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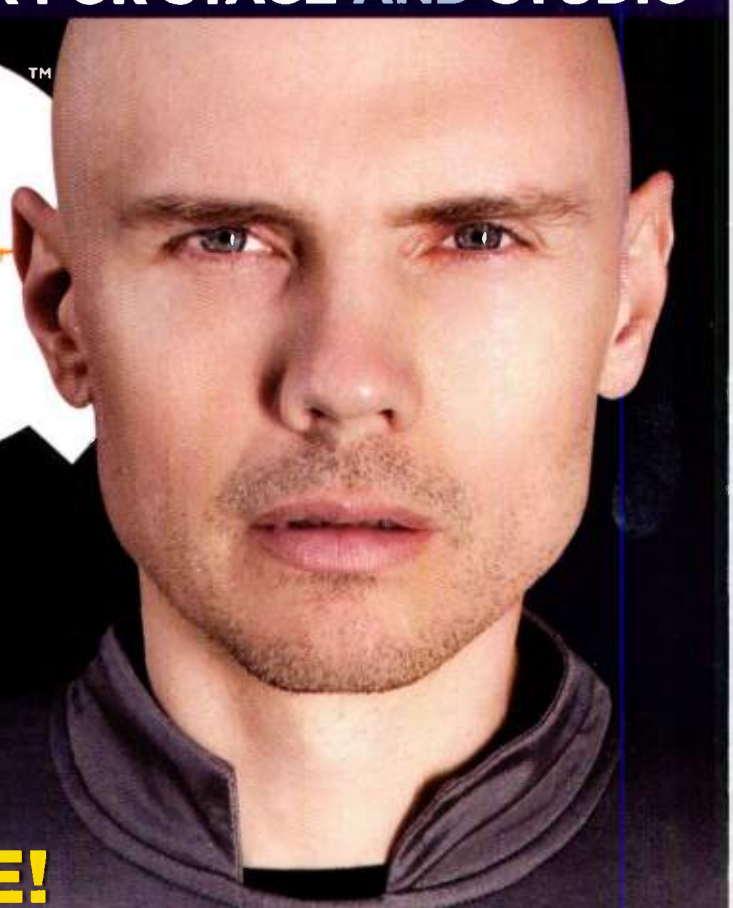

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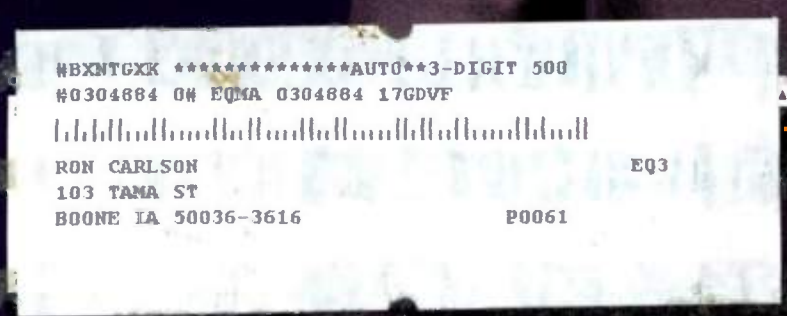

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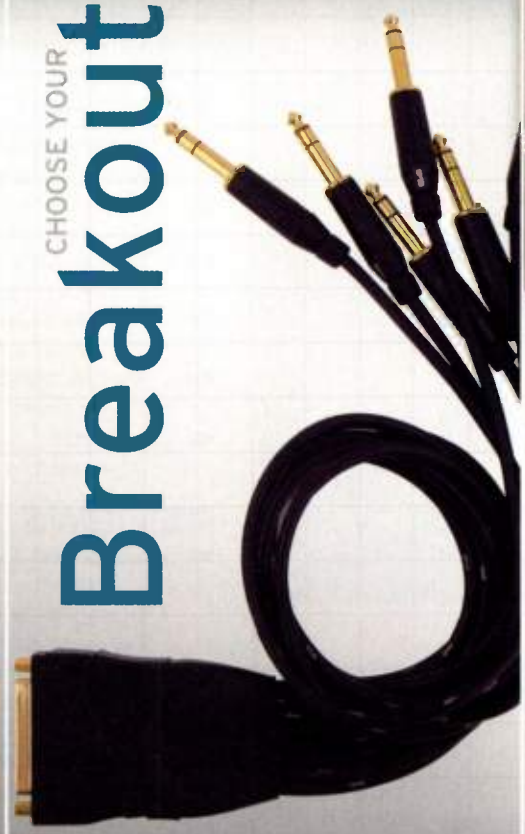

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POWER APP ALLEY

DEPARTMENTS

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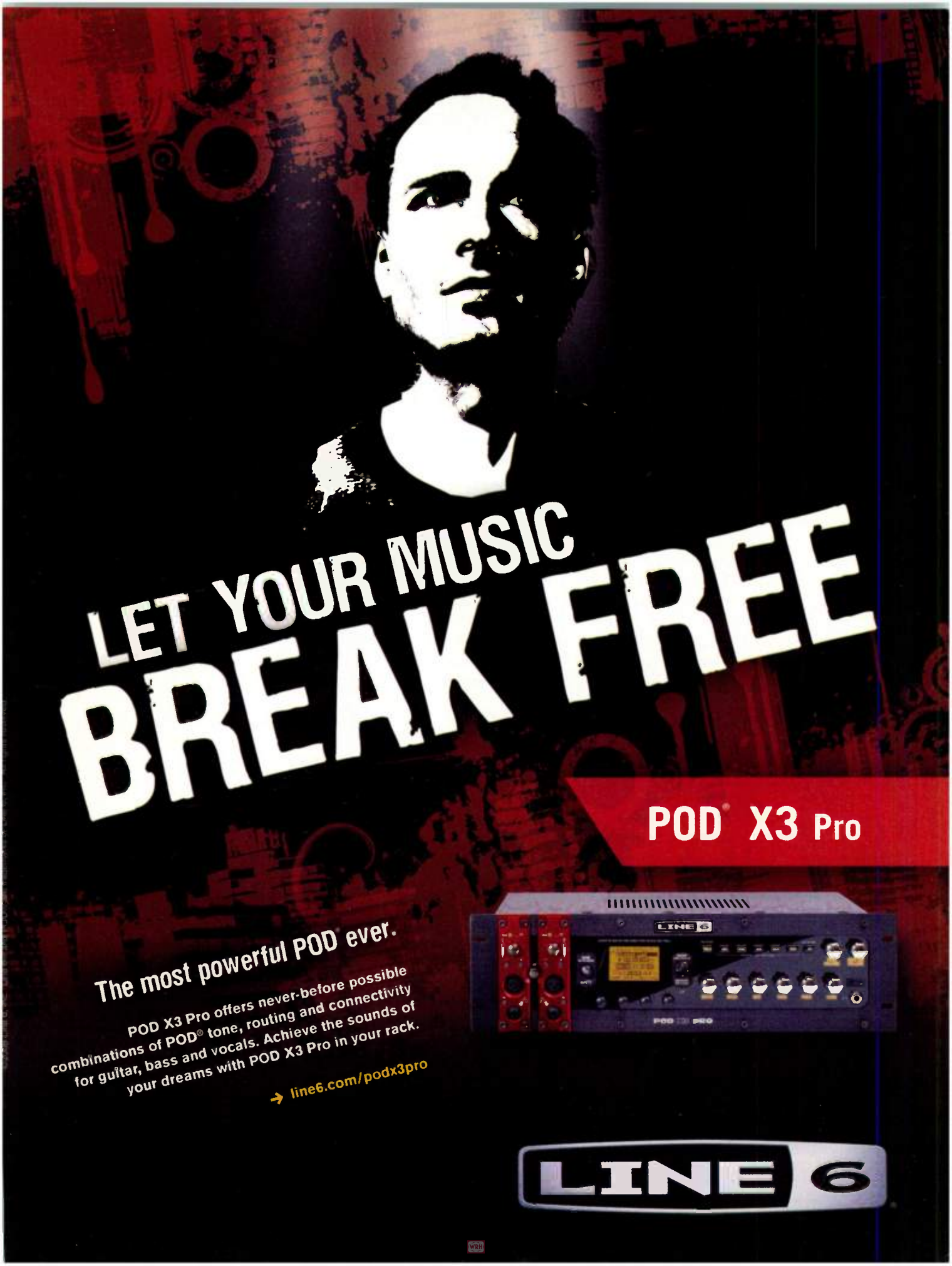
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THE "BACK TO BASICS" TRAP

There's a lot of talk about going back to basics and simplifying one's sound. I don't have a problem with that; for example, layering a boring melody line with more boring melody lines will make for a bigger sound, but won't improve the melody line. In that case, time spent on writing a better melody is a better option than time spent doing tons of layering.

And when it comes to recording, we sometimes see people adding way too much compression or EQ, doing overdubs that aren't really necessary, inserting gratuitous loops, and the like. In the process, they lose sight of the most basic musical component: recording a great performance that bristles with soul, integrity, and originality.

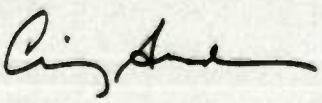
So it's good there's an emphasis on getting back to the right kinds of basics. But if "back to basics" is an excuse for not being willing to try new concepts—even ones that might appear at first excessive—then we've thrown out the baby with the bathwater.

Many thought that rock and roll, a daring blend of R&B, blues, pop, and country, was just a passing fad. Some felt the Beatle's "Sgt. Pepper's" was excessive in terms of using the studio as an instrument, yet now it's considered a classic album—possibly the best of their career. And Phil Spector's "wall of sound" was definitely over the top compared to what was happening at the time, but had a profound influence on pop music.

Today's tools let us do feats that could only be dreamed about a few years ago, yet often, these tools aren't exploited to anywhere near their full potential. Of course, there's nothing wrong with that: Just because something exists doesn't mean we *have* to use it. In fact, I often advise people who are overwhelmed with technology to find their comfort zone, and work within that.

However, *staying* exclusively in your comfort zone may keep you from finding something ground-breaking. It's the people who transposed samples way out of their natural range who uncovered great new options for soundtracks; and we owe looping to the composer who cut a piece of analog tape and stuck one end to the other. Where would the Sex Pistols—or Enya or Queen for that matter—be without huge amounts of layering? And how many tape recorder motors were burned out in the process of figuring out tape flanging?

Sure, don't lose sight of the fundamentals. But in the process, also make sure you don't lose sight of what might be over the horizon.



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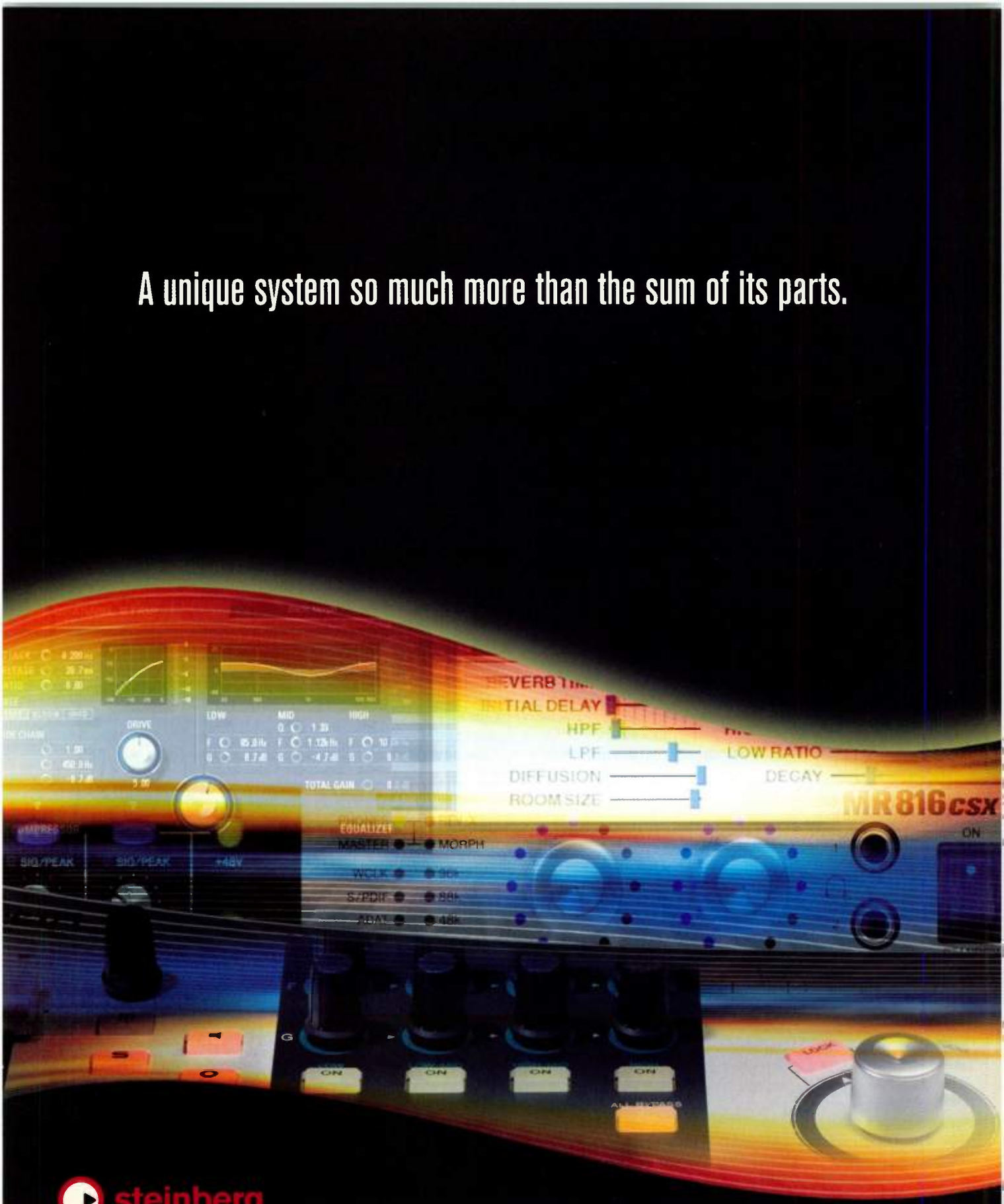

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SOUNDING BOARD

BE FRUITFUL AND MULTIPLY

After reading the article in *EQ* about how one combines multiple amps to get a ballsy blues tone [Signal Bleed and Ballsy Blues—08/08], I was surprised that Mr. Romano didn't discuss how the guitar signal magically fed all the amps. But look at the photo: On top of a half-stack was the magic piece of gear that allowed all of this to occur . . . the Radial JD7 Injector. Buddy Guy has been a Radial JD7 user for several years, both in the studio and live.

Peter Janis, Radial Engineering

THE CASE OF THE MISSING VISTA

I remember when *EQ* was the only serious magazine that covered Windows pro audio software, and appreciate your covering both Mac OS and Windows. But what about Vista? I've been running on a 64-bit system, and there's plenty of compatible software and hardware. We're in a chicken-and-egg situation, and the only way there will be more support for 64-bit programs and drivers is if magazines like *EQ* pay more attention to Vista. Like it or not we're going to be using it, so we might as well get the most out of it.

Stephen Vorenberg

Executive Editor Craig Anderton responds:

EQ was one of the first audio magazines to have a comprehensive article on Vista [02/07], but realistically, the majority of Windows-oriented musicians continue to use XP or Vista 32-bit, which gives manufacturers less incentive to develop 64-bit apps and drivers. However, this may change for several reasons: 64-bit drivers *are* appearing, XP is no longer being sold at retail, Windows 7 won't be out for a couple years, and Vista's performance is being improved via service pack tweaks. 64-bit computing is the wave of the future; the only question is the rate of adoption. As 64-bit computing becomes more mainstream, *EQ* will ramp up the coverage to match.

THE TRUTH ABOUT CATS AND VOLTS

Craig [Anderton]'s answer to the letter "Is Cheating Wrong" [*07/08*] was a bit misleading. The method for measurement is correct, but the statement "The mic represents a small enough load that the difference in voltage with a mic connected or disconnected is negligible." is not accurate. If you put a Y cable on the mic connector (or open up the box) and measure the voltage on pins 2 and 3 with a mic connected, there will always be a measurable voltage drop. If the microphone draws 3mA, for example, there will be 10.4V dropped across the resistors, so the mic will only see 37.8V (or probably a little less, as most phantom supplies are a bit shy of 48V open circuit).

While very few mics require full spec phantom power, a specification exists so that we have something against which we can test and know where we stand.

Mike Rivers

THE BASS WHISPERER

As a bassist and recordist, I read *EQ* with interest. In "Strategies for Singers Who Suck" [08/08], I was glad to see that the whisper track was suggested. Not all singers can have the pipes of a Kelly Clarkson, and most go flat when they try to push or support their voice live to be heard over instrumentation.

As to bass, I don't go for the wall rumbling and floor shaking; as a listener, such deafening experiences leave me wanting to not experience a live performance again. I prefer hearing the bass in sync with the bass drum as a "punch" to the heart.

Mike Ziemski

FACETIOUS REVENGE?

Craig [Anderton]'s Talk Box piece ["The Revenge of the Single," 08/08] ends on a seemingly facetious note with its mention of YouTube. I'm not sure it was intended that way.

The piece is full of brilliant observations. Indeed, few people put on a vinyl LP or a CD to listen for pleasure, and doing so creates a certain segment of temporal experience. YouTube is hella fun, and there's actually a lot of really compelling material that can be squeezed into under ten minutes, including old school clips.

We don't choose the time we live in, only what to do with the time we have. We create for the media around us. I am hoping Craig was trying to make this point, and not deriding YouTube and the "Revenge of the Single." There will always be a place for longer form works; as bandwidth increases, we may see that audience return.

Jack Curtis Dubowsky

Executive Editor Craig Anderton responds:

I definitely was not being facetious, you can take what I wrote at face value. Personally, I felt very liberated when I realized I had options compared to releasing complete albums on CDs—especially because video options are now a reality as well. As one door closes, another one opens. . . .

DUDE, WHERE'S MY DYNAMICS?

I enjoyed David Kahne's piece on producing Paul McCartney [08/08]. I have just one question and follow-up for Mr. Kahne since purchasing *Memory Almost Full:* Why does this record *sound so bad?* The poor thing is flat as the proverbial pancake, hyped EQ, abrasive, and, for this listener, unlistenable. Any intended emotion is gone amidst crinkly brittleness. Hard to believe that Sir Paul sanctioned this.

A clue here may be 'The Kahne Method' sidebar in which he lists the vintage and custom compressors, EQs, and plug-ins used, and the fact that "it's all wired all the time." Sounds more like they are "all *in* all the time."

I'm sorry if I sound a bit upset, but I expected better from musical genius Macca. Maybe he and Mr. Kahne thought this "aggressive" sound would appeal to the iPod/Earbud/MP3 generation. For me, and doubtless others, it is simply audio abuse.

Charles Horton

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

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

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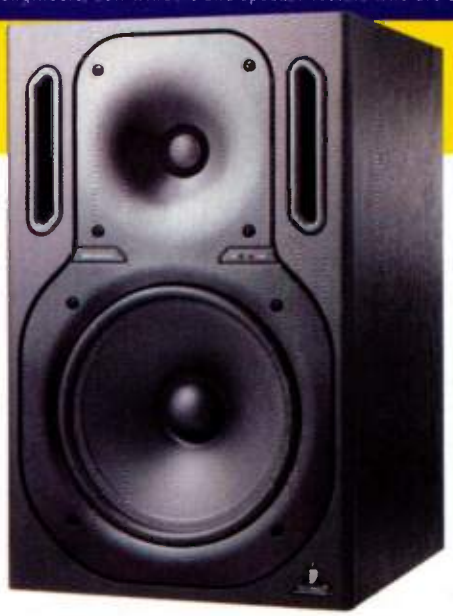

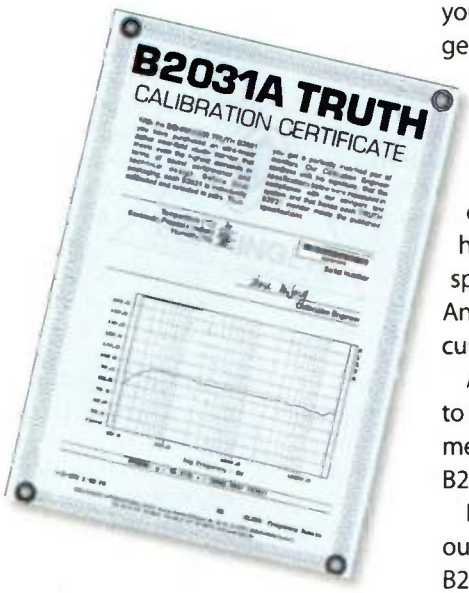

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BACK TO THE FUTURE

The Orb Revisits Its Roots & Updates Its Methods

BY RICHARD THOMAS


MILES COLE

The inside flap of the digipak for the Orb's latest CD, *The Dream*, lists all the standard verbiage one would find on a traditional release: management and crew listings, artwork details, special thanks, and URLs.

But it's the small credit at the top that says the most: "The Orb (this week) are Alex Patterson, Youth, and Tim Bran."

In a manner more akin to the jazz greats of the '50s and '60s, the Orb have become one of electronic music's most influential acts by enlisting a rotating cast of players that have helped invigorate and redefine the band's sound. The one constant over the last 20 years has been the ingenious, incongruent mind of Alex Patterson. From the ambient house bounce to grungy marches, Patterson has constructed an emporium of sound atop the cornerstones of dance, dub, punk, and soul music. *The Dream* teams him up with Dreadzone member Tim Bran, and longtime friend Youth (of Killing Joke), who worked with Patterson on *The Orb's Adventures Beyond The Ultraworld*, and *U.F.Orb*.

"Alex and I have such a strong musical history," says Youth. "When we get together, we tend to go back to our school record collections and reference things from the early '70s right through to the last 20 years between those first albums and now."

