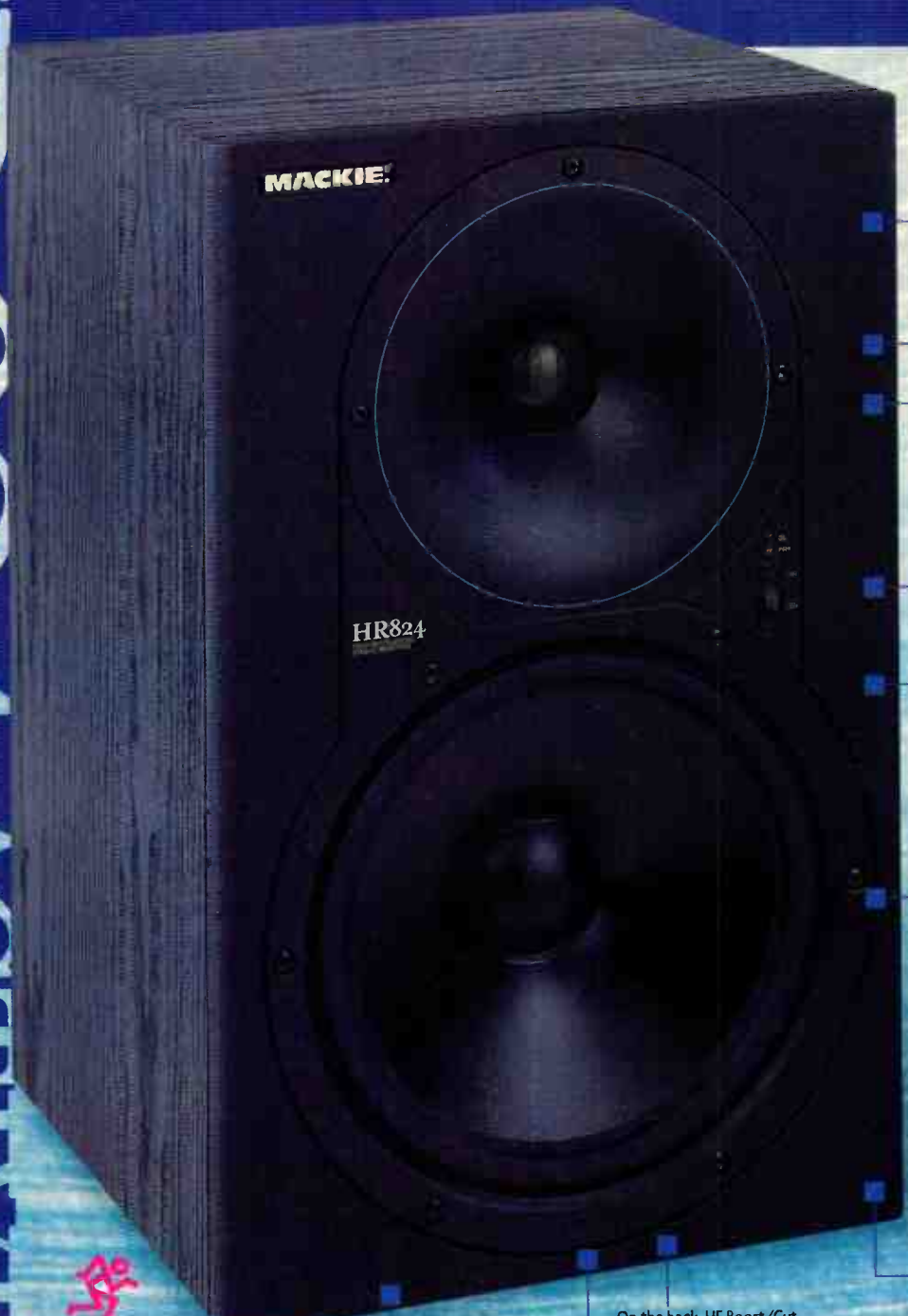
HR824 ACTIVE MONITOR

"Overall frequency was almost hard



Logarithmic wave guide helps accurately propagate high frequencies over a wider area. Result: better dispersion, more precise imaging and a far wider sweet spot.

Edge-damped 25mm high-frequency transducer is directly coupled to its own 100-watt FR Series™ Low Negative Feedback internal power amp.

Alloy dome is free from "break-up" that plagues fabric domes, causing high frequency distortion.

Signal present and overload LEDs.

Instead of a noisy port, a passive honeycomb aluminum transducer on the rear of the HR824 almost doubles the low frequency radiating surface.

"This allows the HR824 to move a large volume of air with minimal low frequency distortion & power compression."
EM Magazine*

Specially-designed 224mm low frequency transducer has a magnet structure so massive that it wouldn't even work properly in a conventional passive loudspeaker. But servo-loop-coupled to a 150-watt FR Series™ amp, it's capable of incredibly fast transient response and extremely low frequency output.

Inside: the HR824 cabinet is 100% filled with adiabatic foam. Result: Unwanted midrange reflections from the low frequency transducer are absorbed **inside** the enclosure instead of being reflected back out through the cone into your listening space.

"The enclosures — dressed in a conventional yet classy black — are shielded."
EM Magazine*

Inside. Two separate FR Series™ power amplifiers with a total of 250 watts rated power — the most of any active monitor in the HR824's class.

On the back. HF Boost/Cut, Acoustic Space, Roll-Off and sensitivity controls, balanced 1/4" and XLR inputs. *"The Mackie HR824 is the only system* (in the comparative review) *that doesn't require the user to fumble around with tiny tools in order to make adjustments."*
EM Magazine*

Actually this paragraph doesn't have anything to do with the HR824. Mackie is further expanding its R&D/Engineering department and is looking for more analog and digital engineers with experience in pro audio. Log onto our web page for particulars.

*** Electronic Musician, October 1997, All quotes are unedited.**

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World Radio History

response was so flat that it to believe." Electronic Musican Magazine*

Ready to confront reality? The HR824 Active Monitor is now in stock at Mackie Dealers.

Owning a set of HR824 near field studio monitors has the potential of seriously altering your perception of sound.

For the first time, you'll be able to hear **precisely** what's going on all the way through your signal chain — from microphones right through to your mixdown deck. You'll suddenly discern fine nuances of timbre, harmonics, equalization and stereo perspective that were sonically invisible before.

Some tracks you've recorded will amaze you; others may send you back for an immediate remix.

But either way, for the first time, you'll be hearing **exactly** what was recorded — not what a conventional loudspeaker may or may not have been capable of reproducing.

> "In fact, all the sonic details that I can discern on a $45,000 reference system were very well reproduced, although not identically, on the HR824s. That was very impressive."

> "The precise resolution is a major boon for finicky sound sculptors."

> "The imaging and high frequency dispersion is brilliant. I was amazed at how far off-axis I could scoot my chair and still clearly hear what was going on in both channels."

Admittedly, these are pretty brazen claims (which is why we're backing them up with comments from a credible, third-party source).

But all you have to do to become a believer is to visit your nearest Mackie dealer. When you compare HR824s to the competition, you're going to hear some dramatic differences.

First you'll notice far more openness and detail. Critical listeners tell us that it's as if a curtain has been lifted between themselves and the sound source.

Next, you'll notice low frequency output so accurate that you might look around for the hidden subwoofer (some of the world's most experienced recording engineers have done this, so don't be embarrassed). The HR824 really IS capable of flat response to 39Hz. Moreover, it's capable of **accurate, articulated** response that low. Rather than a loudspeaker's "interpretation" of bass, you can finally hear through to the actual instrument's bass quality, texture and nuances.

Each HR824 ships with its own signed Certificate of Calibration attesting to its ±1.5dB 39Hz-22kHz frequency response.

Next, if you can "unlock" yourself from the traditional, narrow "sweet spot" directly between the monitors, you'll discover that the HR824s really DO live up to our claim of wide dispersion.

> "The low end was robust and present; the electric bass and kick drum thump-ed into my chest the way those huge UREI® monitors did back in the old days."

Their sweet **zone** is so broad that several people can sit next to each other — or if you work solo, you can move from side to side in front of large consoles — and still hear a coherent, detailed stereo panorama.

> "Overall, the response was so smooth that I wasn't even aware of a crossover point."

Finally, let the salesperson go wait on somebody else and enjoy an extended session with one of your favorite CDs. When you're through, you'll discover that when distortion and peaky frequency response are minimized, so is ear fatigue: You can listen to HR824s for hours on end.

> "Stereo imaging and depth were fabulous."

One final point... your monitors are the only part of all your studio equipment that you actually **hear**. Along with good microphones, HR824s are the best investment you can make, no matter what your studio budget. And, like premium mics, HR824 monitors cost more than less accurate transducers.

But if you're committed to hearing **exactly** how your creative product sounds, we know you'll find owing HR824s well worth it.

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World Radio History

EQ
PROJECT RECORDING
& SOUND TECHNIQUES
VOLUME 8, ISSUE 11
NOVEMBER 1997

ON THE COVER:
The Dust Brothers in their PCP Labs project studio. Photo by Ed Colver.

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Miller Freeman

Danger of Vaporware

A little bit of vaporware is relatively easy to tolerate. It's fun to get a sneak preview of the future; besides, if a company gives a commitment to a future delivery date and actually meets that date, no one really minds. Even if a product is a month or two late, well, no one's perfect. But the vaporware situation is getting out of hand. It's no longer harmless fun, but is actually threatening the health of the industry.

Here's why: When a company announces a product prematurely, it sets in motion a chain of events that reaches far beyond that company. Suppose Company A announces a new product with either breakthrough features or a breakthrough price. Now Companies B–Z, who are working on something that could end up being competitive with Company A's offering, feel the heat to announce their products ahead of schedule, as well as price them lower than Company A's offering.

In the rush to compete with products that may not even exist yet, prices decrease to an unrealistically low level. One of two things happens: Either a company has to raise the product's price compared to the original target, leaving consumers feeling like they're at the wrong end of a bait-and-switch deal; or the manufacturer has to sell a bazillion of their latest gadget to make any money off of what should have been a profitable product.

But this is good, yes? Competition is supposed to make things less expensive, right? Yes, it does. But there's more to a product than price, such as support. If a company is making so little money from the product they can't provide decent support, include a well-produced manual, or work on future updates to keep the customer base they already have, no one benefits.

Nor does anyone benefit from the pressure that vaporware puts on engineers. Projections for when products will ship are often overly optimistic, and it's up to the engineers to compensate. Corners get cut, tempers fray, software unravels, reliability suffers, and the product ends up not being all it could be. The end users feel burned, the engineers feel burned-out, and the marketing people end up doing damage control instead of marketing.

Vaporware also jeopardizes the industry's credibility. Many products announced at last year's AES were still not shipping by this year's AES. Consumers are constantly having carrots dangled in front of them, never knowing whether to spring for what's happening now or wait eight weeks for the next ultragadget — except those eight weeks turn into ten, which turn into 20, which can even turn into a product that never ships, or bears little resemblance to the promises. It's not uncommon nowadays for products to ship over a year after they were first announced, which is clearly unreasonable. Meanwhile, stores don't buy because they don't want to get stuck with inventory they won't be able to sell when the next generation of products hits. And don't get me started on how many ad dollars are wasted on promoting products that don't exist when the ads hit.

What's worse is that many companies now announce future enhancements, and tack on a fictional date like "4th Quarter 1998." First of all, anyone who bases their purchasing decisions on a promise of something that might not exist until over a year from now (if ever) is not a very smart consumer. But more importantly, if the product is that far away, why not wait until the 1998 AES and — what a concept — take orders on a product that can actually be shipped? A promise should mean something; someone's word should be their bond. Of course, no one can live up to a standard of 100-percent perfection in an imperfect world, but we don't have to go looking for trouble.

So manufacturers, try exhibiting a product at the first show after the product is complete. If you finish a month or two early, don't sweat it. Take the extra time to write a really good manual, get your service people up to speed, and chase down the bug fixes that would otherwise lead to a costly and inconvenient update program. The sales from your existing product will hold you over because people won't have stopped buying it in anticipation of something else coming along "somewhere down the line."

Is that really such a dumb concept? *—Craig Anderton, Technology Editor*

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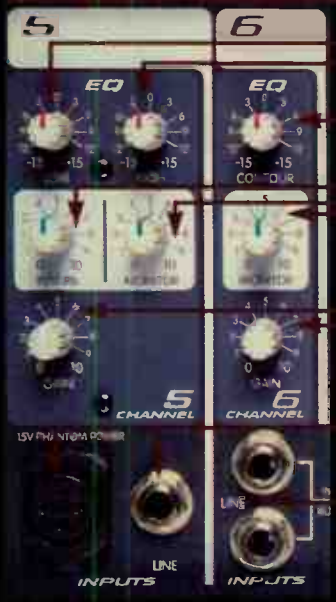

Two-band EQ shapes the sounds at each input. You can route signals with Reverb and Monitor sends. Two true Hi Z inputs, (not just line inputs labeled "Hi Z"), give you the best sounds from acoustic guitar pickups or high Z microphones. With each input sounding great, your final mix *has* to sound great.

Graphic EQ with FLS™ Feedback Locating System

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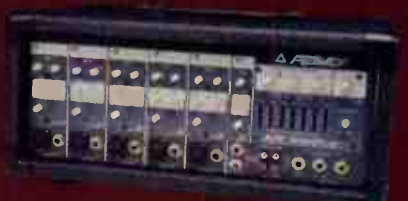

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MIC MEMORIES

Re: Sept. 1997 *EQ*, Microphile, Electro-Voice 666

I remember the EV 666 very well. I had to settle for the less-expensive brushed aluminum dynamic 664. My distinct recollection is of an earlier availability of the EV 666, as I was a contestant on a TV quiz show in the spring of 1963 on WWJ TV Detroit where the EV 666 was used.

I enjoy *EQ* a lot; I do live sound for contemporary church music and have learned a lot of useful pearls. I especially enjoy articles on EQ, mic placement, and, of course, all the cutting-edge new digital stuff.

Jeffrey T. Johnson
via Internet

RUSH MIDI UPDATE

I know that this a bit late, but I just got off the road after four months in Europe as head keyboard tech for Michael Jackson's HIStory tour and I came upon the July issue of *EQ* while sorting through my huge pile of back mail, and much to my surprise, read about one of my mod boxes!

The "Hi Tech Box" Passive 108 port MIDI thru box was built by me, literally overnight in a rush (sorry, couldn't resist) and shipped off the next day to Rush rehearsals in Canada. I remember every one of the MIDI jacks, hand-punched case, hand-riveted, and wired — sore wrists and bloody fingers. Whew !!!

To test it, I hooked up every piece of MIDI gear I could find or borrow from my own collection, the shop, and anyone else I could contact early the next morning. Much to my surprise, it worked without any MIDI hang on my gear, as well as on Rush's huge setup. Great to see the box alive and well and still functioning in the middle of the rack!

Hi Tech musical services is now Music Media Technologies (formerly hydra tech), and we do a lot of the same services focusing on MIDI systems for tours and studios. Recent major clients include Eric Clapton, Lionel Richie, Michael Jackson, The Moody Blues, and Tina Turner.

Tim Myer
mumed@aol.com

POP MUSIC

I appreciate John Monforte's article, "The Home-Brew Pop Filter," in the August issue. Wanting to make one for my new CAD E-300 mic, I went to Fabric Warehouse and bought a 10-inch wooden embroidery hoop (they didn't have the suggested 7-inch ones, but the 10-inch is even better). Then I bought a piece of the taffeta, plus three other possible fabrics. Even at that, the bill came to less than $6.

What I found was that a fabric called "formflex all-purpose interfacing, Style #4102" passed the frequency response (breathing) test and the aerodynamics (blowing) test best of all. Plus, it's stiff enough to fit the hoop with no wrinkles or warps and no need for glue. And it comes in basic black. Next to the natural wood color of the hoop, the color combination looks fine without any paint. No major studio would be ashamed to have this pop filter poised in front of its best mic.

I also did something slightly differently to mount the pop filter: I took an extra mic stand and attached a Radio Shack spring-loaded mic clamp. The teeth of the clamp, bent back at a slight angle, hold the hoop frame while the tightening screw of the hoop rests on the sleeve of the mic clamp. It's secure enough without any need for screws. It looks neat that way, in an almost Art Deco way.

All in all, it's a fine pop filter, at a cost of less than $3 and a half-hour of time. Good going.

Ward Mead
via Internet

SWAP SHOP

When reading in the August 1997 issue about solving Windows problems for good, it was mentioned that to swap the C and D drives one only has to swap the IDE cables. This is true only if one HD is connected to the Primary IDE port and the other HD is connected to the secondary IDE port. If both HDs are connected to the same port, however, you have to take out each HD and change the jumpers on them from master to slave, and vice versa. Then you need to put the new C drive back in so that it is the first connection on the IDE cable.

Bud Furry
Brooklyn Park, NY

DAILY MUSE

This letter is in response to Al Kooper's article "The Muse." I am one of those musicians who makes his living in music. I'm not famous, rich, or live in a glamorous lifestyle. I pay my bills by playing music (which is probably 99 percent of the music community). I know plenty of songwriters as talented as the John Sebastians of the music industry. Al said that these people should be revered for a short spurt of songwriting. It's their job! A garbage man picks up garbage every day, just the same as the day before. A songwriter (if he or she is truly talented) can always write. Don't make excuses for these people, Al, because I know that there are people just as talented as you or John Sebastian who aren't famous and have articles.

I admire your work very much, but just remember that there's a Paul McCartney in every town. Shame on the songwriters who can't produce quality music over a span of a career, because people have been doing it unnoticed in their home studios for years.

Marc Battaglia
Levittown, PA

LOVE LETTER

REMEMBERING BRIAN WACHNER

Brian Wachner passed away recently at the age of 52. For those of you who didn't know Brian, he was the founder, owner, and president of BGW, a company that he ran with his wife Barbara and his son Jeff. When I say that Brian was the founder of BGW, I mean he literally started BGW with a $5000 loan. When I say that he was owner of BGW, I really mean that the company owned him as much as he owned it. He lived his product and was fanatically devoted to it, to his customers, and to the quality that was as much a part of his product as it was of himself. Brian represented all of the things that we value in the audio industry — hard work, integrity, quality, and devotion to the well being of his customers.

Herb Schiff
Associate Publisher
EQ Magazine

World Radio History

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KEEP ME UPDATED

Q *Have there been any updates to TASCAM's DA-88's Version 4.0 software, and, if so, what changes or enhancements were made?*

Cameron
via Internet

A As of June '97, Version 4.01 is the latest revision of DA-88 software. This revision is an enhancement to the DA-88's handling characteristics when used in a video environment under Sony 9-pin control. No other changes were made. TASCAM Customer Service can advise you of update policies and associated fees.

TASCAM has a fax-on-demand service (800-827-2268) that provides extensive information about the entire product line. Your first request should be for an "Index," which includes a complete document list for all products in the system. Afterwards, up to three documents can be requested for faxback during any one call session. For example, item 1130 is a 7-page Operational Quick Tips document detailing features of Version 4, while item 1140 contains two pages of error message descriptions.

Roger Maycock
Marketing Support
Representative
TASCAM

THE GOLD RUSH

Q *David Miles Huber states in a recent EQ article that the green CD-R discs last longer than the gold discs. I've also read, however, that gold discs last longer than green discs. I know that most of us will probably be dead before we really see if our masters degrade or not, but with this difference in opinion, who can we believe?*

Anonymous
via Internet

A After additional research, including extensive fishing on the Internet and looking into Andy McFadden's CD-Recordable FAQ page, I found that gold media probably does have a longer lifespan and may even work better at higher recording speeds. I also polled several reputable disc-mastering services and, although they couldn't attest to its lifespan, gold discs were generally the CDs of choice. Oh, and yes, Virginia, it is real gold!

David Miles Huber
Contributing Editor
EQ Magazine

MAYBE IF YOU HUM A FEW BARS?

Q *I recently bought two Fostex 6301B powered monitors. They have been retrofitted to run on 12 VDC (using a 4-pin XLR) instead of 120 V. I use a TrippLite PR-15 12 VDC power supply. Both speakers have what sounds like a ground hum when power is on and there is nothing plugged into them.*

I have tightened all screws on the PCB and the unit housing and I have also powered these with a 12 VDC battery, and the hum is still just as annoying. The volume is at zero and the hum is still present. What capacitors, filters, etc., do I need to replace or add to eliminate the hum? I have seen these "modified" versions elsewhere and know it is possible to run these clean.

T.J. in L.A.
via Internet

A While Fostex understands why you might want to modify the 6301B monitors to run on 12 VDC, we do not offer plans or instructions on how best to do this type of modification. Such modifications would ordinarily void any warranty, so we wouldn't recommend it without first checking with us or a factory-authorized service center. Since, however, you seem to have purchased yours used, perhaps that point is irrelevant. All we can suggest is that you contact the owners of the other modified monitors and ask them for details.

Derek Badala
Digital Applications
Engineer
Fostex Corporation
of America

DROPPED AT BIRTH

Q *I just bought a TASCAM DA-38 DAT machine. The box it came in looked as if it had been dropped, but the unit looks clean. I've read a lot in Web pages about cleaning heads, but have seen nothing about head alignment (as in, did the heads get knocked out of alignment when the unit was dropped?).*

Is there anything to worry about re:

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How to buy your next reverb without listening to it, Part 2:

Bruce Swedien, 5 time Grammy-winning engineer, producer; Credits include projects with Quincy Jones, Michael Jackson and Burt Bacharach.

"The ProR3 is one of the first new reverbs that has the clarity and density I like. I use it on vocals and strings. I love the performance."

JD Brill, Schubert Systems Group; F.O.H. Engineer for The Eagles, Glenn Frey, Don Henley, Joe Walsh, Bozz Scaggs, Larry Carlton and Al Jarreau.

"Surprisingly transparent and by far the best reverb ever from Yamaha. The ProR3 stands up to all the major processors at a much lower price. As a sound company owner and an engineer, what more could I ask for? I bought six of them."

Chris Taylor, Clair Brothers; mixer for Amy Grant.

"The flexibility of the unit is wonderful for live sound. The direct access keypad lets me go straight to any preset rather than having to scroll through all the programs. I like to create great gated-drum verbs using ProR3's internal gate and eq."

Chris "Hoover" Rankin, CS&N's longtime FOH mixer.

"The ProR3's sound quality is excellent. The decay is very smooth, not grainy. It has a lot of sonic depth...It's a very rich sounding unit."

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Craig Anderton, EQ

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Jim Williams, Gig Magazine

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Nick Batzdorf, Recording

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Loren Alldrin, Pro Audio Review

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alignment? I can make clean recordings here (based on a bit-rate display showing only occasional errors), but I am concerned about any alignment mismatches when using these tapes in other machines.

Can you calm this nervous new owner?

Ben Cahill
via Internet

A Assuming you checked the error rate (was it via the front-panel LED or via the "hidden function" as described in my article?), I would say that if the machine is making good tapes it is probably OK. It would be a good idea to check its tapes on another machine and vice versa.

Having not seen the box damage, I can't imagine what type of damage could have been done to the machine. Take note that there is no head alignment, only "Tape Path" adjustments. These adjustments wouldn't go out of whack because the unit was dropped — unless the whole chassis was warped.

Eddie Ciletti
Contributing Editor
EQ Magazine

THE LONG & SHORT OF IT

Q *Are there length restrictions when running S/PDIF cable? For instance, can I go 15 feet without problems? What type of cable should I use? By the way, I love the stuff Eddie Ciletti does for EQ.*

Chad
via Internet

A Cable length is determined both by source impedance and cable capacitance. In general, the lower the output impedance and cable capacitance, the better. S/PDIF and composite video impedances are both 75 ohms. You should be able to run a hundred feet of 75-ohm *video* cable with no problem.

When a video signal travels a "great" distance, a booster amplifier must be inserted to recover cable-related gain and EQ losses. Anyone working with massive cable runs should really use balanced AES I/O. Long cable runs can be overcome by inserting a digital device, or devices, along the way to "reshape" the signal. Your 15-foot run should be no problem.

Eddie Ciletti
Contributing Editor
EQ Magazine

BALANCING YOUR SNAKE

Q *I've been asked to build a snake between a balanced mixer and an unbalanced patchbay (XLR male to 1/4-inch unbalanced). It's obviously not the desirable way to go, but the client already has another snake that works and doesn't want to invest in a balanced patchbay.*

I'd typically short the "low" side to ground at the 1/4-inch end, but noticed that the other snake connects only the "hi" and ground wires. ("Low" is not connected at either end.) Does this sound right?

Mike Ennis
NYC, NY

A Regarding the XLR to 1/4-inch unbalanced snake, please get out of the habit of shorting the "low side" to ground/pin 1. This can — in some cases — reduce headroom by 6 dB, causing unwanted clipping, especially if the source is a digital device.

I recommend balanced wiring so that you can take advantage of the noise-canceling advantages. For 1/4-inch sources/outputs, wire the 1/4-inch end with red to tip/hot, then black and shield to sleeve/ground. At the XLR, wire black/1, red/2 and black/3.

For active balanced XLR sources, wire black and shield to pin 1 and red to pin 2. Only transformer-balanced gear should have the "low side" tied to ground.

Eddie Ciletti
Contributing Editor
EQ magazine

ASK US

Send your questions to:
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Digital Recorders
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EQ PRODUCT VIEWS

GIVE A LITTLE SQUEEZE

The new tabletop MC6 Mini-Comp compressor from dbx Professional Products is designed to be easily accessible to the engineer or performing musician who wants to see their settings at a glance. Offering the same compression made famous by dbx's 160 family, the MC6 adds several new features, including a Dual-Mode Auto function which optimizes settings for vocals or instruments within the Auto Attack and Release setting. The MC6 also utilizes true RMS Power Summing, dbx's proprietary stereo operation algorithm, for accurate phase tracking through the entire audio spectrum and dynamic range. The MC6 carries a suggested retail price of $139.95. For further information, contact dbx Professional Products, 8760 South Sandy Parkway, Sandy, Utah 84070. Tel: 801-568-7660. Fax: 801-568-7662. CircleEQ free lit. #101.

TAKE IT EAZY

All the essential parts of the female EaZyCon connectors from Neutrik are enclosed in a dies cast case with a soft rubber applied surface. The contacts are designed according to Neutrik's latest patented tuning fork principle and comes standard with gold plating, in a solder version which comes with contacts pre-tinned and pre-fluxed. A digital version will also be available which will offer a strict coaxial link between two shields with an entirely new locking mechanism on the female connector. The locking mechanism allows a solid coaxial and noiseless link to the mating male connector or to a microphone. For further information, contact Neutrik USA, 195 Lehigh Avenue, Lakewood, NJ 08701. Tel: 732-901-9488. Fax: 732-901-9608. Circle EQ free lit. #102.

DAT'S AMORE...

With a suggested retail price of $995, the PCM-R300 DAT recorder from Sony offers a number of new advanced features, including a set-up menu for preference selection which allows users to set level synch threshold, activation of Start ID transfers from DAT or CD and even activation of the built-in clock. The menu also includes a switchable ID6 mode (SCMS) as well as an error readout menu as a display option. The unit employs Super Bit Mapping (SBM) technology (converting the audio signal from a 20-bit resolution A/D into 16-bit signals, allowing it to be recorded to DAT tape). The PCM-R300's audio interface includes digital I/O (S/PDIF, RCA pin) and analog I/O (Unbalanced/RCA pin). For more details, contact Sony Electronics, 1 Sony Drive, Park Ridge, NJ 07656. Tel: 800-686-SONY. Web: www.sony.com/proaudio. Circle EQ free lit. #103.

TIME CAPSULE

At the heart of Neumann's TLM 103 large diaphragm, transformerless condenser microphone, is a newly developed capsule based on the K87 used in the U 67 and U 87 microphones. The TLM 103 features extremely low (7 dBA) self noise, a large dynamic range (131 dB) and has the ability to handle acoustic signals up to 138 dB SPL. Optimized for voice and instrument pickup, the TLM 103 provides a flat frequency response to 5 kHz, with a wide, 4 dB presence boost in the higher frequencies. The internal structure of the TLM 103 is elastically mounted to reduce sensitivity to shock and mechanical noise, and it operates on standard 48 volt phantom power. The TLM 103 will be available with a retail price of $995, and will be also available in stereo pairs. For more details, contact Neumann/USA, P.O. Box 987, Old Lyme, CT 06371. Tel: 860-434-5220. Fax: 860-434-3148. Web: www.neumannusa.com. Circle EQ free lit. #104.

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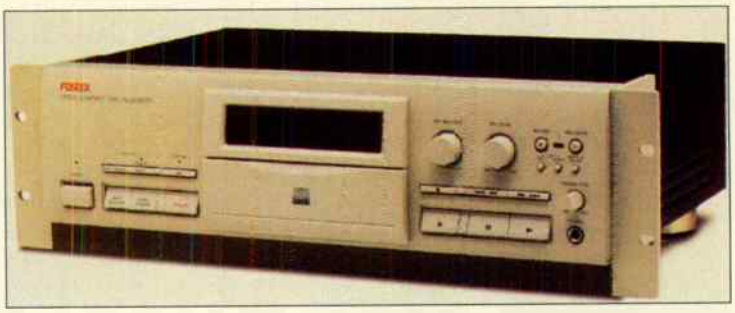
UNIVERSAL APPEAL



The CR200 universal CD-R recorder from Fostex is designed to record for both professional and consumer formats, and boasts the ability to take masters from virtually any audio source — including hard disks, cassettes, minidiscs, and DAT. The Fostex CR200 features three Digital Synchro Recording Modes which allow the CR200 to be armed and synchronously started from a master DAT player equipped with an S/PDIF connector. This feature is designed to automatically record track IDs, as well as automatically stop and start the CR200 by detecting source signal, at the touch of a button. The CR200 also offers a Digital Fader Function; two manual recording modes; selectable digital copying codes via rear panel DIP switches; an 8-pin parallel port, and wireless, infrared remote control. Other features include AES/EBU inputs, XLR balanced +4 dB inputs, and RCA -10 dBv unbalanced I/Os. The CR200 will also convert any digital input signal ranging from 33 kHz to 48 kHz into the CD standard 44.1 kHz. The MSRP of the CR200 universal CD-R is $2,195. For more information, contact Fostex Corporation of America, 15431 Blackburn Ave., Norwalk, CA 90650. Tel: 562-921-1112. Fax: 562-802-1964. Web: www.fostex.com. Circle EQ free lit. #105.

CATTLE BE ALL...

MIDIMAN's Flying Cow is a a cost-effective external digital audio converter. If you're using a two channel digital I/O card in your computer, the Flying Cow A/D and D/A converters deliver clear audio from 20-bit, delta sigma converters with 128x oversampling and a dynamic range of nearly 100 dB (A-weighted) in a half-rack design. The Flying Cow provides both AES/EBU digital I/O on XLR connectors and S/PDIF I/O on RCA connectors. Analog I/O is also available on balanced XLR connectors and unbalanced 1/4-inch connectors. A/D sample rates of 48, 44.1, 32 kHz, and Word Clock are selectable from the front panel. The Flying Cow is designed to remember all parameter setting even after it has been powered down. For further information, contact MIDIMAN, 45 East St. Joseph Street, Arcadia, CA 91006. Tel: 626-445-2842. Fax: 626-445-7564. Circle EQ free lit. #106.

THE BIG SQUEEZE

Featuring Peavey's exclusive OptoDynamics system, the VC/L-2 Valve Compressor/Limiter contains absolutely no solid-state devices in the audio chain. The "heart" of the design features an EL84 tube and a custom electro-luminescent panel which provides a faster response than bulbs with a smooth and more musical gain control. Peavey has provided each channel with two 12AX7 (four stages) tubes to provide warmth. The output stage of each channel is a "power amp" design that uses a two-stage 12AT7 tube which results in a +20 dBm output capability. To ensure optimum gain, the VC/L-2 XLR inputs and outputs are transformer balanced. Additional 1/4-inch line and instrument inputs and outputs are also provided. The suggested retail price of the two-channel, two-rackspace unit is $1299.99. For more details, contact Peavey Electronics Corporation, 711 A Street, Meridian, MS 39301. Tel: 601-483-5365. Fax: 601-486-1278. Web: www.peavey.com. Circle EQ free lit. #107.

EIGHT IS ENOUGH

Every channel on Oram Professional Audio's new Octasonic mic-pre features switchable +48V phantom power, 70 dB of gain (channels 1–6), +28 dB of head room, a peak indicator, phase reverse, and balanced in/outputs. The 1U unit has an internal power supply and features the same mic preamps found in the BEQ Series 24 console. When the Octasonic is used in conjunction with Oram's Octamix additional features include panning, routing, 2 stereo mix outputs, LR and stereo cue, and an additional headphone output jack. For further information, contact Sweetwater Sound, Inc., 5335 Bass Road, Fort Wayne, IN 46808. Tel: 219-432-8176. Fax: 219-432-1758. Web: www.sweetwater.com. Circle EQ free lit. #108.

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EQ PRODUCT VIEWS

BALANCING ACT

The two rackspace ET1R balanced power unit from Equi=Tech has a power handling capacity of 1000 watts and measures only 16- x 12.5- x 3.5-inches, and weighs in at 29 lbs. The unit features 10 receptacle outlets in the back and can handle a total maximum amperage of 8.3 Amps. The units are ETL-listed and are available with all of the same options as larger Balanced Power rack units, including EMI/RFI filtering and super-isolator options. The ET1R carries a suggested retail price of $879. For more details, contact Equi=Tech Corporation, P.O. Box 249, Selma, OR 97538. Tel: 541-597-4448. Fax: 541-597-4099. Web: www.equitech.com. Circle EQ free lit. #109.

SOLID AS A ROCK

The AKG Solidtube microphone is a single-polar-pattern, large-diaphragm, pressure-gradient tube condenser microphone that utilizes a 12AX7 vacuum tube. The mic offers a number of high-end features, including a bass attenuation switch (12 dB @ 100 Hz); a pad of 20 dB; an outboard power supply utilizing a high-voltage rail for low-noise operation; a push button ground-lift switch on the power supply to help reduce the possibility of ground loops; a shock mount and mic stand adaptor; and an integrated pop screen. The AKG Solidtube also offers a viewing port that allows visual monitoring of the internal tube operation as well as ambient light in dark recording environments.The suggested retail price of the AKG Solidtube microphone is $1,500. For more information, contact AKG, 1449 Donelson Pike, Nashville, TN 37217. Tel: 615-399-2199. Fax: 615-367-9046. Circle EQ free lit. #110.

A MEYER FOR THE MASSES

The HM-1S incorporates many new technical developments from Meyer, including electronic phase correction, true single-point source, magnetic shielding , a wide coverage pattern or "sweet spot", as well as an optional subwoofer. The HM-1S includes gold-plated connectors and an improved enclosure made of denser material with an oak veneer, which is designed to offer better dampening characteristics. Biamplifiers delivering 400 watts total power output are built into the enclosure and offer a full range response of 42 Hz–20 kHz. For more information, contact Meyer Sound Laboratories, Inc., 2832 San Pablo Ave., Berkeley, CA 94702-2204. Tel: 510-486-1166. Fax: 510-486-8356. Circle EQ free lit. #111.

AND THE MEEK SHALL INHERIT THE EARTH...

Offering 20-bit digital inputs and outputs on both XLR (AES/EBU format, S/PDIF compatible) and optical connectors, the JOEMEEK SC3 is a premium quality stereo compressor that builds on the sound of the flagship SC2. In addition to it's digital inputs and outputs, the SC3 also offer high-quality analog balanced inputs and outputs. The 2U, 19" rack mountable unit offers an internal power supply, front panel output level control that allows trimming of output, and switchable metering to read either internal level or gain reduction. For more details, contact JOEMEEK, 23773 Madison Street, Torrance, CA 90505. Tel: 310-373-9129. Fax: 310-373-4714. Web: www.joemeek.com. Circle EQ free lit. #112.

