EQ

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the Future
of Recording

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A HOLIDAY
GRAB BAG
OF GEAR CHEER
12 PRODUCTS
DEEP

TOM ROTHROCK
PAT DILLETT
GUY SIGSWORTH
BAD RELIGION
RECORDING IRAQ
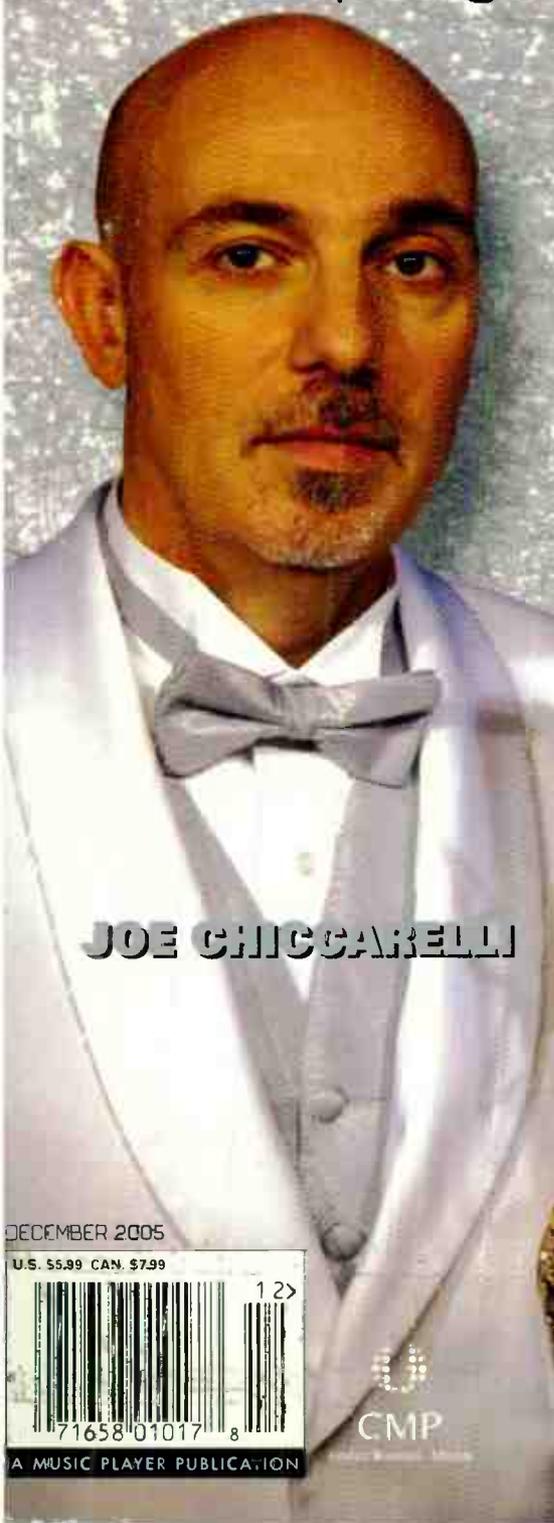
JOE CHICCARELLI
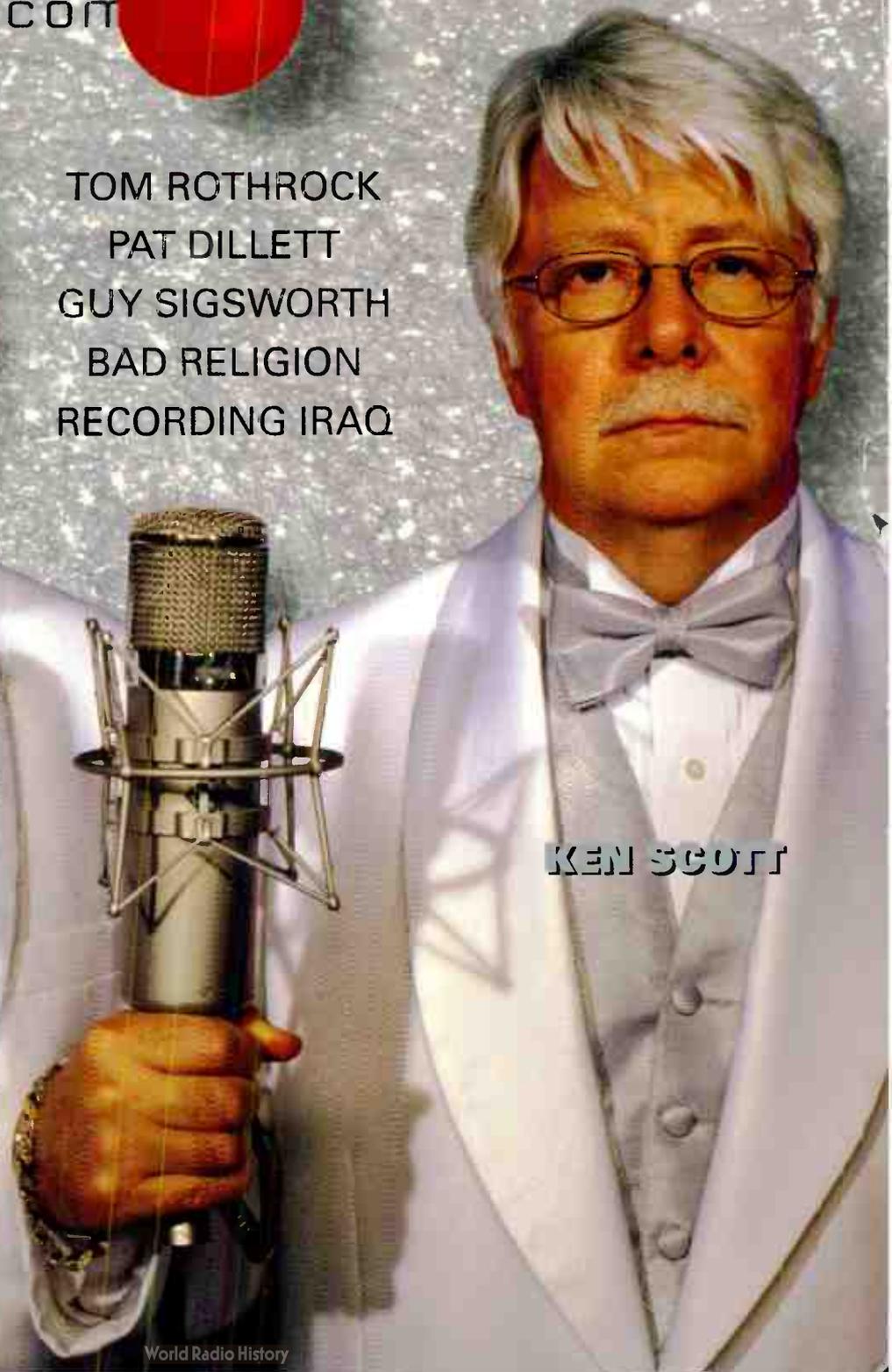
KEN SCOTT

ENHANCED MIDI PROGRAMMING

Tracktion 2 features a fully revamped MIDI editor with faster note entry, quicker editing, more intuitive keyboard control, and improved viewing of notes and controllers simultaneously.

DRAG-A-FILTER

Wanna add a VST plug-in, pull up a VSTi instrument, route to an Aux send or add some EQ? Just drag a filter to the track you want to effect. It's really that simple.

EASIER RECORDING

Tracktion 2 lets you record your ideas as fast as they come. Just drag the audio or MIDI input icon to whatever track you like and hit record.

INSTANT INFO

Tracktion follows your every move with its Properties Panel. Click on an audio clip and see its fade-out curve; click on a MIDI clip and quantise away; click on a reverb plug-in filter and fine-tune the pre-delay. The relevant info is always at your fingertips.

IMPROVED METERING

When setting levels, T2 can turn the full screen into a giant meter bridge with the press of a button.

QUICKTIME SUPPORT

Tracktion 2 supports Quicktime™ video playback. Select a movie and start composing music, add effects, replace your dialog, and win your Oscar©.

QuickTime

EXTERNAL SYNC

In addition to Tracktion's ReWire host functionality for use with applications like Reason, T2 supports MIDI Time Code (MTC) and MIDI Machine Control (MMC) input/output, plus MIDI Clock output.

⊙ use 64-bit math when mixing tracks

SUPERIOR 64-BIT, 192KHZ MIX ENGINE

Much has been made about the "summing bus" in DAW software. Tracktion 2 features a new high-definition 64-bit mixing engine for uncompromising sound.

12/05
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SHOOTING TO THRILL
Photography: Beth Herzhaft/herzco.com, Make-up/Hair: Alix Druckman, Tuxedos: Tuxedo Junction San Mateo

World Radio History

Talk Box

APOCALYPSE HO HO HO

"What do they say about me, Willard?"
"They say you're an assassin, sir."
"Am I an assassin?"
"I don't know, sir."

We were up the Nung River at MusicPlayer Live! Two days now. Without a paddle. Anderton, American journalist, jumped around the landing docks when we finally pulled in, spittle flecking his glasses. "Is *EQ* a good mag? Is *EQ* an evil mag? Is the editor's letter impenetrable and insane or merely insanely impenetrable? Am I going to be the one to explain all this? Are they going to believe *me*: NO! Wrong! It's got to be YOU." His hands danced in the air in front of him as he fidgeted against the accumulated anxiety of all the restless natives in his forum.

Ho ho ho. OK. So here we go [in English]: Readership is up, newsstand sales are up, subscriptions are up. We just finished, with the buy-in of 1,000 of you readers, the 2006 Editorial Calendar (go to eqmag.com and if you ask nicely maybe we'll post it for the masses), and this year that we just stunningly finished will only be outshone by next year. We're talking a MONITOR issue like our past MIC issue. We're talking geniuses dishing here like they don't dish anywhere else on what clearly constitutes the finer points of our quickly changing art. We're talking reviews that, now listen carefully, DON'T LIE, and are done by our rogue's gallery of producer's big and small.

And because this is The Holiday Issue and we're in such a holiday mood for giving, we're also talking THIS issue what with its 10-page JOE CHICCARELLI interview of KEN SCOTT, coffee talk chat style, about DAVID BOWIE, THE BEATLES and all and sundry. We're talking mini-interviews with TOM ROTHROCK on JAMES BLUNT, we're talking PAT DILLETT's letting his love down easy in an open letter to her here in black and white, and we're talking GUY SIGSWORTH on BEBEL GILBERTO.

And it gets even better than that. As in E-ticket better. Wild knuckle fights featuring gear vs. gear, app stuff to help you push it to where it's never been pushed before, and, now get this, an editor's letter that has absolutely nothing to do with blood-sucking monkeys, my band Oxbow, or words like ass. Or tuba.

Do tell.

We just did.

Punch In

JUST A NEW YORK CONVERSATION
TOM ROTHROCK ON:
JAMES BLUNT,
DR. DRE,
& MORRISSEY

From Badly Drawn Boy to Elliot Smith to James Blunt to Richard Thompson it seems you've managed to do at least ONE thing on each of those productions that just elevated the record from OK to great. What was that one thing, how'd you do it, and why'd you choose to do it?

Tom Rothrock: If on each project I could go to my rolodex and pull out the one perfect card that says exactly, guaranteed, "great record," would it be smart to give it to you?

If you didn't want to be savagely beaten: yes.

TR: Hmm. . . . Whether I'm going into a writing session, preparing for an album production or meeting with a film director to discuss composing, there *is* one constant: I know that there'll be an exchange of ideas. What makes for great collaborations starts with a balance of talent. A record producer has to work with the capabilities of the artist at the point of recording. Conversely, the artist is held to the producer's breadth of experience and style. It's then answering the challenge of these dynamics that occurs during the process that makes for great results. Interestingly, I have found the same relationship in film composing between the director and the composer.

You bring a distinct rock sensibility to recording pop and your rock bonafides are well known but what exactly did you "borrow" in order to beef up arguably lighter pop fare?

TR: My first year of high school I did my algebra homework every day listening to *Back In Black* for the whole year. No exceptions. I haven't met many other artists who weren't influenced by that record, even if they're a bluegrass band.

Great record. What about it did you like so much? Outside of the fact that its perfect as a soundtrack for inebriation? Or better yet how'd it influence your most recent thing: the James Blunt record? We mean how'd that go?

TR: Pretty well until I overdosed on some spiked brownies that James had slipped me while recording a piano ballad in the bathroom of someone's house whom I had never met. James, it seems, had found his own way of challenging my dynamics.

Producers who you like and listen to regardless of WHAT they're doing.

TR: Not surprisingly, Mutt Lange. Also Dr. Dre. However, much of my inspiration comes from outside of music. I find architecture very powerful musically.

OK. In a fight between you and that other famous Mancunian, West Coast dwelling ex-pat Morrissey, who wins?

TR: Fighting doesn't get you laid. I think Morrissey would agree.

Nice side step.

James Blunt

Tom Rothrock
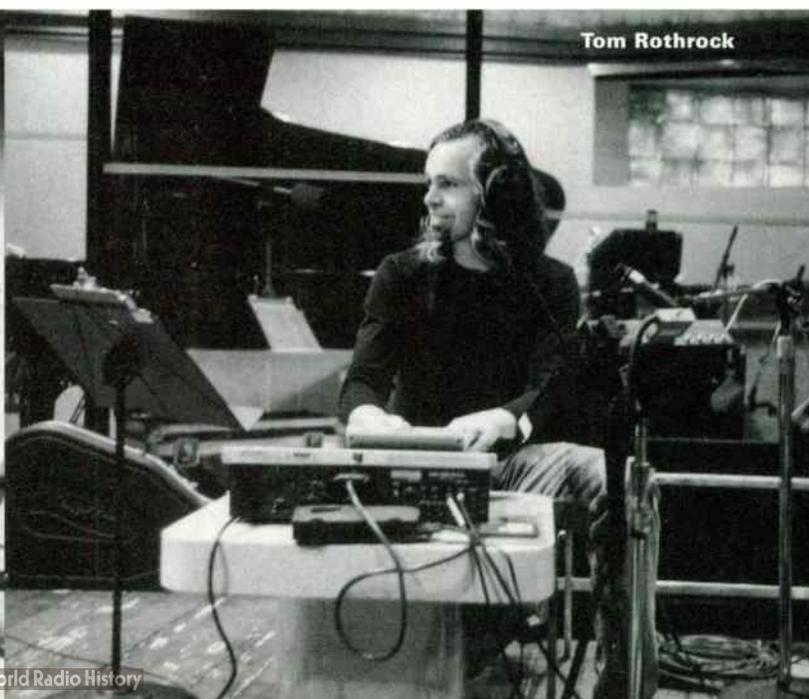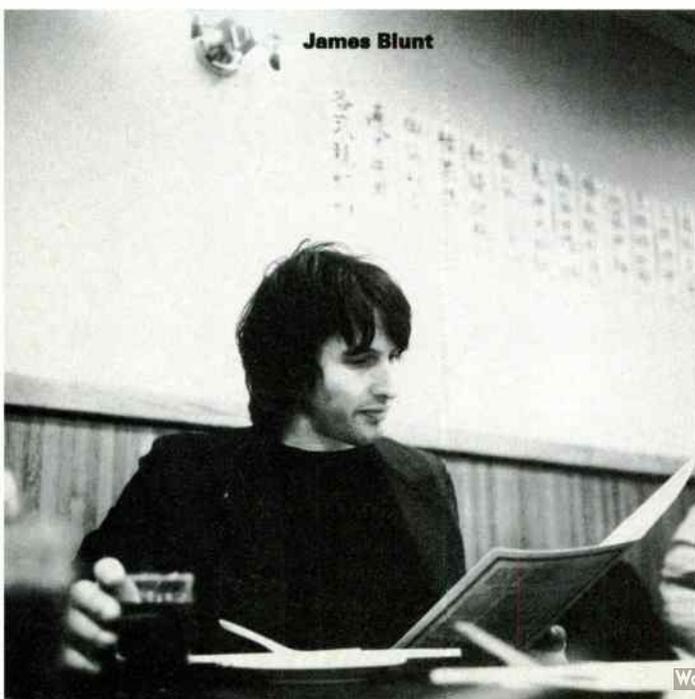
BAD RELIGION

by Noa Lazerus

Scene opens: We see Lazerus seated studying in the library surrounded by university texts and his PowerBook. He is immobile and staring at the ceiling.

Music up (Bad Religion):

LOS ANGELES IS BURNING
When the hills of Los Angeles are burning
Palm trees are candles in the murder wind
So many lives are on the breeze
Even the stars are ill at ease
And Los Angeles is burning

Lazerus shakes his head,' "Damn, they're at it again." Scene fades. . . .

The first thing you notice after mixing *Bad Religion Live at the Palladium* in 5.1 surround will be the formidable, hyper-catchy, philosophically rockin' earworms that gnaw their way into your head like mental floss. They will sing to you at the most unexpected times for weeks on end thereafter. It's been tough on my Master's degree studies, for sure. Bad Religion's music is like that — it hits you on a lot of different levels and you love it for that reason. For the dynamic surround mix for the soon-to-be-released concert DVD, the band performs a choice selection from their massive musical catalog for a live performance at the famous Hollywood Palladium that is . . . something to behold.

But it's been a few years since I was involved in a live concert recording and mix session. The last one was an unusual gig in London with members of Pink Floyd, the horn section from the Scottish band Wet, Wet, Wet, and Tom Jones who sang songs like EMF's hit single, "You're Unbelievable."

For *Bad Religion Live*, I used the Audio Cube system, which I was introduced to when I began working for Chace Audio in 2001. The Audio Cube, or AC-5, is designed by Cube-Tec, a German company. It is a PC-based workstation and works seamlessly with Nuendo and Wavelab software platforms for its innovative new tools. It was my discovery of the Audio Cube that eventually led to a sound revolution as I found more opportunities to work with music in film. The Audio Cube is both a multi-channel digital audio workstation and a forensically sophisticated audio restoration platform.

And so for *Bad Religion Live at the Palladium* I tried a new and experimental approach I'd been considering for some time. This involved using the Audio Cube's mastering tools, which were so effective on stereo material, and deploying them on each individual track of the multi-track live recording. To do this, I imported the original Pro Tools live multi-tracks into a session in Nuendo and then set about using the mastering tools in the Cube on a track-by-track basis. The live recording sounded good and there was decent separation thanks to the team that did the original remote recording. I set up a configuration of tools and started with the kick drum. I used a set-up that cascaded the Cube's Analog EQ and two multi-band compressors to deal with specific aspects of the sound.
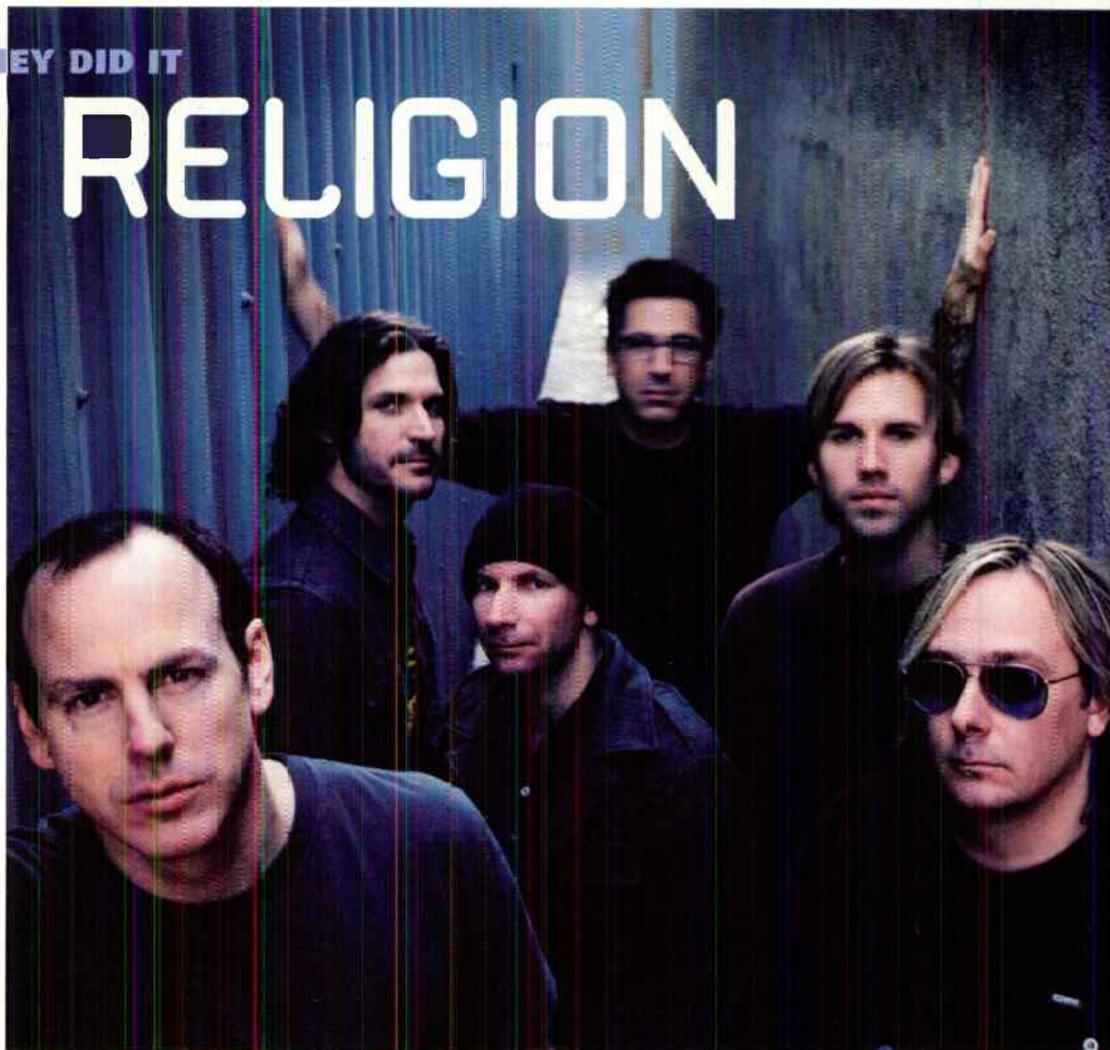
I then went into the Cube-Tec Vitalizer, which allows the user to do a variety of things from adding compression to an analog EQ to additional bass and, of course, vitalizing. I also used a tool called the Loudness Maximizer, which handles the overall sound in a new way that allows for wide range of dynamics and control — like packing the sound into a fat dynamic range and increasing volume without changing the sound. The concept worked beautifully and I applied this technique to every track from hi-hat to the bass to all three of the guitars. As a result, I could now optimize each sound for its specific need. Fat, controlled lows on the bass guitar and kick drum, increased depth on the snare, and a crisp edge on all the guitars. I was even able to enhance the natural ambience of the audience tracks in a very refined manner. And all of this occurred before mixing even began.