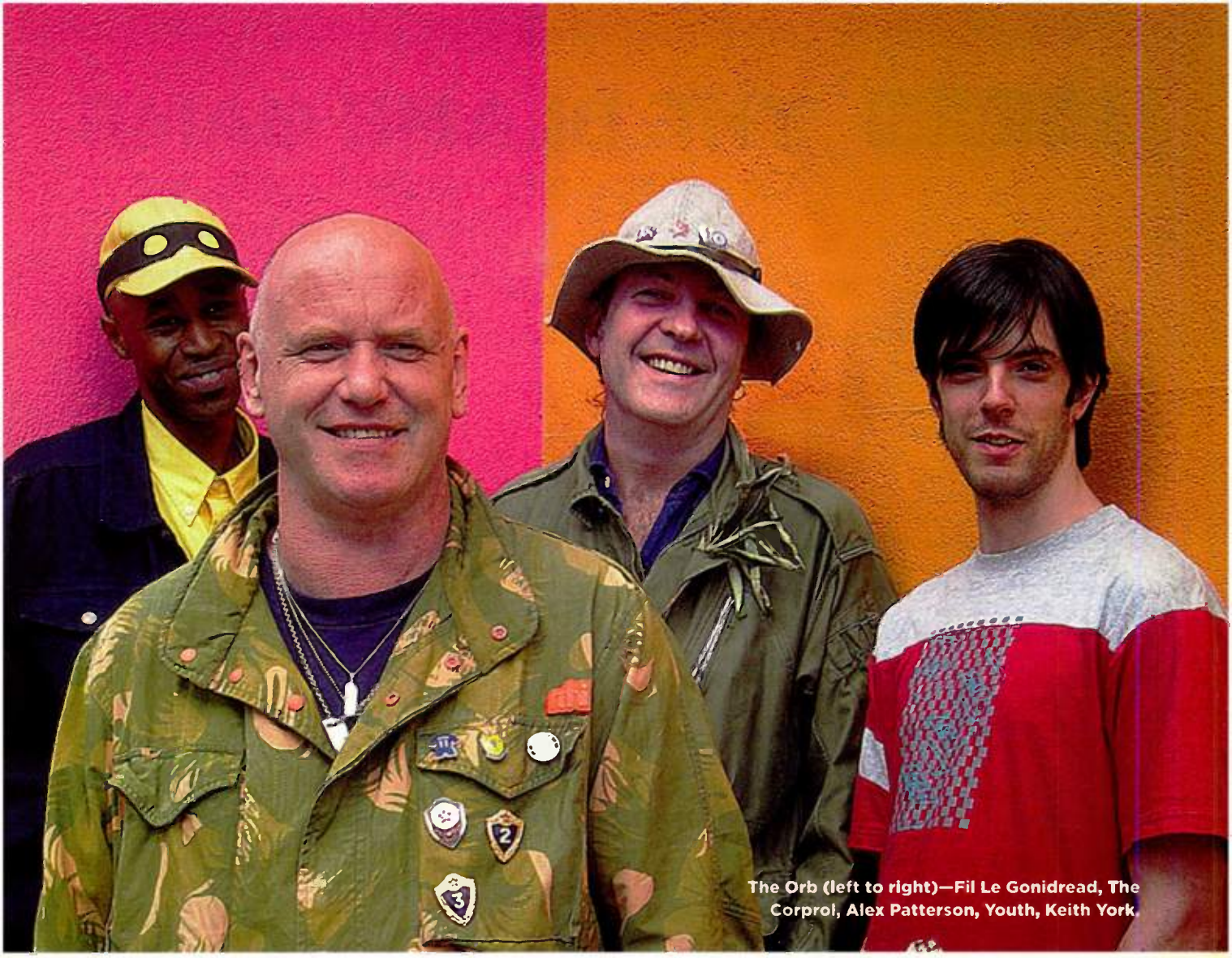
Stylistic parallels can indeed be drawn between *The Dream* and *Ultraworld*—the cover art, for starters—but with two decades of technological innovation separating them, the major differences lie in the production details. Recorded primarily at the Dreaming Cave—Youth's small studio in the back of his garden—the album was started in Pro Tools. Midway through the sessions, however, Youth switched over to Logic due to its swipe-comping capabilities—the likes of which greatly altered the way the group worked.

In the early days, Youth and Patterson would record everything to a 24-track tape machine, and when their two-inch reels ran out, they'd run into a bank of three or four Akai S3000 samplers as a means to archive their jams until more tape could be purchased. Finite digital storage space and the high cost of tape meant the group had to be frugal with their output. While Patterson and Youth initially approached *The Dream* with a focused thriftiness—an ethic the duo says accounts for the more traditional and minimal song-based approach of tracks such as "Vuja De" and "A Beautiful Day"—virtually unlimited hard-disk space, and the ability to quickly and efficiently comp multiple tracks inspired the Orb to let loose. The newfound freedom resulted in the recording of massive jam sessions. When it was all said and done, about 70 percent of the album's tracks could be traced to impromptu jams between Youth (on bass), Bran (on keys), and Patterson (on decks and effects).

"I'm the bloke who made all the mad noises," laughs Patterson, whose mobile phone has now become his go-to sample collection device. "I'm not the one who goes into a computer program and uses something everybody else can get. That's what makes the Orb unique, I'm afraid to say. It's got that quirkiness to it."

If those sample-delic non-sequiturs make up the Orb's pulsating brain, Youth's melodic, sub-aqueous bass lines are the legs that propel the tunes forward.

"I was aiming to get a very melodic, Paul McCartney-meets-Air sound on some of the tracks," says



The Orb (left to right)—Fil Le Gonidread, The Corprol, Alex Patterson, Youth, Keith York.

Youth. "On a track like 'Codes,' I was aiming for a more Giorgio Moroder homage, and a little bit of Norman Whitfield, but there are also some King Tubby bass lines in there."

In addition to a Modern Music Status bass—outfitted with a graphite neck and active pickups—Youth used a Gibson EB-2 semi-acoustic that provided the thick sustain that can be heard in a reggae-styled track like "Lost & Found." Short of a little EQing using Logic's Low Pass Filter, and some glitch-y amp simulation sounds via Guitar Rig, Youth kept the signal path relatively unaffected. The large majority of the album, according to Youth, was processed in the box. Reverbs were an exception, and for those, the group employed the services of a mid-'80s-era Great British Spring.

"They sound like a reverb, but they don't eat up the sound," says Bran of the six-foot long drainpipe, which was used in conjunction with Logic's Space Designer convolution reverb to create the album's extraordinarily deep, dubby sound. "We'd run it live on the desk as an effects send, and then record that back into Logic as a take. If you just stick things through a reverb it can get a bit boring. But if you're playing the reverb off drum loops and spinning delays, it's like the old dub records from Jamaica. That's how they used to do it, and that's an instrument in itself—a *performance*."

With such a heady mix of low-end frequencies and midrange samples, it was important to Bran that he kept the mix spacious and clutter-free. Nowhere is this achieved more effectively than in the title track, where each signal was surgically EQ'd to exist in a niche, and then strategically panned throughout the stereo field to preserve clarity while creating width.

"We wanted to make it so that it was like walking into a forest of sound," says Bran of "The Dream." "I'd use a little panning to lead you around the stereo field and give you space, but, typically, I didn't use too many effects. It's almost like an overture to what's coming."

The Dream is one of the richest Orb albums to date, and, at nearly 80 minutes, it's no light fare. Regardless of who rotates in and out of the Orb, the 48-year-old Patterson shows no signs of slowing down, even if he is traipsing through familiar pastures.

"*The Dream* is something we wanted to reinvent from the first two albums, and just go back to our roots for a little while," says Patterson. "We know that period, and we know the sounds we can use to get people's ears to tweak up. It's almost like visiting an old friend." EQ

PUNCH IN

THE BLAME GAME

Are Labels Truly Dunderheaded When It Comes to the Internet?

BY MOSES AVALON

It's true that the record business is suffering partly because labels were slow to respond to the Internet. But the popular notion amongst musicians that the Internet = freedom, and the labels = plantation is not firmly rooted in reality. Here's the real deal.

HOLD THE REVISIONISM

The problems affecting the labels are not born from CEOs being unable to operate their email. Major labels weren't completely ignorant of the opportunities the Internet presented for their business. In the late '90s, as evidenced by memos and minutes from Universal, BMG, and Sony, the majors spent millions on R&D for Internet distribution models that emulated the film business (think: cable/pay-per-view, but with music streams that result in buys). Then, like a hurricane hitting the shore, a tech *protégé* run by people inexperienced in intellectual property called Napster came on the scene. The principals of Napster wanted labels to *give* them the rights to "distribute" their catalogs. Napster's perception was that labels didn't pay royalties to their artists and, being pro-artist, Napster wanted to make sure that artists were paid royalties from their downloads.

THE ARTIST'S FAULT

Obliging the young start-up wasn't a possibility for numerous reasons—some of which weren't entirely selfish. A fact glossed over by the media when criticizing record companies was that, between 1999 and 2001, there was nary a major-label contract that granted the labels permission for "digital distribution," and artists were not willing to give these rights up so easily. This hesitation stemmed from an earlier incident when the majors had approached their stable for rights to re-release their music on a new widget: the compact disc. Virtually every artist signed over these rights without receiving any money upfront. They were told that the payoff would be higher royalties, because the disc would sell for about $12 instead of the usual $7.99 for a piece of wax. But, in the end, labels ended up charging the artist a "new technology deduction." This actually lowered their royalties to what they received for LPs. Many artists felt duped, and they decided that, this time, they would be smart and negotiate. This stalled the process for years, and it cost both the artists and the labels dearly.

Of course, the labels could not reveal this vulnerability to Napster for fear they would do an end run and go directly to the artists. Napster tried anyway. But artists were even less inclined to give these rights to computer geeks—no matter how hip and "pro-music" they appeared. And that's when things got ugly.

FROM ALBUMS TO SINGLES

Critics claim that labels wanted to sell albums instead of singles because they deliberately want to dilute their inventory—in other words, buy ten crappy songs to get to one good one. That's ridiculous.

The blame falls squarely on the artists and their management looking to receive publishing advances. See, advances to songwriters from publishing deals were based on projected album sales. Switching over to a singles-driven model may sound good from a consumer point of view, but a sudden change would have seriously affected the economic viability of being a professional artist.

Imagine you are an artist and Sony Publishing is going to give you a $500,000 advance based on the fact that Sony was doing an initial pressing of 300,000 albums with 14 songs on it that you wrote. That's 4,200,000 songs going to print worth about eight cents a pop. Now, imagine that Sony is going to try something new. Instead of pressing 300,000, they are going to simply post a few tracks, and see how many downloads they get. The result was as could be expected. This was considered too unpredictable a basis to forecast royalties, which would mean little or no publishing or future album advances. No manager during that time was going let his or her client sign that deal.

DIGITAL ROAMING MOJO

Due to antitrust concerns, there are limitations to the conversations that a major label can have with another major label—or a tech company—regarding a standard for digital transmissions. In other words, if you, as a record company, make a deal with *one* company, you could be required to make a deal with *all* of them. No one was ready to do that in 1999. There were several companies competing for a "standard." If record companies sided with Napster, others who were developing similar services could slap them with an antitrust suit. At the time, Microsoft and Apple were exploring copy-protection solutions. Napster had none. So the majors tried stalling Napster until the big boys could chime in. Between all the various formats and codecs in the making in 1999, labels needed to wait until the tech industry settled on something consistent. We're still waiting in 2008.

WHO CARES?

When you read the opinions of those who think labels had their heads up their asses, remember that the "progress" they are preaching would involve *exactly* this scenario: A world with no advances where everything is driven by advertising, and where all the money is on the back end. In case you forgot, that's the end that is most difficult to collect from.

Labels *were* trying to develop Internet-based solutions in a controlled manner—one that would not upset the current economics. Unfortunately, these important factors were lost on Team Napster, whose average executive was barely 25 years old. And, conversely, labels couldn't appreciate that their precious industry was now in the hands of people who had no patience for red tape or maintaining a standard that was feeding thousands of artists and their families for several decades.

We all know what happened next. Massive litigation and rewriting of copyright laws eventually closed down the free version of Napster. Labels and tech companies had both drawn blood, and the wounds still have not healed. The labels missed their chance to partner up, and now it's a duel to the death. To determine the way your art is treated and distributed is what's on the line. Don't believe for one second that the tech companies care any more about you than the labels. EQ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Pictured in Stratosphere Studio A are (left to right) engineer Geoff Sanoff, Niklas Frisk, Nina Persson, and Nathan Larson.

URBAN CAMP OUT

A Camp Undergoes a Musical Metamorphosis

BY JANICE BROWN

Formed by The Cardigans' Nina Persson, A Camp began as a "side project" in which the Swedish siren sought to explore new musical territory—the first release being 2001's eponymous alt-countrified pop debut produced by Mark Linkous of Sparklehorse.

Fast-forward to 2008 in Manhattan's Stratosphere Studios, where Persson and her felicitous cohorts—including her husband, film composer and Shudder To Think guitarist Nathan Larson, and Atomic Swing founder and musician/songwriter Niklas Frisk—have hatched a whole new set of songs.

Frisk is overdubbing an ambient guitar part—with undulations courtesy of the Fulltone Tube Tape Echo—for "Golden Teeth and Silver Metals." This is the first of a trio of generously effected overdubs the band will add to three different songs during the hour *EQ* crashed the session. They are nine songs into the album, tentatively entitled *Colonia*, which they've produced in studios around NYC in three-day session blocks. According to Persson, A Camp works in highly collaborative songwriting sessions prior to entering the studio. "We get together and put our ideas out there, and then we all help put the song together like a puzzle," she says. "When a song starts to have some shape, I'll record it on a cassette deck. Then, we'll book three days at a commercial studio, and work on entire songs at a time."

Though Larson has a rehearsal/recording studio in Brooklyn, where A Camp managed to do a lot of the overdubs for the new album, the band purposely avoids doing any extensive pre-production. "The idea is that the recordings be very performance-based," Larson notes. "We come into the studio, and there's a certain spontaneity to the sessions—everyone's excited, and we're building the songs as we go."

After the Americana-inspired *A Camp*, and Persson's subsequent work with The Cardigans, A Camp adapted its sound somewhat to its environment. Frisk calls this second production A Camp's "urban album," as opposed to the first, which was written and recorded in rustic retreat. Larson explains: "A Camp had been seen as this Americana act, and it felt a little unnatural to try to recapture that just because it's how the first record sounded. We wanted to try out some different, odd sounds. For example, there are no rock-and-roll guitar sounds on this album—it's more string-based. And we are using some really stupid-sounding synths—like Usher and R. Kelly-style bass patches—that would sound out of context in an alt-country record."

Larson points around the studio at some of the most used instruments and effects on the record: Roland Juno-60 and SH-101 synths, a Prophet-5, an Echoplex and a Roland Space Echo RE-21. "I really like the sounds that are going on in hip-hop," Larson notes, "especially The Neptunes approach—that really dry, clicky snare-drum thing they do."

Guided by Voices' Kevin March contributed live drums to the upcoming A Camp release, which were augmented by signal processing. "In some cases, we'd take the live drums and run them entirely through a

pedal—'Purple Rain'-style, through a flanger, or some cheesy effects pedal," says Larson. "'China Town,' for example, is really pretty, but there's something slightly Kraut-rock about it. It has this Can-like bass line that sort of loops on and on, and Kevin had done this beautiful brush drum part. We took the click track and ran it through two MoogerFooger pedals—a ring-modulator and a delay—and it became this really wet, obscene-sounding thing. Now, this is the first part you hear, and it runs throughout the song."

Recording sessions with engineer Geoff Sanoff at Stratosphere, Loho, and Magic Shop in Manhattan—as well as Mission Sound and Larson's studio in Brooklyn—were about capturing performances, and even technical missteps would provide unique character. Sonic influences included the David Bowie/Brian Eno Berlin trilogy, as well as recordings by the Pretenders and Adam & The Ants—the latter two of which were reference points for live drum sounds. According to Sanoff: "Nathan and I would talk about what drum sound they were after, like before recording 'Here Are Many Wild Animals,' we listened to this early Adam & The Ants song with rumbling floor toms, so I had an idea what they were after."

Sanoff tracked March on drums in a few different studios, with one major miking consistency. "I always used a speaker mic on the kick drum," he notes. "Either a Yamaha Subkick or an NS-10 mounted on a mic stand. Inside the kick drum, I'd use either a Shure Beta 52 or an AKG D112, and, on the outside, the Subkick or NS10 woofer and a Neumann FET 47."

Sanoff set up his overheads—either Coles 4038s or Neumann U67s—over the cymbals, equidistant from the snare. "Some people want to keep the snare out of the overheads," he says, "but I figure if it's a rock recording, the cymbals will get picked up more than enough no matter what, so I don't worry about that so much. I try to keep the snare in the center, and everything in its right spatial place."


Nathan Larson channels Lee "Scratch" Perry on the Space Echo RE-201.

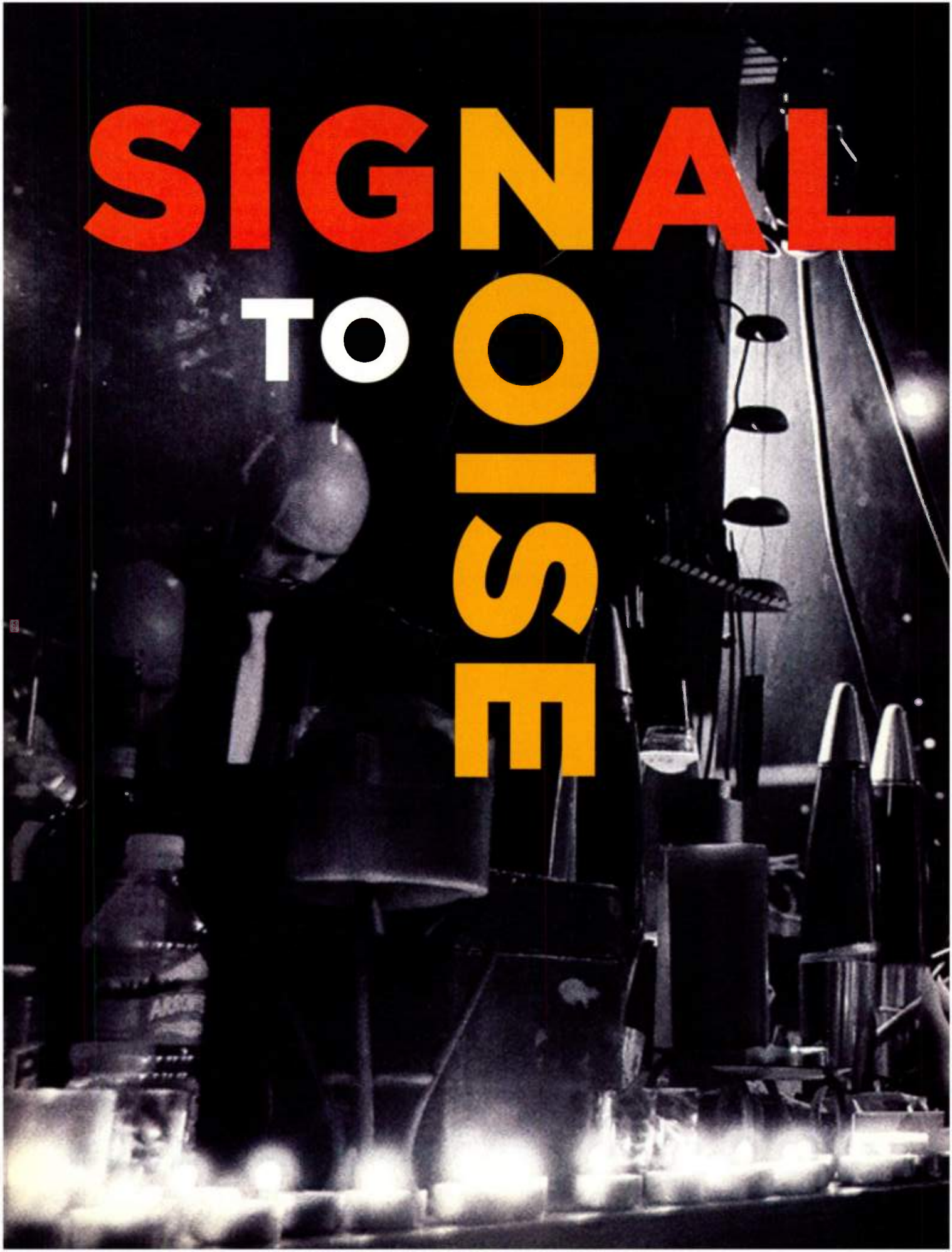
In the days following *EQ*'s visit, A Camp brought in their string "section"— notably Joan Wasser of Joanaspolicewoman, and session cellist Jane Scarpantoni. Both are longtime collaborators who write their own parts. Similarly, multi-instrumentalists John Natchez and Kelly Pratt, both members of Beirut (and the latter also a touring member of Arcade Fire), make up the horn section on the A Camp record.

Sanoff, who has worked quite a bit with smaller ensembles, reveals a technique for getting big-sounding strings. "When you can only afford to hire two or three string players, and you double- or triple-track them in the same room on the same mics, you end up getting this chorusing thing that doesn't work the way it would on guitar or piano," he explains. "It doesn't sound as thick as you want it to sound, so what I do is have the players change seats for the different tracks. With Joan and Jane, I set up four chairs, and each time we'd double or triple something, we'd have them swap chairs. I would also move the mics, so that the sonic build up never quite happens in the same way."

Sanoff used a U47 on cello and an AKG 414 on violin, as well as a pair of close room mics—B&K 4011s during sessions at Stratosphere, and U67s at Magic Shop. "You've got your four mics for each pass, so on any given pass you can mute two mics or keep them," says Sanoff. "By blending the different mics, and subtly panning, you can make the string sound much bigger than it actually is."

A few weeks later, A Camp went up to Firehouse 12 Studios in New Haven, CT, to mix the album with Alan Weatherhead. Here, they continued to experiment by sending tracks—drums, vocals, guitar, whatever—into effects pedals. The recordings were done in Pro Tools HD, and Weatherhead is mixing the record to 1/2-inch tape—a medium Larson compares to Magic Shell. "The same way that magical chocolate shell covers your ice cream, analog tape somehow just encloses everything, and brings everything together."