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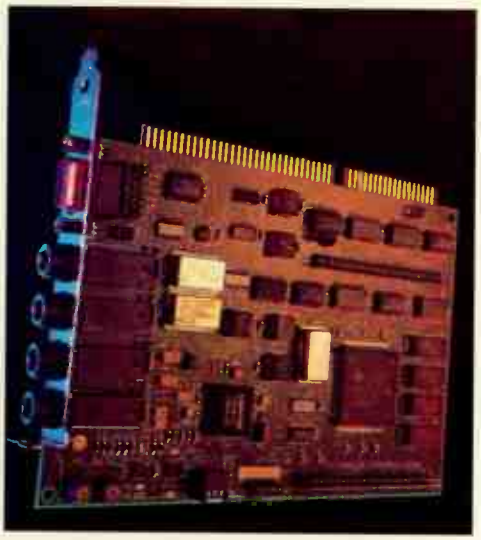
EQ STUDIO WARE

BACK TO SCHOOL...

The Mac/Windows compatible Cool School Interactus Vol.2 CD-ROM from Cool Breeze Systems is the latest in their series of interactive educational learning environments. CSi vol. 2 features Digidesign's Pro Tools® 4.0 software and selected third party development partners. The program includes screen element definitions with click-state pop-up simulations for the Edit and Mix windows, Transport control, and Menu selections, a glossary of D.A.W. related terms, over 100 operational examples, as well as production techniques, special short cuts, and key commands. CSi vol. 2 also includes the "CSi AutoPlayer" which launches CSi into an "auto-pilot" mode which can be disengaged and resumed at any time. For more information, contact Cool Breeze Systems, 2041 Riverside Drive, Suite 122, Columbus, OH 43221. Tel: 800-729-6919. Fax: 614-486-4690. Web: www.coolbreezesys.com. Circle EQ free lit. #113.

IT'S IN THE CARDS

Power Technology's DSP•FX-SC Sound Card combines their pro-quality effects-processing hardware with Windows drivers to provide direct recording and playback support for most OC DAW software packages, including Cakewalk Pro Audio, Sound Forge, Cubase VST, SAW +32, and others. The system also includes a dedicated 32-bit floating point DSP engine which implements Power Technology's DSP•FX Plug-Ins in real time without placing extra burden on the PC's CPU. Two inputs and outputs, in both analog and AES/EBU digital audio formats are supported, and multiple card usage allows up to 8 ins and outs with full clock synchronization. DSP•FX-SC utilizes Power Technology's ISA-V buss structure which is fully compatible with standard PC-ISA busses.For more information, contact Power Technology, 100 Northill Drive, Bldg. #24, Brisbane, CA 94005. Tel: 415-467-7886. Fax: 415-467-7386. Web: www.dspfx.com. Circle EQ free lit. #114.



IT'S TOOLS TIME!

Digidesign recently unveiled Pro Tools 24, a 32 track recording system that records, edits, and mixes 24-bit resolution audio. The System is comprised of the d24 card which provides track count; the Digidesign DSP Farm for signal processing and mixing; Pro Tools 4.1 software, and the new 888 24 I/O Interface which supplies eight channels of 24-bit A/D conversion, eight channels of 20-bit D/A , and eight channels of AES/EBU. Each Pro Tools 24 core system provides 32 tracks of 24-bit or 16-bit recording and mixing. Up to three 888/24 I/O interfaces are supported for 24 channels of input/output per core. Track count and I/O are expandable using expansion kits giving a minimum of 48 tracks and up to 72 I/Os. Pro Tools is now available for a suggested list price of $7995. For more details, contact Digidesign, 3401 A Hillview Ave., Palo Alto, CA 94304. Tel: 650-842-7900. Fax: 650-842-7999. Circle EQ free lit. #115.

FUSION OF FUNCTION AND FUN

Ideal for musicians, DJs, producers, engineers, and sound designers, fusion:EFFECTS from Opcode are an inexpensive way to tailor an individual sound and add texture to mixes. Opcode's fusion:EFFECTS offer odd, niche-type sounds not commonly found in hardware audio processors. Fusion:VOCODE will allow users to generate distinctive effects including guitar talkboxes, robot vocals, or even pulsating rhythm parts derived from sustained chords. Opcode has also included advanced control features, including Level, Resonance, Depth, and Mix, as well as five-band tonal control. Users can select their own carrier wave of they can "construct" one with fusion:VOCODE's on-board synth. Fusion:VOCODE carries an MSRP of $149.95. For more information on fusion:VOCODE, or Opcode's full line of fusion:EFFECTs, contact Opcode Systems, Inc., 3950 Fabian Way, Suite 100, Palo Alto, CA 94303. Tel: 650-856-3333. Fax: 650-856-3332. Web: www.opcode.com. Circle EQ free lit. #116.

World Radio History

linear activation

From now on, PA stands for Performance Audio

The truth is that most PA systems are not designed for live performance. They borrow cone drivers from instrument amps and crossovers from home hi-fi sets. They can't handle the power and they don't disperse the sound evenly. Basically, they're useless.

Linear Activation from EAW is not just another PA. It redefines the word.

LA offers a complete line of PA systems engineered by EAW – the world standard in professional touring sound. LA features the same professional cones and compression drivers, the same heavy-duty, computer designed crossover and the same road-proven construction techniques and materials. All designed to solve the specific problems of small-venue live performance.

You're a professional. Don't you deserve a professional PA? To find out more about a truly professional PA, call 508-234-6158 and request a copy of the Linear Activation Technology Brochure.

Kenton G. Forsythe, Exec. VP, Strategic Product Development (right), and Gary Hordesty, VP, Engineering, demand that EAW innovations use fundamental laws of acoustical physics in new ways.

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the Missing Link?

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Pick any of a number of programs: Sound Forge®, SAW+™, Samplitude™, Cubase Audio™, Wavelab™, CoolEdit™, GoldWave™, etc. It's amazing what you can do with a computer these days! But... how do you get those 16-mic drum parts into the computer in the first place? Or, once you've stacked and fattened those vocal harmonies, how do you get them out?

We've Found it.

With the STUDI/O multichannel sound card you get two sets of optical in/out: that's two adats!

16-channels, phase-locked and in sync. No ground loops, no noise. Switch to SPDIF format and digitally record from a sampler CD. Bring it in at 48KHz on the fly, using the onboard sample rate converter. Transfer to and from your DAT machine. Convert to 44.1 KHz on the way. Use your ADATs in pass-thru mode to go direct to disk. Or, connect STUDI/O directly to your favorite digital mixing console.

STUDI/O.

GET it!

Get 16-channel,24-bit record and playback. Get 18-bit stereo analog monitor mix. (Steerable to digital outs too!) Get top-quality stereo sample rate conversion. Get full compatibility with Windows® Sound System.

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EQ STUDIO WARE

VIRTUAL LOW-END

Waves' newest Plug-In is based on patent pending technology called MaxxBass. MaxxBass is a virtual subwoofer that utilizes proprietary algorithms based on psycho-acoustic research to deliver high quality bass sounds through any audio speakers. MaxxBass analyzes the audio signal which is below the low-frequency limit of the system and then adds a series of harmonics to the signal which help to enhance bass perception. MaxxBass plug-in will support the different platforms supported by Waves. For more details, contact Waves, 6716 Central Avenue, Suite 8, Knoxville, TN 37912. Tel: 423-689-5395. Fax: 423-688-4260. Web: www.waves.com. Circle EQ free lit. #117.

STRINGS 'N' THINGS

Rarefaction's newest sound library, Etymology, offers a collection of sounds by experimental guitarist Fred Firth and avant cellist Tom Cora. Produced by Thomas Dimuzio, the royalty free sound library contains a profusion of string and wire manipulation techniques and effects. Etymology includes long solo and duet performances, ready made for media sound beds. The CD-ROM version consists of 16 bit, 44.1 kHz, AIFF sound files, ready to use in your digital workstation, sampler and performance applications, and will mount on any Macintosh computer or Windows 95 PC. For further details, contact rarefaction, Tel: 415-333-POKE. Fax: 415-333-5022. Web: www.rarefaction.com. Circle EQ free lit. #118.

A SOUNDING BOARD FOR THE FUTURE

The Audiotrix 3D-XG sound card is a full featured, professional quality sound card offering 16-bit, full-duplex digital audio. The board offers Yamaha XG wavetable synthesis with expanded sound effects processing, including Yamaha's proprietary 3D YMersion sound. The first sound card to feature Yamaha's newest XG MIDI technology, the Audiotrix 3D-XG provides 676 voices, and 21 drum kits while supplying 32-note polyphony and 16-part multi-timbrality. On-board effects include 11 types of reverb, 11 types of chorus, and 42 types of other variations. The Audiotrix 3D-XG also includes an 18-bit DAC for MIDI instrument rendering. The output of the Audiotrix 3D-XG is processed through an on-board digital signal processor (DSP) and digital effects can be applied to MIDI data as well as to other output sources (Mic, Wave, CD audio) independently. Other features include Sound Blaster and Sound Blaster Pro compatibility, advanced audio control with extended bass and treble control, and 3D-surround sound processing via Yamaha's YMersion sound. PC platforms that are supported include Windows (3.1x, 95, NT 3.5x, NT 4.0) OS/2 Warp, Linux, as well as many other versions of Unix. For more details, contact Mediatrix Peripherals, Inc., 4229 Garlock Street, Sherbrooke, Quebec, Canada J1L 2C8. Tel: 819-829-TRIX. Fax: 819-829-5100. Web: www.mediatrix.com. Circle EQ free lit. #119.

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RØDE™ NT1

Large Diaphragm Condenser Microphone

Now you can enjoy the rich warm sound that only a true, large diaphragm condenser mike can deliver—at a price dramatically lower than everything else in its class.

Designed by the company that brought you the critically acclaimed Classic Valve Tube and NT2 microphones, the NT1 is sensitive enough to capture subtle vocal nuances, yet rugged enough to withstand high SPL in electric guitar and drum applications. Couple that with its 1" gold-sputtered diaphragm, extremely low noise circuitry, internal shock-mount system—and yes, that precision sound—and you can easily see why the NT1 is the must-have workhorse for your studio.

NT1 $499 U.S. MSRP

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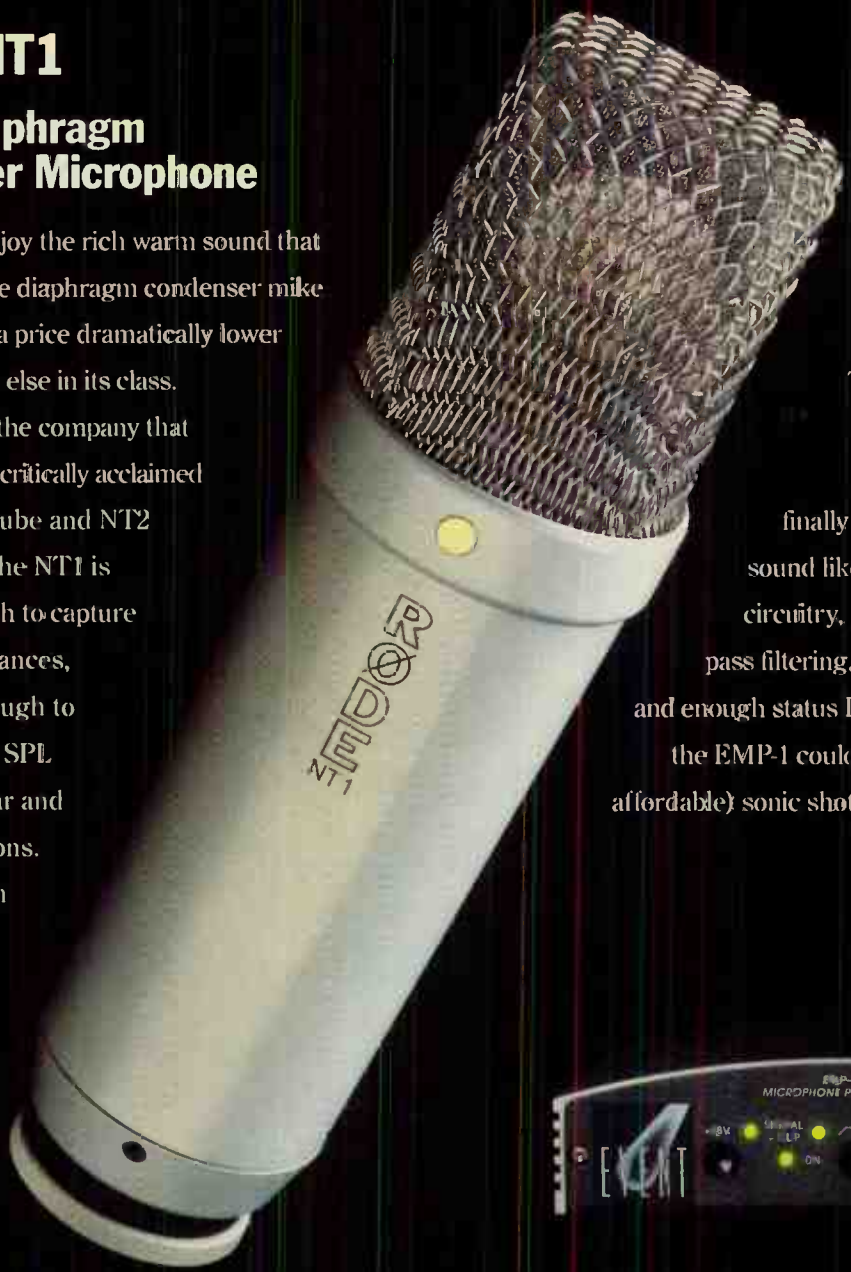

Event EMP-1™

Microphone Preamplifier

Want to spruce up the sound of your current microphone collection (or even your NT1)? Then plug them into the new Event EMP-1—a world class preamp so acoustically transparent that you'll finally hear what your microphones *really* sound like. With features like ultra low noise circuitry, phantom power, phase reverse, low pass filtering, continuously variable gain control, and enough status LEDs to light up your control room, the EMP-1 could be the single most important (and affordable) sonic shot in the arm you give to your studio.

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World Radio History

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Much, Much More Than **Words**

Light on words but heavy on gear, No Comment Studios has plenty to offer east coast musicians

STUDIO NAME: No Comment Studios
LOCATION: Belleville, New Jersey
MAIN MEN: Tony Viscardo, owner/chief engineer; Steve Addeo and John Albanese, assistant engineers; Ricki J. Begin, tech; Greg Baron, piano tech
PROJECTS RECORDED: Conosur, *Zonda*; Jono Manson, *One Horse Town* (with John Popper); Glen Alexander, *Oria; Lady Day* Soundtrack; Gary Valente, *Evil Twin*; Russ Bonagura, *Daydreamin'*; Bob Ackerman Trio, *Old and New Magic*; The Smoking Section, *Pick It Up*; Sam Shaber, *In The Bunker*; Chaka Khan (two-song demo for Warner Bros. Records)
CREDITS: In addition to playing Broadway shows and sessions with artists such as Chaka Khan, The Mighty Sweetones, and The Smoking Section, guitarist/producer Tony Viscardo has performed live in Europe as well as in New York City. His current project, Conosur, features himself on guitar, Hernan Romero (guitar), and Manolo Badrena (percussion).

World Radio History

CONSOLE: Soundtracs Megas 32x24x2
RECORDERS: Alesis ADATs [4]; Otari 5050 2-track
KEYBOARDS: Fender Rhodes; Wurlitzer Piano; Hammond XB2 with Leslie 147; Kawai 6-foot grand; Korg 01W and 03RW; Roland D-50, MKS50, and R8 drum machine; Yamaha TX802; Oberheim Matrix 1000; Alesis D4 and S4; E-mu Classic Keys
SAMPLERS: E-mu E32
MONITORS: Tannoy System 12; Yamaha NS10M; Alesis Monitor One
COMPUTERS & SOFTWARE: Macintosh Quadra 650 with Sound Designer; CD Master List; MOTU Performer
DATS: Panasonic SV-3700; Casio DA-7
OUTBOARD GEAR: Demeter VTMP-2b; Lexicon PCM70 and Prime Time; TL Audio tube compressor/mic pre; Alesis Quadraverb, Midiverb 2, and Quadraverb 2; Roland SD-3000 and SD-2000 delays; dbx and Valley Audio DynaMite compressors and gates; Klark Teknik and Valley Audio EQs
MICROPHONES: Neumann U87; AKG C414, C460, C451, CE5, and D112; Sennheiser 421; Shure SM57 and 58; Audio-Technica AT4050/CM5
GUITAR GEAR: Mesa Boogie Mark III and Mesa Boogie Studio Preamp; Fender amps: '59 Bassman, '62 Blonde Pro, Pro Junior, '59 Tremolux, and '63 Reverb; Marshall stack; Jim Kelly; Zoom 9002; Roland JC 120; DigiTech Studio Tube Preamp; Jackson Perfect Connection
FAVORITE GEAR: Demeter mic pre and TL Audio tube compressor. Viscardo remarks: The tube gear really warms up the digital recorders. You can't beat the '62 Fender Pro with a great mic through the Demeter and a bit of Lexicon 'verb.
STUDIO NOTES: Viscardo continues: Our grand piano is a favorite of the many great pianists that record here. From jazz masters Jim McNeely and Danny Holgate to Shawn Colvin's pianist Doug Petty, they all speak highly of the instrument.
PRODUCTION NOTES: Viscardo concludes: My goal when producing or engineering is to make the artist feel as relaxed as possible and get that feeling on tape. EQ

PHOTO BY DAVE GRVOL

World Radio History

Soundfield SPS 422

This Soundfield mic has a couple of tricks up its sleeve

MICROPHONE NAME: Soundfield SPS422
PRICE: $3999, including rackmount controller, stand adapter, and cable
TYPE OF MIC: Four-capsule condenser
POLAR PATTERN: See notes
FREQUENCY RANGE: 20 Hz to 20,000 Hz
EQUIVALENT SELF-NOISE: 14 dBA SPL in cardioid (IEC179)
MAXIMUM OUTPUT LEVEL: +22 dBu
MAXIMUM INPUT FOR 0.5% THD: 145 dB SPL
OUTPUT IMPEDANCE: 100 ohms, balanced
MIC NOTES: Soundfield's SPS 422 uses four matched condenser microphone capsules arranged in a tetrahedral array. Each of the four capsules faces a different direction, enabling the microphone to capture sound three-dimensionally. Audio signals from the four elements are sent (via a single cable) to a rackmount processor that provides user control over the SPS 422's pickup pattern and stereo width. To prevent ambient humidity from adversely affecting performance, the SPS 422's body includes a heater that reduces condensation.
USER TIPS: The rackmount processor includes a preamp, so output from the rear panel may be directly patched to a tape machine or other line-level device. Varying the Width control on the processor will take the SPS 422's output from mono to full stereo. Varying the SPS 422's Pattern control will take the mic's output from 360 degrees to dual cardioids to straight figure-eight. Depending upon the combination of the Width control and the Pattern control, the mic's output can vary from stereo 360 degrees through stereo XY cardioids to mono figure eight. When used in Mid-side mode, the middle signal appears from the processor's left output while the side signal appears at the right output. Under normal circumstances, the SPS 422 is a side-address mic (i.e., the "front" is at the side of the mic, indicated by the Soundfield logo). However, the SPS 422 may be altered to "end-fire" address by changing the processor's Position switch to "End." When using the SPS 422 mounted upside-down in its shock cradle, left and right will effectively be reversed. A switch marked "Inv" is designed to return this condition to normal. EQ

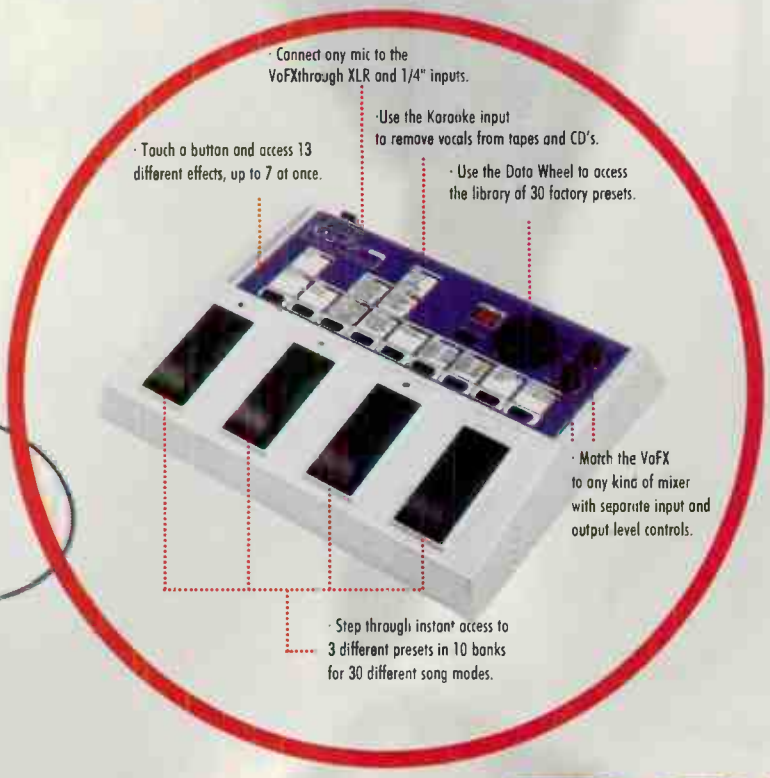
PHOTO BY EDWARD COLVER

World Radio History

TAKE CONTROL

With the DOD VoFX VOCAL FX PROCESSOR from DOD

Finally, studio quality vocal effects when and where **you** want them. Want Reverb, Echo or Doubling? Step on it! Want vocal flanging? Step on it! Want them all the same time? Step on it! You've never seen anything like DOD's new VoFX Vocal Effects Processor because there's never been anything like it. Just connect your mic to the VoFX and connect the VoFX stereo outputs to your mixer and you're there. Suddenly, you have **real time control** over all your vocal effects. Use it on stage or in the studio. If you're a singer, **you need this!** Try the new VoFX today at DOD dealers everywhere.



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World Radio History

A Harman International Company

RAMSA DA7 Digital Console

Although still on the drawing board, RAMSA's digital console looks ready to rock the world

BY CRAIG ANDERTON

Although scheduled for a NAMM launch, RAMSA showed a prototype of its DA7 digital mixer at AES '97. In order to avoid accusations of vaporware-mongering, the product was shown only to a selected group of attendees, and it was made very clear that quantity shipments wouldn't occur until March 1998. Besides, the $5000 price point puts it between Yamaha's 02R and 03D, and it's half the price of the upcoming Mackie and TASCAM digital consoles, so no one could accuse them of trying to launch a preemptive strike against similarly priced consoles.

Primarily, RAMSA knew it had a low profile in this country for digital audio, and wanted to announce that they intend to be players in this field. If, however, the DA7 does what RAMSA claims it will do, they probably won't have to worry about a low profile much longer.

BASICS

The DA7 has 32 inputs and 8 output busses. Typically, 16 of the inputs are +4 analog mic/line (no –10), with eight TRS balanced and eight XLR connectors. The 16 digital inputs (with 24-bit converters and 32-bit internal processing) require optional-at-extra-cost cards, depending on whether you plan to interface with ADAT, TDIF, or AES/EBU. Each card handles eight inputs, so you could have eight channels of ADAT + eight AES/EBU, 16 channels of TDIF, etc. You can, however, also replace eight of the analog inputs with another digital card (great for 24-track, digital 8-track-based studios), or use an analog card instead of digital for 32 ana-

PHOTO BY CHRIS JOHNSON

THE PRICE IS RIGHT: The Ramsa DA7's $5000 price point will put it between Yamaha's 02R and 03D, and at half the price of the upcoming Mackie and Tascam digital consoles.

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IT'S QUIET, DEPENDABLE AND DOESN'T NEED A LOT OF ATTENTION. DON'T YOU WISH YOU HAD MORE FRIENDS LIKE THAT?

THE SERVO 120 REFERENCE AMPLIFIER

Think about it. From one slim rack space, the Servo 120 gives you 60 watts per channel of clean, dependable power without creating any new problems in your life. All for less than 200 dollars.

Dedicated to "reference-quality" audio, the 120 features a wide frequency response of 10 Hz to 100 kHz (-3 dB) and quiet, convection-cooled operation.

The amp's front panel features individual level controls with LED meters and a convenient headphone jack with a speaker-disable switch for isolated monitoring.

Built tough, the 120 is housed in a solid steel chassis. Its Bipolar design and high-quality toroidal power supply ensure consistent performance. Like all of our Servo amps, thermal and overcurrent protection circuitry is standard.

Servo 120. The kind of friend that's hard to find. Get acquainted with one soon at your local Samson dealer.

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For more about Samson Audio, please call (516) 364-2244, fax (516) 364-3888 or write to Samson Technologies Corp., P.O. Box 9031, Syosset, NY 11791-9031. Visit Samson Audio at www.samsontech.com ©1997 Samson

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AZDEN UHF
NOW Two Choices!

412UDR

411UDR

One year after stunning the industry with our 411, a 63 channel user-selectable UHF system for under $1000, Azden is introducing the 412UDR, a full single-space rack receiver with antenna mounting on front and rear, and with all the great features and performance of the 411UDR.

Tests in the field around the world have drawn rave reviews for the 411, with the RF performance and sound quality being compared to systems costing up to 5 times more!

Both receivers are PLL synthesized, dual conversion superheterodyne, true diversity, with balanced and unbalanced XLR and 1/4" outputs, tone squelch, output control, and status LEDs. Available with frequency agile handheld (41HT), or bodypack (41BT) with a choice of Azden's world-renowned omni-directional (EX-503M) or uni-directional (EX-505U) capsules.

41BT

41HT

EX-503M

End-user prices:
411UDR receiver $589.00
412UDR receiver $689.00
41BT bodypack $159.50
41HT handheld $399.00
EX-503M $25.00
EX-505U $49.00
AMC-2A $150.00

AMC-2A

CHARGE IT! The 41HT handheld can be used with either 2 AA alkaline, or our exclusive rechargeable NiCad battery, and you can charge it with our optional AMC-2A charging station.

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CIRCLE 04 ON FREE INFO CARD

log inputs. (To give an idea of card pricing, the 8-channel ADAT card is estimated to list for around $400.)

There are 16 flying faders, which access four "layers" of control. Layer 1 controls inputs 1–16, and layer 2, inputs 17–32. You can, however, also "flip" individual faders between the two layers, so for example, while in layer 1 some faders could control layer 2 channels.

In layer 3, the faders control six aux sends (two S/PDIF and four analog), six aux returns, and the eight bus masters. Layer 4 can be anything you want — such as combinations of faders from the other three layers — as well as MIDI faders for sending out controller data. (Regarding MIDI, the DA7 also transmits MIDI Machine Control messages.)

INPUT STRIPS

Each input has 4-stage parametric EQ and dynamics control (compressor, noise gate, expander); these settings, as well as all mixer settings, show up on a large supertwist LCD. The user interface is particularly cool: touch a fader and the LCD shows that input strip's parameters. To then adjust the EQ, touch one of the three EQ programming knobs, and the screen shows the EQ parameters. Same goes for dynamics, bus assign, aux assign, and surround sound mix (5.1 surround sound is an integral part of the mixer). Bottom line: there's no paging through menus to get to common functions.

A rear-panel option slot accommodates 16 analog inserts or digital inserts on busses (not on inputs). It can also gang together two mixers to create a 64-input mixer. In this mode, busses go across the two mixers as if they were one big unit.

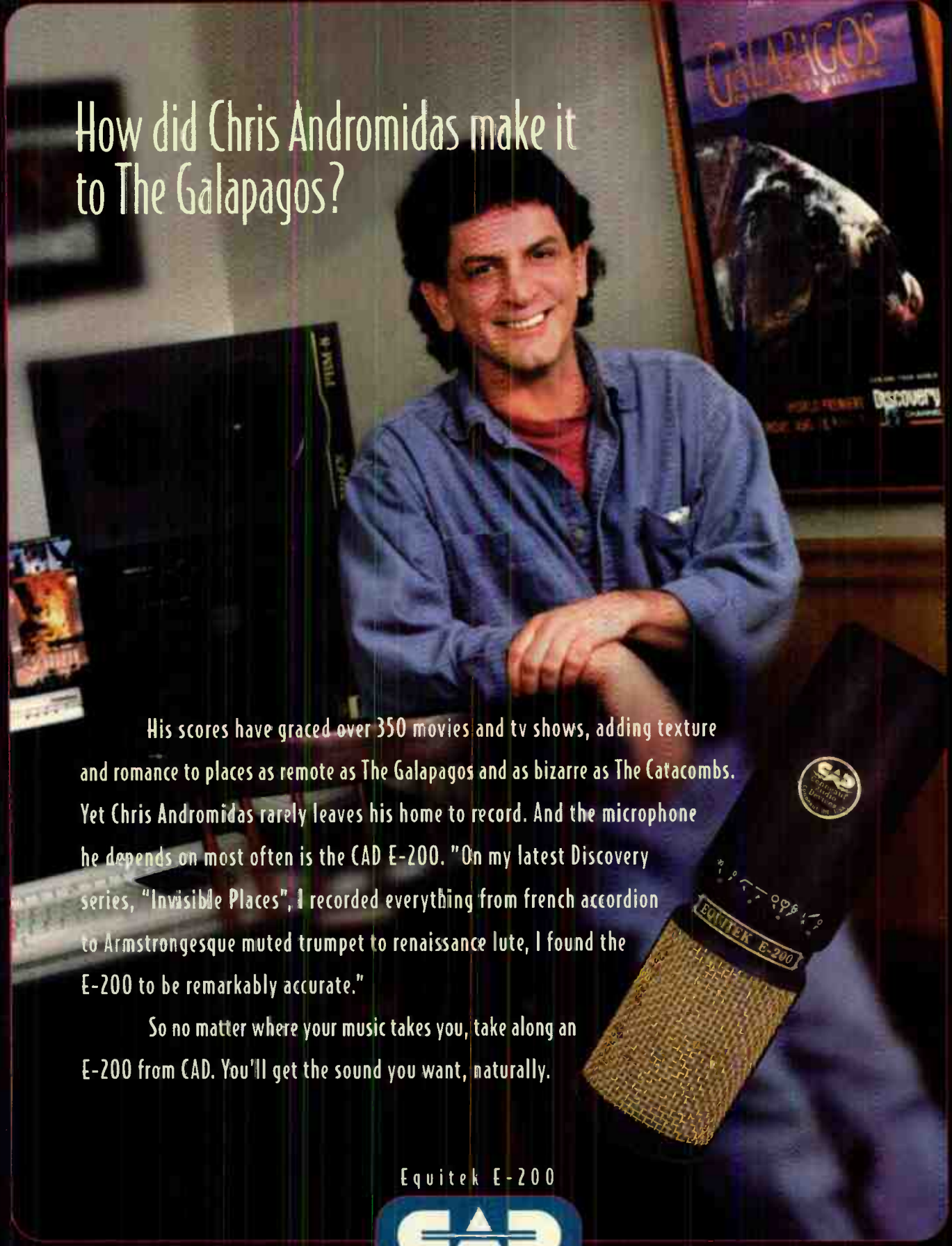
There's a Solo button, programmable among AFL, PFL, or solo in place. Plus, if you're concerned about meddlers at live gigs or sound installations, password protection can rope off the console as a whole, or specific sections.

CONTROL & AUTOMATION

Although there is dynamic automation on board, its memory is relatively limited. RAMSA will, however, be offering Mac and Windows automation software for mix-intensive projects. Furthermore, there are 200 memory locations. Fifty of these memorize all console

continued on page 136

World Radio History



How did Chris Andromidas make it to The Galapagos?

His scores have graced over 350 movies and tv shows, adding texture and romance to places as remote as The Galapagos and as bizarre as The Catacombs. Yet Chris Andromidas rarely leaves his home to record. And the microphone he depends on most often is the CAD E-200. "On my latest Discovery series, "Invisible Places", I recorded everything from french accordion to Armstrongesque muted trumpet to renaissance lute, I found the E-200 to be remarkably accurate."

So no matter where your music takes you, take along an E-200 from CAD. You'll get the sound you want, naturally.

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World Radio History

CIRCLE 10 ON FREE INFO CARD

Yamaha 02R Turns Two!

Version 2 software for the popular digital console offers options users have been clamoring for

BY ROGER NICHOLS

It has been almost two years since the first shipments of the Yamaha 02R digital console. Since then, Yamaha has also released the 03D, a smaller version of the digital console, but with software that wasn't available in the 02R, such as surround sound mixing. Yamaha has also listened to its thousands of 02R customers and put together a wish list of features they would like to see in a new software revision. As of September '97, all 02R's will ship with Version 2 operating software, and previous 02R owners can upgrade to Version 2 by purchasing an upgrade kit from their dealer.

To keep this thing short, I am going to have to assume that you already know what the 02R can do. I am just going to outline the new additions to the pile of features.

SURROUND SOUND MIXING

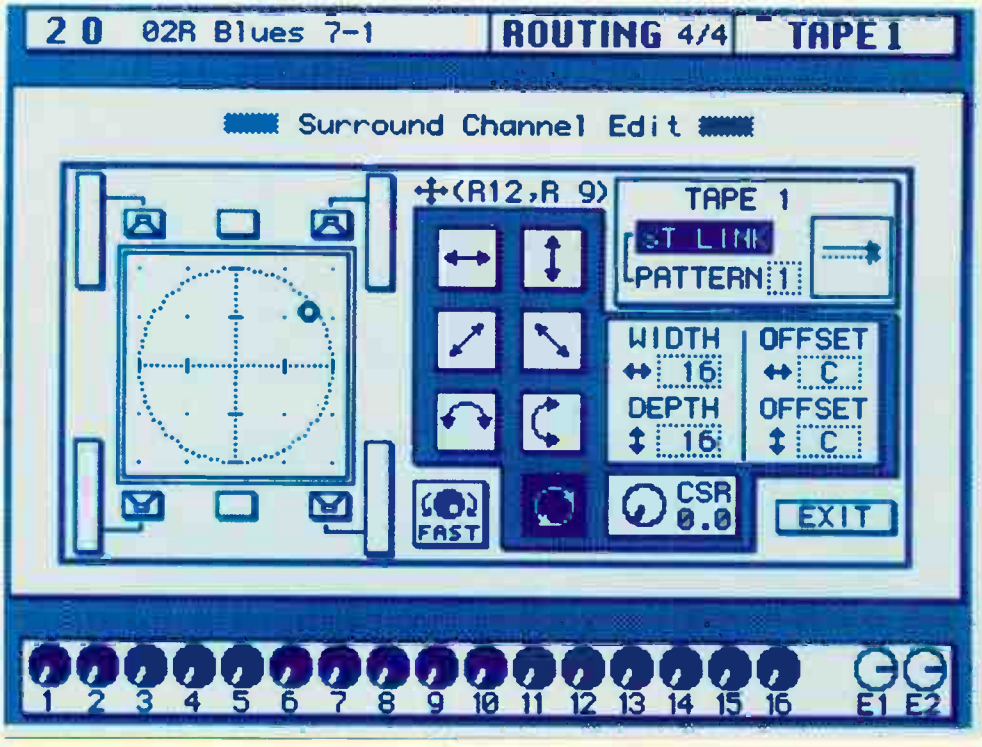
The most obvious addition to the V2 software is surround sound mixing. There are now additional pages under Routing that refer to various configurations of surround systems. As far as options go, 2+2 is set up to be left and right speakers in front and left and right speakers in the rear; 3+1 is your basic LCRS (Left Center Right Surround) configuration; 3+2+1 gets you into what is commonly referred to as 5.1 (read five-point-one) format, which gives you left, center, and right in the front of the room, left and right rear speakers, and one subwoofer channel for a total of six channels of audio information. [*See the 5.1 feature in the October issue for more information.*]

You have choices for output monitoring. The first six bus outputs are used for the surround outputs. You can send to your monitors from the output of your destination recorder, you can listen to the outputs from an optional analog I/O card, or you can route the busses to Aux Outputs and use them as monitor sources to feed the monitor amps.