BAD RELIGION

When I was finished with mult -track mastering, the session was exported to FireWire and set up in Pro Tools. For the mix I worked alongside Chace's surround mixing ace, James Young, using the Harrison Series 12 mixing console. It was great to work with Jim as he taught me a great deal about mixing in surround. He explained that one of his pet peeves is that so many good music mixers are shy about using the center channel. This is because we have grown up accustomed to mixing with a false center of stereo mixes and are unfamiliar with using a designated center channel.

Jim played several different music mixes, which he had collected in surround, and all were good but the mixes that embraced the mix technique using the discrete center channel for things like vocals and kick drum and bass guitar sounded far more dynamic since they used the full perspective of the speaker layout. This is a key aspect that music mixers can learn from film mixing. Brett Gurewitz, Bad Religion's guitarist/writer and president and founder of Epitaph Records, was present at various stages throughout the mix process and was intrigued with the surround dimension of the live mix. Brett is a mixing engineer and producer and was very erudite in his understanding of what goes on in the studio environment and offered some good suggestions along the way.

And so the multi-channel mastering experiment I conducted before the mix paid off and made the final mixing process much easier, as I had taken some time to really sculpt the individual sounds. The individual tracks sat very well once I had created the first initial mix and with a live show and time constraints, that is a very positive outcome. The fact that the band is so great live is what this DVD is all about.

Scene opens: Peaceful yard at dusk, Lazerus is home watering his plumeria trees, stares at the sky, drops hose, shakes head:

"Damn! Earworms in the garden."

Music up

SUPERSONIC
Well here I go again, everything is alien
How does it feel to be outstripped by the pace of cultural change?
My deeds are senseless and rendered meaningless
When measured in that vein
I could go supersonic, the problem's chronic
Tell me does life exist beyond it?
When I need to sate, I just accelerate into oblivion. . . .

Grammy-nominated engineer/mixer Noa Lazerus works at Chace Audio and is also a musician, composer, and university student currently completing his Masters degree.

LOOK SEE

Revolution in the Head: The Beatles' Records and the Sixties (Pimlico)

Only rarely does a book appear whose merits exceed the hyperbolic hosannas of back-cover blurbs. Such a volume is the newly released Second Revised Edition of *Revolution in the Head: The Beatles' Records and the Sixties* by the late British writer Ian MacDonald. Combining musicology, articulation, and the ability to tell a story well, MacDonald lets the chronicle of The Beatles and the explosive era to which they were symbiotically related emerge, song by song. He repeatedly reveals the nature of the creative process that undergirds their work, both in its human elements and in the ridiculously inspired application of audio experimentation by George Martin and his team in the comparatively primitively equipped environs of Abbey Road. Unequivocally, he concludes, "The Beatles' way of doing things changed the way things were done and, in so doing, changed the way we expect things to be done. That the future is partly a consequence of the existence of The Beatles is a measure of their importance." Throughout, MacDonald writes about the people who made this possible with the kind of subtlety, lucidity, and celebration of essential detail for which one hungers in any genre. And be forewarned: One skips the footnotes at one's peril.

A work of power and significance, this book must be embraced by anyone who would know what makes great music great. —David Flitner
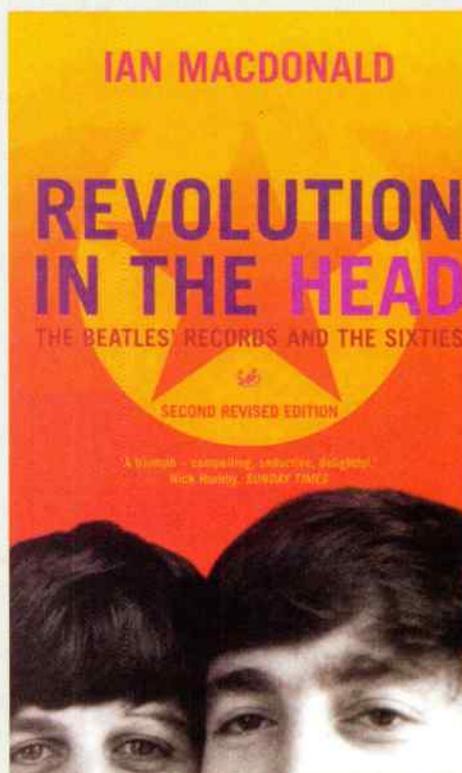
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TWO FOR TWO
GUY SIGSWORTH + TUOMAS KALLIO on BEBEL GILBERTO

When remixers mix and then the remixes are mixed onto a record of remixes, you have the flex of remix mastery in all of its glory.

What?

Yeah, exactly.

Forthwith two of the geniuses (genii?) behind Bebel Gilberto's completely inspired *Remixed*.

Guy Sigsworth: I was right in the middle of producing songs for the Sugababes third UK album (*Three*) when I met Bebel. It was at the point where every song had around 40 tracks of vocals to sift through; and although I knew the end results would turn out great it was quite a job to assemble. So Bebel turned up and I just loved her energy and fun. She makes music-making feel like something naughty and mischievous.

We wrote "Cada Beijo" within about an hour of her coming through the door. I was imagining the sound of Walt Disney's *Jungle Book*, with its bass flutes, and this song was my attempt to recreate that feeling with a modern twist.

Later, when Marc (Hollander — owner of Crammed Discs) asked me to remix a song, I told him I'm not a deejay, so I'll give you an alternative song-form version. I'm very proud of my remix of Bjork's "All Is Full Of Love," where I reharmonize the melody, rehear the sound of the song, but it's not primarily about the beats. I did a remix for David Sylvian that was also in that spirit.

Anyway, I asked for two songs to choose from, and Marc sent me everything from the multitracks in WAV form. I quickly settled on "O Caminho," because I heard a clear feeling for it. At first I heard it like an old Françoise Hardy song, "Tous les garçons et les filles," that kind of thing. Or maybe Bacharach/David? But I was also hearing the kind of guitar sound you can hear on Lalo Schifrin's *Bullitt* score — like a jazz player caught up in a 1960s love-in or something! Most importantly I wanted to hear a spooky harpsichord doubled by vibraphone, because it reminded me of all those UK TV themes of the 1960s and '70s: *The Prisoner*, *Randall & Hopkirk (Deceased)*, *Man In A Suitcase*, and the Harry Palmer films with Michael Caine, *The Ipcress File*, and *Billion Dollar Brain*.

I love all these elements from the past, but I don't want the result to feel merely like a stylistic exercise. You still have to come up with riffs and chords that are good regardless. How did I actually do it? Well, I worked out the guitar part, but trusted playing it properly to my friend Kate Havnevik. It was my Gibson 335 played into a POD. In a former life I was a classical harpsichordist, so I played that part. Most of the rest was created with well-chosen samples.

I'm perfectly happy to use someone else's factory double bass sound, because I know that after I've finished processing it in Pro Tools it'll be something different anyway. The drums were a mixture of an old jazz kit from Battery, and live playing of my Yamaha "Cocktail" drum kit. We used effects like Reaktor's Spring Tank a lot. Basically everything had to sound either pre-1970 or post 2000, with nothing in between. With my engineer, Sean McGhee, I'm always looking out for the sounds you hear in 1960s movies whenever the plot involves brainwashing or hypnosis — usually it's distorted tape delay feeding back on itself — and we got one in on Bebel's vocal just before the end of the song.
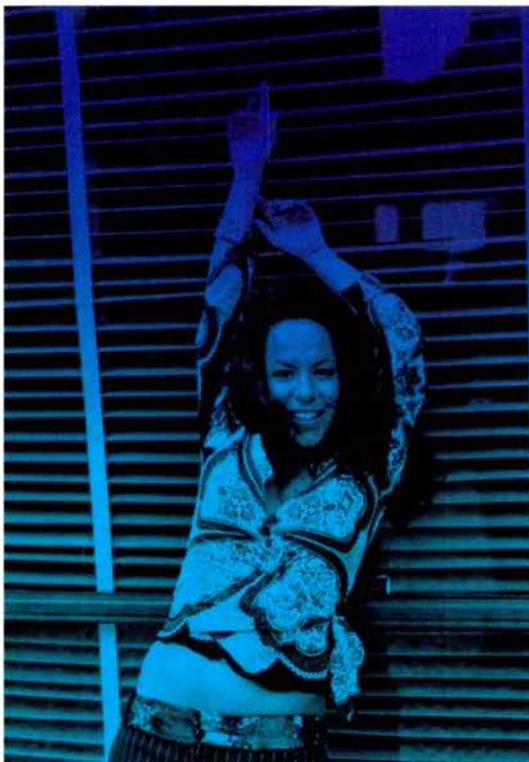
Tuomas Kallio: It was tricky. I had no idea who else was involved and no idea of the style of other mixes. I got some five to six tracks to choose from and we went on with "Winter." But Nuspirit Helsinki is a lot about trying to concentrate on the music itself as a whole, rather than separate layers (not doing remixes by simply replacing the rhythmic patterns of a given track); it's also always been about mixing electronic production with organic live instrumentation. So on "Winter" we decided to go for a combination of Detroit techno-flavored electronic beats and lush string arrangements. Why? Well the vocal performance and melody of the particular song felt like that to us. We also wanted to sustain the relatively fast tempo of the original. And we did not have too much time to put it all together. So we took a string quintet (actually three violins, viola, and a cello), a percussionist, piano (heavy effects), a Detroit-style riff on a Juno, sub bass line and an electronic beat. And we always try to explore a vocal track for example just by concentrating on the vocal performance, melody, and lyrics and often try not to listen too much to the original backing track. We like to think of what we do as reinterpreting music rather than remixing a track.

Guy Sigsworth, remixed "O Caminho" and has written and produced tracks for Seal, Bomb The Bass, Lamb, Talvin Singh, and Madonna. He's also produced songs for Björk, and worked as her musical director.

Tuomas Kallio remixed "Winter" on Bebel Gilberto's newest, *Remixed* and manages to be part of Nuspirit Helsinki, a Finnish collective of DJs, producers, and musicians whose magic wands have touched everyone from Yoko Ono to Nicola Conte.

Miking Guitars in the Studio: Steven Lee

This well-paced DVD gives a good, basic grounding in recording acoustic and electric guitars in the home studio. It demonstrates the recording process using a PC-based recording system and a Mackie mixer, and the 10 chapters are presented logically, starting with some good basic studio theory and including signal path, different types of A/D converters, how to set up headphone mixes, and so on. The acoustic guitar chapter also includes demonstrations of stereo miking, using pickups, and some common multiple mic phasing problems.

Moving onto the electric guitar, the chapter starts a little confusedly with a demonstration of re-amping, but then you get some solid information on amp recording with a lot of the different miking possibilities explained, demonstrated, and explored. I liked the fact that instead of always reaching for the EQ, Steven shows you the different tones available by using three different mics on one speaker. Excellent advice!

The last chapters tell you how to build a fort to baffle off the amp (and give you lots of mixing tips). And then there's a nice little bit on guitar intonation adjustment and the-oh-so-important "please tune often" request.

This DVD gives a lot of helpful info and tips on mic choices and mic placement, recording direct and then re-amping, and noise problems and their solutions. He also gives you some good tricks: using different rooms (including putting the amp in the bathtub — cute!), and my personal acoustic guitar favorite, the ear and body mic set-up.

A friendly and professional DVD. —*Bart Thurber*

THE BREAK UP BY PAT DILLETT

It has been over for a while now, but I have only recently begun to feel like I can talk about it.

We were together a long time, which is what made ending it so difficult. Me and Analog had some great times together, but no more. Sure, we still see each other from time to time, but it isn't the same. She is as warm as ever, always giving me back more than I put in. But lately she seems a little high maintenance. Those rituals we had just to make music together really wore me down. I know my friends liked her. Some of them still do. But sometimes you have to move on. Sure, I had been cheating on her for years. At first it was just a little fling once in awhile . . . she was a "comp buddy," if I may be crude. Now she is my new love.

Her name is Digital.

I will admit that what first made her attractive to me was that she was cheap, and a little dirty, too. But she has changed. She has become more sophisticated. I am not ashamed to be seen in public with her anymore. She filled the void that Analog left when she got so needy. Digital never asked for anything. She was always there, always ready, always willing to give me another track and never punish me with crosstalk. Gone were the nights spent lying awake listening to Analog's timecode bleed.

This would have all been good — a perfect dalliance. She doesn't ask much of me, I don't ask much of her, very simple. But then our relationship grew. Digital began improving herself. It was little things at first, but I could sense that she was really trying to please me. I began to return the favor, opening myself up to her. Trusting her with more and more of my life. Analog continued to grow more distant. Days stretched into weeks, and then months without seeing her at the studio. Meanwhile Digital always had time for me, and she was learning what I liked. She began to provide me with all the good features of my relationship with Analog, but with none of the hassles. She didn't make me take her to expensive places. We could work all day together and never leave the house. She hardly ever asked for expensive gifts and accessories, while it seemed like Analog was asking me for a couple hundred bucks every 16 minutes or so.

IT'S NOT YOU. IT'S ME.

Now we are happy together, me and Digital. I admit I have trouble keeping up with her sometimes. She's so young, she's still changing and growing, always wanting to try new things. I know I sound like a guy going through a midlife crisis, but I feel like Digital is keeping me young too. Do I miss Analog? Sure I do, she was my first love. We were together over 20 years. I worry about her now, that she will have trouble finding someone to take care of her. I will always be there for her but I can't give her all the attention she needs. It took me a long time to get over Analog. I will always remember the good times. I even let her keep the MRL I gave her, to remind her of how we were always in perfect alignment when we were together. Once. But no more.

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World Radio History

THE SORROWS OF YOUNG WERTHER

Hello. My name is Whit Aldridge. First and foremost I would like to congratulate the *EQ* staff for publishing the best magazine in the world! I am a huge fan, however, I am currently enrolled at the Art Institute of Atlanta in the Audio Production and Engineering degree program. While furthering my knowledge of the arts of recording and every other aspect of the industry, my wallet is being sucked bone dry. I would really like to keep reading your gift to the world but the cover price is just a bit too much for my monthly expenses. I am inquiring about a student subscription or maybe a couple of compensated issues. I hate to ask but I want to "be in the know" with all of you guys. If there are any possibilities that you know of please let me know.
Sincerely,
Whit D. Aldridge
Marietta, Georgia

You know, you seem like a plenty smart guy, it's almost amazing to us that you missed that if you SUBSCRIBE to EQ you save huge bundles of jack. So go to eqmag.com or use one of those blow-in cards that litter your apartment floor, jack. You won't be sorry you did. —Editor

MY EYES!!! MY EYES!!!!

By large studio standards, I'm a really small operator! I have been recording live concerts, primarily acoustic, orchestras, choruses, bands, church groups, for about 40 years in the Baltimore/Washington area. As you are probably aware, almost no studios are willing to make remote recordings that are usually 2-track and everything is live. Consequently, there's almost no competition in this market segment, except, of course, those folks with a DAT and two mics who think then can do it themselves. Since I use Neumanns 414s, Millenia Media, Lucid, VLZ-Pro, 1176's, Lexicon, etc., and a high level DAW, this isn't really competition once I get in the door. My final product is CDs (used to be LPs, then cassettes) and I've done almost too many to count.

I'm also a full-time computer center director at a large community college.

And I've been reading *EQ* for many years but your latest **change** to **format by** including those blue printed paragraphs in a different font style than the rest of the article is **really annoying!** It makes the article hard to read. The **change in font size and style** destroys any flow of the article **and the** thought process THAT THE READER HAS underway in absorbing what the writer is saying.

GET rid OF this PROTOCOL and KEEP the font/size/style constant!
Regards,
Wally Knapp
Ellicott City, Maryland

You got it, chief. —Editor

YOU IDIOT GENIUSES

I spent most of last night poring through back issues of *EQ* and thought I'd write you.

First off, BT is probably one of the best interviews ever. It's like he's forever on coke, except it's not the coke that turns you into a complete a-hole. It's magic coke that allows him to empty his superhuman brain in the most accessible way, thereby allowing him to come off as personable, knowledgeable, and very cool.

The biggest thing I noticed though is the lack of standard magazine consistency. At first this annoyed me. I wanted my regular sections. I wanted my traditional one-pagers and recurring themes. Then I realized something. Yes, you have a few regular items: Room With a VU, the sessions bit in the front of the book, etc. But for the most part, you seem to fill your pages with content, rather than fill your pages with thematic placeholders . . . then try to squeeze in content that fits. This creates a kind of editorial spontaneity that's very, very refreshing. It makes you scan every page for fear of missing out on something you didn't know was there to begin with. Too often I find myself passing over chunks of my favorite magazines because, for some reason or another, I've fallen out of lust with my "sections." Not in this case. Oh, and any magazine that has Dean Kuipers writing for them is automatically rope-a-dope.

This isn't a 'round-the-back pitch for freelance work. (I'm still not enough of a tech head to review gear and gadgets.) Just wanted to email a "good on ya" for breaking the mold by doing away with the mold altogether. Have a good one.
Richard Thomas (by email)

THE MAKING OF *STRANGE WE SHOULD MEET HERE*
PAUL TURPIN SPEAKS

Hello. I've been asked to tell you about the making of Idiot Pilot's *Strange We Should Meet Here* CD. It's a story that starts at home with free software, and ends with two 18-year-olds signing to Reprise/Warner Brothers. I mixed the CD very early in 2004, and formed a small label in Bellingham, Clickpop Records, to release it a couple months later. On May 17 of this year, it was re-released by Reprise, with new artwork — but the original mix and mastering were unchanged. Since then I have been touring the U.S. and UK with Idiot Pilot and the band has really begun to take off. But, let's go back to the beginning.

I first met the band six years ago. A friend of mine brought them into Bayside Recording studio to try to finish their first EP. At the time, my studio partner Chip Westerfield and I had just finished moving into our new facility in downtown Bellingham. To make a long story short, the songwriting and the singing of these young men impressed me. I did some editing and mixed the record, and subsequently mixed their gig at a local outdoor festival as well. Not long after that, Michael Harris and Daniel Anderson were suddenly the only people in the band, along with a computer, and Idiot Pilot was born.

Both Michael and Daniel became regular fixtures around the studio and musically went through an experimental stage, refining their collaboration and sound. Daniel began using his laptop for some electronic experiments and played these for Michael — and this was the beginning of the signature Idiot Pilot sound. Over the next year (late 2002 through 2003), Daniel programmed countless compositions and Michael would pick out which ones to pursue and collaborate on. This was all done at home in Daniel's basement. The software at this stage was a copy of Pro Tools Free for PC on Windows98 along with some early version of Fruity Loops. The hardware generally consisted
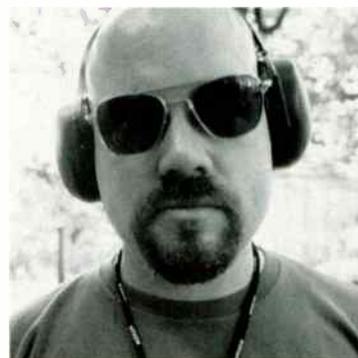
THE ONLY BETTER EQUIPMENT

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of a small Casio keyboard, Daniel's guitar, a few pedals, a real piano, a bass, and Michael's voice. Daniel played or programmed all the instruments and Michael sang vocals and many layers of backing vocals. These tracks from the basement became the basis of *Strange We Should Meet Here*. It should be emphasized that at this point, the songs sounded very much like the final versions. Most of the final instruments were tracked, and the arrangements and rough mixes sounded great. Finally, Idiot Pilot announced that they were done, and ready to figure out the next step.

The next two steps were a series of production meetings At the meetings, the band and myself, along with Chip Westerfield and Dave Richards, listened to all the rough mixes that Daniel had made at home. Our goals were to decide which tracks were destined to be included on the album, and also to figure out what, if anything, needed to be done to them. At the first meeting, we listened to 22 songs and gave them each a letter grade. Fifteen of these songs got an "A", and so we decided to concentrate on those for eventual release. In the long run, some even newer songs were added and a few of these "A" grade songs are now the cream of the crop of the unreleased B-sides. Many of the songs only needed changes in the mix, and we decided that I would attempt to remix the entire record in Pro Tools at the studio. However, we also decided that a number of the songs needed to be re-sung, and that the bigger epic rock songs needed some real drums to be layered onto the programmed drums to take the energy level up a notch.