Weatherhead also mixed the first record, and was given free reign to come up with creative ideas at this stage. Larson describes some of the results: "On this really pretty, very stark acoustic guitar and Wurlitzer-based song, he took the acoustic guitar, and ran it through an [Electro-Harmonix] Memory Man to create this whole sonic space which totally adds something harmonically and texturally to the song. On another song, we wanted to bring a Laurie Anderson-style vocal in during this ornate string break. We wound up running vocals through a low-pass filter, re-recording them, mixing them in with the original vocals, and heavily Auto-Tuning them so the result sounds very computerized in this really interesting way—not at all like Cher!" EQ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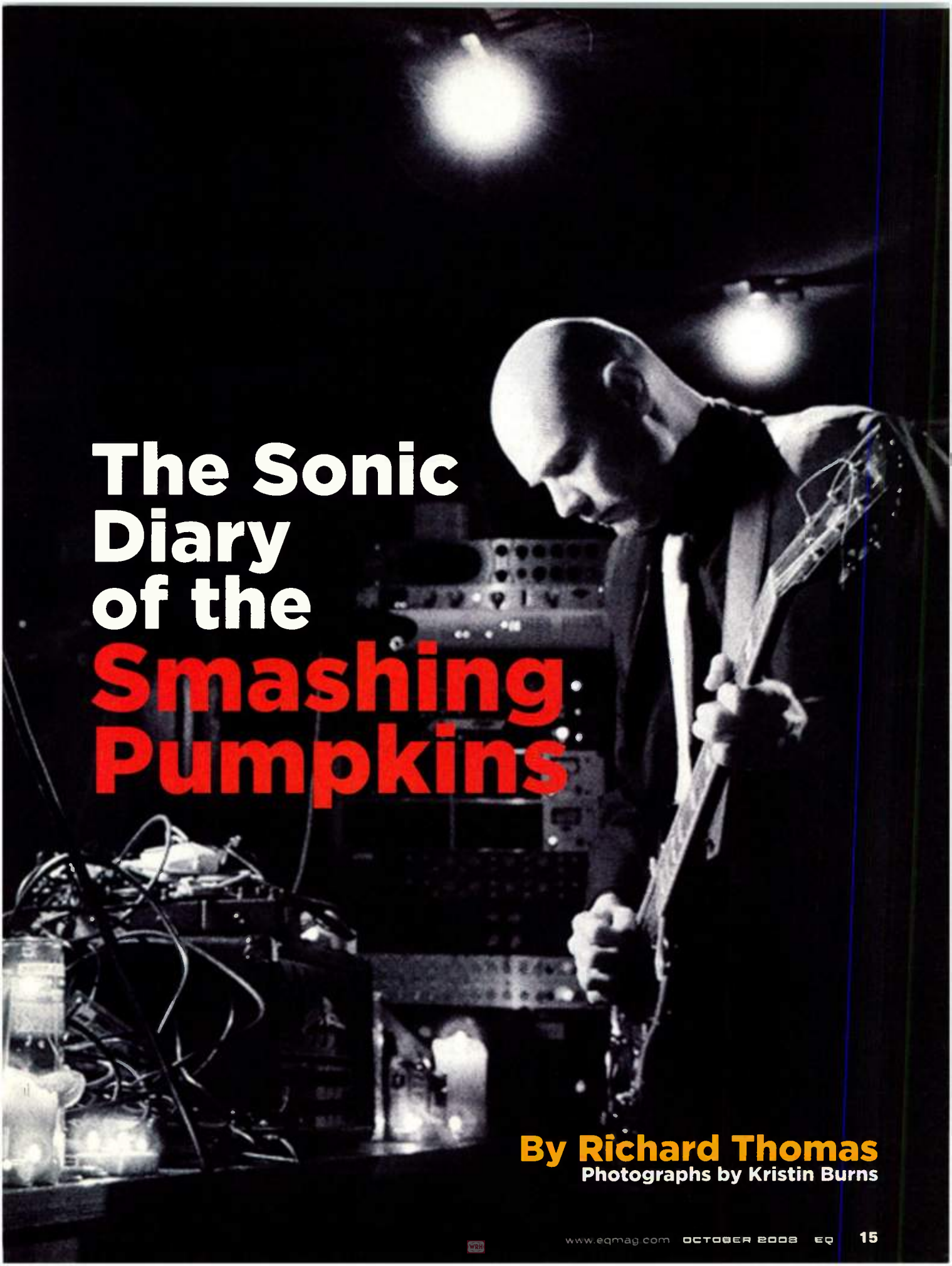
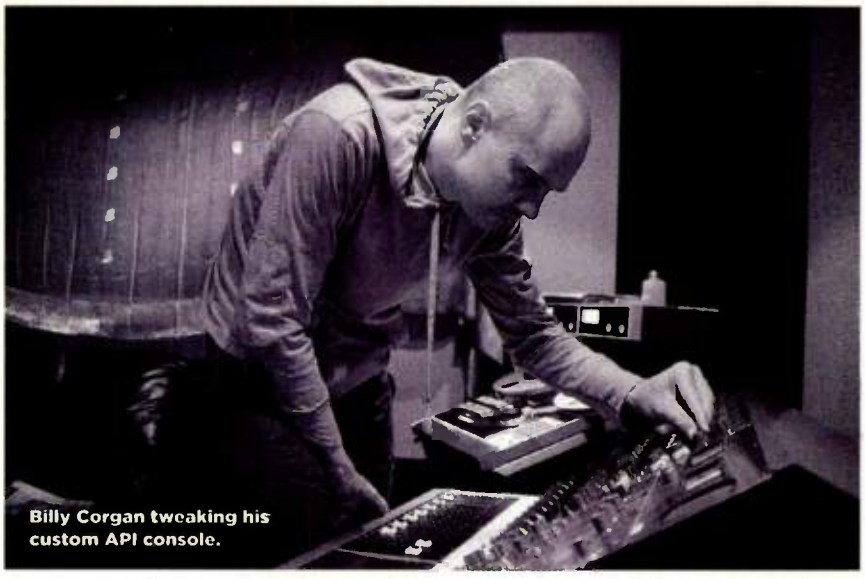


The Sonic Diary of the Smashing Pumpkins

By Richard Thomas
Photographs by Kristin Burns


Billy Corgan tweaking his custom API console.

"I'm sorry, I'm on a tangent," he laughs. "See, I told you. I don't interview anymore. I'm just talking like a normal person."

It's ten minutes into our first interview, and Billy Corgan has gone slightly off-topic. Nothing too outlandish, but he's affable and apologetic nonetheless. The two of us are sitting on the patio outside a nondescript home studio in Los Angeles, where the audio is being mixed for a forthcoming DVD chronicling the Smashing Pumpkins' 12-show run at the Fillmore in the summer of 2007. In two weeks he'll travel to another studio to record "G.L.O.W.," a new Pumpkins track for the Guitar Hero World Tour video game. Corgan also went through facial scanning and motion capture at Neversoft to become a playable character. "Digital me," he smiles, right down to the sheen off his dome piece. There's a lot on tap in Pumpkinland, but for the moment its chief resident is calm and centered. The loudest thing about him is a pair of bright orange socks peering over the top of his black-and-red high-top Nike Court Forces.

That anybody would announce the fact that they were talking like a normal person seems strange, unless that person happens to be Billy Corgan. Frequently misinterpreted and misquoted, it's understandable that Corgan is somewhat of a guarded interview, at least in regards to certain topics. Gear isn't one of them.

"I love talking about that stuff," he says. "I'd rather talk about that stuff than talk about emotional stuff. So yeah, as far as you want to go down the rabbit hole. . . ."

The thing is, the further down you go, the more you realize that the emotional stuff and the technical stuff intertwine like patch cables. Personalities, playing styles, tension, harmony, exploration—everything is interconnected.

Riffs and rifts. Tone and atonement.

The collective dynamic among Billy Corgan, drummer Jimmy Chamberlin, guitarist James Iha, and bassist D'arcy Wretzky manifested itself in one of the most sonically-diverse and emotionally-complex bodies of work in rock history. As individuals, they affected one another just as much with their absence as they did with their presence. They are torchbearers of the Alternative Nation, and their music resonates with hippies, shoegazers, Goths, shredders, and e-music experimentalists alike.

"Thousands of songs have come and gone over the past 20 years, but we can count on one hand the iconic bands that are a staple in the format," says Michael Martin, Vice President of Programming at 98.7 KYSR in Los Angeles. "We test thousands of records in a year, and Smashing Pumpkins are always near the top with multiple tracks. It's beyond the single and beyond the album. It's the band."

With Corgan at the helm, the Pumpkins filtered their concepts through a gamut of accredited producers, engineers, and mixers, achieving unique creative and critical outcomes for each project. The motivation, whether conscious or subconscious, remained the same: Move forward, apply pressure, don't fake it.

"Go back and read the press on us from 1989 to 1992," says Corgan. "People had no clue who we were and where we were going. We were onto something and we followed it through, and it built up into something that sold and was popular. It had its moment, but I think once we crested that wave it was back to a level of experimentation. What we didn't understand were the ramifications it was going to have on the band commercially. You can't build yourself into this superpower and then say, 'I'm going to go back to being arty guy.' They don't want to hear that, and I wasn't sophisticated enough to understand that. Now I am.

"The mainstream world only wants to hear you when you have your s**t together. It may take us three years to get our s**t together to a point where we can make that kind of level of work, and then we'll show up and we'll set the phasers to stun. I'm 41, Jimmy's 44—we still have a good seven-plus years where we can play that kind of music that way. I think 'Superchrist' is a good indication that we're still willing to light stuff on fire."

A blunt force psychedelic jam produced by longtime friend Kerry Brown, "Superchrist" is both a push to the future and a nod to the past. It's the first fruit of a band no longer beholden to a label—*Zeitgeist* fulfilled their one-album deal with Warner Brothers—and rekindles a raw, brazen energy that, to Brown, was a cornerstone of *Gish*-era recording.

"Tell me tell me what you're after. I just want to get there faster." — "Siva" (1991)

The Smashing Pumpkins rose to prominence in the shadows of Wrigley Field on the North Side of Chicago in the late 1980s. Outfitted in cold weather thrift store threads, they delivered punishing body blows of bombastic, cinematic love-rock, their pop appeal perfectly shaded behind a treacherous wall of sound. Destiny handed them an alternative pedigree, but their cover material—"Sookie Sookie" (Steppenwolf), "The Joker" (Steve Miller Band), "Venus In Furs" (The Velvet Underground)—exposed deep roots that would inform their future recordings.

"The Pumpkins looked like they were from Mars," says producer Butch Vig. "To see how they looked and hear how they sounded was one of the reasons why people thought they were really special. If you ever saw that band play live, they could absolutely crush people."

The band had already released a self-produced single for "I Am One" in the spring of 1990 before Corgan contacted Vig about producing a Sub Pop seven-inch for the song "Tristessa." The strength of that partnership prompted Vig to sign on for their full-length debut, which was to be recorded at Vig's Smart Studios in Madison, Wisconsin.

"Billy was very ambitious," Vig remembers. "He wanted to make everything sound amazing and see how far he could take it; really spend time on the production and the performances. For me that was a godsend because I was used to doing records for all the indie labels and we only had budgets for three or four days."

The band loaded into the studio with a modest amount of gear, most of which can be seen in their first few videos. On stage, the band's signature sound was rooted in Corgan and Iha's mid-'70s Strat/'87 Les Paul combination, but the recording centered around Corgan's rig: An early '80s Marshall JCM 800 2203, known as the "Soul Head," run through Marshall 1960A cabinets, all purchased off "some stoner guy" in Chicago for $800. The KT88 tubes in the JCM produce a round, creamy tone that, when used in conjunction with an ADA MP-1 tube preamp, produced the *Gish* tone. Using the low input side of the JCM, Corgan would turn the master volume all the way up, and then use the preamp's volume to make micro adjustments. A host of effects, from the Fender Blender to the Phase 100, were folded in for extra fuzz and sweep comb filtering. The bass parts were recorded with Wretzky's black Fender P-Bass—dubbed the "Rat Bass" for the scattering of white rat stickers all over the face—and played through a Trace Elliot AH300SM.

"Billy was 'green' only in the sense that he didn't necessarily have hands-on experience, but he knew what he wanted," Vig continues. "He's a big fan of Queen and ELO, and those records had big produced sounds, and as much as he didn't know maybe from an engineering standpoint how to do it, I think sonically what he heard in his head, he understood."

The band would collectively hash out the arrangements through exhaustive rehearsals, but when it came time to record, Corgan laid down the majority of the parts. This oft-talked about procedure became a standard practice.

"As good as D'arcy and James are, it was just going to sound better if Billy played it," says Vig. "I think it probably caused some friction, but it was something they dealt with and accepted in the band."

The drums were the one component of the Smashing Pumpkins that Corgan could not reproduce. A jazz drummer by trade, Jimmy Chamberlin paired swing and subtlety with a thunderous intensity reminiscent of legends like Keith Moon and John Bonham. Chamberlin has been a Yamaha endorsee since 1993, but back then his setup was a Pearl DLX Series kit with a 16x22-inch kick and a Yamaha steel snare. As Chamberlin remembers, the kit was miked with Sennheiser 421s on the toms, Shure SM57s on the snare, an AKG D112/Electro-Voice RE20 combo on the kick, and AKG C414s as overheads.

At the time, Vig didn't have a tremendous amount of money to make significant cosmetic changes to Smart, but the shape of the studio's live room—all odd angles and no parallel walls—made for an incredible sound, inspiring the live feel of the band's studio performance. *Gish* was recorded onto a two-inch, 24-track Otari MX80, but few things were recorded *through* the studio's newly acquired 56-input customized Harrison console (Vig relied largely on outboard Summit and API preamps) though he says that Harrison's versatile EQ section and exceptional high- and low-pass filters made it easier to quickly carve out pockets in the mix for Corgan's unique tone. When all was said and done, *Gish* cost around $20,000 to produce, and took just over 30 days to record.

"For me that was the equivalent of making a Steely Dan record," laughs Vig who, two months after wrapping production on *Gish*, traveled to Los Angeles to record Nirvana's *Nevermind*. "Having that luxury to spend hours on a guitar tone or tuning the drums or working on harmonies and textural things . . . I was over the

SMASHING PUMPKINS — THE *EQ* MIX TAPE

"Tristessa"
(*Gish*)
Palm muted guitar chunks, extreme snare rolls, and a mellow break followed by a blistering solo, "Tristessa" is every trademark Pumpkins embellishment rolled into one track. Producer Butch Vig utilized light compression through a combination of Summit and API compressors to preserve headroom and accommodate the song's extreme dynamics, but Corgan's *Gish*-era, attack-style guitar still cuts through the mix like a blade.

"Starla"
(B-side off the *I Am One* single)
An epic, mesmerizing track built up around extended solos, "Starla" was produced by Kerry Brown and recorded through a Soundcraft TS12 board onto a TASCAM MS16 one-inch tape machine. Brown used a Yamaha SPX90 for the reverb effect on Corgan's voice, and an Eventide H3000 Ultra-Harmonizer is responsible for the backwards effect that runs through the first third of the song. "I remember that overdub guitar solo," says Brown. "Just him, the headphones, and the cabinet. You don't hear that much anymore. You can't simulate what you can do with a cabinet in front of you. I mean, Billy was bending notes on a mic stand!"

"Glynis"
(*No Alternative* compilation)
Though it's rarely played live, "Glynis" is one of the Pumpkins' finest non-album tracks, and can only (officially) be found on the 1993 *No Alternative* compilation. An old Speak & Spell "hello" starts the song, and the soupy solo in the middle is the result of double-tracked guitars fed through a vintage Electro-Harmonix Bassballs pedal. The song is a dedication to former Red Red Meat bassist Glynis Johnson, who passed away from AIDS-related complications in 1992.

"Beautiful"
(*Mellon Collie & the Infinite Sadness*)
A result of digital/analog synergy, "Beautiful" is a processional ballad featuring opening and closing orchestral-style arrangements created via MIDI. Corgan handpicked sounds that fit with the song's psychedelic vibe, and then jammed to the track in MIDI, adding and removing notes as he went along. "There's something about that visual connection to my brain that's really good for me in terms of writing," says Corgan. "But let me say this," he continues with a laugh, "can we please get off MIDI? When you're a guitar player, you plug it in. It works; it doesn't work. If it's the pedal, you change the battery. But then you're sitting in front of a computer and you get that spinning wheel of death. . . ."

"Eye"
(*Lost Highway* soundtrack)
Most people know "Eye" as the electro-rock crossover from the popular David Lynch film, but the track began as an instrumental for Shaquille O'Neal. The two were linked up by a longtime friend of Corgan's. Being a big sports fan, Corgan was up for the challenge. He concocted the instrumental before speaking with Shaq, but the two weren't able to meet up to seal the deal. Lynch, on the other hand, thought it was perfect for *Lost Highway*. The track relied heavily on a Kurzweil K2500 for its 808-styled percussion, a Waldorf VST for the synth line, and a 12-string acoustic lined in direct.

"Blissed & Gone"
(*Still Becoming Apart* promo)
With radio samples and distorted percussion sliced and diced in Propellerheads' ReCycle, "Blissed & Gone" is another product of Corgan's *Adore*-era experimentation with loops and samples. "I remember playing the song for Rick Rubin when he came to visit me in the studio, and he didn't know what to say," Corgan remembers. "That's the trip I was on."

moon to think I had found a comrade-in-arms who wanted to push me, and who really wanted me to push him."

But for all its sonic ambition, *Gish* couldn't hold a candle to what came next. After touring behind their first record, Butch Vig and the Pumpkins spent five months recording their follow-up, *Siamese Dream*, working 14-hour days, six days a week. And towards the end of the recording process, after tours had been booked and a release date established, they worked a full seven days. Alan Moulder, whose history with dense guitar bands like Ride and My Bloody Valentine, was asked to mix. He booked two weeks at Rumbo Studios in Los Angeles.

The first song took four days. The entire album took 36.

"Got me a raygun. Got me an altitude. Can't help feelin' something's wrong with every one of you." — "Pissant" (1994)
"When we set out to make *Siamese Dream*, we wanted to go way, way over the top," explains Vig. "We didn't care if anybody thought it was overproduced."

Tack a zero onto the *Gish* tab and you come close to matching *Siamese Dream*'s total cost. Through it all, the tenacity of the group's work ethic was eclipsed only by the pressure to succeed. Along the way, Iha and Wretzky ended their relationship, Chamberlin developed what would become an acute substance abuse problem, and Corgan's creative turmoil pushed him to the point of near suicide. His songwriting, as if voiced by a choleric yet optimistic teenager well beyond his years, hinged on defiance, acceptance, family, and alienation. Of the "hundreds of dumb riffs" they would play, the ones that stuck not only sounded good, they felt good to play.

"I'm a person who tends not to repeat technique, which I guess is kind of suicidal in a way," says Corgan. "Most people look at a recording career as a series of conclusions. I've always treated my recording career more like a journey. I think when any artist gets into a comfortable set of choices, that's where the death of creativity lies."

Months of recording meant lots of time for experimentation and tweaking. To help minimize distractions, Vig and the Pumpkins checked into Triclops Studios in Marietta, Georgia, a cozy space that allowed the band a sort of temporary respite. Unlike Smart, Triclops' '70s style room had high, woody ceilings that made for a modest decay. Vig brought along his API Lunchbox loaded with modular pres for the bass and a few guitar overdubs, but most of the instrumentation was run through the studio's Neve console onto Studer A800s. Corgan's "Soul Head" and Marshall cabinet were still in effect, but he no longer used the MP-1. Instead, Corgan achieved *Siamese Dream*'s highly stylized tone with a litany of DOD pedals and a '70s-era, silver-faced Big Muff Pi. As the guitar he'd used on *Gish* had been stolen, his go-to guitars became '57 Eric Clapton re-issue Strats with Lace Sensor pickups.

"We found a secret weapon on that record," says Vig. "A little preamp in a pedal steel guitar. It wasn't built for a loud guitar. It was built for a low output on a pedal steel, so it had this super high-end white noise gain that gave the guitar this sonic jet sound."

That pedal steel preamp—coupled with an old school tape flanging created by physically speeding up and slowing down the reel by hand—is the sound behind Corgan's otherworldly solo on "Cherub Rock." "Quiet" features hard-panned left and right guitars running through the Big Muff with the tone turned all the way down, while the howling break in the chorus to "Mayonnaise" is nothing but pure feedback created by Corgan's $60 pawn shop "Mayonnaise Guitar."

But Corgan's gear was only part of the equation. The endless overdubs—at least 40 in "Soma"—are well-documented, but Vig says that proper mic configuration is what allowed the parts to congeal. Vig's miking technique was as follows: Corgan would crank up his amp to full gain, and then set the guitar down. After boosting the headphones send on all the mics, Vig entered the room to move around the mics, using the phase-shifting hiss from Corgan's guitar echo as his guide. According to Vig, an AKG C 414 produced the widest spectrum of sound, a Sennheiser 421 accented the midrange, and ribbon mics were used to obtain a smoother sound with quick, yet mellow, transients.

"You can't have 40 guitars that are all full range," says Vig. "There

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"Untitled"
(*Rotten Apples*)
The final track recorded by the original Smashing Pumpkins line-up in 2000, "Untitled" was semi-acoustic home cooking that rekindled the vibes of *Gish* and *Siamese Dream*. The chain for Corgan's solo, one of his favorites, features a DOD FX84 Milk Box compressor and a Shin-Ei Companion Fuzz Wah. "The song was our way of saying 'f**k you' to all those people who thought we'd somehow lost our minds and weren't able to return home," says Corgan. "We were in the studio for what appeared to be the last time, so it was very emotional, and we had only three days."

"The Everlasting Gaze"
(*Machina/The Machines of God*)
"The Everlasting Gaze" is the first track off *Machina*, a highly conceptual piece that marked the return of Chamberlin, but whose course was altered by the departure of Wretzky halfway through recording. The shiny, cosmic grunge that defines the album is encapsulated in this four-minute juggernaut. Corgan switched up to a Les Paul Junior '57 reissue with P90 pickups, but the extra crunch came by running it through a little Crate practice amp, then going direct into the box from the amp's line out jack. "When we *really* wanted to 'go there' we would plug into the headphone jack," laughs Corgan.

"Pomp & Circumstances"
(*Zeitgeist*)
When Danny Elfman had to bow out amicably of doing the string arrangement, Corgan opted to forego their second option for an internal fix. Using an E-mu Emulator II, they built up a shredded wall of sound that was then bounced down and tape degraded numerous times until it was virtually falling apart at the seams. The tonal disparity between the 8-bit E-mu (although it used a data compression algorithm that gave the equivalent of at least 12 bits), an inspired, bluesy solo, and Corgan's soaring vocals—doubled nearly 30 times in true Roy Thomas Baker fashion—give the song its uniquely operatic feel.

have to be places for them to fit. You could have low-midrange, or you could have everything scooped out with a high-pass that's cut at 300 or 400kHz."

The miking tactic seemed almost drum-like, which, given Vig's musical expertise, is a fair assumption. "Maybe from me being a drummer, that's an aesthetic I brought to the table that I didn't even really understand at the time," he says.