The most innovative part of the surround sound addition is the panning configuration. When surround panning comes to mind, you automatically think of joysticks or, at the very minimum, a left-right and front-back pan control for each channel. With the V2 software Yamaha has implemented the "Panning Trajectory" approach. Panning of each individual channel is graphically displayed on the LCD screen as the representation of a room with speaker icons placed according to the surround model you are using. You can then select from a menu of various trajectories over which the sound will travel during a dynamic panning movement. In each case, you can decide what percentage of the signal will be routed to the center channel and how much the trajectory can be squashed in either the front-back or left-right direction. For 99.9 percent of your panning requirements, this system will work perfectly. For those occasions when you want a joystick input for dynamic panning that doesn't fit a bezier trajectory, then Yamaha will offer a MIDI joystick. Remember, since everything on the 02R is automatable (is that a word?), you can pan one channel around, then change tracks and pan another one. On the LCD display by each speaker icon is audio level metering so you can always see exactly how much total signal is being routed to each speaker.

ROUTING

While we are on the subject of routing, there are some new additions in V2 that are very useful. The inputs to the console are in blocks of eight. In each of these blocks you can reroute the incoming signal to any other input. As an example, if you recorded the stereo guitar on channels one and three, you can reroute channel three to input two so that you can stereo link them together.



MIXING IN THE ROUND: The most obvious addition to the V2 software is its surround sound mixing capabilities.

World Radio History

Bring the Mastering House Home

For mastering digital audio in your home studio, look no further.

Sound Forge 4.0 combines professional mastering tools in affordable software that's easy to use. The most powerful editor for Windows, Sound Forge is packed with processing tools used by many mastering houses:

- Three equalizers: 10-band Graphic, Paragraphic, and Parametric so your final mix sounds good on any set of speakers
- Normalize feature to match levels between tracks
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You can also re-route the aux outs to busses. This means that you can have aux sends feeding digital busses so that effects sends can go digitally to your outboard reverbs that accept digital inputs.

SCENE MEMORIES AND AUTOMIX

Scene memories are used to store the state of the entire console. The number of scene memories has been changed from 52 to 96.

In Automix, you now have extensive offline editing of Automix information. You can erase or insert events at any timecode location and move or copy events to another timecode location. This works out great if you have mixed a song and then want to go back and add two bars before the second chorus. You can just move the Automix data two bars later, starting at the second chorus, and push Play. You can also choose to display only the channels or type of Automix events that you want to work with to keep the clutter to a minimum and avoid changing data that you don't want to change. You can also trim a range of events offline. If the vocal rides are perfect but just a little loud in the second chorus, then just trim them down a little. Timecode addresses can be captured on the fly and new events inserted at the captured time.

Touch sensitive faders have now been added to Automix. If you turn this option on, then you don't have to press the Select button in order to update a channel. If you start to move the fader, the Automix computer knows and automatically starts updating the mix information.

An additional check box on the Automix page allows you to update mix information to the end of the song when you stop the tape. Without this box checked, if you were lowering the level of a guitar and stopped the tape at the second chorus, from that point on the level of the guitar would return to the previous level. If you wanted to change the level to the end of the song, you would have to play the tape to the end with the guitar fader at the desired level. Now, with the End box checked, when you stop the tape the current fader level is written to the end of the tape.

MIDI DUMP

On the MIDI page, you can now select more than one type of data at the same time. This means you could select all of the boxes and save the entire console at once with one continuous MIDI dump. If you mess around in this area, make sure you keep very good documentation of what you are dumping. When you send data back to the 02R it overwrites existing data. If you save Automix 7 and later read it back in, it will overwrite the data in Automix 7. You cannot re-route this information to another Automix location. If you dump the entire contents of the Automix memory, you cannot just read back in one memory location — it overwrites the entire Automix memory. So, be careful.

In the Setup page, you can enable MIDI dump data compression. This will save storage space on the destination device, but should not be selected when the data is intended for an 02R that does not have V2 software. The data is automatically expanded when read back into a V2 02R.

REMOTE CONTROL

V2 offers remote control of external devices from the 02R. If you hold down the Flip button, you enter a new Remote Control area. From here you have four different external devices that you can control at the same time from each Scene Memory location. The controllable devices available are 02R, 03D, ProMix 01, General MIDI, MMC (MIDI Machine Control for tape machines), 16 tracks of Pro Tools, and some of the more recent Yamaha reverb devices. I have been using a ProMix 01 for extra effects returns. Any level, pan, and memory recall data for the ProMix 01 is stored with the 02R scene and completely reset whenever I recall an 02R scene.

There is also a Remote Page for Bus/Aux Masters. This is not really a remote device, but it lets you control the Bus and Aux master levels with the 02R faders instead of the encoding wheel, which was the only way in previous software versions.

DIGITAL I/O

V2 has added a 24-bit recording mode for those who do not have 24-bit recorders yet. It works by splitting the 24-bit signal into two 16-bit signals. One channel carries bits 1–16 and the other channel carries bits 17–24. When played back, they are put back together to form the 24-bit signal. This will turn any 16-bit, 8-track recorder into a 4-track, 24-bit recorder. Of course, you need 24-bit data from somewhere to make it work out, but more on this some other time.

CONCLUSION

That about does it. There may be something I forgot, but if there is, you probably won't need it. There is an extensive list of new features in V2 for the 02R, and I am sure they will quickly find their way into your 02R.

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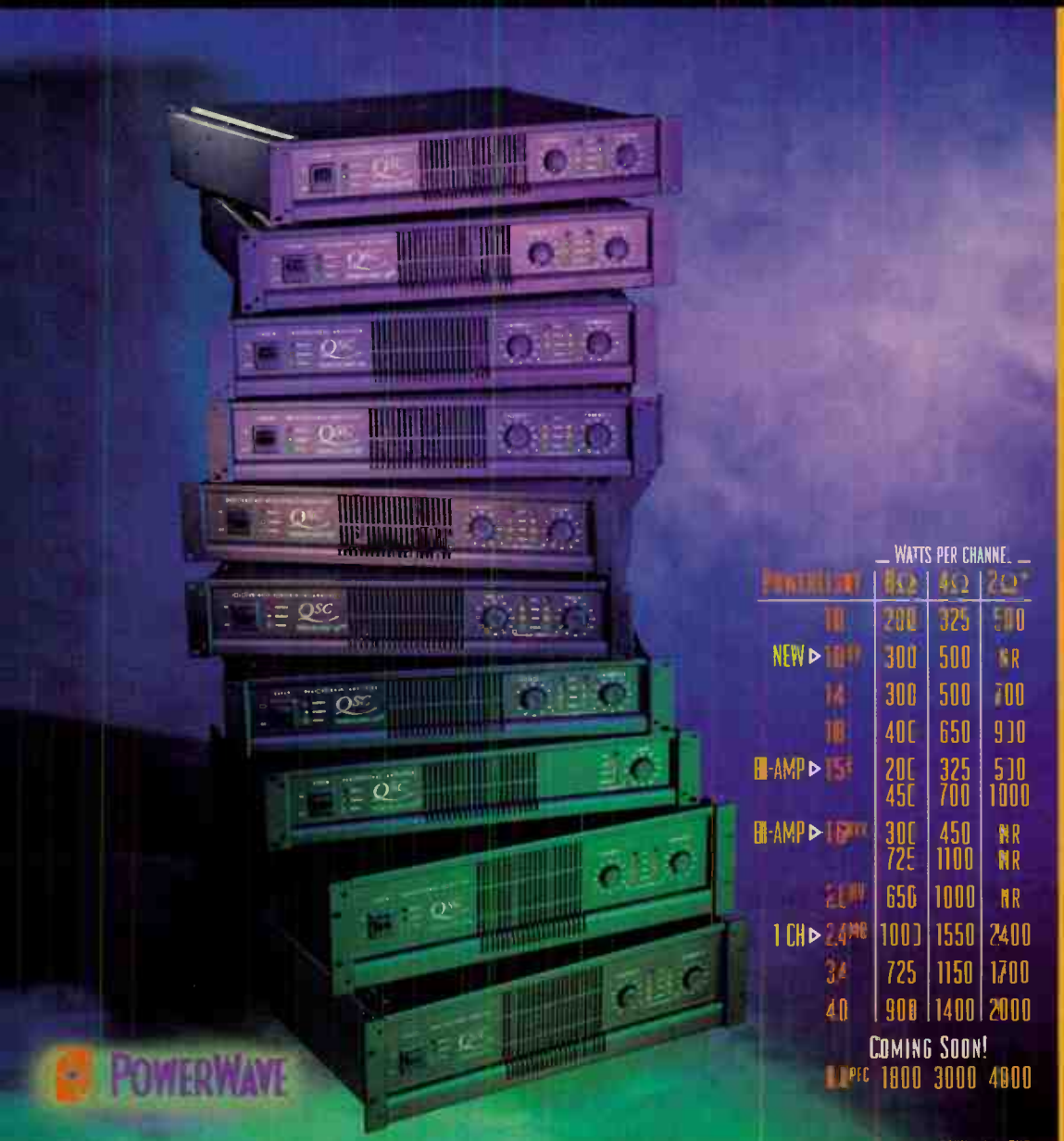

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Stalking the **Wild Acoustic**

Some good ideas for recording acoustic guitars

BY CRAIG ANDERTON

Whether music is plugged, unplugged, or replugged, the acoustic guitar just keeps strummin' along. For those raised on MIDI, virtual tracks, and drum machines, miking an acoustic guitar can be somewhat intimidating — but don't fret. Recording acoustic guitar is a lot easier than recording something like a drum kit, and is often even easier than recording vocals. Although (as in any aspect of recording) there are no "rules," the following procedure has worked for me, and inspired enough people to say, "Wow, cool guitar sound!" that I figured it was worth writing up.

STRINGING ALONG WITH TEFLON

Your primary considerations should be the basics: properly tuned strings in good condition and the right acoustic space. For strings, there's a new kind called Elixir made by W. L. Gore & Assoc. (Box 2200, Flagstaff, AZ 86003-2200; tel. 888-367-5533) that integrates Teflon® into the metal wrap, thus reducing — though not totally eliminating — finger squeaks and buzzes. Amazingly, this happens without significantly diminishing the brilliance or clarity. If the guitarist being recorded doesn't play real loud, thus making the squeaks more obnoxious than usual, these strings are well worth trying.

ROOMINATIONS

As to acoustic space, I generally avoid both dead and ultra-live rooms. One room I worked in recently (Take One Studio in Freiburg, Germany) had an excellent space for acoustic guitar that was mostly tiled, but with the tiles slightly angled, like an extremely elongated W. On two walls, the tiles were elongated vertically, and on the other two walls, horizontally (fig. 1).

To keep the room from being *too* live, two large vertical baffles straddled the corners, which kept reflections under control. The result is a bright, live sound, but one that is not out of control (fig. 2).

MAIN MIC MANIPULATION

AKG 414's are popular mics for acoustic guitar, although some engineers prefer condensers with smaller diaphragms. In any event, you don't want to use a dynamic model, as the sound will usually be duller than desired.

Regarding the "one mic or two" question, the following may go against conventional wisdom, but I prefer using only one mic to pick up the main sound, then build the stereo ambience through reverb. This avoids phase problems, cuts setup time, ensures mono compatibility, and is more controllable. If I do use a second mic, it will serve as more of a room mic rather than for close-miking the guitar.

To position the mic properly, have the guitarist play, face your ear toward the instrument, and shift your ear's position to hunt for "hot spots." Optimum positioning depends on the sound you want to achieve; for the richest, deepest sound, I generally point toward the sound hole at about a 60-degree angle, with the base of the mic approximately where the neck joins the body. If the sound has too much bottom and you want more finger sound, move the mic parallel to the guitar and further up the neck. For less bottom and more pick sound — good for adding definition, yet letting the guitar sit further back in the track — move away from the sound hole and toward the bridge. I prefer to move

FIGURE 2

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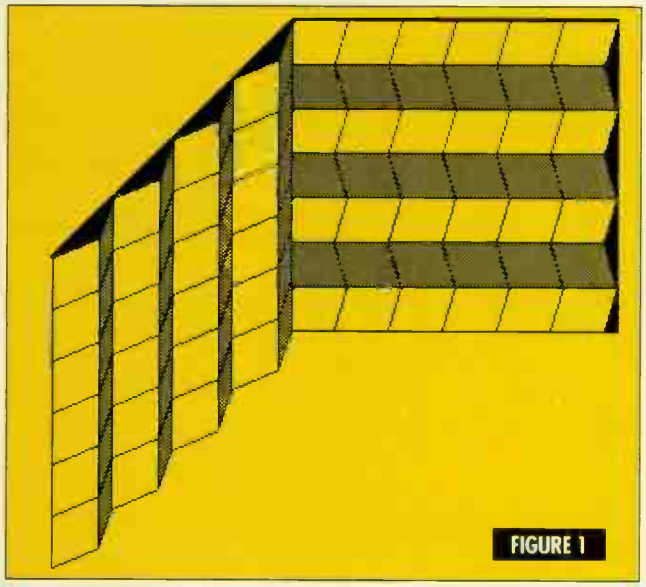

FIGURE 1

the mic in as close as possible to the guitar, consistent with being far enough away that the guitarist won't hit it while playing (about 1 foot or so seems about right).

If you're working with an engineer, go back to the control room and listen while fine-tuning the mic position. Once you've found the magic spot, move on.

A SOUND TO DI FOR?

Built-in piezo pickups exist mostly to electrify the acoustic guitar when playing live. But if you have the tracks, it never hurts to run the piezo output through a preamp (or DI box if the preamp is already built-in) so that, if desired, you can add this sound in parallel with the main mic. However, the downside is that you're adding another noise source, the timbre may be thin and require EQ, and you have to deal with yet another mixer channel. In my experience, a good mic, good strings, and a semi-live room will be all you really need.

DON'T TOUCH THAT LIMITER!

Some acoustics, particularly classical types, may have a strong, low-end peak caused by body resonance. While this projects well live, when recording it can overwhelm the rest of the signal. To tame this peak, rather than reaching for a limiter, use a parametric EQ stage to apply a cut that cancels out the resonance somewhat. The best way to find this peak is:

1. Turn down the monitors to a very low listening level.
2. Set bandwidth to 1/4 octave or so.
3. Turn boost to maximum.
4. Sweep the frequency control until you find the frequency where the bass jumps out.
5. Change the boost/cut control to cut, and trim back to reduce the peak.
6. Turn the volume back up.
7. Fine-tune the bandwidth and boost/cut controls for the desired sound.

DON'T TOUCH THAT MIXER, EITHER

Many people always route signals through a mixer, either through force of habit or laziness. Whenever possible, I patch the mic preamp directly into the multitrack recorder's input to bypass the mixer entirely. This avoids a whole bunch of active circuitry; sometimes less is indeed more.

As to which preamp to use, of course that's a very subjective decision, and depends also on how your mic interacts with a given piece of gear. I usually patch into an Aphex 107 for a clean, sweet, defined sound,

continued on page 136

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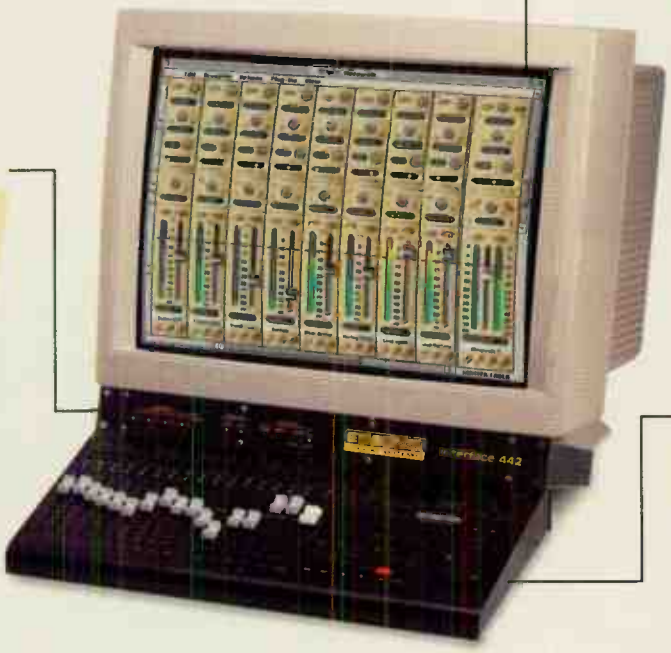

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5.1 — The Pessimist View

PHOTO BY JIM HERRINGTON

A new format means it is time once again to butcher some classics recordings

BY AL KOOPER

I remember when quadraphonic product began to flounder in the marketplace. Paul Simon said to me: "It doesn't have a chance. Most people don't even have a clue where to put *two* speakers in the room!" And it was probably true. I bet housewives all over the world were the ones responsible for the death of quad with the following one sentence: "You're not putting those four speakers in *my* living room!"

Now surround sound wants to put five or even seven speakers in your living room. But the Joneses are so yupped out, they *want* a home theater in their space because the Smiths have one. Status rules in the '90s, not housewives. DVD can handle the info, and we're off. Now some genius has come up with the idea of re-releasing older audio product in surround sound. Thus begins a whole new set of worries for the engineers and producers of said catalog items.

When CDs made their move in the mid '80s, companies scrambled to find in-house engineers to remix and remaster catalog product and save them money while doing so. By and large, the original producer and engineer were ignored for fear of what they might charge the companies to remix/master their original work. It's not enough that these companies were already raking in about 80 percent or more of the profits from these laser Frisbees, but, on catalog items, there is basically no production cost. These records have earned back what it cost to make them years ago! So some kid who wasn't alive when the original records were mixed and mastered is set up in a cubicle at each record company to "remix and master" all their catalog releases. The results are inevitably sonically lacking in sensitivity to the program material.

My personal experience with this cutback has been less than wonderful. At the dawn of CD production, I called the president of MCA Records and asked to remaster all the Lynyrd Skynyrd product I had produced (their first three albums) for free.

Why?

Because my name is on them and I wanted these "new" releases to take advantage of this new media and sound as wonderful as possible. Some new kid isn't gonna know about the hihat problems in "Saturday Night Special" simply because he didn't produce or engineer that track. MCA, in a rare off-guarded moment, let me go in and I did the best I could. When they were released midline (price point $9.99), I was proud of them, and that is the point. So two years later, MCA put out a Skynyrd box set. Did they use program material from those three albums?

Yes.

Did they use the mastered versions I had done for free for them?

No.

Did some guy paid by the week remaster them so horribly that I had to compare the two CDs to confirm that those were even my *mixes* on the box set?

Yes. So you know I'm *really* looking forward to the 5.1 revolution where the prognosis is that all my catalog items will sound not unlike ping-pong balls in a block-long garbage can.

The same thing is gonna happen again. Some new 5.1 guy is gonna get a cubicle at Polymer Records and rob the consumer of hearing his/her old favorites as they were originally conceived. I'm not purposely singling out MCA, either. Most of my catalog as an artist is on Sony. They hired a talented, personable guy named Bob Irwin to remix and remaster most of their Legacy Series. With all due respect to Irwin, he simply can't possibly know what I know about the original masters. He does a better job than most of these other clowns, but in my heart, I know I could make a happier consumer if I were allowed in there, *gratis*. I am not allowed in there. I am "consulted" only because I scream blue murder when I read in various magazines that my old albums are scheduled for re-release.

> *"Most people don't even have a clue where to put two speakers in the room!"*

Polygram recently put out a double Blues Project CD anthology. I called and asked if I could master it. They sent me an already EQ'd master tape and I declined because the damage was already done with the new EQ choices. The reason I wasn't allowed access to the original masters? "Too expensive." We can't win here.

Needless to say, there are many people in my position out there and I am endeavoring with this column to safely speak for all of them when I say: Let us remix and remaster our old work. Nine times out of ten we won't even charge you (you cheap bastards) so we can keep some integrity in our earlier works as they find their way onto these new media.

Use some common sense, guys! EQ

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Another thing a recording console will save you is hassling with cables. That live board has only 4 sub-masters. So, if you want to send multiple signals to any of the 8-tracks, you'll need to patch and repatch. And forget

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Serious Monitoring. Inputs a Plenty

You'd be hard pressed to find the M1600's monitoring capability on another mixer — let alone a live board. With 6 AUX sends you can create stereo cue mixes and still have plenty of AUX power to spare. Plus, you get 4 fully assignable effects returns. Thanks to its inline design the M1600/16 gives you 32 inputs at mixdown.

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CIRCLE 96 ON FREE INFO CARD

X Mixes the Spot

John X reveals his secrets for successful remixing

BY BOBBY OWSINSKI

Yes, his effects are loaded—and he's not afraid to use them. John X. Volaitis is one of the new breed of engineers who's thrown off his old-school chains and ventured into the world of remixes. Along with his partner Danny Saber, John has recently done remixes for such legends as David Bowie ("Dead Man Walking," "Little Wonder") and U2 ("Staring At The Sun"), as well as Marilyn Manson ("Horrible People"), Garbage ("Stupid Girl"), and a host of others. As you'll see, the X-man's methods are both unique and fun.

EQ: When people send you tapes for remixes, what are they actually sending you?

John X: Far too often they'll send us the entire multitrack, when all we need is one track of that. Usually you could just send the lead vocal, timecode, and a start time and tempo because half the time we'll change the key and the tempo anyway. David Bowie's "Little Wonder," for instance, we did in almost half time. That means you're pretty much throwing out most of the original tracks because you can't use any of that stuff to begin with.

Sometimes that's inappropriate though. We just did one for U2, "Staring At The Sun," which they're really happy with. Part of why I think they're happy is the fact that we didn't butcher them at all. We kept a little piece of everybody because they're a band. The one thing you learn is that when you remix for a band, you can't have the singer and the guitar player and not have the bass player and the drummer in it because it creates total warfare for them that's gonna make them say, "Look, let's not use that." So you find one little thing, like some thick fill that the drummer did or the bass player making some noise at the beginning of the song, and use that. Maybe it's the only thing that you can really loop and get into the track and make it dancey, but it's something that's gonna let them say, "Hey man, that's me." As long as they know they're in there, they're fine.

One special thing I've noticed about the remixes is that if you don't have a really great vocal performance to begin with, you're screwed. The same old rule still applies. If you got a good performance on somebody, you can almost do anything to it and it's still good. With somebody like Bowie or Bono, those guys are "the" cats, so it sounds great right off.

Where do you build your mix from?

I generally have to start with the loops. You've got to find the main loop or the combination of loops that creates the main groove. Sometimes the loops may have a lot of individual drums, but they're usually not crucial rhythmic elements. They can be accents and they can be stuff that just pops up in a break here and there.

Do you use a lot of compression?

I use it a lot. Not always in great amounts, but I tend to try to get some handle on the peaks. Loops I rarely mess with. If somebody's got a loop and a certain groove that they like, I almost always leave those things alone because they start getting real squirrelly if you mess with them. All of a sudden the groove can change radically. Anything else, I don't mind slammin' the hell out of as long as it sounds the way I want it to sound. I don't even have a rule about it.

What's your approach to panning?

I try not to waste the sides [i.e., hard left or right in the stereo spectrum] on anything that's not really, really actively stereo like stereo patches that come out of people's keyboards. To me, most of those are boring. They're not really doing anything and they're a waste of the sides, so I'll just tuck them up a little bit. I'll have them L and R, but not always hard. What I always try to do is

HIS EFFECTS ARE LOADED AND HE'S NOT AFRAID TO USE THEM: John X prepares an industrial strength signal chain for a remix session.

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keep my effects and delays or my radical panning stuff hard left and right, which makes it feel like the more radical stuff is projecting a little bit further than the rest of the band. It just gives a different sort of depth perception.

What about adding effects? Do you add them as you go along or do you get a balance and then add them?

I do both. I love effects. For years I acted as a total purist. "I'm gonna bypass everything in the room and go to tape." That's really cool for some stuff, but what it was doing was getting me into a mindset where I couldn't even think about putting effects on stuff with any real imagination. All I was coming up with was sort of the same thing you always hear on conservative albums. Now as far as I'm concerned I'll go haywire with that stuff. I'll record effects on tracks, and if I don't like them, I'll just erase them. It's no big deal.

That sounds chaotic, but usually I'm trying to accomplish something very special. For example, sometimes I'll mult the lead vocal to a few different channels. Then each will be EQ'd completely differently, some compressed, some de-essed severely and sent to long reverbs, and some super filtered and sent to some weird pitch-modulation stuff. Then I'll flip around from syllable to syllable throughout the verses and have the entire effect structured around the voice constantly shifting, yet leave something consistent from the main vocal track.

As far as the amount of dry vocal, that's arbitrary. Sometimes, you find some spots where you feel like it's right and you leave it there and then just sort of tune in that other stuff so it becomes something natural. But sometimes it's something special to where anyone who listens to it can't even figure out what the hell is on there. You don't have enough time to identify the flanger because by the time you think it might be a flanger it's already turned into three other effects. You have to do it in such a way so it's not a distraction and it's not defeating the lead vocalist.

Do you have a method for setting up your effects?

Yeah, I go right for the Eventide stuff first. I'm definitely a snob that way. I go for the 4000, the 3500, the 3000. Then I'm gonna go into the [Lexicon] 480's and stuff, depending on what the people have in them. I actually like the [Lexicon] 224X with the Resonant Chords. I love that patch and use that thing a lot, and I use the [Lexicon] PCM 70 with their "Rhyme in C-minor BPM, Rhyme in C-major BPM" patch a lot also. You can generate pitches with a nice resonance but be able to tune the pitches to the key of your track and set the delay time almost instantly. I've taken some really dud parts and just really brought them to life with those. I've been making loops with them too, like tuned drum loops that are really usable. I definitely go for the weird stuff first. I only put up maybe one reverb. Reverb has a way of piling up underneath your track, so there's a lot more of it underneath the track than there is on top of it. I'll usually try to keep the amount of reverb down to one special item for a distance perspective kind of thing, just to let you know that someone's back there, but not so much to drown the band. I prefer the shorter, weirder stuff, definitely.

SONIC MORTICIANS — (L-R) Danny Saber, Producer; John X, Engineer; Shannon O'Shea, Mgr.; Butch Vig, Producer.

What do you bring to the studio with you?

I have a bunch of mostly funky gear. A lot of stuff I bring is not engineer related, it's more music related. I'll bring some weird toys like an ancient Akai sampler that has knobs on the front that lets me do all kinds of weird stuff. I have some weird vocal processors like the DigiTech Vocalist VH5, which I use quite often, and a Korg version that was made years ago. It's a really super cheesy vocoder with some weird key bending stuff that you can do. Other than that, I bring a Lexicon Vortex and a bunch of weird little pedals. That's about it. I like to bring the stuff you know you're not gonna find in a control room.

What format are you mixing to?

For remixes, usually DAT with some nice converters. If it's something that I really think has come out special, I'll put it on 1/2-inch tape, but usually I don't bother with 1/2-inch on remixes because we'd send them off and the people would master off the DATs anyway. It's kind of a waste of tape and time to even bother sending the 1/2-inch if the people aren't gonna use them. A lot of independent labels aren't even mastering the mixes either. They're transferring the DATs straight across and that's it. I just sort of became aware of this in the last few months.

Since you're building up the track from scratch, how long does it take you on a remix?

Usually we try to do them in two days. My partner, Danny Saber, will go in the first day and he'll do his musical arrangement, such as playing all the parts and laying out the loops and all that stuff. The second day is mine and that's it. Sometimes it slips into three, depending on how elaborate I get on that second day.

When I'm mixing you don't really get the impression that people are working in there. The vibe is whatever it is because that's my day, it's my show, and I can do what I want with it. I rarely stress out about anything and it's always gonna be complete mayhem and chaos. My main assistant has to be wearing a lab coat that says "Patch Boy" on it and I have my own dark blue one. We've found that giving the assistants those lab coats gives them a really new sense of importance. At first we were joking about it, but now it's like, "Damn, look at these guys! They have become serious." If you ask them a EQ they're right on it. [*Laughing.*] And the best thing is when clients come in who've never worked with us, the assistants could tell them anything and they believe them because they're wearing that lab coat. It's like, "The doctor just told me that this is the way it's gonna go down, so I believe them." The whole thing is really fun! EQ

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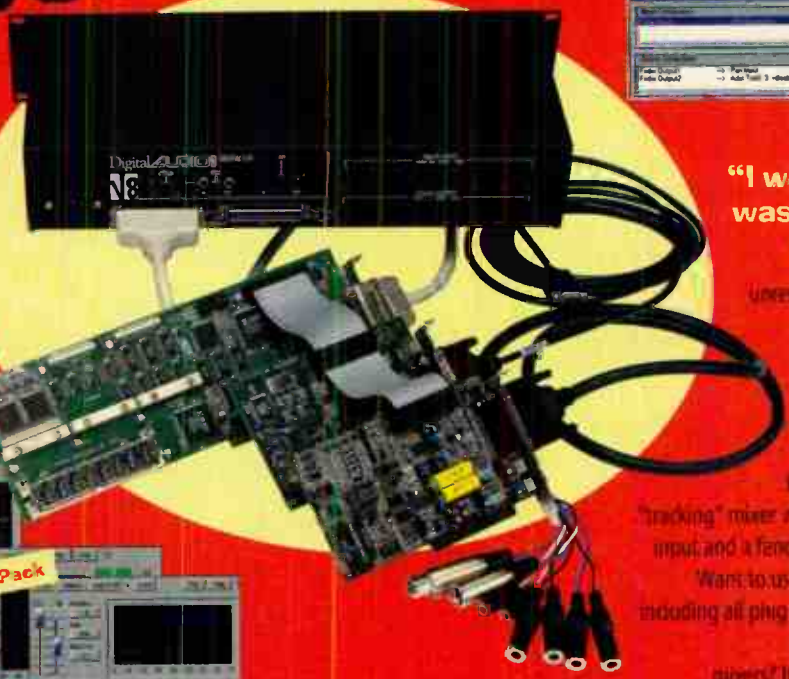

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Riff Raff in the Studio

How to record the thickest of guitar sounds

BY TERRY HUGHES

Engineer Terry Hughes of Rubber Ball Productions (North Brunswick, NJ) recently completed recording and mixing Riff Raff In The Basement *for the band This Boys Life on J-Bird Records. Here, Terry discusses his technique for getting fat guitar sounds with a minimum of tracks and a little bit of ingenuity.*

Recording distorted electric guitars can be a tricky thing because you want a big sound, but you don't want to overpower the rest of the instruments. A technique that I have used sounds like at least two guitars, but it's really just one. For *Riff Raff In The Basement* I used a hot-wired Marshall 800 Series guitar amp, but I have also done it with a Mesa-Boogie amp, or whatever the artist's choice of amp might be. In any case, there's also a split from the guitar going to a second amplifier (in this case a Peavey Classic 50). To accomplish the split, the guitar cable is patched to a Whirlwind Splitter that distributes the signal to the two amplifiers.

Generally I don't do this during basic tracks because it's a bit of a project in itself. It's more the kind of thing to do when you can say, "We're going to do guitar today, and if we don't finish, we'll do it tomorrow." I don't want anybody upsetting these mics. In the case of *Riff Raff...*, we had already tracked bass and drums with a reference guitar that was to be erased. P.J. Baratelli (guitar player for This Boys Life) was here about three days with the setup and played a Gibson Les Paul Studio. We left everything up and did 14 songs in all. Setup time to get up and running was about 1.5 hours. Remember that you need to do each step correctly before moving on to the next. You don't want to settle and then move on.

I close-miked the Peavey amp with a '57, but not in the normal manner. There was an old wrapping paper tube laying around that was headed for the garbage, so I cut it down to about four or five inches long. One end of the tube was placed right against the speaker grille of the amp, and the head of the mic was put into the tube by about three inches. It was an experiment — I didn't know if it was going to work and I tried it with a much longer tube, but it sounded funny. Putting the mic inside the tube changes the bass response of the mic by trimming off a certain amount of low end (which is real interesting), and it has an effect of focusing the sound pressure directly into the mic. It also changes the directional pattern of the mic: it doesn't pick up much sound from outside the tube.

Even though the tube is so thin, it still has a prominent effect. The Peavey amp was close-miked with a Shure SM7 as well. I put a Shure SM81 two feet away from the speaker, and used that as my semi-ambient microphone. For a loud amp, the '81 should be set to –10. You won't get away with 0 and you don't want to kill the mic. The rear of the cabinet was miked with an Shure SM59 — an oddball dynamic mic from the '70s that vaguely resembles the '57's and '58's but has these strange vents on it. It's not for everybody, but it has its purposes, and this was one of them. All those mics were on the Peavey Vintage Reissue.

For the Marshall, I didn't use any close mics because I had enough of that up-front flavor from the Peavey amp. I went with ambient mics on the Marshall. There were two different mics in different positions, both placed on small desk-type stands set on the floor. I used an RCA 77D and an RCA 44BX, but I had to watch the SPL carefully. So as not to damage the ribbons, this amp was set a bit lower in volume. One mic was

PHOTOS BY JEFF PASCIK

PLAY GUITAR: Terry Hughes used two guitar amps, a Red Box emulator, and a number of mics, including a Shure SM57 in a wrapping paper tube, to create the thick guitar sound on *Riff Raff In The Basement*.

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about two feet away, off-axis by 45 degrees, and the other was set about four feet away, straight-on. I always have those mics set on the music setting ("M"), where they're a little bassier (which can be cool for vocals, by the way).

Then I took a Hughes and Kettner Red Box speaker cabinet simulator and brought that back into the console as well. The feed for the Red Box comes from the Marshall's speaker output employing a "through." Its "speaker out" from the amp to "speaker in" on the Red Box, then "through" (on the Red Box) back into the speaker cabinet. An XLR output on the Red Box sends a mic-level signal to the board. It can work on phantom power or battery, but I always use phantom power. It's a great box and can simulate either a 4 x 12 cabinet or a 2 x 12 combo amp. This signal adds some more cabinet flavor, and I like it combined with mics. That whole setup is the source end of the system.

For mic pres I have been using RCA BA-21's, vintage M.A. Research 422, and Bellari's RP 220 and RP 110 mic pres (which are excellent moderate-priced tube units). Each mic goes to a pre and then to an individual compressor — tube wherever possible. When I run out of tube compressors (Bellari RP282A's and my Altec 1591A), I like using a Symetrix 525 or the Loft 400, which is a quad limiter with a fast attack that's real good for guitar. All of these signals get routed to the console, so that I can bring each up on its own fader, with its own EQ. Then I listen to each source and get the best sound I can from each.

After that I start to combine the signals for recording onto two tracks. The eight signals are split four to the left and four to the right, hard-panned and assigned to two busses (though some of the signals might end up on both sides, depending on the phase relationship). And if I run into phase problems, I might have to change the bussing. When you're dealing with that many mics (and that many different kinds of mics), you have to watch the phase carefully, so I keep popping the monitors into mono to check it.

The mics all sound different, and some of them don't even sound that good when you pull them up individually, but they all play a part in coloring the tone. Like the Shure '59 from the rear...you might bring that up and say, "That doesn't sound so good." But it's a link in the chain and I don't use the '59 signal dominantly. It pulls a lot of bass off the rear of the cabinet. You can't expect these mics to be miracle-workers on their own. It's definitely the combination.