Next it was time to transfer the material from Daniel's computer to the Pro Tools HD system at Bayside Recording. Unfortunately, this is where we hit a major snag. Daniel brought me the files — but we didn't have access to either a Windows98 PC or a Pro Tools LE system. Of course, Pro Tools is truly cross-platform software, but Pro Tools Free was not. It only ran on Win98 OR MacOS 9 — and in addition, these files weren't cross compatible between those systems. It wasn't in the budget, to buy a Win98 PC and an mBox just to do the transfer — and we couldn't find anyone who had this combination of gear! Eventually I borrowed a Windows machine and an mBox and a Windows copy of Pro Tools LE from three different people and finally got the transfer to work. Once the files were opened in Pro Tools LE on the Windows machine, then I could resave them in a compatible format that would open on the Pro Tools HD systems on the Macs in the studio. The album almost didn't happen just because we couldn't cross the PC-Mac divide.

But by this time it was the Fall of 2003, and we entered the stage of additional tracking. Daniel and Chip got on the task of recording Michael's additional vocals. These were usually sung through a Neumann M147 through an Avalon VT737 tube pre with some compression. I called on a local drummer, Aaron Ball, to try his hand at layering real drums on top of the programmed beats. This wasn't easy, as it required him to rock very hard, but keep track of changing time signatures and music that he wasn't intimately familiar with. Overall, the drum sessions went well. But since, we wanted to retain the feel of the drum programming, I did need to spend a lot of time editing the real drums to match both the timing and repetitive nature of the programmed beats. However, there were a few spots where it was appropriate to change the programmed beats to match the drums (some fills) — and so occasionally roles were reversed. The drum editing was a combination of using Beat Detective, and some good old-fashioned cut-paste-nudge. After this main phase of additional
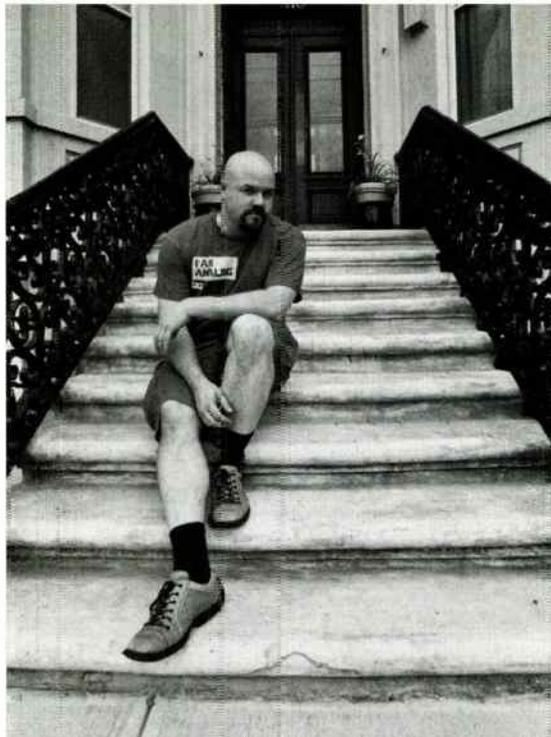
tracking was done — I made new rough mixes and we reanalyzed the songs. By now it was cut down to 18 songs including several new ones. Eventually four more would be cut.

At this point, unfortunately, the project got delayed again. During the remainder of the Fall of 2003, the studio was fairly busy and we needed to accept a bunch of extra work to bring in money. So, the Idiot Pilot final mixing sessions got delayed several times. Some work got done in October and November, but final mixing didn't really get under way until the end of the year.

The album was "mixed in the box" using Pro Tools HD. The most important use of effects were creative use of reverb and some cool and unusual outboard effects pedals. The reverb I used the most was Audio Ease's Altiverb. I love the way it can add to a sound and change the ambience without sounding like traditional verb at all, and the regular verb's just sound right to me. This is largely true of any convolution reverb — but I'm very familiar with Altiverb's presets and so far, I prefer them. The two pedals I used the most were the Moogerfooger MF-104, and a Schumann Electronics PLL. The Moog is generally my 'secret weapon' — I use it liberally on vocals and occasionally other instruments, I also use it with the band at live shows. The PLL is a crazy hand-made analog harmonizer that resynthesizes the input into a square wave and can add new harmonies from there. I used it on a few bass lines to create far deeper and intense Synth Bass sounds. The rest of the plug-ins were generally Waves and Bomb Factory.

The mixing took a fairly long time. First of all the verses and choruses had a very different sound from each other on most cuts. Also, despite starting with only eight tracks in the original sessions, many of the songs had grown to have a very large number of competing vocals and instrumental layers. Another challenge was that many songs had two different bass parts (electric bass and synth bass), as well as two entire drum layers (programmed drums and live drums). During mixing there was also yet another final level of additional tracking. At the last minute, we replaced a guitar solo in one song, with an improvised keyboard solo by Daniel (tracked using the Logic ES2 soft-synth on my laptop). Also at this point I added depth to several tracks by programming additional synth bass and strings parts that exactly doubled the original parts.

The mixing took about 26 half-day sessions. Just about all of the time, I was working on the mixes alone. But, I constantly made new mix CDs for the band and other co-producers and would get comment sheets back from everyone. Then another round of mix changes would happen to each song until everyone was pretty happy. A few songs went through only five or six such revisions, but some of them went through about 10. On Feb-8th, we decided that mixing was completed. We certainly would have liked to send away the mixes for a top-level mastering job, but since we still didn't have a budget in place, I mastered it myself. One of the advantages of this is that, if something sounds funny during the mastering process, you can just open up the mix and make some changes and then import the improved version into the mastering session. I am the person at the studio who does the in-house mastering, but it's not preferable to master something I have just finished mixing. But sometimes you just have to do what is needed. Amazingly enough, when the record was eventually re-released, the label did not require any remixing, and surprisingly, no re-mastering either. Which must mean I had done my job right.

Tool Box

BY KEVIN OWENS

01

02

03

04

01 DIGIDESIGN MBOX 2 ($495)

This 2nd-generation, USB-powered recording interface features two analog inputs, two analog outputs, two channels of S/PDIF I/O, MIDI I/O, phantom power, zero latency-monitoring, and more. Ships with the Pro Tools Ignition Pack, which includes special versions of Propellerhead Reason, Ableton Live 4, IK Multimedia SampleTank 2, and a host of other plug-ins.
digidesign.com

02 LINE 6 TONEPORT UX1 AND UX2 ($175, $269)

Designed for recording bass, guitar, and vocals, each of these USB interfaces features a mic input with preamp, an instrument input, stereo line inputs and outputs, stereo headphone jack, and Line 6's GearBox modeling software. The UX2 adds a second mic input, analog VU meters, S/PDIF out, volume controls for the headphone and main outs, and more. Much, much more.
line6.com

03 BRAUNER PHANTOM AE ($1,250)

Released to commemorate the company's 10th anniversary — thus the AE call letters — this fixed cardioid pattern mic has the same guts as Brauner's Phantom C, but comes with a black and gold finish, a signed certificate of authenticity, a dozen roses and dinner, and a matching shockmount and aluminum case. Designed for vocals, spot instrument apps, and lovers of all ages.
braunerusa.com

04 KAGI MEDIA MIX IT LIKE A RECORD ($149)

Hosted by Grammy-winning engineer, mixer, and producer Charles Dye (Jon Bon Jovi, Ricky Martin, Julio Iglesias), this part instructional DVD/part Pro Tools session-based interactive mixing course tackles such subjects as compression, EQ, saturation, separation, and effects, and how they relate to each other with respect to the final mix.
kagimedia.com
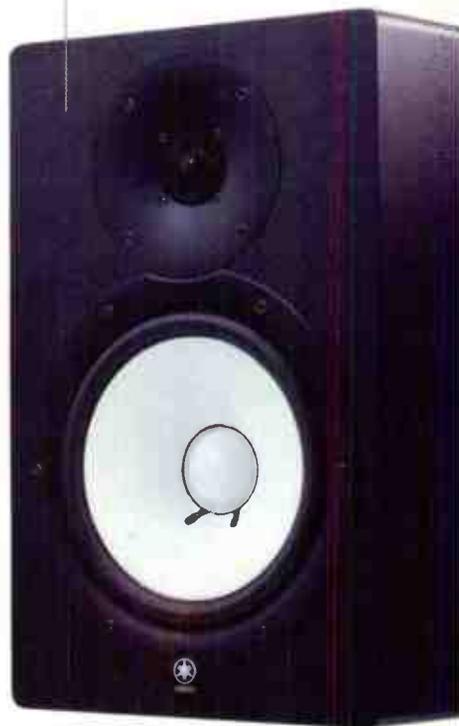
05 M-AUDIO STUD OPRO 3

($99.95 per pair)

These powered desktop monitors boast a feature list you'd expect from a more wallet-busting set: MDF cabinets, silk dome tweeters, fiberglass insulation, magnetically shielded drivers, high-temperature voice coils, bass boost controls, RCA and 1/8" inputs, stereo headphone out, and a custom bass-reflex ported design.
m-audio.com

06 TRUE SYSTEMS P-SOLO ($750)

Constructed of hand-matched, military-grade components, this compact (3" W x 6" D x 6" H) single-channel microphone/instrument preamp features a balanced, dual-servo transformerless design, an internal linear AC power supply, a hi-impedance instrument input, dual analog outputs, a highpass filter, phantom power, and four metering LEDs.
true-systems.com

07 JOEMEEK ONEQ ($799)

The folks at Joemeek call this single-channel mic pre/optical compressor/de-esser/enhancer "the most technologically advanced product" they've ever produced. In addition to mic, line, and instrument inputs and AES/EBU and S/PDIF (optical and coaxial) outputs, the oneQ boasts an "Iron" switch, which alters the preamp circuit from solid state to transformer coupled.
joemeek.com

08 YAMAHA HS SERIES

The HS Series consists of two powered monitors — the 70-watt HS50M **($249.95)** and the 120-watt HS80M **($449.94)** — and the HS10W powered sub **($599)**. Both two-way monitors feature balanced XLR and 1/4" jacks, master level controls, and trim switches for adjusting frequency response. The HS10W sports a 120-watt, 8" long-stroke woofer and three balanced XLR outputs.
yamaha.com

09 WAVE ARTS MULTIDYNAMICS 5
($174.95)

Designed for use in mastering, noise reduction, volume maximization, and other sound design applications, Version 5 of this dynamics processor allows independent compression or expansion/gating of up to six bands. New features include support up to 192kHz, new presets and preset management, and per-band bypass, solo, and mute controls.
wavearts.com

10 GUARDIAN CP-150
($79.98, $89.98)

These cases are constructed from durable thermoplastic, and feature molded mic drops that secure either six or nine standard-style microphones. Other features include a padded compartment for cables and accessories, security locks, heavy-duty latches, and a spring-loaded handle with a rubber kung fu grip.
guardiancases.com

11 PRESONUS ADL 600
($1,250)

Packed with six military-grade vacuum tubes running on 600-volt power rails, this high-voltage, class-A, two-channel microphone preamp delivers 75dB of gain and a signal-to-noise ratio of −100dB. Highlights include mic, line, and instrument inputs, selectable microphone input impedance, a variable highpass filter, analog VU and LED metering, and more.
presonus.com

12 MCDSP REVOLVER 1.0
($495)

Happiness is a warm Revolver (RTAS/AudioSuite, Mac only), a convolution reverb plug-in that offers image response "sculpt-ability," dedicated and routable EQ, two syncable delay lines, and specialized stereo imaging. In addition to the included impulse library of reverbs and acoustic spaces, Revolver's analysis tools let users model any acoustic space, outboard gear, or signal path.
mcdsp.com

JASON SLATER

PROJECT: Recording Bass: Queensryche, *Operation: Mindcrime II*
DATES OF RECORDING: May 2005 – September 2005
STUDIO: (mobile or otherwise): J's Mobile Audio Love Unit (Have Jams Will Travel); Five Knuckle Bullet Studios; Mike Wilton's Home Studio; Synergy
LOCATION(s): Redmond, WA and Redwood City, CA
OFFICIAL ALBUM TITLE: *Operation: Mindcrime II*
PRODUCER/ENGINEER: Jason Slater

Jason Slater is a busy man. The bass player/songwriter/producer/programmer and engineer is best known for Third Eye Blind, Good Charlotte, and his producing and engineering for acts like Twisted Method, Slaves on Dope, and Apartment 26. But Slater also regularly collaborates with Queens of the Stone Age's Troy Van Leeuwen, with whom he just finished the debut album for Van Leeuwen's Enemy project, *Hooray for Dark Matter*. And now, he's just finished producing the new Queensryche record, *Operation: Mindcrime II*. Slater's producing adventures with Queensryche began after his band Snake River Conspiracy went on tour with them. "We hit it off," says Slater. "The next thing I knew we were working on the record."

Slater had been a Queensryche fan when he was a teenager so the opportunity to produce their record was a metalhead wet dream come true. "I was a fan of the bass playing on the first few Queensryche records," says Slater. "And being a bass player myself, I was flattered that they asked."

SIGNAL PATH

When it came to recording the bass tracks for *Operation: Mindcrime II*, Slater invoked the use of three different signal paths to capture the multiple bass tracks he intended to use for the record. First, direct through a Little Labs D.I. box to a Summit Audio pre amp. Next, through an Aguilar DB924 Bass pre amp to an Avalon DI and then to a Summit Audio compressor. Third, through to a Gallien Krueger 1001 RB head and a 4 x10 sealed cabinet, miked up with an EV RE20. The tracks were recorded into TASCAM MX-2424s.

To say that *Operation: Mindcrime II* is *slightly* bass heavy would be a severe understatement, and might also be considered a serious invitation for a bar brawl with Slater — who lives and breathes bass. "The key when using this many tracks for the bass is keeping everything in phase," explains Slater. "I always adjust the miked signal so the phase is aligned with the direct signal."

Zon basses make up a good part of the bass-end of the project. "You have to start with a great sounding instrument to get a great recording and — to me — these are *it*," says Slater. "We used a five-string Sonus series and a five-string Piccolo. And on a few tracks we used a 4-string VB series."

MIC POSITION

Slater used RE20 and FET U47 mics to record the bass tracks. As for his preferred position, Slater responds, "I mic things *very* closely."

And everything counts to Slater. "I start with a great instrument, and from there I use the highest quality equipment I can get my hands on," he says. "It's critical to use a short, high-quality cable between the instrument and the DI or amp. In my experience, that has had a *huge* impact on the tone."

PROCESSING

Slater deployed both hardware and software effects to process the signal. "I've been using MOTU's Mach 5 sampler, Altiverb 5, and Crane Song's Phoenix plug in," he says. "And I really like the older Summit hardware that was designed by Dave Hill."

And that's not the only legacy gear that came into play. "I have a couple pres from an ill-fated modular system that I relied on a lot, and the TPA-200 pretty much kicked the crap out of any other tube pre I've heard," attests Slater. "For solid-state pres, I'll usually go with the Crane Song Flamingo."

TRACK NOTES

The recording of *Operation: Mindcrime II* took place across four different studios. Thanks to portable technology, the band could continue touring while the record was being made. "This whole record has been mobile," says Slater. "We have been working between Geoff Tate's, Mike Wilton's and Scott Rockenfield's studios in Washington, my studio in the San Francisco Bay Area, and tracking backstage on two tours." *Operation: Mindcrime II* will be delivered in January 2006. EQ

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START YOUR ENGINE
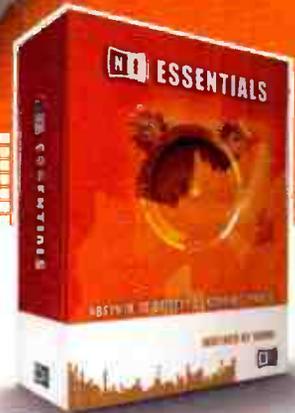
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NATIVE INSTRUMENTS
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Success Story
by Steph Jorgl

JACK OF ALL AUDIO: DINO HERRMANN

COMPANY: Sculptured Music
CONTACT: sculpturedmusic.com
LOCATION: Los Angeles
KEY CREW: Dino Herrmann

As the son of a German racecar driver, Dino Herrmann grew up knowing what it means to be fearless and, dare we say, driven. And after tearing through his required apprenticeship in Germany, he left his hometown to do just that: take on the American [music] Dream convinced that being a successful composer was possibly the most logical thing in the world to be/do.

So after moving to Boston in 1989, Dino power-schooled it nitro-style straight through his music courses at Berklee, finishing all of the classes for his four-year degree in just two years. Fast forward six years now and Dino is a savvy DAW guru who is launching a successful composing company called Sculptured Music, and busting his way into music/film as a composer, engineer, programmer, and editor, contributing to Destiny's Child, Jennifer Lopez, and American Hi-Fi, and is credited for his work on films from *Alien Vs. Predator* to *The Day After Tomorrow*.

Dino Goes To Hollywood

How did he do it? Straight out of school, Dino scored himself an assistant position at Rusk Studios in Hollywood. "There I learned all the studio stuff: miking techniques, working on SSL and Neve consoles, and later mixing," he says. "It was even better than school." He eventually got to do some rap mixing for Candyman and Prince Paul, and mixed a record that went gold for Latin recording artist Daniela Romo.

Then, after just two years at Rusk, Dino moved on to calculate and execute a series of successful entrepreneurial exploits: a recording studio that built its clientele recording bands for less than 10 bucks an hour, becoming a Logic guru, programming and engineering for some of the composers he met through his consulting work, and partnering with orchestrator Daniel Hamuy to launch a company called PowerKeys that provides custom shortcut keys for Logic, and keyboard guides, to pros.

One thing led to another and by 1997, Dino was able to close his low-budget recording studio, buy swank digs in the hills above Los Feliz, and plunge hardcore into composing, editing, and engineering for film, TV, commercials, and pop music.

Dino's Studio Setup

Dino runs his productions on a dual 2.5GHz Power Mac G5 stocked with a Pro Tools HD 3 Accel card and an HD 192 interface. The computer is loaded up with Logic, Reason, and Live, as well as a collection of his favorite plug-ins. "I've been using the Waves Platinum bundle for post production for many years and I love the equalizers and the compressors they have," he says. "When I bought the Pro Tools HD 3 Accel card, it came with about $10,000 worth of plug-ins, including Amp Farm, and I just love *it*. I also love all the Bomb Factory ones, the Focusrite plug-ins, the Indigo, the Sony Oxford, and Reverb One."

But what he's totally crazy for is Sound Toys' PitchBlender. "PitchBlender I *adore*," emotes Dino. It's got this crazy flanger. You can get weird sounds with it and change your sound to do percussive things, like time-delay them. That's my favorite plug-in."

In the native world, Dino relies on Spectrasonics' Trilogy, Atmosphere, and Stylus instruments. "I also have my EXS library converted from my Roland and GigaStudio libraries," he says. "And another good thing that I have is Retromatic EXS Manager. If you have more than 30,000 sounds, you *need* this. It scans your EXS samples, matches them to the patch, and loads them into the sampler."

He also loves the EVP88 software instrument. "And Yellow Tools Culture is the best percussion plug-in ever made," says Dino. "It sounds so real, but you have to learn to play it because it's hyper mapped to multiple velocity levels. I also have Yellow Tools Majestic Bass and Candy saxophone software instruments. And Tape Delay is a fantastic delay from Emagic."

Why Dino?

The key to his success? "I have a very broad spectrum because I've been doing Top 40, R&B, hip-hop, electronica, and classical," he says. But he also gets gigs with the sheer power of speed. Dino sums it up, "One of my teachers at Berklee, Carl Beatty, told me: 'Be fast. If you're working with a producer and you like to look at things and figure them out, great. But that's not a good thing when you're in the studio. Just learn your stuff and be fast. That's how you get hired again.'" EQ

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KEYBOARD CARE

We invest a fair amount in our studios and gear rigs. Yet despite their importance and value in studio environs, electronic keyboards are often — surprise, surprise — neglected. A little extra care and diligence, however, can help keep your keyboard controllers, synths, and workstations in good shape for a lot longer.

Public Enemy Number One?

Dirt and unwanted material working its way into your keyboard. Electronic keyboards use one or more sensitive key contacts to trigger a note when a key is pressed. When these contacts get fouled with foreign matter, keyboard responsiveness suffers. You can't prevent every speck of dust from sneaking in between the keys, but some preventative medicine *will* help. Shield the keyboard with a non-porous dust cover when it's off and not in use. Watch out for liquids. Soft drinks are the most damaging, but all kinds of liquids (coffee, beer, wine) can cause expensive damage to keyboards. So make a conscious effort to keep drinks and other liquids away.

Common symptoms of dirty or damaged contacts are: No note when a key is pressed, "doubled" notes when a key is pressed, or no velocity sensitivity (often maximum velocity is experienced). In some cases these contacts can be cleaned to alleviate these problems. Disassembling the keyboard is necessary (and can be rather complicated), but if you can get that far, a dry cotton swab can often do the trick. *(Check documentation to make sure servicing a keyboard yourself is safe and doesn't violate any warranty eligibility BEFORE taking it apart!)* In other cases, key contacts may need to be replaced to fix the problem.
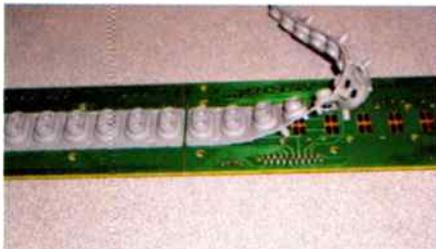
Key contacts from a Kurzweil keyboard can be pulled back and cleaned with a dry cotton swab. It's not a sure-fire fix, but if you're willing (and able) to do some work yourself, it may save some bench-time.