The army of guitar signals would later make vocal tracking a strenuous procedure for Corgan. Vig didn't much care for the midrange in Corgan's voice, so to soften that particular timbre he used a Shure SM7 (generally regarded as a more "open"-sounding mic when its rolloff and boost features are engaged simultaneously) through an API preamp and a Summit TLA-100 Tube Limiter, all fed back into Corgan's headphones. Like everything else, vocal takes were abundant, with Corgan sometimes singing for eight hours at a time to make sure his tracks were pitch perfect.

"My voice is really hard to record," says Corgan, smiling. "It's hard to record, it's hard to monitor, and it's hard to mix. I'm Irish, I'm meant to sing sad ballads! My voice isn't really meant for rock, and I'm pretty sure many people out there would agree with me."

He laughs again, and you can hear it a little clearer. His voice. *That voice*, lurking underneath his conversational tone. That unmistakable inflection that can shift from an airy lilt to a nasal, sandpapery growl at the turn of a verse. To some it represents instant alternative rock salvation; a vocal uppercut to the face of the status quo. To others—Bruce Britt of the Broward-Palm Beach New Times, for instance—it's the "most annoying voice in rock." But *Siamese Dream* has gone four-times platinum on the strength of *that voice* because emotionally, it carries with it as much layered complexity and contradiction as the instrumentation that backs it. "Today" was the greatest day Corgan had ever known, not because it really was, but because it couldn't get any worse. Somehow that was enough of a comfort to lure him away from the edge. Somehow, against all odds, the Smashing Pumpkins kept moving forward.

"To the fringes gladly I walk unadorned, with gods and their creations." — "Porcelina Of The Vast Oceans" (1995)
"People don't always articulate their expectations," says Corgan. "I think whenever we would work with producers, they would do their best to try and balance those forces between what somebody would want, what I would want, and what was best for the record."

Before a single note was recorded, Corgan knew he wanted the next release to be a double album. Flood and Alan Moulder, friends since their early days at the prestigious Trident Studios in London, were tapped to co-produce. The band began rehearsing at Pumpkinland, their Chicago recording space, and Billy began funneling cassette demos to Flood for review. Roughly two-thirds of *Mellon Collie & the Infinite Sadness* was tracked at Pumpkinland on an Otari MTR-90 MKII, while the remaining portion was tracked at the Chicago Recording Company on Studer A820s.

"I love recording at 15 ips NAB, but with Dolby SR, because it just adds a whole different dimension to the sound," says Flood. "Apart from the obvious benefits of Dolby, if you tweak the Dolby unit really, really well, it's a bit like adding an Aphex and a dbx sub-harmonic bass enhancer on every channel. Also, the way that tape changes the sound or modifies the sound, 15 ips is *technically* not correct, but I find it to be so musical, particularly on the bottom end. This was very much a conscious decision, and very much a part of the album's sound."

Another conscious decision was to change up the manner in which the group recorded. In the past, the band had only used one room to track, which of course meant only one thing could be going on at a time. Hours spent waiting for one person to finish up their part led to frustration. For *Mellon Collie*, Flood would generally work with Corgan in the A room on the Otari and an MCI board, while Moulder worked with Wretzky and Iha in the B room on a Pro Tools rig slaved to both TASCAM DA-88 digital recorders and two-inch tape. The combination of analog and digital opened up a world of recording possibilities, and played to the creative strengths of *Mellon Collie*'s adventurous spirit. A track like "Thru The Eyes

Corgan utilizing a dual vocal miking technique.

Of Ruby," which contains approximately 70 guitar tracks, would have been nearly impossible to do with tape alone. Likewise, "Porcelina Of The Vast Oceans" contains roughly six sections that were all recorded at different times with different instrument and microphone configurations and then fused together—another beneficial byproduct of editing in Pro Tools.

Guitar and amplification choices were the key differences between *Siamese* and *Mellon Collie*. For the bass, Wretzky switched up from the P-Bass to a '60s era Fender Jazz Bass reissue with Ampeg and Mesa Boogie amps. For Corgan, what sounded great about the *Siamese* fuzz pedal setup in the studio made it sound horrible live. He still had his Marshall 1960A cabinets, but Corgan shifted to a Mesa Boogie Strategy 500 and a Marshall JMP-1 preamp (Corgan also notes that he used an Alesis 3630 to drive extra gain into a Marshall). As the ultimate goal for *Mellon Collie* was to capture the band's live, unbridled sound, Billy largely used this touring rig to record.

"Flood felt like the band he would see live wasn't really captured on record," says Corgan. "So a lot of *Mellon Collie* was tracked by the band at deafening volumes. I mean *deafening*. There was so much SPL in the room that it was physically uncomfortable. Your ears, your emotional resistance, would wear down."

Flood also discovered that Corgan was a much better singer pitch-wise when he didn't use headphones, so he switched Corgan up to a Shure SM58 and had him sing in front of open speakers.

"My experience with U2 taught me that a lot of things you'd expect to become problematic with monitors in the room *aren't*, and by careful use of screening, by positioning the monitors and what you put *in* the monitors you can actually get a lot of benefits," says Flood. "For instance, Jimmy used to love having the kick drum and a bit of snare going through his wedges, which were directly behind him. So if you've got a kit that's lacking a bit of bottom end, you pump the kick and the snare through the wedges and you start to tweak them to get extra weight. We also developed this system whereby we had what was called 'rehearsal mode' and 'tape mode.' In rehearsal mode, everybody was on the floor, the amps were blaring, and you wouldn't have to worry about spills. We had the speakers inside these big coffin flight cases in the back of the room and miked them close up, then miked them about six feet away. Then we'd close the lid. When you were tracking in tape mode, everybody could flick over at the flick of a footswitch and their amps would be quietly purring away in the corner. When you'd give a little bit back to them in their own respective monitors, automatically the sound of the room cut right back and you'd get the vibe of four people playing on top of each other."

For the drums, Chamberlin's core *Mellon Collie* kit was a Yamaha Maple Custom with a 16x22-inch kick, a 22-inch ride, 18-inch and 19-inch Zildjian A Custom crashes, 22-inch swish knockers, and 10-inch and 15-inch fast crashes. Because of his big band background, he frequently changed out his snares, building his kit around the snare and the ride as opposed to the kick. The familiar drum rolls all throughout "Tonight, Tonight" can be attributed to Jimmy's classic 5 1/2x14-inch Ludwig Supra-Phonic.

"From there I go to microphones as far as how I want the drums to sit dimensionally in the track," Chamberlin informs. "If I want the drums up front and aggressive, I'll use a lot of AKG C 414s so they sit in front of things dimensionally. If I want the drums to sit in a rhythm section configuration, I'll lean back towards the 414s and maybe some Shure SM98s. Then maybe go for Shure 12As on the bigger drums."

Mellon Collie debuted at Number One on the Billboard 200 when it was released in October of 1995. Less than a year later it had crested $6 million in sales, and was later nominated for

SIGNAL TO NOISE

"Again, Again, Again (The Crux)"
(*American Gothic* EP)
Another product of the Pumpkins' tenure with Roy Thomas Baker. The exceptionally loud Gibson J-160E acoustic/electric had such a distinctive punch in the lower midrange that it was paramount to pair it up with an electric that didn't overshadow the tone. The solution: A 1973 Telecaster run through a '60s Selmer amp and double-tracked. If *Zeitgeist* is the sound of a world pounded into dust, *American Gothic* is the sound of that world waking up to a new era of possibility.

"Superchrist"
(*Fresh Cuts, Volume 2*)
"Superchrist" pairs the Pumpkins with longtime friend and producer Kerry Brown ("Starla") for a 6/8 psychedelic jam. A custom API console in Studio 3 at Sunset Sound was used for tracking, with a fair amount of trial-and-error determining which instruments sounded best on what channel. With 18 analog drum tracks thrown against the well-worn tone of a 1958 Fender P-Bass (run through a Ampeg SVT-VR head with a SVT-810E cabinet and miked with an AKG D12), "ballsy" doesn't even come close to describing the sound. —*Richard Thomas*

seven Grammys. It was the most powerful statement the Smashing Pumpkins had made to date. Unfortunately, much-publicized events that took place during the group's 1996 tour produced an equally powerful effect.

"Blank page is all the rage. Never meant to say anything." — "Blank Page" (1998)

Death, divorce, and harsh life realizations "that have only recently probably finished playing out," says Corgan, clouded the two years after *Mellon Collie*'s release. By the time Corgan saddled down to write *Adore*, Iha was focusing on his solo album (*Let It Come Down*), Wretzky was a sporadic presence, and Chamberlin was out of the band. Filter's Matt Walker was brought in to replace Chamberlin for the remainder of their tour, but the hole left by the original drummer's absence would significantly impact the creation of the new record.

"I thought I was going to do this really different album," says Corgan. "So typical me, I didn't use any of my gear. Like, *any*. I went out and bought new guitars and strange amps—a Fender Blackface and a Selmer combo, I think. Most of my memories with *Adore* have more to do with programming."

The success of "Eye," an industrial hip-hop crossover track that appeared on the soundtrack to David Lynch's *Lost Highway* instilled a much-needed confidence in Corgan. It was basic electronic production, but it proved to him that he could press on with more sophisticated fare. Corgan hooked up with Brad Wood (Liz Phair, Placebo) and began recording with the band in Chicago during the summer of 1997. Never one to do anything the easy way, Corgan decided to load into a new studio nearly every week. It was catch-as-catch-can recording. If something wasn't working in a new surrounding or couldn't get set up in time, it wasn't used.

"He was trying to create a different environment, quickly and geographically, and trying to avoid certain things that happen when a band settles into a studio," says Bjorn Thorsrud, who has engineered every Pumpkins record since *Adore*.

Material was recorded on a mix of analog and digital formats. Already familiar with Studio Vision Pro for MIDI and audio editing, Corgan used ReCycle to chop up and manipulate drum loops. A Kurzweil K2500 and an Alesis HR-16—the same drum machine used to create the beat for "1979"—were also used for additional rhythmic elements and sequences. Wood's classic EMS VCS3 "Putney" was featured prominently on "Ava Adore." As it was with *Mellon Collie*, experimentation was paramount. Boxes would show up in the post every other day, each one containing a new sample library, vintage synth, or rack module gobbled up from eBay or plucked from the pages of *Keyboard* magazine. Still, the pieces weren't fitting together and, eventually, Corgan and Wood parted ways.

"It was a total crap shoot," says Corgan, who soon relocated to L.A. to refocus his energy. "I was out of depth. There was no process, there was no system, and there was no go-to piece

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of gear. There was nothing. I learned a tremendous amount, but I couldn't tell you what the hell I did."

Billy reached out to Nitzer Ebb's Bon Harris, who contributed additional programming and sound design with the aid of his Nord Modular, Oberheim Xpander, and massive Roland System 100M. But the songs didn't come into full focus until Corgan reconnected with Flood, whose experience with bands like Depeche Mode and Nine Inch Nails made him the perfect candidate to help actualize *Adore*'s hybrid vision.

The dissonance was evident to Flood upon arrival. The mix of disparate Pro Tools sessions and one-inch tape created a textured canvas that proved difficult to homogenize, and the tension between band members was palpable. The band worked at Sunset Sound until reoccurring technical difficulties with the Neve console forced them to complete the project at the Village Recorder in Santa Monica. To further *Adore*'s maudlin, Goth-tech spirit, Corgan assumed a Max Schreck-like persona, emphasizing his shaved head with lighting and make-up and donning long, flowing garb that accented his 6-foot 4-inch frame.

"I *did* go around and proclaim rock to be dead," Corgan laughs, "which was probably the stupidest thing I ever did. I was in my *Adore* personality saying *Adore* personality things like 'F**k the electric guitar!' And of course 12 months later I'm playing 'The Everlasting Gaze.'"

Many fans attributed *Adore*'s stylistic shift directly to Chamberlin's lack of participation, and contrary to favorable reviews and another Grammy nomination for Best Alternative Music Album, Corgan insists "nobody *got* the record." "To Sheila" pumped blood through its mechanized heart, "Ava Adore" flashed her crooked teeth, but the bite wasn't as strong. Chamberlin's raw power was replaced by reverberating, distorted 808 kicks. Shuffle and swing turned into quantized grooves and fills. Predictable ticks marched along in place of glittering cymbal embellishments.

"I don't feel excluded from *Adore*," says Chamberlin. "When I listen to that record, I hear decisions that I totally influenced because I *wasn't* there."

Corgan, mid-session, wandering from instrument to instrument.

"I think Billy felt very much on his own," adds Flood. "It's difficult when you're the artist, the producer, the sound person . . . and suddenly you're left high and dry.

"You know I'm not dead. I'm just living in my head." — "The Everlasting Gaze" (1999)

Chamberlin returned to the Smashing Pumpkins in March of 1999, but another absence would alter the face of the band's fifth studio release, *Machina/The Machines of God*. Flood was once again asked to produce, but unlike *Mellon Collie*, where many ideas were mapped out before a single note was recorded, few were aware of Corgan's creative intent: a concept album about a fictitious rock band fronted by a character whose life is forever altered after hearing the voice of God. As could be expected, the sonic subtext would prove just as esoteric.

The goal was to take the digital lessons learned from *Adore* and apply them to a rock environment. How does one create the sound of a band playing on another planet? Through tape degradation, synth-like mechanized guitars, soaring pads and effects, heavily-processed vocals, and of course, big drums. Chamberlin returned with a custom-made Yamaha green maple kit, but *Machina* marked Corgan's first real departure from his fleet of Fenders, instead using a Les Paul Junior reissue with P90 pickups that often ran through a Crate practice amp. An SIB Varidrive and a host of Moogerfooger pedals were also used to add to Corgan's sonic repertoire. The hazy shimmer in big choruses for "Stand Inside Your Love" and "The Everlasting Gaze" is another trademark *Machina* sound.

"I hope I'm not taking credit for somebody else's work," laughs Alan Moulder, "but I'm pretty sure I created it with a tape delay on a short, slappy guitar reverb going through an AMS Harmonizer. I think I ducked it with compression triggering off the drums."

To help the band gel with the new material, Corgan decided to take the Pumpkins out for a few select club dates in April of '99 while Flood went on holiday. They would return to the studio fine-tuned, ride that live momentum through a weeklong recording session, and then bring in Moulder to mix after another head-clearing break. When Wretzky's commitment to the band began to erode, plans began to change. Though rumored since late summer, it was publicly announced in September that she had left the band.

"Billy and I thought, 'How are we going to do this?'" Flood remembers. "We decided that we were going to have to make a very different kind of record. They saw out their time on the tour, and after that we pretty much went back to the drawing board. Certain songs on the record are survivors from that first period, but it meant a shift in the way the songs had to be formed."

The majority of the songs were recorded into Pro Tools through Corgan's API Legacy board, but the band had multiple mixing consoles to choose from at Chicago Recording Company, so Flood performed a litmus test. He transferred two songs onto tape using a Studer A280, which as luck would

have it, was found in each of the mix rooms. He then ran the tape through each console with all the faders at zero—no EQ, no panning—and then into a DAT machine. When he compared the recordings, the differences were unbelievable. Of the Neve VR72, SSL 6056E, and the '80s Neve broadcast console that Corgan brought in, the SSL won out. Its low-mid punch would help tighten up the record's bright sound. Though Corgan wasn't a big fan of SSL boards, the team found a workaround.

"Howard Willing, one of the mix engineers, knew a guy at Inward Connections who built an API simulation mix bus," remembers Moulder. "The idea was that we were going to replace the mix bus in the SSL with this API one, which kind of 'de-SSL'd' it a bit."

Machina was made with the understanding that it would be the Pumpkins' final album. *Machina II/The Friends & Enemies of Modern Music*—originally intended to be the second disc on a *Machina* double album before Virgin vetoed the idea—received an Internet-only release, but a handful of copies were distributed on vinyl through Corgan's own imprint: the befittingly titled Constantinople Records.

"Erase the schemes that I'm drawn to believe. There's no fear anymore." — "Sunkissed" (2008)

"I know a lot of our fans are puzzled by *Zeitgeist*," admits Corgan. "I think they wanted this massive, grandiose work, but you don't just roll out of bed after seven years without a functioning band and go back to doing that."

A few key decisions had already been made before Corgan and Chamberlin set out to record *Zeitgeist*. Thematically, the record was going to bear down on the country's sordid sociopolitical state, and blunt force analog production would galvanize the ship. Furthermore, Corgan penned *Zeitgeist* knowing his new band members would be both qualified players *and* singers, which allowed him to expand the scope of his vocal parts.

Corgan and Chamberlin began demo-ing at a rented space in Arizona before moving to Kerry Brown's studio in Los Angeles for further fleshing out. Though initial work began with Michael Beinhorn (Korn, Black Label Society), Roy Thomas Baker became the album's primary producer.

"We were working purely on intuition as to what the overall sound should be," says Baker, whose long list of production credits includes Queen's *A Night At The Opera*. "It was supposed to be an analog sound, but it wasn't supposed to be old school. If you're doing everything intuitively, there's no such thing as old and new school. We were going for an audio uniqueness as opposed to sonic purity."

Corgan's new guitar rigs included Diezel Herbert and Einstein heads (the latter for overdubs) and a Bogner Uberschall, again run through his classic Marshall cabinet. He also began experimenting with different model Fenders in preparation for the release of his signature model Strat, but, as Baker recalls, "there were more guitars in the studio than at Guitar Center." Recording at The Village on both a new Neve 88R console and a vintage Neve 8048, the goal was to capture the impenetrable

truth of a live, organic performance. As Corgan isn't generally a punch-in player, all the guitar parts had to be replayed from the top down, which at times put both Billy and Jimmy in even more visceral situations. Drums for the nearly ten-minute epic "United States" were recorded in one take.

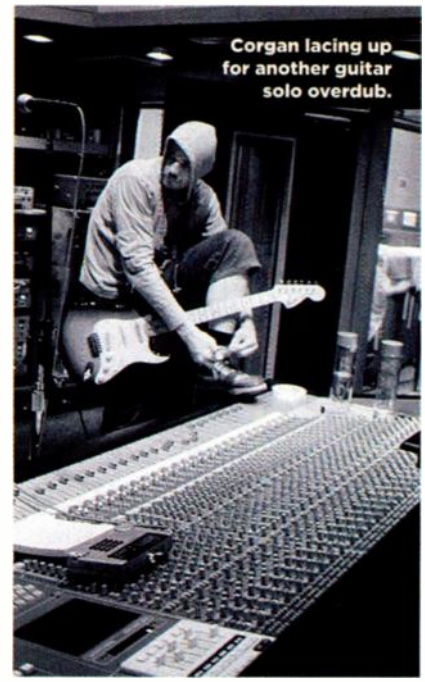
"Jimmy is probably one of the most unique drummers I've ever worked with," says Baker. "Even when he does something he considers bad, it's still better than 98 percent of the people out there at their best."

The drums were recorded in Studio A at Los Angeles' Sage and Sound, a spacious room with 18-foot ceilings and a fully restored Neve 8048 console. The drum and overhead mic configurations didn't change much from the *Gish* days, but the room was miked with an AKG C24. Chamberlin also switched to his now-favorite crash—a lush, dark 22-inch Zildjian Constantinople—and downsized his kick from a 16x22-inch to a 14x22-inch to obtain more resonance and a different shell sound. Another tactic he used to employ fuller sound in his drums was to customize the bearing edges to 60 degrees instead of 45, which Chamberlin says pushes the sound *around* the drum instead up back of to the drummer.

"Roy was the only guy that really noticed that phase cancellation," laughs Chamberlin. "That guy hears things that nobody else hears! I learned more with Roy Thomas Baker in those four or five months than I have ever learned in my entire recording career."

In addition to Baker, former Pantera and Soundgarden producer Terry Date assisted in the final stages of production. For Corgan, Dates' straightforward approach to the songs "helped them resonate on a physical level," and was a good foil for Corgan's complex methodology. Mixing was also a very absolute process.

"Everything had sort of an on/off switch," explains Baker. "So instead of having various degrees of volumes, we'd have the approach of, 'It's either on or it's not.' Billy would say things like, 'I can hear it, but it should either be a lot louder, or a lot quieter.'"


Corgan lacing up for another guitar solo overdub.

Corgan, Chamberlin, and Baker took their methods even further during the mixing of the *American Gothic* EP. "We did everything by hand . . . multiple hands," laughs Baker. "I was sitting on one end and Billy and Bjorn

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[Thorsrud] were on the other. Jimmy was maybe standing back and listening to the overall mix—leaning forward and turning something on—and everyone had different faders. Everything got progressively louder and louder, it was like a race to see who could reach peak volume the fastest! We had a good laugh doing that."

The four-song *American Gothic* represents some of the Pumpkins' best and most exciting material to date. It also signals a potentially new style of "bite-sized" recording that seems to fit with Corgan and Chamberlin's current creative mindset: smaller packages, single producers, streamlined concepts. Corgan isn't one to force the issue these days, and now that the Pumpkins no longer report to a label, anything goes.

