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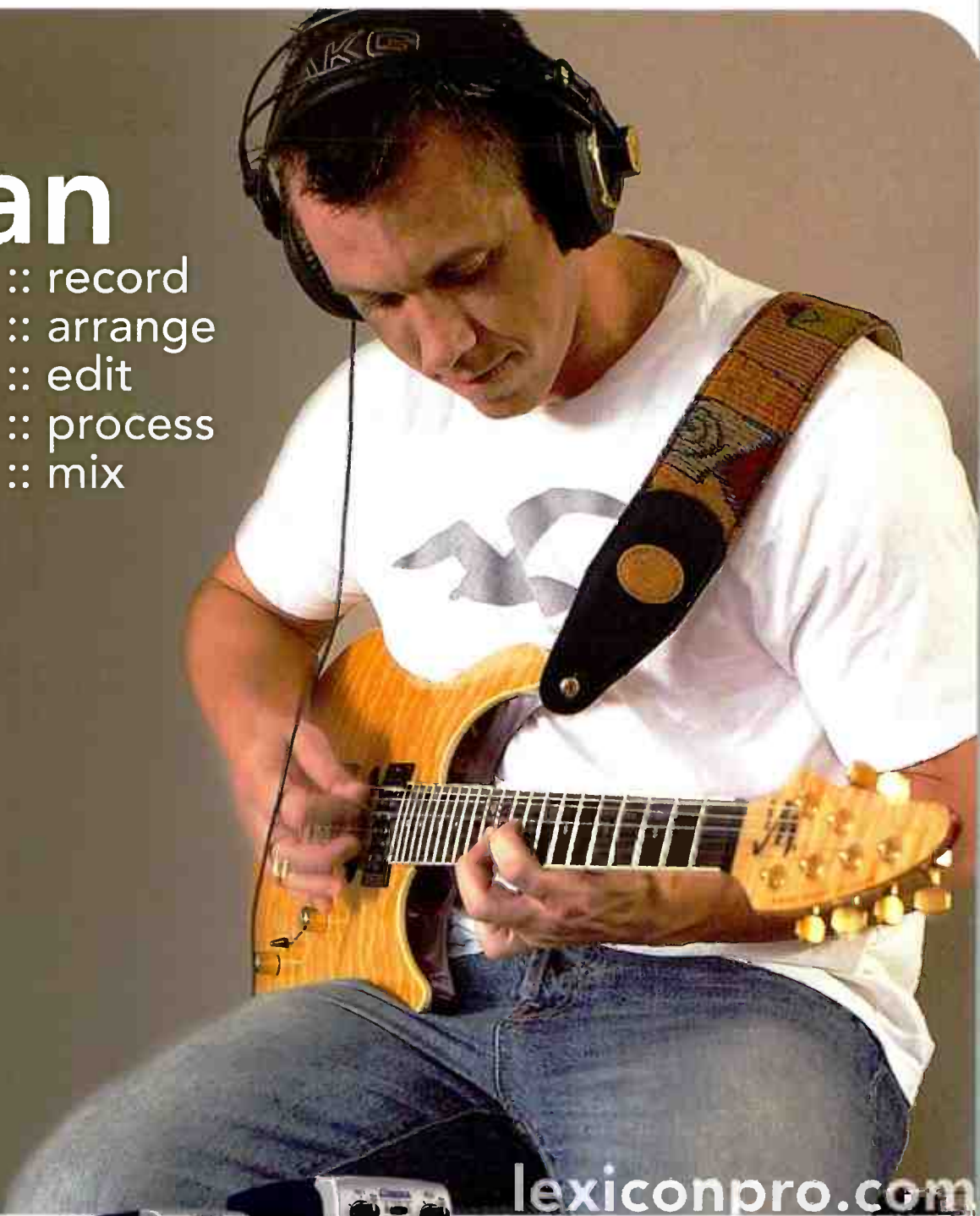
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# 08/06

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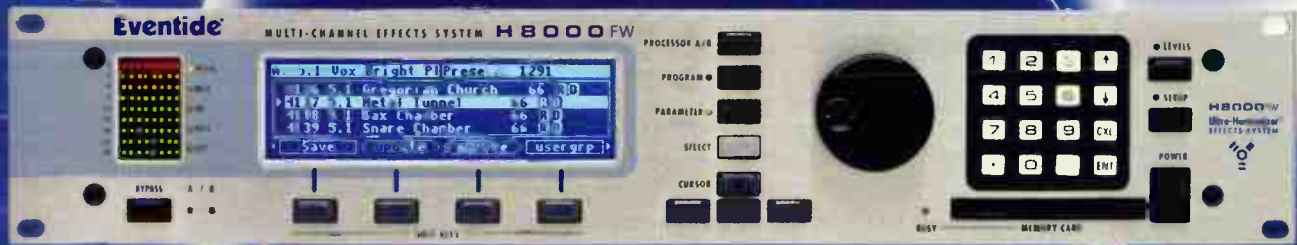
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# Talk Box



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## DIGITAL IS NOT A MINDSET

Some people just seem to love putting the world into neat little boxes: File-sharing kills music or file-sharing promotes music. Red states or blue states. Deal . . . or no deal. But while computers seem to thrive in a world where everything is either an unambiguous one or zero, I don't think that applies to our primarily analog reality. For example, if an election is "too close to call," shouldn't we really be talking about a "purple" state? And file-sharing might go *both* ways: kill some CD sales, but boost sales of other CDs.

Maybe it's just me, but it seems some of our music and recording world reflects this push to simplify everything down to a minimal set of options. Take overcompressed masters, which have basically two levels of dynamic range — extremely loud, and off. Or the premise that you have to use either hardware processors or software plug-ins, or commit to Mac or Windows. That if you love tubes, then modeling is by nature a pale imitation of the "real thing," and if you're into modeling, then tubes are obsolete. And don't get me started on analog vs. digital. . . .

So it's great when people break out of those molds, and send signals out from their software host into hardware processors, then back in again. Or use a tube guitar preamp to go through a modeled cabinet, or send a modeled preamp through a physical cabinet . . . or feed a Minimoog into a Marshall stack. And although I'm not convinced that analog summing boxes sound "better" than digital summing, I have no problem accepting that they sound *different* because they mix some analog in with digital technology.

This world is a complex one, and few real-world problems yield to simple, jingoistic solutions; similarly, music stubbornly resists attempts to fit in little boxes. So when you record music, don't believe the hype that one size fits all: Do everything you can to create a rich, nuanced, analog-style experience — even if every piece of gear you use is all about ones and zeroes.



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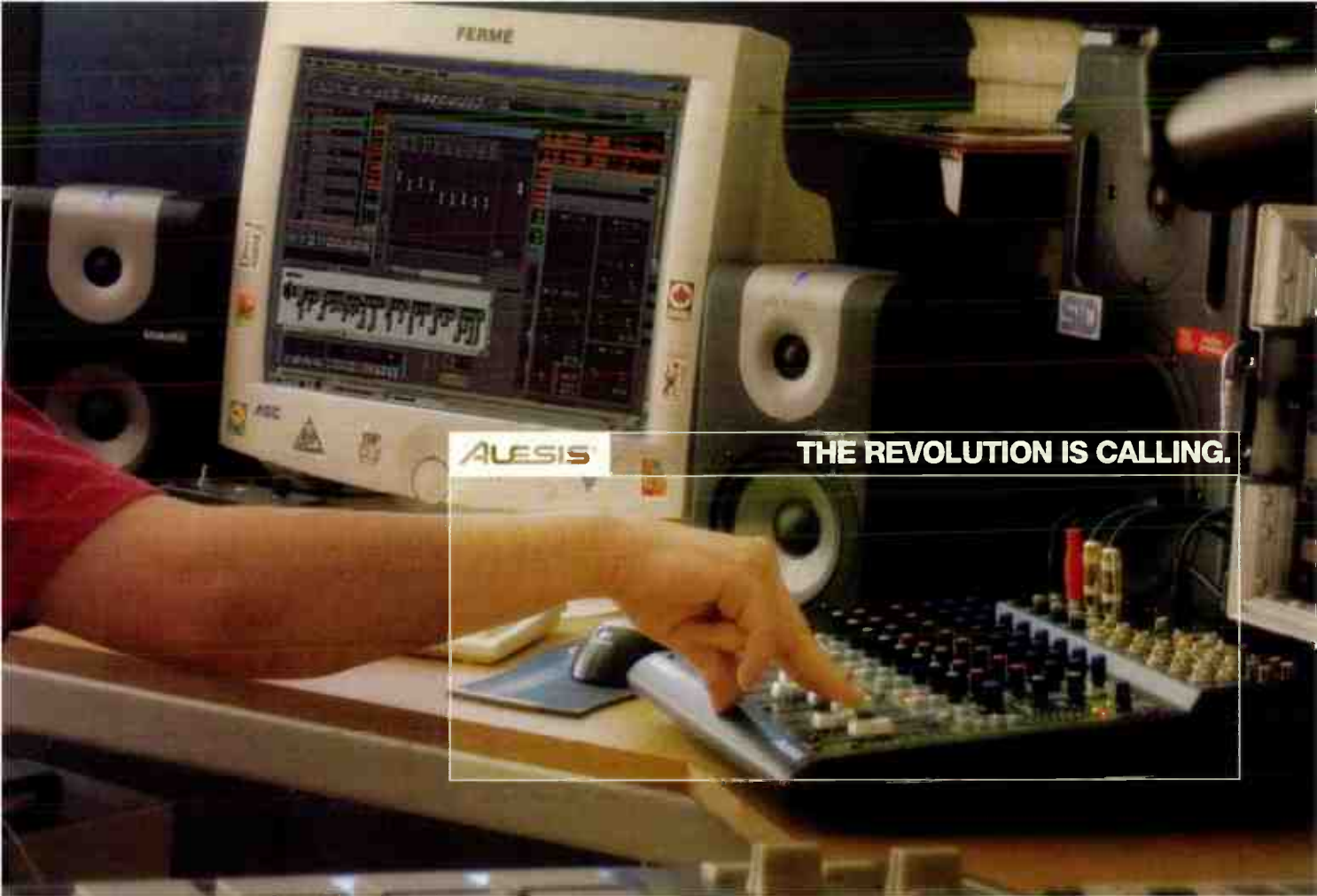
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# Punch In

TUNE IN, TURN ON, PUNCH OUT BY  
THE EQ STAFF

## The FRESH Approach by Lily Moayeri

DJ Fresh has production abilities that have been cemented for a long while in the global drum 'n' bass community, but for the last couple of years, he has been forging a solo path—resulting in the recent release *Escape From Planet Monday*.

Gnarly basslines and machine gun beats have long been Fresh's signature, but *Escape* is all about a broadening range. Featuring collaborations with the Pet Shop Boys' Neil Tennant and DJ Shadow, *Escape* draws from an interesting drum 'n' bass palette but provides songs that are much more multi-faceted than anything he's previously created.

Assembled in Fresh's closet-sized home studio, the album's live elements (saxophone, flutes, vocals) were recorded in far away locales (New Zealand, for example) and sent back to him via the Internet. Using Native Instruments' Kontakt to construct a preset with all the beats cut and assigned on keys, Fresh later mixed MIDI files sent by DJ Shadow with live cuts to thicken his patented sound—a trick he had originally discovered while producing the Pet Shop Boys.

"I'll use CMT Bitcrusher or TC Electronic Powercore Assimilator to make a live sound fit," he says. "You can take a horn sound you got off a record, create a horn sound with a synth, then use Assimilator to match the EQ of the one you are playing with the one off the record."

For *Escape*, Fresh toggled between an Apple Macintosh G5 and a prototype custom-built Carillon dual 3.6 Intel Zion PC, which he matched with numerous plug-ins; each with a particular quality he

desires. For example, the Blue 1.5 (used to create the guitar sound on "Pink Panther") for "its capabilities with editing synth parameters and automating them with a modulation matrix that allows assignment of anything you need," Spectrasonics Atmosphere for "pads and strings," z3ta for "arpeggiated old-school, to blaring bleed, synth sounds" (used on "Funk Academy" and "Throw"), Sony Oxford's EQ for "its warm thickness," and Glitch, which Fresh refers to as an "Aphex Twin" plug-in ("It automatically turns whatever you put through it into crazy syncopated stutters, time-stretches, and filters you can create your own pattern with.") For compression and limiting, he likes Waves' transparent, neutral characteristic, which "doesn't add color to what's already there."

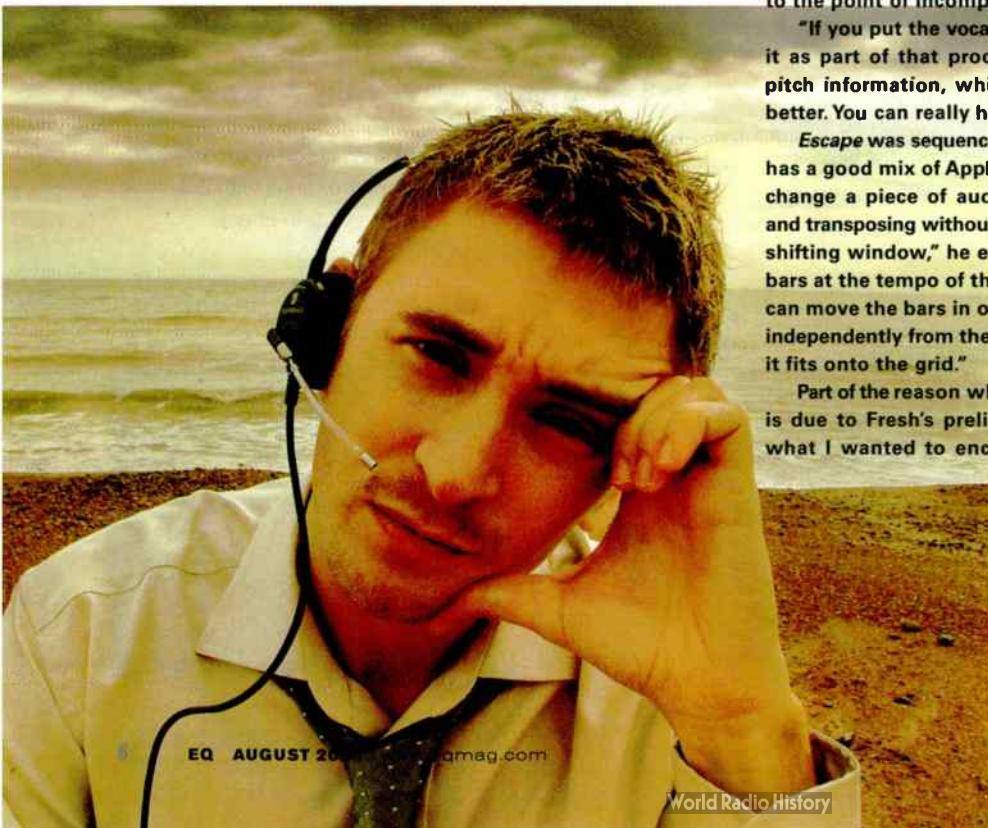
"On that tip, I also used Melodyne on a couple of tracks," says Fresh. "You can get a certain kind of pitch correction with Melodyne that's like an effect. If you overuse it, it's got an interesting effect. You get different effects from using Antares Auto-Tune 4 to do a similar thing to correct the pitch of a vocal. Kontakt also has a feature that lets you take out all the harmonic information for a sample then play the notes back in yourself. You can use a vocoder to do a similar thing."