If your keyboard is moving around with you for gigs, tours, or other purposes, make sure it's got a safe home while in transit. While the original box is often safe for a shipment or two, it's not made to be used over and over again. Find a sturdy hard-shell case that fits the size and profile of your keyboard. Yes, it's an investment, but a good case can cost far less than many repairs.

The other side of protecting your keyboard is often overlooked. The rear panel — opposite the keys — contains the essential connections to your system. Audio, MIDI, and power cables dangle behind the keyboard

This keyboard survived several overseas trips in its original cardboard box, until a baggage handler dropped it off the plane's luggage ramp.

awaiting a wrong step by a zealous assistant or a clumsy spectator. One good yank on a cable plugged into your keyboard, and internal wiring could be easily damaged. I like to simply loop all my cables under the keyboard and on top of an arm of my keyboard stand. That way, there's a little slack and the worst case is more likely to be a broken cable (much cheaper to replace).

Loop cables over the arm of a keyboard stand to leave a little slack in case someone trips over a cable.

Last but certainly not least, keep the data in your keyboard protected. Use whatever backup method is available for your keyboard: floppy or hard disk, smart media cards, or sysex dumps.

Like with the rest of your studio, use an ounce of prevention . . . or two.

Todd G. Tatnall is the Senior Tech in Sweetwater's Technical Support Department.

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Radial JD7 Injector - suggested list $849 US
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Radial J48 Active DI - suggested list $199 US
For great sound without choking, look no further than the Radial J48. Features a 48V phantom supplied active drive circuit with a unique DC-to-DC transformer isolated switching power supply to provide amazing headroom while eliminating hum and buzz caused ground loops. Radical.

Radial JDI Passive DI - suggested list $199 US
Jensen Transformer equipped, the Radial JDI has become the standard passive DI in the business. Exceptional noise rejection eliminates troublesome ground loops and virtually zero phase distortion at any level makes the JDI a must have for studio and stage. Available in single, stereo or 6-pack. Magic.

Radial X-Amp Re-Amplifier - suggested list $199 US
Ever wish you could go back and change the sound of a pre-recorded guitar track? Now you can with X-Amp. When tracking, record a spare dry track and play it back through the X-amp after the guitarist has gone home. Two outputs lets you drive amps and pedals to create thick new textures. X-plosive.

Radial JPC Stereo DI - suggested list $199 US
Designed specifically for PC sound cards, DVD players and all those cool consumer devices that cause nothing but havoc, the JPC is 100% transformer isolated to eliminate nasty ground loops and equipped with a 48V active drive circuit for long cables. Easy to use. Great sounding. Indispensable.

Radial JDV Super DI - suggested list $449 US
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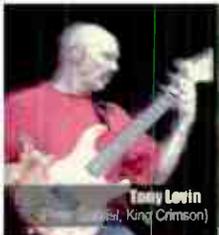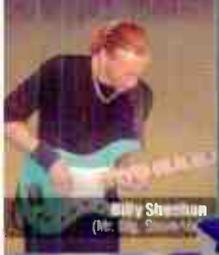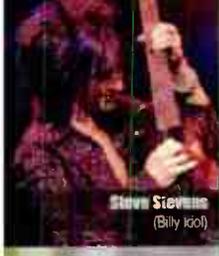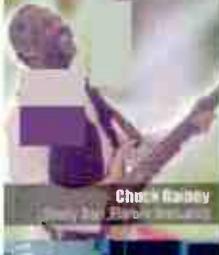
LIFE DURING WARTIME

The war zone vocal booth and other harrowing tales of survival and recording in Baghdad, Iraq

by Max Sidman

As soldiers in the U.S. Army's First Cavalry stationed in Baghdad, Iraq, Neal Saunders, Terrance Staves, Ronin Clay, Edward Gregory, Michael Thomas, Marion Sanders, and Michael Davis spent a year from '04 to '05 on the job, rolling through the rough-and-tumble streets of Baghdad ferreting out insurgents, surviving ambushes, and avoiding roadside explosives.

And in their downtime, these seven soldiers worked together as a rap group called 4th25 (pronounced Fourth Quarter, as in the crunch time, do-or-die last minutes of a game), holed up in their living space with a compact recording setup, working through their fear, confusion, and frustration, and coming to grips with their reality by making music. The result of this group's war zone recording sessions is the album *Live From Iraq*, and it has nothing to do with politics, red or blue opinions, or voting strategies. According to **Sergeant Neal Saunders**, it's all about reality and survival.

Where were you stationed?
We were stationed in Baghdad, Iraq, in Camp War Eagle, but the name was later changed to Camp Hope for whatever reason. It's right outside Sadr City.

How'd you record the album? I mean how'd you rig everything up given the situation?
Well the hard part was trying to find somebody to send us the equipment. It's funny, every audio company has all this "support soldiers" stuff on their websites, but when I tried to put my orders through, they always all said, "Oh sorry, we don't ship to APOAEs" — a deployed-overseas kind of address that soldiers use. So it was hard, but I finally got with a guy through a friend of mine, a dude in Philadelphia who was connected with Sam Ash, and he was all over it. I think he was actually more excited about us recording an album out there than we were. He helped me get all the stuff we needed, that we could afford, and on a tight time line. Plus he mailed it all himself at the post office and we paid him back.

So he hooked us up with a Motif Es6, and of course we expanded it with all the memory. He also hooked us up with a Yamaha 01X, which we used for the mixing console and as a DAW with the computer sequencing software that we had. We ordered Digital Performer but at the time, it wouldn't work with the Yamaha mLAN setup, and we wanted to minimize the number of cables and cords that we had to pick up, so the mLAN really helped a lot. We finally went with Logic and recorded

Straight outta Sadr: Sergeant Neal Saunders saying hello to his little friend.
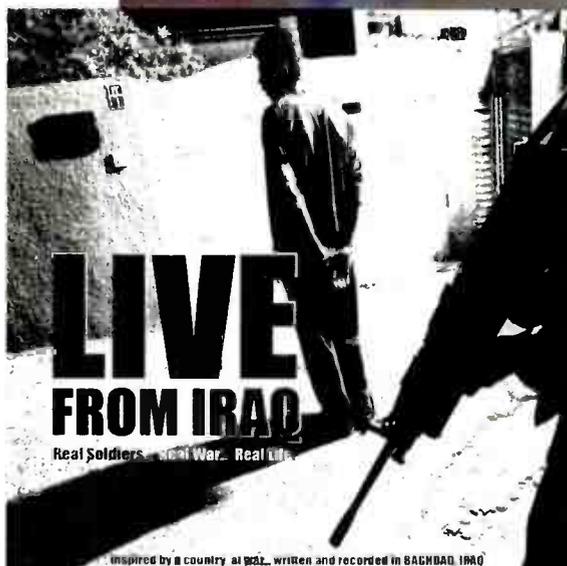
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Purple Heart Vet Marion Sanders on the keys.

the entire album with it. We picked up a Røde NT2000 mic, a pair of M-Audio BX8as and an [Apple] PowerBook. That's pretty much all of it.

You mentioned minimizing cables in your recording setup. Was that a necessity because of the lifestyle of deployment, or space? Or budget? Habit?
We wanted to keep all that stuff out of the way, plus it was extra money that would have taken away from a piece of equipment that we needed. I usually bought stuff on the 1st and 15th of the month because that's when we got paid. So money was tight. As soon as it came in, it was gone.

Was the material on the album created while you guys were on duty?
All of this was inspired by our deployment in Iraq. We had nothing before we got there. We ordered all the recording equipment there, and we wrote, created, recorded, and produced all the music there. The only thing that wasn't done in Iraq was the mastering of the finished product. We sent it from there back to the U.S. to get mastered.

What was the recording process like?
It was hard. We usually had to record in between missions, but there was so much inspiration, everything was just pouring out of us — everything we were going through is what we put into that album. It was probably one of the easiest things I've ever done, as far as having to write lyrics and make music. It was just flowing out of us and we couldn't catch it all fast enough. You know, we'd go out and get

It's funny, every audio company has all this "support soldiers" stuff on their websites, but when I tried to put my orders through, they always all said, "Oh sorry, we don't ship to APOAEs."

in an ambush and then come back and we were just feelin' it. That shit is *crazy*, man, and we wrote down exactly what we were feeling at the time.

Is that the theme of the record?
Well, the overall vibe is that, for the first time ever, you are hearing a

World Radio History

In country: Ronin Clay in the vocal booth.

you're not gonna tell your parents or your wife or your kids that you're afraid you're going to die, so you have to hold your breath when you talk to them. Then there are songs like "Fuck 'Em." I've gotten a couple of angry emails about that song, saying things like we're glamorizing murder. But if you really listen to the album from beginning to end, you'll realize that there's more going on. It's about the transformation of us as soldiers, from safe civilian life to a place where the people were trying to kill us, not because they knew us and didn't like us, but because we were wearing this uniform. So it's about what it takes to survive. A lot of people want to discuss this war as a right-or-wrong issue, but it's not a matter of right or wrong for soldiers — we're there, we're doing it, and it's a matter of life or death. We have to become what it takes to survive, and a lot of people don't understand that transformation. The song "Testament of a Soldier" is about how regular people will never understand how and why I became what I had to become, so just leave it alone. There's a lot of anger, a lot

candid response about being involved in this conflict from a source that's in the thick of it, while we were in the thick of it. This whole album is just raw and it's how we felt at any given moment and in every given moment. The song "Holdin' My Breath" is about something that every solider goes through: When you call home,

World Radio History

Tools of the Trade.

of confusion, a lot of frustration on the album — for the first time ever, you get inside a soldier's mind while he's being a soldier.

How did you record vocals, and did working in a war zone affect that process?

We built a vocal booth. When we first got to the building we lived in, some soldiers had been living there before us, and we replaced them and moved into their space. There was one room that had been made into two rooms by a divider wall, which was just made out of two-by-fours and eight-by-four-foot sheets of plywood. I figured they were gonna remodel anyway, and I didn't ask anybody, but out of necessity we tore the wall down. We popped all the nails out, got a saw, and cut it loose and cut it all down. We cut a door out of one of the eight-by-four sheets, we reused all the nails from the wall, and we created an eight-foot-by-four-foot booth.

There are fire extinguishers that go inside every tank, and they come in foam boxes, so we ripped up all the foam, and then we got some sleeping mats from Iraqi civilians who came on base and sold us stuff that we needed to keep the camp up and running. We put five mats in the vocal booth — one on each wall and one on the ceiling — and then lined the walls between the mats with the foam from the tanks' fire extinguisher boxes. It wasn't perfect, but you know, it did

"There is no upgrade from this"
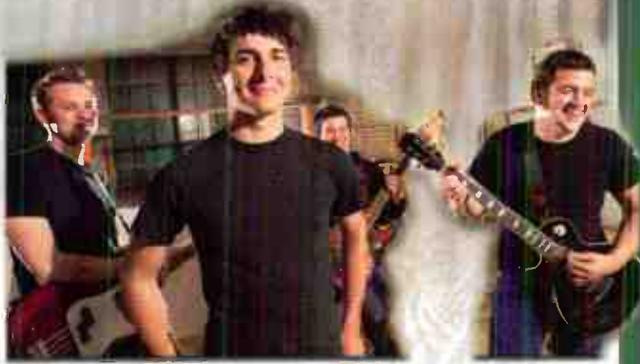
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the job. We could be in there recording verses and we didn't wake anyone up or bother anyone. And it kept most outside sounds out.

Did your commanding officers know what you guys were up to, or express any kind of opinion on the project?
Oh yeah, they knew what was going on. There was no way we could hide all the equipment that was coming in, and we openly talked about it. We even put out a casting call for the album just to get people involved in it. And a lot of people came through, but I don't think they really understood the concept. They were all like, "Live from Iraq? I wanna talk about cars and rims, and what they're doin' on the regular rap scene. I can't miss a beat!" And I think the chain of command thought that's what we were doing, too. I don't think they understood the seriousness of the album.

Since the album's come out and you guys have returned from the Middle East, have the military or any of your commanders tried to stop you from selling the album?
No, they haven't. When we got back, there was a little bit of concern about where some of the images on the CD and some of the video and images on the website all came from. But what they and a lot of people fail to realize is that, if you know what you're doing on the Internet, you can find anything you want. We were 100 percent into this project and we knew that we didn't want to use any of the photos or video that we had access to, so we just went on the Internet and it just so happened that a lot of the stuff we found coincided with what we had gone through and what we were rapping about, and some of it actually does pertain to the specific area where we were stationed. We put some of our own photos that weren't military-involved on the website, like pictures of children and billboards and just regular stuff like that. But all the stuff that we thought would be sketchy, that people might have problems with, we made sure that all of that came from the Internet so we had some type of plausible deniability. There was one officer who saw a picture of ours that he didn't like so he took it to the battalion commander, and the battalion commander basically said, "What do you want me to do? None of this is classified information." So that was that. And that was right when we got the first shipment of CDs, back in March, right when we got back from Iraq. By the time the officer saw it, it had already been out there and everyone else had seen it. And aside from that one situation, all we've gotten from everyone is praise. EQ

Check out 4th25's music online at www.4th25.com.

World Radio History

to try and re-record it, so that's what we did first. Honestly, I had no idea what I was doing. It was a complete write-off, but because of my past history with them, they were willing to accept it and we moved on from there and I carried on working with them.

JC: I've heard that they loved to try everything and anything and the sessions would drag on for weeks. That it wasn't like plug in a guitar and go!

KS: Well, they would take ages to get the basic track. Remember, back then, we're doing it four-track and there's no, 'Okay, the drums are good, let's keep them and then redo other things.' They were all mixed together on one or two tracks, so you had to get everyone happening at the same time. So it would take a while, with everyone learning the arrangement, and just playing it the way they wanted it played.

Take something like "Sexy Sadie," I think that was three days just to get the basic rhythm track, and it was just them in the studio playing and the tape going the whole time. At the end of the day they would come up to the control room and ask what were the good tracks, which we would have kept a note of: 'Take one was quite good, then Take five,' etc. And they listened, and then they would say, 'Okay, we'll try again tomorrow.' That kind of thing.

And the sessions were long, long. Mainly, because of the way Abbey Road was: It was always booked to start at 2:00 PM. Quite often, they wouldn't arrive until much later. IF they showed up. I mean sometimes they didn't. We would always know if they weren't going to turn up because the fans weren't outside — they always knew. It was amazing. You could go stick your head out the front door, 'Oh, the girls aren't there screaming, looks like they're not coming in today, we might as well go home.'

JC: What was the whole collaboration like between George Martin and the band? For instance, were you an assistant to Geoff Emerick or Norman Smith?

KS: Norman Smith.

JC: So, what was the interaction like? Was it different from what it turned into in the '70s and '80s where the engineer was very integral to the session? How often did you jump in and say, 'Hey, could we try this sound?'

KS: Oh yes, with the Beatles they encouraged us. They were open to everyone coming up with ideas. I think, Chris Thomas has said before now that his first occasion in the sessions for the *White Album* . . . well, George Martin was on vacation and Chris Thomas was his assistant. So, he got Chris to come by in place of him and Chris said he was terrified, he thought they hated him because he came up with some suggestion, I can't remember the exact idea, but their response to him was, 'Who the fuck are you?' basically. But they went ahead and tried it anyway and that kind of thing went on, especially toward the end because they wanted to try everything. My experience was that George Martin lost control of them and became less important to them as time went on. I think they

actually reached the point even with arrangements where they would literally play what they wanted the strings to be on a piano and George just scored it. It wasn't so much writing the arrangement as just scoring.

JC: So, the *White Album* was actually not so much them getting rid of George as much as George had been leaving to some degree?

KS: Yeah, perhaps. The thing that no one can quite comprehend is that the Beatles' sessions could be *so boring*. They could go on and seem never-ending and nothing seemed to be happening, and, at times, they could be difficult to work with. Oh, most people at Abbey Road did not want to work on Beatles' projects. It's like a family, when you're in there five, six days a week, all of these hours with the same four people, at times you're going to rub each other up the wrong way. It's natural.

So, yeah, George Martin probably felt that he was having less and less to say in what it was that was going on. In terms of the engineers' position, the producer back then was classified as an A&R man, he wasn't called a producer, as such, and it was Artists & Repertoire; his whole thing was picking songs and making sure they were arranged correctly. So, the producer didn't really bother too much about the sound. So in the beginning it was all Norman Smith, and I don't think he got anywhere near the credit that he should have gotten.

But they'd all be there for a basic track. . . . Whoever wrote the song would come in, run it through with them all, they'd work out the arrangement, and start to get the basic track. Once the basic track was down, it tended to be much more whoever wrote the song was the one that would be there all the time and the others might not even show up for days on end — until it was finished. And if Paul had to come in to put a bass track on one of George's, George would say, 'Come in on Thursday and we'll put the bass on it,' and he'd come in and then go. It was very much like that. The individual songwriter took the control of the process.

JC: Do you have a favorite cut from those experiences or a favorite sound or something?

KS: One of the things that always fascinated me is the way people read things into records that weren't necessarily there. The classic for me is in the song "Glass Onion." There's a drum thing that goes *blat blat*. It happens three times in the song. Well, with that drum part, even though it was on the basic track, we double and triple tracked the snare drum onto one separate track. But we were still four-track at that point, might have been eight-track, I can't quite remember. Well, I had a new second that day and I wasn't quite confident in him, so we had to do what seemed to me like a tight punch-in after the third *blat blat* and I wasn't prepared to let the second do it, so I said, 'Don't worry, I'll do it,' and we'd do a couple of takes, didn't happen, then, finally, we come to the last take, I pushed the record button early, and we're going onto the same track as the *blat blat*. So I accidentally erased the doubles. So in the first two sections of the song it's fine but on the third section it's only the original.

> THE THING THAT NO ONE CAN QUITE COMPREHEND IS THAT THE BEATLES' SESSIONS COULD BE SO BORING. THEY COULD GO ON AND SEEM NEVER-ENDING AND NOTHING SEEMED TO BE HAPPENING, AND, AT TIMES, THEY COULD BE DIFFICULT TO WORK WITH. OH, MOST PEOPLE AT ABBEY ROAD DID NOT WANT TO WORK ON BEATLES' PROJECTS.

SHOOTING TO THRILL

What's funny is the number of people who've said, 'Ah, it's so brilliant the way they took it from that big sound down to that small one at the end there, what meaning did that have?' I admit it, I fucked up.

JC: So as a gear junkie gimme the goods on the Beatles' guitar sounds, Beatles drum sounds, mics, or anything that was like a go-to piece of equipment.

KS: Quite honestly, I can't even remember but I know, at some points, we were using a STC 4038 over the top of the drums. At some point we were using an AKG D19 as an overhead. The kick was probably an AKG D20. The Fairchilds would have been the drum compressor and for vocals, sometimes piano. Also the Altec 436 modified by the EMI staff. The Altecs we would have used on bass, sometimes guitars, sometimes even across the entire mix. As well.

JC: Wow. So even then, you were compressing the stereo or mono bus?

KS: Sometimes, not always. Oh, yeah. If it called for it.

JC: Could we talk quickly maybe about the Beatles' guitar thing? Was there any particular set-up? AC30s for the most part or a little bit of everything?

KS: Yes Voxes, but there was some experimentation by the *White Album*, we even used Fenders. Not everything was Vox at that point. The miking was Neumann U67s. Maybe a foot to two feet away.

JC: And not a U67 smashed up against the grill cloth? This is a pet peeve I have. It seems that somewhere in the '80s this idea of an SM57 up against the grill cloth aimed right at the center of the cone has become the accepted way to mic a guitar. All these classic sounds that we think are the greatest guitar sounds ever, I don't know if people ever used 57s then, and if they did, I don't think they put them there.

KS: No, they didn't use them. No, they didn't put them there. But, you see, one of the other things that has changed, which has changed the way guitars sound is these high output pick-ups. You take an old Strat or an old Tele with the original pick-ups, plug it in and you'll get this amazing sound. Nowadays, those high output pick-ups have this weird high end that you can never completely get rid of. And it just gets so annoying. I think every engineer and guitarist should really understand the effects these pickups have on the overall sound of their rig.

JC: Yes, that's absolutely true. You always find that you're trying to get rid of that white noisy thing on the top end. So then you start to roll off the top end or move the mic off axis and then you start to loose the punch.

KS: Yes, one of the things that you learned back then, because you didn't have much control over the sound was it had to be right in the studio to start with. And, if it's not, you ain't going to be able

to do too much in the control room and it came from the guitar, which is the starting point, where that string moves, that's where you have to get it from. It just carries on from there.

THE LATE GREAT GUITAR

JC: You've worked with some of the greatest guitar players ever and that's quite a privilege, so I was hoping that I could talk about a few of them, the amps and guitars that they played, and what it was like to work with them. Let's start with Jeff Beck. I recently saw Jeff playing at a Music Care's benefit and he was so amazing and it hit me at that moment that the art of the guitarist has dropped to such a low level compared to what it was in the '70s. He was the highlight of the evening and I realized 'just what a great guitar player is supposed to be.' It killed me that night to walk out of there thinking about it; just his tone, the nuance, as well as his dynamics are just tremendous.

KS: Jeff was amazing. I did *Truth* and *There and Back*, I saw so many different sides of him because I had worked with him over such a long period of time from the first solo album onward. I even worked with Jeff on some of Stanley Clarke's projects like *School Days*. He always played on one track on each of Stanley's discs. I saw Jeff in the 'very confident phase' and then the times when you had to coax him along.

JC: So when you would work with Jeff Beck or George Harrison did you go out to the amp and make sure the tone was dialed in?