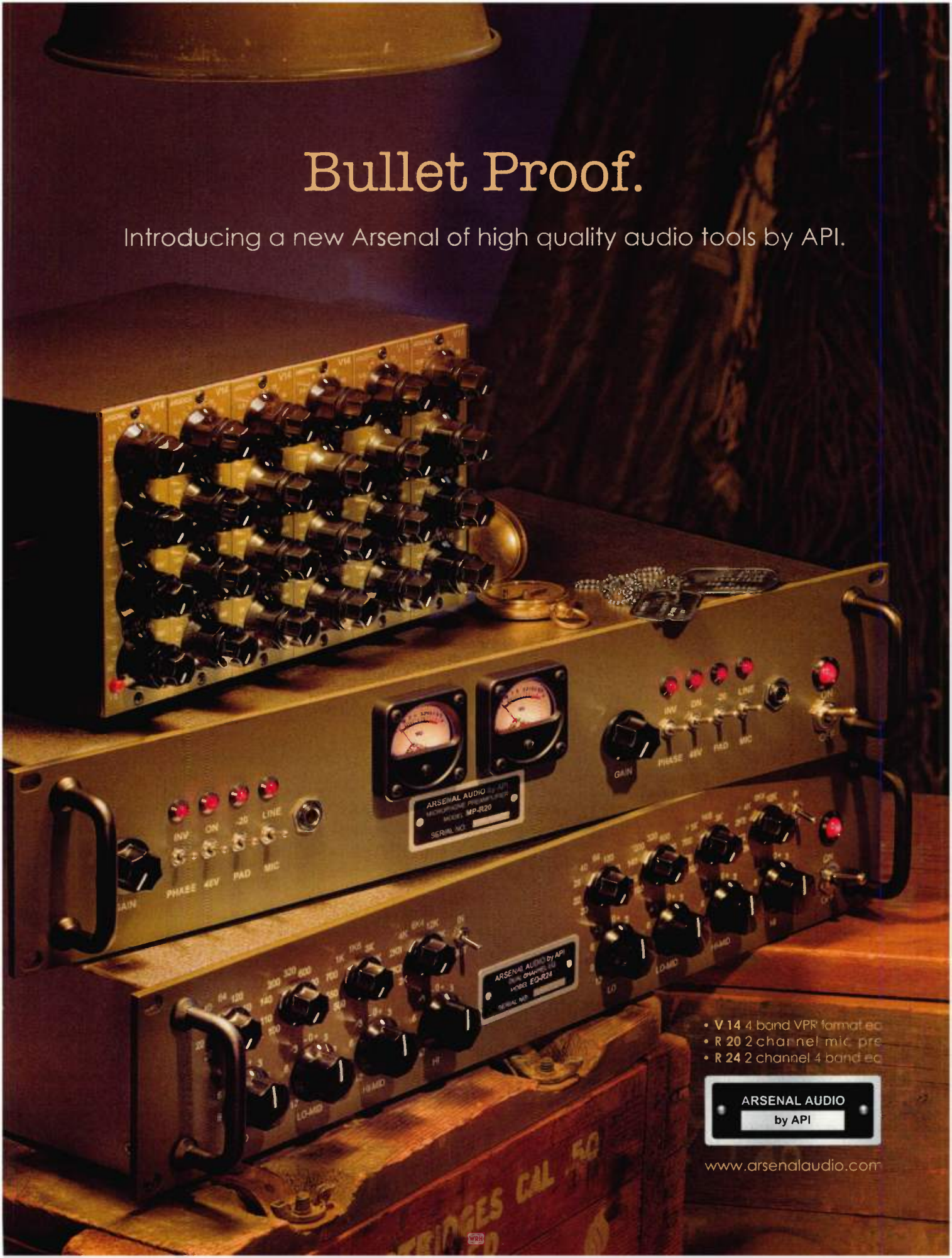
"I know the next record is going to be really psychedelic," says Corgan. "I don't think the Sabbath influence is going away anytime soon, but I'm thinking more late '80s/early '90s English shoegazer mixed with '60s psychedelia and '70s funk. I can hear it in my head, but that doesn't mean it'll ever get out of my head."

Fans can expect a Smashing Pumpkins 20th Anniversary Tour sometime in late 2008, as well as the Fillmore live DVD release. But spring of 2009 is when things should get really interesting. As this article is being written, SmashingPumpkins.com is petitioning fans for original photos from 1987–1992 in preparation for the release of a *Gish* boxed set, which may include everything from demos and B-sides to revisited versions of old songs. The group also has archived performances of their first 40 shows, warts and all. As they have no label contract in place, the size of the boxed set is to be determined, which is good news for superfans, as Corgan is no stranger to releasing Herculean sets of material. The Pumpkins will also embark on a small-scale tour to support the release, which means *Gish* songs, *Gish* gear, and intimate *Gish*-sized venues. Need more message board fodder? Corgan plans to give each and every Pumpkins album the same treatment. Does all this historical activity signal a break in fresh songwriting? Not a chance.

"This should now be where I prove what I've always felt I'm capable of," says Corgan. "There's nobody in my way, there's no MTV not playing my video, there's no gatekeeper. If I can truly do phenomenal work, it will be heard, whether it's acquired for free or bought, it doesn't make any difference. There's nothing standing between me and an audience.

"Look, we hit *massive* homeruns," he continues. "We never followed them up. We never took the safe, obvious next step, and I think that gets lost. We're not a milk-it band. We never *were* a milk-it band. There's that old saying, 'If it's on the cover of *Time*, it's too late.' By the time people got around to understanding what we were doing, we were gone. *Now* is the time to prove our mettle." EQ

Richard Thomas interviewed the RZA for EQ's *Wu-Tang Clan cover story in 01/08. Find more of his work at www.miningthelandfill.com.*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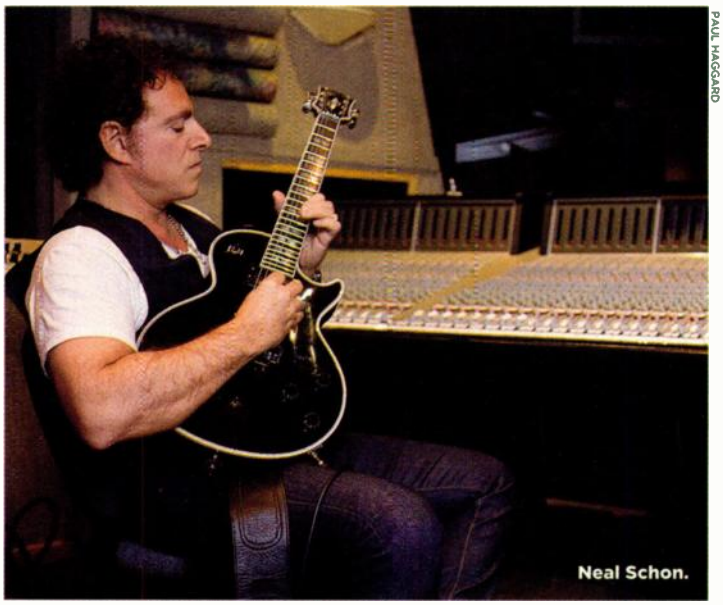

PAUL HAGGARD

Neal Schon.

NEAL SCHON RETRACKS JOURNEY

by Michael Molenda

Unless you truly live in a cave without a satellite dish, you already know that Neal Schon discovered Journey's new singer, Arnel Pineda, by watching YouTube—ultimately making both musicians national heroes in the vocalist's homeland, The Republic of the Philippines. The other part of the Cinderella story is that Journey's profile is currently hovering high above the ranks of the nostalgia circuit. It's almost like the former "biggest band in the world" is pulling a Rocky, and taking another run at the title—some 20 years after the hit-making glory years with Steve Perry at the mic.

The band's return to form isn't just musical. Journey is also embracing new music-distribution strategies, releasing its recent CD/DVD set *Revelation* [Nomota] exclusively at Wal-Mart. The collection includes 11 hits recut with Pineda (a stipulation of the Wal-Mart deal that Schon initially wasn't down with), 11 brand new tracks written mostly by Schon and keyboardist Jonathan Cain, and 14 video selections on a live-concert DVD. *Revelation* was produced by Kevin Shirley, who helmed Journey's *Trail By Fire* in 1996, and has also worked with Led Zeppelin, Rush, Aerosmith, and Iron Maiden.

One of the interesting things about the Journey recording process is that the band members track basics almost totally live—like some '60s throwbacks or feral indie mavericks. So if you tag Journey as a classic, corporate-rock hack that painstaking overdubs its tunes piece-by-piece to ensure maximum radio friendliness, well, you'd be as wrong as wrong can be.

I think it's pretty ballsy that a veteran band of Journey's stature actually rocks it out live in the studio like an old blues band.

We've never known how to do it any other way as a band. After we agree on the arrangement of a new song, we go straight in and cut it. If you can't remember the structure in your head, you just write down some notes. That's it. In Journey, you play the song—start to finish. For the *Revelation* sessions, I'd sometimes play the rhythm guitar live, and, other times, I'd play the leads live, and then overdub the rhythm part. I can't remember what was what. But if I was going to overdub a solo, I'd get right in there after the basic track was cut, and lay stuff down before I started thinking about it too much. I like the feeling of playing on the fly. Things tend to come out more naturally that way.

Do you feel that playing live with the band drives you to perform better than overdubbing parts individually?

Well, I actually prefer overdubbing in the control room because I have tinnitus. When everything is loud and the room is ringing, I tend not to perform that well because I can't hear tuning or pitch. What works best for me is to get a nice, big sound, and then stand in front of the mixing board with the tracks playing back at a very low volume.

Do you typically go with complete takes for your solos, or do you cut-and-paste bits from different versions?

Most of the time, I like going with one full take. Kevin [Shirley] definitely likes to mess around with Pro Tools. I'm not opposed to it, and if Kevin came up with an edited solo that was equally as interesting or better than the full-take version, I flew with it. I would do four or five takes, and he would usually use all of the first one, or all of the second one, or a bit of one and two.

Do you just plug into an amp and let it fly, or do you already have a sound in your head that you're trying to capture?

I knew we needed to jump on things in order to make the two-month deadline for delivery of the album, and what helped me do that without worrying too much about my tone was a combination of three things: my signature Les Pauls, a Diezel amp, and a Boss GT-6. I'm very familiar with the way the guitars sound—I've been using the same pots in every guitar I've had for the last 20 years—and the Diezel delivers a nice, smooth, and predictable tone. I use the GT-6 for effects such as chorusing, and I've spent a lot of years programming that little thing.

How did you mic your amps?

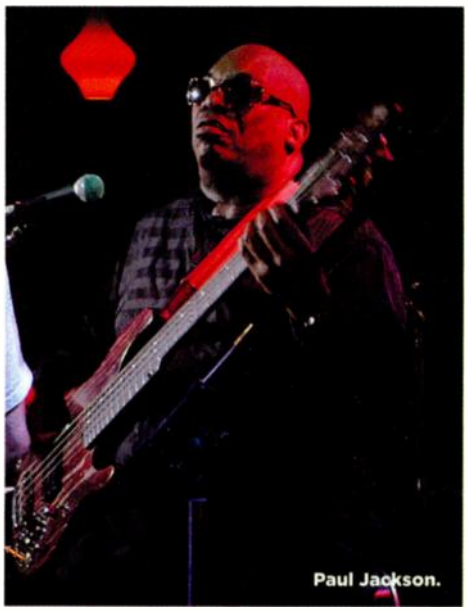
Because we were cutting live, my amp was in a big closet off Studio A at the Sausalito Record Plant. Jonathan's piano was isolated in a side room, and the drums and bass were set up in another room. I used some Royer ribbon microphones positioned close to the speaker cabinet, as well as further back in the closet. I was really happy with the way those mics sounded. When I'd come back in the control room after a take, the playback sounded almost identical to the guitar tone I was hearing live in the room. That was a nice shock. It's usually, "Wow—that's *not* what my guitar is supposed to sound like!"

As you are a very melodic player who also shreds, did you need to change up the gear or the mic positions to capture different levels of tonal articulation?

No. I didn't change the amp heads, the speaker cabinets, the mics and mic positions, or anything. Once I got a good sound, I stuck with that setup. If I wanted a cleaner sound for a rhythm part, I just turned down, or I brought in a Telecaster once in a while. We only had two months to record 26 songs [*Ed. Note: The band recorded more songs than were released on* Revelation], so I needed a simple setup that would work for everything. If we had another month or two, I would have experimented a bit more—perhaps using three different amp heads with three different cabinets.

How do you always manage to uncork such "sing-able" solos?

I really pay attention to melody, because a lot of guitar players don't. It's definitely a challenge to play something really melodic in a short amount of time—something that carries over from a vocal line and catches the attention of not just casual listeners, but other guitar players, as well. I always like having a good beginning and a good ending. The middle part is on the fly, because I like a solo to wander a bit. But that's just my style. After all of these years, I still can't tell you what scale I'm playing. My style is a mishmash of everything I like. I throw it all in and make some Cajun soup. EQ


Paul Jackson.

TRACKING WITH JACKSON

by Buddy Saleman

Paul Jackson is a legend—a force of nature that, during his solo work and tenure with the Headhunters, shaped how musicians view jazz, funk, and fusion bass. Recently, Jackson entered San Francisco's Potrero Post to track the funky *Detour to Oakland* by the EastBay Messengers with engineer/producer Jerry Stucker.

What was the main signal path for the EastBay Messengers sessions?

Stucker: Paul splits his signal between a direct line going into Pro Tools via a Countryman direct box and a Roland V-Bass synthesizer. This gives him the ability to transform his sound into whatever he pleases down the line, while still maintaining some level of clean, unadorned tone direct from his bass. Typically, there is no compression or limiting, as Paul likes to be in control of his own dynamics, and he isn't comfortable having to change the way he plays in order to work with dynamics processing.

Jackson: I go for a very balanced hand-to-hand technique that documents the fine details of my sound, so I want few effects and things compromising what I'm playing.

Stucker: Actually, one of the most critical aspects of the "signal path" and recording process was getting a perfect monitor mix in the control room, because Paul hates wearing headphones. We struggled for hours to get it just right. Paul wanted the drums louder than the rest of the band and his bass, so that he had to work harder to get the tone he wanted. It's very much akin to what he likes to do onstage.

Can you detail your bass?

Jackson: This is the ESP Paul Jackson D bass + C Part 2. Its name is Mishiko. My first one was named Geraldine, after the Flip Wilson character. Although it has five strings, it's actually played as if it was a 4-string bass. I just like using the extra string to play drones. The Roland V-Bass interface is built right into the bass, as it is a piezo system, but I made sure they used some good wood, too. As far as I'm concerned, the nature of the bass is to produce a good sound *without* any electronics.

Many sessions these days lay down a direct track, an amp track, and an effect track for the bass. Why didn't you use an amp?

Jackson: I'm not against amps—my favorites are from EBS. They have a beautiful sound. But, in the studio, I want a flat sound—no amp coloration. This philosophy came from my early days of playing acoustic upright bass, and it has kept with me.

How did you construct the bass tracks?

Stucker: A favorite technique of Paul's is to record his bass lines in sections, and then create a whole track out of the parts. We would record the verses with all the ideas and playing styles he had in mind, and then mix and match them across the song. Typically, he would use his direct bass tone for these parts. When we got the chorus, he'd often go for a completely different feel, and he'd bring in the V-Bass, as well. We would combine the synth's vintage analog models and weird delays to get a unique—and sometimes very odd—sound that we would put behind the original clean bass parts. The blend is absolutely gone.

How can a bassist prepare to deliver his or her best performances in the studio?

Jackson: The main thing is to love what you do, but, after that, there's no replacement for practice. I still practice after all these years because I always want to know what I can get from the instrument—and that means using my hands, and no effects. You can make a bass sound like anything in the studio, but great bassists deliver everything a track needs with just their heads, hearts, and hands. This is also why it's still important for bassists to listen to the players who came before them. The challenge of being fresh is to hear something solid from the past in a new way.

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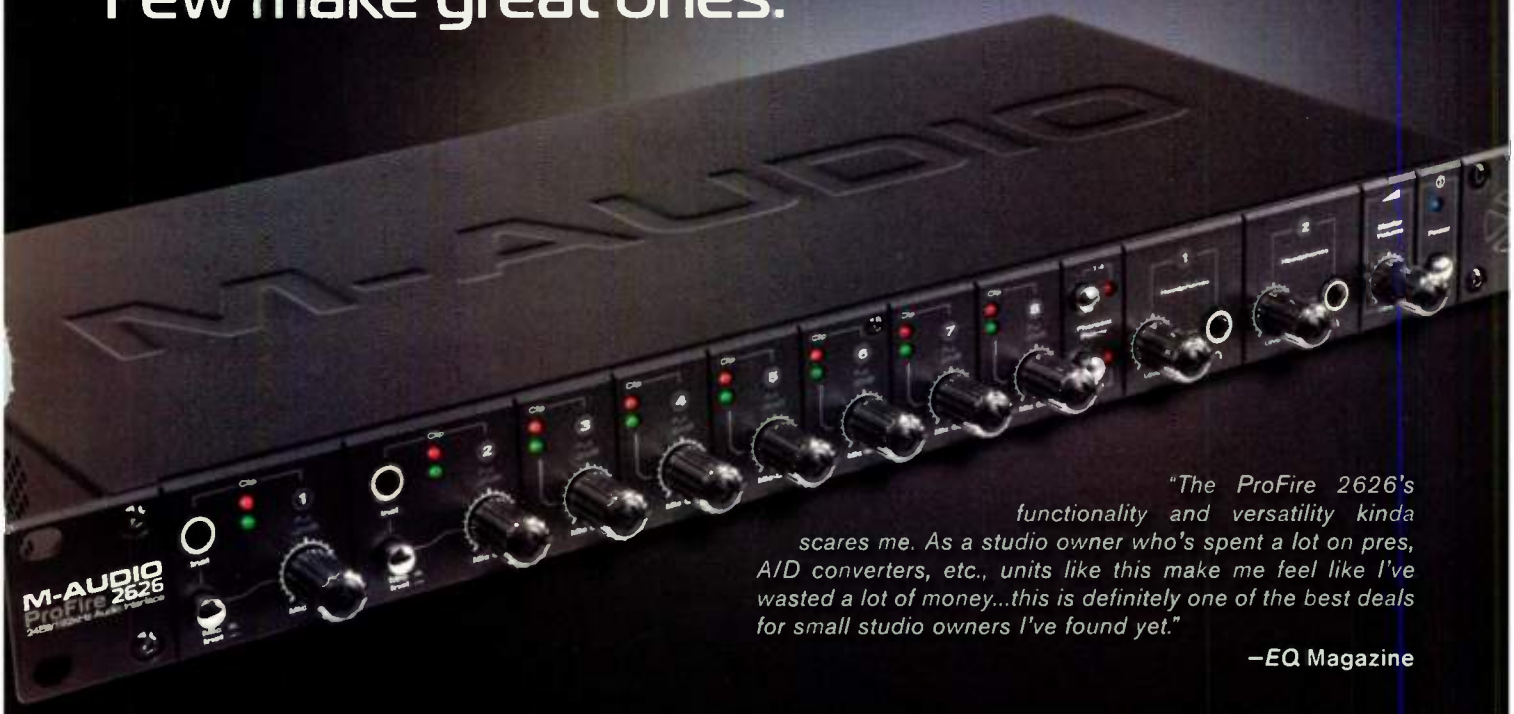

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In Sonar, the "Keys Funky" track is provided by MIDI data driving an instance of Rapture LE. After selecting both the MIDI track and the one that plays back audio, the Bounce to Track(s) option has been called up to bounce the resulting audio to a new track, thus converting the virtual instrument output into a hard-disk audio track.

PRINTING MIDI INSTRUMENTS

by Karl Coryat

Recording keyboards via MIDI rather than audio not only lets you get good sounds very quickly, it also gives you maximum flexibility for making last-minute changes. However, sometimes it's useful to print these sounds—meaning, record them as audio alongside your other audio tracks. Here's why.

NO SYNC

This applies only if you're recording to analog tape with a MIDI sequencer or drum machine and aren't using a sync tone. If so, you'll need to print the MIDI instruments' audio signals. How many tracks you use is a tradeoff. Printing them to stereo tracks saves tracks, but you'll never be able to adjust the instruments' blend afterward. However, using up four or five tracks may not leave you much room to work with for recording other audio.

NOT ENOUGH MIDI INSTRUMENTS

If you want a MIDI organ sound *and* an electric piano on your song, but you have only one keyboard and it can't do both sounds at once, print one of them. Set up your program to play one of the sounds via MIDI—preferably the less important one—and connect the keyboard's audio output to one or two of your recording inputs. Then, run the song while recording the keyboard's audio to a new track or tracks. (Make sure no other audio is accidentally getting onto the new track.) For the rest of the tracking process—and during mixdown—you can let the other keyboard sound via MIDI, blending the first keyboard's audio track into the rest of the mix.

SOUND NOT THICK ENOUGH

Assuming your system can't handle dozens and dozens of high-quality MIDI sounds being generated at once, you can thicken up the sounds by printing MIDI. For example, you could make a more complex string sound by printing several different string sounds that are playing the same notes, and blending them with a real-time MIDI string sound during the mix. Pan the various strings differently if you want them to sound broader overall. Just make sure the sounds are sufficiently different from each other. If one sound is just a slight variation on another one (perhaps the same sound with a slower attack), it's not going to add anything, and it could potentially harm the blend through frequency cancellation.

"SHARING" EFFECTS

Suppose you want a cavernous reverb on a string sound, but you want to use the same reverb unit on the vocals with a *different* reverb sound. The solution: Print the string sound onto two tracks in stereo, along with the cavernous reverb. Alternatively, you could print *just* the cavernous reverb, and run the dry strings in real time, which would allow you to alter the reverb blend easily whenever you need to. The tradeoff is a minor one: If you need to mute the string sound, it's a two-step process, because you have to mute the dry strings and the reverb separately.

SIMPLIFY MIXDOWN

Maybe you have a MIDI track with fader, pan, or EQ moves that you can't automate for some reason. Rather than repeating these moves each time you make a pass at mixing the song down, perform them while printing the instrument to two tracks in stereo. That way, each time you run the song, the moves will be there—almost as if you had automated them. Actually, this technique applies to any tracks—not just MIDI instruments. For example, if you want a lead vocal's reverb to undergo complex panning and level changes that can't be automated, print the reverb (only) to two tracks with these moves in place. Then, they'll be there each time you run the song.

BE CAREFUL . . .

Whatever you do, don't delete the MIDI tracks for any instruments you print—just mute them. You never know when you'll want to go back, tweak a sound or a blend, and re-print. Keep your options open. A muted MIDI track takes up virtually no disk space or processing power, so why erase it? EQ

Excerpted from Karl Coryat's Guerilla Home Recording, *and reprinted with permission from the Hal Leonard Corporation. Visit www.halleonard.com for more details.*

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BIG DRUMS IN SMALL ROOMS

by Mike Papatonis

We all want huge, thick drum tones that drive the mix and give it backbone. To this end, we employ better microphones, top-of-the-line cables, quality preamps, and high-end converters. Each of these things will certainly make improvements in the sound, but I would argue that the most important element in the recording chain—besides the source sound, of course—is the room itself.

A great set of drums in a great room sounds amazing. The same drum set in a bad room can sound like the drummer is playing his cases—a situation I refer to as the "bucket effect." If the snare drum sounds like someone is hitting a bucket instead of a drum, there's a problem with the room. For example, the bucket effect often occurs when the drums are on heavy carpeting, as the sound can be choked and hollow.

Because the room has such a drastic effect on the drum tone, home studios can be at a disadvantage when compared to the glorious live rooms of big studios. This doesn't mean you can't get great drum sounds in a home or project studio, it just means you have to do a little more work and be a little more creative. Let's examine a few ways to fatten up drum sounds in a small room.