Fresh used these on the Neil Tennant-vocalized "Throw" where he put it through Melodyne, Auto-Tune, Kontakt, then vocodes it in different combinations to get over-the-top vocal pitching effects. The vocoder is also used on "Funk Academy," where Fresh tries a new way he's found for getting around the vocoder distorting the words to the point of incomprehension.

"If you put the vocal through Kontakt, it ends up semi-compressing it as part of that process," he explains. "It takes away all of the pitch information, which makes the vocoding process work a lot better. You can really hear the syllables."

*Escape* was sequenced using Steinberg Nuendo 3, which Fresh finds has a good mix of Apple Logic's MIDI and Pro Tools' audio. "You can change a piece of audio by selecting it in the arrangement page and transposing without having to load up plug-ins or a separate pitch-shifting window," he explains. "It will show you the division of the bars at the tempo of the track along the piece of audio as a grid. You can move the bars in order to time stretch that section of the audio independently from the piece of audio as a whole, move it along until it fits onto the grid."

Part of the reason why the end result comes across as so organic is due to Fresh's preliminary compositional approach. "I decided what I wanted to encompass sound-wise on the album and set about casually trying to make tracks that fit each of those descriptions. From the underground drum 'n' bass point of view, it would have been much easier not to have done that. But then it would have lost the important thing, which was to get an album that flows from start to finish."





# RUSTY ANDERSON ON GUITAR MIKING

by J.J. Blair

If you've been unable to avoid the deluge of Paul McCartney in the media for the last few years, you've probably noticed one Rusty Anderson — Paul's lead guitarist — who is also one of the most in-demand session players of the last 15 years. Anderson recently added "producer" to his credentials, so *EQ* thought it a great idea to catch up with him and quickly discuss a few of his favorite guitar miking tactics.

**EQ:** Share with us a typical miking configuration that you find yourself using regularly.

**Rusty Anderson:** Well, I really like putting a large diaphragm condenser where the cone meets the center diaphragm. . . .

**EQ:** On-axis? Off-axis?

**RA:** Concerning axis: I was once told that sometimes you don't really want to have a mic that's exactly on-axis, so there's two parallel planes. I don't know if that makes sense. . . .

**EQ:** Well, the reason for putting a mic off-axis is to get off-axis rejection of the higher frequencies, meaning, the further you turn it from parallel, the fewer high frequencies you are going to get. And so sometimes, if you have the mic directly facing a speaker, the more you are going to pick up those high frequencies, which is something that is usually desirable.

**RA:** At times, I like miking on-axis because of that — on-axis, right on the edge. Like a SM57, people always like 57s, but I don't think a 57 will work without a Royer or a 414, which are both really good for picking up the low end. But you have to make sure that the phase is correct. In a way, probably the



no-brainer thing to do is pair a 414, or any large diaphragm condenser, with a lower level guitar sound. Too much volume will kinda freak out mics; and the lower the amp volume, the more you can open up the mic pres.

**EQ:** Which is why I don't like to record 4x12s as much, and when I do record them, I tend to put the mics a couple of feet off the cabinet — it's a different sound. You get the room and you don't get that "immediacy" when you do that, although you certainly can close-mic them, but you might as well use a smaller amp if you are just miking one speaker. . . .

**RA:** I've heard a lot of great recordings that have ambient-miked guitars. But I've never been really able to really pull it off, which is weird. You know what the trick is? With ambient-miking, you just have to spend a lot of time really listening. The most successful ambient miking I've done is when I've taken

a close mic and a far mic, put the far mic really far away — turn it backwards facing the wall, maybe flip it out of phase.

**EQ:** What I do sometimes is put a mic or two directly on the speaker and then put a ribbon a few feet back. I'll have my second engineer move the ribbon mic back and forth slowly, so you can hear the phasing build up constructive interference on certain frequencies. You hear "oh, now it's building up at 100Hz" or "now it's building up at 300Hz," and it sounds phased slightly, but you can really fatten guitars up that way.

**RA:** You can get kind of a quirky sound doing that, not unlike some REM records that have these nice ambient guitar sounds, which are really cool because they add personality. But a lot of times, I just don't even care to mess with ambient miking. I'll just go in, close mic the cabinet, and be done with it. Most of my favorite pop recordings of guitar are close-miked, so if I'm trying to recreate some of those tones I don't particularly feel the need to even mess around with ambient miking.

## THREE ON A TREE

**Jean Claude Reynaud: Sound engineer and producer, JMR employee, fast driver, cognac drinker.**

**EQ:** Do you have some whacky effect you use behind closed doors?

**JCR:** A broken Roland SRE-555 echo. The reverb is so weird. I find myself using it on guitars and even backing vocals.

**EQ:** Do you remember any particular effect on a recording you've heard that changed your life?

**JCR:** Maybe when I heard the first gated reverb from an SPX, I was sure that I would quit my job soon, it sounded so bad. . . .

**EQ:** What's your favorite hangout after a mix?

**JCR:** Is this a question to know if sound engineers are really alcoholics? —*Cookie Marenco*

## DEBATE: THE BIG PRE SOUND

Today the big pre sound (some call it "iron") is very popular with many engineers in the context of rock/pop music. I've found myself perplexed in recent times by many people on forums making claims that "the Avalon 737 or Focusrite ISA (220, 430 & 428) pres are boring." This is funny, as when the 737 came out the reviews were glowing. Why the sudden change? Well if you have someone sing through a 737, and then into a pre like the Great River or Portico, there is a huge difference — with many people preferring the bigger, fuller sound of the Great River/Portico. These newer pres are giving us the full, big sound up front while in the past, with many pres, you would need to add EQ and compression to get similar results.

For anecdotal purposes: I recently recorded a song for a client that has a several vocal parts. I found myself using my Neve Portico on the main vocal track, and my Langevin DVC on the alto, tenor, and soprano tracks. The reason? I used the Portico on the

background vocals, the tracks sounded too big, and they competed too much with the lead track. In order to allow the lead vocal track front standing, it was important to use different mic pres.



Using a 737 or ISA starts you in the middle of the tone scale. Both pres are not very clean, or very tube-y. The ISA is center right — going more towards a cleaner sound, but having a touch of smoothness. The 737 is center left — having a smoother sound over the ISA, but not as warm as a Manley or Vipre. By not having a huge sound up front, you are allowed the opportunity to mold the sound more with EQ and compression. If you have a bass guitar, for instance, you could run it through an Avalon 2022 for a clean sound and then use an 1176 compressor to add the

right amount of punch to the track. If you used a fuller, bigger pre, you may need less compression and EQ to get the punch you want. Of course, a 737 or ISA pre will not get you the same sound

as a Great River or Portico, but they can deliver a full sound when paired with good EQ and compression. In fact it may offer more flexibility, since your starting out with a more even-sounding pre that you can later build on.

George Massenburg has fantastic-sounding clean pres that many love. His feeling is that it's best to get the sound right, and accurate, from the source — flavor can later be added with EQ and compression. This is sound logic, and it's coming from one of the more successful engineers out there. On the flip side, if you know your pres, and know you

can get your desired sound quickly with the bigger or more colored pres, it's going to make your life easier. Many times you could use a big sounding pre, touch it up with a little compressor to even out the peaks, and a touch of EQ to add some sparkle and you're done. I know I have done this many times and have obtained great results in terms of workflow. However, with recording an orchestra, or many live performances, it may be better to go with a more general sounding pre, as you will have that flexibility to alter the sound later on. With a pre that has a very strong character, you may find yourself painted into a corner, so to speak.

The point is, both schools of thought should be weighed when approaching a project. Your warm tube pre, or big pre, may be the best route to take for certain applications. However you just might find that so-called "boring" pres may just be the ticket to the right sound, by allowing you space to customize and spice things up with the right ingredients later down the line. —Glenn Bucci/Revelation Sound

# CHARLATANS

Until recently, the UK's own Charlatans had worked separately, employing a bi-continental recording strategy. But with *Simpatico*, their ninth album proper, the group decided to merge at Big Mushroom, their Cheshire, England-based joint studio, to flesh out an album that, according to keyboardist Tony Rogers, is "more of a unit" — something he attributes largely to the coalescing into a single studio environment.

For pre-production work, Rogers, bassist Martin Blunt, and drummer Jon Brookes assembled preliminary ideas at Rogers' home studio (the appropriately dubbed "Little Mushroom"), while singer Tim Burgess and guitarist Mark Collins opted to work primarily in Palm







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## CHARLATANS

Springs; coming together later with producer Jim Lowe at SARM's Hook End Manor Studios.

With the intention of producing an album that amply conveyed the band's more organic sentiments, the Charlatans decided on tracking with 16-track, two-inch tape, a move that has helped convey their newly-arisen ska fascination, an element that can be attributed to many hours being spent spinning the legendary Trojan box sets and yielding to a noticeable affinity for the Clash — influences that have strongly affected better than half of the album, particularly on Burgess' vocalizations. "We've all been ska fans for a long time," confesses Rogers. "I'm surprised it's taken until now to crop up on our records." But the Charlatans are no pretenders to the throne, for *Simpatico* offers much in the way of genuine ska sounds, as Rogers assures. "The instruments we recorded with are some of

the same instruments used by the seminal ska bands of the '60s."

But for all the vintage equipment and Hammond organs present on the album, Charlatans didn't abandon technology in the whole. Big Mushroom's 24-track Pro Tools rig was certainly not neglected during their sessions, and Apple's Logic Pro was liberally employed as a primary writing tool. Pulling authentic vintage sounds from the software samplers and virtual instruments, Logic helped the band not only pen a large portion of *Simpatico*, but also sped up the process of recording — which is evidenced on tracks such as "The Architect," where Rogers, for the first time, played a Theremin to give the song an underlying spooky vibe. Using Logic, Rogers says, "I played it [the Theremin] in, cut off the rough edges, smoothed the sound up, and then added a few effects." Easy as pie,

and incredibly effective to boot.

This new way of working, namely using Logic, has in certain ways steered the Charlatans towards more of electronic-based methods of writing and recording. On the "Road to Paradise," for example, the band started with a percussion loop and worked their way backwards — incorporating the guitar, organ, drums, and bass lines afterwards. "[We] normally come up with a melody," says Rogers on the subject of the Charlatans writing process, "but using Logic really did help. It wasn't just about a melody and a hook. Logic advanced that song to get somewhere it would have never been before." But it's not a substitution for the real deal, by any means, Rogers concludes. "If you can use technology as a tool, but not let it show up as the most important thing, then that's what's really great." —*Lily Moayeri*

## Five Quick Questions with Howard Benson

**EQ:** How do you pick the band that you want to work with? What's your first step?

**HB:** I usually look for two things: "Star quality" and vocals. As long as the songs are mostly there, I can deal with them — but the thing that I cannot fix is the "star."

**EQ:** How much time do you spend on a rough mix?

**HB:** Tons. I do most of the rough mixes in the box — which I consider the most important part of the record. I sometimes spend days working on them.

**EQ:** You work a lot with Pro Tools. When using it, are you making verses and choruses to put together, or are you taking the traditional approach?

**HB:** It varies. Sometimes it's very traditional — I use it like a tape machine. But then some songs have to be moved around a lot. Most people don't understand why their mixes don't sound good, why things don't match up when they come back to record at another time, why things are out of phase. Pro Tools is a very deceiving piece of equipment; unless you really understand what's going on there, in a very fundamental way, you're screwed.

**EQ:** When you're producing, how much psychology are you using



to get the take you need?

**HB:** A lot. For example, people always ask what was going on during that vocal performance on Hoobastank's "The Reason." Honestly, the Lakers were in the playoffs, and Doug is a huge sports fan. Every time we would stop the tape I would tell him the score. That's what we were talking about; we weren't talking about the song at all. In some ways, that's

the thing to do. When you're so focused on the song, you can make it melodramatic. It's not like "The Reason," all this kind of like goopy stuff where if he starts overstating it, it sounds really bad. I use this a lot on my singers: "hey, just sound bored." Sometimes that will keep the edge off of the vocals.

**EQ:** How do you get that perfect take?

**HB:** You have to let it come to you. You've got to be open to let it hit you. Sitting there trying to change things constantly sort of defeats the purpose. Look, you need to put in the work, but there's some magic that has to happen in the studio. Sometimes people listen to "Helena" from My Chemical Romance or the Rejects' "Move Along" and ask me "how did you do it?" I don't really know — I just do it. —*Jeff Anderson*

## THREE ON A TREE

**Ken Walden: President/Founder of Secrets of the Pros**

**EQ:** Do you have some whacky effect you use behind closed doors?

**KW:** Nope. Lots of plug-ins — which are as good as any box I've heard.

**EQ:** Do you remember any particular effect on a recording you've heard that changed your life?

**KW:** Sound Toys and Eventide gear — like being in a dream.

**EQ:** What's your favorite hangout after a mix?

**KW:** Bed. I'm wiped out after a real mix session. —*Cookie Marenco*



# STEVE ALBINI: A RECORD RETROSPECT

If you hate most producers, talk to Steve Albini. For over 20 years, he's been the most famous "anti-producer" in the business, making an art out of leaving art alone. And of the over 1500 records he's recorded, one of his most famous accomplishments was the second record for an up-and-coming band called P.J. Harvey. *EQ* took some time out of Albini's busy day to hear him reminisce about the watershed record *Rid of Me*.

**EQ:** So *Rid of Me*, recorded over 10 years ago, is still considered one of the best records you've recorded. You're known as a very hands-off engineer, but your approach also gives records a certain sound. How much credit does your recording deserve for a record's acclaim?

**Steve Albini:** The lion's share of the responsibility of how a record comes out is in the hands of the band. If you're working on a record in a technical capacity you can screw the pooch; but you can't elevate something that's not already really good. It's a case where you can f\*\$& up a record real bad, or you can avoid f\*\$&ing up a record. You can't take a record that's not great and make it great.