On the way to the tape machine, both busses are run through a graphic EQ, then from the graphic EQ into a Bellari RP 563 stereo sonic enhancer (more recently I have been using Aphex 109 Tubessence EQs for the '57, '59, Red Box, and '81). So now the *bus* is being EQ'd as a source in addition to the individual signals. I definitely use both EQs to color the sound. You have to listen to the combination of the mics, as well as listening to them separately. Once the mics are all up, you might want to tweak the graphic a bit. I know this sounds like a lot of processing, and I'm from the old school where "less is more" — but in this case, more is more.

Finally, I trail off with noise reduction because we are hammering the signal through all this processing. Usually it's a dbx 563X (one on each bus) for cleaning up the noise without trimming off the top end — if you set them right.

Everything is then recorded to tape. In the case of *Riff Raff*, a TASCAM TSR-8 8-track, analog half-inch machine with dbx noise reduction. I use Ampex 499 and hit the tape hard, sometimes pushing it up to +7.

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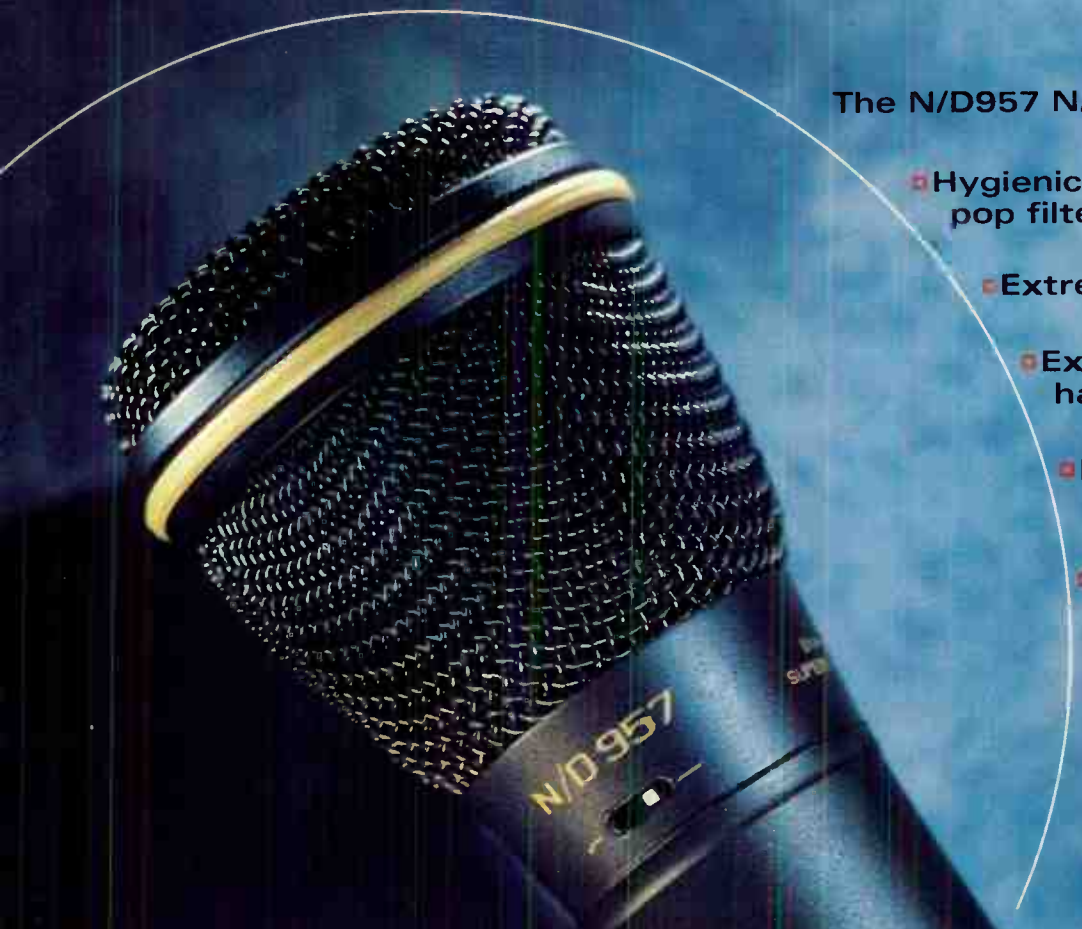

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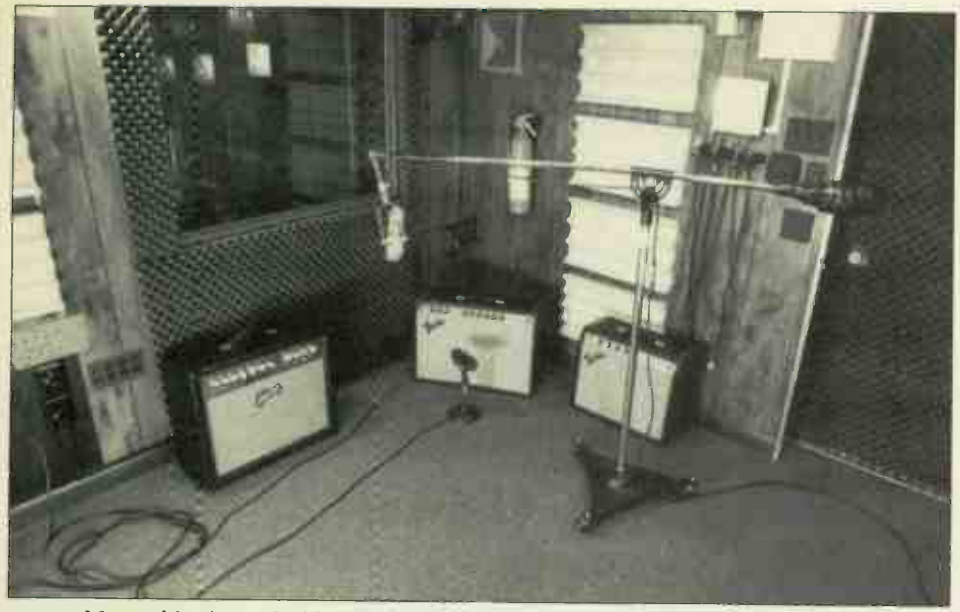

My machine is tweaked for 499 and I just kill it for total tape saturation, which is very nice for distorted guitars. The signal sent into the tape machine is slightly different from what's coming out of the tape machine. You only get the saturation on playback. You wouldn't want to do this on a cello, but it works for this sound.

It's already an unusually big sound, but it's not finished just yet! In the mix, I re-ambient-mic the guitar by taking direct outs from the console and sending them to amps. I'll put a Fender Deluxe Reverb in the iso booth and a Marshall in the drum room, both set low in volume, and for very little distortion (if it went down distorted and you distort it a second time, it will turn into fuzz). This time I'll use two RCA mics on each amp — about four feet away and four feet high — and pan them hard left and hard right in the mix. I also run the Red Box from one of the amps, and this gets panned to the center. I don't like running a signal through twice in the same manner, so if I recorded the Red Box on the 4 x 12 setting, then on re-miking, I'll use the combo setting. These signals are all used very lightly in the mix — just for color.

With small track formats like 8-tracks, people are wondering how to get these guitar sounds, and re-miking in the mix is the oldest trick in the book. It's a long but rewarding process. Some people feel it takes too long, but usually, people making some kind of record are willing to take the time and we'll leave it up for a couple of days (if needed). It's not something that you want to break down and try to re-create the next day. When you bus the signals and get them over to the left and right, it really sounds like two guitars. It's just big!

Terry Hughes can be reached at Rubber Ball Productions at 732-249-9241.

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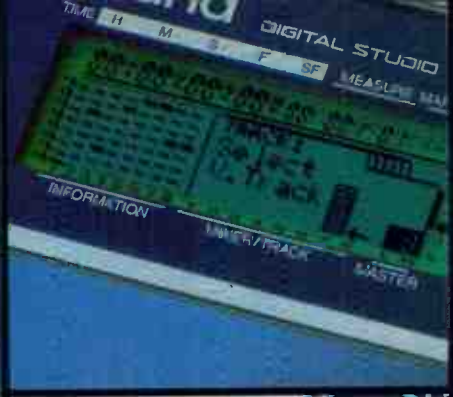

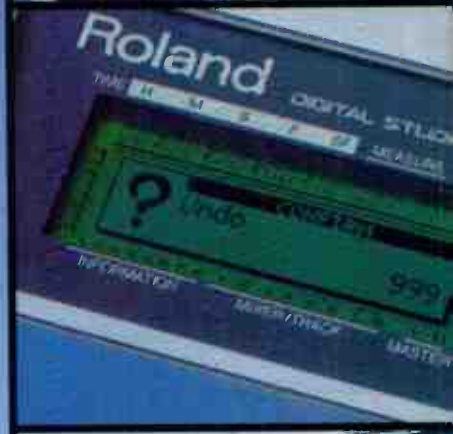

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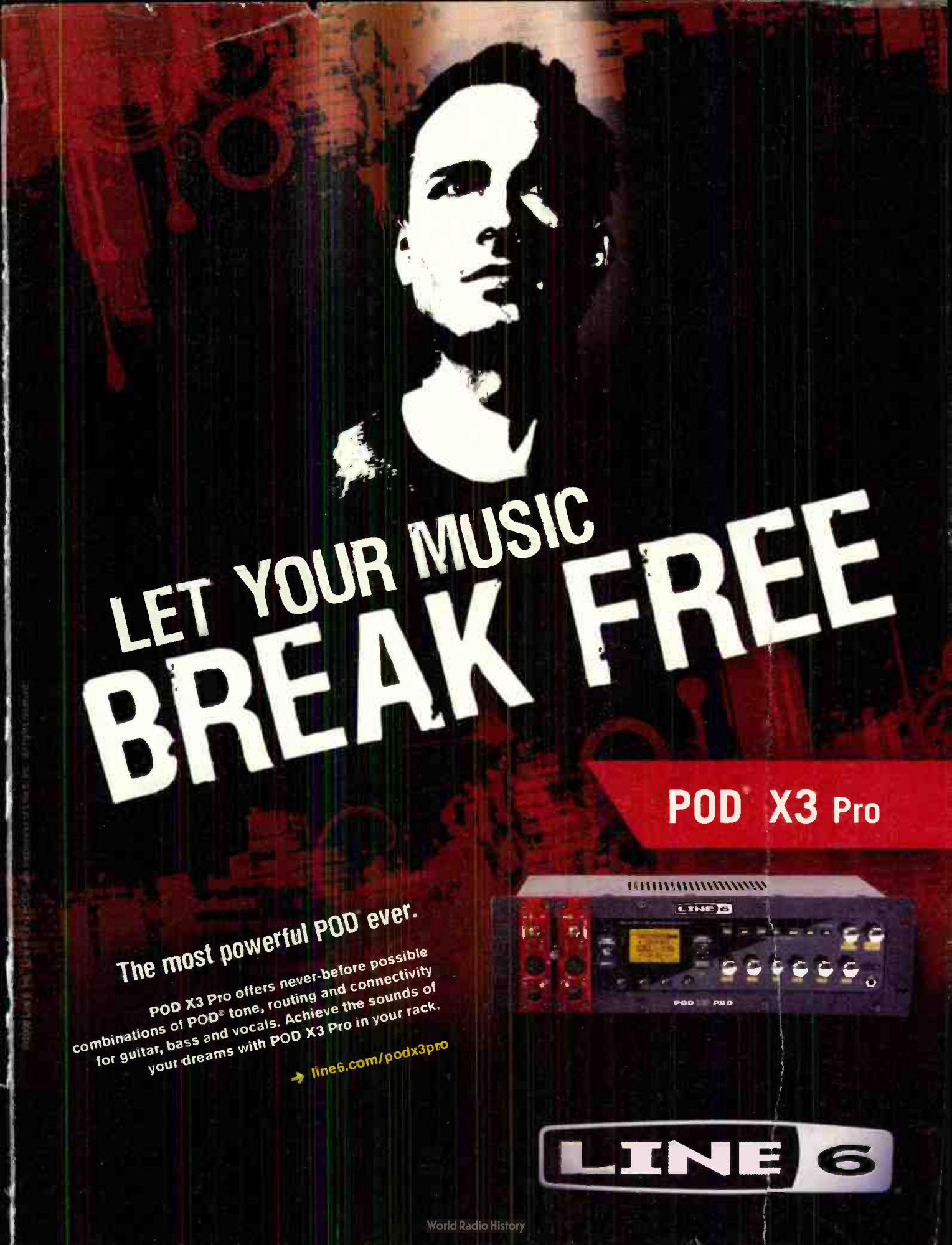

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Talk Box

THINK BACKWARDS

Making music is an art—but *selling* music is a science. And all too many times, when I've asked someone how they plan to market their music, the answer is "Well, I'm going to get 1,000 CDs made, store them in my garage, and . . . uh . . . um . . . you know, like, sell them."

Cue the buzzer sound effect, because that's the wrong answer. It's not enough to just create music; you also have to figure out how to market it. But how do you create a marketing plan?

Simple: *Think backwards.*

By that, I mean think first about the goal you want to attain, *then* consider how you're going to attain it. Picture your potential customer walking into a store: What artwork will grab their attention? Are they even walking into a *record* store? If you're making "meditation music," maybe your customer is walking into a health food store, and you want your CD sold at the checkout stand.

What if your demographic is in the late teens/early 20s? Plan to make up a flyer promoting your CD (or downloads) like the "room for rent" flyers with the little tear-off tags on the bottom, and post them on bulletin boards at every college within driving distance. Enlist your fan base (because you have a website and have been collecting names, right? *Right?*) to cover the colleges you can't drive to. And why the tear-off tag? Because it has the URL where people can download one or more of your songs for free (there's nothing like the word "free" to get people's attention).

Keep working backward. Will you be selling music at gigs? Then think about how to present your music. In fact, do your customers actually *want* CDs? Maybe they'd prefer to have their music on a USB stick, so why not duplicate some of those as well?

Before you even place a call to a CD duplicator, draw up a marketing plan. Define which people are most likely to enjoy your music, figure out where to find them, and decide what marketing "hook" will speak to them. Explore various avenues of distribution. Find out who covers music for your local paper. Talk to musicians who have been successful at getting their music out into the world.

Then—and only then—think about getting your music mastered and duplicated.

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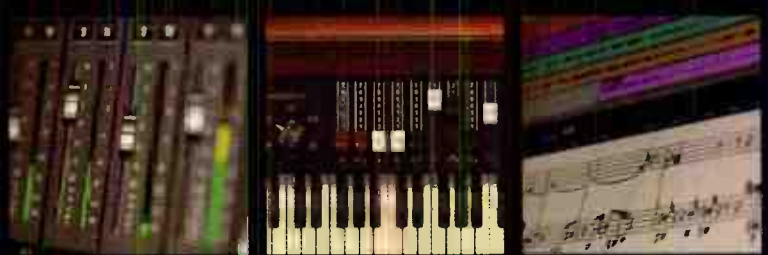

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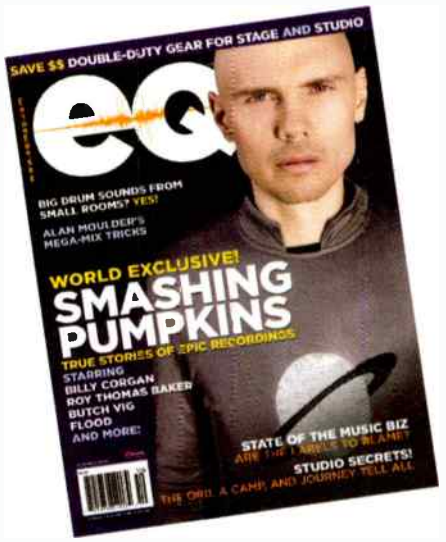

THE EVERLASTING THANKS

Thank you, thank you, thank you, THANK YOU! I will never be able to thank you enough for the massive piece on the Smashing Pumpkins ["Signal to Noise" – 10/08]. I've been searching for details about how they made all of those great albums since I was a young, way-too-angsty 19-year-old blaring *Gish* in my college dorm. One question though: I've went to your website to sign up for the live chat with Billy, and I can't find anything. Help! I need to know how I can be a part of this. I have more questions for him than you could believe.

Aaron Renault (via email)

Editor Matt Harper responds:

Unfortunately we experienced some last minute scheduling difficulties due to Billy's understandably hectic schedule (he has a lot of interesting things for you fans in the works that we aren't at liberty to publicize right now). As of writing this response (10/20/08), the event is officially cancelled. Though we worked tirelessly to make this happen for you, ultimately it just wasn't meant to be. Rest assured that we will announce the next installment in our Artist Master Class series shortly, and we're sure you'll be pleased with what we have in store for you.

On a related note, now seems as good of a time as any to recommend that you sign up for our free *Record Ready* e-newsletter at www.eqmag.com. This is by far the best way to keep up-to-date with all the going-ons over here at *EQ*, including announcements regarding our Artist Master Class series. As a subscriber you'll also get special content, all the new gear news you can stomach, and the opportunity to win tons of free stuff. All of the cool kids are doing it, so what are you waiting for?

LIFE IN THE FAST LANE

I'm a musician/vocalist/engineer/producer and I've been running my Pro Tools studio as a business for three years. Over the years I've gained the respect of my clients due to my tracking style. You see, I tend to mix and add effects to the vocals during the vocal tracking, and usually need to spend no more than 20 minutes after the tracking is complete getting the levels right. With a lot of Hip-Hop and R&B artists, this means they can have a finished song laid down in about an hour.

Recently, I started to work at a nice, new studio. They want me to bring them my customers, but they forbid me to add even so much as light compression until the tracking is complete. I feel as if these owners are taking an unnecessarily slow and entirely old school approach to a fast moving industry, and it is costing me my clientèle. Will you please do a story about integrating tracking/mixing with RTAS plug-ins on a DAW so I can show them and, hopefully, return to my normal workflow? These guys have a lot of money and great equipment, but unfortunately they are closed-minded and have little actual knowledge of tracking/mixing.

David James (via email)

Editor Matt Harper responds:

We'll do you a good one and start working on an article about processing vocals on the fly, and why that is a great way for *some* of us to work. Meanwhile, I urge you to push this issue in front of these owners you speak of and show them the cover story. In there you'll see that Joe Chiccarelli has a lot of positive things to to say about the subject of committing to EQ, compression, and other effects during tracking. I mean, if such is good enough for artists like My Morning Jacket, Beck, U2, Elton John, The Shins, White Stripes, Morrissey, etc. then surely it's good enough for your clients, right?

DEAR CHRIS MARA...

I just wanted to write because, as a fellow engineer, I really look up to you. I caught your video over at the *EQ* site [www.eqmag.tv], and was astounded to see you breaking down the calibration process for an analog reel-to-reel tape recorder.

I recently acquired a Fostex open reel, 1/4-inch 8-track recorder. Are there any recommendations you can give me for the process of tracking in a DAW and then bouncing to 1/4-inch tape?

Shawn Larson (via email)

Contributor Chris Mara responds:

Try this technique:

1. Create eight new tracks in your DAW.
2. Pick eight tracks that you want sent to tape and assign them to the DAW's analog outs (1-8).
3. Take the new track's inputs (analog 1-8) and group them.
4. Put the tape machine into reproduce mode.
5. Arm the analog machine and the new tracks in your DAW.
6. Play/record your DAW session as you record on your analog deck. This way you're simultaneously recording onto tape *and* back into your DAW.

Note that while being in reproduce mode assures that you're actually hearing tape (versus the machine's input), this results in a long delay. Therefore once you finish each pass, you'll need to slide your group of new tracks to the left and line them up with the original tracks in your DAW. Check to see/hear how they line up further down the song too—they may drift, so you may need to line them up again at, say, the top of the second chorus or whatever.

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

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PUNCH IN

KICKIN' THE BANG

Arabian Prince on the TR-808

BY COREY BLOOM

Mik Lezan—popularly known as Arabian Prince—says he was practically *born* a gear junkie. As a young man growing up in the storied Los Angeles inner suburb of Compton, Lezan spent his days toying with CB radios and building his own speakers. Eventually settling in with a set of turntables and a Roland TR-808, the DJ quickly joined the ranks of the West Coast hip-hop elite, linking up with fellow electro-innovators such as Egyptian Lover, and later, Dr. Dre (a friendship which lead to the founding of the seminal gangsta rap squad N.W.A.).

Though Lezan is best known for his stint with N.W.A., the young DJ contributed to countless classic records, largely as a producer, but he also dropped quite a few solo releases. Though initially commercially ill-fated, the aforementioned albums have garnered a cult following in recent years, which is why the folks at Stones Throw Records just released an anthology of Lezan's works between 1984–1989, appropriately titled *Innovative Life*.

Tell me about the gear you started off on, and how you made it work.

When I first started DJing back in the day, they didn't have the Technics 1200s. The first two turntables I put together were linear-tracking turntables where the tone arm went sideways on a track. You couldn't really pick up the arm, it just slid sideways on a track. We would put some plastic underneath the record to try and do some scratching, but it was near impossible.

My first drum machine was a cheap Mattel Synsonic Drum. I used to rock that at the club, though, and people would dance to it. After that, I saved my money and got a Roland TR-808. I begged and pleaded my mom—"Look, I don't want to spend money on food or anything else, I just want to take this money from my parties and get an 808." I bought that, and then I went out and got a Roland Juno-60 keyboard. Neither one of those were MIDI. They were CV/Gate, so syncing those up to anything—especially in the studio—was a pain in the butt. You had to go through the CV lock, which was just like a pulse. If you ever hear that click—that Kraftwerk percussion sound, which me and Egyptian Lover used on a lot of our songs—it's actually not even a sound from the 808. It's the pulse that locked it to other equipment in the studio.

Jumping into the present, how do you feel that technology has helped or hindered your creative process?

I still own a lot of my old gear. I'm a real gear head. I have a lot of analog keyboards and drum machines in storage, but I don't use them anymore. I've been able to use Propellerhead Reason and Ableton Live to get the sounds I want. I hear a lot of cats say Reason sounds thin, but that's because all they are doing is taking stock sounds and leaving them there. I still do what I've always done—find a drum sound or keyboard sound, and then tweak it to get it somewhere new.

Do you use the 808 at all?

I still use the 808, and I always will. I use hardware vocoders, too, because I haven't heard any software versions I like. And I'll use my Neve preamps to get a warm signal into the box, but I do most of my processing internally.

Do you use Live to edit, or do you export your tracks to a different DAW?

I use a lot of different DAWs for different things. I use Sony Sound Forge for editing, Steinberg WaveLab for mastering, and Adobe Audition for a lot of my multitrack recording. I'll use Pro Tools occasionally, but not as much as other people. I can use Audition for what I need, and it's faster and not as cumbersome.

You say you'll always use a real 808. Why?

Because each kick is not the same when you use an original 808, whereas in the digital realm, whatever sample you use, it's always the same. You can work around it, but it is difficult. In a lot of my mixes where I didn't use a real 808 what I'll do is use like eight or 10 different drum kicks in one sequence—some longer, and some shorter—just to give it that natural feel. I've studied the 808 for hours on end, and I've found that every time a single programmed kick would hit—if a kick was by itself and there wasn't another kick for another six bars—it would have a longer decay. But if there was another kick two or four bars away, the first would get cut short—it wouldn't resonate as long. You have to program your patterns differently using software to replicate that effect. Otherwise, you'll sound like one of those producers who leaves all the 808 kicks wide open. All you hear is "boom, boom, boom." The kicks drown out the rest of the track, and it just doesn't sound right.

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Le MERIDIEN WIEN

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GERMAIN TO THE POINT

Four Quick Questions with Producer **Clark Germain**

BY MR. BONZAI

MR. BONZAI

Clark Germain's impressive credit list includes Stevie Wonder, Chick Corea, U2, Iggy Pop, the Commodores, Bonnie Raitt, and many others. We caught up with him for a brief chat at his new Laurel Canyon, California, studio WonderWorld, to pick his brain about recording techniques, personal studios, and the future of the music biz.

You've worked with David Benoit and Herbie Hancock. What piano recording techniques have you learned from working with these guys?

My miking technique changes depending on the piano and the player. With David Benoit, quite often we will record the piano in the same room as the drums. In this setup, I have to use a custom stick to keep the piano lid open just above the mics. I keep the mics fairly close to the hammers in a bit of a modified X-Y pattern. David has an absolutely wonderful touch on the piano—very sensitive and lyrical—so it helps when the mics are close to the hammers.

When I recorded Herbie Hancock, they brought in a huge Fazioli piano. This thing sounded gigantic! I had to experiment with a lot of different miking techniques with the producer, Bob Sadin, playing the piano. I eventually settled on one AKG C12-A inside, facing the upper register hammers, and one outside, facing the low soundboard. I combine these with a pair of AKG C12s outside at a medium distance, and a pair of Earthworks M50s out in the room. I don't necessarily use *all* the mics, but you want to have all your bases covered.

What do you think is the most difficult instrument to record?

I would have to say drums. So many times, the problem is in too many mics, improperly placed, causing phase cancellations that make the drums sound small. Minimal miking techniques can work great, but when you want a more pop sound, you need to do more close miking. I get a large part of my drum sound from the overheads. I like to use C12s, or a pair of Sony C55Ps.

For the toms, I am a big fan of C12-As and Sennheiser MD421s with a bit of EQ. For the top of the snare, there is still nothing better that the old Shure SM57. I'll also place a mic on the bottom just in case I need a little more sizzle in the mix. For the hats, I generally use an AKG C451, and for the kick, I like to have something like a MD421 inside and a Neumann U47 FET outside.

You have your own studio. Explain your setup.

I have a Pro Tools|HD 3 Accel system running through Apogee DA 16x converters into a customized Amek 2500a console. This way, I can set up the static mix to where it sounds good through the console with all the Pro Tools faders at 0dB. Then, I make small fader moves in Pro Tools. This setup provides access to all my great old outboard gear, as well as all my favorite plug-ins. I like having the ability to automate various parameters of the plug-ins for different sections of the song. It really gives me the best of both worlds. I think the most important thing, though, is to have a mixing environment that remains constant. That way, you never have to guess about how things will sound when you bring them in for mastering.

What do you feel is wrong with the music industry these days?

I think we are in a huge transitional period. It's not just the fact that people are downloading music for free—although that is a major factor—but the major labels have not been supporting creative endeavors nearly as much as they used to for quite some time now. If you continue to put out a new version of something that had success in the past, the people will eventually give up on you.

Also, the days of active listening are long gone for most people. Music listening has become a passive activity—something you do while performing some other task. I think that the future belongs to the independents, and forward-thinking majors. The record industry will go back to being a singles-based business, as well—which is how it started. I do believe that if we give the people good and creative new music at fair prices with easy access, they will be willing to pay for it. It is going to take a while, but I think when the industry recovers, there will be more access to diverse types of music than ever before. EQ

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EVOLUTIONARY THEORY

Sasha Returns to the Remix with *Invol2ver*

BY RICHARD THOMAS

If punk rockers live and die by the 7-inch, DJs are defined by the variety of their continuous mix. The calling card for all forms of electronica, the DJ mix (or mixset, if you prefer) spent its formative period as the byproduct of two Technics 1200s and a simple mixer. For quite a few years, that was fine. But once the sheen wore off the superstar mystique in the early 2000s, DJs knew they had to step up their game, and gear manufacturers waited in the wings with new technologies to serve the quickly evolving craft. New DAWs allowed for increased integration between what historically was kept behind studio doors, and what was spun, scratched, and manipulated in clubs. Newfangled external controllers with expanded features allowed DJs to literally stay in touch with the tactile performance ethos of their past.

No one capitalized on this convergence of art and technology on a mainstream level in quite the same way as Welsh DJ/producer Sasha did with his breakthrough 2004 hit, *Involver.* This first foray into the hybrid world of on-the-fly remixing was made possible by Ableton Live. Pro Tools sessions for each handpicked track were flown in from the original artists, sliced and diced by Sasha and his squad, seasoned with additional instrumentation, and thrown into Live to create a DJ mix with fluidity and thematic consistency. With the arrival of Live on the scene, pre-production for Sasha's sets became less about crate digging, and more about the deconstruction of full songs into clips that could be tweaked and manipulated in the DAW, and then performed live with the aid of a hardware controller.

Soon, however, Sasha found himself increasingly at odds with his equipment. The idea of scratching on a laptop made him physically ill, and the basic controllers at his disposal fell short of his needs. So, he began developing his own controller—the Maven. The current Maven Mark II version is a 100-percent custom-built unit, replete with handpicked knobs, switches, LEDs, and other bells and whistles specific to Sasha's desires.

"We even designed the fader caps ourselves," says Sasha, who has pumped an estimated $100,000 into the unit thus far. "I just wanted to have it right. That stuff doesn't come cheap, but it's revolutionized what I do."

Never before has the Maven been more of a critical crutch than now, as Sasha is on the road promoting *Invol2ver*, the second installment in his groundbreaking mix series.

"We started the album at the beginning of 2007, but nearly 80 percent of what we did never ended up on the album," explains Barry Jamieson, Sasha's longtime friend and the lead engineer on *Invol2ver*. "We were doing loads of experimenting, and, eventually, we thought, 'Why are we doing this in the box again? We've got all this beautiful analog gear!'"

Sasha, Jamieson, Leo Leite, and Spooky's Charlie May and Duncan Forbes utilized a multi-room setup that allowed for simultaneous mixing and sound design. Once a track was broken down into building blocks by the team in Studio A, clips would be shipped over to the B room and tweaked using U&I's MetaSynth and Native Instrument's Reaktor 5 before ultimately being hauled back into Live for Sasha's remixing. On Ladytron's "Destroy Everything You Touch," Leite time-stretched the source vocals to create the otherworldly choruses, using Reaktor 5's Grain Perception plug-in. Afterwards, he says that he filtered out Helen Marnie and Mira Aroyo's voices into "glitchy bits" that were then heavily compressed, gated, and used to create the track's percussion stabs.

For a track like Telefon Tel Aviv's "You Are The Worst Thing In The World," the manipulations were a bit subtler. Using a combination of Logic's built-in vocoder and the Eiosis ELS plug-in, May created between 20 and 30 different vocoder treatments, and then stacked them onto different parts of the original clean vocal to create a spatial, deeply layered effect.

Meanwhile, back in Studio A, vintage synths such as the Roland Jupiter 6 and JD-800, along with circuit-bent TR-707s and Alesis SR-16s, were used to jam out accompanying beats and melodies to the existing source clips. A Soundcraft G2 console provided what Jamieson calls a "sculpting environment" for the outboard sound design before everything was dumped back into Live. Jamieson adds that many of the synths were processed through guitar pedals and outboard filters to achieve a lo-fi effect—oftentimes using a Jomox T-Resonator and Analogue Haven's Truly Beautiful Disaster before hitting the desk. If a song called for something more "proper," the synth's signal would first be sent to a Millennia STT-1 Origin, and then compressed using either a Universal

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Audio LA-610 or an LA-2A.

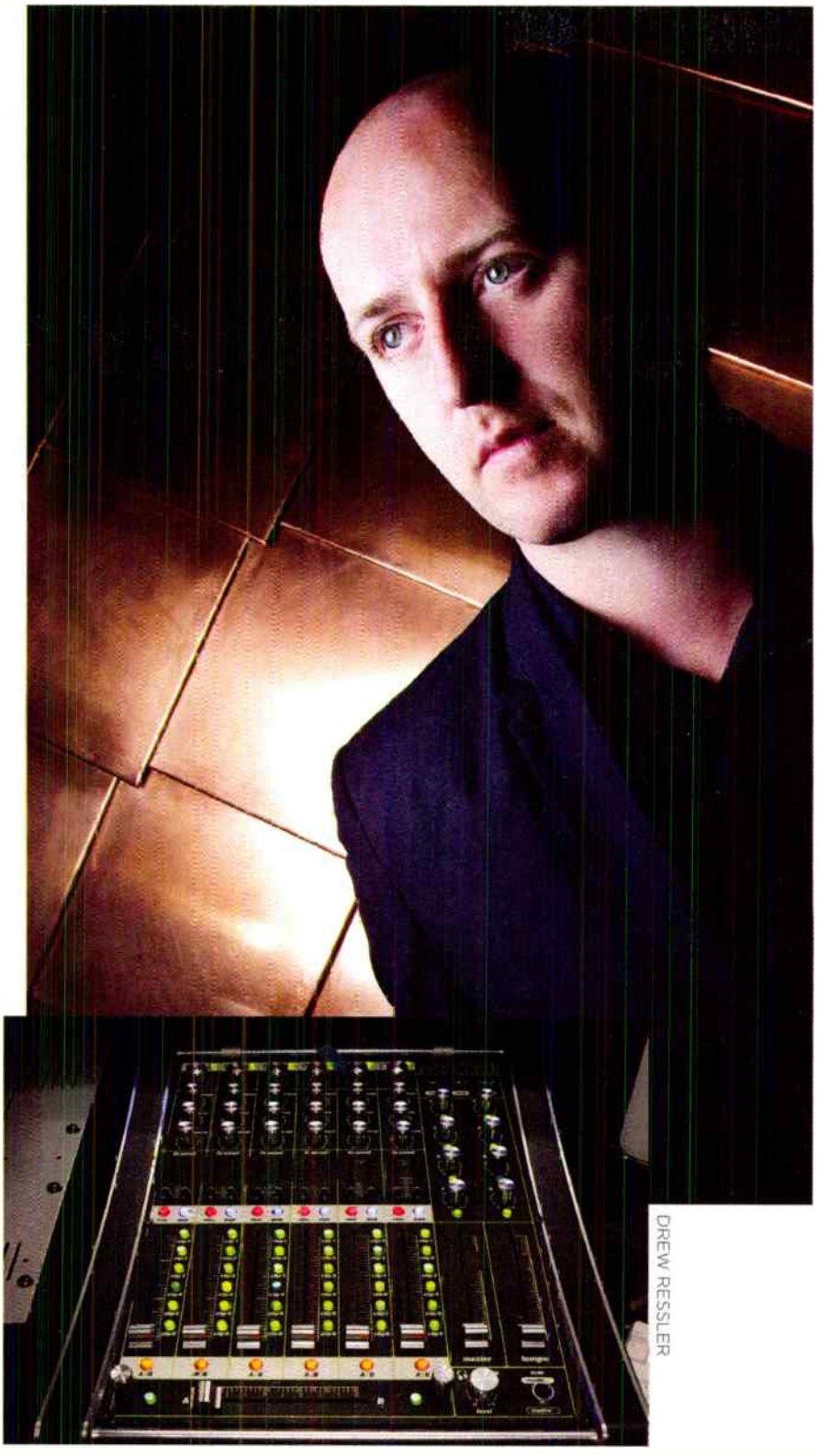
"It's quite a flexible box for the money," says Jamieson of the Origin. "It's great if you want to do combinations of solid state and valve preamps, or solid-state compression and, say, valve EQ. Sometimes, we'd put a couple of preamps in-line—like the LA-610 and the STT-1—so it's going through the valve process a couple of times to get a bit of that grit and noise."

Though all the mixing and arranging was done in Live—with Logic acting as more of a tape machine for the crew—it wasn't the group's secret weapon. For that they turned to FL Studio 8. But rather than use it as a writing tool, they employed it as an automatable patch bay, connecting different modules within the program to one another to create complex sound-design matrixes.

"Let's say you have a reverb," explains Jamieson. "You can have one parameter going from a bass line to the wet/dry of the reverb. Then, you can take another controller from another input, and give it a side-chain input to compress it, but just using the volume control within the plug-in itself. It's almost like you're using compressors, but you're not. You're just using controller information to manipulate parameters. It can get really complex really quickly."