IDENTIFYING DUFF DRUM TONE

First, let's talk about what's causing your drums to sound, well, *small*. Although this is oversimplifying things, the main issue is that small rooms don't let sound waves develop and breathe, and early reflections (sound bouncing off close walls and ceilings) often cause phase issues that can thin out the drum tones. To minimize the effects of early reflections in tiny home studios, recordists often cover everything with heavy absorptive materials, which makes the drums sound even more lifeless. Basically, you're fixing a problem *with* a problem.

There is nothing wrong with early reflections. In fact, they can make the drums sound fatter (as long as the reflections aren't too fast). It's the very close boundaries (more on this later) that can cause phase shifting. The other issue is that small rooms have very little natural reverb. While too much reverb (or decay time) can make drums sound washy and inarticulate, the lack of reverb can make drums sound small and choked.

DOING BATTLE WITH PHYSICS

Knowing that acoustics will always win if we don't follow the rules, here are some tips for getting big drum sounds in small rooms.

Don't set up drums too close to walls. Early reflections within approximately 7ms can cause phase shifting and comb filtering. When possible, keep the drums a minimum of four feet away from the walls, as this should produce a total combined time of at least 8ms of reflection time to the wall and back from the wall. (For math freaks, reflections typically travel at 1.13 feet per millisecond, so keeping the drums four feet away from a reflective surface buys you approximately 4ms from source sound to the surface, and 4ms from surface back to the source sound and microphones.)

Don't smother your room. Reverb is our friend. A small amount of absorption can keep reflections from getting crazy, but using too much will kill decay time and make the drums sound lifeless. Absorption should be distributed strategically around the room while leaving live areas on the walls and ceiling. You don't have to be an acoustics expert—just use your ears. Move your absorptive materials

around, and listen critically to determine which combination of live and dead areas in your studio sounds the best.

Go with wood. Of all the building materials that can be used in a studio, wood is king. Not only does it make a room livelier, but most woods reflect the audible frequency range pretty evenly so that a room's natural EQ stays flatter. In addition, wood's early reflections are very flattering—a big plus for recording drums. So make a wood floor part of your studio's sonic equation—even if it means throwing down a couple of pieces of plywood. (A small, thin rug can be used to keep the drums from sliding around.)

Diffuse. Diffusion evenly distributes some of the random reflections in a room, making the enviroment sound open and spacious. Home studios can embrace this effect by hanging diffuser panels on the walls, or by simply putting other objects in the room (such as instruments, music stands, or even people—although people will absorb, as well).

Control reflections off low ceilings. As many home studios *are* in homes, ceilings tend to be lower than what you'd see in a commercial recording facility. Early reflections from low ceilings can wreak havoc with drum tones, so use some absorption directly over the drums to minimize the adverse effects. Here's another tip: Avoid omni overhead mics in this situation, as they'll "hear" more early reflections than mics with tighter polar patterns (such as cardioid).

Compress the room. Set up a couple of room mics some distance from the drums, and compress them heavily to punch up the room tone. Of course, a small space still won't produce as much "air" as a large room, but this technique should still improve punch—especially if you experiment with the positioning of the room mics.

MIX TRICKS

As the saying goes, "If you're going to steal, steal from the best." A great way to get big drums is to use someone else's sound. Here are two sonic thievery options for augmenting your home-studio drum tracks.

Reverb Plug-Ins. Impulse or convolution reverbs are a great way to add quality reverb timbres to drums tracking in small spaces. These types of reverbs (Audio Ease Altiverb, Trillium Lane Labs TL Space, Digidesign

ReVibe, etc.) are actual models of real spaces. This means that if your room doesn't sound so amazing, you can stick the drums in a tweaked studio or famous concert hall by simply running some of the channels through the reverb. Admittedly, you won't get quite the same results as cutting in a great room, but this is a fantastic way of cheating the system. I find this option to be especially effective on overheads and room mics, as these mics capture the entire drum sound. An effective technique is running the overheads through a convolution reverb to produce openness and space, and then using a short plate reverb for any close mics (toms, etc.).

Samples. Having a library of quality drum samples has become standard for many mix engineers, and many major releases employ drum replacement or augmentation. Why fight fashion? Now, you can have some of the best drum sounds ever recorded at your fingertips. I'm not a fan of replacing drum sounds completely, as this can sound rather artificial and unnatural no matter how good the samples are. I do, however, like to augment the original drum sounds with samples to fatten them up, and "steal" some of the room tone from a bigger studio. I used to augment drums only when a player had a bad-sounding set or didn't hit the drums well, but, lately, I've found that if I slip in a little bit of the samples even when I have a good sound to begin with, it makes an improvement. It also makes mixing go faster, because the drum samples are dialed in already. But let me point out that, although drum replacement and augmentation can do wonders to a mix, the technique doesn't work everywhere. For big, solid drum grooves, it's a miracle cure. If the mix needs something more natural or dynamic, however, samples can sound campy and fake. Like any good application of audio engineering, the key is to know what to do, or what *not* to do.

A small absorption canopy on a low ceiling can be effective at keeping early reflections from causing phase issues.

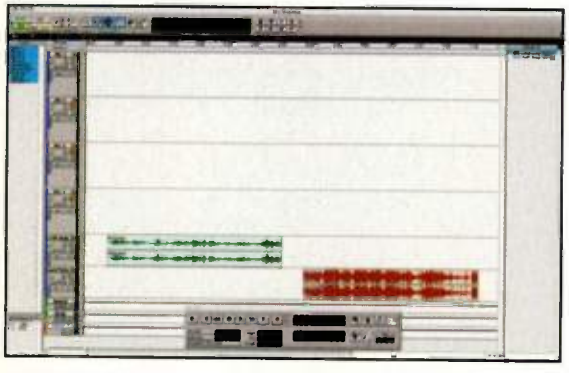
DOING YOUR OWN MIC SHOOTOUT

by Cliff Goldmacher

As different microphones typically accentuate specific frequencies, there is no one microphone that is right for everyone. For example, if your vocal tone is already fairly dark, you should avoid mics that have a reputation for being a bit less bright. Conversely, if you have an edgy or bright sound, you'll probably want to stay away from mics known for shimmering top end. In the end, darkness or brightness in a vocal can be tamed or improved with EQ, but the goal in choosing the right vocal mic is to get the best signal possible into your DAW with the least amount of correction. If you've never taken the time to examine your voice for its specific qualities, there's nothing like a mic shootout to begin your education.

GETTING THE MICS

If you live in a big music city—such as New York, Los Angeles, or Nashville—your best bet for getting your hands on a bunch of different mics is a studio-equipment rental company. You can also hit up friends to lend you some of their favorite vocal mics, or work out some kind of a "test before buying" deal with your local music store. You should only need the mics for a day—which will keep your costs down at equipment rental places, and put the music store's mind at ease.



DAW Edit Window view (for the one that shows the audio files).

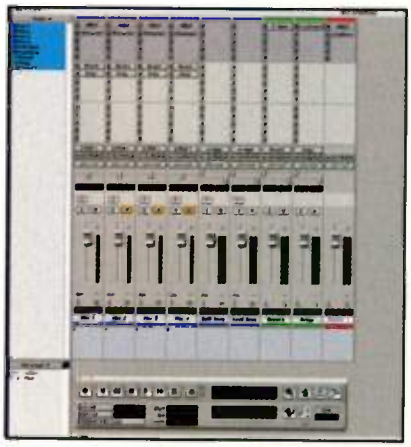
RECORDING

Set up a session in your recording software with two stereo music tracks running one after the other with five seconds of silence between them. Selection One should be a 30-second snippet of music that works with a soft vocal approach, and Selection Two should be a track that demands a louder and more energetic performance. Then, set up a mono track for each microphone you are testing (don't forget to label each track with the name of the mic used). The key here is to position the microphone in the exact place where you record the majority of your vocals. For example, if you record your own vocals in the control room while sitting next to your DAW, then that's where you should set up each mic. In other words, do your best to recreate the actual situation you'll be in when you record your vocal tracks.

Now, doing your best to sing each track identically, perform the same soft and loud passages on each mic. Keep your input levels and gain settings the same for each "contestant." Also, take care not to overload or distort the input signal. A good way to do this is to ensure the loud passage on the first mic is well below overloading the mic preamp or your recording software.

CRITICAL LISTENING

At this stage, you're going to need some help. Have a friend assign a letter to each of the mics without telling you which letter goes with which mic (he or she can write this in the comments box in the session software). Then, play back the vocal test tracks, and unmute one channel at a time in random order. After being told the letter designating the mic you're hearing, take notes on the sound of the vocal during the soft and loud passages. Which mic is more accurate? Which is more pleasing? Does a particular mic make your voice jump right out of the speakers? Also, ask your friend which mic he or she thinks is the best for your voice. (Getting a second opinion is never a bad idea.) Hopefully, with repeated listens, it will become clear which mic does the best job for *your* voice.



DAW Mix Window View (for the one that shows the faders).

WHO WON?

A clear winner is a clear winner—go buy it! However, if the results you're getting from two different mics are very similar, you can always base your purchase decision on factors such as the price of the mic or available features (includes pop screen, shockmount, pads, multiple polar patterns, etc.). Remember, it's not always the most expensive mic that will sound best on your vocal. Quite simply, the mic that sounds best on your vocal *is* the mic that sounds best on your vocal. EQ

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Alan Moulder (mixer, left) and Tony Diodore (vocals, guitar, producer of BM LINX).

ALAN MOULDER ON MIXING BM LINX

by Jeff Anderson

New York-based, electro-rock band BM LINX recently enlisted Alan Moulder to mix its upcoming Craze Factory release. Moulder—who is considered one of the U.K.'s preeminent alt-rock producers—has worked on many hit records for groups such as Nine Inch Nails, Smashing Pumpkins, Depeche Mode, the Killers, and Marilyn Manson.

"There are a number of different elements to deal with here," says Moulder of the BM LINX project. "Some songs have programmed drum samples, and others are played with acoustic drums. There's quite a bit of sequencing, as well as vocals, guitar, electric bass, and synth tracks. The songs are a bit more aggressive than the band's previous album, and we wanted to retain that quality in the final mixes."

How did you approach the drum mix?

This is not an overly elaborate recording of the drum kit—which I like. They used three mics for the kick—inside, outside, and a sub [*a speaker is placed in front of the kick and used as a "mic"*]—a snare with top and bottom mics, the toms, and a couple of room mics. For the kick, I used about 25 percent of the speaker mic, and then equally balanced the inside and outside mics. I routed all three sources to one mixer channel so that all the EQ and compression blended together.

What compressors did you use for the combined kick track?

The kick track was processed with the SSL's channel compressor, but then I sent the signal—along with some of the other drum tracks—to a few different compressors, such as a Neve 33609, an Empirical Labs Fatso, and an Elysia mpressor. I use different combinations of these compressors for different bits of a song. For example, I may bring in the mpresser for the choruses, and the Fatso for the verses.

How much of the room mics do you blend into the overall drum sound?

The song I'm working on now only has a rear room mic. I didn't do any compression or EQ to it. Level-wise, it's positioned where you barely notice it, but it definitely makes the drums sound bigger—especially the kick sound. You really notice it when you take it away.

Did you use any samples to beef up the drums?

I used a couple of very subtle kick and snare samples just to fill in some stuff I couldn't get with EQ tweaks. All the samples were MIDI mapped to match the attack of the acoustic drums.

What about ambience effects?

There was a bit of a room sound from an Eventide H3000 on the snare, along with a Lexicon PCM-60 Room preset on the kick and snare.

What about all the synth tracks? Did you fatten them up at all?

The sounds were pretty much there. I used SoundToys FilterFreak to take off a bit of the top end. FilterFreak gives you four or five ways to saturate a signal, so I could also make the synths sound dirty, fat, clean, or overdriven.

How do you ensure the electric bass doesn't get swallowed up by low-end synth parts?

I had a miked bass sound—no DI—and I ran it through Native Instruments Guitar Rig to give the tone a bit of a growl. I wanted Guitar Rig to accentuate the bite and attack of the bass strings. The synths are dealing with the low end,

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~ Kerry King

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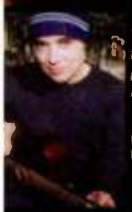

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so it wouldn't work to add any lows to the bass guitar.

What about the guitars?

I didn't do a lot. I used a little compression, and then I'd EQ the tone to filter out some of the low end and bring out the top end. I try not to change the guitar sound too much.

How did you approach the vocal sound?

The vocals were generally doubled. I'd blend them together in the box, and bring them up on one fader of the console. Then, I used a Chandler TG1 compressor and a Neve Portico 5042 Tape Emulator to add a bit of drive to the vocal sound. I set the compressor to limit, which makes the vocal sit nicely in a track. It also brings out some of the sound of the room the vocal was sung in, so you don't have to use as much reverb or delay in the final mix.

Can you detail the delay and reverb processing you did use?

It depends. For delays, I tend to use short slaps around 100ms, or perhaps a 300ms delay mixed underneath the vocal to add space. Sometimes, I send the delays into reverbs, as well. Some of my favorite processors and plug-ins are the Eventide Orville, SoundToys EchoBoy, and Line 6 Echo Farm. I also like the Electro-Harmonix delay pedals.

Do you compress the entire mix through the stereo bus?

Yes. There's a chain with a Manley Variable Mu Limiter/Compressor, a Manley Massive Passive EQ, and then the SSL compressor at the end. All of the compression is very subtle—no more than 1dB or 1.5dB.

Why do you use two compressors—the SSL's onboard processor and the Manley?

I just like the sound. It's more for the tone than for any sort of compression, actually. The Manleys offer a bit of added drive through their tubes and transformers, and the SSL throws in a bit of extra punch.

Is there any trick to crafting a fantastic final mix?

Well, I think the main goal is having everything balanced. I mean, that's a very simple thing to say, but it's really about moving sounds around, and putting them all in the right places. For example, having stereo tracks helps you get your sounds out of the center, which, in turn, leaves more space for your vocals. At that point, it's just filling in any holes in the frequency spectrum with instruments, musical parts, and EQ adjustments. It can be as simple as letting the guitars take the top end, the bass take the low end, and giving the vocals their own spot. But whether a song is dense and complicated, or fairly minimal and open, you need to shape and sculpt each sound until the mix sounds right to you.

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CHEAT SHEET

VIRTUAL MIXER PARAMETERS

by Craig Anderton

Cheat Sheet delivers concise, explicit information about specific recording/audio-related tasks or processes. This installment describes virtual mixer parameters, as found in DAWs and some virtual instruments.

SHOW/HIDE BUTTONS

Typically a toolbar with buttons that allow showing/hiding mixer sections (*e.g.*, sends, meters, EQ, inputs, etc.) to customize how much space the mixer takes up on-screen.

WIDE/NARROW BUTTON

Changes the mixer channel width. Narrow mode allows seeing more channels at a time, but wide mode usually allows seeing more channel parameters, or presents more detailed channel parameter values.

COMPACT/EXTENDED VIEW

This goes by different names, but simply means that a section (such as sends) can be shown in a more compact way to save space. *Example:* In compact view, knobs might become linear sliders that take up less space.

TRACK TYPE

Unlike analog mixers, virtual mixers often have different track types for a given channel: Audio, MIDI, Instrument (has a MIDI input, hosts an instrument, and outputs audio), FX Return (takes the output from an effects bus), etc. Channel types are assigned when creating tracks.

NUMERIC PEAK INDICATOR

Shows a channel signal's maximum (peak) value. Positive values indicate the amount over 0dB, negative values show amounts under 0dB.

PEAK HOLD

Holds the peak level attained so that even if you're not looking at the meter, you'll be able to see the maximum peak level at any time.

INTER-SAMPLE METERING

Conventional peak meters measure the value of individual samples. However, when the samples are reconstructed into an analog waveform, waveform peaks may exceed sample peaks. Inter-sample metering measures the final analog waveform, giving a more accurate representation of the signal.

METER RESOLUTION

Sets the range covered by the channel's meter. *Example:* When tracking, you might want a wide range (*e.g.*, 0–90dB) to catch low-level noise, but while mixing, a narrower range (*e.g.*, 0–36dB) makes it easier to see the effects of compression.

DELAY

Some mixers allow trimming delay in small increments to tune out timing differences among tracks. *Example:* The miked sound from an amp will likely be delayed compared to the same amp sound taken direct. To compensate, you can delay all channels except the miked sound, or delay the direct sound compared to the miked sound.

AUTOMATION READ/WRITE

By enabling Write, the program remembers any fader, panpot, send, etc. moves during mixdown. Enabling Read allows the program to follow these changes on playback.

CROSSFADER

Generally a control assignable to two channels that allows crossfading between them.

TRACK ICON

A small image (such as a picture of a mic, guitar, piano, etc.) that can be added to a channel, making it easy to see at a glance which instrument is playing through a particular channel.

GROUP BUTTON

Allows grouping selected channels together so that moving one control affects the same control in all grouped channels. *Example:* Consider a drum kit with multiple mics feeding multiple channels. By grouping each channel, you can change the level of the entire kit by changing the level of any of the grouped channels.

RATIOMETRIC (LOGARITHMIC)/ LINEAR GROUPING

With linear grouping, changing a control by a certain amount (*e.g.*, 3dB) changes all other grouped controls by the same amount (3dB). With ratiometric grouping, changes relate to ratios. *Example:* Turning down one control halfway turns down all other grouped controls by 50 percent.

INSERT

Allows inserting plug-ins into the channel's signal chain. Inserts typically sit between the input and main fader, but some may be post-fader, or switchable pre- or post-fader.

INPUT ASSIGN

Selects the hardware audio interface's input that connects to the mixer channel.

OUTPUT ASSIGN

Sends the channel to either a bus or hardware audio interface out. Typical, individual channels go to a master bus, which then feeds an audio interface output for monitoring.

SOLO

When selected, only the soloed channel will be heard. There are two solo types: "additive" (multiple channels can be soloed and heard) and "exclusive" (soloing one channel mutes all other channels, as well as disables any existing solo assignments).

MUTE

When selected, turns off the muted channel's output. If both mute and solo are selected, one will have priority but this is not standardized.

PAN/BALANCE

With a mono signal, the audio can be placed anywhere within the stereo field, from full left, to center, to right. With stereo, balance weights the audio more toward the left or right. *Example:* With balance full right, the stereo signal's right channel will be at full volume, and the left channel at minimum volume. EQ

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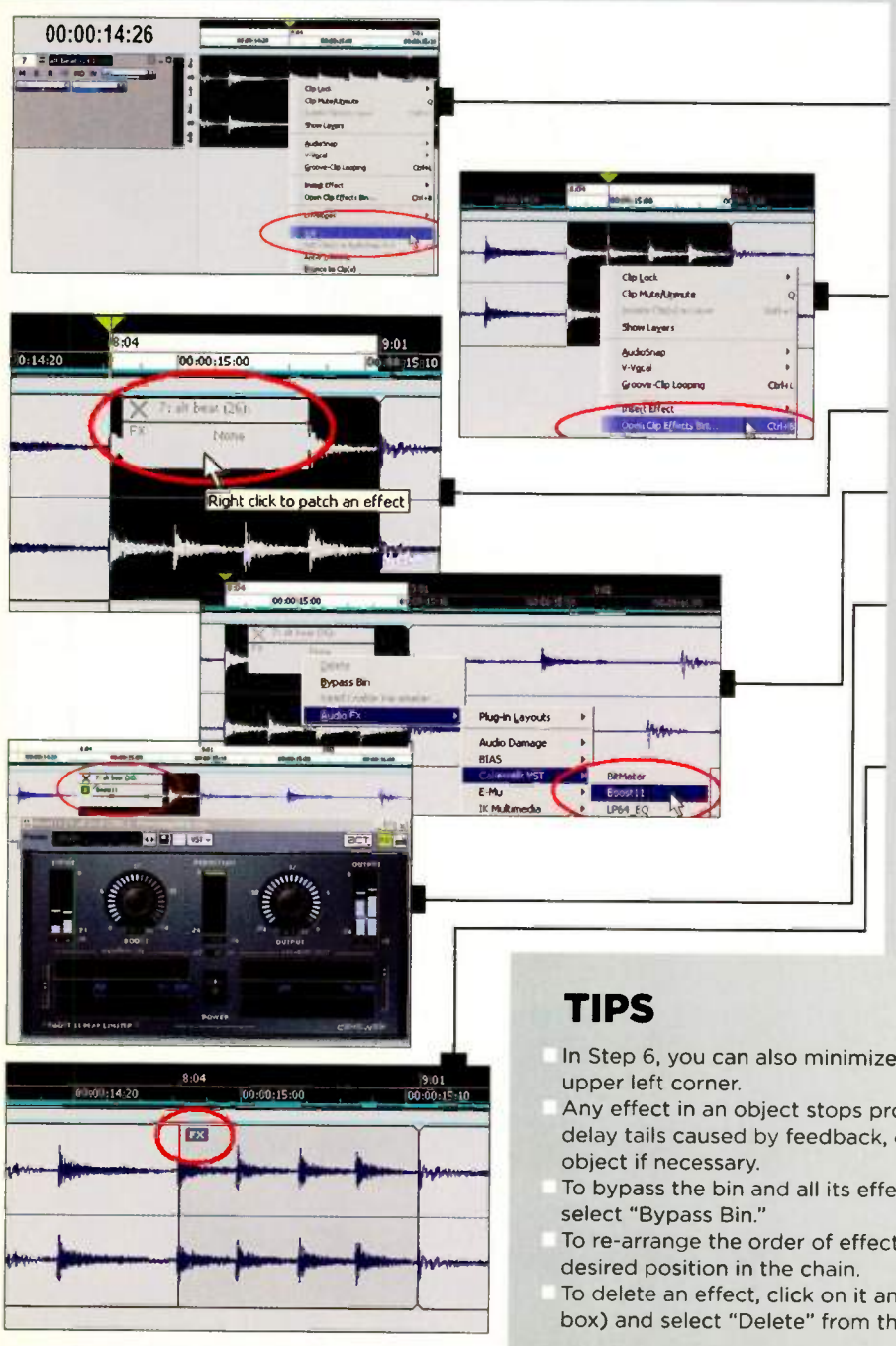
BY CRAIG ANDERTON

CAKEWALK SONAR 7

Do true object-oriented editing in Sonar

OBJECTIVE: Isolate specific objects within a track, and process them individually.

BACKGROUND: Although effects are generally applied to complete tracks, you can define an object within a track and process only that object. This saves CPU power by applying an effect on an "as needed" basis rather than constantly; this example shows how to add heavy maximizing on just one drum fill to make it really stand out. Note that object-oriented works with any type of clip—audio, MIDI, or groove.



STEPS

1. To isolate the object from the track, right-click at the beginning of the section you want to isolate, then select "Split" (keyboard shortcut: type "S") from the context menu. Do the same at the end of the section.