KS: No. They knew what was needed, you didn't have to. It was just there, you weren't trying to fix something. I would have miked him the way I tend to mic everybody, either U67 or U87 in front of the amp and sometimes a distant mic. As I say, it comes from the instrument, you don't have to do all of that multiple miking kind of thing when the musician is giving it to you. If it comes from the instrument, you don't have to work too hard to get the sound, it's just there.

Steve Morse, from the Dixie Dregs, he would never stop practicing, it didn't matter what was going on, he would always have a guitar and he was practicing scales. We'd be doing violin overdubs — he'd get on the talkback, 'Yeah, it was a little sharp, let's try it again' and all the time he's just practicing.

JC: What about George Harrison? You were engineered *All Things Must Pass*. One of the tastiest and most melodic guitarists ever, not to mention brilliant choice of sounds.

KS: Oh, George was just a wonderful person all-round. George was a perfectionist, an incredible songwriter as well. Ampwise it was usually Voxes and Fender, never Marshalls. As you know we often used Leslie cabinets. The mics would have been probably a KM 54 or a KM 56 on the top and a U87 or a U67 on the bottom because, once again, it was only a mono track, so we didn't have to mic both sides.

JC: Would he double track slide parts at all?

> THIS IS A PET PEEVE I HAVE. IT SEEMS THAT SOMEWHERE IN THE '80s THIS IDEA OF AN SM57 UP AGAINST THE GRILL CLOTH AIMED RIGHT AT THE CENTER OF THE CONE HAS BECOME THE ACCEPTED WAY TO MIC A GUITAR.

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KS: At times, yeah, actually. Oh, well, with the Beatles, one of the things on the *White Album* that doesn't often get picked on by people is that on a lot of the tracks, the basses were doubled with a Fender Six-string bass. Parts were worked out very carefully because there would be two people playing. In fact, there were a couple of tracks where it was also doubled with a vocal as well.

JC: OK. Lightning round: John McLaughlin?

KS: An amazing technician. He always liked to show off his technique. There's nothing wrong with that, it's only that he would try and put as many notes in as possible, which, at times is great, but at times it would be better to just have one note, as opposed to 50,000 notes.

JC: What did you do when miking his acoustic guitars?

KS: It would probably be simply an AKG 414 in that era. But, he always used Marshalls turned full-blast. We went through a situation where we had started *Birds of Fire* in England at Trident, we were going to finish it off at Criteria in Florida. This was during the BeeGees time where the sound of every American record would be acoustically as dead as possible. We went in there and he turns up his guitar and amp and he starts to play and it sounds so small so he just turned everything up more, this was a 100-watt Marshall turned full-blast and it sounded ridiculously small, it blew up instantly, we thought, 'oh, it's got to have been a problem with the amp — put up another one', and it was exactly the same, it was just the room was so dead, it just ate up everything. Criteria wasn't the right studio for Mahavishnu Orchestra, they needed a live place, that's why we ended up at Electric Ladyland in New York. John liked to crank. There were times, for me, it may have been just a little too distorted, but that's the way he liked it. The guitar he used most of the time was his double neck. I'm not sure if it was Gibson, I can't remember, but it had the 12-string and 6-string necks.

JC: Mick Ronson?

KS: Unbelievable. His whole guitar sound was always perfect, from a technical point. Miking it was again a U67 or U87 just in front of his speaker. He used to use a single cabinet Marshall. But he always went through a wah-wah pedal and he would get his tone by setting the wah-wah pedal at a point he liked. That's how he always got his sound. So he would kind of crazy EQ everything. All the Bowie stuff was done with the wah.

JC: Warren Cuccurullo?

KS: Warren, yeah, there's no one quite like him actually. One remembrance is a track on the first Missing Persons' album called *Noticeable Ones*. We were trying to get the guitar solo; we tried and tried. Nothing. And, so, finally, Warren says, 'When we get to the solo section, kill the track.' I said, 'What?' 'When we get to the solo, turn off the volume of the track and let me try it without any music going on.' We got the solo first take.

JC: Because you get boxed into the chord changes. Frank Zappa did this at times. Frank, I think actually got it from Brian Eno.

KS: I also worked with Warren doing some mixing on a Duran Duran album. Warren called me up and I just love him so much that I had to do it. He was a great asset for Duran Duran as far as I'm concerned.

JC: I wanted to ask you about Missing Persons because I know it started out as a spec deal at Frank Zappa's home studio, and it turned into you producing and then managing the band.

KS: Yeah, well, it was initially a demo. Frank had just built a new studio but he was out on the road. He knew my reputation enough that I would find every single damn fault in that studio, so, he let us use it knowing that by the time he got back off the road it would be working perfectly. Those demos that we were doing, that's what eventually was released. We put it out ourselves as an EP. We got shot down at every major label in the States, I think, three times — most labels in England twice, and a couple of labels in Australia and no one wanted to touch them. So, we knew we had to do something and we were also trying to get managers involved, and they didn't want to deal with it or only wanted Dale. So I jumped in, lock, stock, and barrel. Once one of the tracks had become the most requested record of the year on KROQ, we suddenly got a deal. A terrible deal, but we got a deal with Capitol and sold 800,000 records.

STUDIO, STUDIO

JC: So shortly after Abbey Road you moved over to Trident Studios?

KS: I'd been doing some engineering for producer Gus Dudgeon and I said to him, 'Look, I've got to get out of here, time to move on, any suggestions?' He said, 'I've been working at a place called Trident. Why don't you come down and we'll set up a meeting?' I went down there, met with the owners, the Sheffield Brothers, and started working there shortly afterward.

JC: Let me ask you a couple of things about Trident because, as you know, I started at Cherokee and they had all Trident 'A'-Range consoles and I'm a huge fan of that desk.

KS: Well, at first it was actually an old Sound Techniques board, the studio went through two boards before they started to make the A range. Some of the early Bowie tracks were done on that Sound Techniques. But the whole thing with the 'A'-range was that the Sheffield Brothers wanted to take over the business in every way. They wanted to get into management, video, and manufacturing, as well. One of the staff engineers, Malcolm Toft, was an extremely technical guy. So they said, 'Why don't you design a board and we'll start to build it and see what happens.' So, they came to the engineers Roy Thomas Baker, Robin Cable, myself, and said, 'What would you like to see?'

JC: What was your feeling about the mic pre? The EQ, I know. But I love the way you could overdrive those mic pres and get that

> WHAT DID TRANSPIRE WAS THAT SINCE THEN I HAVE HATED NEVE. IT WAS THE TWO COMPETING THINGS, YOU HAD THE NEVE SOUND OR YOU HAD TRIDENT. THEY SOUNDED SO COMPLETELY DIFFERENT YOU WERE IN ONE OF TWO CAMPS AND BECAUSE OF HAVING SOME INPUT AS TO HOW THE 'A'-RANGE WAS GOING TO BE, I WAS MORE ON THAT SIDE.
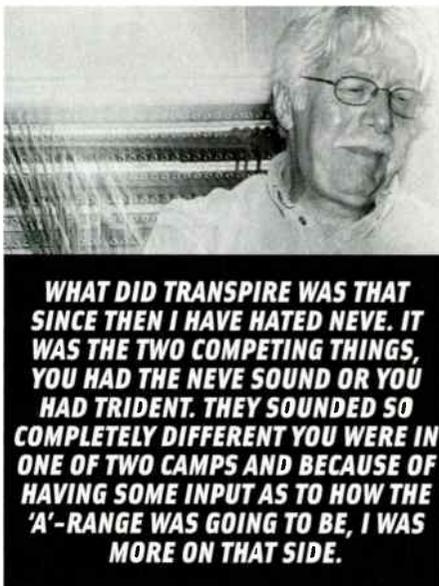
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great saturation and as a guitar EQ, that was one of the best ever.

KS: Hey, I came from the EMI boards, the best board distortion ever. Unfortunately, the 'A' range could never compete for me in that regard, but the EQ was basically what the three of us had requested.

What did transpire was that since then I have hated Neve. It was the two competing things, you had the Neve sound or you had Trident. They sounded so completely different you were in one of two camps and because of having some input as to how the 'A'-range was going to be, I was more on that side. After leaving Trident, I tended to go with studios in England, that had Cadac boards because they were closer sounding to the Trident than a Neve, so, I always liked them.

JC: Since a lot of music recorded nowadays is in home studios, it's now really becoming more often about one person in their own studio environment. I think you learn very differently that way. You learn different skills and there are certain skills that you don't learn at all. Personally, I enjoyed the fact that I worked at larger studios where there were three to five rooms and seven engineers. There was camaraderie and a team spirit and competitiveness, as well. Was Trident like that?

KS: Well, I think we had our own particular sort of niche clientele and the type of music that we were into. Roy Thomas Baker would always get the weirdo things and he had his own sound. There was one occasion he was doing a John Entwistle album and he had to go and have some dental surgery so he couldn't make it one afternoon, and I was put in there. In those days you didn't tend to leave things set up — locked out that is. So I'd set it up the way I normally would, I got what was my usual balance at the time and we were going along and then Roy came back from the dentist and he came in, 'Um, okay,' and he just tweaked a couple of knobs and it changed completely from my sound to his and it was so simple, it was weird. I had exactly the same kind of thing with Phil Spector, as well, where I was working on a Ronnie Spector project. I got my sound whilst Phil was downstairs teaching the musicians the song, and he came up and said, 'Okay, can you do this? Change that?' Two, maybe three slight things, and suddenly it was the Phil Spector sound. It was amazing.

So, getting back to the camaraderie, the atmosphere at Trident was such that we all wanted Trident to work as a business. It was everything to sort of get it to be the best it could be as an entity, more so than us as individuals. I think that's why it was so successful. It was also just great to hang out there. Everyone did.

JC: Let me ask you about the piano there because a few years ago I went back and listened to some of those early Elton John discs. I was engineering Elton's *Songs from The West Coast* and I wanted to reference those recordings. Wow, the piano is like an electric guitar, it's so bright and "attacky." I listened to Bowie and Supertramp as well, and that piano just pops and rings like a guitar.

KS: Oh, absolutely, it was a very hard sounding piano. When Gus

Dudgeon and I went to France to do *Honky Chateau* and *Don't Shoot Me I'm Only The Piano Player*, we tried to match up to the Trident piano, and we never quite did. We got pretty damn close, but, no, it was an amazing piano at Trident.

JC: How'd you mic it?

KS: I don't know what the others did but mine was basically, let's see. . . . When I started there it was probably a Neumann KM-56 on the high end and then two 67s or 87s mid and low.

JC: So you put a pretty bright mic on a pretty bright piano.

KS: Oh, yeah, absolutely. And then add a lot of high-end on the board, as well.

JC: That's pretty radical. Nowadays, everybody has this concept of 'take it flat,' go through a nice preamp and let's be real safe and neutral about everything.

KS: Because no one can make a bloody decision. That's what it's all about these days. It's 'let's not make a decision until we *really* have to.'

JC: So, with the Beatles' sessions or Elton and Bowie, I mean, on those tracking dates you 'went for it,' every sound was tweaked to the way you heard it in your head? Very few decisions were left for the mixing.

KS: Our training was four-track, you have to make decisions, you had no choice. I still do it now whether it's 24 track or digital. That's where I came from. I think every engineer should spend a year just working on four- and eight-tracks so they learn how to make a decision.

JC: As a young, American wannabe engineer, studying records when I was a teenager, I remember feeling all the records coming out of England were so much more aggressive, so much brighter and in your face.

KS: The grass is always greener. We always wanted to emulate the American sound, because the sound of the singles were cut with much more power and so much more level, and we could never do it. I remember the Beatles would have loved to have had the Motown sound for one of their tracks. I remember Abbey Road getting a telex from Motown congratulating them on the sound of the Beatles' records and how much they would love to sound like the Beatles. We did what we did. Honestly, to me, even if they do it that way and we do it the same way, it's not going to come out sounding the same — it just doesn't.

JC: This is such a good point. When I started as an assistant, you had so many great talented producers and engineers coming in all the time, so you watched what people did and if something sounded great you tried to copy it. You literally copied the microphone, the EQ setting, the compressor, and so on. But it never ever worked and it always sounded like crap because you never understood

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the mindset behind the technique, the philosophy, where it came from.

KS: In my way of thinking about the top engineers, there's an inherent sense of what's right and wrong and you don't have to think about it, that's why, as a producer, I still engineer my own sessions. It's a pain but I do it.

JC: I also noticed you were credited as playing synthesizer on sessions as well.

KS: We had an ARP 2600 at Trident. David Hentschel and myself spent lots of time experimenting with it. So while I was in the middle of mixing Elton's "Daniel," producer Gus Dudgeon decided Davey Johnstone's solo didn't pop. So I actually doubled the part on synthesizer.

THE THIN. THE WHITE. THE DUKE.

JC: I'd love to hear about the Bowie relationship. I know you started off initially just engineering for him and then segued into co-producing.

KS: I did. It was *Man of Words, Man of Music*, which was eventually re-released as *Space Oddity* and *Man Who Sold the World*. Those I just engineered. But the way it came down was David had given up his music for a while because of a lack of success of the first two albums. But he came into Trident one day to produce a single for a friend and because I'd worked with him before I was put on the session. Around that time, I was getting fed up with just engineering, and in a tea break I happened to say to him, 'You know what? I'm a bit frustrated. I want to start moving into the production side.' He said, 'Well, I've just got a new manager, and I'm about to start a new album. I was going to do it myself but I don't know if I can, how about working with me?' 'Yeah, sure.' And that was *Hunky Dory*, which then led to the other three albums.

JC: I went back and looked at the résumé and the one thing that I noticed with everybody from Bowie to Supertramp to Stanley Clarke and everybody you've worked with: You made their career-defining record. Perhaps in some cases not their most commercial records, sometimes those coincide in an artist's career, sometimes not, but you truly made the records that defined them as an artist. I'm not going to say you gave them their sound but it really felt to me like perhaps you opened up the artist or put them on the path to who we know them to be as that artist. I'm curious if you really spent a lot of time with them outside the studio trying to figure out who they are and what they wanted to accomplish. I mean as you became a producer was that something you were sensitive to: helping them sound the way they wanted to sound?

KS: No I didn't spend a lot of time but, I think it was just my choices of who I worked with. At one point, I don't know if it was my manager bullshitting me or what, but I remember that there was

some talk about working with the Stones and I said, 'No thank you,' because I knew that I couldn't give them what they would need and I think it was very much a question of the acts I chose to work with: I would only work with them if I thought I could give them what was needed — and vice versa.

With David though I just wanted to move into production and he wanted me to co-produce and I wasn't going to say no. It worked because, maybe because we'd worked together before and understood each other — whatever, it worked and it got better. With David it was a matter of knowing when not to say anything at all in the studio. To a great extent it was also perfect for both of us. He hates mixing so he never turned up at any of the mixes, so, it was just me and I got to do whatever I damn well pleased.

There was only one time that there was any question about the mixes. Oddly, I listened to it recently and I have no idea what was going through my head then, but there's a track called "Watch That Man" where I determined that to get the power from the tracks, I needed to keep the vocal really low, make it one of the instruments and have it really quiet. And, so, that's the way I mixed it. After handing the album to David's management company, they got back to me and asked could I try another mix on "Watch That Man" with the vocal up. I said, 'Fine.' I told them my concern, they said, 'Do it, let's see.' I did one with the voice up. They listened and said, 'You know what, you were right, we're going with the original,' then about two weeks later RCA called me up and said, 'That track "Watch That Man," can you try one more mix on it with more vocals?' I said, 'I've done it for David.' 'Well do one more for us.' 'Fine,' did it and they went with the original. Now, hearing it, God, I wish that vocal was up louder, but, at that time, that's the way it seemed to work. So, that was the only time there was ever a problem.

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JC: In contrast, perhaps to the Beatles' sessions, were these relatively quick sessions?

KS: Oh yes they were, *Hunky Dory* took about two weeks to record and then two weeks to mix. But don't forget artists back then had to come out with an album every six months. Elton was the same. Elton sessions were two weeks recording and two weeks mixing.

JC: And it would have been all live in the studio with David's band?

KS: Basically, yeah. We'd do overdubs, of course, but the great thing was it was probably 8-track and then we went to 16-track as the studio upgraded. So it was very quick.

JC: The thing I remember from *Hunky Dory* was how present, warm, and alive all the acoustic guitar sounds were on David's records. It's funny, you don't think of them as being so storytelling. Your memory tends to think of the weirdness of Ronson's electric guitar, perhaps.

KS: That's one of the unique things with those, well certainly with *Ziggy* especially since it's on every track. I mean even on the rock and roll tracks there's an acoustic there going along with the electric rhythm, it gives it a whole sort of different feel. That's the way the early rock and roll used to be, like when you see Elvis, you've

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always got the three of them behind him with electric, but he's got the acoustic going, as well. It wasn't something we consciously thought of or went for, it's just the way he plays the acoustics. On some of the guitars there would have been some heavy compression when I think about it. Probably a UREI 1176 or LA2A. Maybe miked with a U67 or C414.

JC: Tell me about the Mick Ronson, David Bowie, Ken Scott collaboration.

KS: We each had our own roles and we didn't have to talk about it, it was instinctive. We knew who did what and like David would say to Ronno, 'Okay, it's time to. . . .' 'I know, I'll do the guitar at the end of the song.' And he'd go down there and before any of us could say anything, he'd be playing it brilliantly, he knew exactly what was needed. We were, I guess we were in each other's heads. We knew our places. I knew when to shut up, if David knew what he was doing. In fact, the hardest thing for me with David recording was just making sure I always had enough tracks, if suddenly he wanted to book a 37-piece lesbian humming group, I had to be sure I had enough tracks to be able to do it in some way. In the studio it was more knowing when to be silent than knowing when to say something; always knowing that I had the complete freedom at the end with the mixing.

JC: That's something that you do learn as an engineer on many sessions — to just kick back. Step in when you're needed, when everybody is exhausted with ideas or floundering, that's when you speak up and until then sometimes it's just best to sit and assess the situation. But was David always the one, not always, but was he trying a lot of different ideas and really sort of pushing the envelope?

KS: Umm, with David, unlike the Beatles' sessions, it was very much him knowing what he wanted right from the get-go. I think he knew all along what was going to happen, but he didn't always tell you this is what's going to happen until when we got to that point. You had to be ready . . . yes. I think Mick was just so intuitive as well. And with David almost all of the lead vocals are one take. And no need to put them in tune afterward. Even if you could. But what I quite often got to do while recording the vocals, was using maybe an AKG 414 and a U87 and have them at a 90% angle so he's singing in-between. So you tended to get less 'P' pops. Then you could use one of the mics or both of them, mix them together or whatever.

JC: I remember going back and listening to some of the stuff and feeling in some cases, the vocals either had some kind of room sound or short tape slap, some unique sense of space to them.

KS: It's possible. Both of those, the room and the tape slap, I would tend to have done more with backing vocals than with a lead vocal. Just somehow the placement of the vocals in the track was David knowing what to do with his own voice. At the microphone. Yeah, sometimes it was him and Ronno, sometimes just him, and quite often they would stack, especially by *Pin Ups* time, because the backing vocals were quite effected then. I used an old Countryman Phaser, funnily enough when I came to do the 5.1 remix on *Ziggy*, I was trying to get hold of a Countryman, and I couldn't find one anywhere. I know I used those on strings a couple of times as well. . . .

JC: Yes, there's that little line on "Starman" that's. . . .

KS: Oh yes. It's guitar, piano, I think a couple of pianos or something.

JC: Might you have done three instruments, bounced it down, phased it in time.

KS: Quite possibly. Yeah.

JC: It's something that drives me crazy about a lot of records made now. When we think back to those sounds, of the Beatles and even going back to the Henry Mancini records. The way they stacked instruments to make one tone. Check out what's really going on with "Peter Gunn," the layering of instruments. It always seems to me that there's odd combinations of instruments stacked to make one new sound that is unique. Where, in the last 20 years, the tendency was to get the synth patch or to get the one guitar tone through four pedals that perhaps came up with something interesting. Unfortunately, in the end you feel 'oh, yeah, that guitar sound it's nice.' But you never went, 'Wow, what's that sound!?' I wonder how often did you deliberately stack instruments to come up with something original.

KS: We did it on occasion with Bowie, but with the Beatles many times. The one thing that comes to mind is the saxophone flute line on "Moonage Daydream" that was a strange thing that David got from an old American record. But we did do it with Supertramp.

SUPERMAN MEETS SUPERTRAMP

JC: Let's talk a little bit about Supertramp. How did you get involved with them?

KS: I was originally contacted by A&M Records to do a mix on a track called "Land Ho" at the height of the Bowie stuff. I did it, A&M loved it, but the band was iffy about it and I don't think it was ever actually released. But A&M said, 'Look, we'd like you to do an album with them.' I said, 'Fine, send me demos,' and the demos were utter crap. It was like I'd get five seconds of a chorus and then it would go to another section, then it would stop and then I'd get the ending of another song, there was . . . it was completely random. I said, 'This is ridiculous.' Jack Nelson, this American guy Trident brought in to manage the producers, said, 'You know what? A&M are into this band, we should do it.' I said, 'It's crap, I don't want to do it.' This carried on for a couple of weeks, finally, they were doing a showcase somewhere and Jack said, 'Let's go along and see them and that will be our final yes or no.' I said, 'Fine.' So we went down and this time was a complete turnaround. He said, 'Oh, no, you were right, don't do them, they're crap.' I said, 'Are you kidding? I've got to do this record. They're amazing."

The sessions started off at Trident and we put down tracks and we would take forever, I mean sometimes it took a day-and-a-half to get the snare drum down but I was looking for something and I knew what I wanted and it just took that long to get the sound that I wanted.