Though Sasha rarely strays from his tech-house roots on *Invol2ver,* the album should have appeal outside the club due to a track selection that features, among others, Thom Yorke, M83, and Engineers. Furthermore, the convergence of analog warmth and razor-sharp digital deconstruction makes for a far more textured listening experience than your standard mix fare. Though he hasn't released a proper artist album since 2002's *Airdrawndagger*, the *Involver* series has proved to be just as labor-intensive.

"The idea of working on an original album is fairly terrifying," laughs Sasha. "I'd removed myself from the club scene for a good nine months, and that's a long time to be away from what you do as your main thing. But, that said, we work a lot faster now, and I have such a strong team around me. So maybe we'll start with a couple of tracks and see where it goes." **eq**



DREW RESSLER

Sasha's Maven Mark II controller was custom-built from the ground up to allow a physical, hands-on connection to the software he uses. Even the fader caps were designed specifically for the Maven.

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MS. MINIMALISM

Keeping it Simple with Juana Molina

ALEJANDRO ROS

BY MICHAEL ROSS

"Solo" and "simple" are the operative words used when describing Juana Molina's bare-bones operation, but the beauty lies in the primitivity of her work. With their hip-shaking rhythms and unique synth lines, Molina's loop-based songs can inspire even the most ardent party-pooper to dance.

On her latest outing, *Un Dia*, the Argentinian songstress layers vocals, guitars, synths, and percussion into a Boss RC-20XL Phrase Recorder, and then archives the results in MOTU's Digital Performer in order to explore the creative possibilities of looping. Starting as a way to perform her compositions live without a band, looping has since become the essence of her craft.

"At first, I didn't know I was playing a loop," she says. "I was just playing something over and over. Ten years ago, I thought that was bad, so I interrupted it, and put a chorus in the middle. I had these concerns about everybody thinking the loop was boring. Then, looping became more common in everyday music. I should have listened to myself back then!"

To record *Un Dia*, Molina employed her usual method of setting up her live rig in her house. Replacing the small Behringer mixer she uses live with a Mackie 1604, she goes straight from the mixer into the RC-20XL, and then into a MOTU 828 interface. Molina's guitar—an antique Martin—sports a DiMarzio magnetic acoustic pickup that she combines with the signal from a Neumann TLM 103 linked to an Aphex 207D preamp. She acknowledges the system has limitations.

"I don't really care much about the sound quality," she confesses, "because sometimes when I pause to fix the quality, I forget the idea. Why would I need quality for no ideas?"

A firm adherent to the "if it ain't broke don't fix it" philosophy, Molina admits to being very conservative—to the point of returning almost every new piece of gear she buys.

"I bought the big Boss RC-50 Loop Station, and it had too many pedals," she says. "I would have ended up a shoe-gazer! The only advantage would be that it is stereo, and while some of my keyboard sounds are stereo, they get turned into mono when sent to the RC-20XL."

All of Molina's recordings have been made using the TLM 103 and a Shure SM58 to mic every instrument with her trusty Korg 01W synthesizer supplying almost every other sound. However, her recording space's negligible soundproofing allowed a chorus of unlikely contributors to her last album, 2006's *Son*.

"The birds in my garden were very apparent on *Son*," she says. "I didn't make them participate as heavily this time." eq

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My Morning Jacket (foreground to background): Bo Koster, "Two-Tone" Tommy, Jim James, Carl Broemel, and Patrick Hallahan.

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FOR THE RECORD

Throwing Caution to the Wind, My Morning Jacket Indulges in Their *Evil Urges*

Stop me if you've heard this one before: There's a band, and this band has toiled on the road for years, living an existence rife with vans that smell of urine and dirty socks, hole-in-the-wall clubs staffed with near-deaf sound guys, and barely ingestible continental breakfasts at virtually uninhabitable Motel 6s. Slowly but surely they gain a reputation as a truly great live act, and before long they enter the studio to record what they are sure will be their masterwork. They've spent years writing and rehearsing this material, honing their craft in front of audiences that grow exponentially by the gig. Their goal is simple enough: Capture the vibe, the energy, the intimacy of their live show.

by Shane Mehling

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But somewhere along the way something bad happens. Blame it on too many overdubs, too many EQ boosts and not enough cuts, convolution reverb abuse, or a mastering engineer that was bound and determined to be the victor in the Loudness Wars, but the fact remains: What ships from the pressing plant is a squashed, pitch-corrected, time-stretched sham; a dull, lifeless, reproduction of a once-beautiful thing. No balls, no groove, no soul.

Louisville-bred rockers My Morning Jacket decided early in their career that they would never be the punch line in that terminally unfunny joke. Considered by many to be one of the best live bands on the circuit (or at the least one of the most athletic—point of proof being their nearly four-hour set at 2008's Bonnaroo Music Festival), the quintent knew that when it came time to record their newest LP, *Evil Urges*, they were in a do-or-die scenario. It was here that they would either defend their hard-earned rep and assume the throne as the leaders of modern rock, or die a shameful commercial death.

Singer/guitarist/mastermind Jim James knew that if the band's fate was to be a glorious one, they would need to find a producer that understood the magic of their music enough to encourage great performances instead of relying on quick fixes. They needed an old school pro. Little did they know when they embarked on a short run of live dates that their sonic soulmate was waiting for them in the crowd, an ardent fan of their patented psych/funk/indie/southern rock gumbo.

"I went to see them play at [Colorado amphitheatre] Red Rocks and we hit it off immediately," says veteran producer Joe Chiccarelli (Elton John, U2, Beck, and The White Stripes). "I had seen them about six years earlier and was a fan, so I had an understanding of what they did even before we started working together."

"As I began our search for someone to work with, Joe's name just kept popping up over and over again," James says. "Even the people I was talking to about working with us were talking about Joe."

Since the men of My Morning Jacket had already cut loads of demos for *Evil Urges* before Chiccarelli was flown in, the newly assembled team was able to hit the ground running and get right to work on what would prove to be the band's crowning achievement.

"We tried to go for the middle road between banging it out and being surgical," says James of the group's strategy when entering the studio. "I believe you have to have a certain spontaneity and then capture it, harness it, and get surgical on its ass [*laughs*]. [Making an album] is like a blacksmith pounding out a sword—you have to put a lot of labor into the process, but if you pound it too much, you can ruin the sword."

My Morning Jacket discusses their last take with producer Joe Chiccarelli. Pictured left to right: Patrick Hallahan, Bo Koster, Joe Chiccarelli, and "Two-Tone" Tommy.

SAM ERICKSON

"Besides the human voice, the studio is perhaps the greatest instrument known to man," James observes from My Morning Jacket's tour bus during a brief respite from a tireless one-gig-after-another tour of

PEDAL TO THE METAL

While the My Morning Jacket guys used and abused everything from EMT plate reverbs to the Urei Cooper Time Cube to create the otherworldly sounds on *Evil Urges*, a good portion of the spatial effects were courtesy of a hot little pedal from Eventide called the Time Factor (for a full review of the Time Factor, go to www.eqmag.com/gear). "It has a real natural tone with a very warm, almost analog high-end quality that blended into the tracks very well," Chiccarelli says. "Even though it's in a stompbox form, it has a line level in and out, so it was very easy to interface into the API Legacy Plus console."

The Eventide ended up being used on lead and background vocals, guitars, and keys. "I love the fact that I can sit it on the console and easily tweak and refine while I working on a live performance," Chiccarelli tells. "In some cases it was printed on the track with the original sound. For background vocals, I would print several sets of various stereo delays using the Analog Tape Echo and Mod Echo programs to fatten and widen the parts. I would then balance them off in Pro Tools, combine them to one stereo track, and bounce them back to tape."

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the U.S. James says that the band had recorded in various studios in the relatively rustic surroundings of their Kentucky hometown throughout their decade-long career. For *Evil Urges*, the group felt they needed a change of scenery, and therefore left their Midwestern abode and headed towards the bright lights of the big city. But while they knew that they wanted an urban environment to work in, they were undecided on where to set up shop. At Chiccarelli's urging, the band hopped in the van and soon found themselves in New York City, sitting at a Neve 8088 in what is unarguably one of the East Coast's greatest recording facilities: Avatar Studios.

Chosen not only for its first-class gear list or the convenience factor of being smack dab in the middle of West 53rd St., Avatar was also the perfect studio for My Morning Jacket to work in due to its multiple (five), spacious iso booths. "We were going to record bass, drums, two guitars, keyboards, and a lead vocal, all live," Chiccarelli explains. "We had to be able to isolate everyone. We also wanted a lot of space for each player so we could easily audition different amps and keyboards on the spot."

Before the first tom was tuned, the band decided to utilize Avatar's Studer A-800 MARK III 24-track tape machine for the majority of the tracking. "We used Pro Tools for additional tracks of horns, strings, background vocals, etc." Chiccarelli says. "But all of the tape editing was done with a razor—old school."

"We did the guitar and vocal overdubs in Pro Tools so we didn't have to link up two tape machines," James adds, going further to proclaim his love of the integrated approach. "It's the best of both worlds. I just wish that there was another way to meld the sound quality of tape with the workflow advantages of digital. But with anything digital you'll always have the problem of people infinitely editing and f**king around. We spent the first half of these sessions without a computer running. It made things much simpler."

The decision was made to record each song from the top-down, collect multiple takes, and then comp together the best performances. "They're such good players that it wasn't an issue," Chiccarelli says of the band's ability to pull off a respectable track in a single take. "But sometimes the chorus is a little better in take four and the bridge is better in take three and you like the outro from take seven . . . we wanted to leave ourselves with lots of options."

"Going into Avatar, I knew which songs I wanted to sound dry and tight, and which songs I wanted to sound open and roomy, so we immediately set up two rooms for two different sounds," says drummer Patrick Hallahan. "The rather large main room was the right environment for big-sounding songs like 'Evil Urges,' and 'Smokin' from Shootin.' A 'dead' vocal booth worked perfectly for the more machine-like beats on 'Touch Me I'm Going to Scream Parts 1 and 2' and 'Highly Suspicious.'"

Besides the occasional TR-808 kick sample being blended in as a helper track and the Roland CR-8000 chugging away in the back of the mix on "Touch Me I'm Going to Scream Part 2," the oftentimes cold, industrial percussion one hears on *Evil Urges* is all man-made. "Obviously drum machine sounds are shorter, punchier, more compressed-sounding, so we needed a small, dead acoustic space to replicate that," Chiccarelli tells. "We were lucky that this vocal booth worked so well. It barely held his kit. But the low end really built up in that small room and it made the tracks sound quite punchy."

Surprisingly enough, the few effects that Chiccarelli used on Hallahan's drum tracks were dialed in and committed to during the tracking process. "Joe is very particular about getting as much done pre-mix as possible, so most of the signal processing was done as the tracks were recorded," Hallahan says. Chiccarelli adds: "I don't leave a lot of decisions to mixing. I print the sounds how I want them because I don't want to leave these things until later. When I bring up the faders I want to hear the way the record is actually going to sound."

According to Chiccarelli, the magic of Hallahan's drum sounds cannot be attributed to mic choices or signal paths full of boutique gear but, rather, the drummer's masterful technique: "When it comes to getting that tight, dry sound, we would do things like mic only the top of the snare instead of our regular over-and-under miking. And we would deaden the heads so there wasn't so much resonance. But it's all about Pat's stick technique. He would choke up on his stick, which keeps the stick from rebounding and therefore keeps the head from resonating much after a strike. That's what made the machine sound."

Mindful of the fact that a rock record is only as good as the worst guitar sound contained in the

A LITTLE EQ

"I should note that the one other piece of gear used all over this album is the Chandler TG12345 Curve Bender equalizer," Joe Chiccarelli tells us as we're finishing up a last-minute fact check on the story you now hold in your hands. "I used this as the final stop on my rough mixes, which [mixing engineer] Michael Brauer modeled his final stereo mixes after."

Chiccarelli calls the Curve Bender, which is modeled after the EMI TG12345 desk used to record the Beatles and Pink Floyd at Abbey Road, "very powerful and rock and roll sounding. A couple of clicks—the boosts and cuts work in 0.5dB increments—can dramatically color the overall sound of the mix. I've subsequently used the same EQ for recent projects like The Raconteurs, The White Stripes and Brandi Carlile."

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grooves, James and guitarist Carl Broemel took their sweet time crafting the guitar tones on *Evil Urges*. "As a rule, I start with the gear that I am most used to—the amps and guitars I use while we're on the road. When that doesn't do the trick, I go hunting for sounds," says Broemel, noting that, though his trusty 88 Black Les Paul Standard is on the lion's share of the album's tracks, he would regularly switch amongst a fleet of amps including a Vox AC30, an Orange Rockerverb 50 2x12 combo, a Carr Viceroy 2x12 combo, a Top Hat Ambassador, a Fender Pro Junior, and a '70s Peavey Vegas [*for a detailed list of what Broemel used on each track of* Evil Urges, *go to www.eqmag.com*].

James kept his rig much more consistent, using one of his three Gibsons (a J-185 acoustic, an ES-335, and a Flying V), a Fender Stratocaster, or a Telecaster through a Premier 76, a Mesa Boogie Trem-O-Verb, or a Mesa Boogie Blue Angel. Similarly, Chiccarelli kept the guitarists' signal paths simple: a Shure SM57 and a Royer R-121, each on axis to a speaker cone, and a Neumann U67 for the room ("to keep the guitars from sounding one-dimensional"). Each mic was then sent through the Neve 8088's 31102 preamps and bused together to Urei 1176 limiters. "One guitar amp to one tape track," Chiccarelli clarifies.

Chiccarelli notes that for some of James and Broemel's gnarlier guitar tracks, he would run a signal through a Demeter Tube DI to complement their amp sounds. "I'll use the DI track when I need to add more definition to a guitar line, when I need more clarity for individual notes in a distorted chord. We'd also use the Demeter DI for the pedal steel tracks, then blend that signal in with what we got out of the amp to get a more balanced sound."

Broemel elaborates on the gear used in conjunction with his Carter 12-string pedal steel on crowd favorite "Look at You": "I used a Source Audio Hot Hand Wah. My feet were busy controlling the steel, so I couldn't use a standard wah, and I didn't want to use an auto wah. The Hot Hand uses a tiny device that you wear on your finger and the motions of your finger

SAM ERICKSON

Jim James cuts acoustic guitar tracks and vocals simultaneously.

then control the sweep of the wah. It came in . . . handy [*laughs*]."

Since the band was recording vocals live with the other instruments, achieving proper separation when James was cutting acoustic guitar tracks required some ingenious mic placement on Chiccarelli's part. Says the producer, "Acoustic guitars were done while James was singing, so we had to make sure the leakage was minimal. In some cases I would put a lapel mic inside the acoustic guitar for total isolation. It also created a weirder sonic perspective, like your ears were inside the guitar."

More traditional miking techniques were also employed, utilizing some common unidirectional cardioid mics such as the Neumann KM84 and a Shure SM57. "I'll put the SM57 on the body by the bridge and the KM84 up by the 12th fret," Chiccarelli explains, adding that, when the sound produced using the SM57 is too boomy, he will "use an Electro-Voice RE15 on the body . . . it has a natural midrange-y sound to it."

Deviating from such tried-and-true miking techniques was of paramount importance when it came to "Touch Me I'm Going to Scream Part 1." "There's an acoustic guitar part on that song that never sounded right," Chiccarelli confesses. "It just sounded pasted on to a more electronic track. So we re-recorded the guitar track using an Altec Salt Shaker through a Pultec HLF3, which is a real drastic high and low pass filter. The sound was lo-fi and grainy—almost like it was an old sample of an '80s 8-bit emulator. It instantly fit with all the other colors of the song."

In retrospect, Broemel adds that he's glad the band avoided what would have been convenient at the time, such as automating plug-ins or using amp simulators, and, instead, integrated effects processing into their guitar performances. "Using computer plug-ins isn't our first choice when getting a guitar sound," the guitarist says. "I would say, in general, anything you can do with your eyes closed and your hands on the knobs is going to turn out better than what you would get while staring at a screen."

Keyboardist Bo Koster is a firm believer that amped keyboard sounds ultimately blend in better with guitars in a mix, so he insisted that Chiccarelli keep at least a 60/40 ratio in favor of amp to direct signals. "The amp definitely adds more dimension to the sound as well as some extra harmonic distortion," Chiccarelli says. "It's not even that you have to put it through a Marshall—even a small amp does the trick."

Koster drew from a veritable smorgasbord of killer keyboards for the *Evil Urges* sessions, including a Fender Rhodes, a Wurlitzer electric piano, a Clavinet D6, and a Hammond B3. According to Chiccarelli, most of the

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keyboards were sent through an unspecified Mesa Boogie bass amp, which was miked with an Electro-Voice RE-20. However, Broemel's multitude of boutique combo amps were also brought in from time to time to "add some reverb, vibrato, and distortion and open up the possibilities," such as on stand-out track "I'm Amazed."

A similar approach of mixing amp and direct signals was employed for bassist "Two-Tone" Tommy's tracks. "I have a bad habit of lightly slapping the strings along with the snare," Tommy confesses. "That can be problematic when going direct. [A DI] is too clear, too unforgiving."

Tommy is cut from the same cloth as his bandmates in regard to the shared proclivity for constantly switching up rigs. For *Evil Urges'* 14 songs, Tommy used no less than seven basses—from the more aggressive-sounding 2001 Fender Deluxe P-bass (for raging rocker "Remnants") to a 1980 Rickenbacker 4001 (for the fuzzed-out lead bass lines in "Two Halves"); from a '70s Fender Precision fretless (for the über-smooth "Librarian") to the '76 Alembic that cuts sharply through the mix on kick-off track "Evil Urges" [*for Tommy's track-by-track gear list, go to www.eqmag.com*].

Chiccarelli says that the direct signals were all piped through his trusty Demeter Tube DI and that nearly all the amp tracks were courtesy of a Mesa Boogie 400+ head matched with a Mesa Powerhouse 1000 cabinet (miked with an Electro-Voice RE-20 on the 10-inch speakers and an AKG D112 on the 15-inch speakers). "I also used an old Ampeg B-15 for the fretless tracks," Tommy adds. "We used the RE-20, placed in the upper right-hand corner of the speaker."

As a general rule of thumb, Tommy tends to keep his bass sound fairly dry. But for *Evil Urges* the bassist decided to go nuts with an Electro-Harmonix Bass Micro-Synth. "It's on quite a bit of the album, including 'Evil Urges,' 'Smokin' from Shootin', and 'Look at You,'" says the bassist. "The only way you can rein the signal in is to send it through the amp's effects loop, so we *had* to use an amp signal."

Joe Chiccarelli (left) convenes with Bo Koster (middle) and Jim James (right) while comping together a few choice sections.

SAM ERICKSON

While lead vocalist Jim James has one of the most singular voices in rock today, he says that he approached the *Evil Urges* sessions as an opportunity to branch out and expand his range of vocal personalities. As each song became a quest for what the vocalist calls "the perfect color," Chiccarelli found himself auditioning, and ultimately using, a stunningly wide array of mics and effects. "Almost every song employed a different vocal mic," Chiccarelli says. "A lot of the vocals were done with a Neumann U47 or a U67. A couple of things that were more breathy and quiet were done on an [AKG] C24, and for his old-timey, radiophonic vocal sounds, we used an Altec 639 'Birdcage.'"

Though James would step up to a Shure SM58 and do a baseline vocal live with the rest of the band, he would often immediately go straight to the booth after the take and perform a couple extra passes. These tracks would then all be comped together for the perfect vocal. Chiccarelli says that James' ability to work with various mics allowed him the opportunity to experiment on the fly. "Certain singers will find themselves getting shy around more than one or two mics, but Jim sounds pretty good on just about anything—it sounds like him whether he's on a [Shure] SM7 or a [Neumann] U67."

"We made a conscious decision to always vary the mics when we did a backing track, or when we were shifting vocal personalities," James says. "For instance, if we used a U47 for

EARLY COMMITMENTS

"The great thing about working with Joe is that he's constantly helping you make choices and stick with them," My Morning Jacket front man Jim James raves. "That way you are really mixing the record as you go along. I am very into that old-school work ethic from when bands only had a few tracks to work with and the engineers had to place and practically mix the performers before they even hit record. It kept everyone honest."

Chiccarelli explains why he isn't shy about tracking with EQ, compression, reverb, or any other signal processing: "I started in the early '80s where everything was done on analog 24-track machines and people really made decisions and committed to their sounds before the mix. They bounced down background vocals, bounced down guitars—they would use 20 tracks and then make a submix and that was it. All the other stuff was erased! I would rather commit to something and build other sounds around—even if it means having to re-cut tracks late—than I would leave so much uncertainty to the end. Being uncertain just isn't the way I like to work."

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FOR THE RECORD

Jim James (right) checks in with Joe Chiccarelli (left) after finishing a vocal pass.

SAM ERICKSON

the main vocal, we would use a [AKG] C12 on the backing vox, which has a thinner sound that mixes nicely with the U47."

Chiccarelli says that James' vocals were sent through either the Neve 31102 pres on Avatar's 8088 console, or through outboard Neve 1073s. Every vocal signal was sent to either a Teletronix LA2A or a Urei 1176, and lightly compressed before hitting the tape.

Though the Neve pres added a sense of warmth and the squish from the compressor/limiters significantly beefed up James' vocalisms, Chiccarelli's liberal use of reverb is perhaps most responsible for the singer's unique sound. "To Jim, reverb's another instrument and another sound on the record and he plays off that texture," Chiccarelli says. "It's really important he has it in his headphone mix and he hears exactly how it is going to sound on the album, whether it's a plate or a chamber or an old '80s AMS RMX16 non-linear program."

Says James on the subject of drenching everything in reverb: "I just have a need for space in a recording. I feel that a lot of modern recordings are lacking space and depth in the stereo field. Many recordings sound flat, with all the sounds pushed right up in your face. I hate that. I like older recordings where you can feel the space around the performers. It's not that I'm on some retro trip—that gets old—I just want there to be some difference in distance between the instruments."

After the core instruments were recorded, James approached Chiccarelli with a wild idea: Take *Evil Urges* into a completely different realm by adding horns and strings to a sizeable chunk of the album's tracks.

COMPRESS IN

"Michael [Brauer] has a particular style of applying compression that differs from mine," Joe Chiccarelli says of the man who handled the mix on *Evil Urges*. "He uses multiple stereo compressors to feed things. But things were effected when tracking, especially the room mics: I used [Urei] 1176s on all of the electric guitars and Teletronix LA2As on the acoustic guitars. Keyboards were all hit with the dbx 160, and I used [Empirical Labs] Distressors and Chandler TG1s, Germaniums, and Neve 33609s on the drums. The vocals were processed through an Altec 9473A Dual Band Limiter as well as the LA2As and 1176s."

With so many room mics being fed into so many compressors, one has to wonder how many tracks made it to the final mix. "Michael muted a few things, but not much. I left him with a lot of options to mix and match with," Chiccarelli says. "For drums, I'd leave one mono, distorted, squashed room mic, one real far, wet-sounding ambient track, and one up-close mic to catch the early reflections and reproduce a lot of the low end build-up. You can hear the perspectives change a lot throughout the album."

World Radio History

"The first person who popped in my head was David Campbell, Beck's father," Chiccarelli says. "I'd worked with him many times before, so I reached out to him and, next thing you know, he's in the studio."

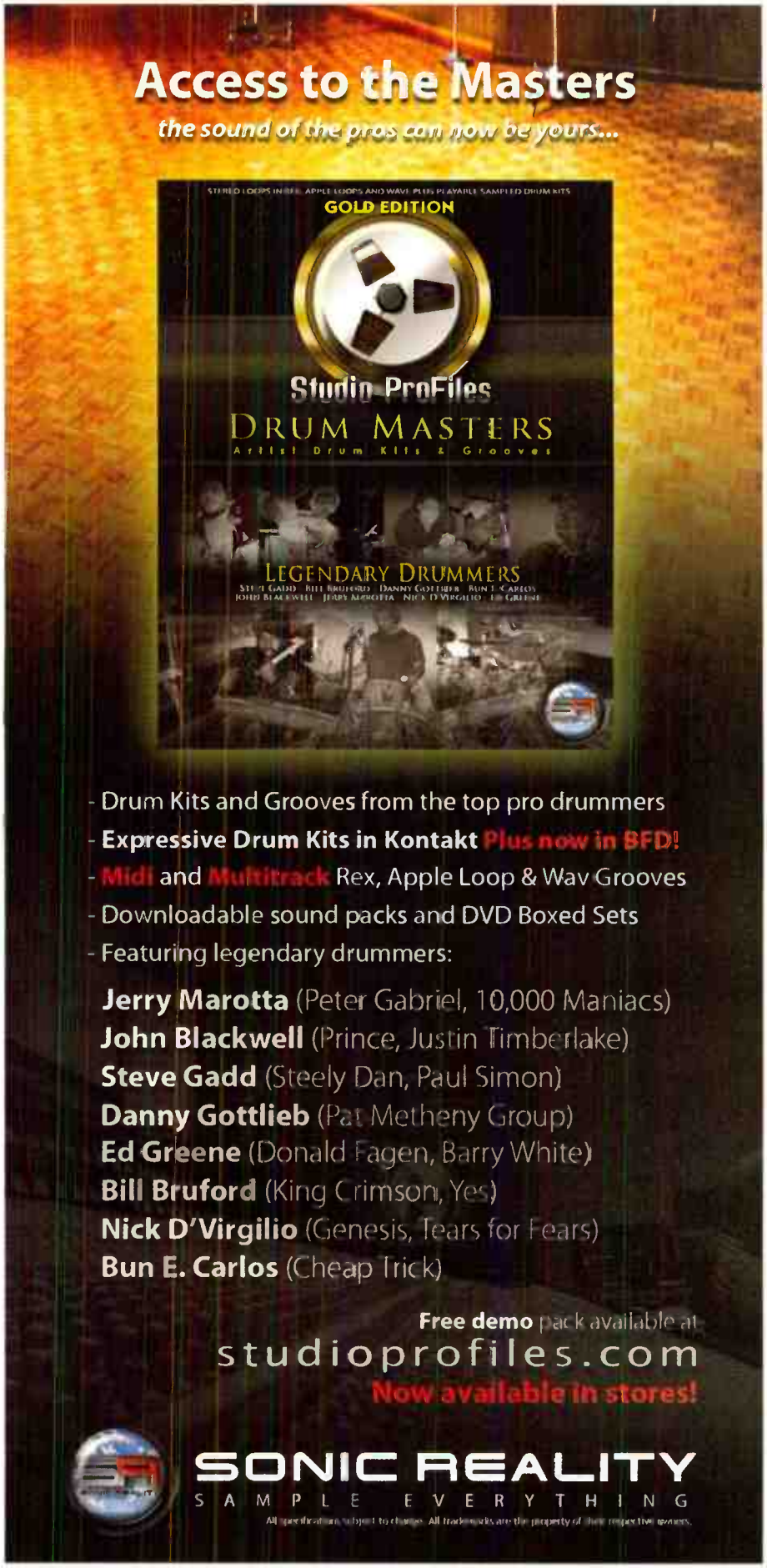
"Working with an outside arranger is tricky because I try to tell them exactly what I want for each song and sometimes it doesn't quite come out right," James says. "David listened to what I said, but he also added his own little touches and flourishes that I thought worked quite well."

Campbell came to the *Evil Urges* sessions with a handful of New York's top players. Starting with horns, Chiccarelli arranged the players in Avatar's Studio A live room. "It's perfect for horns and strings," Chiccarelli observes. "The room is so live. I close-miked the horns with Shure 12As, put four U67s a few feet further out, and then used a Royer SF-12 stereo ribbon for the room."

However, the session would prove more challenging than Chiccarelli initially assumed. "In that 'open' of a room, the horns were too wet. They would have stuck out too much no matter how you mixed them. I ended up putting baffles around the performers to tighten the sound up and focus the strings into the mics."

Using a pair of vintage Neumann M50s placed high above Campbell's head, and an AKG C24 stereo mic in the middle of the room, Chiccarelli captured the strings with relative ease. "Some songs needed tighter, smaller string sounds and others wanted to be more grand and symphonic. I would change the balance between the wider-sounding M50s and the tighter-sounding C24 depending on what was most appropriate."

After taking a two-week break during the holidays, the band reconvened with Chiccarelli at Nashville's Blackbird Studios D room to cut a few quick overdubs. "Jim wanted to work more on background vocals and Patrick wanted to experiment with drum textures," the producer remembers. "We booked out two weeks, which was time for the remainder of the lead



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vocals, the background vocals, whatever guitar and percussion overdubs, and to re-cut one song, 'The Golden Touch'—which didn't make the album and most likely will be released as a B-side. It was good to take a couple weeks' break and reflect on what we did at Avatar. We came in hearing everything fresh and instantly identified sections that needed work."

According to James, the band traveled to Blackbird to partake in the studio's "insane gear list." "We were among the first to use their brand new API Legacy Plus console," Chiccarelli adds. "It's the largest API ever built—96 channels, 192 inputs, 200 faders. The console's pres and EQ sections offered a good contrast to the tracks we cut on Avatar's 8088. We also took advantage of the multitude of vintage effects they've recorded, especially the Urei Cooper Time Cube, the Ursa Major Space Station, and their echo chamber. We used these delays and reverbs on a lot of the backing vocals. Again, all of the effects and approaches were song-specific. If a device worked for the lead vocal, it was printed on a separate track after the vocal composite was complete."

It was at Blackbird that Chiccarelli and My Morning Jacket parted ways and Michael Brauer [Coldplay, John Mayer, KT Tunstall] jumped aboard. After mixing the lavish live album *Okonokos*, Brauer was asked to lend his talents to the upcoming *Evil Urges*. "We wanted to work with Michael again because he gets a big sound," James says. "He has this muscular, athletic way of mixing records. He gets into it like he's playing basketball. I wanted this record to focus on the rhythmic side of the band, the interplay between drums and bass. Michael used to be a drummer, so I feel like he naturally comes from that perspective of 'making it thunder.'"

Chiccarelli agrees that Brauer did an amazing job at keeping the final mix faithful to the sounds the band achieved during the tracking sessions: "He really blew my mind. He was able to build a more exciting version of the rough mixes—which were done in less than 10 minutes. I'd just put the faders up, get a balance, and press 'record.' He didn't go in and tweak stuff and turn it into something it wasn't. This album was really built from the floor-up, from the live tracking. He honored that."

While James says that Chiccarelli had "the golden ear that we were looking for," the producer modestly defers all accolades to the players themselves. "They are great musicians with a great work ethic and they aren't precious about anything," Chiccarelli says. "If they couldn't play a part and had to adapt and write something new or couldn't use their favorite guitar amp because it didn't blend right, they didn't care. I think that when you go about things with that sense of abandon—where the only thing that matters is the end result—that's when you end up with something great." EQ

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CALEXICO: TUCSON TONE KINGS TURN TO *DUST*

by Ken Micallef

For years, Tucson tone kings Calexico have explored a dark, *noir*-inflected style that encompasses '50s jazz, Mexican mariachi, and David Lynchian textures—with a serious nod to spaghetti western composer Ennio Morricone. Calexico's 10th release, *Carried to Dust*, finds principal members Joey Burns (guitars) and John Convertino (drums) pursuing their southwestern sonic sorcery via producer/engineer Craig Schumacher's heavily tricked-out Wavelab Recording Studio.

Playing a 1962 Airline electric, 1950s Harmony Archtop electric, 1999 Manuel Rodriguez nylon cutaway and a 1960 FT-79 Epiphone Texan acoustic, Burns was joined by additional musicians who further broadened Calexico's smoky melodic palette. Volker Zander's 1961 Hofner Club bass and Jairo Zavala's 1960s Gibson LGO acoustic typically overdubbed Burns and Convertino's basic tracks with final arrangements created during mixdown. Coupling Digidesign's Pro Tools and iZ Technology's RADAR (via a Soundcraft Ghost board) with his own gear and effects, Schumacher maintained Calexico's naturalist approach on *Carried to Dust*.

"Calexico's music resonates with people because it has dynamics," Schumacher explains. "A lot of modern music is totally losing dynamics through that whole concept of louder, louder, louder. I'm fascinated by how they do that, but [the resulting music] doesn't resonate with me."

Beyond the band's atmosphere-laden approach, Burns' guitar layering (often through Gretsch Safari and Fender Blues Deville amps) is another Calexico trademark.

"I think of Frank Sinatra's guitarist Al Caiola, or R.E.M.'s Peter Buck; he knows when to drone," Burns says. "I like a wide palette—allusions to an orchestra at times, and at other times, more of a solo or duet dynamic. I'm not about plugging in and playing on ten. I want the sound to pulse and breathe."

John Convertino (left) and Joey Burns.

AUBREY EDWARDS

Located deep within the former dry battery storage room of Western States Telephone and Telegraph in downtown Tucson, Schumacher's 1,500 square foot facility is flush with vintage guitars, lots of delay pedals (he *loves* delays), keyboards, amps, and effects (including original EMT 140 and 240 plate reverbs). In addition to his work with Calexico, Schumacher has produced/engineered Nico Case, Steve Wynn, Richard Buckner, Giant Sand, and the Sadies, among others.

How do you typically mic Calexico's guitar amps?

I generally place a Royer 121 or 122 ribbon mic six to eight inches away and off to the right side of the speaker cone's center, then go through DW Fearn VT2, Daking Micpre/EQ, Grace Design Model 201, Groove Tubes SuPre, or UA 610 mic pres. I don't like getting right in the center of the speaker where the sound is really bright; when the mic is offset, you get more midrange.

I particularly like ribbon mics because the way you angle the ribbon is almost the way you hear the speaker: If you line the ribbon up in a vertical position, then you catch the edge of the speaker as you would with a dynamic mic. But if you turn the ribbon horizontally, it's like you're picking up the whole speaker. The ribbon gives a lot of flexibility, and also knocks off some of the brighter, edgier content that can create distortions in the mix.

While ribbons are well-suited for electric guitars because they're

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very smooth to begin with, for an edgier sound I'll put a Shure SM57 right up on the grille—just shove it right up there and let it take all the power. A ribbon won't distort if you do that, but the air pumping on it could cause problems, so that's why I move it back a few inches more compared to other mic types.

Does mic placement change depending on the guitarist?

With electric guitar it won't change that much. Nine times out of ten before I move the mic around I'll change the amp tone—volume, treble, mids, reverb, gain—then maybe ask to hear the middle pickup, or try other changes at the guitar itself. I'll adjust those elements first, because the nice thing about the ribbon is that it's so close to what you're actually hearing that when you dial up the guitar, then listen to what's coming through the monitors, you'll have a more realistic idea of the sound. You can hear the treble that you changed coming out of the studio monitors.

With a dynamic or a condenser mic, I find myself moving the mic more than with a ribbon. But when recording an *acoustic* instrument with a ribbon mic, the first thing I do is move the mic. That's because the ribbon can provide so many different tones depending on how it's pointed, due to the null points.

What's your approach to miking nylon string guitar?

I'll aim the mic at where the neck joins the guitar's body; depending on how much low end I need, I'll swing the mic toward or away from the sound hole. That is where the Royer 121s or 122s really stand out. When the ribbon is facing dead-on straight, it's catching some of the sound hole and that bottom end. But if you don't like that, you can literally rotate the mic ever so slightly, and turn the null points or ears toward the sound hole to really cut that low end boost.

There's also interaction between the mic and the sound. If the guitarist is playing a fast strum rhythm, the low end boom can really build up—so I cut [EQ] from 200Hz on down. But with a slower song where the chords develop, I might want that lower end to create more of a mood. Any rules of thumb I have are really about the low end.

Where do you place the Royer in relation to the nylon string guitar?