**EQ:** Well, conversely, when it comes to complaints about a record, what role do you accept? *Rid of Me* has been criticized for the vocals being too quiet. . . .

**SA:** When they make their own record they can make the vocals as loud as they want. I don't really remember having a conversation on it; the vocals ended up where they did on any given song because when we were listening to it that's where they settled—everybody thought it sounded good there. I don't remember there being a conscious decision about the vocals being loud or quiet. Every time you play a tape, you pull the faders up and it sounds a little different every time, and at some point along the process someone said, "yeah it sounds good that way."

**EQ:** You recorded the album at Pachyderm Studios, where you also did *Silkworm*, *Failure*, and *Nirvana*. Why that particular facility?

**SA:** It was a nice studio for a long-term project because it's a residential studio. There's a nice house you can live in while you're there. It's a comfortable environment and it's also relatively secluded. In order for anybody to go on a bender, or have a drug binge, or go way late at a night club, they'd have to make

a concerted effort; you'd have to work pretty hard to get in any serious trouble.

**EQ:** You try to record bands as live as possible. For the setup of PJ Harvey, where Polly sings and plays guitar, did you go the extra mile and record vocals live as well?

**SA:** Occasionally I'll do that, but not on that record. It's rare, but it does happen. I've done records where every stitch of music was tracked live, but not for a rock band where you have vocals that are fairly "important."

**EQ:** The drums have an attack that really drives the record, especially the snare. Did you try anything different for the setup?

**SA:** It was the normal set up for me— a kit in the big room with the amps hived off in the isolation rooms on the side.

**EQ:** So, when you go back and listen to records you've done in the past. . . .

**SA:** I have to admit that I don't listen to records that I've done very much. You end up spending an awful lot of time on a record while working on it. It might be the case where you've heard all you need to hear. There's also something

vaguely narcissistic about listening to records you've worked on.

**EQ:** *Rid of Me* has been shown to be a very polarizing record. People either love it or hate it in comparison to PJ Harvey's later material.

**SA:** Those records are way more important to Polly than anyone else. Other people can pass judgment, but that's all for their amusement; Polly has to wake up every morning being Polly. She has to be comfortable with the way her records came out, and I don't really concern myself too much with what other people's opinions of her records are. It's trivially simple for somebody to say "I used to like the first couple of records, but I haven't really liked the last couple" or "I didn't really like her when she was a rock musician, but now I really think she's gotten somewhere." I think all that sort of critical monologue you hear from everybody is totally meaningless. You like the records? Terrific. You don't like them? I suggest you don't buy them. Anything beyond that is nonsense. —Shane Mehling



## SESSION FILE: Adam Lasus

**Clap Your Hands Say Yeah funded their CD and distributed it themselves . . . and now it's Number One on the CMJ New Music Charts. Here's the story on the producer behind it.**

by Jeff Touzeau

Adam "Red" Lasus was one of the many pioneers during the "first wave" of indie music, producing and engineering bands such as Julianna Hatfield, Chris Harford, Versus, Madder Rose, Helium, and Yo La Tengo during the early '90s. Originally from Philadelphia, he built his first facility, Studio Red, around the block from the Khyber Pass, a club where most of the country's hardest working indie acts would ultimately pass through. Lasus



Adam Lasus entering mix-land.

frequently hung out there, befriending interesting groups he would lure into his studio, or "musicians playground" as he calls it.

Since closing Studio Red, he moved on to become the owner and resident producer of Brooklyn's Fireproof Recording, originally the borough's oldest hook and ladder company. [Editor's Note: He has since relocated Fireproof to Los Angeles.] EQ caught up with Adam just as one of the newest records he produced/mixed, *Clap Your Hands Say Yeah*

(the debut album by the group of the same name, with additional engineering by Keith DeSouza) began to catch fire. The album was funded and distributed solely by the group, and to date has sold over 60,000 copies — and in the process, skyrocketed to Number One on the CMJ New Music Charts.

### YOU GOTTA BE ABLE TO SWITCH GEARS . . .

Lasus is quick to point out that "indie rock" took him by surprise, and when he began he wasn't looking to fit into or work in this rapidly emerging, if elusive, genre. Instead, during the '80s, Lasus was focused on groups like Echo and the Bunnymen, The Cure, and Velvet Underground, eventually gravitating towards The Beatles and The Stones. As a result, his productions became largely oriented toward guitar and drums rather than, say, big keyboards and samples.

### GO OUTSIDE YOUR "COMFORT ZONE"

Although indie rock represents most of his work, Lasus frequently draws techniques and ideas from altogether different genres. "I did a record with a buddy of mine,

Matt Keating, and he was kind of in a Motown kick and wanted to have a horn player come in. So we listened to Marvin Gaye, *What's Going On*, and if you listen, they have the little bongo going on all the way through the track that gives it this really cool little groove. So when we went to do the basics, we thought 'Let's play real sparse and leave room for all these horns, cool piano licks, and other hooks.' We were able to build up that great vibe, definitely Motown-y flavored," he recalls.

Lasus believes that cross-genre sampling is also a healthy thing: "One of my favorite examples is Beck, who samples Dylan, The Beatles, The Stones, Devo; then he'll do a riff on top of it. I don't do that because I don't work with samplers, but why not try to build your production by emulating these other productions? The end result might be something totally different and better than what you anticipated."

### "CLEAN" IS NOT ALWAYS "GOOD"

Lasus offers this advice to producers working in any genre: Be careful of making things too clean. "This happened on the *Clap Your Hands Say Yeah* record. I put up a \$1,000 mic, and the band came in and said 'The vocals sound way too good — way too clean.' So I broke out my mini Marshall amp and a \$2.50 Radio Shack mic, the cheapest one available to us, and ran the vocals through it (Figure 1). Similar techniques were used on Beastie Boys records and on Beck records to different degrees. Some mic it up with a cheap mic, others with a high end mic." [Editor's Note: Another easy way to get a cheap mic sound is to use a headphone "in reverse," with the earcup acting as a mic. This technique is used a lot by DJs.]

Lasus also notes that one can go direct out through the headphone jack, and that the tone controls on the amp enable a gritty or clean sound, depending on preference. "I love using this cheap combination of the Radio Shack mic and the mini Marshall amp — it breaks up the artist mentality of 'I'm looking at a \$1,000 microphone.'"

### RE-AMPING: NOT JUST FOR GUITARS

He also uses the mini-Marshall amp as a re-amp — in other words, to take the output of a track and re-process it to get more of the sound he wants. "If I'm getting that boomy proximity effect on an expensive tube mic, I'll use the headphone amp as a send, and run the vocal into the mini-Marshall, then mic it up as a re-amp. It works perfectly as a re-amp on anything: snare drums, bass, vocals. You can create a whole bus of this thing if you want. I use it all the time."

### NEW TONES THROUGH "TENOR" GUITAR

One of Lasus' favorite tricks for recording acoustic guitars



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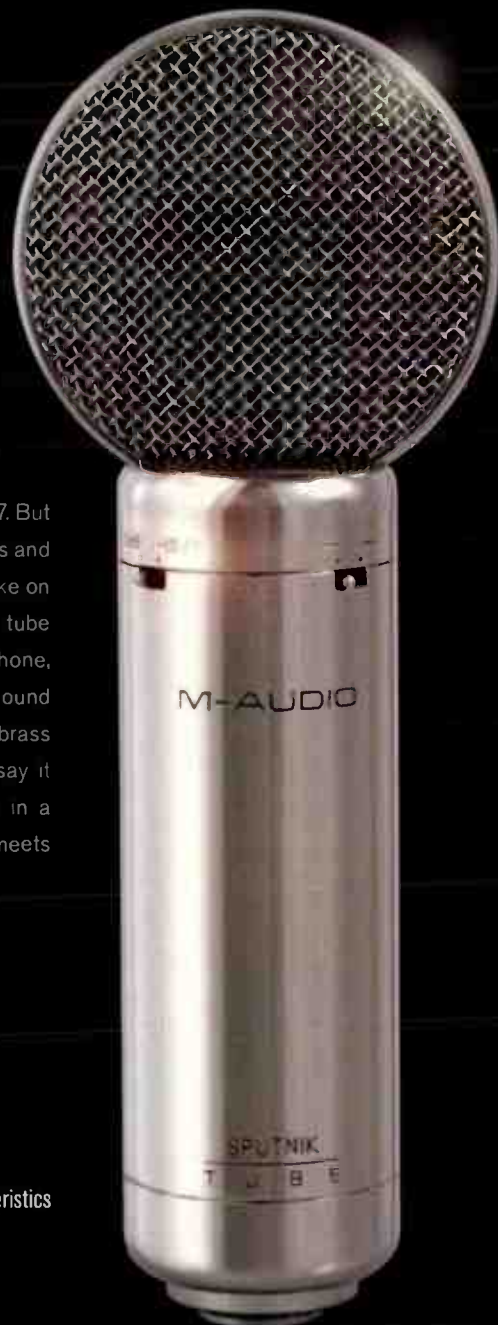
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World Radio History

## SESSION FILE:



**Fig. 1. Sometimes good things do indeed come in small packages.**

was borrowed from his alt-country counterparts. "I use what is called a Nashville tuning, and it turns the guitar into almost a tenor guitar. It sounds like you're playing with a capo on the 12th fret. I took a reissue Martin small body guitar, like the Nick Drake 00-15 size, stripped off all the regular strings, and put all the light gauge strings from a 12-string guitar on it. You put this on somebody's chorus, and you get this gorgeous texture, kind of like a banjo sound."

We've all been trained to hear a guitar a certain way, and Lasus says this technique breaks up the preconceptions we've all built up over time. The technique even works on the cheap \$100 guitars, which project the higher frequency range just fine. Intonation challenges are not much of an issue because the high gauge strings bring less tension on the neck anyway. *[Editor's Note: You may need to make some bridge adjustments to correct the intonation for lighter gauge strings.]* "This tuning also changes how you can mic up the instrument," claims Lasus. "You don't get those booming tones, so you can place the mic as close as 3' away from the body without any problems."

### "PLUG-OUTS" SOMETIMES BEAT "PLUG-INS"

Fireproof has an extensive collection of effect and processor pedals (Figure 2). While these gadgets were originally designed mostly for guitar, they get serious mileage in Lasus' shop during both the recording and mixing phases. Where other people might reach for plug-ins during a tracking or mix session, Lasus finds that the right effect pedal can lead to a more genuine or desirable result. "I often run vocals through a Electro-Harmonix Big Muff or a Rat pedal, or a Boss Delay. A Boss Delay pedal, for example, might sound better than your rack delay. It's only low-fi and has 8- or 12-bit resolution, so it sounds a little more old school. Sure, you can use a plug-in to get phase and flange, but why not use a real MXR Phase 90, or a real Electro-Harmonix Electric Mistress?"

He also uses pedals on the aux channels during his mixes. "Let's say you have an organ, and it's not quite



**Fig. 2. Plug-Ins from the late 20th Century.**



**Fig. 3. There's nothing like an old Echoplex . . . and nothing quite like maintaining one, either.**

stereo enough. Run it through a stereo flange pedal in the mix! If a bass isn't thick enough, I'll often run it through a Big Muff as an aux, return it on a channel, and just put about 20% of the Big Muff in there for some more bottom or some fuzz." He also uses tape delays (Figure 3) instead of digital rack delays, something he borrowed from the famous Johnny Cash productions.

### ANTICIPATE YOUR CLIENT'S NEEDS

The bottom line for Lasus is finding the comfort zone for his clients. "I once had an artist called Amy Ray come in, and she brought Joan Jett in to play guitar. Jett came in and I pulled out my SG Jr., with a single P-90 in it, and plugged it into my cheapest, dirtiest little Ampeg Rocket amp. She turned it all the way up, and she was like, 'Okay, that's my sound. Let's go!' Then ten minutes later, we were done. The SG Jr. was just right for her, because she has smaller hands than some other people and this guitar had a slim neck. If I had pulled out a regular Les Paul or a Jazzmaster, it might have been a different story. So you always have to be sensitive to those things." **EQ**

*Jeff Touzeau is a renaissance man of sorts — author, producer, owner of Hummingbird Sound and frequent EQ contributor. His brand new coffee table book Making Tracks is currently available at many fine establishments. Do yourself a favor and check it out.*



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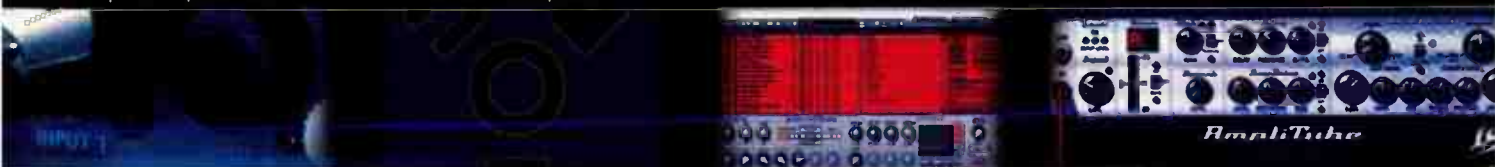
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## TECH BENCH Disaster Prevention

by Jeff Anderson and John Klemme

It's 2 A.M. and you've just finished capturing that perfect vocal take when the unthinkable happens — your hard drive crashes and all of your files are suddenly lost.

From the project studio to the most professional of facilities, it's never a question of "if" your hard drive will fail, but "when." So here are a few solutions to keeping your studio up and running in the face of impending doom.

To begin, the general rule of thumb is: If you don't feel comfortable losing it, you should be making a backup copy of it, so the key is to be regular in your data backups. For the professional studio running several servers and/or NAS (network attached storage) environments, daily incremental backups are considered policy. And that's a policy you would do well to adopt.

There are many regularly employed methods of data backup — from making CD or DVD copies of your computer files to using backup software — that provide hands-free and time-saving methods for data recovery. No matter the method you choose, the simple fact that you have taken the time to create a backup is what's of most importance. What follows are some of the most popular means of backing up your data.

### CD/DVD BACKUP

You can always burn a backup copy of your most recent session to give to the band — but what about yesterday's vocal tracks, last week's overdubs, and all of last month's sessions? For some home studios this might take a few minutes each week — drop in a DVD-R, write your main drive to disk, and you're good to go. You'll be able to easily reference your last backup disk and not be at a complete loss. For many mid-size and professional studios this process alone isn't enough, and often just the beginning of a well-thought-out contingency plan. Remember, a DVD will hold 4.7GB. Three years ago this may have sounded like a ton of space but for recording formats at 96K and higher, 4.7GB will sometimes not even hold one session — so strategize accordingly.