And then, after a week or so, we get a phone call from the A&R guy saying that Jerry Moss is in town and he wants to come by and hear some stuff. Oh, no, we're nowhere near far enough along. It was my first experience with an A&R man, not to mention the owner of the label, having not dealt with a record company at all with Bowie.

JC: So in all those records, there was no A&R involvement?

KS: Nothing! It was David, Ronno, and myself. None. We even knew what the single was. The only time was with *Ziggy*, where there was no single, so we had to go back in and do "Starman." Well, we kind of knew that up front, but we pushed it, but, no, absolutely, I never saw anyone from RCA.

JC: Do you think it had anything to do with there being so many great records released then?

KS: Yeah, artists did what they were meant to do: CREATE. So with Supertramp here's Jerry coming in. This was going to be my first experience dealing with a record company. I was petrified. I didn't know what to expect. He sat down, we played him some of the tracks that we had and they were bare minimum, and he got up at the end, and he said, 'Thank you,' and left. We thought, 'Oh, crap, that's it, it's all over.' We sort of ended the session there because we thought it's pointless to go on, he's just going to say forget it. We heard back from the A&R guy next day, 'Jerry loved it, you have as much time as you want, anything you want, you got it.' So, six months later we finished the album. But that was what I'd learned from the Beatles to the nth degree, and David as well: Try everything.

I mean there were lots of tricks on those records. I was determined not to use typical percussion, for instance, as opposed to like maracas or tambourine, we had drum brushes shaking in front of the mics. You hear the wind and you get the same impression as maracas, but you just haven't heard it before. There's a musical saw on one of the numbers, and all of the sound effects. None of them were stock. We went out and recorded all of them specifically. We knew exactly what we wanted sound effect-wise: to go do it for real.

JC: The dynamics in those records are just so dramatic and that would have been in the mixing process then, no automation on the console, correct?

KS: No, once again, it was all in the mixing. Even though there were a bunch of us there at these sessions. All of the band was there 'hands on' at the mixes. We all knew what it had to sound like so there were no arguments about, 'Ah, the drums should be up front, the drum or the bass should be up. . . .' We knew what it had to be, so we were working as an ensemble and it was all done in mixing.

JC: Okay. I have to ask about the bass sound because it always sounded so forward and so punchy.

KS: Again, a very simple chain, probably just a DI and a UREI 1176. It's the player — that's his tone.

JC: Okay, so Ken what you're saying is that in most of these cases it's about Great Musicianship coupled with Great Production. It's Chemistry and Kismet, not trade secrets?

KS: Look, great musicians truly make my job easy. I would encourage all of us to encourage the talent in the artists and players. That's where the classics come from. EQ

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Portable recording never had it this good.

by Craig Anderton

I'm a portable recording freak: I've used cassette, DAT, Minidisc, and TASCAM's PS5. I've used 'em all, dropped 'em all, been in situations where recording was . . . uh . . . hazardous to my health (see sidebar), and am always looking for something better, smaller, and groovier.

In this corner: Edirol's R-1 with the virtues of no moving parts or mechanical noise, and serious recording options that lift it out of the "toy" category. It records uncompressed WAV (16/24 bits), as well as MP3 up to 320kbps, to CompactFlash (CF) cartridges up to 4GB in size. (However, note that the cartridge format — presumably related to the Windows FAT protocol — imposes a 2GB file size limit.) Recording sampling rate is 44.1kHz, but the R-1 can play back files at all common sampling rates.

And in this corner: Sony's MZ-M100 Hi-MD, the latest and definitely greatest iteration of MD technology. Now, just in case your opinion about MD is based on early models, it's time for an opinion update. This recorder/player uses 1GB discs, can record uncompressed WAV files, talks to computers, and implements the latest version of ATRAC (which sounds better than MP3) if you want to use data compression.

THE STORAGE STORY

With the R-1, a 2GB CF cartridge accommodates slightly over two hours of 24-bit WAV files, and almost 14 hours of MP3 data at 320kbps. Drop the MP3 rate to 64kbps for 69 hours (!) of recording time. MD's 1GB disc yields about one and a half hours of uncompressed recording, and with ATRAC3plus, almost eight hours at 256kbps, 34 hours at 64kbps, and 45 hours at 48kbps. Still stuck on MP3? Do 17 hours at 128kbps.

But if you need to record a lot of audio, consider media cost. After googling around for a bit, a 1GB CF cartridge averaged around $70, and a 1GB Hi-MD disc, $7 in a 10-pack. In either case, you'll likely end up transferring the contents to your computer — so if you don't need lots of continuous recording, you won't need to carry a wad of CF cartridges. But if you're deep in fieldwork (or want to bring along a bunch of your favorite music), MD gets the nod for cost-effective storage media.

What about reliability? CF is inherently ultra-reliable, but MD holds up extremely well. The disc is in a plastic enclosure that keeps out dust and apparently, the Forces of Evil — MD users report excellent reliability. I can attest that they are rugged little suckers that seem unaffected by heat, cold, humidity, and the vibration caused by stacks of EAWs shaking a dance floor at a dB level that kills insects. For fail-safe, CF rocks. But I wouldn't lose much sleep over losing MD data.

FEATURE WARS

The R-1 is clearly designed for musicians, and has a "studio" pedigree. Effects can be added during playback or recording, and it's comforting to be able to add limiting to the signal path when you're concerned about overloads. The "mastering" effect, which offers two-band compression, is helpful, as is the hum noise cut. Noise gating, EQ, and other effects increase the unit's versatility; and there are other cool features, like half-speed playback, pitch stretching, and block repeat. Oh, and you'll never find an MD with a built-in tuner and metronome.

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My 3 Most Stunning Portable Recording Moments That Didn't Involve High Speed Car Chases

#1: Sitting in a kayak in Alaska, far away from shore, recording whale sounds with Bernie Krause, using a Casio DAT powered by lantern batteries and some borrowed Navy hydrophones. I was told "If the kayak flips over, you have about a minute to right it before you die of hypothermia." As I sat in the middle of a school of breaching whales, I wondered what would happen if one came up from under me. Luckily, none did.

#2: Recording a bunch of religious zealots on the streets of New York City who preached fire and brimstone, preferably coupled with the wholesale extinction of white people. Fortunately they didn't see fit to contribute to the extinction process just then, so I nailed some great samples.

#3: Getting stuck at the Atlanta airport while returning from Europe, and at 2 AM, recording the security announcement I wanted to cut up for a tune I was doing. I decided to record in the men's room: no noise, good acoustics. I was standing on a toilet seat and pointing my mic at the speaker in the ceiling . . . and a guy walks in just as the announcement says "Report any suspicious characters, or unusual behavior, to your nearest law enforcement agent." I didn't stick around.

EXTRA!
SONY MZ-M100 Hi-MD
EDIROL R-1
LIVE
EQ MAGAZINE

The MZ-M100 took a more circuitous path to its current market niche: a consumer format that flopped in the U.S., but was reborn as the pro's choice for field recording, interviews, and other audio-on-the-go applications. Yet MD still does well as a consumer item in Japan and to some extent, Europe. So the MZ-M100 straddles the consumer/pro line. It lets you name tracks, and includes digital

rights management (DRM) for those ripping copy-protected material — but if you're a pro doing your recording through the analog or line ins, you can transfer the recordings to unprotected WAV files on your computer.

SIZE-WISE

No contest: The MZ-M100 is sleek, shiny, and has an integrated fluorescent display that's

so cute you want to lick it. The R-1, while still palm-sized, is somewhat bigger and heavier (about 3.75" x 1" x 5-1/4" vs. 3.75" x 3/4" x 3-3/8"). Mitigating circumstance: The R-1 has built-in stereo mics that sound good. Like, surprisingly good — and with no moving parts, they pick up no noise. The MZ-M100 comes with a great stereo mic (the ECM-DS70P), but it's about 2.25" across and connects

via a thin cable to the MD. So the R-1 is bulkier, but in a way, more convenient for situations where you can place the recorder exactly where you want to record.

SOFTWARE WORLD

Either unit transfers to Mac OS X or Windows XP via USB 2.0. The Edirol is simpler: It just shows up as a USB peripheral — drag your files and go.

Sony includes their SonicStage software, which can transfer files to and from MD and has other bells and whistles, but is PC only. However, included Mac software lets you pull files off the MD to your computer, which is probably all that pros really care about.

BATTERY LIFE

With two alkaline batteries, the R-1 will do about five and a half hours of playback and two hours of recording. With its single AA alkaline battery, the MZ-M100 stats are a little more complex: In Hi-MD mode, you'll get two hours of uncompressed recordings, and three hours when using data compression; using standard Minidiscs gives about double that. With the internal rechargeable NiMH battery by itself, you'll get three and a half to five hours of uncompressed recording, depending on the type of disc used. Playback is about twice that of the R-1 for data compressed formats, and about eight hours for linear PCM.

You can also use rechargeable batteries for either device, but the MD lets you use the internal battery with a "sidecar" alkaline battery. This combination allows recording times of up to eight hours.

SO WHICH ONE WINS?

For straight-ahead field recording and sample collecting, either does the job — and either positively demolishes DAT or cassette. But I'd give the edge to MD. It's smaller, lighter, less expensive ($439.95 vs. $550 list), uses one instead of two batteries yet has longer record/playback times, and the media cost is currently 1/10th that of CompactFlash. Also note you can get a bundle with Sony Sound Forge 8 software for $549.95.

However, the R-1 is a more versatile, musician-oriented device. It has no copy protection, and includes useful, "musician-friendly" extras that MD doesn't have. If you're looking for a recorder that bridges field recording, occasional use in the studio, and capturing musical ideas, the R-1 offers more amenities.

QUICK PICK

NAVIPLAY BLUETOOTH STEREO KIT FOR IPOD + NAVIPRO EX WIRELESS REMOTE

($239, $49.95, tentechnology.com)

OK. These little geegaws, these wee gimcracks, these teeny stocking stuffers have absolutely nothing to do with making music, recording music, producing music at all. This is pure end product use action, which, insofar as it affects HOW the music you record is listened to, might interest you. OR you could be like us: suckers for geegaws, gimcracks, and tiny stocking stuffers.

And these qualify as all three. Whilst augmenting the powerful mass reducing mania that is the iPod, the machine that lets you listen to 10,000 of the most seminal tunes of your life (sorry, Brian), these naviPlay things unleash you from the device itself. Genius.

Or at least it was before the Nano and the Motorola ROKR made this sort of a "so what?" moment. So it's a weird kind of paradox: If you're an early adopter you already own a Nano and won't need something that makes this business card-sized jukebox wireless. If you're *not* an early adopter, you probably won't buy this either.

But that does NOT matter.

These Macworld Best of Show 2005 items look cool, and add a functionality that works well for us at a . . . wait a minute: suggested retail price of $239?!?! Suggested is right. As in: We suggest you lower that price to the much more affordable $49.95 that they're charging for the wireless remote. Cool item, good geegaw for someone you'd like to spend a lot of dough on. —*Vincent Rose*

NOT-SO-QUICK PICK

FOCUSRITE OCTOPRE LE

($599.99, if you know where to look)

As soon as I checked this unit out, I thought it was a great idea.

I mean I'd been looking for a converter to use the ADAT inputs on most major soundcards (like my friend's MOTU 828) for a while. You see, I have a TASCAM MS-16 1" 16-track in my studio and I've been looking for a way to transfer the 16 analog tracks to digital while using only one soundcard.

Let me explain: I've been using my Soundcraft Series 600 for quite a while at Shapeshop, my studio in Chicago. It's a great board and I love the way the beefy pre's on it sound. HOWEVER, I've noticed recently that the preamps tend to accentuate low mids, peaking around 300Hz, which can make things real muddy, real fast, when applied over a bunch of tracks. Because of this I've been looking for any mic pre's I can afford to diversify the character of the tracks.

And, well, I like the way the OctoPre's preamps sound — they're very different from my board, which is refreshing. They have a very modern and uncolored sound compared to the Series 600. They don't have the "warmth" in the mids that I'm used to, nor do they have the smooth, but present high end, that my board has. They *do* have a tightness and neutrality to their sound that actually made the tracks that I recorded with them stand out in a mix of Soundcraft tracks. They were more efficient amongst the mud and so I guess this is what I mean by "modern". Moreover, right when I plugged my KSM32 into the unit to do some vocals, the sound seemed tighter. I did a bunch of takes right away that I kept *and* liked. I also had a chance to use the OctoPre on a vocal session with Robert Iwanik from the band Rope. The mic pre complemented his sibilant and aggressively dynamic vocals and we ended up doing all his vocals with it.

The best thing about the unit? Being able to use it as a pre or a standalone converter.

And with the optional converter I/O installed, it becomes a full-on 8-in-8-out soundcard.

All you need is ADAT Lightpipe inputs/outputs on your computer soundcard and you have eight more channels of ins and outs. The unit's auto switching can feed either the mic pres or the line inputs into your DAW and then you can use the unit for eight line level outputs if you want to mix on an analog board. There are also multiple sync options that are clearly displayed on the front panel including the ability to sync to an external 256x clock.

What else?

Well, my Les Paul bass working through the instrument preamp function sounded aggressive and open compared to the dbx 163x (I sometimes plug directly into (that dbx does kill though when you turn up the compression knob) The layout of the unit is straightforward enough. That's always good. The blue light on the output VU meter is pleasing although the numbers for the levels are a bit hard to see from a ways away. The controls are easy to understand and you can cycle through the channels to see their levels on the nice blue VU.

There's also an impedance selection switch that switches the impedance on the first two channels to a lower 150ohms. This is handy to match the impedance of ribbon mics and other low imp mics. There's a phase reverse switch on the first channel only, which seemed odd. There are low cuts on every channel, which slope down at 120Hz. The phantom power is global.

And while I found it strange that the line inputs were located on the front panel (it seems like if it were in a rack you'd want everything but the instrument inputs on the rear panel), the OctoPre is a handy unit to have around the studio and it can pull off a bunch of important tasks. For the price it would be nice to get eight mic preamps alone, but the digital converters make it a great value. —*Griffin Rodriguez*

■ Do series/parallel, in-phase/out-of-phase pickup connections
■ Change the tone control potentiometer value and capacitor
■ Alter the volume control value and taper
■ Balance string levels
■ Create alternate tunings
■ Tweak the 12-string modell by changing the detuning and level between string pairs
■ Swap out guitar bodies

And what accomplishes this magic? Variax Workbench is a hardware/software combo with a cute little Variax-to-USB converter box, cable for connecting the Variax to the converter, another one to connect the converter to USB, and cross-platform editing software (requires at least a Mac OS X 10.3 with a G4, or Windows XP/2K with a 500MHz PIII). USB can be 1.1 or 2.0 — the program doesn't care. But a word to the wise: Hit the Line 6 website to grab the latest hardware and Variax firmware before you warm up your virtual soldering iron. And

a word to the wiser: Variax Workbench software is available as a *free download* for guitarists who also own either a PODxt Live or a Vetta II. Both of these can connect digitally to a Variax, and also to a computer (via USB on the PODxt Live, and any USB-to-MIDI interface for the Vetta II).

In addition to the editing-related pages — one for the body type, one for the pickup

wiring, and another for the controls — there's a "Tone Locker" patch librarian function. This is where you save preset bundles, swap presets around, copy and save presets, etc.

Although this is all great fun, I was surprised that the ability to create Alternate Tunings became one of my fave features. Slide guitar, anyone? Tune up the bottom two strings an octave? Capo the whole thing? Drop the low "E" to "D"? Sure. The strings don't break when you tune them up several semitones, either.

So is Workbench an *essential* accessory for the Variax? Probably not. The Variax by itself should have enough sounds to keep you busy for quite some time. But if you're a tweaker, like the idea of creating guitar models that couldn't possibly exist in the real world, get a certain satisfaction from violating the laws of physics, and like to hear sounds you haven't heard before, Variax Workbench is a most excellent stocking stuffer. —*Craig Anderton*

FireWire vs.USB:
The Saga Continues...

TASCAM FW-1804 + UA-101 Hi-Speed USB Audio Capture Device

by Sam Wheeler

You can read white papers all day and never find a conclusive answer to the question of connectivity.

Is it better to have more bandwidth (FireWire), or more raw speed (USB)?

And when you add the question of support, with FireWire operating on a relatively open protocol (Apple-style) and USB entrenched in the plug-and-play game (Microsoft), the contest becomes even more esoteric. The early battles seemed to indicate that USB would satisfy more consumers, but the IEEE (FireWire) standard has gained ground. Now, we present a new battle, between a FireWire interface from an industry giant (TASCAM) and a USB device from a relatively new line offered by a competitor (Edirol).

Both devices promise high-performance at well under $1,000.

But do they deliver?!?!!

TASCAM FW-1804

OK, TASCAM has been providing audio solutions for the home studio since cassette ruled the domain. Their more recent digital audio workstation offerings have not disappointed fans of their multi-track cassette recorders, however, with generous connectivity and control options. And the FW-1804 follows hot on the heels of their FW-1884, delivering a 2 rack-space unit for those of us who don't have enough real estate for the 1884's control surface, but still offering all the connectivity TASCAM is known for. As a relatively mobile "notebook" user, I

was initially wary of the rack-mount unit, but it is actually rather lightweight and portable (if you're into that sort of thing). Furthermore, the FireWire connection is a little less cumbersome than a CardBus interface, and provides greater bandwidth than USB. Although I had to adapt the laptop's 4-pin FW port to the 1804's 6-pin connector (something TASCAM does not recommend, by the way, even though there is no way to power the 1804 via the 6-pin connector), once I powered it on and saw the warm glow of the front-panel buttons, I felt right at home (probably because I actually was at home).

The FW-1804 met my expectations. There are Neutrik and 1/4" inputs on four channels, with 1/4" inputs on the remaining four analog channels. The phantom power rated well and recording quality was very good. I have yet to actually use the ADAT optical in/out pair, but they are there, along with the

ubiquitous S/PDIF in/outs that I do use regularly. I actually have limited opportunity to use the Word Clock in/outs (downloading samples from older drives), so it's nice that they thought to include them, but I do have to wonder who else needs this connection. Then I discover that the unit also has two MIDI inputs and FOUR, yes, FOUR MIDI outputs, which fits with TASCAM's description of this unit as a "FireWire Audio/MIDI Interface". **I began dabbling with digital audio in the days of the Mirage sampler, so all those MIDI connections are actually handy for me. For those who are cutting their teeth on the M-Box, however, that part of the rear panel may end up gathering dust.** Speaking of the rear panel, that's where all the inputs and outputs are (except for one 1/4" "Guitar" input on the front), leaving a very clean looking front panel.

The sound was very nice across the board, although it did seem to lack power at the outputs compared to other units. The S/PDIF out was pretty much all that I listened to, since the only other options are the optical out and the stereo 1/4" pair. This is typical for home studio offerings, however, so I won't sweat that too tough here. It does deserve mentioning, however, that even home studio users could benefit from a pair of Neutrik outputs to run into a PA system. The neighbors might not like it, but the DJs would be a lot happier.

The software interface is minimal, allowing the trim knobs on the eight channel inputs to do their work in traditional TASCAM style. Obviously, a control surface would be more user friendly, but that's not the point of this unit. Instead, the FW-1804 is designed to allow maximum connectivity with high-quality converters in a reliable fashion, and it delivers. I was using the 1804 with a 3.2GHz Dell Inspiron "notebook" with 1G RAM running XP, so I expected no problems with latency or cutout. For the most part, I was satisfied. **Playback was only rarely interrupted at the lowest latency setting, especially when running ACID, my primary DAW, but things improved somewhat, although not completely, when using** Cubase LE (bundled with the unit). The real **payoff came with GigaStudio 2 LE (also included), which performed flawlessly.** I haven't spent much time with GigaStudio before, but once I started dabbling, I began to suspect that the FW-1804 was designed with sampling in mind.

Overall, the unit performs well when compared to many competitive offerings, although they could have either packed a little more into the box, or made a smaller box. Without the control surface, I'm not sure what exactly TASCAM is going for with this unit, since it still requires a fair amount of space for the 2 RU's with all the connectors out the back. I suspect that it is geared toward dinosaurs like me, who still have loads of MIDI hardware, but are looking to get away from our antiquated samplers. Otherwise, they will have an uphill battle trying to market it as a digital recording replacement for the limited, but reliable 4-tracks they are known for (not to mention that it doesn't work with Windows 98 or earlier). Mac users may have a better time
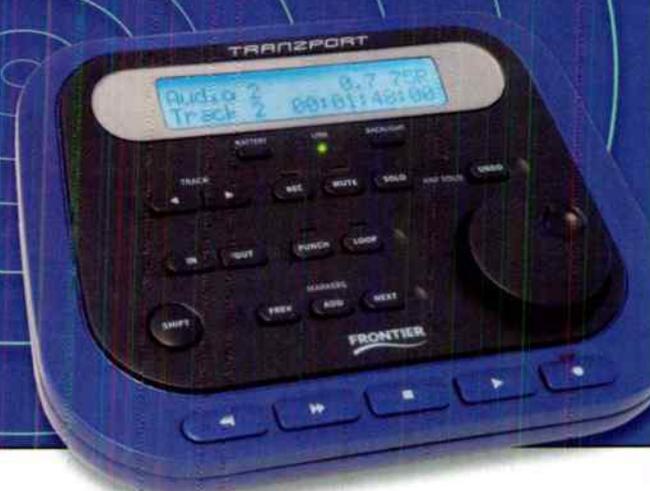
with this unit, but will likely find the FW-1804 to be a bit overbuilt with little to show for it. Solid converters with TASCAM style reliability characterize the FW-1804 as a workhorse for the home studio though. Score another hit for FireWire.