About 10 to 12 inches away to start. If Joey is playing aggressively that works great, but if he's a little quieter I move the mic closer. If there's too much pick noise I might ask him to try a different pick. Or I'll rotate the mic, and point those null points—those "ears" of the mic—at his strumming hand, which really cuts down all that noise.

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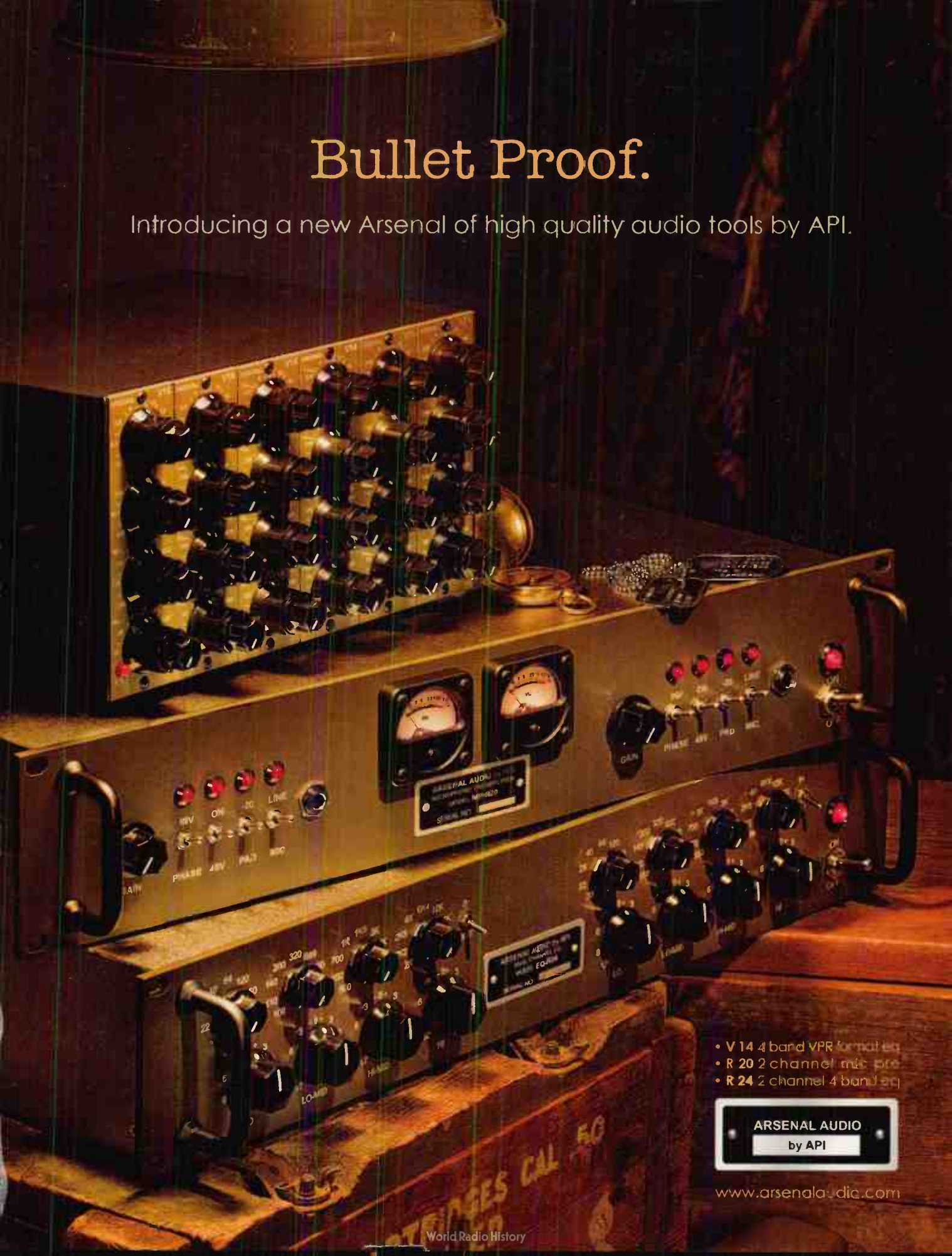

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"VIRTUAL" BASS RACK

by Craig Anderton

Certain processor/track setting combinations have become my "go to" starting points for recording bass with DAW software. It used to be necessary to create these settings from scratch for each project, but now most DAWs let you create and save Track Templates (also called Track Presets) that remember effects and control settings—like a "virtual effects rack." The 10/08 Power App Alley showed how to create a guitar amp track preset in Steinberg Cubase 4; this time we'll cover bass, using Cakewalk Sonar 8 as our DAW.

FIRST, GET IN TUNE

Insert a tuner as the first plug-in for your virtual rack—but note that some chromatic tuners are designed for guitar, and can't deal with the bass's low *A* and *E* strings. If so, play harmonics on those two strings, and (assuming your intonation is correct) tune to them. With Sonar, turn on "Input Echo" or the signal won't go to the tuner. Also, note that enabling the tuner mutes the track signal.

WHY YOUR TEMPLATE NEEDS *TWO* TRACKS

A Sonar Track Template can contain multiple tracks. This is important for bass because you almost always want to retain the low end; applying an effect like wah in series with the bass thins out the sound—but applying it in parallel "overlays" the wah effect on top of a solid bottom. So, the secondary track is used mostly to layer effects.

When recording, record into both tracks simultaneously. If you're processing an existing track, copy it into the second track so you have two identical, parallel audio tracks.

MULTIBAND COMPRESSION FOR BASS

On the main track, a Multiband Compressor follows the Tuner because it serves as both a compressor and, if you adjust the various bands' levels, an equalizer. I use lots of compression in the lowest band (under 200Hz or so), with light compression in the lower mids so that the bass doesn't compete too much with more "midrangey" instruments like piano and guitar, and fairly heavy compression in the upper mids to bring out pick noise. (This allows more latitude when mixing the bass in relation to the kick, as pick transients make the bass "speak" better if the two instruments compete.) During mixdown, you can tweak the high and low ends easily by adjusting individual bands in the multiband compressor—you may not even need standard track EQ.

Sonar's multiband compressor includes a limiter function. Enable this under the "Common" tab to affect all bands; this will trap strong transients (great for slap bass), and can bring up levels of individual bands to "push" the limiter for a more squashed sound—without having to vary the band's compression controls.

THE FX TRACK

The second track contains several effects, but I rarely use them all. The first effect is a wah, because if you use envelope-followed wah, it wants to "see" a signal with maximum dynamics. Next is a compressor, which serves as an effect. While the multiband compressor in the other track provides more traditional, transparent dynamics control that preserves bass transients, the compressor can mix a heavily squashed signal in with the main track. This provides a ringing, sustained effect when used subtly.

A Track Template in Sonar 8 for bass, along with some essential effects.

Distortion is good for "grit," and Sonar 8's new TL64 Tube Leveler effect is a good choice. However, as this adds "crunch" more than heavy-duty distortion, I typically follow it by a lowpass EQ to trim the distortion's high end. Native Instruments' Guitar Rig 3, the final effect in the chain, serves as a sort of "universal" effect because no matter what I want to layer on the bass, odds are Guitar Rig 3 can do it (incidentally, Sonar 8 ships with an LE version of Guitar Rig).

LET'S MIX!

The final advantage of this approach is the ability to mix the two tracks independently. Use automation to bring in the crunch track during the big chorus, and pull it back for the verse . . . tempo-sync effects parameters to the host tempo for a tight rhythm section . . . you get the idea. Best of all, because you're starting from a template, you'll get to the mixing stage *much* faster.

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RECORDING THE PIANO

by Matt Harper

Pianist Spencer Brewer has been involved with pianos his entire life—playing, tuning, restoring, and of course, recording on them: He has done 14 major label releases, produced over 200 CDs, and composed for numerous films.

EQ interviewed Spencer at his Laughing Coyote studios shortly after the release of *Cinematic*, a double-CD featuring versions of his compositions done with both solo piano and full orchestration—and found out some of the recording secrets that come only from being a piano tech for over 30 years, and a player for nearly 50.

Spencer Brewer in his shop, surrounded by pianos.

What was *Cinematic*'s signal path?

The album started in 1997 on a Neve 8232 console. The mics were generally two rebuilt 1968 and 1971 Neuman U-87s with new 3-micron capsules, going through a pair of matched Avalon 737s with NOS Telefunken tubes, then to a Pendulum OCL-2 and directly into 20-bit ADATs. We monitored using Genelec 1032s. The Neve's EQs were fantastic for processing—about +1dB at 500Hz, +1.5dB at 1.6kHz, and +1 to +2dB at 16kHz.

Later cuts were recorded to Pro Tools, still using the Avalons but without the Pendulum. We now mic with a pair of matched Neuman M-149s, and monitor on a Yamaha DM-1000 board using Waves Platinum plug-ins for compression and EQ. Throughout all this time, we've used Lexicon reverbs.

How do you "prep" a piano for recording?

Every piano is different. The 1985 Yamaha C7 in my studio has been worked on consistently for 23 years to get our sound—a "bell-like" tone with clarity throughout each of the octaves, without no section "speaking" louder than another. This evenness depends primarily on the hammers, the strings, the termination points of the "speaking lengths," and how well the action is regulated.

Can you elaborate on the piano's physics?

Like any stringed instrument, a piano has a soundboard that generates the sound, and a bridge that serves as the actual amplifier—it connects the "speaking length" [the part of the string that rings when played] to the soundboard. The ribs behind the soundboard support the instrument's curve, or "down-bearing" integrity; this bow is about 7°–10° for piano, to 40°–50° for violin.

The bridge is crucial—the amount of down-bearing, or the height of the top of the bridge compared to the soundboard, determines how well the instrument speaks in relation to the curve or rise in the soundboard.

All modern pianos (1900 and later) have two bridges. One runs the length of the piano from high treble to low tenor, while the other is the bass bridge. The crossover of tnese two bridges usually happens between notes A1 and G2. This is important, because this is where some of the magic of stereo mic placement occurs.

And what about mic placement?

If you're doing a close mic placement for an "in your face" recording, put the mic in hyper-cardioid or cardioid mode and place it in parallel with the tuning pins, between the first and second plate stress rails. This way the cardiod pattern picks up the instrument's high and alto notes. Position it about a foot behind the bridge and facing the bridge, around 1.5' to 2' high for optimum amplification.

Next, do the low end placement. The low end of the main bridge and bass bridge run parallel for about a foot and a half. Place the low end mic about 1.5' above the strings, between (and in parallel with) these two bridges. This allows the mid to low tenor notes, and the best of the bass notes, to be picked up in the cardiod or hyper-cardoid pattern at the bridges' amplification points. This placement not only gets a good stereo spread, it also allows for some really fine interplay of harmonics and tone in the mid to lower frequencies.

For more "air," move the mics just outside the piano's rim, keeping them the same height above the ground for consistency. Point the treble mic at the same spot and aimed toward the player, with the bass mic also aimed toward the player but at the cross-section where both bridges run together. If you aim both mics at the bridge, the sound has more depth and a wider range of frequencies. Placing the mics further gives less definition, but a wider frequency range because of the way the sound develops on the way to the mics. In all cases, though, the bridges hold the key to the piano's overall sound.

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GENJI SIRAISI: LAYERING LIVE AND ELECTRONIC DRUM SOUNDS

by Ken Micallef

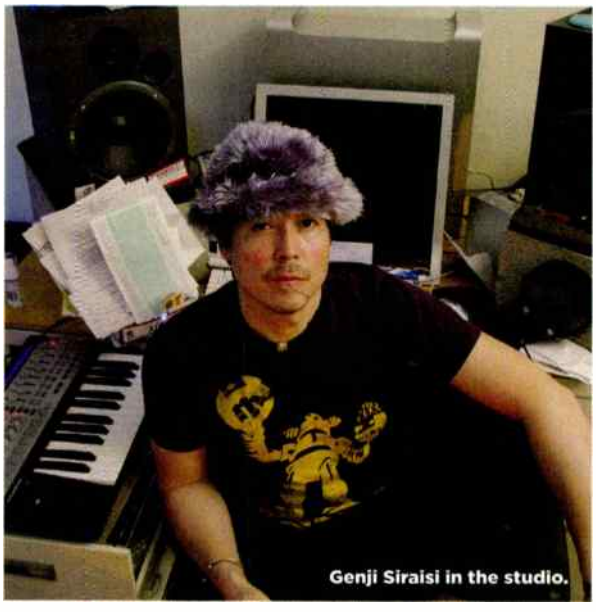
Drummer, DJ, and former television commercial engineer (from Tropicana to Tampax) Genji Siraisi is best-known for his rhythm method workouts with the Grammy-nominated New York jazz funk band, Groove Collective—but his tentacles reach even further. Siraisi's 2007 release, *Censorsh!t,* melded mad programmed beats with full set acoustic assaults, resulting in an experience like surfing electronic/hip-hop waves with Afrika Bambaataa and Bernard Purdie as your guides. *Surviving Freedom (Uncensored Remixes & Naughty Bits)* on the Expansion Team label is Siraisi's expected remix album, featuring *Censorsh!t* "reinterpretations" by Balún, no luck club, Q-Burns Abstract Message, Alex Moulton, and Siraisi's DJ alter ego, PushtoBreak.

Artists as diverse as N.E.R.D. to Portishead typically combine live drums with programmed Akai MPC (or equivalent) loops, seeking the ultimate fat beat or impossible-to-perform-live effect. With all of Genji's live/programmed, acoustic/electric information on his plate, who better to ask about mixing live and programmed drums for production satisfaction?

CONSIDER THE SOURCE

"You have to decide whether you're going to use live or programmed-sounding drums—a 'live' drummer or a 'super' drummer. Even something as simple as altering the snare sound with a sample overlay changes everything; sometimes I'll take a live loop and mix in a sample underneath, because the live snare sound will change as you hit it in different spots. Adding the sample will make it more consistent, without losing the element of having variations among hits.

"Dance or electronic music is built on the idea that the sound will hit the same way, every time. It's frustrating to make a sampler sound like a live drummer—but trying to play acoustic drums to sound like a drum machine is equally frustrating, which is why I like Alternate Mode DrumKAT. Drumagog [drum replacement software] is very useful too."


Genji Siraisi in the studio.

FIND THE RIGHT SOFTWARE TOOLS

"Drum sound software like XLN Audio Addictive Drums is good . . . or FXpansion BFD, the live drum emulator. It makes it easy to add a programmed snare part with the live one. Addictive Drums lets you keep the nuances and is designed to introduce certain amounts of variation, so even if you hit the MIDI note at the same level, it will add some [sonic] variations. Addictive Drums has a very natural feel—it's a good augmentation for live dates."

MIC DRUMS WITH ENHANCEMENT IN MIND

"If you know you'll be using replacement software with live audio, then you want as much isolation between each drum as possible. But don't forget about the room mics—the one trash mic in the room might be the sound that you want. The distance you move the mic back will create a more delayed sound; the sound will spread, and the drum decay will last longer. A smaller room reduces everything, as there are more early reflections, standing waves, and unpleasant artifacts.

"That ambient room mic is the one thing you will not get from the sequenced sound. You can always emulate the sound of a tightly miked drum with a sequencer, but it's harder to emulate the way the drum reacts with the room."

CLOSE MIKING

"Even a [Shure] SM58 will work if you're not whacking the drum. I don't like the mic right on the head; pulling it back even an inch or two changes the tonal quality a lot, depending on where you're pointing the mic on the drum. It's that lost art of adjusting the mic to get what you want."

DRUM TUNING

"The playing and the part is important, but the head and the tuning—and the room in which you're recording the drum—is more important than the drum itself, or something like the shell material."

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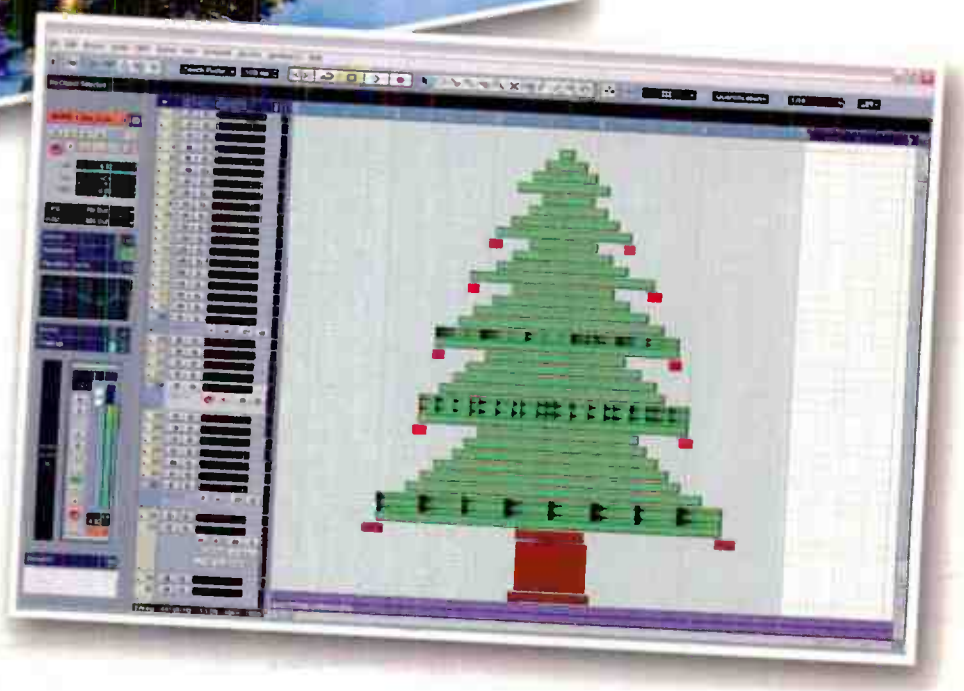
WHICH CHRISTMAS TREE DO YOU FIND MORE INSPIRING?

a.



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TO COMPRESS OR NOT TO COMPRESS

"If you compress the room mic, the character really changes a lot because the decays are so much longer. You want to adjust levels before you compress, though; don't take the easy way out. The attack and release parameters are just as important as the ratio.

"EQ is also important. Sometimes with a sharp EQ you can bring up the tone in the bass drum 8dB. As a different example of EQ, I might take a stereo mix drum loop, then split it into three sends, all pre-fader, and each with a filter: highpass, lowpass, and bandpass. I'll turn down the main level control and set the filter crossover points to split the signal into low, mid, and high bands, one on each track. That gives you a lot of options. You can really control the kick drum when you process each band separately, and it has a mixture of frequencies."

ABOUT DRUM REPLACEMENT SOFTWARE

Several software programs can analyze an audio file and generate MIDI data for triggering samples. SoundReplacer is an AudioSuite plug-in that can pick transients out of a file, then split them into three velocity zones for triggering multisamples that get mixed back into the file. An RTAS realtime option, TL Rehab, works as an insert and allows realtime auditioning of samples. Its principle of operation is similar to Drumagog, a cross-platform plug-in that works with VST/AU/RTAS systems.

Drumagog works best with multitracked drums having separate tracks for snare, kick, etc. It includes excellent samples for replacing existing drum sounds, or you can create your own Drumagog-friendly drum sample sets. To replace a drum sound, you insert Drumagog as a plug-in, then adjust its controls for reliable triggering. There's also filtering if you need to isolate the drum from bleed—it's even possible to use this feature to pull a drum sound out of a mixed track, although the results depend on how "buried" the drum is in the mix.

Drumagog also offers some advanced features, like a "ducking" option (*e.g.*, if your "old" snare sound remains in an overhead mic track, you can duck the snare sound in the overhead track when the "new" snare hits). Drumagog can also generate a MIDI out for triggering a soft synth or hardware synth with drum triggers. —*Craig Anderton*

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ELODIEO ON CRAFTING HER SIGNATURE VOCAL SOUND

by Joe Shambro

As the voice of the French experimental-pop duo Elm, Parisian-born New Yorker elodieO had two albums' worth of recording experience under her belt, and with it, plenty of time to perfect her vocal tone. She learned quickly what she liked best, and when starting the process of recording her debut solo release, *Stubborn*, she had a very specific sound in mind.

"I'm very particular about recording my voice," says elodieO. "I did a lot of the vocal recording at home, where I felt most comfortable singing, and where I could tweak the vocals over and over. It was just myself—no producer. After a bad studio experience, I bought a laptop and a Digidesign Mbox and started to learn Pro Tools so I could edit sessions myself. I learned from scratch, and I called friends who are Pro Tools engineers to help me along. I asked a lot of questions!"

Capturing a voice as dynamic and versatile as elodieO's required a special touch, but, surprisingly, that touch didn't involve high-end microphones and boutique preamps. Instead, elodieO found that less-expensive gear suited her vocal style much better.

"I brought home a Neumann U67 and an Avalon 737 preamp, but I didn't care for the results," she says. "I have a very difficult voice to record, and I ended up liking the vocal sound I got using only the AKG C535 microphone that I like to use live routed through my Mbox."

Aside from her home-recorded lead vocals, many of the album's choral-like harmonies—along with lead vocals on three songs—were recorded at Popcorn Studios in Paris with producer Boris Persikoff, who used a Neumann U87 and an Avalon 737 preamp. But even with the many digital tools available for vocal manipulation and artificial doubling, all of elodieO's intricate vocal layering was done naturally, with her singing each part. After tracking was completed, elodieO sent off her work to be mixed by a studio in California, where, in elodieO's words, "they flattened the mix." After some trial and error, she found Jason Corsaro at Barber Shop Studios in New Jersey, who worked closely with her to produce a final mix for release.

elodieO in repose.

MICHAEL FALLIS

"Jason did an amazing job," says elodieO. "I finally heard everything as I envisioned it. And I'm making sure my vocal sound translates to my live shows by bringing a TC Helicon VoiceTone Create pedal to re-create the effects on the album. I want to get it as close as I can. Of course, I'll also have my trusty AKG C535 with me, too." EQ

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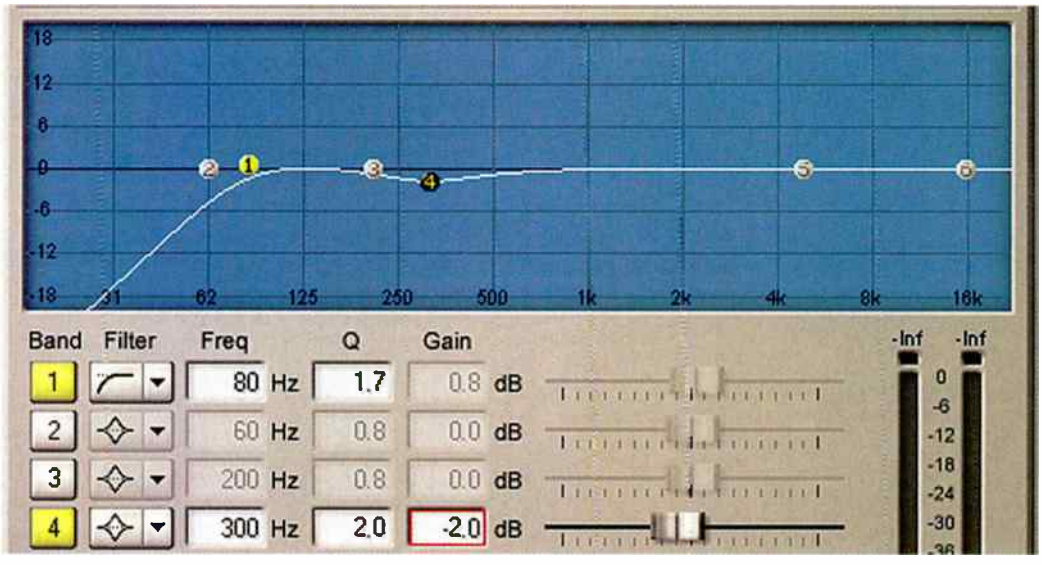

Cakewalk Sonar's Sonitus:fx EQ is creating a slight cut around 300Hz and a gentle rolloff starting at around 80Hz, both of which can help reduce muddiness.

6 WAYS TO CLEAN UP MIX MUD

by Bruce Bartlett

Does your mix sound like mush? You'll know it when you hear it, because the tonal balance of your song will sound tubby. Instruments will be blurred together rather than distinct, and they'll sound distant and muffled. Here are six ways to reduce muddiness so your mixes can emerge with clarity.

STOP THAT LEAK

Leakage (signal bleed) in a multiple-mic situation is a major cause of muddy sound. Examples of leakage are the drum sound picked up by a scratch-vocal mic, or the electric-guitar sound picked up by an acoustic-guitar mic. I explained several ways to reduce leakage in the June 2008 issue of *EQ*: place mics closer, overdub instruments, record direct, gate the toms, deaden room acoustics, omit the bass amp, and impose high-pass filters on most instruments. It also helps to position bass traps in your studio and control room to suck up boomy low end.

BACK OFF THE EFFECTS

Too much reverb can muddy the mix. For some reason, many recordists assume a song sounds more "produced" if it's bathed in reverb and/or echo. But if your mix is sounding muddy, mute or disable all effects for a moment. Does the mix suddenly become clearer? If so, turn down the effects send levels. You might be surprised how little reverb you can get away with. I also recommend putting no reverb on the bass and kick drum, using shorter reverb times (especially if the song's tempo is fast), and trying echo instead of reverb (just be sure to reduce feedback so you get fewer repeating echoes, and adjust the delay time so the echoes don't mess with the groove). Another trick is adding about 50ms to 100ms of pre-delay in your reverb unit or plug-in so that the listener hears the direct sound of the instrument for a short time before the reverb kicks in. This can clarify the sound by separating the reverb from the direct sound, as well as help the reverb appear more audible so you can use less of it.

COMPENSATE FOR FLETCHER-MUNSON

As discovered by audio researchers Fletcher and Munson, we hear less lows and highs (around 4kHz) when monitoring at low volumes rather than high volumes. For example, a rock band might sound bright and punchy when you hear it playing live at around 110dB. But when you record the band, and play back the track without EQ at a normal listening level of approximately 85dB, it can sound dull or muffled.

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Frank, Global-Conceptual Engineering Manager, BEHRINGER Germany designed and voiced the B2031A.

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Darwin, BEHRINGER Mechanical Engineering department did the B2031A computer-aided mechanical design. His photo should be next to Frank's but it looked more balanced over here.

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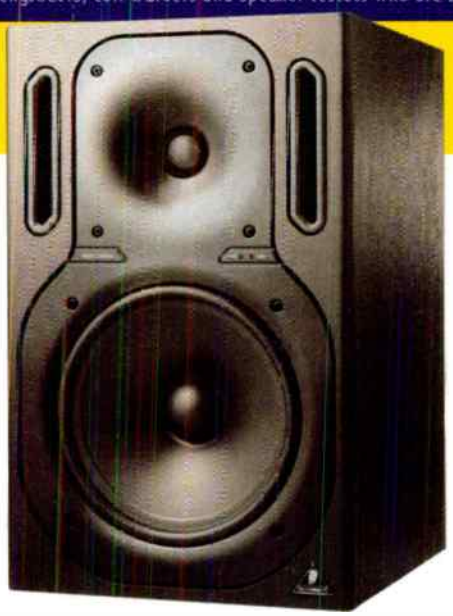

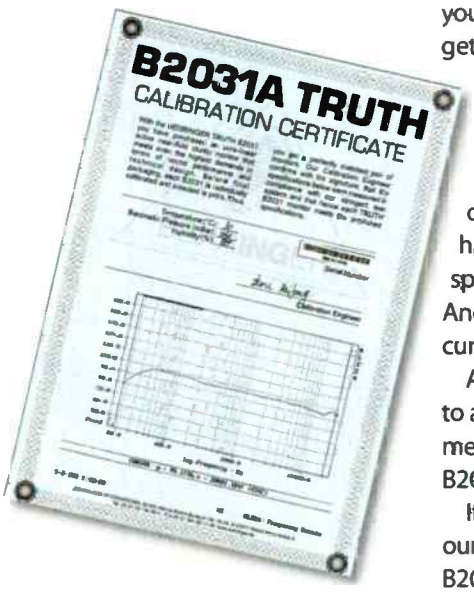

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Compensate by boosting EQ levels in the highs and/or upper mids.

CUT EXCESS LOWS

If the sound is bloated or tubby, try cutting 1dB to 2dB around 300Hz. This seems to be a "magic frequency" where a lot of mud resides. It's also common to cut between 400Hz and 600Hz on toms and kick drums. In addition, recording several background vocals can result in bass buildup, so turn down the lows in massed harmonies. If the mix sounds kind of "heavy," or too strong in the deep bass, use a high-pass filter on each track. Starting with a low corner frequency, slowly turn up the frequency until the sound thins out, and then back off a bit.

RESTORE HIGHS

Sometimes, a mix sounds muddy or dark because it's weak in the high frequencies. Try using EQs to boost the presence of instruments that lack clarity, apply an audio enhancer (but watch for added noise), and make high-frequency boosts *after* you compress, as compression tends to reduce the perceived impact of tonal tweaks.

GIVE ELEMENTS THEIR OWN SPACE

A clean mix is uncluttered—meaning that too many parts are not playing at once. Arrange the music so that similar parts don't overlap. Mix selectively so that not too many instruments are heard at the same time. For example, you might bring in vocal harmonies only during the choruses, or have guitar licks fill in the holes between vocal phrases, rather than playing on top of the vocals (think "call and response").

In a clear-sounding mix, instruments do not "crowd" or mask each other's sound. They are separate and distinct. Clarity arises when instruments occupy different areas of the frequency spectrum. For example, the bass provides lows, keyboards emphasize mid-bass, lead guitar punches out upper mids, and cymbals fill in highs. Often, the rhythm guitar occupies the same frequency range as the piano, so they tend to mask each other's sound. You can aid clarity by equalizing them differently. Boost the guitar at, say, 3kHz, but cut the piano at that frequency. In other words, use complementary EQ. If the bass and kick drum blur together, thin out the kick and add lows to the bass, or vice versa. Use a high-pass filter or turn down the lows on some tracks—especially guitars—to leave room for the bass guitar and kick drum. The guitars might sound thin when soloed, but the overall mix should sound balanced. It also helps to pan similar-sounding instruments to opposite sides. For example, the rhythm guitar and keyboards might cover the same frequency range, but you can make them more distinct by panning the guitar hard left, and the keys hard right. EQ

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CHEAT SHEET

STEINBERG CUBASE 4.5

by Craig Anderton

Cheat Sheet delivers concise, explicit information about specific recording/audio-related tasks or processes. This installment describes basic Cubase operations.

SET UP VST BUSES

Cubase shuttles audio to and from your audio interface via buses. From the Devices menu, select VST Connections. In the Inputs tab, add and name buses as needed, then from the Device Port popup menu, select the Device Port that connects to the bus. Similarly, in the Outputs tab, assign Cubase buses to Device Ports using the popup menu.

CHOOSE SAMPLE RATE

Immediately after creating a new project, go *Project > Project Setup* and enter the desired sample rate from the drop-down menu in the Sample Rate field.

EDIT OTHER PROJECT ATTRIBUTES

Project Setup also lets you change the recording bit depth (Record Format), Record File Type, Stereo Pan Law, etc. It's best to define these upon creating a new project, but you can change them at any time.

ADD A REWIRED SYNTH

From the Devices menu, select the ReWire synth (slave) application. In the dialog box that appears, activate the desired ReWire channels by clicking on the corresponding power symbol buttons. Then, open the device you want to ReWire. To quit a ReWire session, close the ReWired synth application first, then Cubase.

SET LOOP/PUNCH POINTS

Ctrl-click in the timeline to set the left locator, and Alt-click in the timeline to set the right locator.

INSERT A VST INSTRUMENT TRACK

This method works best for auditioning presets with non-multitimbral instruments. Go *Project > Add Track > Instrument*. In the Instrument drop-down menu, select the VST instrument you want to insert. To insert more than one instance, select the desired number in the Count field. Open the Inspector to make MIDI input assignments, select patches, and change instruments.

INSERT A VST INSTRUMENT VIA ACTIVATION

Use this method to insert multi-timbral VST instruments. From the Devices menu, choose VST Instruments. Select the desired instrument from the Instrument field pop-up menu, and when asked if you want to assign a MIDI track, click on Create. This creates a folder track with the instrument audio and MIDI tracks. Insert more MIDI tracks to send data to multi-timbral instruments.

BROWSE FOR VST INSTRUMENT SOUNDS

In an instrument track, you can audition any sound from any instrument (cool!). Click in the Apply Track Preset field, which opens up a browser. Click on a preset, and the appropriate instrument and sound will open (if you don't see an instrument, then Cubase has opened an Instrument Track Preset with audio and MIDI effects, channel settings, etc.).

CHOOSE FIXED TEMPO OR TEMPO TRACK

In the Transport, click on the Tempo button to toggle between a fixed tempo or the tempo stored in the Tempo Track.

SELECT TIMELINE REFERENCE

Right-click in the Timeline and select the desired reference (*e.g.*, bars/beats, samples, seconds, etc.).

SCROLL AUTOMATICALLY

To have the track view scroll automatically, click on the Autoscroll button (in the upper toolbar, toward the right of the Edit toolbar. The small arrow button to the right of the Autoscroll button, when enabled, suspends scrolling if you're editing.

CREATE KEYBOARD SHORTCUTS

From the File menu, choose Key Commands. In the left column, choose what you want to assign to a key. Type the key in the Type In Key field, then click on the Assign button to bind the key to the function. Click on OK to save the assignment. Note that you can also create Macros; refer to the manual for more information.

SAVE SYSEX IN A CUBASE PROJECT

From the File menu, open Preferences. Under MIDI, select MIDI Filter. Check Sysex under Record, but *uncheck* Sysex under Thru. Click on OK. When you record a MIDI track and initiate a sysex dump from your MIDI device, it will be recorded in the MIDI track. If you can't initiate a sysex dump, you will need to send a Dump Request message from Cubase. This can be created in the MIDI Sysex Editor but is much more complex than initiating a dump from the device itself.

REMOVE PLUG-IN COMPENSATION FROM VST3 DYNAMICS EFFECTS

Cubase includes plug-in delay compensation to even out any timing differences caused by plug-in latencies or by dynamics processing "look-ahead" functions. However, if you want to use dynamics plug-ins for live performance, click on the plug-in's "Live Mode" button to disable look-ahead.

DESTRUCTIVE CLIP EDITING

Right-click on a clip, then select Plug-Ins and choose the desired plug-in. Set the parameters as desired; additional parameters are viewable by clicking on More, including the ability to fade the effect in and out over the clip. When all parameters are set as desired, click on Process. Note: This function is typically used to save CPU by applying effects to objects. However, VST3 plug-ins turn off automatically when no audio is present.

MIX DOWN TO AUDIO

To mix down a project, define the region to be mixed with the left and right locators. Then from the File menu, select *Export > Audio Mixdown*. Name the file, choose the format (MP3 and Ogg Vorbis are options too), sample rate, and other parameters, then click on Export. eq

Cut Along Dotted Line

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Shhhh...

Producer/Engineer/Mixer **Joe Chiccarelli** had a sleepless passed year, recording The Shins, The White Stripes, Brandi Carlile, Morrissey, Augie March, Mika, Stars, Kurt Elling, Grace Potter, Raconteurs and My Morning Jacket. His Royers were on every session. Let's give them this one blessed moment of downtime...

"I couldn't be without my Royers. I use them on every album project. If it's jazz, it's on a trumpet or piano. If it's rock, it's on the electric guitar. If it's classical, it's on a violin or a woodwind instrument. Royer ribbons just seem to work. Most importantly, the musicians respond positively to their sound, and that's always a major indicator to me. These mics positively make my job easier and yield tones that the artist is pleased with.