### EXTERNAL HARD DRIVES (DIRECT ATTACHED STORAGE)

With the quickly dropping costs, and higher storage capacities, of external hard drives it's become very convenient to backup your main hard drive. You can pick up a USB or FireWire hard drive with hundreds of GB of storage at any computer store that will easily hold hundreds of sessions, as well as all the other data important to maintaining your studio business — finance records, receipts, and even all of your email. Remember to choose a hard drive that allows you room to grow. If you have 40GB of data to backup today, you might have 60GB by the end of the year, so

buying a larger capacity drive will give you more flexibility as your studio grows.

### NAS (NETWORK ATTACHED STORAGE)

In many home and professional recording studios, there are often multiple computer systems in one studio, or a combination of studios, all networked together. Using a NAS device for your data backup means you no longer have to mirror a Direct Attached Storage device (external hard drive) on multiple computers — thus saving time while still ensuring proper backup and data recovery in the event of equipment failure. For many studios there may not be a need to backup all of the data on the main computer systems. Studio A may require 50GB of data backup, while Studio B might only have 10GB of data. If this is the case (as it often is) then a NAS backup storage device is certainly the route to take.

### COMPUTER BACKUP SOFTWARE

One of the most important and critical aspects of data backup is the software you choose. More often than not, this single element of your disaster recovery plan can mean the difference between hours versus days of time spent recovering your crashed hard drive. With the proper software you'll not only be able to retrieve your music (and other important files) but recover a complete operating system, some applications, and user settings that will save you hours of time. Easy-to-use backup software, such as the award winning EMC Dantz Retrospect, allows you to configure incremental or continuous data backup automatically, or by the click of a button. Keep in mind that no matter the caliber or size of your studio, what is important is that you have a plan to create a fast, secure method of data recovery.

### DISASTER READY "BLACK BOXES FOR YOUR DATA"

Every airplane has a "black box," so why not have one for your computer? Using ingenious, yet simple, technology, the company ioSafe is making fire- and waterproof Disaster Ready Hard Drives. From a high security rack-mount version to a more economical Mini-USB or NAS version, each Disaster Ready Drive comes with a data recovery guarantee — making the price tags (starting at under \$500) more appealing, and allowing even the smallest of home studios affordable, plug-and-play solutions for disaster-ready data protection.

When it's all said and done, data backup is just as important to your studio as your console, outboard gear, and microphones. The time you spend creating and implementing a backup copy and plan to recover it quickly comes at a great discount compared to the price you might pay if all of your data goes crashing away. So figure out which method best suits your needs and get to backing up your data. You'll thank yourself one day. **EQ**





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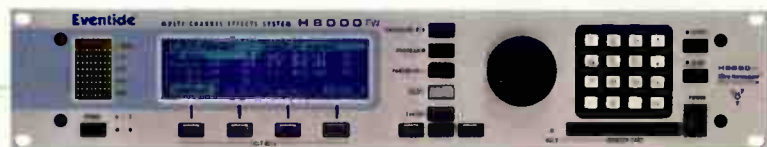


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Emu's new software instruments are available to all existing Emulator X, Proteus X, Digital Audio Systems and Xboard owners. The Emulator X2 includes SynthSwipe, a sampling tool that automatically samples any hardware or software MIDI instrument, then creates a playable preset. [www.emu.com](http://www.emu.com)

## Eventide Announces H8000FW Upgrade Program for H8000, H8000A, and Orville Owners

Users have the opportunity to upgrade to the H8000FW Ultra-Harmonizer effects processor at a reduced price. [www.eventide.com](http://www.eventide.com)

## Digidesign Ships Intel-Based Mac-Compatible Pro Tools LE and Pro Tools M-Powered 7.1.1 Software

These new versions of Pro Tools software are compatible with Apple's new Intel-based iMac, MacBook Pro, and Mac Mini computers. [www.digidesign.com](http://www.digidesign.com)

## McDSP Announces Plans For Intel-Based Macintosh Support

Upgrades to Intel-based compatible versions will be free to all registered

users of McDSP software. [www.mcdsp.com](http://www.mcdsp.com)

## URS Announces the Classic Console Strip Plug-In

URS has combined their Classic Compressor and Classic Console Equalizer into a highly efficient channel strip plug-in featuring a compact screen design. [www.ursplugins.com](http://www.ursplugins.com)

## Audio Ease Releases Altverb for Windows XP

Audio Ease has released their Altverb reverb plug-in for Windows-RTAS and Windows VST. The new version is available as a free download for all Altverb 5 owners. [www.audioease.com](http://www.audioease.com)

## Buzz Audio Introduces the Elixir True Class A Preamplifier

The API 500VPR Series format-compatible Elixir features a transformerless mic input using Buzz Audio's True Class A Amplifier technology, coupled with a Swedish Lundahl output transformer. [www.buzzaudio.com](http://www.buzzaudio.com)

## Universal Audio Releases Neve Plug-Ins

Version 4.3 software for the UAD-1 DSP Card & Powered Plug-Ins system

includes a 14-day fully functional demo of the Neve 1073 and 1073SE. UA will also release plug-in versions of the Neve 33609 bus compressor and 1081 EQ. [www.uaudio.com](http://www.uaudio.com)

## M-Audio Announces Wireless Controller Line

The MidAir line of wireless USB MIDI controllers and interfaces, including the MidAir 25 and MidAir 37 controllers, feature wireless technology from Frontier Design Group. MidAir products are designed to meet the needs of performers who desire more freedom of movement, as well as studio musicians wanting to eliminate long cable runs and clutter. [www.m-audio.com](http://www.m-audio.com)

## Disc Makers Introduces Smudge-Proof Inkjet-Printable CD-R Media

Disc Makers' Ultra HydroShield™ inkjet printable CD-Rs deliver instant-dry, water-resistant, affordable on-disc printing. [www.discmakers.com](http://www.discmakers.com)

## MPCSounds Releases "Vinyl Scratchez" Sample Library for Akai MPC Samplers

This library turns the Akai MPC drum machine into a classic hip-hop

turntable featuring up to 1,536 vinyl kick and cymbal scratches performed by professional DJs. [www.mpcsounds.com](http://www.mpcsounds.com)

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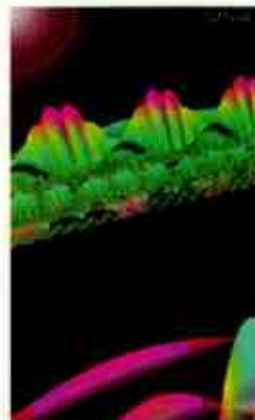
Live Lite 5 Enhanced Edition offers Plug-in Delay Compensation, MIDI remote control, ReWire support, high-def recording and rendering (up to 32-bit), Mackie Control support, track freeze, and the "Complex" warp mode for on-the-fly time stretching. [www.ableton.com](http://www.ableton.com)

## Virtuasonic Releases Synesthesia Impulse Response Library

Synesthesia, an unusual collection of more than 1,000 impulse response files, transforms nearly any standard convolution reverb program into a general-purpose spectral processor. [www.virtuasonic.com](http://www.virtuasonic.com)

## Wusik Releases Wusikstation V2.2.6 Full and Demo Versions

Update includes a number of bug fixes and enhancements, including the ability to insert more instances. [www.wusik.com](http://www.wusik.com)







**Wave Arts Introduces Power Suite 5 Mastering, Mixing, and Sound Design Plug-Ins**

This cross-platform suite (with Macintel compatibility) includes a flexible 10-band EQ, Reverb, Loudness Maximizer, Multi-Band Compressor with Six Bands, and 3D Panoramic Signal Processor. [www.wavearts.com](http://www.wavearts.com)

**Free Mackie C4 Commander MIDI Controller Software Now Online**

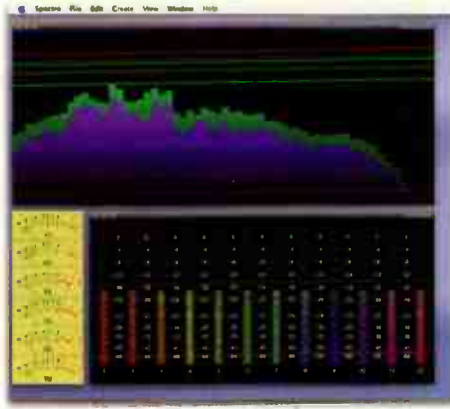
Mackie C4 Commander software brings the world of the Mackie Control C4 rotary control surface to your Mac or PC, allowing control of vintage MIDI hardware from the convenience of your mix position. C4 Commander comes preloaded with over 180 MIDI hardware devices; custom layouts are easily constructed. [www.mackie.com](http://www.mackie.com)

**McDSP Announces Plans For Intel-Based Macintosh Support**

Upgrades to Intel-based compatible versions will be free to all registered users of McDSP software. [www.mcdsp.com](http://www.mcdsp.com)

**MOTU Ships Ethno Instrument 1.0, Symphonic Instrument 1.1.2 Universal Binary Versions**

These Universal Binary updates



include numerous enhancements and optimizations. [www.motu.com](http://www.motu.com)

**Manic Media Productions Launches STONA Audio Analysis Software**

The STONA software tool is aimed for the professional audio engineering world for use in mastering, and as a tool for setting up room acoustics. [www.manic.co.uk](http://www.manic.co.uk)

**GIK Acoustics Introduces Tri-Trap Acoustic Panels**

The Tri-Trap has been designed to absorb more low end, but also does an excellent job of absorbing the high end as well. [www.gikacoustics.com](http://www.gikacoustics.com)

**Audiofile Engineering Introduces Spectre 1.0.0 Audio Analyzer**

The Spectre audio analysis tool not only analyzes inputs from your audio hardware, but can also receive input from network sources by using Apple's AUNetSend/AUNetReceive Audio Unit pair. [www.audiofile-engineering.com](http://www.audiofile-engineering.com)

**MusicLab Ships MIDloverLAN CP 3.0**

MIDloverLAN CP 3 is completely

free of IP addressing, doesn't use TCP/IP networking protocol, and offers extremely low latency. [www.musiclab.com](http://www.musiclab.com)

**Blue Cat's Music Software Releases Three Triple EQ Plug-Ins**

Blue Cat's Music Software announces a set of three VST and DirectX plug-ins: Triple EQ, Stereo Triple EQ and Widening Triple EQ, available as a bundle or separately. <http://software.bluecatonline.org>

**Sonic Studio Releases New Driver with EQ for Series 300 Hardware**

Running in the +DSP environment of the Series 300 hardware, the new Sonic EQ carefully recreates the minimal phase equalizer that first appeared in the original Sonic System. [www.sonicstudio.com](http://www.sonicstudio.com)

**Access Music Announces Virus TI Operating System 1.1 Public Beta**

The new software suite updates the Virus firmware, plug-ins, and drivers, and contains several tutorials on how to use the Virus TI in conjunction with Ableton Live, Apple Logic and Steinberg Cubase. [www.access-music.de](http://www.access-music.de)

**otiumFX Releases Sonitex STX-1260 VST Plug-In Effect**

Sonitex includes stages to emulate the mixing stage, overall distortion, vinyl pressing and playback, vinyl noise, frequency fidelity, and finally the resolution and characteristics in the digital sampling. [www.otiumfx.com](http://www.otiumfx.com)

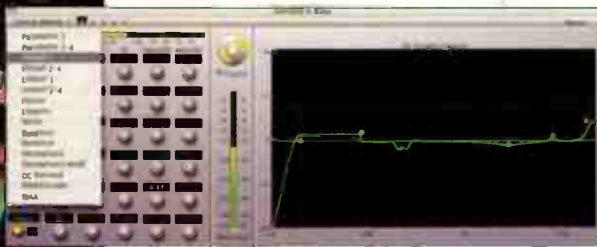
**digitalmusician.net Releases Version 1.5 of Its Online Music Collaboration Platform**

Version 1.5 enhances the user experience by featuring a project area with file upload and chat, as well as the option to allow Cubase and Nuendo users to take advantage of automatic latency compensation for live input recording. [www.digitalmusician.net](http://www.digitalmusician.net)

**Music Unfolding Releases M3 Audio Unit Plugin Distortion Effect**

M3 is an Audio Unit plugin distortion effect with two wave shapers, two parametric EQs, a delay and an envelope/MIDI controlled formant wah section. [www.musicunfolding.com](http://www.musicunfolding.com)

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Ever listen to a tune, scratch your head, and think to yourself “How the hell did they do that?” Yeah, we have too. But hey, we’re *EQ* – so we go out and find the answers.

We collected a “who’s who” of music production specialists, then paired them with a “who’s who” of recording journalists. Result: The tips, tricks, tools, and tactics they use in their trade – which is, of course, **PRODUCING GREAT MUSIC**. We dig hard and we dig deep, so just sit back, relax, and learn from the hit-makers themselves.

# HOW THE HELL

## **BOB CLEARMOUNTAIN** The Mixmaster That’s Not an Appliance

For 30 years, Bob Clearmountain has been a cornerstone of the recording industry. It’s undeniable: The man is the scary kind of prolific, with credits from the Stones to Springsteen. He’s a mixing engineer’s mixing engineer, whose approach to the console has elicited praise from all areas of the

community. How *does* he do it? Read on, as he shares his top-shelf techniques for successful mixing.

**EQ:** When you begin a mix, how do you approach it? Do you build from the vocal or start with the rhythm?

**Bob Clearmountain:** I start by putting all the faders up, a sort of very quick rough mix. Usually I’m unfamiliar with the recording so, while

watching the channel meters, I’ll solo each instrument briefly to find out its contribution to the overall picture. I’ll play it through once with the vocals up to have an idea of where the lyrics are going, and get a picture of what the mood should be. I’ll play the tune down several times, sometimes rewinding over certain sections where instruments or vocals are entering, until I have a good idea of what each instrument or vocal sounds like so I





# THEY DID IT

can quickly identify them later in the mix. While I'm doing this, I'm also trying to put the elements in a perspective that makes sense with respect to panning and levels. I'll then begin to EQ instruments that don't seem to be sitting properly after adjusting levels and panning.

**EQ:** What happens next?

**BC:** It varies; I might work on the

drums and bass a bit to get a good basic rhythm thing happening, or I might find an appropriate lead vocal effect (or lack of it), or perhaps experiment with how the various instruments play off each other in the stereo picture. I might patch in an outboard compressor or EQ on an insert if an instrument or vocal needs it, and maybe try some delays or reverbs to see what might add to the vibe.

**EQ:** When do you engage the mix automation?

**BC:** Once everything is sitting pretty good, I'll play it down working on a dynamic manual mix — sort of a rehearsal before firing up the mix automation. I'll then turn on the computer and usually do a pass riding the lead vocal, maybe pushing drum fills, or riding various instruments that need to be featured for various parts of the tune.