UA-101 HI-SPEED USB AUDIO CAPTURE DEVICE

And in the left corner, wearing the anodized-blue faceplate, we have our USB contender, the UA-101 by Edirol. **When one goes looking for USB audio interfaces, Edirol's are usually first on the list, generally bringing good value and compatibility in this format. And on paper, the UA-101 looked great**: a low-latency interface capable of operating at up to 192kHz with plug-and-play, USB 2.0 capability for less than $700. Apparently, the UA-101 is supposed to be a stripped-down UA-1000 in a half-rack breakout-box, with the added feature of being USB 1.1 compatible for older computers (two channels only at 44.1/48kHz sampling rates).

Out of the box, things still looked good.

The UA-101 is well constructed and sturdy, with decent connectivity and control setup. The faceplate is the aforementioned groovy anodized blue affair with a handy LED level meter. There is even a block diagram of the internal wiring on the top, for whatever that's worth. Setting it up on my 3.2GHz Dell Inspiron with 1G RAM and XP Pro seemed easy enough. Once I got it up and running, however, things started to go downhill. Periodic bursts of digital flatulence were present in both recording and playback, even with the buffering/latency at maximum.

Investigation at the website though revealed that Edirol does not recommend using this petite, ultra-portable unit (or any of the UA series) with laptops because of the greater potential for IRQ conflicts when connecting USB devices. However, a quick IRQ address change seemed to resolve the distortion issue, but then I found the device was cutting out periodically during playback, even at maximum buffer/latency settings. Edirol's advice is to change the computer's performance settings to adjust for best

performance of "background services". This cleared up most of the problems with playback and actually allowed for a decreased latency setting during recording, although it was still around 100ms. That at 192kHz, mind you. At 96kHz things get below 50ms and 48kHz is acceptable at around 25ms, but that's still way too high for anything that claims to have "incredibly low-latency".

In general, the sound was not appealing. It's a bit thin and grainy. Despite having a rather weak output signal, the unit appeared to be distorting when the input signal got anywhere close to 0 dB. It's not a pretty distortion, either, kind of like my old Peavey Bandit after all the knobs got rusty (a lot quieter, though). Experiments with various apps seem to indicate the converters are to blame. With the internal levels turned down, the distortion cleared up, but the sound was still not much better than the hardwired POS soundcard that came with my notebook.

Connectivity is what makes this unit worthwhile, but even then, the UA-101 has stuff about it that I didn't like. Like? The

two onboard preamps were disappointing, which I sort of expected, given that no competing interface has preamps worth writing about. **Having two Neutrik inputs on the front is nice, though, especially if you have to plug in an external preamp.** The additional six 1/4" inputs on the back are standard, as are the eight 1/4" outs, so no news there. The ADAT optical connections are a welcome sight on the front panel, although S/PDIF would have been even more useful for me. They make a big deal about the direct monitor patch having zero-latency during recording, but that's an analog feature any hardware audio device should have. It certainly does not make up for 100ms of latency when overdubbing.

The UA-101 software is adequate for most applications, even if the rest of the unit is not. It's simple, capable and easy to use. The only flaw there is that it sets itself up in the Windows Control Panel, but a desktop shortcut gets it out where it's useful. The software is bundled with the LE's of both Cubase and GigaStudio, both of which are worth checking out, but not for the $695 list price this unit carries. Overall, the UA-101 is somewhat disappointing and serves to strengthen the growing opposition to the USB 'plug-n-pray' system. With comparable FireWire devices available for the same money (Ediro!'s own FA-101 actually retails for slightly less) and without all the USB driver problems, it seems that IEEE has won this latest battle, even if the war continues. . . .

Roland V-Synth XT

Professional Synthesizer/Sound Generator
($ 2,195 online)

by Monte Vallier

I have to be honest. When I was handed the box with the Roland V-Synth XT and asked to check it out and see if it was something I could use and review, I was apprehensive. I know a little about sound synthesis and while I've used many of the old Roland, Moog, ARP, Sequential Circuits synths over the years, reviewing something that I only have a surface knowledge about is a challenging and touchy situation. There's always 50 guys ready to write in to the editor about how "that reviewer doesn't know shit" or "why don't you get REAL ENGINEER guys to write reviews?"

Well, I know that I'm like 95% of the readers — I want to know if a product will be useful to me and worth learning more about. I'll take a review as a starting point in my own research and investigation. So, that being said,

in order to cover my butt I decided to enlist a good musician friend who knows a lot about synthesizers and has been making cool sounds with a variety of electronic instruments for years. I asked Marc Capelle, San Francisco composer and studio musician, if he would take the Roland V-Synth XT home and tweak around with it for a few days. He did. We did. Here it is.

What the hell is it?

Marc Capelle: To be basic, this is a sampling, sound-generating synthesizer that's packed with so many features that it's sort of mind boggling. It's difficult to say exactly because I'm constantly discovering new things that it does. It's a workstation, a synthesizer or a variety of synthesizers, a drum machine, it's an analog

processing unit, it's a filterbank, a sequencer, an arpeggiator, it's an amp and effects modeler, a vocoder — it's a sound shaper for all aspects of electronic music creation.

Gimme a break down.

MC: Sure, first of all it's pretty compact. A 4-rack space tiltable unit that weighs about nine pounds; with all the features it seems like it should be at least five or six more pounds. It has a full color touchscreen for navigating through the patches and programming that also is an X/Y effects controller; it has an XLR 1/4" combo mic pre/hi-z input on the front for sampling, vocoder action, or plugging a guitar in. It comes with the VC-1 and VC-2 cards pre-installed. They are the "V-Card" software that basically transforms the V-Synth into a Roland D-50 and into a VC-2 Vocal Designer. It has analog, optical and coaxial audio in and outs with main outs as balanced 1/4". It also has a USB connector for file transfer, MIDI communication, and audio streaming. You can back stuff up onto your laptop or use the CompactFlash or SmartCard slot provided. There are eight fully assignable knobs next to the touchscreen that are easy to assign with all sorts of parameter controls. It's cool to be able to reach and tweak.

How easy was it getting started and loading patches and programs?

MC: The architecture is very apparent. It's very addressable in a very user-friendly, point and shoot kind of way. It's great because there are some very sophisticated synthesis and sequencing aspects to it that are made really clear. It's easy to go through and take something that's just a template and turn it into what you want with whatever sounds you want, whether you're loading sounds from the internal memory bank and internal samples or from your own samples. So it's great because the basics are very smartly programmed and it's easy to pull from this sort of really flashy sort of demo workstation mode into something that's much more personal.

Show me something.

MC: Sure, I'm going to grab some of my own wave sounds from my PowerBook that's hooked up to the USB connection. This is very simple. I'm loading samples one at a time, which is a minor gripe I have — it would be cool if there were a batch load feature. I'll

One thing I noticed while working with this is that your initial impression is that this is a very commercial instrument and then you get deeper into it and realize that people like Eno, or Shadow, or Madlib would find the things it does immediately attractive and not just the sound but a form of composition.

store them here to one portion of the keyboard and then go in and load one of the great templates of surprisingly contemporary rhythms. Being able to do this quickly with this much control over each parameter lets me turn this into an outsider kind of thing, a Madlib kind of thing, much more experimental and out there. It's clear that whoever designed this thing knew that this is what people want to do so they left a lot of breadcrumbs to follow.

[*Marc finishes tweaking after a couple minutes and plays a beat that sounds like Public Enemy led by Donald Duck — very cool and ridiculous.*]

MC: As you can see I was able to create a variety of cool sounds using a variety of my own waves or AIFFs and some excellent drums sounds that come with this thing — I mean we are talking about the same folks that brought us the 303 and the 808 and they haven't failed us there. It's neat to be able to do live time manipulation both on the face of the V-Synth itself using the time-trip pad and also with my controller. I was able to create grooves that went on for three or four minutes that had lots of structural variations and a lot of sophistication to them while working with a relatively short pattern. This is something that anybody who is doing

electronic dance music, say, or ambient music or even sound design is going to have a great time with. The realtime filtering and realtime manipulation are more great aspects of this box.

I noticed you had a sampled guitar patch loaded. What'd you do with that?

MC: I had a project where I needed guitars. I had layers of real guitars recorded already but they didn't have sufficient girth to them. So I loaded a patch called "Screaming Lead" from the V-Synth library. The unit has a lot of amp models that come as part of the structure and the routing to the effects. I did some amp modeling and used some portamento controls. I was able within a much quicker period of time than it would have taken to plug in a guitar, tune it, set up an amp or mic, etc., to get a very usable, valid sound very efficiently. It sounded great in the track with the other guitars — very real and fuzzy and fat with a lot of analog reality.

Tell me about the V-Cards. What's the VC-1 thing you were talking about?

MC: The VC-1 is a dedicated voice card designed to emulate the classic D-50 synth from the late '80s. It's called the D-50, but they didn't stop there because it is more than that. It does a lot more than the D-50 ever did, but you do get an authentic recreation — a complete revisit to some of the very nice sounds and features of that instrument. A lot of the sounds will immediately bring you back. Whoever programmed it knew exactly what they were doing and what they were harkening back to. Check this out: It's the "Shamus Theme". Doesn't that capture Jan Hammer perfectly?

Wow. I'm still sick of that sound. But you're right, I'm transported. . . .

MC: Or there are sounds that are perfectly reminiscent of Trevor Horn. Or the LFOs and horn stabs like Prince used. The architecture is great too because it allows things like the chase function, which means that when you strike a note you can assign another note to sound, as well. You can split the keyboard to have duophonic sounds that are duophonic in the sense that the attack is different. The chase function is rad! You can output the lower tone slightly later than the upper tone so you can create a stereo effect with maybe a part detuned slightly and set

an eighth-note behind. Pretty cool. Also you can selectively split the keyboard and assign parameter controls like pitch bend to one of the sounds and not the other. That's a great live tool.

Are there sounds that are immediately usable without a lot of tweaking?

MC: Well, yeah, despite the presence of a lot of chiffy sounds, there are many desirable sounds. Here's a sound that is good. With the velocity curve and the depth of programming in this sound it is usable in so many ways. It's thought out for players. This clav sound is totally acceptable. The velocity curves are sophisticated — much more than the original D-50. It seems like this thing creates its sounds in a few different ways. According to the literature, it has PCM oscillators with VariPhrase capability, powerful modulators and COSM processors with filters. There are two oscillators, two COSM blocks, a block to modulate one of the oscillators with the other, and an overall volume envelope called a "TVA". So each of the oscillators can get its sound one of three ways: analog modeling, through the playback of samples, or by getting audio from one of the physical inputs on the box — the S/PDIF, USB, or the analog input.

Can you develop a sound from absolute scratch using the sound generating components in the box or do you start with a preset and use a subtractive or reductive synthesis to get where you're going?

MC: Essentially you are starting with a patch. You could generate a new patch by using a PCM template that is designed off the patches that exist within this architecture. When you're creating a form, a waveform, you're essentially creating the inception of a sound and that's where you are working from. The structure of those sounds allow the manipulation of panning, pulse width, reverb structure, envelope time, the pitch modulation, portamento, the splitting functions and balance of those splits. So it's not as if it's an endless amount of templates but it's infinite obviously mathematically. It's enough to create an endless amount of sounds.

Part of the romance for me and part of the respect that I give to Roland for this product is they're moving forward but they're not turning a blind eye to all these great methods of synthesis and all these great controllers and sounds that have been used (and maybe

now classified as retro because of the things that have been done to them), but never fully explored. How can you turn your back on something with infinite possibilities? Plus it's not like they give you one thing with infinite possibilities, they give you a variety of things with infinite possibilities. You'd just hope that with something this deep that they would put some wood on it somewhere.

Anything else?

MC: Well, the Vocoder, the arpeggiator, and the step modulation we didn't get into yet. Let's start with the Vocoder. The V-Synth comes with the VC-2 card preloaded, which is a vocal sound shaper. One thing I noticed while working with this is that your initial impression is that this is a very commercial instrument and then you get deeper into it and realize that people like Eno, or Shadow, or Madlib would find the things it does immediately attractive and not just the sound but a form of composition. The Vocoder vocal processor is an example. Within five minutes here I dialed in something that was intended to recreate the sound of a large chorus and the breath of a male singer. But through manipulating it with my Edirol controller and the touch pad while playing a flugel horn into a SM57 going into the mic input, the sound suddenly became a Jon Hassel or Miles Davis-like electronic piece. Obviously this instrument is not just for proper use but proper misuse as well.

And the arpeggiator feature is great for a variety of reasons. First off, it's going to remind anybody who has worked with Jupiters or Junos or any Roland synth with the up down arpeggiation that it's very simple and easy and it's totally evocative of all that old stuff. So you have a simple arpeggiation process but beneath it you also have incredible sequencing ability. It's that great kind of point and play elemental arpeggiation that is great fun and useful and that harkens back to a lot of classic sounds. The way it so easily integrates into any tempo map makes it really fun. It's a lot like all the other aspects of this box — it emulates, reproduces, and improves on the past.

Anything that bugs you about it? Or anything you'd like to change or add?

MC: The main problem that I have with this is the saving function. It's too complex. The process of saving your samples and custom patches should be simpler. I lost a few

hours work the first day because I missed a step in the saving procedure. You have to be careful in tracing your footsteps. I hope the software will continually get better in this regard. Also the USB connection is a little iffy. One small bump and I lost everything that I was loading. Make sure you are certain of your cable.

I also found myself really wanting to step away from the touchscreen style programming after a while. I would love it if they could design an interface that would allow having a lot of the screens and controls appear on my computer and allow me to use my mouse and allow for an easier flow of data from stored libraries of samples and patches. It seems that this is where things are going anyway. The way music is created today it is only logical.

The lack of the ability to control program values extensively through MIDI and computer interface is a shortcoming. The MIDI control information is not explained well in the manual. Overall though, it has its shit pretty tight.

Closing words?

MC: My initial reaction to this thing was that I was using it more than I wanted to tell people. I was enjoying the simple arpeggiations, the totally wide breadth of reverbs and a lot of guilty pleasure sounds that I want to revisit but usually don't get the chance to revisit. It's really like, well, maybe you're not a Corvette person but you find yourself in one going down the road really fast and it's fun as hell. It wasn't anything I was gonna tell my gearhead friends about right away. To further stretch the car analogy: it's like a Mini with a Lamborghini engine in it. It has such a small footprint and such a humble interface and endless possibilities that it seems a lot bigger than it is. Also I can close my eyes and think I'm 20 years younger and doing this. It's refreshing. ▣

Pros: High sound quality. High level of performance. Efficient packaging and design. Amazing assortment of features. Highly musical and playable instrument. You get a lot for the money.

Cons: Not extensive and underexplained MIDI controls. The complexity of the saving function. The sample memory can't be expanded. You may find yourself geeking out for hours and lose all your friends, family, and your job.

EQ SHELVING & FILTER CUTS

CLEAN YOUR BOTTOM!

by Rich Tozzoli

A tight bottom.

Eaaassssssyyy. I don't know what *you* were thinking but a tight bottom is what most of us strive to achieve in our *mixes.* And one way to help your low end is through the selected use of EQ shelving and filter cuts. Let's take a look at a few techniques that might help you clean the junk out of your trunk.

OK. Think about all the instruments that take up sonic space in the bottom of the typical song. You've got the kick, bass, toms, guitars, keys, and sometimes strings. Add to that additional sampled bass and kicks and that's a lot of info fighting for a piece of the same action. Whether it's through an analog outboard EQ or software plug-in, you've got the tools at your fingertips to get the job done.

The first thing I do is simply "focus" on the foundation of the mix, typically in the 250Hz range and below. As is often said, a problem identified is half solved. Listen to what's happening "down there" — can you clearly hear the thump of the kick in relation to the bass? Is the low end of acoustic or electric guitars muddying up the situation?

It's at this point that I begin to assess the tracks and start cutting frequencies.

Typically, I will apply a gentle 150Hz shelving EQ (Example 1) to all guitar and keyboard parts in my mixes (which I have presets ready for). Remember, a shelving equalizer, unlike a parametric or linear, affects the entire range below (or above) the specified frequency. I'll also place the same type of EQ on the toms of a drum kit — all in the effort to clarify the kicks position in the song. It's important at this stage to listen to these tracks both in solo mode and within the mix, as sometimes I remove too much bottom making the sound wimpy — which is easily fixed by accordingly adjusting the shelving frequency.

Next I'll work with the all-important bass (or basses) and kick (or kicks) to sit one "on top" of the other. By that I mean if the kick is hitting the sub frequencies in the 60–100Hz range, I'll try to get the bass to drive at the 100–130Hz range. Depending on the type of tune, you may have to reverse the situation — but you get the point.

Example 1.

Example 2.

And in order to get this to work, I most often use a full-function EQ that has a separate filtering section — such as the Sony Oxford, Universal Audio Cambridge, McDSP FilterBank plug-in, or my Manley Massive Passive outboard unit. A high-pass (or low-cut) filter will pass the highs past the selected frequency — great for pulling out unnecessary rumble and thumps. The responses are gentler on filters with lower numbers (6 dB/octave), and get steeper and more aggressive as the numbers increase (36 dB/octave). Sometimes though, I'll simply use the LF shelving section from EQs such as the Waves Renaissance or the URS S Series to get the job done — in combination with low-cut filters. You'll of course have your own preferences.

Often, there are one or more loops in a song with no control over the kick. When this is the case, I'll typically use multiple stages of cuts and filtering (Example 2). Filtering the bottom of Loop 1 around 60Hz, I'll also shelve around 160Hz, making room for the kick in the second loop. Again, every situation will be different, but overall this method tends to work quite well. Certainly the ultimate goal is to have each heard clearly — while maintaining the punch needed to push the bottom of the tune along. Don't forget to monitor at both soft and loud volumes (and with headphones) so you're not fooled by the bass response of your room.

If you think in terms of cut, not boost, you'll find your rhythm section will sound punchier. Of course, there are no rules here, and you should do whatever it takes to get the job done — but cutting is a good place to start. When it comes time to boost, I'll typ-

ically punch up (if need be) 120Hz with a very tight Q on the bass and 10Hz on the kick, with a slight 10K boost for clarity. Again, add ingredients to taste.

And after running through the above-mentioned tracks, I will apply a Waves PAZ analyzer across the stereo bus, to visually look at the energy of the mix. I'll then run through

just about every track in the mix to "watch" the low end. I've discovered a lot of sub offenders using this method, such as Fender Rhodes parts, room mics, and the rumble of closely miked guitar cabinets.

With a little creative use of EQ and filtering, you, too, can be proud to show off your bottom! In public, no less!

FILTER FOLLIES

So, I asked Director of Algorithm Development at Universal Audio Dave Berners to help explain how different filters provide various sonic characteristics. . . .

"Most lowpass filters, which are defined by a filter type and a cutoff frequency, will have certain things in common: For frequencies well below the cutoff frequency, lowpass filters pass signal transparently (with very little alteration in magnitude or phase). For frequencies well above cutoff, these filters will attenuate the signal significantly. What separates the different filter types from each other is how they behave near the cutoff frequency, in the transition region.

Each filter type is defined by what is chosen as the most important quality for the filter to have, while maintaining the properties that make it a lowpass filter. This 'most important' quality may be, e.g., approximately linear phase at low frequencies (Bessel filters), very flat magnitude response at low frequencies (Butterworth filters), or very sharp filter cutoff (Elliptic filters). Different filter types will obviously have different responses, and these differences produce different sonic characteristics."

HERE COME THE DRUMS
DRUM...DRUM DRUM...DRUM
Submersible *DrumCore*
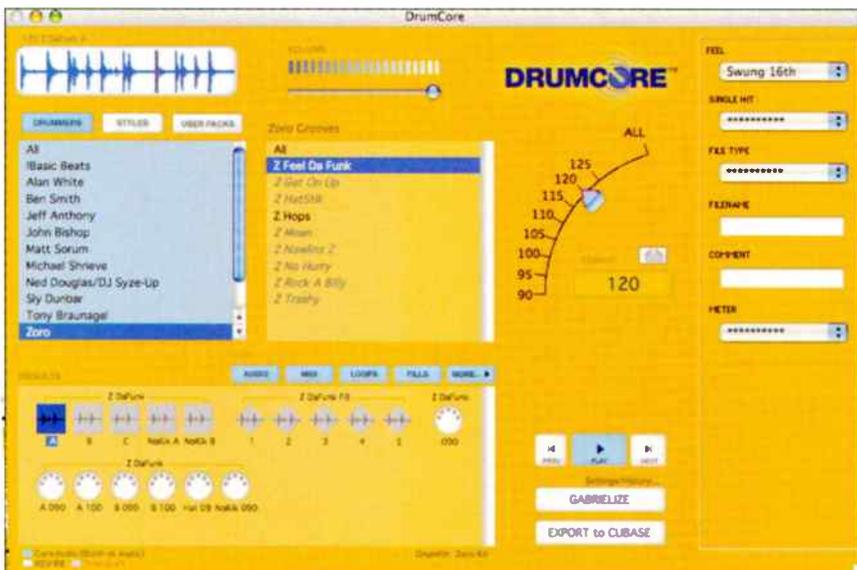
Managing even a smallish library of drum loops and samples can be a major challenge . . . how do you find the exact loop you're looking for among 20 loops named Big Rock Loop 1 through 20?