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Joe Chiccarelli

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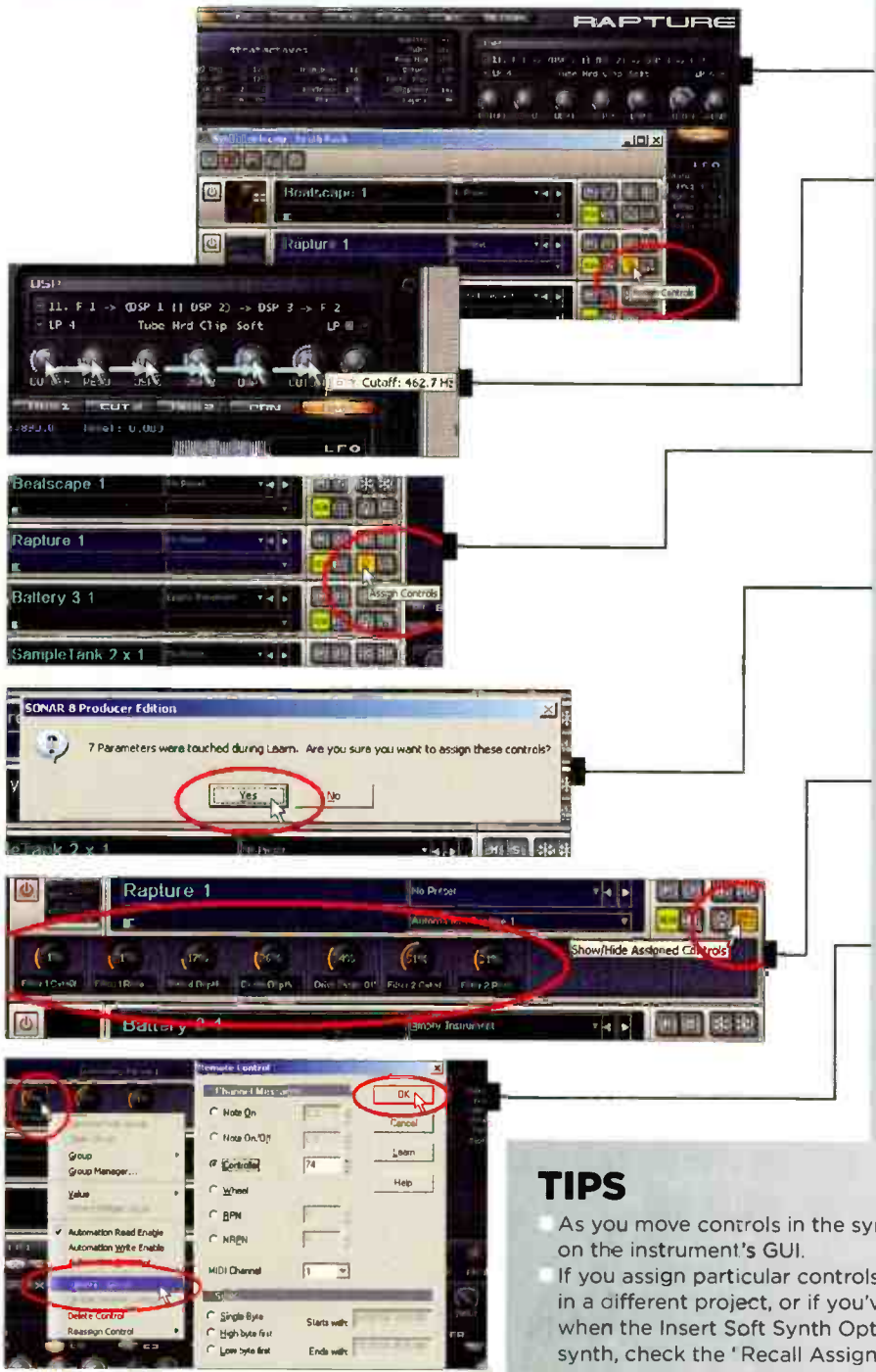
BY CRAIG ANDERTON

CAKEWALK SONAR 8

Consolidate important soft synth controls

OBJECTIVE: Encourage realtime tweaking of synth parameters by collecting them in a common view.

BACKGROUND: The Synth Rack view lets you duplicate various synth controls at the synth rack itself, so you can bring the most tweakable and important synth parameters to a common location. You can then edit the sounds or create automation moves by changing the control positions, or bind the controls to a hardware controller. We'll assume your project contains soft synths, and the Synth Rack view is open.



STEPS

1. Click on the "Assign Controls" button; this calls up the instrument's GUI.

2. Move the parameters you want to assign as controls. You can't just click on a parameter; you need to alter it from the existing setting. The order in which you move the controls is important, as the controls will be assigned from left to right along the bottom of the instrument's rack, based on that order.

3. After moving the controls you want to add to the Synth Rack, click again on the "Assign Controls" button.

4. A dialog box opens that says "X Parameters were touched during Learn. Are you sure you want to assign these controls?" (X is the number of parameters you moved). Click on "Yes."

5. Click on "Show/Hide Assigned Controls," and the parameters you selected appear as controls along the bottom of the instrument in the rack.

6. To bind a control to a hardware MIDI controller, right-click on it, select "Remote Control," then enter (or "Learn") the controller number. Click on "OK" to finish.

TIPS

- As you move controls in the synth rack, the corresponding controls will move on the instrument's GUI.
- If you assign particular controls to a synth, Sonar can remember them—even in a different project, or if you've closed and re-opened Sonar. To do this, when the Insert Soft Synth Options dialog box appears upon inserting a soft synth, check the 'Recall Assignable Controls" box.

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LOUD AND CLEAR

WORDS FROM THE WISE:

"Equator Q Series represents the state of the art in monitoring system design. For this level of sophistication, the price tag is about half of what it ought to be–a tremendous value. Hands-down, these are the best sounding, best performing monitors I've worked with."

Jason Scott Alexander/ Producer/ Mixer/ Remixer Mix Magazine Contributor/ September, Mix Magazine Tech Review

"The first monitors that I've ever had that you can set up and tune to any of my rooms in twenty minutes. I love 'em. When I want the music loud with lots of bass, the Q15's deliver. When I need to blend elements of the mix at a lower level, the Q15's are spot on. The Q15's sound great no matter where we use them."

Stephen Dent/ Managing Director/ Head Engineer Daddy's House Recording Studios

"I've become extremely dependent upon these monitors. I used my Q10's to mix and engineer the entire Mummy: Tomb of the Dragon Emperor soundtrack and most of the film score. I find the Equator monitors to be very transparent and true to the sound. With the Q10's, whatever I was working with in the control room was exactly what I ended up with on the screen."

Elton Ahi/ Music Scoring Mixer Rusk Studios

"If I listen on the Equators and then walk into the hall, the sound is remarkably like the performance itself. Both the Q8's and Q10's are very clean sounding and reproduce the music with excellent detail. I've also been very impressed with the spatial imaging these monitors deliver and the fact that they are very capable of handling wide changes in dynamic range, which is critically important when it comes to orchestral recordings."

Gary Gray/ President Audiolin Music/ Toronto Symphony Orchestra

"I love having the option of tuning the monitors to the room manually or via an automated process. It gives the more experienced audio engineer the ability to have an extremely high level of control while, for the less technically inclined engineer, the software can make the critical decisions."

Gerhard Joost/ Chief Engineer/ Mixer/ Producer Groove Addicts Studios

"The big test always comes when you go to what I like to call 'the cold light of mastering'—where all the scratches and dings become obvious. When we played my mixes back, they were exactly what I expected, with no surprises. Who could ask for more?"

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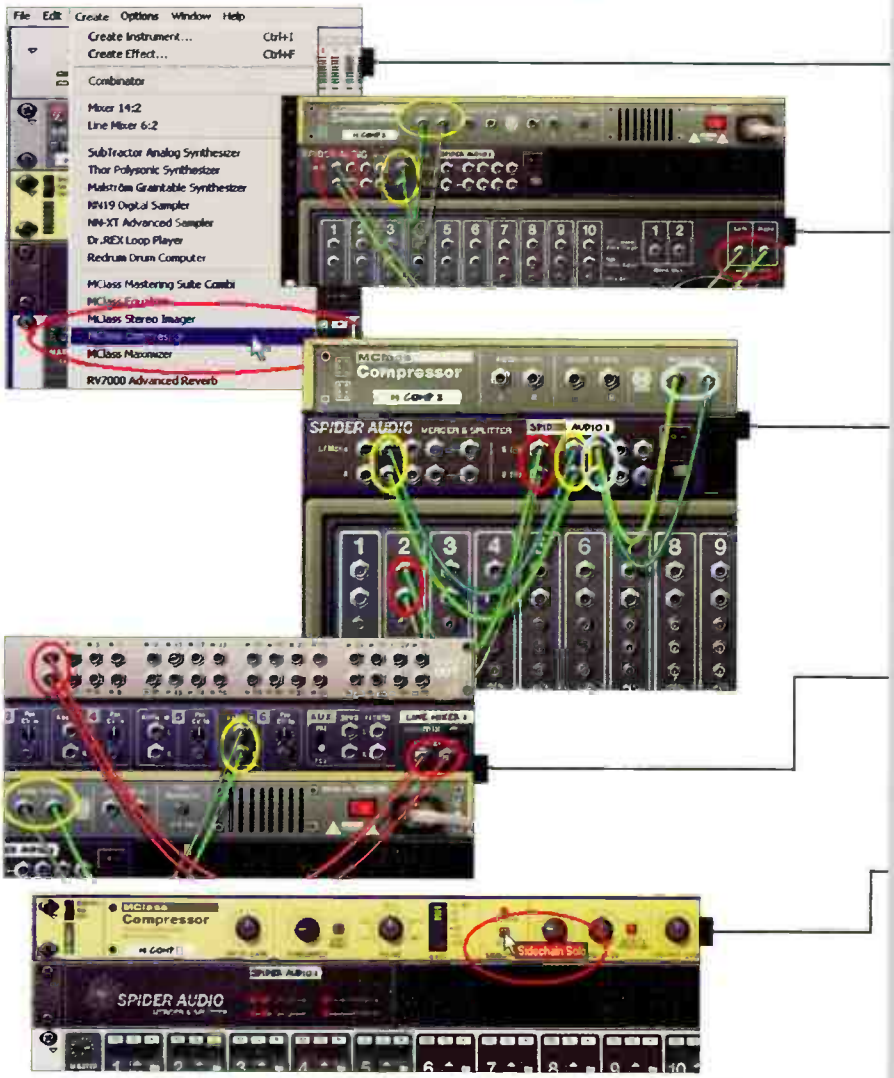
POWER APP ALLEY

BY CRAIG ANDERTON

PROPELLERHEAD REASON 4

Set up sidechaining with Reason's MClass compressor

OBJECTIVE: Implement sidechaining with the MClass compressor so that one sound can compress another sound.
BACKGROUND: Normally a compressor controls dynamics based on the signal at its input, but if sidechain inputs are present, other signals can control dynamics instead. In this example, we'll show how to use an individual drum (in this case, snare) to compress an entire drum mix.



STEPS

1. From the Create menu, add an MClass Compressor, Spider Audio Merger & Splitter, and the instrument you want to process (for example, ReDrum).

2. Hit the Tab key to flip the rack around, and start patching. Connect the ReDrum Stereo Outs to a pair of Spider Audio Merger inputs, and the Merger output to the MClass compressor input.

3. Patch the Snare drum output (*e.g.*, ReDrum output 2) to the Spider Audio Splitter input (previous connections not shown for clarity). Patch one set of Splitter outs to a pair of Spider Audio Merger inputs, and another set to the MClass compressor Sidechain In.

4. Patch the MClass Compressor output to a mixer (*e.g.*, Line Mixer 6:2) or the hardware interface; if using a mixer, patch it to the hardware interface as shown (again, previous connections are not shown for clarity).

5. Hit Tab to turn the rack around again. Adjust the compressor controls (Threshold, Ratio, etc.) for the desired effect. To monitor the signal coming in to the sidechain input, click on the Sidechain Solo button.

TIPS

- In Step 3, taking an individual ReDrum out removes it from the main stereo mix. Splitting the snare drum output and sending it to the Spider Merger mixes it back into the main mix, but you could also send the split snare output to a mixer channel. This would allow independent control over the snare drum and overall mix.
- The sidechain input can come from anywhere—not just the instrument being compressed.
- For frequency-dependent sidechain compression, insert the MClass Equalizer between the sidechain signal and the MClass Compressor sidechain input. Use the Sidechain Solo button to monitor the sidechain signal, and adjust the MClass Equalizer to boost or cut the desired frequencies.

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"LUNCHBOX" 500 SERIES PREAMP ROUNDUP

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SAVE MONEY WHILE GETTING GREAT GEAR

by Jay Matheson

Although many analog tape machines and analog mixing consoles are still in use, it's safe to say most musicians now record in the digital domain. However, one crucial console element can't be virtualized in a DAW: the microphone preamp.

The preamp amplifies the mic's signal by approximately 30–60dB to line level (normally referenced as 0dB); however, amplification is never totally transparent. Any preamp imparts certain characteristics to the signal—particularly regarding transient response and tonality—so the quest for quality mic preamps is part of the path toward pro-quality recordings.

It doesn't take long for the average engineer to realize that the inexpensive mic pres built into a $300 interface may not be up to capturing powerful, dynamic sounds. In fact, the quality and sonic characteristics of mic pres can be as influential as mic selection. Even a high-end condenser mic can sound thin, cheap, and boring when subjected to an inferior preamp.

Yet it's a fact of life that high quality mic pres require costly parts (transformers, tubes, chassis, potentiometers, etc.) and manufacturing techniques; they also usually require a significant investment. With price tags of $1,000 and up per channel, bang for the buck is crucial.

Enter the 500 series modular system, introduced by API many years ago. This consists of a metal frame with an internal power supply, along with input and output connectors that hold up to six of the company's modular products. After this initial investment, you can purchase additional preamps, EQs, and compressors without the added cost of a chassis and power supply.

THE 500 SERIES FORMAT: HERE TO STAY

Companies other than API started creating products that would fit into the already existing "lunchboxes," as the frame came to be called, and use the same power supply and connectors. As the format's popularity increased, these manufacturers even began production of their own housings for 500 series devices. These units hold from two to 11 devices and come in portable, tabletop, and rackmount configurations.

But before you pull out the checkbook for a lunchbox, consider the format's pros and cons. Pros include:

- A significant per-unit savings over comparable stand-alone preamps.
- Up to ten can fit into a three-space 19" rack—that's a lot of gear.
- Cabling the units is neat and easy.
- The widespread acceptance of the format guarantees more offerings from manufacturers in the future.
- Portability—you can transport your favorite 500 series devices from one studio to another in a neat, lightweight package.

And for equal time, here are some limitations:

- The initial investment in a rack/power supply is between $300–$700.
- Due to their small size, features such as 1/4" inputs, EQ, and high pass filters are often not included.
- Their size also limits the size of internal components—you won't find large numbers of tubes or bulky transformers.

TESTING 1-2-3-500

The opportunity to compare large numbers of top-shelf pres is both a great privilege and sometimes a dreaded task. For our tests we acquired a Pro Tools|HD rig (with 192 interface), 14 pres, and two API lunchboxes—all tested using ace musicians.

Our first test tried each pre on kick, snare, and overhead. We used an

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Electro-Voice ND 868 on kick, Shure SM57 on snare, and Neumann KM100 as a mono overhead. Our second test was with a KM100 on a Martin HD28v acoustic guitar. Next, we re-amped distorted guitar (Radial Engineering X-Amp into a Marshall JCM800 head through a Marshall cabinet, loaded with four Celestion vintage 30s, and miked with a sure SM7B). We also tested those units incorporating 1/4" DIs on the front panel with a '71 Fender P-Bass and Yamaha Motif keyboard. For vocal testing, we amplified pre-recorded vocal tracks though the mic inputs, courtesy of a level-matching transformer that converts line level signals to mic level and impedance.

Overall, the quality, workmanship, and sound of every pre we tested was exceptional. All pres fit snugly in the rack and had no mounting issues; each unit also featured a thick metal front panel with both phantom power and phase reverse switches (or buttons). I was astounded by the sounds we were able to capture using this unbelievable arsenal of preamps, and so were all the other engineers that were present—so, let's look at what we found out. (Note: The following prices are list prices.)

PURPLE AUDIO BIZ MK AND PANTS

PRICE: $675
STRENGTHS: Input and output metering and level control. Switchable input impedance. Lit switches. Low price. Switchable dual-gain stage.
LIMITATIONS: Use of line mode often needed to avoid input clipping.
CONTACT: www.purpleaudio.com

These two pres are very useful, and although they look very similar, have their own distinct characteristics. Both units offer helpful tri-color LEDs for both input and output level, as well as an impedance toggle switch and 1/4" DI inputs.

The Biz Mk is very aggressive-sounding—great for "in your face" mids, and tight lows. It excels on cutting rock vocals and distorted guitars, and its 1/4" inputs are great for keyboards. The unit offers 35dB of gain in line mode, 60dB in mic mode, and 75dB with the "dual" button depressed (note that we sometimes had to use the line mode when tracking loud sources to avoid clipping). When using a pair, I was astounded at the stereo imaging and clarity when tracking the Motif with a piano sound on a rock song. If you want a pre that knows how to cut through in a mix, this is the one.

The Pants has a much thicker low end with full low mids, which works well on thin sources that need fattening: rap vocals, snare on heavy music, kick drum, and line in bass guitar all benefit. It offers 40dB of gain in line mode, 60dB of gain in single mode, and 75dB in high mode. The Pants has very big lows and a pronounced top with smooth mids; when tracking vocals, it caused my U87 to sound much bigger than normal, with a nice top end presence for loud rock and punk vocals.

GREAT RIVER MP-500NV

PRICE: $1,034
STRENGTHS: Input and output metering and level control. Ultra-solid build quality. Switchable loading.
LIMITATIONS: Requires two slots in a 500 rack.
CONTACT: www.greatriverelectronics.com

Occupying two spaces in the 500 chassis, the 500NV is particularly well-built, with a 6-segment LED meter for both input *and* output. The preamp's basic coloration is a huge clear low end, smooth mids, and a nice top end presence. Kick drum and vocals were our fave applications. The front panel 1/4" DI yields the same huge low end, with great cutting high-end clarity and presence. My Neumann U87 had more beefy low end, with musical highs, than any other pre I've tried on loud rock vocals. The unit also features a switchable input impedance for extra tweakability. The 500NV offers 70dB gain, along with a pad and output level control.

(CONTINUED)

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LACHAPELL MODEL 583S

PRICE: $1,349
STRENGTHS: Lit front panel switches. Top quality build. Tube amplification circuitry. Output level control.
LIMITATIONS: Takes up two slots in a 500 rack. No metering.
CONTACT: www.lachapellaudio.com

This is another solidly-built unit that also occupies two slots of a 500 rack. It's one of two tube-based (ECC83/12AX7) units in this group of pres, which yields a definite sonic signature: huge, musical lows with lots of body, smooth mids, and particularly sweet upper mids and highs. Standout applications for this pre are acoustic guitar, bass/keyboard direct via the 583S's 1/4" front panel input, kick, snare and overhead where you want a big open sound. It's not a particularly cutting pre, but its very musical sound also exhibits a little compression, depending on the relative input and output level settings. It offers 70dB of clean gain and a 20dB input pad; the clever lit front panel switches make for a very sweet-looking unit.

SHINYBOX SI

PRICE: $500
STRENGTHS: Low price. Input level metering. Variable input trim. Dual-color lights in all switches.
LIMITATIONS: No 1/4" DI input. No output level control.
CONTACT: www.shinybox.com

Si offers a transformerless design and 72dB gain, with a 10dB output trim. One of its key features is 10-segment metering. While metering isn't offered on all the pres, it's a handy and desirable feature.

The Si has a big, open, round sound with fine overall balance—great for reproducing deep lows with plenty of punch and smooth highs, with a shade less upper mids than some of the other pres. The 10-segment metering precludes having a 1/4" DI, but there is impedance switching. This pre is the least expensive one we reviewed and is a great value; it impresses on kick, snare, overhead, and acoustic guitar.

AVEDIS AUDIO MA5

PRICE: $775
STRENGTHS: Switchable 28kHz boost circuit. Extra-solid build. Output level control.
LIMITATIONS: No 1/4" DI input. No metering.
CONTACT: www.avedisaudio.com

This elegant, sturdy, simple pre features 70dB of gain and an output level control. It's a Class A unit with a sound reminiscent of vintage Neve preamps—superb transparency, the characteristically Neve silky top, and some of the most massive low end on kick drum of any pre I've tested. The MA5 has one unique feature: a 28kHz high end boost, which purports to add "air" or openness (even though that's theoretically above the range of human hearing, the filtering extends into the audible range). We found it sometimes a nice addition for acoustic guitar, piano, and drum overheads. Good applications for the MA5 would be almost anything not needing aggressive mids: kick, overheads, vocals, bass guitar, and keyboards. There is no 1/4" DI, so consider teaming it with a direct box.

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BUZZ AUDIO ELIXIR

PRICE: $975
STRENGTHS: 4-LED level meter. Switchable input impedance. Mute switch.
LIMITATIONS: No output level control, although gain is sufficiently detailed that an output control is likely not needed.
CONTACT: www.buzzaudio.com

The Elixir uses a transformerless input with Class A design, and offers 22–70dB of gain (10dB less for the 1/4" DI) and a 20dB pad along with a handy 4-LED level indicator, low/high impedance switch, and mute switch. The Elixir is a solid performer with outstanding overall tonal balance—I especially liked its 1/4" DI input on bass guitar; the massive lows and balanced mids make it suitable for kick, snare, and guitars that need a hefty low end enhancement. The Elixir seems a great general-purpose pre for any source, as the sound leans a bit towards big lows with overall good mids and clarity.

A-DESIGNS P-1, EM-BLUE, EM-GOLD, EM-RED, EM-SILVER

PRICE: $895
STRENGTHS: A-Designs' units come in 5 "flavors." 20db pad. Very solid construction.
LIMITATIONS: Lacks metering. No output level control.
CONTACT: www.adesignsaudio.com

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ROLL MUSIC SYSTEMS TUBULE RMS5A7

PRICE: $1,000
STRENGTHS: Tube amplification circuitry. Very substantial chassis. Cool old school button-style switches. Input level trim.
LIMITATIONS: No metering or output level control. No DI input.
CONTACT: www.rollmusic.com

Using a tube (with a high-voltage plate supply) for amplification, the RMS5A7 has a 10dB variable input attenuator, and a gain control switch that goes from 33 to 66dB of gain in 3dB steps. It also features a 20dB pad and a well-made chassis. The Tubule was very evenly-balanced over the entire frequency range and it seemed just as comfortable on kick, snare, overheads, guitar, bass, or vocals. While not as aggressive-sounding as the solid state pres, the Roll Music's Tubule delivers what you want from a top-shelf tube pre: big, solid tube lows with no harshness, and great overall balance.

A-Designs sent us five pres for evaluation. The P-1, EM-Blue, and EM-Silver units offer 65dB of gain while EM-Red and EM-Gold offer 63dB gain, all using a continuously variable pot. They also include a DI input and a -20dB pad. While all share a big/bold sound, feature set, and cosmetics (except the front panel color), each has a distinct sonic signature.

While all five pres are multi-purpose, A-Designs has varied each pre's character by using different combinations of custom-made input and output transformers, making each a little better-suited for specific applications. The P-1 has a pronounced upper mid/top end and solid lows with smooth mids—it's ideal for vocals, overheads, direct keyboards, and acoustic instruments. The EM-Blue offered a great overall balance with a little more high mid and top end air; that extra high-end "zing" helps dark snare sounds, or vocalists who need additional definition. The EM-Silver serves up a thick, slightly extended low end response with very smooth mids and slight low mid dip. It's our favorite of the five for kick drum, bass guitar, direct synths, and other low end sources. I also had good luck with soft, intimate vocals.

The EM-Gold creates a similar low end to the Silver, but with slightly pronounced upper mids. It's useful for sources that need strong lows and very good definition (heavy distorted guitars, rock vocals, drums that need both thud and attack, etc.)—it's the smoothest pre of the group. The EM-Red is excellent for thick sounds that need a little less top; the mids are strong, and have a "woody" quality. I really liked the Red on bass guitar and electric guitars that need plenty of beef without the sometimes annoying top end buzz. Its slightly darker top also works well on overly-sibilant vocalists.

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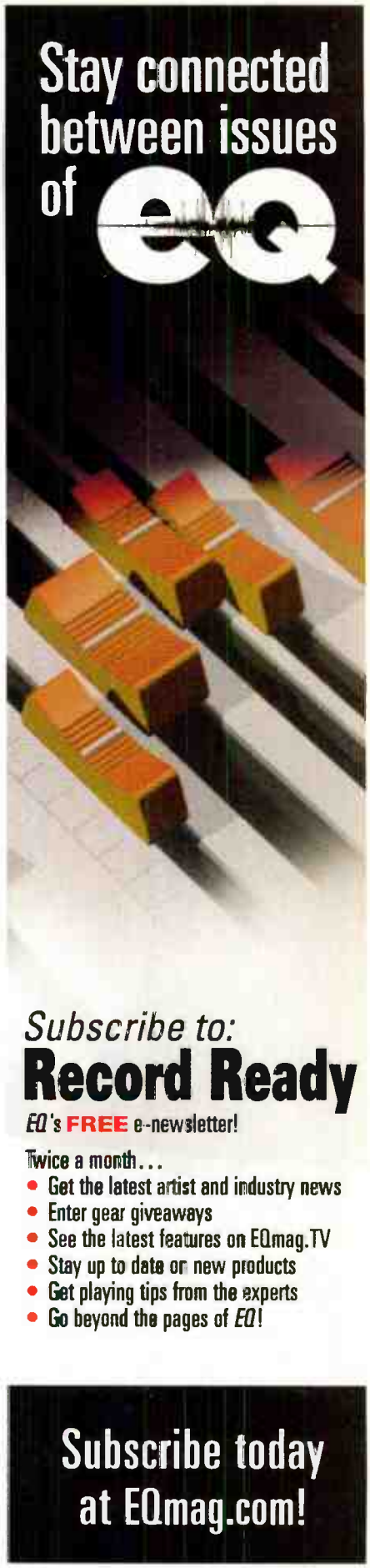

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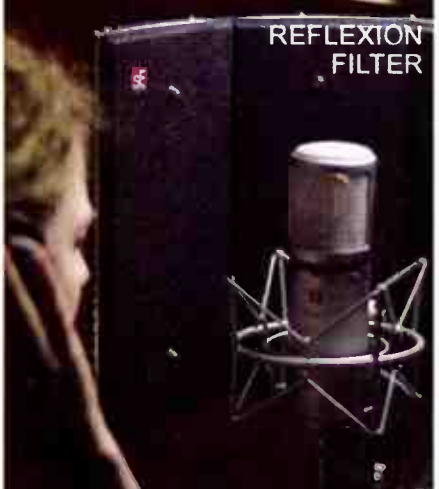

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ATLAS JUGGERNAUT

PRICE: $1,095
STRENGTHS: Variable impedance. Swappable iron/nickel transformers on inputs and outputs. Clip light. +THD for adding harmonics. Gain boost switch. 8 LED front panel buttons.
LIMITATIONS: Lacks metering and output level control (although 1dB gain detents pretty much obviate the need for a "fine tuning" level control).
CONTACT: www.atlasproaudio.com

The Juggernaut is easily the most feature-packed preamp we received. It features 12–70dB of gain, iron and nickel input transformers (you can swap out one for the other in about 30 seconds, thanks to two screws and a clip), variable input impedance, a mute button, clip LED, and "+THD" (a 10dB output pad). This pre is so flexible, it's the sort of device that offers an engineer nearly infinite tweaking options. In general, the iron transformer yields huge lows for tracking kick, snare, or bass guitar, while the nickel input transformer favors guitar. There's also a 300–10k ohm dial impedance switch and 1/4" DI inputs. While recording bass guitar through the Juggernaut, it sounded a bit less "stiff" than many DI sounds—almost more like a miked bass amp. The unit also features lights on each of the eight front panel buttons, and pots with 41 detents (and aluminum knobs) for gain and impedance.

CONCLUSIONS

In general, we were floored by these pres: The sonic variety and overall quality was simply astounding. Clearly, the years of obsessive design and craftsmanship invested by these manufacturers has really paid off; after about a month of testing, I am now a confirmed 500 series junkie. In fact, I plan to purchase at least three channels of these incredible units.

These pres gave my current projects some fresh inspiration, and a seriously-needed sonic shot in the arm. Our thanks go out to the designers and manufacturers for supplying the units for this article, and more importantly, their endless hours of exceptional design work. Now, where did I put my checkbook. . . . EQ

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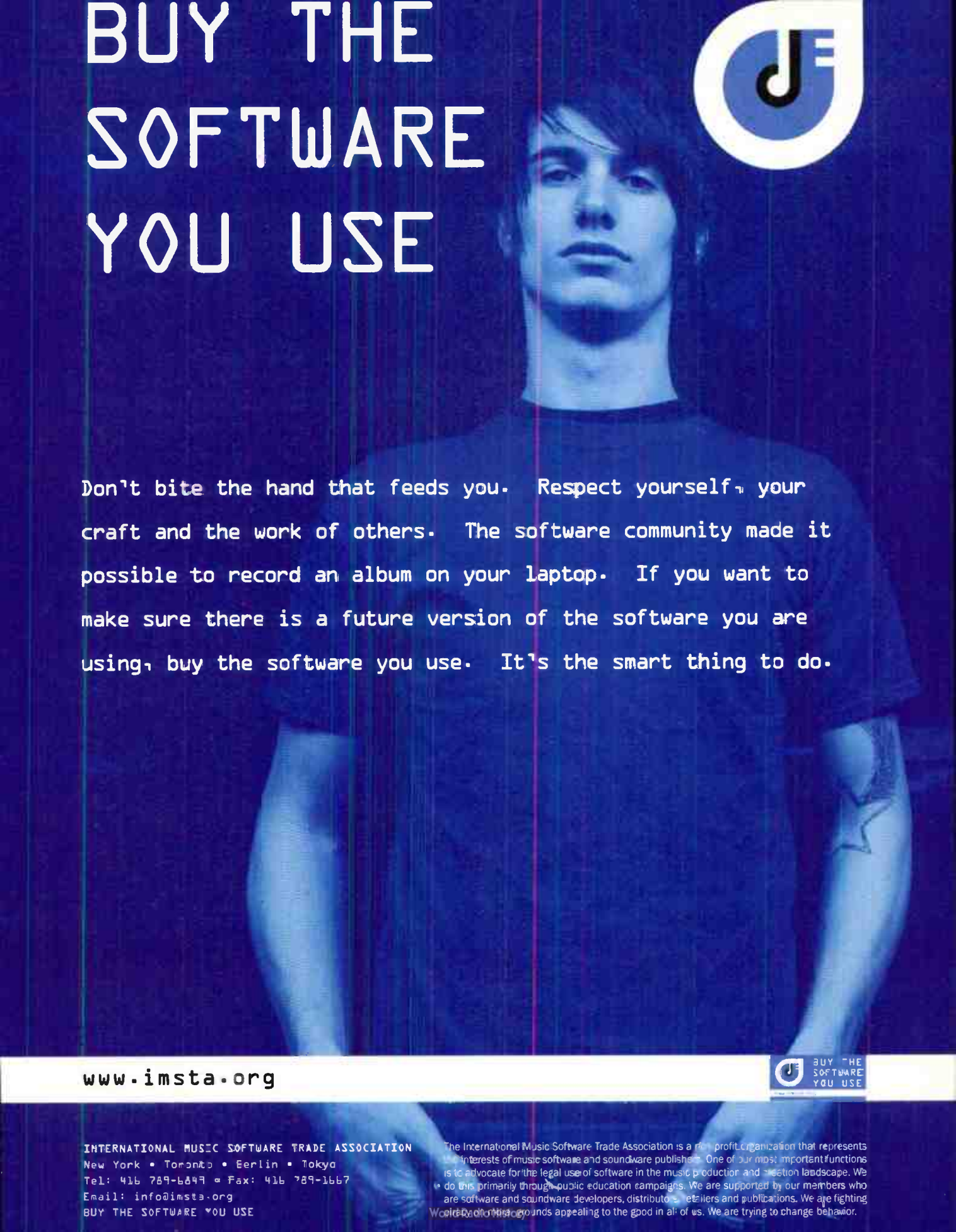

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GEAR HEAD

"LUNCHBOX" 500 SERIES COMPRESSOR ROUNDUP

SQUEEZE YOUR SOUND BY SQUEEZING THESE INTO YOUR LUNCHBOX

by Garrett Haines

As Jay Matheson noted in his 500 Series Pre Amp Roundup on page 54, there are a variety of advantages with the "API Lunchbox" format—and this format's popularity among engineers is rising. Consequently, we've seen a swell of offerings in the 500 series compressor field. We were fortunate enough to obtain almost every available model for our roundup, and even more fortunately, the gang at Mercenary Audio loaned us a six-space API model to house them. Later, Purple Audio let us enjoy one of their Sweet Ten rack units. For more information about these boxes (as well as some other options), see the sidebar on page 64; note that all prices given are list prices.

SQUASHING 1-2-3-500

In addition to the other engineers at Treelady Studios, I enlisted the help of Herman "Soy Sos" Pear, from Tuff Sound Studio. Soy normally focuses on electronic, urban, and world music, and he brought an extensive collection of modular synthesizer sounds that ranged from spacey to phat to downright bizarre. We also used guitar, piano, bass, and drum source and submix tracks from country singer Christian Trich, progressive rockers Undermine the Common, and rapper E Rock. This provided us with a wide range of instruments, vocal styles, and production aesthetics for our tests.

PURPLE AUDIO ACTION

PRICE: $675
STRENGTHS: All-button in "Nuke" Setting. Tri-color LED metering. Everyday workhorse compressor performs well on most sources.
LIMITATIONS: Extreme settings can cause distortion. Ratio knobs can be difficult to move. Dialing up good sounds on some sources requires patience.
CONTACT: www.purpleaudio.com

While most of the other units gave us immediate gratification, we had to work with the Action. This is not bad; some of my favorite gear required time to get used to the control interactions. Soy Sos found Action outstanding for tracking samples and fast transient synth materials, but he had difficulty dialing in vocal settings quickly.

Purple states that the Action is reminiscent of their MC77 (a respected recreation of the Urei 1176; Purple was the world's only source of this particular compressor sound for several years). I can see the relation, but at the same time, this is not an MC77 packed into a 500 series rack. For one thing, the attack and release times are much broader than the MC77, which can cause distortion if you're not careful. We wanted to like the Action on bass, but our results were average. However, on synth samples, kick drum, and snare, the Action came alive, adding pop, snap, and presence to sources. The more we used this box, the more we liked it.

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BURGIN MCDANIEL KOMIT

PRICE: $995
STRENGTHS: One knob operation. True hardwire bypass. Independent limiter. Gain makeup.
LIMITATIONS: Requires the right input for proper gain staging. Meter less useful than standard VU.
CONTACT: www.burginmcdaniel.com

Talk about vibe: The Komit comes in an Army issue ammo box, has G.I. Joe green-rubber knobs, and a level meter that looks like the control panel from a missile silo. The guys didn't like the meter, but I did—it fits with the unit's personality. Instead of ratios, there is a compress knob that has images of a circle that gets more squashed and pancake-like as you go clockwise. But don't think this is all sizzle and no steak. Both Kevin Burgin and Travis McDaniel have years of audio and tech work on their résumés, including working side-by-side with Mr. Rupert Neve.