# HOW THE HELL THEY DID IT !

**EQ:** Do you ever do a 5.1 surround mix after you do the stereo mix?

**BC:** I always do a 5.1 surround mix simultaneously along with every stereo mix. Once the stereo mix is sounding decent, I'll start assigning surround channels (on the multi-track routing matrix and aux. 4 for the LFE) while still listening to the stereo mix. Then I'll switch the monitors over to listen to the 5.1, possibly changing some channel assignments if they don't sound right, and trimming the post-fader sends to the surround buses with the small fader.

After all that, it's just refining both the stereo and 5.1 mixes (which are essentially the same) and incorporating the producer and/or artist's comments. Both the stereo and surround mixes get printed to eight channels on a second Pro Tools HD rig via an Apogee Rosetta 200 at 88.2kHz.

**EQ:** So you never just fold down your surround mix for the stereo?

**BC:** Absolutely not. I don't even know why that function exists on some desks. It can't work, as the panning is often quite



different, and usually there are more effects like reverb and ambience in the rear channels — the stereo would end up with too much of that stuff.

**EQ:** I'm assuming that you're working with Pro Tools. How much do you use the DAW? Is it used as a tape machine, or are you doing some processing in the box?

**BC:** I mainly use it as a tape machine. It sounds quite good, as the rig is running with all Apogee AD and DA-16X converter interfaces. Occasionally, I'll

use an automated EQ plug-in if I'm running out of channels on the "mixing table" to double-patch, and an instrument needs an EQ change along the way. If vocals need tuning, I'll use the automated "Pitch" plug-in that comes with Pro Tools to tune by ear, as I don't trust, or like, the sound of any of the automatic tuning plug-ins. Plus it's a whole lot faster than the "graphic mode" some of them offer, and I can easily go back and adjust any bit I may have missed later by trimming the automation. I also occasionally have to resort to submixing elements, like maybe backing vocals or strings, when producers come down with the wretched-excess disease that makes it impossible to bring all the separate tracks up on my 72-input mixing table.

**EQ:** I see you have an SSL 4000G+ in your studio. How often do you use the onboard gates and compressors in your mixes?

**BC:** A fair amount. I do a tricky patch that turns the equalizer and the compressor, in fast limit mode, on one channel

## KARL RICHARDSON "Stayin' Alive" Through Impossible Drum Sessions

The sessions for what would become the soundtrack to the film "Saturday Night Fever" seemed to have clouds over them from the beginning. Co-producers Karl Richardson and Alby Galuten had to rework the grounding system at Le Château Studios, in the north of France, before they could even get started. The console buzzed and hissed, and dropouts in the fader paths had to be marked so you could push through them quickly and hope no one noticed. Then the schedule for the film's release meant the album had to be finished sooner than expected. In the midst of this, drummer Dennis Bryon's father passed away, necessitating his son's absence for the funeral. In this pre-drum machine milieu,

how did they get a killer drum track without a drummer?

The two producers played around with the rhythm generator on a Hammond organ, but it just wasn't the same as the "real thing." Then they got one of those ideas that goes down in history. Richardson remembers, "We thought, why not take the drum sounds from the 'Night Fever,' which we had already recorded with Dennis, and use them?"

Richardson and Galuten spent hours looking for the perfect two bars of drum tracks for "Night Fever," then copied them onto a piece of half-inch tape on an MCI four-track deck — kick, snare and left-right overhead tracks.

Then it got really interesting. As Richardson recalls, "The tape was about 22 feet long — we were running at 30 ips — and I took a bunch of empty tape box hubs and gaffer-taped them to the top of microphone stands. This set up a tape path equal to the length of the tape around the room between the four-track deck and the [MCI] 24-track deck, using the tape guides from a 2-track deck as tension arms.

"This was kluge city," Richardson continues. "Total Rube Goldberg. The drum tracks that were getting to the 24-track machine were third generation by now, and the tape heads were pretty badly worn to start with, [because] the studio had had no maintenance. So I was tweaking the tracks, which

already had Dolby A encoding, with even more high-end EQ from the old API 550-type console to get some brightness out of them. But we got about seven minutes' worth of pretty good-sounding drum tracks that were the right tempo and groove for the song."

Barry Gibb did the pilot vocal while his brother, the late Maurice Gibb, played bass directly into the console. Upon his return, Dennis Bryon overdubbed tom fills, cymbal crashes and high-hat parts. It may have indeed been kluge city, but it was good enough to earn a Grammy nomination the following year, for the track would become the ultimate anthem of the Disco era. —Dan Daley





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**It's impossible to know just where a particular instrument is going to sit in the mix before I've finished recording a song, so I like to keep my options open.**

into an automated de-esser for the lead vocal on an adjacent channel. The gates are handy in "expand" mode for getting rid of unwanted noise, or reducing hi-hat bleed in the snare mic.

**EQ:** How much compression do you use during your mix?

**BC:** Also a fair amount, but it really depends on the recording.

**EQ:** Do you rely heavily on room tones?

**BC:** Sometimes. It sure helps to have a nice stereo pair of drum room mics for the rear surround channels, even if

they're not used in the stereo mix.

**EQ:** Do you ever use a 2-bus compressor for your mix?

**BC:** Always, as well as a six-channel compressor that's slaved off the stereo compressor for the surround. It's actually a little mod we did on my SSL using its "patchable VCAs."

**EQ:** If you're producing the track, do you record with effects?

**BC:** Rarely. I prefer to leave the effects for the mix — especially delays and reverbs. It's impossible to know just where a particular instrument is going to sit in the mix

before I've finished recording a song, so I like to keep my options open. Often I'll want to add a cascading delay to a guitar in the surround mix that bounces around the room, which is tough to do if there's already a delay recorded along with the guitar on the same track. It's also a lot harder to punch in when you have to worry about matching an existing delay. —Jeff Anderson

#### **MATT BAYLES** Teaching the Behemoth

Heavy metal has found new saviors in Mastodon, and heavy engineering has found a new face with Matt Bayles. While he's had his hands in projects with Pearl Jam and Soundgarden, for years he's cultivated his underground status with records by Botch, Isis, and Norma Jean. But with Mastodon's soaring popularity, Bayles' crystal-clear recording and crushing production is finally garnering the recognition it deserves. So how did he create an instant classic with *Leviathan*, which started the shift of both he, and Mastodon, to the forefront of heavy music?

**EQ:** Before *Leviathan* you recorded their

#### **MARK OWEN** The Young Dog Telling the Old Tricks



Having worked on projects from The Pink Spiders to Ric Ocasek, Mark Owen has become one of New York's quickest-rising, in-demand engineers, helping forge the sought-after "New York sound." So how did he get to be so hot, so fast? While finishing up a mix for the band *Acquiesce*, Mark shared some of the coolest tricks he used on this highly anticipated release.

According to Owen, the

majority of the recording was done at Electric Lady's studios A and B. It's interesting to hear how they cut the record: 2-inch on a Studer A 800 at 15 ips, with Scotch 250 tape calibrated to CCIR +4 (the European standard for calibration). But why the European standards? "CCIR doesn't emphasize the bottom end like AES does. By using the 2-inch machines, I was able to hit the tape hard — not just let the meter hit zero, I mean I was able to whack the f@\$\* out of everything.

"I'm a firm believer in cutting the band as a whole," Owen adds when asked about tracking the rhythm section, which was done together in one room. "The players have to be able to communicate and feed off

of each other. Electric Lady has these gobos that weigh tons, which sound just won't get through. If you take the time to set them up properly, you can get away with overdubbing any of the tracks after the fact."

Most of the tracks were run through eight Neve 1081s, six API 512 preamps or six API 560 graphics, then all through two customized Dangerous Music eight-channel mixers. "For a majority of my sessions, I have my assistant set up two mixes at all times — one recall file for the SSL, and then a DAW session file set up through the Dangerous 2-bus and master section. I'm a huge fan of that gear; it gives me such consistency no matter where I'm working."

But how the hell did he cut it?

Drums were cut using a rather standard model: A Sennhesier 421 and a Neumann U47 for the kick, a Neumann KM86 (top) and an AKG 414 (bottom) for the snare, Sony C-37s for the toms, AKG C-28s on the overheads, and a stereo pair of U47s for the room. "I almost never mic the hi-hat — it's usually the track that is never being used in my mixes," Owen says. "I process all of my drum tones to tape, using some various EQs and a dbx 160 compressor with a couple dBs of reduction on the kick drum, so that when the guy pushes on the chorus I can control him. Using the tape machine, I beat the crap out of everything but



# HOW THE HELL THEY DID IT

previous record, *Remission*. What did you take away from those sessions that helped you prepare for *Leviathan*?

**Matt Bayles:** *Remission* was made under unique circumstances, because we went to Atlanta, and the day we arrived the tape machine broke and we got delayed — it became a bit of a clusterf@\$. We were working on an Ampex MM1200, which is a slow, punching tape machine. I pride myself on being able to work with anything I'm given, but in this case it wasn't possible. We had to scramble for an overdub studio that was in our budget, and then we had to mix at a third studio when this was all supposed to be done at the original studio. The bass gear we had wasn't very good so what I took away more from that than anything, from a recording standpoint, was we needed to improve the bass sounds. Coming into *Leviathan*, I wanted us to finally capture kick ass bass tones, so I got a chance to remedy that.

**EQ:** Mastodon is the most "metal" band you've ever recorded, but you have a very polished sound as well. How do you balance the two?



**MB:** I can't relate to what anyone else would do, but I just try to get people to play their parts right, and make sure I get the best sounds with the gear they bring to the table. In the case of Mastodon, it's Marshalls, not Mesas, for example. It's their identity as a band, and my job is to make

sure they play it right, and make it sound good without having to alter it too much.

**EQ:** To what extent was *Leviathan* done with Pro Tools?

**MB:** Only the vocal overdubs — basically everything was done to tape. Eventually we just ran out of tracks, so we synchronized Pro Tools to tape. The drums, bass, and guitar were all done on, and stayed on, tape. I never dumped them and mixed them out of Pro Tools.

**EQ:** Was that your decision?

**MB:** Pro Tools is, in a lot of ways, a budgetary concern, as tape has gotten so expensive. At the time I thought, "Bränn's such a phenomenal drummer, I don't have to lean on [editing with] Pro Tools." They're all great musicians, so I didn't really have a concern about making a performance

**If you lean on compressors with distorted guitars, you're not recording it right.**

the kick to get a nice, natural compression."

The bass was tracked using an Ampeg V4 instead of going the DI route. "It has a great way of breaking up, adds more mid-range, and is a lot quicker than an SVT," Owen states. "I just miked it with a U47 and compressed with the dbx 165, one of the best compressors ever made. It's a versatile sound, and it just makes the whole track work.

"Guitar sounds should be pretty straightforward, in this case," Owen tells us. "We used my old Vox AC30, which was made pre-1964, and is better than the import/export stuff. I put up a 50-watt Marshall that we ran with a Variac [a device that varies the AC power supply voltage —Ed.] to run

the tubes at a lower voltage. The Variac makes the tubes break up more and give a unique sound — pretty much nicking the Van Halen sound. I compressed it with an 1176, and just equalized with a Pultec MEQ."

On to the subject of vocals, which Owen considers the paramount feature of the recording, he shares this strategy: "I always set up four or five mics and record a chorus through each. It's usually pretty easy to hear which one is best when you can A/B them with the press of a button. We were using Telefunken V72s for each vocal mic — which give the sound a certain edge and rasp — but ended up using an original C12 and compressing with a dbx 165 or a Fairchild 660,

depending on the song," Owen concludes.

"I also added in a lot of ARP and Moog sounds, mainly to make a more noticeable difference between parts. It's really all about 'the part,' so I spent a lot of time at SIR Studios in pre-production working out different parts, and even changing tones between the parts, and capturing each rehearsal on DATs, which I later went back and listened to in order to strategize about how to approach the upcoming sessions. Now that we're in the mixing phase, I find that I'm replacing some of the pre-planned guitar parts, even lead guitar parts, with the ARP sounds, and I'm hitting an old Allan Smart compressor pretty hard on the stereo

bus as I mix down. We've been doing so much. For example, we've also been using the Simmons V Drum triggers to generate noise to add to the drum tones. It gives an 'airy' feel. You know when you mic the bottom on a tom? It kind of gives the same sound — it's like an extra tone that I can add in for beef. Also, for the drum sub mix, I used the Daking 92579 to provide a smashed stereo track of drums. I find it has a way of thickening the kit's overall sound.

"And on top of that," Owen says with a grin, "I've got my hands on an old MCI JH 110 that I've been using to make natural tape delays."

It's the real-deal-Holyfield, all of it, and you cannot beat that. —Jeff Anderson

# HOW THE HELL THEY DID IT !

out of a band that doesn't have the skill, and they wanted to use tape as well.

**EQ:** Brann is a very complex drummer. Do you find it difficult to capture his approach clearly without over-producing?

**MB:** In comparison to other drummers: No. He plays a lot of notes, but he's got good dynamic control. Dealing with tape, you have to rely on the automation and the quality of the automation when you're mixing to be able to mute out the unwanted noise from the toms and the hi-hats from the snare. A lot of times, drummers hit the crap out of their cymbals, but their toms don't sing well. There's always that challenge when someone plays a lot of notes; it's just my job to figure it out.

**EQ:** What was your approach toward compression for this record?

**MB:** When you have distorted guitars, they're naturally compressed. The tube circuitry in the amplifier compresses them to start with, so if you lean on compressors with distorted guitars, you're not recording it right — you're just not thinking. I didn't really compress the drums much at all. I touched it a bit for the room mics, but I think it was easier to make the mics suit the song on an individual basis. Mastodon has up-tempo stuff and down-tempo stuff, and if I committed to one sound then I'd lose the use of the room mics. The bass was compressed as well as vocals, and while I'm mixing, the actual mix will get compressed; the kick and snare, the over-heads got touched a little. That's it.

**EQ:** Where/how did you record the guitars?

**MB:** At Litho, with an API console and NEVE BCM-10 Sidecar. Brent wanted to record two different amps with two different cabinets. For that record it was 57s and 421s. I tend to lean on 421s. The 57s tended to be a little buzzy, which doesn't work for them.

**EQ:** What about the vocals? Did you encourage more singing?

**MB:** I wasn't going to shy away from it. Brent would go down that road and have second thoughts — I told him to trust his initial instinct. Sometimes he would react

against the "pretty part" intensely, and I would encourage him not to overcompensate, but focus on making sure the vocals fit the part.