2. Right-click on the object, and select "Open Clip Effects Bin" from the context menu (keyboard shortcut: Ctrl+B).

3. An effects bin opens up that's similar to the standard track effects bin.

4. Right-click on a blank part of the effects bin, and select the desired audio effect from the pop-up menu.

5. The effect will now appear in the bin. Like a standard effects bin, the small check box to the left of the effect name indicates enabled (green) or disabled (gray). To insert more effects, repeat step 4.

6. As soon as you click anywhere other than the effects bin, the object's bin minimizes to a small box that says "FX." This indicates there's an effects bin in the object. To re-open an FX bin (*e.g.*, for adding more effects), just click on the box.

TIPS

- In Step 6, you can also minimize the effects bin by clicking on the "X" in the upper left corner.
- Any effect in an object stops processing at the end of the object—including delay tails caused by feedback, or reverb tails. Add silence to the end of the object if necessary.
- To bypass the bin and all its effects, right-click anywhere within the bin and select "Bypass Bin."
- To re-arrange the order of effects within the bin, click-drag effects to the desired position in the chain.
- To delete an effect, click on it and hit Delete, or right-click on it (or its enable box) and select "Delete" from the pop-up menu.

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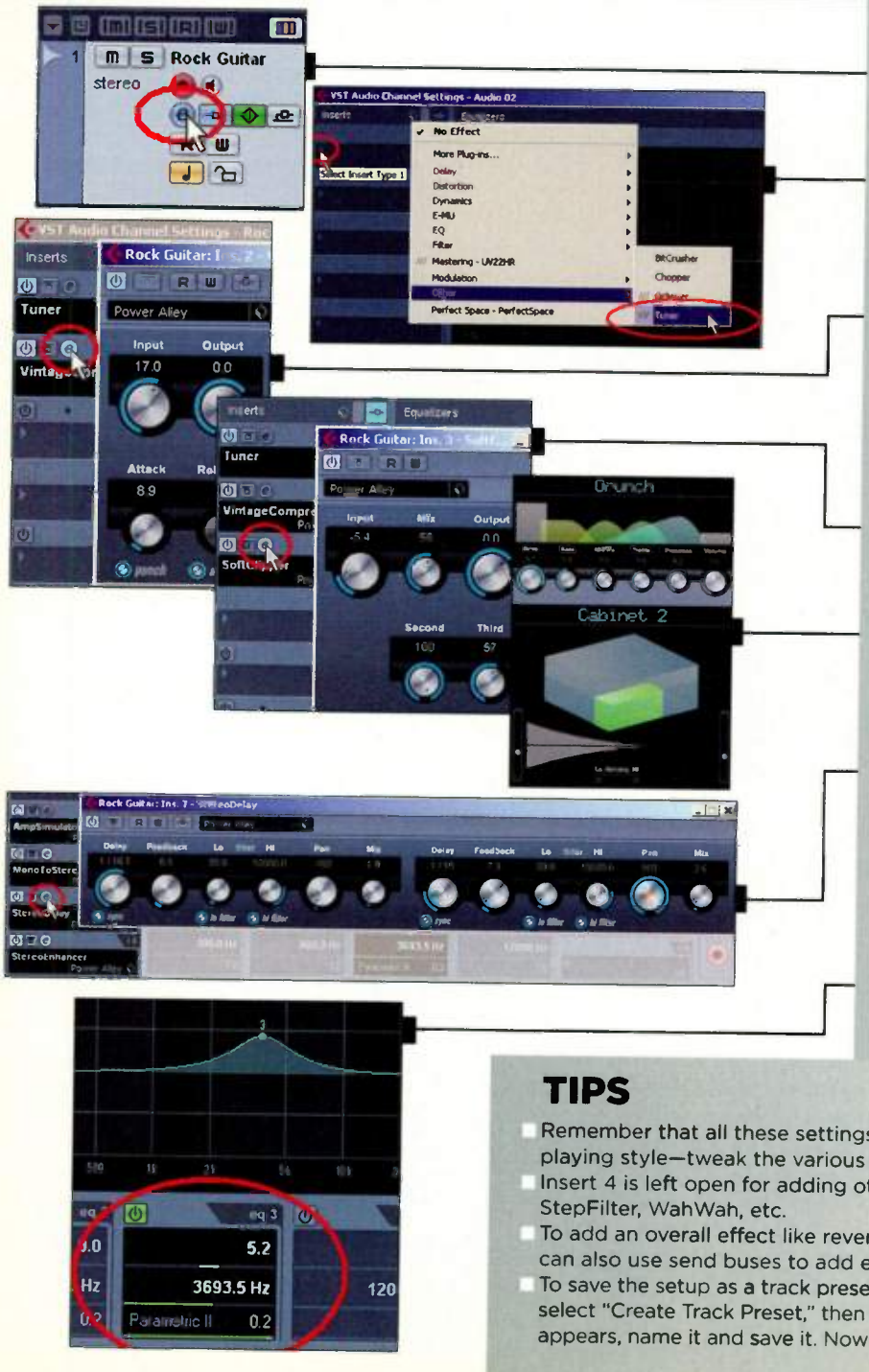
BY CRAIG ANDERTON

STEINBERG CUBASE 4

Assemble a cool guitar rack in Cubase 4

OBJECTIVE: Use Cubase 4's bundled effects to create a track preset for processing rock guitar.

BACKGROUND: An audio channel in Cubase allows inserting up to eight effects in series, and the program itself includes enough effects (as well as amp simulation) to create a fine guitar rack setup. You can play through this in real time if your system latency is low enough, or apply it to a dry guitar track while mixing.



STEPS

1. Click the Edit button (e) for an audio track to open up the VST Audio Channel Settings window.

2. Click within the first insert field, and navigate to *Other > Tuner*. This places a chromatic tuner as the first "effect" in the chain.

3. Similarly, insert the VintageCompressor plug-in into the second insert. Click on the insert's Edit button to see the compressor's GUI and change the parameter values; try the settings in the screen shot (Input=17, Output=0, Attack=8.9, Punch and Auto=On).

4. Similarly, insert the SoftClipper into the third insert and click on its edit button. See the suggested settings.

5. Insert the AmpSimulator into the fifth insert (leave the fourth insert empty) and click on its edit button. See the suggested settings.

6. Insert the MonoToStereo effect in the sixth insert (try Width=90, Delay=10.0, Color=10, Mono off), the StereoDelay (see the suggested settings) into the seventh insert, and the StereoEnhancer (try Width=168, everything else off) into the eighth insert.

7. Enable the EQ, and set it for a slight midrange boost so the guitar "speaks" a little more. Your rack is ready to go!

TIPS

- Remember that all these settings are for a specific guitar, pickup type, and playing style—tweak the various parameters for a sound that's right for you.
- Insert 4 is left open for adding other effects, such as Modulation, Octaver, StepFilter, WahWah, etc.
- To add an overall effect like reverb, replace the StereoEnhancer in insert 8. You can also use send buses to add even more effects.
- To save the setup as a track preset, right-click in the corresponding audio track, select "Create Track Preset," then when the Save Track Preset dialog box appears, name it and save it. Now you can call up your rack for any audio track.

NEW GEAR FOR PRODUCTION AND PERFORMANCE

by Craig Anderton

We're talking major convergence here: Those who've been squirreled away in studios are re-discovering the joys of live performance and wanting to incorporate some elements of the studio on stage. Conversely, those coming off the road would like to bring some of that "live vibe" into their studio productions. And when it comes to gear, there are certain economic realities because if something can serve double-duty in the studio and on stage, you're ahead financially.

This article covers several types of gear where the line blurs between studio and stage; we'll also have mini-reviews of some pieces of gear that are unusually well-suited to having a split personality. Of course, pretty much anything used in the studio can be taken out live, and vice-versa; so our gear coverage isn't intended to cover everything. Instead, we'll hit some highlights—and you can hit Google to take it further.

LIVE IN THE STUDIO

For many musicians, the trend is away from isolated overdubs in favor of doing more live playing in the studio; there's something about a band interacting that gives a feel you can't get any other way. Sure, there's more leakage—so what? A little leakage can be an okay tradeoff for making music that's more vital. Some musicians are even ditching the headphones, setting up so they can see each other, and essentially using the studio to capture a live performance—with the added luxury of being able to edit, do overdubs, and mix.

The parallel issue is musicians who rely on particular studio-centric devices (like virtual instruments) and want to use them onstage. This may not be just an aesthetic choice, but a practical one: Consider taking a boatload of keyboards on stage versus loading virtual instruments into a software host (*e.g.*, Native Instruments' Kore 2) or hardware host (like Muse Research's Receptor) and just setting up a master keyboard.

EQ has covered this phenomenon before, in articles like "Mixers *Are* Musical Instruments" (04/07) and features on "performing engineers." But current technology is making it easier than ever to live in both worlds . . . as we're about to find out.

FIREWIRE/USB 2.0 MIXERS/INTERFACES

The concept of the FireWire or USB 2.0 mixer is simple: Build in a computer interface so that on stage, the mixer works like a traditional mixer but in the studio, it can serve as an audio interface with hands-on panning, fader levels, EQ, and the like. However, not all computer-ready mixers are created equal. Some send only two channels to the computer (particularly if they use a USB 1.1 interface), while others allow each input, as well as the main stereo output, to appear as an input in a DAW or other application. For example, the Alesis MultiMix 16 USB sends all 16 ins ("downstream" of the preamp, high-pass filter, EQ, and fader) along with a master stereo out. Thus, if you "play" the mixer as part of your performance, those moves will be reflected in the audio that goes to the computer. As another example, Phonic's Helix Board 12 uses a USB 1.1 interface to deliver a stereo out to the computer, while the Helix Board 24 FireWire MKII streams 18 independent channels to your computer and accepts a stereo return for monitoring.

Some mixers lean more toward stage or studio. Yamaha's N-series FireWire mixers are designed for tight integration with Steinberg's Cubase AI in the studio, but also feature "live-friendly" features like their one-knob morphing compressor. On the other hand TC Electronics' Konnekt Live is a computer interface with limited hands-on control (*e.g.*, no long-throw faders) but includes several features tailored for live performance, such as built-in DSP (3-band master compressor, reverb, and filters) so you don't have to load these effects into your laptop. It also includes an RIAA phono preamp for any turntables in your act, as well as MIDI I/O if you want additional hands-on control (*e.g.*, a fader box like the Mackie Control).

Hot Tips for FireWire/USB Mixers

- **Check the mixer manufacturer's website for any info on which FireWire chip sets work best with the mixer; some combinations refuse to play nice.**
- **Dedicate a FireWire or USB port to your mixer—don't daisy-chain hard drives and other devices on a port.**
- **With desktop computers, installing a FireWire or USB card may give better performance than using the motherboard's built-in ports.**

MACKIE U.420D MIXER

PRICE: $359.99

STRENGTHS: Nice mic pres and EQ. FireWire loopback function. It's a DJ mixer, too.

LIMITATIONS: No MIDI port. 30mm faders on channels 1 and 2.

The U.402d has multiple identities: It's a small studio mixer, DJ mixer, keyboard mixer, and general utility mixer. It features two mic/line inputs with +48V phantom power (one includes a DI function for guitar or bass), and two stereo line level ins, both with RIAA turntable inputs. Outs include stereo Main, stereo Aux, and phones.

There are some unexpected features; the two mic/line ins have 3-band EQ (high 12kHz, low 80Hz, and sweepable mid 100Hz–8kHz), while the two stereo ins have fixed high, mid, and low frequency controls which when rotated full left, provide a DJ-style "kill" function. Furthering the DJ options, there's a crossfader (with slow/fast curve option) for channels 3 and 4, and a Cue function for feeding channel signals into your headphones. The U.420d is also a good bet if you want to preserve vinyl, as you can take advantage of the phono inputs and stream the audio to your computer via FireWire.

In the studio, one cool function is that you can add overdubs easily thanks to the routing, which places the headphones and associated volume control upstream of the master control for the monitors. Suppose you want to overdub vocals: Plug in the mic, turn down the monitors, turn up the headphones, and go—there's a return from your DAW for monitoring. For live recording (onstage or in the studio), you can take a feed from software running on your laptop, add more signals via the analog inputs, and send the combination to the master outputs. However, there's also a FireWire "loopback" function so the entire mix can be recorded back into your computer.

The main limitations are no MIDI input—if you want to use a hands-on controller with your software, you'll need a separate MIDI interface. Also, all faders are 30mm; this makes setting levels on channels 1 and 2 fiddly, although the shorter travel lets you do wicked fast moves with the crossfader (rotary controls set the levels for channels 3 and 4). Also, unlike Mackie's compact VLZ3-series mixers that are encased in metal and built like a tank, the U.402d has a high-impact plastic case.

Keyboard mixer applications are obvious if you're running a keyboard rig live: The FireWire out can take the output from virtual instruments running on your computer (although the lack of a MIDI input is a bump in the road), while inputs 3 and 4 can take stereo outputs from a hardware workstation, and you can stick a couple mics into the first two inputs for your vocals.

While not a full-blown mixer, the U.420d is a handy utility mixer that does double-duty as a surprisingly serviceable DJ mixer, and can serve in other applications as well.

MUSICAL INSTRUMENTS

Sure, any musical instrument works onstage or in the studio. But a new breed of keyboard workstations does a lot more than just play back strings and pianos, and groove-oriented instruments (like Akai's MPC series) can move seamlessly between studio and stage.

A lot of the action involves hands-on control and studio integration; look no further than Korg's M3 and Yamaha's Motif XS series. The M3 includes sliders with templates for controlling many popular sequencers and virtual instruments, as well as velocity-sensitive drum pads. What's more, it includes a computer editor and can serve as a VST plug-in, so you can "insert" an M3 right into your sequencer of choice. (Of course, unlike software, you can only instantiate one instance of hardware.)

Want more? Thanks to external inputs, the M3 can also serve as a signal processor—whether you want to add vocoding effects, or create a credible guitar rack. You can even hook up an external USB drive, and with the M3's sampling functions, record stereo WAV files up to 80 minutes—perfect for recording rehearsals.

The Motif XS has similar capabilities (control surface, signal processing for audio feeding the external audio inputs, recording, editing software, etc.), although there are a few differences. For example, instead of having 8 pads, the control surface adds 8 knobs to the 8 sliders. But the big deal is integration with Cubase AI, from having the Motif XS serve as an audio interface (with the addition of an optional mLAN card) to transferring audio between the Motif XS and your computer. You can even call up sequences from the Motif XS, and open them within Cubase. And of course, there are plenty of master keyboard controllers with control surfaces (*e.g.*, CME, M-Audio, Novation, etc.) that can change tone generator parameters live, or edit sequencer mixers in the studio.

Hot Tips for Workstations

- If you want to process guitar, you'll probably need a preamp or buffer. Synths typically include mic and line inputs, but not guitar inputs.
- In addition to the controls that are intended to control mixers and virtual instruments, you can probably use mod wheels, joysticks, ribbon controllers, switches, data wheels, and other controllers to send MIDI data. Joysticks make great crossfaders!
- When making USB or FireWire connections to a synth, check that all devices are powered-down before making any connections. Although these protocols are supposed to be hot-swappable, you don't want some poorly-spec'ed FireWire hard drive blowing up your synth.

PHOTOS COURTESY OF HARMONY CENTRAL

YAMAHA TENORI-ON

PRICE: $1,200

STRENGTHS: Innovative. Extremely addictive. Easy enough to figure out in minutes, deep enough to be a serious instrument. MIDI out for controlling other instruments. Can load your own samples.

LIMITATIONS: Factory sounds not editable. You can change note lengths, but can't mix different note lengths in the same sequence. No velocity or dynamics. Expensive.

It's controversial: Some say it's a toy, some say it's a serious instrument. It's expensive, but then again, it's expensive to make. Some hate the onboard sounds, some love them (but you can always load your own samples via SD cards). It's limited in many ways, but unlimited in many others. There are those who play with it and are willing to sell their first-born to get one; others couldn't care less.

But the main issue here is the stage/studio connection, and for electronica, the Tenori-On straddles both worlds with style. Designed by Toshio Iwai in conjunction with Yamaha, it's basically a work of art crossed with a step sequencer on steroids.

The heart of the Tenori-On is a 16 x 16 matrix of buttons, each with an associated LED. These can enter notes in up to 16 different layers, but the layers work differently: For example, there are seven "score" layers that are sort of like a MIDI piano roll, as well as additional layers for random, drawing, etc. Taken together, the 16 layers form a "block," and the Tenori-On stores up to 16 blocks; you can switch instantly between them.

On stage, it's possible for one performer to keep an audience occupied with nothing other than a Tenori-On and good musicianship—especially because the matrix lights up at the buttons on both the matrix's front and back, making for intriguing visuals. In the studio, it's a step sequencing instrument that lets you create complete sequenced backing tracks or loops, as well as serve as a MIDI controller (great for adding step sequencing to virtual instruments).

In either case, I find the Tenori-On totally addictive. I'll typically start with one layer, and get a little melodic groove going; then switch over to another layer and create a drum part. The process of entering the notes and creating a sequence, piece by piece, actually enhances the performance value and in the studio, it's definitely worth keeping the record button "on" because you're bound to produce some wonderful sounds as a composition evolves.

Some think the buttons have a cheap feel because they rattle, but I don't have a problem with that; in some ways, it produces a more tactile response. And yes, it's expensive—but it's the kind of instrument that normally would be hand-made by an artist, one at a time, and probably sell for at least five times as much.

After working with one for several weeks, all I can say is the charm hasn't worn off, and I just get deeper and deeper into it. Don't be put off by the toy-like look: This is a bona fide musical instrument—and I plan to get really good at playing it.

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GUITAR AMP SIMULATORS

As more recording guitarists discover the flexibility of amp sims, the "big five" (Native Instruments' Guitar Rig, IK Multimedia's AmpliTube, Line 6's GearBox, Waves G|T|R, and Peavey ReValver Mk III) continue to pick up fans. However, comparatively few have made the leap from using them in the studio to ditching a guitar rack and using a totally software-based setup on stage.

That's changing. More powerful laptops at a lower price are one incentive to go virtual live, but another is a new generation of hardware controllers that allow changing sounds with the same fluidity as traditional foot controllers.

For example, consider Native Instruments' Rig Kontrol 3: It combines a 192kHz/24-bit USB 2.0 stereo audio interface with an expression pedal, nine switches, and jacks for additional controllers, which are all about realtime control over Guitar Rig 3's parameters. At the software end of things, Guitar Rig 3 builds in Rig Kontrol access: You can tie specific parameters to the controllers, and save this information with Guitar Rig presets. Another cool function is the "snapshot," which lets you step through different settings within the same rack. Because you can load a lot of processors into a rack, you can set up multiple sounds—enough for at least a song or two—within that preset.

For Waves G|T|R, there's GTR Ground, a USB foot controller with two expression pedals and 11 assignable buttons. It's designed to accompany G|T|R 3, allowing you to bypass/enable individual "stomp box" modules, provide pedal control, switch between effects setups, and quite a bit more. Waves also markets a guitar-specific preamp, the Waves/PRS Guitar Interface, which buffers a standard guitar's output and makes it suitable for feeding line and mic level inputs.

Unless you're totally committed to tubes, it's getting to the point where you no longer need to use amp sims in the studio yet maintain a separate rig for playing—and you can get the *exact* same sound live you do in the studio.

IK MULTIMEDIA STOMP IO

PRICE: $1,049.99, $799 for existing AmpliTube users

STRENGTHS: Built to "rock and roll" specs. Extremely ergonomic. Great complement of I/O, including six jacks for expression controllers. Digital output. Integrates superbly with AmpliTube 2 plug-ins.

LIMITATIONS: Mono-in only (sorry, Chapman Stick players). In multichannel setups, can control only one instance of X-Gear at a time.

Pretty much any studio-oriented, computer-savvy guitarist is aware of IK Multimedia's AmpliTube series of amp sims. But now, IK has zeroed in on making AmpliTube equally at home on stage with the StompIO controller.

The quality is obvious: The all-metal case is hefty, footswitches are spaced far enough apart for actual human feet, the display is readable, and there's a wealth of I/O. What's less obvious is the Class A DI, high-end AD/DA, elegant automation handling in the studio, and simple preset management onstage.

The package includes several amp sim programs: AmpliTube 2, Ampeg SVX, AmpliTube Jimi Hendrix, and AmpliTube Metal. The controller talks to another program, X-Gear, which serves as a "shell" for all these programs so you can mix and match, say, a cab from the Jimi Hendrix software with a stomp box effect from AmpliTube Metal. Including the software also helps justify the $900 street price, as an equivalent setup would cost vastly more as hardware. Assuming a modern computer with low latency, you really *can* replace a rack of gear.

If you're not familiar with AmpliTube, it has a "creamy" signature tone, with excellent clean-to-dirty breakup characteristics. I won't get into the "better/worse than Guitar Rig/G|T|R/GearBox ReValver" thing because like real guitar setups, these have different sounds. Suffice it to say that I use all five, and I wouldn't want to give up AmpliTube. In many ways, it provides the closest experience to a traditional guitar setup.

Okay, so the sound passes the "tone test" in the studio. Live, StompIO's most striking characteristic is that you can pretty much close your laptop and forget it exists. The vibe is like having a guitar pedalboard in front of you, because you *do* have a guitar pedalboard in front of you—just one with a USB cable going to a computer instead of an audio cable going to an amp.

My only disappointment: When using my Digital Les Paul with a host program (Sonar), I use six instances of AmpliTube 2 and was hoping to be able to control all of them at

(CONTINUED)

STOMP IO (CONTINUED)

once. Not possible: X-Gear has a "StompIO" switch, and the controller talks only to the one that's selected. However, you can control the other instances with StompIO's traditional MIDI control if you have a MIDI interface—while not as powerful as full StompIO control, it gets the job done. Another MIDI-based application is using the MIDI out controls in the studio to control, for example, transport functions with the footswitches.

Aside from that admittedly rare application, any guitarist who carts gear between stage and studio will embrace StompIO. It's already making inroads with pros (Stefan Lessard of the Dave Matthews Band uses it onstage for bass, as does P.O.D.—and Nine Inch Nails used it for recording "The Slip"). The whole AmpliTube/X-Gear/StompIO system is brilliantly thought out, and moves the concept of virtual guitar setups up another notch.