Submersible *DrumCore* may just be what you're looking for. The package comprises 9GB of drum loops performed by nine luminaries including Sly Dunbar, Michael Shrieve, Matt Sorum, and Alan White, along

World Radio History

Contact: drumcore.com
Format: 3 DVDs
Price: $249

with a powerful Mac and PC software app for playing and auditioning loops. Each loop is available as audio or MIDI; the audio loops are recorded at 5–10 bpm increments to minimize tone and feel changes when changing tempo. Loops can be randomized ("Gabrielized") to create variations, and fills are provided. You can use *DrumCore* stand-alone to play loops through your soundcard or via ReWire, though it won't sync with your DAW. Rather, you use it to audition loops, and then export them to your DAW, or if your DAW supports it, simply drag-and-drop loops from *DrumCore* to your DAW. You can also export directly from *DrumCore* to a track in Pro Tools.

With the MIDI versions of the loops you can change which drum kit is being played — use a Matt Sorum kit to play an Alan White loop, for example. And you can also play the drum kits via MIDI over ReWire from your DAW. As a final bonus, you can import your own library of loops into *DrumCore* and manage them, as well. However, this will take some work. You can't, for example, point *DrumCore* at a sample disc and have the program pull everything in. Submersible also makes optional "DrummerPacks" available as add-ons to your library.

The drum loops are uniformly excellent — with that line-up of players, would you expect anything else? As an auditioning and playback tool, the software excels. It'd be great if playback could sync to your DAW, but perhaps in an upcoming version. Until then, the loops and drum kits are spot on, the sound is fine, and browsing your library and exporting into your DAW makes life *much* easier. —*Mitch Gallagher*

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BIG FISH AUDIO
HIP-HOP HIGH

Contact: Big Fish Audio, bigfishaudio.com
Format: DVD-ROM with REX/WAV/Apple Loops
Price: $49.95

This baby? Construction kits with a difference! Each of the 19 grooves includes a loop with everything playing. Most last about a minute, or even more; these are motifs that evolve over time. So, the elements that make them up are more sophisticated as well. In each groove's folder you'll find some "stems" and loops (for example, synth+drums, just bass, and so on), along with individual drum and percussion hits. Another folder contains three drum kits of hits, and an additional folder has 33 drum beats. Nifty: The terminally lazy can just bring in a complete loop, while tweakers can
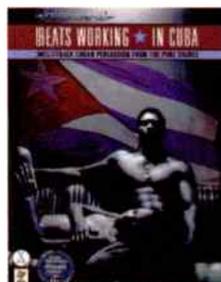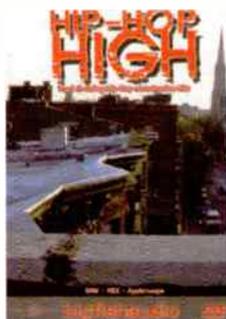
pretty much rebuild a loop from the ground up.

The grooves are minor key (five E♭, six E, two D, two A, two G♯, one A♯, one F♯); the vibe is somewhat mysterious, with an occasional hint of menace — smiley faces need not apply. Tempos are mostly in the 90s, but range from 85 to 100 bpm.

The WAV files aren't acidized. However, any loops and stems are duplicated in REX format, and even the files that are hard to "rexify" stretch well — they paid attention to setting the slice points. The WAV files are also duplicated in AIFF format, with loops/stems as Apple Loops.

If you're in a minor mood, *Hip-Hop High*

gets a thumbs-up for the sounds, stretching, and organization; check out the audio example at eqmag.com. —*Craig Anderton*

ZERO G
BEATS WORKING IN CUBA

Contact: East West, soundsonline.com
Format: 2 DVD-ROMs, NI Intakt player, 1 DVD video
Price: $299.95

First, the conclusion: *great* grooves and 24-bit recording quality, comprehensive documentation, and excellent packaging (check out the included 12+ minute video on the making of the library). You get tons of variations on the main Cuban grooves (Bolero, Cha Cha, Mambo, Songo, Timba, and seven others),

World Radio History

played by real humans with a great vibe.

The sound library (8.2GB) is nothing if not exhaustive, and Native Instruments' Intakt (XP/OSX,VST/ASIO/AU/DXi/RTAS) is a fine, highly editable sample playback vehicle. Entire loops can be stretched by the TimeMachine mode, but each track is also broken out individually — often with options (dry, live, surround ambience). These play back through the REX-like BeatMachine mode for full-fidelity stretching.

Sure, the package excels for creating Cuban rhythms. But if the "human feel" conflicts with more rigid genres (*e.g.*, dance), it's simple to export the triggers driving the BeatMachine as a MIDI file, quantize it, then use it to trigger the BeatMachine. My only beefs with Intakt: Automation seemed flaky, and it's not multitimbral. But you can load the library data into Kontakt 1.5 or higher for mondo extra possibilities.

Yes, you *can* add some of that *Buena Vista Social Club* vibe — without ending up in the slammer for violating the travel ban to Cuba. *¡Vivo el ritmo! —Craig Anderton*

LISTEN HEAR

RYAN CABRERA: *YOU STAND WATCHING*
(Produced by Ryan Cabrera)

On Atlantic Records and so therefore it is a fantastic production. No. No, not really, but it is mastered very well and you can hear everything just fine. If you still feel the need for that whole effeminate . . . whoops, I mean sensitive, guy thing, then you're in luck. You can hear every breath all up and close like because after all if you are a really, really deep artist then you have to sing all breathy and what not. The songs are okay but there is nothing new here. I say we go back to ugly guys who can write and sing. Go to his website, the opening flash is just awful. I mean down to earth . . . damn sometimes I just have a hard time being sweet. Well as my dear old mom used to say: If you can't say anything nice. . . . —*Jason Lally*

[production only]

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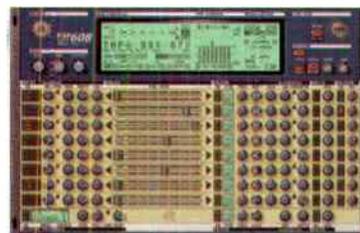
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Power App Alley
by Craig Anderton

CAKEWALK SONAR 5
Got plugs? Rename, exclude, enable, and swap presets

OBJECTIVE Personalize the plug-in menus for improved ease of use.

BACKGROUND When you go to insert an audio plug-in or soft synth, Sonar 5 will show you all available plug-ins — but do you really want the default display? For example, you can rename plug-ins based on function rather than manufacturer so all choruses, delays, reverbs, and so on appear together. Or you might want to exclude some plug-ins from showing up . . . or even exchange plug-in presets with another Sonar user. Here's how.
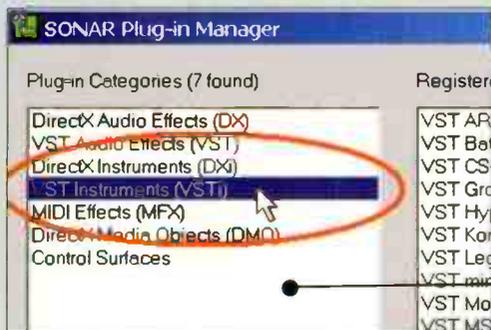
steps

Go *Tools > SONAR Plug-in Manager*.

In the left pane, select the plug-in category containing the plug-ins you want to rename (or otherwise manage). Here, VST Instruments is selected.
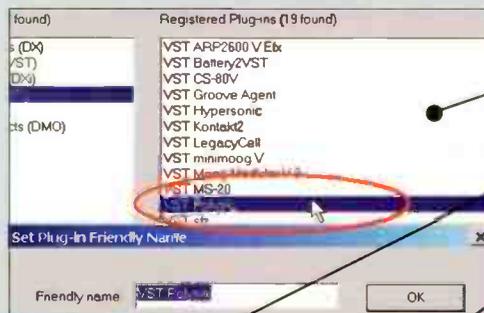
Double-click on the name of the device you want to rename. A pop-up window appears with the name.

Enter the new name, then click OK.

To prevent a plug-in from appearing in the list of available plug-ins, click on it in the right pane, then click the Exclude button.

If you click on a plug-in and the Manage button is not grayed out, that means presets are available for renaming or deleting. Click Manage, then highlight the preset you want to rename or delete.
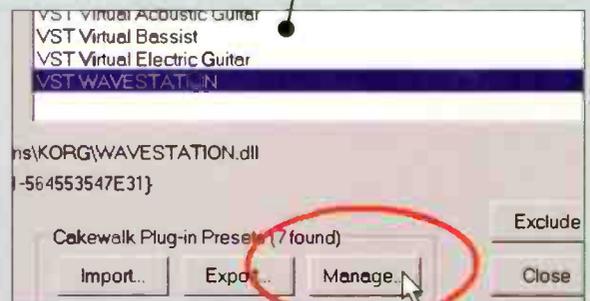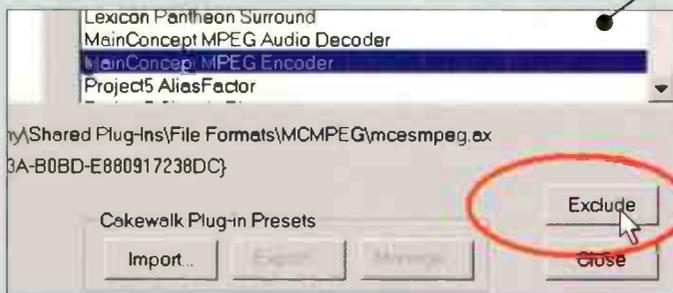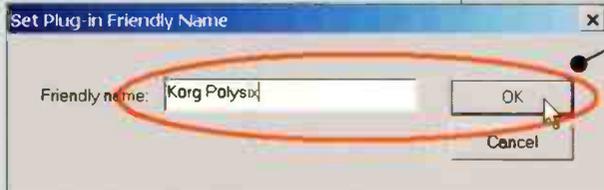
tips

■ If you preface more than one plug-in by the same word, they'll be grouped in a sub-menu. For example, if you rename CS-80V, Moog Modular V2, and Minimoog V to Arturia CS-80V, Arturia Moog Modular V2, and Arturia Minimoog V, a new "Arturia" category will appear toward the lower part of the Soft Synths list.
■ If the Export button is not grayed out when you select a plug-in, its presets can be exported to a file that another Sonar user can import.

Power App Alley
by Craig Anderton

KORG LEGACY COLLECTION
Add truly wild signal processing, courtesy of this flexible plug-in

OBJECTIVE: Process DAW tracks in novel, and perhaps even twisted, ways.

BACKGROUND: Korg's MS-20FX lets you use the MS-20 as a VST-compatible signal processor plug-in. Although the Big Deal is that you can access the MS-20's distinctive filter, an envelope follower, pitch follower, and trigger section — and patch bay! — allow you to do far more than just that.
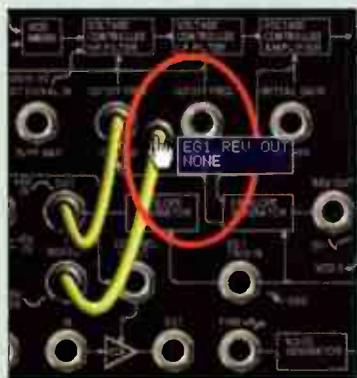
steps

Insert the MS-20FX as a track plug-in, then click on the Edit button.

With the default patch, the Frequency-to-Voltage Converter that tracks the input signal feeds the VCO 1 and 2 control inputs. Turn up the VCO level controls to hear the oscillators tracking the audio signal pitch (or trying to, in the case of complex signals), and play with the oscillator-related controls. Wild stuff!

The sound of the oscillator being constantly on might be a drag, so let's gate it. The default patch has Envelope Generator 2 feeding the VCA. To add a percussive gating effect, turn down all the EG2 controls, and turn up the Decay Time to suit.

To adjust the trigger sensitivity, tweak the Threshold control.

Still not weird enough for you? Okay, let's have EG2 control the Lowpass filter, too. First, remove the patch cord connecting EG1 to the LP filter (click on the end, and drag away from the "jack."

Adjust the Lowpass Filter's cutoff to the lowest desired frequency, Peak to the right amount of bite, then turn up EG2/Ext so it kicks open the filter by the desired amount.

tips

■ This is just the tip of the iceberg for processing with the MS-20FX plug-in. For example, the External Signal Processor also has an envelope follower, and you can limit its response with a band pass filter.
■ If you come up with any cool presets, don't forget to save them!
■ The hardware controller that comes with the Legacy Collection is dedicated to the MS-20, and can make this type of experimentation faster and easier.

World Radio History

World Radio History

AD ORDER FORM

For Extreme Native Recording

Lay down extreme track counts with this native recording powerhouse

The Apple Power Mac G5 is capable of recording over 100 tracks simultaneously — even to the second internal serial ATA drive. Make no mistake: G5-based native systems can handle today's most demanding multitrack recording scenarios via multiple FireWire and PCI MOTU audio interface configurations. And the modest cost of these systems gives you plenty of room in your budget for the additional gear you've always dreamed of.
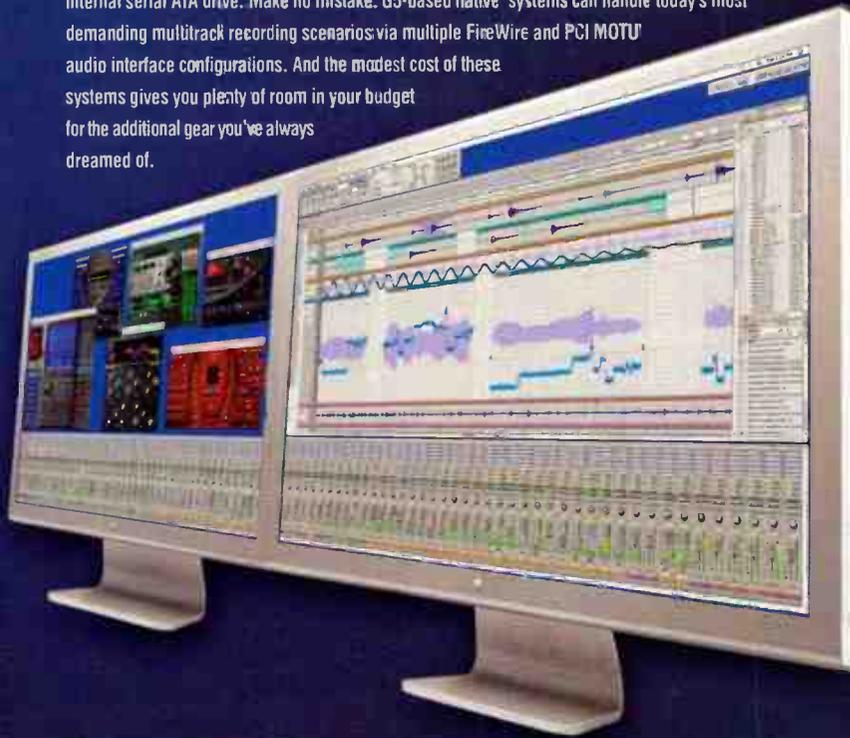
Massive I/O

Connect up to four MOTU FireWire interfaces — that's up to 80 inputs at 44.1 or 48kHz sample rates — on the internal FireWire bus and more via FireWire expansion cards. The MOTU 896HD provides 8 mic/instrument inputs with preamps, individual 48V phantom power and individual front-panel trim control. Quickly adjust input levels via luxurious 10-segment front panel LEDs. The MOTU 828mkII and Traveler interfaces provide 2 and 4 mic/instrument inputs, respectively, along with 8 quarter-inch TRS inputs each. All three models provide 8-channel optical digital I/O, along with either AES/EBU or S/PDIF digital input/output.

A new studio standard

The flagship of the KSM line — and the new must-have mic for any large multitrack studio, the Sure KSM 44 multi-pattern condenser microphone has an extended frequency response specially tailored for critical studio vocal tracking. Its ultra-thin, externally biased, large dual diaphragms provide precise articulation; extremely low self-noise (7 dBA) ensures that the KSM44 captures only the sound of the performance. Inside, the three polar patterns — Cardioid, Omnidirectional, and Bidirectional — offer greater flexibility and uniformity in a wide variety of critical recording applications.

Class A, transformerless preamplifier circuitry provides extremely fast transient response and no crossover distortion for improved linearity across the full frequency range.

The groove.

Spectrasonics Stylus RMX v1.5, the award-winning "groove standard", gets better and better with new features like "Chaos Designer™ Buzz" for stuttering edits, 500 incredible new categorized Multi grooves and 250 slamming new Kits. It's even easier to learn RMX now with the new Reference Guide/Help System and hours of brand new tutorial videos – including one specifically for Digital Performer users!
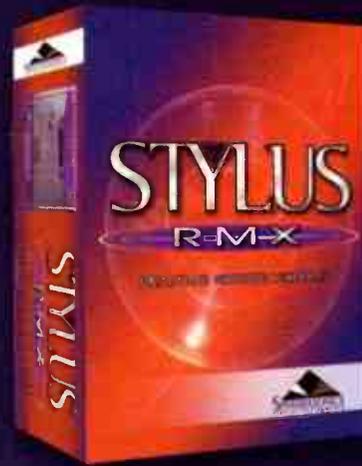
The controller.

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

The control room.

The PreSonus Central Station™ is the missing link between your MOTU recording interface, studio monitors, input sources and the artist. Featuring 5 sets of stereo inputs (3 analog and 2 digital with 192kHz D/A conversion), the Central Station allows you to switch between 3 different sets of studio monitor outputs while maintaining a purely passive signal path. The main audio path uses no amplifier stages including op amps, active IC's or chips. This eliminates coloration, noise and distortion, enabling you to hear your mixes more clearly and minimize ear fatigue. In addition, the Central Station features a complete studio communication solution with built-in condenser talkback microphone, MUTE, DIM, two separate headphone outputs plus a cue output to enhance the creative process. A fast-acting 30 segment LED is also supplied for flawless visual metering of levels both in dBu and dBfs mode. Communicate with the artist via talkback. Send a headphone mix to the artist while listening to the main mix in the control room and more. The Central Station brings all of your inputs and outputs together to work in harmony to enhance the creative process and ease mixing and music production.

Mastering & restoration.

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

Room with a VU

by Kevin Owens

STUDIO NAME: Lava Tracks
LOCATION: Kamuela, Big Island, Hawaii
CONTACT: lavatracks.com
KEY CREW: Charles Michael Brotman
CONSOLE: Oram BEQ 24-channel/8 bus (72 inputs at mixdown)
MONITORS: Tannoy AMS 10s, Yamaha NS 10s
RECORDING HARDWARE: MOTU 2408 (2x), 24 channels of ADAT XT, HHB Burnit Plus and Glyph CD burners
RECORDING SOFTWARE: Logic Pro, BIAS Peak
COMPUTERS: Apple Power Mac Dual G4
MICROPHONES: Manley Stereo Gold, Neumann U87, Neumann KM184, AKG 414TLII, Royer R121s (2x), AKG D112
OUTBOARD: Manley Variable MU Compressor, LA-2A (2x), ADL 1000, Roland SRV-2000, TC Electronic M3000, TC Electronic Finalizer 96K, Digitech 2101, John Hardy mic pres, Bellari Sonic Tube Exciter, Line 6 POD, Alesis Q2
SOFTWARE: Spectrasonics Trilogy and Stylus, FXpansion BFD Drums, Waves plug-ins
ACOUSTIC GUITARS: Santa Cruz Model H acoustic; Eric Sahlin 1990 classical, Ramirez 1976 classical; Epiphone Masterbuilt EF-500, David Gomes acoustic
SYNTHS: Korg KARMA, Roland GR-50, JV-880, JV-1080, JD-800, XP-50, D-50, Juno-60, U-220, R-8, Korg M1, Wavestation, Kurzweil Micro Piano, E-mu Proformance 1, Proteus 1, Alesis D4
EXTRAS: Equitech balanced power throughout; all Mogami cable and patch cords
STUDIO NOTES: Nestled in the heart of pristine *Paniolo* country, on the Big Island of Hawaii, right there next to the banyan tree we're guessing (sadly, the *EQ* T&E budget wouldn't permit an in-person fact check), is Charles Michael Brotman's Lava Tracks recording studio. Built from the ground up under the guidance of acoustic architect Chris Pelonis,

Brotman's goal for Lava Tracks was to create an acoustic paradise in paradise: "I'm an acoustic guitar player who's been fascinated with the sound my entire life," he says, "and that's really a lot of what the studio is about. My life-long quest — and I don't think I'll ever fully achieve it — is to record guitar so naturally that the listener feels like they're sitting there right in front of the guitarist."

Although that quest is still a work in progress, Brotman *has* achieved something no one else has. Namely, bagging the first ever "Best Hawaiian Music Album" Grammy for 2005's *Slack Key Guitar Volume 2*, a compilation he not only performed on, but also recorded (at Lava Tracks), produced, and released on his own Palm Records label. So *something* must be working.

Here, Brotman, Lava Tracks' chief (ok, only) engineer, riffs on how the studio came to be

"Chris got very involved with the kind of music I produce, and he wanted to build an ideal room for cutting acoustic guitar tracks. We knew we wanted a lot of airspace, high ceilings, and large bass traps, and that we didn't want any right angles, no parallel walls, etc., so Chris did the algebra to make sure we didn't end up with any strange standing waves. Beyond that, it was about tuning the room once it was built — making sure it was bright enough but not overly bright.

"An unexpected benefit of some of those parameters is that the room works great for a lot of other things, as well. Vocals sound great in this room, drums sound really bright and live, and electric guitars sound great, too."

Even though the studio is optimized for recording acoustic instruments, Brotman doesn't draw a line in the, uh, lava when it comes to projects. "Depending on what it is and how busy it is around here, I'm up for just about anything," says Charles. "I've done everything from rap to ADR (automatic dialog replacement) sessions for Wayne Newton." Danke schoen, brah. danke schoen!

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