**EQ:** And the studios at which *Leviathan* was recorded?

**MB:** We did the drums at Robert Lang, where the last Nirvana sessions were. It's got a pretty intense, quirky vibe. We went to Litho for the rest.

**EQ:** How much of a "producer" did you play during recording?

**MB:** Even though this is my second record with them, there was still some wariness of how much input I should have, I could sense that. We made some arrangement changes in mixing that I suggested, but primarily up to that point it was just making sure they played everything well. I know when to push, and when not to. —*Shane Mehling*

**THOM RUSSO**  
Track Of All Trades



Looking over Thom Russo's discography, the first word that comes to mind is "diversity." Splitting his time between engineering, mixing, and mastering, Russo is truly a recording artisan. Having worked on hundreds of award-winning

projects (including Michael Jackson, Destiny's Child, Sum 41, and Johnny Cash), Russo, who is putting the finishing touches on the new Mana album, chatted with *EQ* at the Hit Factory in Miami. How does he maintain his sanity when working on such diverse projects? We started by asking about the juicy details on the album that he's immersed himself in for the last four months — from the first kick all the way to the mastering sessions.

**EQ:** Tell me about the drum tracking. Did you use all acoustic drums?

**Thom Russo:** Definitely. I'm a pretty straight-ahead guy. Everything was close miked. I'm one that likes to go for the particular one-mic, mono thing, along with all of the direct mics.

**EQ:** You're talking about a room mic to compress, for mixing?

**TR:** Exactly. Sometimes I also do just a compression channel. You take a send off the desk and go to, like, a Fairchild 660, which I did on this record. Send a little bit of the kick and the snare, a little bit of everything, depending on the tune. Returning that channel, and adding in the hyper-compression to the mix, gives it a really cool, and really aggressive, sound. This project was cool because we cut the drums to a Studer 16-track 2" recorder with Pro Tools at -18dB and the tape at +6dB. The levels in Pro Tools were pretty healthy from the 2" tape.

**EQ:** How did you make that submix?

**TR:** You can take it off of an aux send or a console bus.

**EQ:** Did you do it while they were cutting or after?

**TR:** Most of the time it's something you do after the fact, but I've been doing it while cutting lately. You just have to be careful with phase relationships. That's always the case, especially with drums.

I'm one that likes to go for the particular one-mic, mono thing, along with all of the direct mics.





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**I'm a big fan of behind the kit miking. There are a lot of nice, rich 200Hz things that happen.**

Besides the regular big stereo room mics, I had a couple mono mics set up. One was an Altec "saltshaker" that was right in front of the kick in the bottom position, and a Neumann 67 behind the kit. I'm a big fan of behind the kit miking. There are a lot of nice, rich 200Hz things that happen.

**EQ:** What were you using on the snare?

**TR:** We used three mics. This is getting pretty popular: Use a 57 and a KM84 taped together, and then a 57 on the bottom. After I tried it, I got it. It's a good combination.

**EQ:** For bass, were you using an amp or a direct box?

**TR:** I always do both, to explore all variables. We had around 16 different basses,

and we always tried at least four per song. For the most part, I was able to get away with the 8x10 Ampeg set up and just changing my EQ settings. We used a Neumann FET 47 and the Blue Kick Ball, which was killer for the cabinets.

**EQ:** And the guitars?

**TR:** We split the signal off to five different amps that were heavily goboed.

**EQ:** So when it's all said and done, how many guitar tracks do you use on the average song?

**TR:** It sounds excessive, but I think we had 55 guitars! Inside the live room, the casings were stacked up; it went all around the wall. Ridiculous! I always print a DI from a guitar, so that I can re-amp it if

I need to. That can really be a lifesaver during the last stage of the mixing process.

**EQ:** How do you get ready for the mix? Do you do automation in the box?

**TR:** I'm sort of mixing from day one. I would say that 50% of the projects I'm doing are things that I'm doing all "in the box," due to budget constraints. When I'm mixing on an SSL, in this case, I will start the mix from scratch. But I'm always making rough mixes. You need them for reference, in case you're wondering, "How did the drums sound when I first started tracking?"

**EQ:** As you're tracking and mixing, how do you keep fresh ears on this project?

**TR:** I don't know if you necessarily keep fresh ears. I think that you keep perspective, which is one of the most important things in recording. Because, face it, if you don't have perspective, you don't have anything. —Jeff Anderson

**JERRY HARRISON/ ERIC "ET" THORNGREN**  
Surrounding Heads

The market for 5.1 surround sound remixes of classic albums is expanding. However, a lifetime of listening to music through two speakers (in stereo or mono) can make this conversion process more difficult than it initially seems. One such project that worked well — as

**Face it, if you don't have perspective, you don't have anything.**

**HARVEY GOLDBERG** *Wailing Kazoos*

The saxophone was still a mainstay instrument on pop records in the 1970s. As a staff engineer at Media Sound in New York at the time, Harvey Goldberg recorded plenty of them. But late one night in 1974, he was working on a low-budget record for the De-Lite label (for which Goldberg also mixed Kool & The Gang records) with an artist named Jimmy Angel. The track begged for a baritone sax. The trouble was, there was no money in the budget for a sax player, and they weren't

going to get De-Lite to open the purse strings wider at that time of night.

"These were the days before samplers, even before synthesizers," Goldberg reminds us. "The only way to get a sax sound was with a saxophone and a sax player." So how could he possibly get a great sax solo without a sax?

Believe it: Goldberg asked another staff engineer, Michael Barbiero — who would also go on to create hit mixes for Guns 'n' Roses and Blues Traveler — to grab a toy

kazoo and step out into the studio. Goldberg set up a Neumann U87 FET microphone and brought it up on the Spectrasonic console. He bussed it to a track on the Ampex 16-track deck, and then set the deck's variable speed control to its highest speed. Barbiero approximated a sax solo — difficult enough on a kazoo, and even harder when the pitch and speed were up so high.

When they had something they thought would work, Goldberg returned the multi-track to its normal 15-ips

setting and played it back. "The kazoo was now a lot lower-sounding against the track at normal speed," he recalls. "The really hard part was getting the phrasing right at that tempo. A kazoo warbles a little, and when you slow it down like that it warbles a whole lot. I put an Eventide flanger on the track and added some reverb. I had to really dress it up, but it worked. Now, instead of sounding like a messed-up kazoo, it sounded like a messed-up baritone sax." —Dan Daley



# HOW THE HELL THEY DID IT

the prizes from the 2006 Surround Music Awards can attest — is Jerry Harrison and Eric “ET” Thorngren’s *Talking Heads Brick*, an eight-disk, dual-sided 5.1 remix of all of the pop icon’s studio discography. We met up with Harrison and Thorngren at their Sausalito Sound studio in Sausalito, CA, to discuss how the hell they were able to remix material never intended for surround into true 5.1.

**EQ:** I would imagine those classic Talking Heads’ albums weren’t exactly “5.1-friendly” . . .

**Jerry Harrison:** We went back to the original master tapes. A lot of them had to be baked in ovens. The glue that holds the metal oxide on the tape gets brittle, so if you took one of these reels to a tape player the metal would shred off. We put the tapes in special ovens at around 120 degrees Fahrenheit for ten hours or so, to warm up the glue and



make it stick again, but not enough to cause damage.

We then transferred everything to Pro Tools at 192kHz/24-bit. A lot of our favorite plug-ins for Pro Tools HD, like all the Waves stuff, are not available at 192. So we did a test of the difference between doing it at 96kHz versus 192kHz, and it was very little. You could make it out most in the stereo mix on something like a solo piano or certain vocals where you could really hear the higher harmonics, the air. But rock mixing is not usually about air: It’s about solidity. With air, we’re not talking about silence, but rather about the air

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# HOW THE HELL THEY DID IT !

**That was a weirdo product with a piece of plastic that was like a loop that you would move, and LEDs would show you your position on the volume or fader.**

around the sound of something like a cymbal or a cello. But anyway, it just wasn't apparent enough that it made sense to use 192.

Our system over here has 72 outputs and 48 inputs. Because we have all of these analog compressors, we go out of the board and then come back in to use them. We also have an old BM system, so we go analog to the old system (there's a Lexicon reverb that we really like), and then come back in digital — we're not working only with plug-ins. We find it luxurious to do that.

**Eric Thorngren:** We used a tape simulator from a GSP. When we're doing stereo, we'll bring in a two-track ATR. We'll set it up where we're going straight out into Pro Tools using an analog tape simulator plug-in, which is eminently adjustable. And then we'll go out through the 1/2" and come out of that off the repro head, then into two tracks on Pro Tools. When we've A/B'ed them, the emulator that we've used going into our mixdown system seems to be better than our analog.

**JH:** One thing about high-quality analog is that even with changing digital formats, you can always go back to that analog.

**EQ:** But of course, it all ends up being in digital format, anyway.

**JH:** That's another very real issue. Instead of mixing it down to either two channels or five channels on the computer, we go out through 48 channels of analog summing on our Dangerous two-bus LT equipment.

**EQ:** What challenges did you encounter during the conversion?

**JH:** One of the things we didn't have, when we put it all up on the big console, was the ability to have all the mutes available. The original console automations on most of these records didn't exist anymore. I mean, I haven't heard of any studios that have the Allison Research equipment. That was a weirdo product with a piece of



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**TASCAM**

# HOW THE HELL THEY DID IT !

I was working with a band on making 5.1 mixes. The members all wanted to have their own speaker — “I want that one!”

plastic that was like a loop that you would move, and LEDs would show you your position on the volume or fader. The idea was that it was a VCA automation that didn't have a moving fader, so that it could show you the actual space of it. But the problem was that if you didn't wet your finger, sometimes it wouldn't move. It was bizarre.

Anyway, a lot of this was sort of forensic mixing — you'd have to put it up and listen very carefully, particularly on *Remain in Light*, where we played continuously on every track. We made that album by creating complex muting.

**ET:** The whole track was six minutes, and they'd turn it on for one point — that was the style when automation came in. People said, “Hey, I don't have to stop playing. I'll just play right through the whole track, and you just turn me on when you need me.” So everyone would play all the time, and you'd have to come up with a mute structure for the mix.

So when we came back, we were listening to two tracks, and on there are 24 tracks of these parts, we had to figure out who comes on where. A lot of them are really close, and the tracks would be labeled “pop it 1,” “2,” and “3.”

**JH:** For a lot of these things too, we couldn't find the track sheets.

**ET:** That was good, too (*laughs*)! I don't know if you're familiar with the olden days of recording, but when you had only 24 tracks, the guitar player took his solo, before that there might have been a tambourine part, and in the vamp, you might have something else to build it up.

**JH:** That was very common; that's why mixing boards got so big, because you would end up patching that same channel into three or four other ones. So a lot of the work on remixing the first two records

was figuring out what was on where.

We didn't want to start over; we wanted to maintain the feel that the originals had, but create it in the space of 5.1. There were times when we extended the mix a little longer. These were originally on vinyl, so things had to be faded out to fit the LP. Obviously, we didn't have that constraint. We wanted it to sound like the way you'd remember the original album . . . but more. We didn't want it to sound like a dance mix.

**ET:** You had to go back into the mind of the record then, because we didn't want to mess with somebody's hopes and dreams and memories. I would think about what kind of equipment we had back then. On the records that I worked on with Talking Heads originally, I could remember. Otherwise, I relied on Jerry's input. All of that helped us zone in how figuring out how they got this flange, that delay. . . .

**JH:** On the first couple of records, Tina Weymouth was using a Hofner bass, and playing high notes. So we put that an octave lower. And we thought, “Wow, man! It's got some balls now! It's totally great!” So we sent it off to Chris Frantz and Tina, and we got this note: “ET, Jerry — I thought of the bass more as a low guitar than a bass. Please maintain that sound.” And we thought it sounded really good. . . .

*Talking Heads: 77* was recorded on a 16-track, and some of the songs were only eight tracks. We still found a way to have it sound great in surround.

**ET:** That was very hard. For example, we're sitting here, talking to each other, but my voice isn't coming out of the middle of your head. All the sound in this room is a result of delays, a result of how the room is constructed. Surround is more of a psycho-acoustic feeling rather than, “that sound is over there.”

**JH:** As we got into percussion and doubled vocals, we were able to play with the stereo field. I think we built on that in surround — to make it dance around. But we never wanted to stick, like, the kick over here, and the bass guitar way over there. We wanted to keep that stereo energy.

We did a study on a lot of the surround sound re-mixes that had been done. The ones we liked had the qualities we've been talking about. The ones we didn't had elements like trying to make you feel like you were playing in the band. We generally found that distracting. Although, conceptually, it sounds cool having the feeling of actually being there, and hearing the horn player behind you and to your right, on a riser. But having been in the band, a lot of times it's too loud, of course, but also it doesn't necessarily sound as good as it does out front, where everything congeals together. And then there were other remixes where too much of the stuff was in the rear, and the front seemed too empty. You put it on stereo, and there it is; you put it on surround, and, where's “there”?

**EQ:** What were 5.1 remixes that you liked?

**JH:** I liked *Dark Side of the Moon* a lot. It maintained respect for the original record, and had a sense of a lot happening in front of you, with judicious and cool things happening behind you.

One of the reactions to *The Brick* is, “Wow, I'm hearing stuff I never heard before.” It was always there in stereo, but now there's more clarity. Sometimes that's a problem when something was recorded or played poorly. Sometimes putting music in surround can make elements sound naked.

**ET:** Back in the day, little noises like guitar scrapes and the drummer dropping his lighter . . . you would never hear any of that. But when you spread it out, you start hearing all these things that got covered up in the stereo. We had to pay close attention to that.

When you actually come to “a mix,” it's all about feeling. And when a mix is right, it could be one guitar 5/10ths of a dB louder and wham! It locks. When we sat down to mix in 5.1, at first it sounds “Wow!” — it sounds better than stereo because everything is bigger. But it's not



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# HOW THE HELL THEY DID IT !

necessarily the mix. It was about getting it working like it did. After everything is placed where it should be, and not interfering with the feeling, the whole thing has to gel as a mix. And that's where we went the extra step.

**JH:** It's an evolving format. People still don't get it. I was working with a band on making 5.1 mixes. The members all wanted to have their own speaker — "I want that one!"

Now I know why the early Beatles mixes sound the way they do, where the bass and drums are on one side, and the vocals and guitars are on the other. Try turning off each side. It's a different record! So it was important for us to get a really easy system, one that was easy to solo or turn off speakers. The biggest issues in surround are "What's in the rear?" "What's in the center?" and "How do I not cloud up the sound effects?" It might sound good in the

room you mix it in, but people at home will probably be listening to it with smaller satellites, where more is being put in the sub. You have to be careful that there's no cancellation between something you put there, and what someone's AV amplifier puts there.