ONSTAGE SEQUENCING/SOFTWARE

The die was cast when Ableton introduced Live, and laptops became both powerful and less expensive: Music software, formerly part of the studio's domain, started to gravitate toward the stage. Live doesn't have a monopoly on the genre—I've seen musicians use Sony Acid onstage, as well as Cakewalk's Project5 and other programs—but it has set the standard for software that crosses the stage/studio line.

Programs from the earliest days of personal computers, like Laurie Spiegel's Music Mouse, Dr. T's Fingers, and Intelligent Music's M and Jam Factory, were clearly designed for performance but were also studio-friendly. However, Live incorporated two views—Session and Arranger—that might as well as been labeled "Stage" and "Studio" views. Over the years, Live has beefed up the studio end of things, incorporating DAW-type features like a configurable mixer, video window, and MIDI recording.

On the other hand Propellerhead Software's Reason, which was mostly designed for the studio (actually, it pretty much *virtualized* a studio) yet was still used live, has incorporated more features that make it suitable for onstage use—particularly the Combinator mode that allows splits and layerings if you want to use Reason as a keyboard rack. It also pumped up support for hardware controllers (good news for realtime control fans) and sped up the browsing process, while remaining pretty laptop-friendly.

Hot Tips for Windows Laptops On Stage

- **With Windows machines, go Start > Run > Msconfig. Go to the "Startup" tab, and uncheck everything you don't need (if you use Microsoft Office, make sure Fast Find is unchecked). When in doubt, feel free to delete: If Windows really needs something, it will load what it needs automatically.**
- **You really don't want your computer scanning its hard drive when you're onstage, so turn off System Restore: Right-click on My Computer, select "Properties," click on "System Restore," and check "Turn off System Restore on all drives."**
- **In the same spirit, turn off Disk Indexing. Double-click on My Computer, right-click on a drive, select "Properties," and in the "General" tab, uncheck "Allow Indexing Service to index this disk for fast file searching."**

DIGIDESIGN TRANSFUSER

PRICE: $295

STRENGTHS: Ergonomically combines multiple modules into a single instrument. Lots of "hooks" for hardware controllers. Lack of "hiccupping" when making changes is perfect for live use. Cost-effective. Useful bundled content. Very CPU-friendly.

LIMITATIONS: Works only with Pro Tools. Closed system (*e.g.*, can't host plug-ins). Requires iLok.

(CONTINUED)

TRANSFUSER (CONTINUED)

But, you say, it's not a sequencer. Well, although Transfuser is an RTAS plug-in, it works well as a self-contained step-sequenced/slicing-based instrument. Transfuser incorporates three main elements: the pattern-oriented Drums, Slicer (somewhat like Reason's Dr. REX player, and great for time-stretching), and Phrase, which uses DSP for stretching (*e.g.*, like Sony Acid). Each element has a sequencer section, where you can modify the slices or patterns, and a synthesizer section, which allows *considerable* modification of the sounds you're using.

In the studio, Transfuser integrates with Pro Tools, with the option to bus individual outputs to various tracks, record your playing in realtime, and the like. You can drive it with MIDI (including triggering loops from a keyboard), and create arrangements using the standard toolset in Pro Tools. When recording, you can record both the MIDI that's triggering various aspects of Transfuser as well as the audio that results.

But to me, live performance—whether onstage, or "live" in the studio—is what turns Transfuser from "another plug-in" into something else. For example, with beats, a Beat-Cutter effect offers freeze, re-order, and scratch functions for doing real-time sound mangling. Even better, the MARIO function produces semi-randomized/intelligent changes to individual modules. With beats, this is stellar: Click on it to mash things up for a measure or two, then hit the back button to return to the original pattern. When applied to slices, you'll end up with completely different melody lines.

SIGNAL PROCESSORS

Think of the carefully-crafted vocal sounds and overdubs created in the studio, then compare that to what happens on stage: ooops. . . .

But no longer. Consider TC-Helicon's VoiceTone series, which takes what TC-Helicon has learned from doing studio effects, and puts them in floor pedals that are suitable for studio or stage. For example, the VoiceTone Create combines thickening, delay, reverb, distortion, chorus, flanging, filtering, and the like; get your sound on recordings, then take the same sounds to the stage. To further that dual identity, it has mic-level balanced XLR in and stereo XLR outs; for quick onstage manipulation, there are 99 presets, many keyed to specific musical genres, and two "tweak" knobs.

Another pedal, VoiceTone Double, allows realtime "overdubbing" of up to four vocal parts, while VoiceTone Harmony-G recalls the DigiTech Vocalist, offering two lines of intelligent harmonies that follow the chord patterns established by your guitar playing (the guitar feeds the device as well to provide a reference). There's also doubling, reverb, EQ, dynamics, and delay. A similar device, VoiceTone Harmony-M, is designed for keyboard players as it follows MIDI input for creating harmonies.

The final member of the VoiceTone line, Correct, is a truly unusual device that acts like an "android engineer" with adaptive circuitry that monitors your voice and adds dynamics control, EQ, de-essing, and optionally, warmth. It's uncanny to turn on the "engineer" effects and hear what happens to your voice: It suddenly sounds, for lack of a better term, "produced." Note that you can also tweak these manually, if desired. What's more, it does realtime pitch correction and you can monitor the corrected signal.

VoiceLive is also a direct descendant of TC-Helicon's studio processors. It includes 3-band EQ, compression, delay with tap tempo, reverb, pitch correction, doubling, harmony synthesis, and an optical limiter designed specifically for voice. Furthermore, there's free editing software if you want to work on presets in the studio, then take them out live.

In addition to the new generation of studio/stage vocal processors, there

There are "smart knobs" that can control multiple parameters and tie to continuous controllers; you'll also find trigger pads, a crossfader between two buses, global groove functions (*e.g.*, swing, laid back, import Pro Tools groove template, etc.), tons of effects for individual tracks/buses/master, and . . . and . . . lots of cool stuff, basically. But I don't need to get into too much detail, because you can get all the detail you want by downloading the trial version at www.digidesign.com.

Bottom line: While oriented pretty much toward dance/electronica music (the product name should give you a clue), Transfuser is a very worthy addition to the arsenal of great groove-oriented tools.

are people plugging effects pedals into aux buses, and ripping effects out of racks and taking them onstage—and plenty of companies taking studio circuits and putting them into floor boxes. Of these, one of my hands-down favorites is Roger Linn's Adrenalinn, which combines guitar modeling, beats, and synth-style/step-sequenced processing. In the process, you can take sounds obtainable only by software in the studio to the stage. Electro-Harmonix is introducing a new line of pedals specifically designed for stage and studio; for example, the Metaphors for bass includes an XLR out, standard balanced/unbalanced 1/4" out, and direct out. And Eventide, long known for its studio effects, has migrated that technology to the TimeFactor and ModFactor floor pedals. Also noteworthy: The Boss line of Loop Stations, including the RC-50 and RC-20XL. These let you record and overlay performances, building up complete musical compositions, whether you're playing live in the studio or simply want to blow away an audience.

DIGITECH VOCALIST LIVE 4

PRICE: $699.95

STRENGTHS: Surprisingly non-robotic harmonies. Plenty of other effects for enhancing your voice. Uncannily accurate tracking.

LIMITATIONS: No MIDI input. Footswitches require care to make sure you hit the right one.

DigiTech was first with a harmony synthesizer that followed your guitar playing—the Vocalist Live 2 ($499.95). A smash hit, and deservedly so, it spawned the Vocalist Live 4 covered here as well as the rack-mounted Vocalist Live Pro ($849.95), which includes a MIDI input so that its harmonies can also track keyboard MIDI data.

I've used the Vocalist Live 4 in the studio since it came out, and have incorporated it into my work with the band EV2 to give a bigger live sound (important for a two-piece). In the studio, I prefer to do my own overdubs but still use the VL4 thanks to one of its strongest assets: It does much, much more than just generate harmonies, although of course that's the focus. It can create vocals that don't sound like me, and includes a raft of signal processing such as pitch correction, EQ, dynamics control, de-esser, modulation, noise gate, reverb, delay, and the like—I often use it as a "vocal strip" even when not doing harmonies. For live use, it even includes guitar effects (and a tuner), so singer/songwriters may not need to bring their effects to the gig.

Although DigiTech promotes this as a guitar-oriented processor, I've used it successfully with keyboards and recorded signals. When I asked DigiTech why they didn't promote this aspect of the box, they said that the MusIQ technology that recognizes chords and patterns is optimized for guitar, and while it does work with keyboard audio, it's not really supported because it's possible to come up with patches that confuse it. Okay . . . but if you get a VL4, don't be afraid to try it out with keyboards and synths, too.

The harmonies are convincing enough that you can mix them up pretty high in the studio, and they'll blend well with other tracks. For live use, I prefer mixing the harmonies in the background, thus "thickening" my voice but without calling *too* much attention to the harmonies; I don't want it to seem like I'm "cheating" . . . even if I am!

VIRTUAL INSTRUMENT HOSTS

It's not just guitarists who want to transport their rig between studio and stage, but keyboardists, electronic drummers, and other instrumentalists—and there's gear for them, too.

Native Instruments' Kore 2, a clever approach to managing instruments and plug-ins, is a cross-platform hardware/software package. On stage, it can host all your instruments and plug-ins, integrating them in an ergonomic, performance-oriented interface. In the studio, it's a convenient way to find specific instruments and presets out of the thousands you'll find in a product like NI's Komplete. It can be a plug-in that operates inside a host, or serve as a host for plug-ins. There's also an accompanying USB 2.0 custom hardware controller, which makes tweaking parameters easy (particularly with NI synths and effects), as the controller includes eight touch-sensitive knobs and multiple other controls.

Kore 2's main element is the KoreSound, a "container" for VST/AU plug-ins that can hold complex combinations of instruments mapped across specific keyboard ranges with effects, mixing, MIDI effects, and routing. More importantly for stage use, a KoreSound can morph smoothly between eight variations, letting you get multiple sounds without having to load different KoreSounds. And because KoreSounds are tied to Kore 2, not the host, you can use a KoreSound with Cakewalk Sonar in the studio but then plug it into, say, Ableton Live when you're on the road.

The original version of Kore was solely about managing workflow, but Kore 2 includes the audio engines that power Absynth 4, Reaktor 5, Guitar Rig 2, FM8, Massive, and Kontakt 3. So, Kore 2 has now become an instrument in its own right. It can load the presets included with Kore 2 or presets from various Soundpacks that NI offers. Although the engines don't have the elaborate GUI of the full instruments, some parameters are available for tweaking.

If you don't want to bring a computer per se on the road, in addition to the Muse Research Receptor (see review), there's Open Labs' line of keyboard-meets computer-meets-virtual instruments. These are custom-built Windows XP computers, optimized for the road, with built-in keyboards (both musical and QWERTY), touchscreen, and control surface. They're true, self-contained workstations; you can run almost anything that's compatible with Windows XP (including DAWs) and can even burn a CD with it or surf the Internet. You can use this as your personal studio and do everything a sophisticated computer-based setup can do, then take it on the road as a keyboard rig, live performance instrument, backing track generator, etc.

MUSE RESEARCH RECEPTOR

PRICE: $2,099 (basic version), $2,949 (pro version), $2,499 (with Native Instruments Komplete 5), $1,999 (Total Workstation Rack from IK Multimedia)
STRENGTHS: Rugged, reliable way to bring plug-ins onstage. Networkable in the studio. Excellent support. Multiple configurations.
LIMITATIONS: Not compatible with all plug-ins. Plug-ins purchased specifically for Receptor work only with Receptor.

The list of Receptor users reads like a who's who of performers, from the Oak Ridge Boys, to U2, to Herbie Hancock, and a whole lot more. The idea seems simple enough: Build a custom Linux-based computer optimized to run virtual instrument and effect plug-ins, but house it in a super-roadworthy 2U case. Originally, it seemed like the ultimate alternative to elaborate keyboard rigs; you could just load it with your virtual instruments of choice, use the included software to route them through your favorite effects, hook it up to a MIDI controller and PA system—done.

But over the years, that simple idea has grown into a variety of custom configurations for different type of performance situations, from a custom version for drummers based around Fxpansion's BFD, to a version that comes pre-loaded with Native Instruments' Komplete 5 (as shown in the picture). Another version is IK Multimedia's equivalent to Komplete, with their line of virtual instruments, and there are also different versions within the basic Receptor model—Basic, Pro (with a faster processor and 750GB hard drive), and Pro Jr., with a 500GB hard drive.

However, Receptor is also great in the studio, not just because it relieves your DAW of having to do the "heavy lifting" with plug-ins, but

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RECEPTOR (CONTINUED)

because of the Uniwire networking protocol that allows networking up to 10 Receptors via Ethernet. Think about it: You can load each one up with dozens of GigaBytes of sounds, all hooked into your DAW of choice, but requiring virtually no CPU power or track freezing. The days of Hollywood composers having 30 Akai S3000s loaded with sounds are over.

One fine point: Receptor doesn't need a computer to do its thing in live performance (it even has rear panel keyboard, mouse, and video monitor connectors if you want to access plug-in parameters graphically). However, you'll need a computer to get the most out of Receptor; it's the only way you can load new plug-ins, purchase the full versions of demo plug-ins, and update the system or software.

Receptor enjoys excellent support. Check out their website for more information, as it explains the intricacies of how you install plug-ins, the various model options, how various people use it, and manual downloads. As a Receptor user, I can attest that it works as advertised—and more.

ACCESSORIES

This falls under the "too many to mention" category, but one item of particular interest to guitarists is Radial Engineering's JDX Amplifier Direct Box. Unlike a standard direct box, this inserts between an amp head and speaker cabinet. By tapping the amp head, it preserves the amp sound; this signal then feeds a reactive transformer load. This is not a standard loading device that dissipates energy (in fact, you *must* patch a speaker to the JDX), but actually "monitors" the reactive effects that occur between the amp and loudspeaker, and passes this along to a speaker emulator circuit that to my ears, sounds like sort of an open-back 4x12, but a little tighter. This then goes to an active balanced driver to provide a balanced XLR output.

In the studio, this can give you a direct sound that faithfully reproduces the amp head's characteristics, which you can use instead of or in addition to a miked sound. Live, you can forego miking and just feed the JDX out into a PA, giving a consistent sound from gig to gig.

READY TO MAKE THE TRANSITION?

Going from studio to stage is neither as complex or expensive as it once was, and is worth the effort: Your studio chops will increase dramatically if you also play in front of a live audience, and your recordings will sound more vital when informed with the performance ethic. Go for it! eq

Manufacturer Links

Ableton, www.ableton.com
Akai, www.akaipro.com
Alesis, www.alesis.com
Boss, www.bossus.com
Cakewalk, www.cakewalk.com
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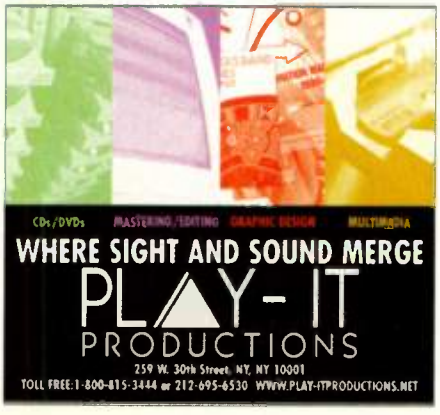

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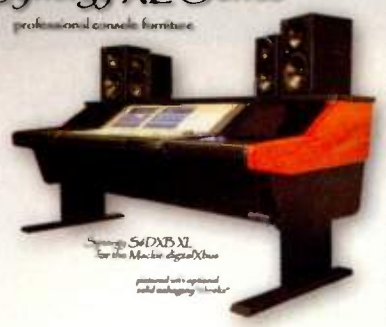

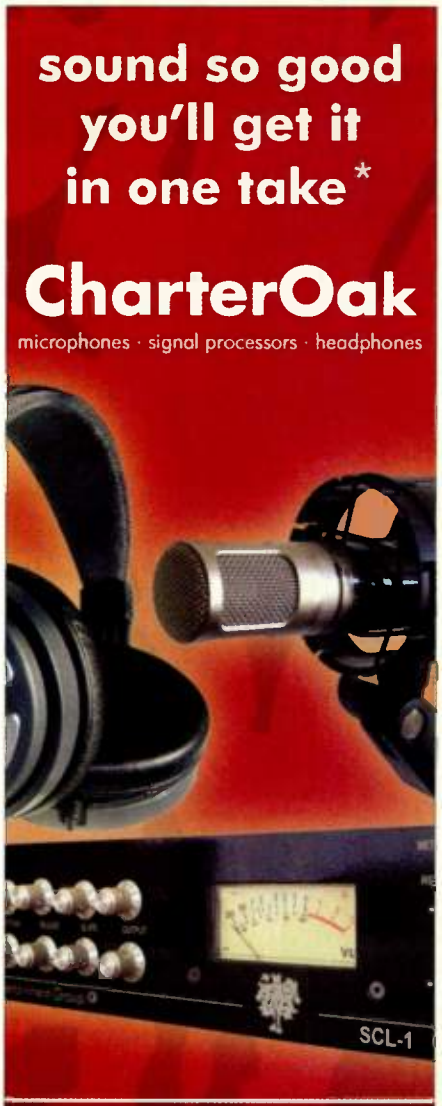

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B&H Pro Audio	800-947-5518	www.bhproaudio.com	39, 63
Behringer		www.behringer.com	7
Blue Mircophones	818-879-5200	www.bluemic.com	19
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Conservatory Of Recording Arts & Sciences	888-604-4075	www.audiorecordingschool.com/eq.html	44
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ROOM w/a VU

by Angelina Skowronski

STUDIO NAME: Slack Key Studio
LOCATION: Nashville, TN
CONTACT: www.myspace.com/slackkeystudio
KEY CREW: Randy Kohrs
MICS: Vintage AKG 414EB, AKG 451; Audio-Technica 4060, 4033; Earthworks QTC1; vintage Fostex 330; Lauten Audio LT-381 Oceanus, FC-357 Clarion, ST-221 Torch (2), Horizon Tube; Mojave Audio MA200 (2); Neumann KM84 (2); Octava M-L52, MK-012 (2); Peluso P28 (2); vintage RCA 44BX; Røde K2 (2), S1; Royer R-122, S1 (2), 121; Shure 57 (8), 58 (5), KSM 27; Violet Design Dolly condenser, Black Finger, Flamingo
OUTBOARD: Demeter HXC-1 Hx Series Tube Optical Compressor, Real Reverb; dbx 266 Compressor; M-Audio Trigger Finger; Stage Ninja Retractable XLR Cable Systems, Instrument Cable Systems
PREAMPS: Ampex 601 (2), 451; ART Pro MPA (2); Forsell Technologies JFET, SMP2; Great River MP-2NV; Telefunken V72 (2); Universal Audio LA610
CONVERTERS: Apogee DA 16X, AD 16X ; Lucid AES AD9624; MOTU 896HD DA
MONITORS/HEADPHONES: ADAM A7; AKG 141 (2), 240 (2); Equation Audio RP-21 (7); Hear Technologies Hearback System; Mackie 824 Nearfield monitors w/sub; Roland DS90; Sennheiser 280; Ultrasone 2000
PLUG-INS: Kjaerhus Audio; Sonnex; Universal Audio; Waves
INSTRUMENTS: Alvarez Denver Bell 5-string banjo; Amistar Randy Kohrs Signature tri-cone model; 1982 Bob Reed resonator guitar; 1989 G&L Telecaster; Gibson Dobro resonator guitar; Johnson tri-cone guitar; Melobar lap steel; Meredith Cherry resonator guitar, Maple resonator guitar; Mike Long D-18 Dreadnaught Guitar; 1935 Oahu lap steel, Diana model lap steel, 1930 small body Hawaiian, 1935 large body Hawaiian; Rayco Weissenborn; 1932 Regal Dobro, 1930 resonator mandolin; Scheerhorn #210 (L-Body #1) maple resonator guitar, Hawaiian Guitar #405C, reso-electric guitar, lap steel, #547 maple resonator guitar; 1970 Sho-Bud Pro II custom; Taylor 710 guitar; 1880 violin made in France.

NOTES: Nashville country and bluegrass name Randy Kohrs appears on more than 500 albums alone, but his fame transforms into infamous when it comes to his own studio—Slack Key Studio has already landed him a Grammy for producing, engineering, and mixing Jim Lauderdale's last bluegrass CD, *The Bluegrass Diaries*.

"My goal is to be recognized as one of the top recording facilities in Nashville based on the products that come out of it," says Kohrs—and he has stayed on top of state-of-the art gear with endorsements from several top companies in the recording industry including Røde, Apogee, and Violet Design. For vintage-sounding sessions, Kohr sticks to using hard-to-find vintage gear including six different custom-built preamps by Natale Tomiano.

The studio had its genesis in Kohrs' work as an acoustic session player; he figured it was a better investment to spend money on gear than hours in someone else's studio. Over the last ten years, the studio has evolved into a facility suited for any genre of music (despite Nashville's heavy country music concentration), and features two newly-built isolation booths. "I'm fortunate to get called to do many resophonic guitar overdubs for other artists' projects in my studio, as I've worked hard to get the right sounds out of my instruments here," says Kohrs. Recent work includes overdubs for a Willie Nelson and Melonie Cannon duet, as well as recording for hit songwriter and artist Larry Cordle's new album.

Aside from the extensive set of recording tools, A-list of musicians, and awards won, one of Slack Key Studio's main attractions is its '50s Americana diner-style kitchen and green room. But aesthetics are secondary to the gear and music. As a home studio recordist himself, Kohr has advice for other musicians building their own studios: "I recommend getting one pair of matched microphones and one pair of matched preamps to start with, then spend your money on quality analog-to-digital converters. One stereo signal chain that sounds amazing is much better than having five that sound terrible." EQ

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SUPERIOR DRUMMER® 2.0

THE NEW YORK STUDIO LEGACY SERIES VOL.1

Superior Drummer® 2.0 "The New York Studio Legacy Series" was recorded by Pat Thrall, Neil Dorfsman and Nir Z at Hit Factory, Avatar Studios and Allaire Studios, NY. Between them over the past three decades they have worked with artists such as Celine Dion, Nick Lachey, Sting, Bruce Springsteen, Dire Straits, Beyoncé, Björk, Kiss, Joss Stone, Genesis, John Mayer, Fiona Apple and Chris Cornell.

EZplayer® pro

ALL YOUR MIDI - ONE PLAYER

Superior Drummer® 2.0 ships with a customized version of the plugin MIDI engine EZplayer® pro filled with MIDI played by Nir Z.

PC MAC VST RTAS

Superior Drummer® 2.0 built in effects delivered by Sonalksis

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