The Komit is a feed-forward compressor and limiter. Simply set the level, choose one of three presets (fast, med, slow), pick a compression level, and you're ready to go. However, note that the Komit requires a reasonably hot signal for best results, so be prepared to drive this box hard—but that's expected, because this is a macho compressor. You know the type: just a man, some coffee, slab of bacon, a six-shooter, and his horse.

In fact if John Wayne were a compressor, he would have been the Komit: "Look guitars, I need you to plunk yourselves right here in the mix and stay there!" I would describe the sonics as vintage, thick, Neve-esque, rich, and slightly aggressive; it's great on guitars, bass, backing vocals, synths, and drums (individual or bus). The Komit is not as clean or hi-fi sounding as the AnaMod, but it doesn't want to be. If you work with rock and roll, you want a Komit. Or two.

BUZZ AUDIO POTION

PRICE: $1,150
STRENGTHS: Mix feature. Sidechain ability. RTR can sound like a pro riding the fader. Could be your next go-to vocal compressor.
LIMITATIONS: Takes up two spaces. Not as "warm" as the Essence. Lowest ratio 3:1.
CONTACT: www.buzzaudio.com

Like the Essence, the Potion requires two spaces in the 500 chassis, and offers the same sidechain and linking powers. The Potion uses a Field Effect Transistor (FET) gain reduction element, which sounds completely different from the Essence. I would describe it as being more forceful, but not in a harsh way. Other differences include unique ratios of 3, 7, 10, and 20 to 1, a Release Time Reduction (RTR) setting that automatically changes the release depending on the attack depth, and a mix knob, that allows you to blend the uncompressed source with the compressed signal for true parallel compression effects.

The Potion was solid on instruments, especially guitars and bass. Having the mix option made all the difference. Remember those unruly bass and synth tracks? They were no problem for the Potion. We just selected its super-fast 50 microsecond attack and a 10:1 ratio, then blended this in until we had a sound that was in control without having that dehydrated, fatiguing sound. Kick drum or snare sticking out too far? Just add an equalizer to the side chain and tell those kids to have a seat. But save room for vocals with this box, because the Potion is great regardless of genre. We tried rock, country, and rap tracks. A 3:1 setting with the proper mix percentage and the Potion can make the vocalist sound like those old pros who knew how to work a mic.

(CONTINUED)

World Radio History

STANDARD AUDIO LEVEL-OR

PRICE: $485
STRENGTHS: Great bang for the buck. Nice leveling with moderate uses, but also capable of serious sound destruction.
LIMITATIONS: DI does not override XLR input. Aggressive sound not appropriate for every source. No metering.
CONTACT: www.standard-audio.com

The Standard Audio Level-Or is a JFET limiter/distortion processor inspired by the Shure Level-Loc PA limiter. It has two modes: Level and Crunch. Set to "Level," the unit behaves similarly to the Level-Loc. However, Standard Audio has added an additional, faster release time for even more flexibility. The insides feature some beefy transformers, and the sound, although raw, caused one listener to dub the Level-Or as the "Poor man's LA-2A." I could certainly agree with that assessment, especially on bass and some vocal tracks. On a whim, when we pulled up a piano track from a country session for Christian Trich, the Level-Or destroyed the keys in a fashion that mirrored the destruction in the singer's story. Really cool.

In "Crunch" mode, the Level-Or can start from slight harmonic enhancement, but quickly moves to aggressive crunch, to distortion, to complete and utter destruction of the original source material. Think of a Big Muff or a Pro Co Rat in a 500 series module and you have the idea. Users can take advantage of the 1/4-inch jack on the front, which is line level and parallels the rear XLR jack, to plug in devices like samplers and drum machines without having to deal with 1/4-inch-to-XLR adapters.

All in all, this does some cool leveling and destruction. It's not a piece for everyday use, but at this price, a pair could really round out a studio's effect collection.

500 SERIES MODULE ENCLOSURE OPTIONS

Users interested in the 500 Series format have more options than ever when it comes to finding a home for their electro-critters; following are three of the more popular chassis on the market.

API LUNCH BOX
This is where the lunch box got its name, because, well, it looks like a lunch box. The API unit can accept six modules and has an internal power supply; a standard IEC cable and some modules are all you need. Several vendors sell this unit, but Mercenary Audio will supply you with blank panels to cover any unfilled slots you may have. Even better, if you return the panel to Mercenary they'll credit you $50 towards the purchase of a new 500 series module.
Price: $425
Contact: www.mercenary.com

ATLAS PRO AUDIO REVOLVER
For users who want even more portability than the six-space lunchbox, the Revolver—a two-slot 500 series rack—is a great solution. Like the other cases, it's self powered (and can provide up to five times more than the API minimum power specification). You can configure it in multiple ways; as a stand-alone unit, it can be positioned vertically or set up horizontally for standard 19" rack mounting.
Price: $400 (less when purchased with modules)
Contact: www.atlasproaudio.com

PURPLE AUDIO SWEET TEN RACK
In addition to being an internally-powered rack, the Sweet Ten has several unique features. As the name implies, up to ten units can be loaded into the chassis. However, slot 9 is a special slot that is designed to accept Purple's Moiyn 8x2 mixer module. The Moiyn effectively turns the Sweet Ten into an 8x2 summing mixer. So, in addition to tracking with modules, you can add equalizers, compressors, or other devices at mixdown. The Sweet Ten can also accept the Purple Audio Cans headphone amplifier, making this a viable replacement for a small format mixer. Around the back, you'll notice a third XLR row. The second XLR out on each channel provides the option of running modules split, or linked to one another. Our sample unit came with some six-inch long XLR cables that make linking two units a snap.
Price: $800
Contact: www.purpleaudio.com

Other options from API and A-Designs are also available, so evaluate your usage scenario and choose accordingly.

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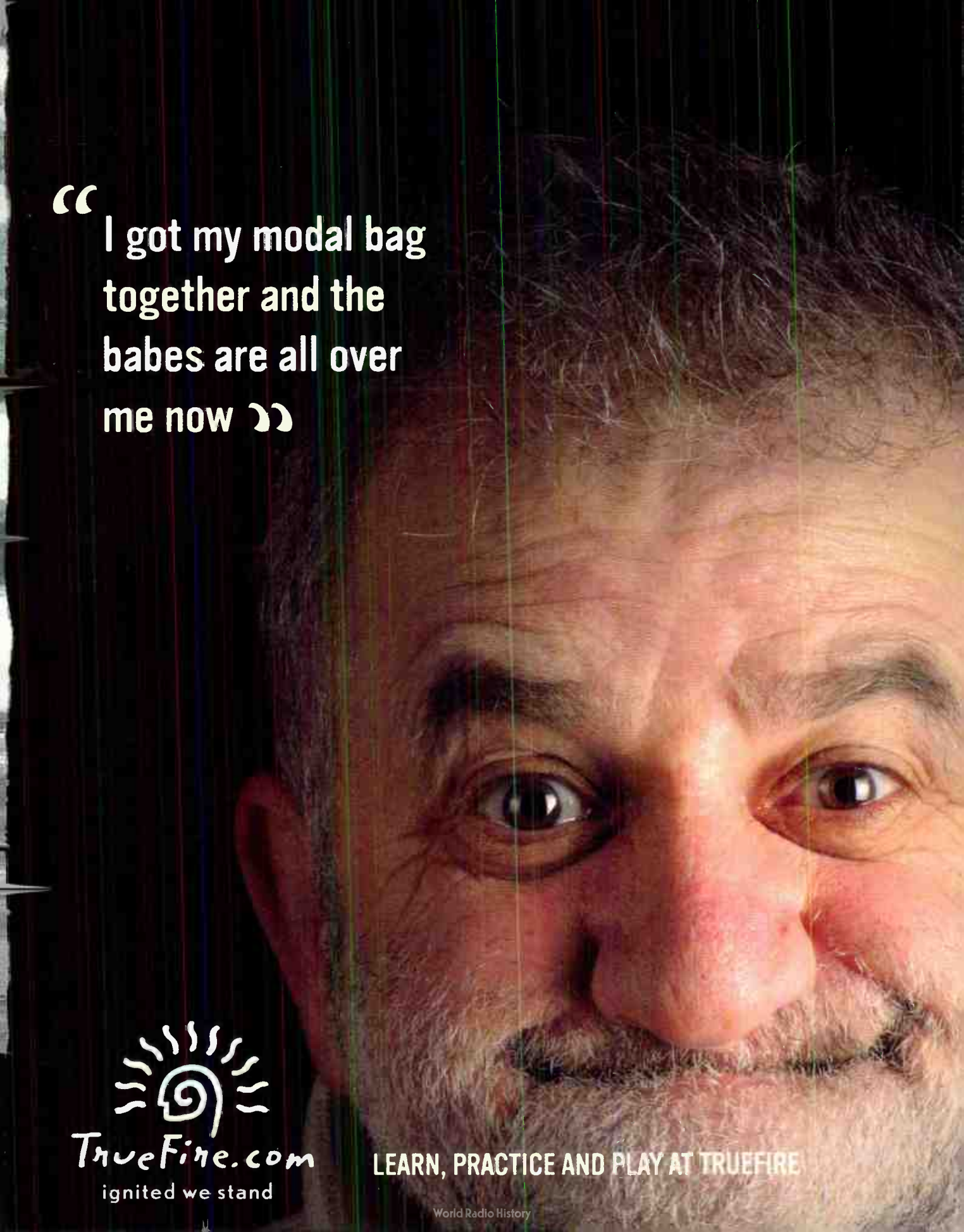

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EMPIRICAL LABS DERRESSER

PRICE: $650
STRENGTHS: Natural-sounding. Key listen makes it easy to target problem areas quickly.
LIMITATIONS: Takes some time getting used to the modes. I want a stereo one for mastering.
CONTACT: www.empiricallabs.com

So many people loved the frequency-dependent compression section on the Lil Freq EQ that Empirical Labs brought out the DerrEsser, a 500 series de-esser. They call it a multi-function dynamic filtering device—I call it cool as heck. Using a band-split approach, high frequencies are separated from lows, which allows the VCA to compress sibilant or harsh transients.

There are actually four DerrEsser modes. With DS, where the level of the highs does not affect the compression, the detector compares the high to the lows; overall signal does not matter. When there are enough highs compared to the threshold, the compression clamps down. In HF Limit Mode, the unit becomes a high frequency limiter, ignoring the low end altogether (this is similar to the Lil-Freq function). In Highpass, you can listen to the high frequencies being controlled with the compressor. And in Lowpass, you can audition the low frequencies being ignored by the compressor. These extra modes help you target problem frequencies, which makes it easier to throw out the bathwater but not the baby.

In use, this has the same clean, quiet, unobtrusive sound associated with other gear from Empirical Labs. I've never heard another analog de-esser that works this fast, is this easy to set, and sounds this smooth. As someone who has used nearly every de-essing plug-in I can say this: Save your money, get a DerrEsser.

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BUZZ AUDIO ESSENCE

PRICE: $1,150
STRENGTHS: Useful auto mode. Dedicated side chain. Clear metering. Gives tracks that million-dollar studio sound.
LIMITATIONS: Takes up two spaces. Not necessarily the best on every source, but I wouldn't kick it out of the rack for eating crackers.
CONTACT: www.buzzaudio.com

Occupying two spaces in the 500 chassis, the Essence is a differential opto compressor. But unlike some widebodies, the Buzz doesn't waste the rear XLR jacks. The first set provides input and output, while the second can be used as a side chain. A pair of Essence units can be linked for stereo work. The unit is sturdy, with full-sized control knobs, excellent metering, and premium construction.

The Essence handled anything we threw at it, but really stood out as a bus compressor. On rock drums it provided the good kind of glue, thwack, and round woody tone that makes vinyl aficionados drool. On bass it could clamp down on string noise, or help stretch out sweet sustain. I tend to dismiss any "auto" compression setting, but the auto attack and release modes on the essence seem to have an alien intelligence: For instance, auto can release fast transients while imposing a longer release time on more continuous signals. The overall fidelity of both Buzz compressors was among the best in the group. I would have no reservations using a pair of these on a mastering job, especially for a rock project.

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ANAMOD AM660

PRICE: $1,295
STRENGTHS: Most audiophile-sounding compressor in the group. You have to try hard to make it sound bad. Adds a smooth, buttery layer to drums, bass, and guitars.
LIMITATIONS: Slight changes in knob rotation can lead to big changes in sound. Pricey.
CONTACT: www.anamodaudio.com

While the current rage seems to be digital models of vintage gear, Dave Amels and Greg Gualtieri are making analog models. That's right, modeling gear with gear. The AM660 is the duo's stab at recreating the Fairchild 660 limiter. From the kidney bean VU meter to the retro-looking knobs, this guy looks like someone zapped a Fairchild with the shrink ray. Controls include input gain, threshold, and eight preset attack/release combinations called "Time Constant." A bypass button allows for quick before and after comparisons.

The AM660 possesses a very hi-fi sound and gave excellent results on nearly anything we ran through it—provided we spent the time to choose an appropriate time constant. It was also one of the only units that could tame some of the weird square wave synth patches Soy Sos brought. It was a standout on electric bass, especially when the player had extreme jumps in volume. (I believe someone called it the "last word on bass compression.") Unless pushed, the AM660 didn't sound like it was compressing, which I found most impressive. If funds permit, a pair of these could take your recordings (and your career) places.

CONCLUSIONS

I want to thank Kyle Smith, Dave Hidek, Dom Misja, and Soy Sos for their help with this roundup. And again, a special thanks to Mercenary Audio for the lunchbox loaner. But most of all, I want to commend the manufacturers on creating such unique and well-crafted products. Depending on your production needs, I would have no reservations about recommending these units: They might come in a small package, but they all pack a wallop of sound. EQ

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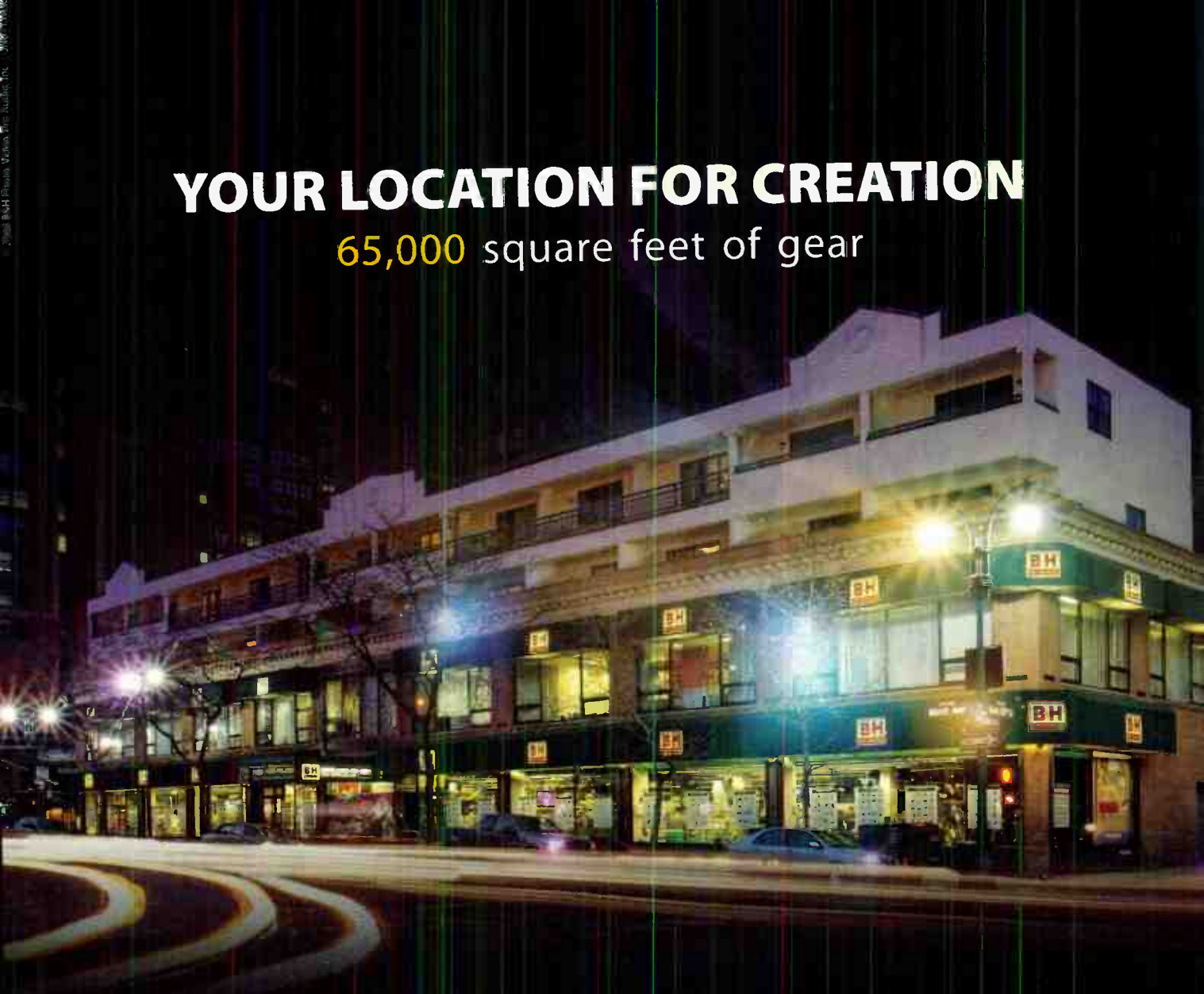

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GADGETS & GOODIES
LET'S GET MIKEY!

As in "microphones," that is—two really cool ones crossed our desk this month, so of course, we wanted to tell you all about them (all prices are MSRP).

MOJAVE AUDIO MA-201 MIC

($695; WWW.MOJAVEAUDIO.COM)

Having owned and used a Mojave MA-200 tube mic for about a year, I was excited to find out I'd be reviewing the new MA-201. I've always been fond of the MA-200 for acoustic guitar and sometimes brass; but with vocals, I almost always have to take down the response around 12kHz with a de-esser. So, I was curious to find out if the MA-201 shared similar characteristics.

As a solid-state version of the MA-200 tube mic, the MA-201 uses a Field Effect Transistor (FET) and comes with a very nice shock mount and metal flight case. The mic features a 3-micron gold capsule, Jensen transformer, cardioid pickup pattern, and low noise resistors.

As a pair was sent for review, I first tried them as stereo drum overheads because we tend to switch up drum overhead miking techniques from session to session. Sometimes we go to pencil mics (like a pair of Shure SM81s or AKG 451s) for that tight, controlled cymbal sound, but other times we use large diaphragm condensers such as Neumann U87s or Blue Dragonflies for the more open, "whole kit and room" sound. We set up the MA-201s, powered them with a pair of API 512Cs, then sent the signal straight to Pro Tools.

The initial position was about six feet above the kit. It was very apparent that the mic's pickup pattern was broad and wide—we were getting too much room tone, and not enough control of the cymbals. We lowered the mics to around three feet and rotated them outward, away from each other, and that helped everything snap into place. The stereo spectrum was wide as a house; we had good control of what each mic picked up.

Next up, I wanted to compare the sound of the 200 with the 201, so I set them both up for a vocal shout out. Using a Nice Pair pre, there was a noticeable difference between the two mics. The MA-201 sounded very accurate, with a little color; it did not have the high-end sibilance I've encountered in the MA-200. Especially at this price, the MA-201 is a great mic to add to your collection. *—Jeff Anderson*

JOSEPHSON C720 MIC

($5,090; WWW.JOSEPHSON.COM)

For more, go to eqmag.tv.

Cool: Instead of the usual pickup patterns (cardioid, omni, figure-eight, and hypercardioid), the C720 is a variable pattern mic that lets you switch the polar pattern at any time—even after you've finished recording (yes, you read that right). The mic has a dual capsule, dual FETs, dual transformers, and even a dual XLR output cable. Thus, you can record both outputs from the C720 and manipulate the polar pattern during mixdown.

I put this mic to some serious tests while working with the 2008 American Idol standout, Amanda Overmyer. During rhythm sessions, we set up the C720 as a knee-high mic for a drum kit. It was around eight feet away from the kit and four feet in the air, with the capsule's front facing the drum set. We plugged in both XLR cables into two channels of our DDA console's mic pres, which then went to Pro Tools.

Talk about control over your room tones! By mixing both mic outputs at different levels, and even dialing in different polarities, we had an unbelievable amount of control. Just listening to the front capsule, the mic sounded vintage and warm; it had a pleasing round bottom, and realistic top end.

Next, we did a vocal shootout for Amanda. Before starting vocals, we always choose several mics to audition with an artist—in this case a vintage Neumann U87, our modded Neumann U47, an AKG C12, and the C720. The producer and engineer found very positive aspects with each one; in the end, they kept the C12 for lead vocals, with the C720 and U47 for backup vocals. As each mic has its own character, the producer just left all three set up and advised Amanda which one to sing through, depending on the part she was recording.

The C720 proved to be extremely powerful for backup vocals because of how you can control the amount of room tone mixed in with the front capsule, as well as the warm beef that it added to the track. It's not cheap—but given the exceptional amount of control it provides, on balance that's a small price to pay. *—Jeff Anderson*

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SOUNDS

SONY: PHD—PROGRESSIVE HOUSE DYNAMICS

PHD, from Bunker 8, has 21 construction kits, each with between 9 and 15 loops. Some drum elements (*e.g.*, kick loop) are also broken out separately from a mixed drum loop. And, extra credit for the text document that lists file attributes—tempo (mostly in the 130BPM zone), number of measures, key, etc.

As you'd expect from house, the drums are appropriately fat and lumbering, the synths arpeggiated, the basses either round or percussive, and of course, you'll find various percussion and funky guitar riffs. Also, note that the one-shots aren't just drum hits, but bass, keys, guitar, FX, and other notes—for a good time, stretch them across your sampler plug-in.

So, what makes this "progressive"? The vibe isn't as loose as "classic" house; there's a tougher sonic edge, along with a rhythmic precision that leans more toward electro/techno—swing is used sparingly, if at all. The end result is a more muscular, contemporary sound.

The construction kits may seem like they could use more files, but the exemplary Acidization allows easy mixing and matching between kits. Think of the kits more as "guidelines" of loops that work well together rather than a limited set of choices; it's worth digging around in the other kits, and importing elements that multiply your options. PHD is a satisfying, consistent, well-produced set. —*Craig Anderton*

Contact: Sony Creative Software, www.sonycreativesoftware.com
Format: CD-ROM with 523MB/249 files of loops; 24MB/226 files of one-shots; 16-bit/44.1kHz
List price: $59.95

BIG FISH AUDIO: URBAN CONTEMPORARY GOSPEL

I fondly remember my father occasionally playing "Gonna Ride that Glory Train," from Harlem's Abyssinian Baptist Choir, at top volume. It wasn't the religious message that got him, but the musical one: It was exciting, vital, raw, and truly uplifting . . . then again, that's what good Gospel music is all about.

Urban Contemporary Gospel has 34 construction kits, each with loops, drum hits, and mixed drum loops also broken out as individual loops (*e.g.*, kick, snare, overhead). The sound quality is conservative—sometimes a bit muffled (a little EQ solves that) and not "hot" (so drag out your maximizer). But overall, there's a fine selection of bass, guitar, drums, keys, organ, and some pretty delicious gospel vocals. In fact, most of the loops (save the vocals) would fit well into a lot of contemporary R&B and hip-hop. Furthermore, the Acidization is far superior to older Big Fish releases—and this is not always easy material to Acidize.

The tunes don't have the rip-your-head-off excitement of hardcore, old school gospel; as the title suggests, they indeed have more of an urban sound—some of the loops would even fit well in smooth jazz. Still, there's a good balance of uptempo and slower tunes, making the set quite comprehensive. In a world of me-too sample libraries, this one stands out as unique and, well, uplifting. —*Craig Anderton*

Contact: Big Fish Audio, www.bigfishaudio.com
Format: DVD-ROM with about 1.3GB of unique 24-bit/44.1kHz WAV/Acidized content, duplicated as Apple Loops (and REX files where possible); also has Stylus RMX installer
List price: $99.95

REAL LIVE LOOPS: REAL LIVE LOOPS, VOLUME 2

These rock/pop/funk drums are totally "unhyped": There's no processing on the dry files, and while also duplicated as files with reverb, even that adds just a subtle ambience—no John Bonham thundering drums here. While you'll have to do some work to customize the drums to your needs, this purist approach (all files are recorded with the same drum setup too) makes them applicable to more contexts than if they were already "pre-produced."

Tempos range from 75 to 135BPM. The Fills folder contains fills at different tempos, but the Loops folders emphasize different groove styles—tom grooves, hi-hat grooves, etc. Timing is tight, even though played by a human; the Acidization is less so, and you'll need to edit the Acidization markers if you want to stretch much past the original tempo.

However, what may be this sample CD's "secret weapon" is the collection of individual drum hits, with multiple velocity levels. This allows creating your own kit that can fit right in with the sounds of the loops and fills, offering an even greater degree of customization than just altering the existing loops.

Bottom line is that while this collection provides the sounds and playing, it's up to you to impart the gloss and excitement. But ultimately, it will sound the way *you* want it to sound—not like everyone else using the same collection. —*Craig Anderton*

Contact: Real Live Loops, www.realiveloops.com
Format: CD-ROM with 16-bit/44.1kHz WAV loops, fills, and single hits, duplicated as dry and wet versions (698MB total)
List price: Approximately $30 for digital download, $40 for CD-ROM (including shipping from the UK)

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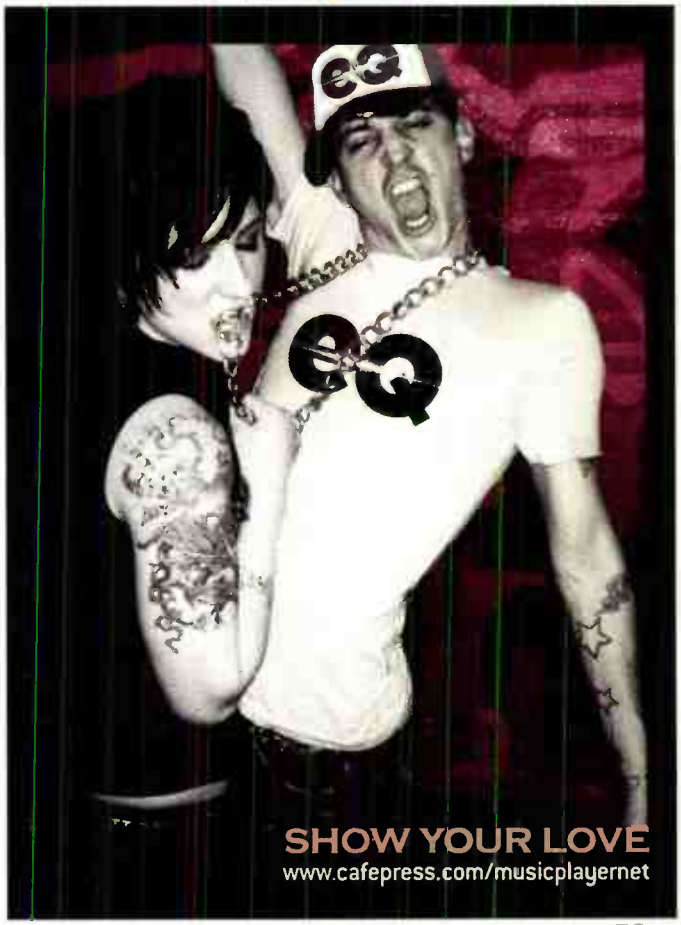

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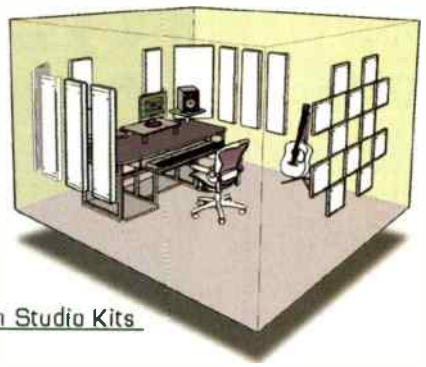

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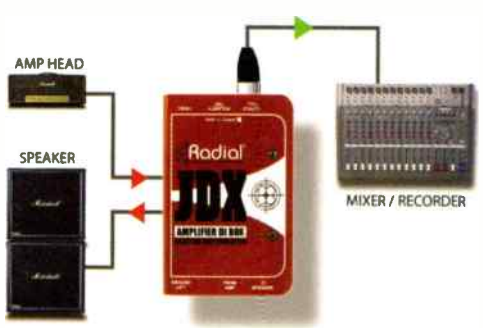

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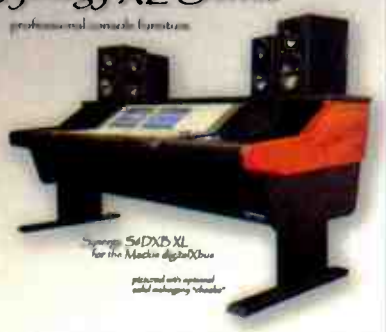

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ROOM w/a VU

by Angelina Skowronski

STUDIO NAME: Inner Machine Studios
LOCATION: Buffalo, NY
CONTACT: www.innermachinestudios.com
KEY CREW: John Rzeznik, Robby Takac (owners); Mike Brylinski (studio manager)
CONSOLES: API Legacy Plus 48-Channel Inline w/Uptown Moving Fader Automation; Digidesign Control 24; Neve BCM10 10-Channel, 8-Channel Broadcast w/ 34128 Modules (8)
CONVERTERS: Crane Song HEDD 192 A/D and D/A (2)
DAW: Digidesign Pro Tools|HD3 Accel, v.7.4
TAPE MACHINE: ATR 102 1/2-inch
SYNC: Apogee Big Ben; Rosendahl Nanosync 192k
MONITORING: Genelec 1030a, 1032As; George Auspurger Mains (custom); Furman HDS6 w/remote stations; KRK E8s; Yamaha NS10s w/ TST-SW150 subwoofer
MICS: AEA R44 (3), R84 (2), R88, R92; AKG 414 (4), 451, D112, D12E; Audio-Technica 3032 (2); Audix i5 (2); Beyerdynamic M160 (2); BLUE Bottle, Dragonfly, Kiwi; Coles 4038 (3); Crown PZM (3); Electro-Voice RE-20 (2); Josephson C42 (6), E22s (6); Neumann KM53 (2), KM56, KM184 (4), M147 (3), M149 (2), TLM103ni, U87 (6), USM69; Sennheiser 421 (2), 441 (2) mkh20 P48 (2), mkh40 P48 (2); Shure SM7 (2), SM57 (5), SM58 (3); Soundelux 251; Telefunken 251, 250, 270, D19 B200, M12 (2), M16 (2), TD25 (3), U47, U67 (3)
PRES/DI: API 212L (32); Avalon U5 (2); Chandler Limited Germanium (8), TG Channels (8), TG2; Eclair Evil Twin; Groove Tubes "The Brick," VIPre; Mercury 72 (3); Neve 1073 (10); PreSonus MP20; Universal Audio 610, 6176
DYNAMICS PROCESSORS: Alan Smart C2; Chandler Limited Zener; Collins 26ui; dbx 160A (2), 160 VU (2); Drawmer DS201 (2); Empirical Labs EL-7X FATSO, EL-8X Distressor (4); Eventide Omnipressor; Fairchild 670; Focusrite Red 3; Gates Level Devil (2); Groove Tubes Glory Comp; Inward Connections TSL-3; Inovonics 201; Malkjos Stereo Bus Compressor; Mercury M66; Neve 33609 J; Purple Audio MC77 (2); RCA BA-6A (mod) (2); Retro Instruments Sta-Level (2); Ridge Farm Boiler; Universal Audio LA2A (2), LA3 (2); UREI 1176 (2); US Army Federal Compressor (mod)
EQ: API 550L (48); Chandler Limited Tone Control (8); GML 8200; Mercury EQP1A (2); Neve 1073 (10)
EFFECTS: AMS DMX, RMX 16; dbx 120XP; Eventide H3000; Lexicon 480L w/LARC, PCM42 (2); Line 6 Echo Pro, Filter Pro, Mod Pro; TC Electronics 2290
PLUG-INS/SOFTWARE: Audio Ease Altiverb, Speakerphone; Celemony Melodyne; Eventide Anthology 2.0; Fxpansion BFD 1, 2; IK Multimedia Sampletank 2.0; Muse Receptor; Propellerhead Software Reason; Sound Toys Bundle; Spectrasonics Stylus RMX; Native Instruments Absynth; WaveMachine Labs Drumagog; Waves GTR, Mercury Bundle, SSL Bundle
NOTES: Whew! That's a lot of gear for just one band—especially a band that started a studio as a mere "pick-up project." John Rzeznik and Robby Takac, of Goo Goo Dolls fame, initially decided to save this old TV and radio studio for reasons no greater than sentimentality. "We'd recorded at the old studio before and Robby worked here as a kid. When the actual studio went out of business, we bought it out and decided to slowly remodel it and make it part of our thing," explains Rzeznik.

Enter John Storyk of Walters-Storyk Design Group. As the original designer of the room that preceded Inner Machine, Rzeznik says that Storyk was their first choice when it came time to select a world-class architect to re-envision the studio. Storyk explains: "John and Robby's mandate was to create a fresh, live acoustic feel, particularly in the large tracking room. We stripped away the original finishes and treatments and replaced them with a completely new acoustic package including extensive perforated wood surfaced treatments. This raised the RT60 value of the room while still controlling low frequency decay."

According to Rzeznik, after recording countless records in studios throughout the country, he and Takac were basically "tired of paying people tons of money to record [their] records," and decided they should make a place where they could do it all themselves.

"Our goal was to have a place where the clock wasn't running all the time," said Rzeznik. "We decided that if we were going to have the space we would make it non-profit. We'll just keep pouring money into making it as nice as possible." EQ

HEY, *EQ* READERS. WANT US TO FEATURE YOUR STUDIO? SEND PICS AND INFO TO eq@musicplayer.com.

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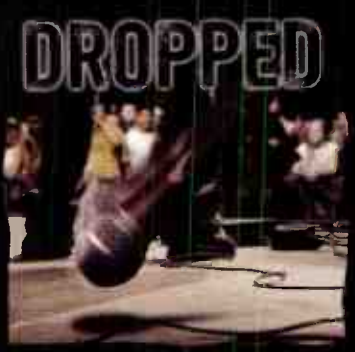

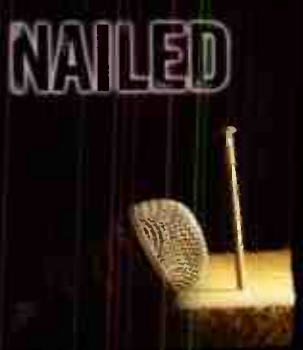

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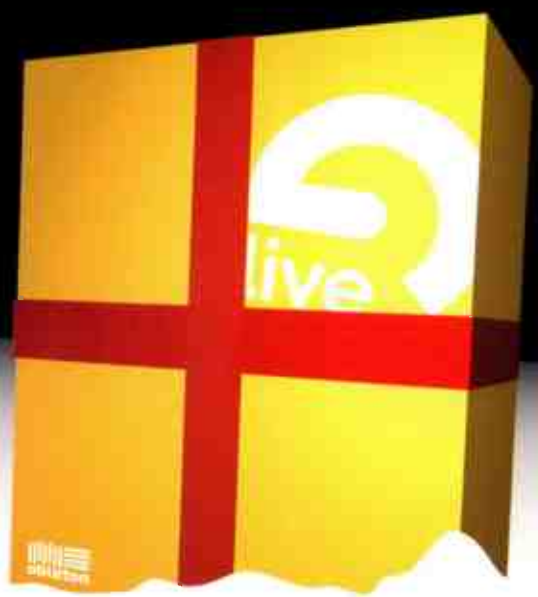

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