**EQ:** So what speakers did you use for this project?

**JH:** We have two sets of surround speakers: A Blue Sky SAT 6.5 system, and a system with a Meyer subwoofer and NS-10Ms with vintage Hafler 220 amps. My philosophy was "Now that we've been mixing our albums for 20 years with NS-10s, why change now?"

For one thing, powered speakers are really convenient when you have to have six speakers. A lot of studios use Genelec systems, but Genelecs have a very different sound. We find that if you put something on Genelecs, it already sounds

great. So you can accidentally leave it alone. You have to be careful with monitors that good.

**ET:** And then you go someplace else, and your mix sounds completely different.

**JH:** Part of what was good about mixing with two sets of speakers was how ET was working with the Blue Skys, and how when we shifted to the NS-10s it sounded so different. The job was to make the mix sound the same on both sets. —Roberto Martinelli

## KEN ANDREWS Masterful Mixing In The Shrinking Studio

With a firm grip on the modern rock sound, Ken Andrews, the man behind acts such as Failure, Pete Dinklage, and Tenacious D, shares his views on the modern recording studio. But the real question is how

## JOHN BOYLAN *Mixing With "More Than A Feeling"*



Boston's first monster hit set the template for the concept of home studios. However, not everyone could have what the band's resident genius Tom Sholz managed to get into his basement. The M.I.T. graduate and former Polaroid research engineer-turned-rocker had a Dan Flickinger console and a Scully 12-track deck, which formed the technical foundation for the band's demos and, ultimately, its eponymous first album. Scholz and vocalist Brad Delp were the core of the band. John Boylan, fresh off successes with Linda Ronstadt, Brewer

& Shipley and Pure Prairie League, was called in by Epic Records to manage what was becoming a frenetic exercise in record production. So how did the team manage to create what was, at that time, the biggest-selling debut album in history?

"Tom was recording at night and still going to his day job at Polaroid," Boylan recalls. "I came to Boston and helped him record the drums in his basement to the 12-track deck. Then I left while he did his guitar tracks till midnight every night." Boylan returned with a remote truck that fed a snake through the basement window to transfer tracks to a 24-track deck. "That was weird, too, because Columbia Records, which owned Epic, had a rule that you could not record within 250 miles of New York and not use Columbia Studios," Boylan recalls. "If you did, you had to pay a featherbed

union engineer just to hang around. We got around that by me paying for the remote truck, then selling the master back to Columbia as an independent production."

That kind of Byzantine environment set the stage for the final mix at Westlake Studios on Wilshire Blvd. in Los Angeles. The API console was automated, which would have been very useful given how Sholz had hidden dozens of separate bits within the densely packed guitar tracks. However, the Allison automation system demanded two non-adjacent tracks to record the binary automation information, and given the heavy guitar tracks and the fact that Delp did all the vocals, overdubbing and doubling himself, which also ate into tracks, there was simply no room.

So it was all hands on deck: Boylan positioned himself on the right-hand side of the console to mix the

drums, engineer Warren Dewey was on the left mixing vocals, Scholz was in the center handling the guitar tracks and assistant Steve Hodge was tape op.

"It was a busy mix, to say the least," recalls Boylan. "At first it was like we were competing with each other — Tom would push the guitars up and Warren would try to keep the vocals on top of them and I was trying to keep a pulse going. We finally had to come to a meeting of the minds to keep the record from pinning the meters halfway through."

Another complication was the decision to fade the entire song in. "It was one more critical move to add to the mix," says Boylan. "But it had an interesting byproduct: it caused radio stations to boost the volume of the record, which effectively inoculated it against broadcast compression. It was radio-proof." —Dan Daley





the hell did he, with a smaller setup than usual, produce some of the most smokin' albums of the past decade?

**EQ:** Do you have a studio that you work out of, or do you have your own, or do you go from place to place?

**Ken Andrews:** I've always had my own little overdub studio, where I had a Pro Tools rig, to edit and prepare the mix for the mix-down studio. Then this whole summing box thing happened — I got a Dangerous 2-bus. For lower budget projects, I started mixing on a hybrid system set up at my place and I was impressed with the results. I then took copies of some of my bigger mixes and, during down time, I mixed the same sessions down with my summing gear that I had previously mixed at some of the bigger studios. In ways, I liked it better; there was a different tonality to it.

**EQ:** So, the future of the large recording studio. . . .

**KA:** As an engineer, I feel the quality is there in a smaller setup. I would say about a third of the projects that I'm mixing can't afford the larger studios. Even on the bigger mixes, I try to explain the situation the best I can, in the most neutral way to everyone

involved. I'm like, "I'll mix it wherever you want." The difference between mixing in my (smaller) studio or at a large studio is way less than, say, mixing on a different mixer. There is only a very subtle difference, and if you mixed it at my place, I think you would walk away happy. It's weird — I love being at large facilities but, when it comes to mixing, it's getting harder for those places to offer something you can't do in a smaller facility. I still go to those big places for tracking; you have to have a great room to record rhythm tracks, but even then I end up cutting overdubs at my place.

**EQ:** Have you always done work in smaller studios when it was possible?

**KA:** I'm definitely one of those guys that has been a part of it. The first record that I produced all the way, Failure's *Fantastic Planet*, used a Mackie 32 x 8 and three ADATS. One of my buddies — an analog "grunge" guy from Seattle — wouldn't believe me for over a month that the recording was done on ADATS.

**EQ:** So did you mix it on a million dollar SSL and record down to a 1/2" Studer deck?

**KA:** I mixed it on the Mackie! I did rent a bunch of good outboard gear for the mix, and for the final mix I rented a 1/2" machine. At that time, mastering engineers were still iffy about accepting DATs, so it had to be on analog.

**EQ:** Tell me about your studio now.

**KA:** I've got Pro Tools HD 3 wired to the Dangerous 2-bus . . . a couple dbx 160 XTs for kick and snare, a couple Distressors, then the output of the whole 2-bus thing goes to an Allan Smart compressor. I also have a Manley Master Passive, Manley Variable MU, and a Crane Song Harmonically Enhanced Digital Device. It's basically a high quality AD/DA

The difference between mixing in my (smaller) studio or at a large studio is way less than, say, mixing on a different mixer.

## Mahajan Says



The studio had a pair of R-121's when we were tracking Yeah Yeah Yeah's in 2002, so I put them on the electric guitars and they stayed there for the whole record. Since then I always use them on guitar amps; they're full and detailed without accentuating the harsh stuff. I'll blend other mics to get some of that hyped attack when I want it, but the R-121 is usually the meat of the guitar sound.

With The National, two 121's on the piano gave me the best piano sound that I've gotten. You can really hear it on "Daughters of the Soho Riots." I'm moving my Royers around a lot now and have gotten great results on just about everything, including cello, vocals and bass amp. They capture sound in a way that fits right into the mix.

**Paul Mahajan**  
(Engineer - Yeah Yeah Yeah's, The National, GMFTPO)



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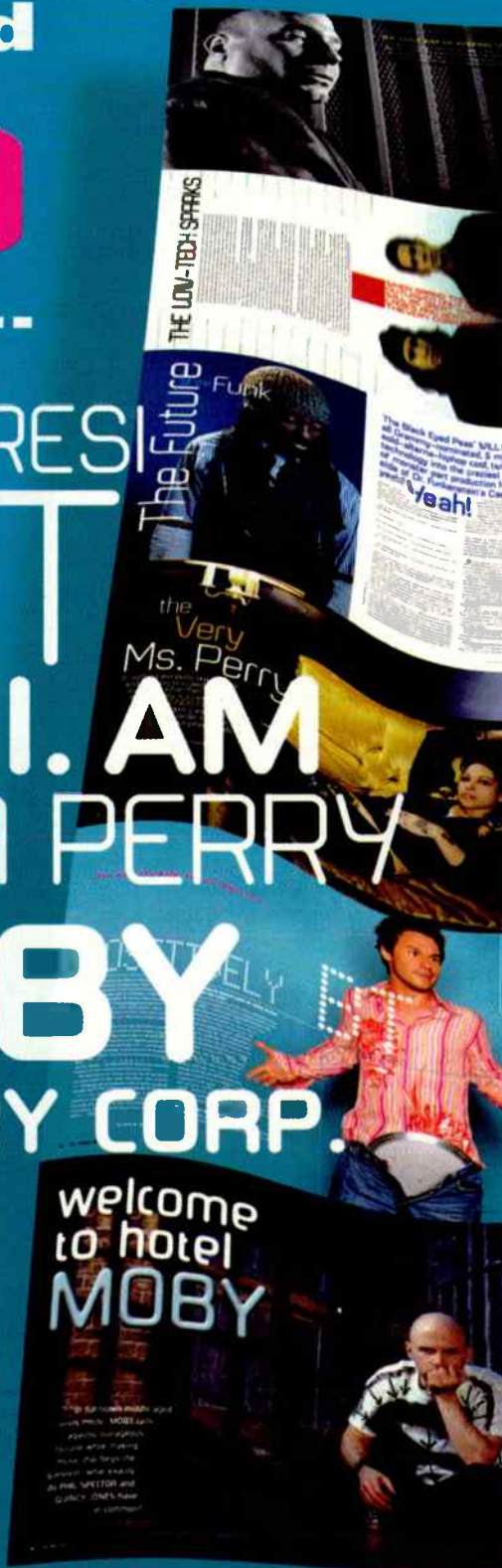
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DID IT!

converter, but it also has a tape saturator built into it. When I was getting serious about my studio, I was just about to buy a 1/2" two-track tape mixdown deck. Right before I bought it, someone told me about the HEDD and I got to try one out for a week. It basically does everything that I want a tape machine to do, but I can print the mix right back into Pro Tools — and it's a lot easier than having to deal with tapes.

**EQ:** So that's how you're mixing down? The signal's going out and then back into Pro Tools?

**KA:** Yes. I record the mix into the computer, then export the mix files out at the rate that the mastering engineer wants. I make a copy of the playlist and add some maximizing to give to the clients for approval.

**EQ:** How much compression are you using on the final mix?

**KA:** I have two stereo bus compressors in my chain. Depending on the type of song, I may use one or the other, but in most cases I will use both to varying degrees. If it's an "aggressive rock" mix, I will be relying on the Alan Smart from 3 to 6dB of gain reduction; then 1 to 2dB on the Manley.

**EQ:** The Manley just adds color?

**KA:** It's less about compression and more about the sound of going through that box. It seems to add more information, more harmonics. It's also a nice, friendly way to control my level to the HEDD. The HEDD is adding the saturation effect. I'm trying to do tiny amounts across all three, so that none of them are working very hard. It gives a nice, healthy level, but it still retains dynamics . . . so that it can be smashed by the mastering engineer.

**EQ:** And the radio station!

**KA:** Some artists are making the choice not to have their CDs so hot — to keep more of the dynamic range. I want the loudest part of my mixes to match everything out there, but the quiet parts should still have dynamics. I'm totally over having the loudest disc. —Jeff Anderson **EQ**





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World Radio History

# NATIVE INSTRUMENTS KORE: THE WORKFLOW MACHINE

**Kore is a new type of product — and EQ demystifies what it's all about**

By Craig Anderton

A lot of people think that Native Instruments' Kore looks really interesting, but have a hard time wrapping their head around the concept. Is it hardware? Software? For the studio? For live performance? Does it work only with Native Instruments products? And most importantly, *do I need this thing?!*

A new type of product deserves a new type of review. We'll get heavily into the hands-on aspect of actually using Kore so you can decide whether it's for you or not; see the Expert Opinion sidebar for additional information.

## THE VERY BASICS

Kore is a package with Mac (Universal Binary)/Windows software and a USB 2-based hardware controller. The controller has two main functions: An audio/MIDI

computer interface, and a control surface dedicated to ergonomic control over the software — you don't have to rely on a mouse and keyboard. You're not obligated to use the Kore audio/MIDI interface, but the software won't run unless the controller connects to your computer.

## THE "KORESOUND"

Whether for studio or live, Kore's main element is the *KoreSound* — a "container" for VST/AU plug-ins you can save and recall. A *KoreSound* can be as simple as a single instrument or effect containing one preset, to a complex combination of instruments, effects, mixing, and routing. (For example, two layered synths split with a third bass synth, each going through a different plug-in, and mixed so that the synths pan hard left and right while the bass

synth goes in the center). Furthermore, all these plug-ins' programmable parameters are accessible through a hardware, hands-on interface that's also mirrored in the Kore software, should you favor mousing around.

The *KoreSound* is not tied to any particular host or program other than Kore. You could use a *KoreSound* with Logic Audio on a Mac, then load that same *KoreSound* into Ableton Live or Sonar running on Windows. As long as the same VST plug-ins are installed on both Kore-friendly platforms, the *KoreSound* is transportable. Also, Kore itself includes many effects you can load into a *KoreSound*. This increases transportability, as you can be sure any Kore system has these effects.

## FINDING SOUNDS

Kore is designed to work with a large number of plug-ins and possible sounds. So, another Kore function is to streamline the process of finding sounds. It's a selling point for instruments to have lots of presets, but learning them so you know which one to load for a particular musical situation can take forever. Kore "tags" presets with attributes, then assembles these in a database. All presets included in NI's Complete 3 and Complete Sound 2 have been tagged (you can download these for any of the bundled products from the NI web site). Plug-ins from other companies including Arturia, Korg, GForce, Spectrasonics, etc. are supported in the controller pages, which we'll cover in a bit. (However, you'll need to add tags to these program's presets yourself.)

For example, suppose you like warm, synthesized string sounds with an analog character. You really like NI's Pro53, and you want to use that. You basically select the desired attributes ("warm," "string," "analog"), then Kore displays all sounds meeting those criteria and the instruments to which they belong. If



**Fig. 1:** Kore inserted as a plug-in within Cubase SX. This "KoreSound" combines three instruments and several effects, including NI's Guitar Rig. Note the browser/database at the bottom, which found this and several other possible sounds that fit the attributes "guitar/synthetic/distorted."





Fig. 2: Kore's hardware controller is sleek and compact.

there's a suitable sound generated by the Pro53, start loading.

You can also add tags to your presets; the documentation spells out the intention of various attributes in detail so you can maintain consistency between your presets and already-tagged presets. (Note: If you have existing versions of NI plug-ins, they're updated automatically to be "Kore-friendly" when you install Kore.)

#### IN THE STUDIO

Kore inserts into your host like any other plug-in (Fig. 1). Each instance is basically

a KoreSound, and you can insert as many instances as your computer can handle — a KoreSound "container" by itself doesn't take up a lot of resources, but as expected, packing it with soft synths and effects does.

The working dynamic goes something like this: You want to add a bass track while using a sequencing program, so you insert an instance of Kore. You're now at the Sound Level. You use the browser to find KoreSounds that match your needs (acoustic bass, synth bass, whatever), then load it. Once it's loaded,

if you want to tweak it, you . . . well, that's next.

#### MEET THE HARDWARE

The controller (Fig. 2) is a relatively compact, metal box housing 8 programming switches, 8 touch-sensitive knobs, data wheel, navigation controls, and a display (it also contains the audio and MIDI interface, but we'll stick to the programming aspect for now). The controller serves up a series of pages for whatever plug-in you've selected; you change parameters using the knobs and switches.

Wherever possible, NI shoots for consistency. For example, the same knob that controls filter cutoff in their FM7 controls filter cutoff in the Pro53, and is located on the same page.

Manufacturers who support Kore also try to follow this protocol, although given the great differences among synths, not all controls have a one-to-one correspondence among various products.

I've also loaded synths that do not yet support Kore, such as Cakewalk's Dimension Pro. In this case, automatable parameters are mapped across the controller pages. At first, it seems easier just to grab a control with a mouse. But with Dimension Pro, there are four different programmable "elements." Suppose you want to tweak the Bit Reduction parameter on the four elements. Kore happens to display these on the same page, so

### Kore: Conclusions

Kore is extremely useful, but it does take some time to make Kore work the way you want. The optimum scenario is a user who uses only supported instruments, and doesn't have many custom presets. This person can dive into Kore right away and make full use of it. If you want to make your existing presets Kore-friendly, expect to take some time tagging them to integrate with the Kore database. Then again, once they're tagged, you don't have to do it again. It's like ripping your CDs to an iPod: It's a hassle, but worth it when your CD collection fits in the palm of your hand. This helps underscore that Kore shifts your thinking away from "plug-ins" to "sounds."

Like any instrument, the controller has a learning curve — you

need to become familiar with it before you can really make it fly. When you start working with Kore, force yourself to forget you have a mouse and keyboard, and use the controller as much as possible. After a period of acclimation, you'll find that most of what you need to do can be done faster with the controller than without it.

As to the program itself, while the initial impression may be daunting, it's not terribly complex to learn. Try using it for recording first, before tackling the standalone, live performance mode. This avoids having to deal with the "performance" layer. Once you understand the Kore way of life, the live aspect will be a snap to assimilate.

Ultimately, Kore is about managing workflow, and its value is in

direct proportion to your workflow's complexity. If you record mostly electric or acoustic instruments and have a few favorite soft synths with a few favorite presets, Kore is probably not for you. But if you swap projects among different platforms and hosts, have a lot of soft synths (think: film scoring) and plug-in effects, and work under tight deadlines, once Kore's set up for your environment it will change how you work for the better (and faster).

In between those two extremes, you have to balance cost and benefits. If you see a complex workflow in your future, it might be worth getting Kore now so you can start the process of tagging presets and creating your own favorite KoreSounds, while using the existing KoreSounds

to speed up your workflow. You may resent buying a controller with a built-in audio/MIDI interface if you already have one, but that's not what costs the bucks — it's the case, the tooling, the hardware, the software, and the sexy touch-sensitive buttons. If NI eliminated the interface aspects, I doubt the price would go down much. Besides, the controller is so much more than just a big dongle — once learned, it's a major reason why Kore can speed up workflow.

So this section ends not with a bang, but with a whimper: How much you like Kore depends entirely on your situation. But at least now, you hopefully know enough about Kore to be able to judge whether it will rock your world or not.

you can tweak them with four knobs in real time. Without the controller, you would need to adjust one element, click over to the next one, adjust that one, click over to the next one . . . you get the idea.

The other big advantage is having a tactile controller for doing automation moves. The only real drawback is you can't tweak parameters simultaneously on different

pages. There's logic to how the parameters are grouped on the various pages, but that logic can't cover all situations. Therefore, you can add User Pages that group any controls (from plug-ins, the mixing environment, etc.) into individual pages. These are particularly useful for live performance. However, I still tend to think of the Kore controller as a programming/tweaking tool,

because for "live performance" moves, I find I really need 16 faders — so I'm not about to throw away my Peavey PC-1600x. Then again, I can plug it into the Kore controller's MIDI input.

#### LIVE PERFORMANCE

For live performance, Kore becomes a standalone program that adds an additional "performance mixer" layer. This consists of "performance channels" that hosts groups of KoreSounds, and offers a complete mixing/processing environment — think Steinberg's V-Stack on steroids.

For live use you can save performances and when you change from one preset within the performance to another, parameters can crossfade smoothly to "morph" from one sound to another. (You can also switch between Performances, but note that you might call up an instrument that needs to load lots of samples, and this may take some time. As a result, it's best to load as much as you need within a single Performance, and just switch between presets.)

#### ESPRIT DE KORE . . .

Yes, it really is for the studio and for live performance, and is indeed part software and part hardware. Kore gets high marks for original thinking, and works as claimed. I would have preferred pages with 16 parameters and 16 controls, along with a bigger LCD . . . although eight parameters is convenient if you don't want to have to think about too much at once. For additional opinions about Kore, check out the sidebar. **EQ**

**Product type:** Software workflow manager with hardware controller.

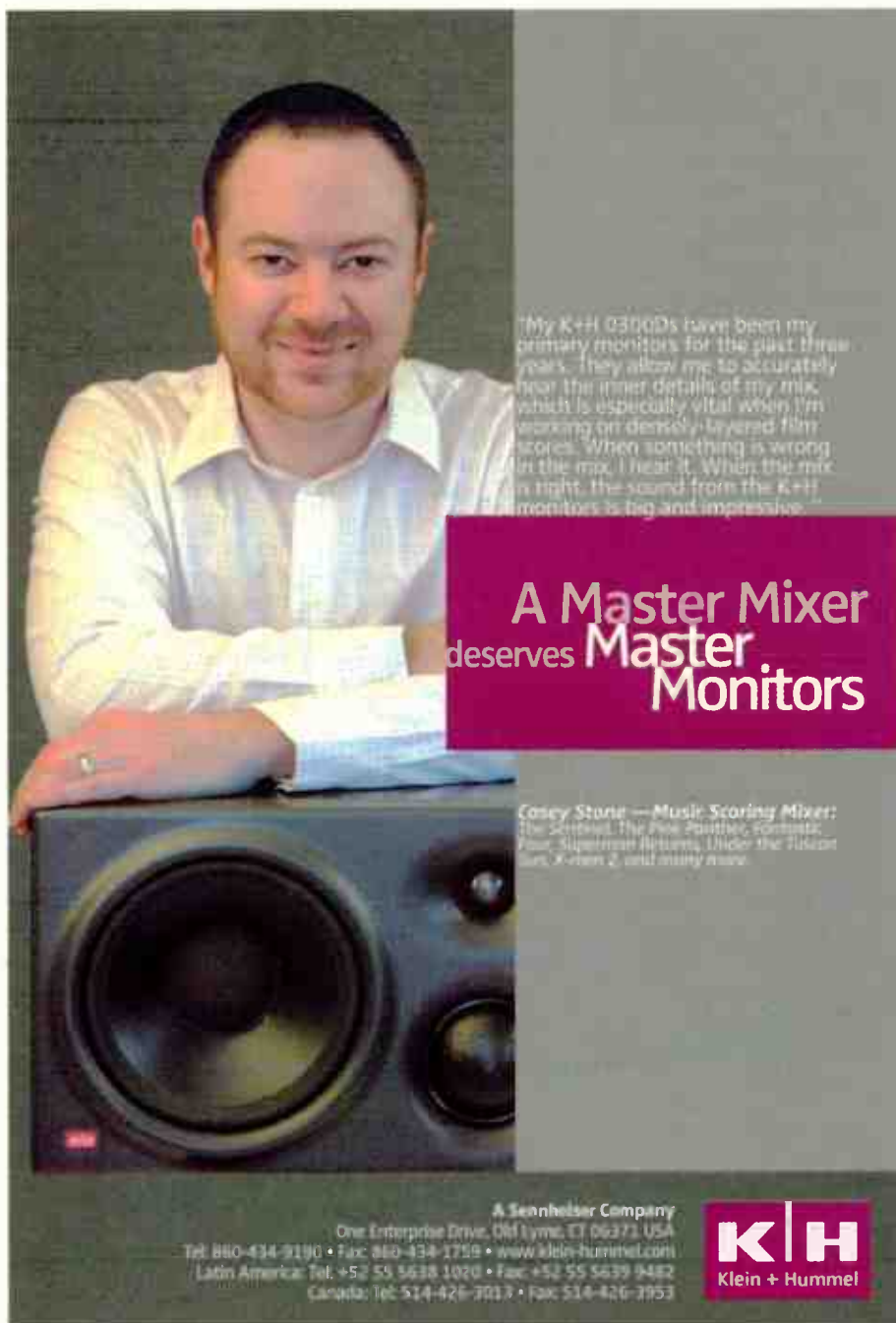
**Target market:** Musicians or engineers who need to manage a significant amount of plug-in instruments, effects, and presets, either in the studio or onstage.

**Strengths:** Can greatly simplify complex workflows. Makes tweaking parameters easier. Innovative. Designed for cross-platform and cross-host operation. Sleek hardware controller. Priced reasonably, considering what it does.

**Limitations:** For those with simple workflows, Kore is a solution in search of a problem. Requires using VST plug-ins to obtain maximum compatibility benefits (but does accept AUs). Takes time to set up the ideal Kore environment.

**Price:** \$559 list

**Contact:** [www.native-instruments.com](http://www.native-instruments.com)



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World Radio History

# MACKIE HR626 MONITORS

## Bliss and the vertical position

By Roy Stein and Tony Gross

These two-way, THX-approved, active reference monitors set high expectations from the get-go: They're packaged with an ergonomic methodology normally reserved for 6th century T'ang Dynasty vases. After carefully slicing off the packing tape and opening the shipping carton's heavy cardboard flaps . . . handles appear! Yes, handles are included to gently lift these 31 lb. beauties from their slumber. How I wished my posh European studio monitors had been packaged similarly; it would have saved one of the corners from being dented when I excitedly removed them from their packaging.

### SPECS-LAND

Once you glide the HR626's out of the box, you'll likely be very impressed with their looks. The front panels are stealth, sleek, and make an immediate visual statement that features two 6.7" die cast aluminum frame woofers and a 1" viscous edge-damped aluminum alloy dome tweeter. On the rear panel are three, three-way switches for acoustic optimization that compensate for listening environment placement, a three-way power mode switch, input sensitivity control, and AC voltage selector.

Also on the rear: Three very convenient, side-mounted sets of input jacks (XLR, phone or RCA) accept either balanced or unbalanced signals. There's also a power cord receptacle for accepting one of the two included standard power cables (US and continental European).

In addition, these monitors boast a rear-mounted 6" x 9" passive radiator slightly hidden under the power amp control section. The two-woofer monitor is based upon the design principles of Joe D'Appolito, which supposedly result in an extended low frequency response and more phase coherency than traditionally designed boxes of the same size. The frequency response,  $\pm 1.5$ dB from 42Hz–20kHz, is confirmed by a



signed calibration certificate included with each speaker.

### FIRST LISTEN

So far, so very, very good. Our first listening test was in GFI Studio's sweet-sounding "A" room. The HR626's were initially parked horizontally on the console meter bridge about 3' apart and 3' from the mix position, with the rear controls set to the defaults. After about 30 seconds of listening to one of my favorite reference discs (Nirvana's "Nevermind"), it seemed the overall sound lacked a bit of luster — small, and not well-defined. The HR626s were okay . . . but where was the "wow!"?

We checked the effect of the rear speaker switches; not surprisingly, the default positions sounded best. I then placed the HR626s horizontally on sand-filled, decoupled, speaker stands elevated 42" from the floor, behind a vintage MCI636 console and spaced both further away and further apart. It still wasn't as detailed as one would expect from monitors in this price range labeled "High Resolution." Hmm . . . I just couldn't shake the intuitive sense that these monitors were better than what I was hearing.

### THE "D'OH!" MOMENT

So I tried something obscenely simple, and turned them to a vertical position. The difference was overwhelming: Far more detail, and extremely well-defined imaging.

With our juices now flowing, we did a tracking session with a female vocalist. The resulting speaker audition was clear, detailed, and the vocal was easy to place in the mix. A previously-tracked

Gibson J100 acoustic guitar was equally detailed. In short, a long session monitoring through the HR626's was a pleasant, non-fatiguing experience.

As context matters immensely, we then tested the HR626s in GFI's Studio B, which was built to emulate most real-world listening rooms. Still trying to make these speakers sound great horizontally, we placed them on the desk, flanking the sides of a Mackie d8b. Again, they sounded a bit dull and not as open as expected. Moving them off the desk and placing them further apart was an improvement, but as soon as we went vertical with the monitors, the "wow!" factor kicked in again. The difference between horizontal and vertical placement was astounding, as surprising the second time around as the first.

The HR626s have now risen to our expectations. You can hear the subtlety in different reverb algorithms and the definition between close knit timbres; placing the vocals in the mix is easy. And, our findings were consistent between two totally different listening environments — not an easy accomplishment for most monitors.

Bottom line: These are darn good speakers, but experiment with the monitor's settings and most importantly, their positioning. The Mackie HR626's monitors are very capable of translating your mixes to the outside world with clarity and definition. They're a good buy for the buck and, oh yeah, did I mention . . . they look mahvelous, too. **EQ**

**Product type:** Active, two-way monitor speakers

**Target market:** Higher-end project and home studios

**Strengths:** Consistent operation in different listening environments. Excellent detail and imaging. Impressive looks and good value.

**Limitations:** Vertical placement seems preferable to horizontal.

**Price:** \$839.99 list

**Contact:** [www.mackie.com](http://www.mackie.com)



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# MILLENNIA MEDIA TWIN DIRECT TD-1

## When you send your signal into your recorder, send it first class

by Mitch Gallagher

Millennia refers to the Twin Direct TD-1 as a "Half-Rack Recording System," and a "collection of core Millennia products designed into a sophisticated recording channel + direct box." I prefer to think of it as the ultimate device for getting signal into your recorder — here's a short list of what the TD-1 does:

- Solid-state mic/line pre (using the same circuit as Millennia's HV3 preamp)
- Solid-state instrument DI with three selectable input impedances
- Tube instrument DI with three selectable input impedances
- Guitar amplifier Speaker Soak DI
- Dual-band fully parametric equalizer (using a circuit similar to the solid-state part of Millennia's high-end NSEQ equalizer)
- Dual-output re-amp interface

In other words, the TD-1 covers a lot of ground (for the full set of specs, a block diagram, and the manual, go to [www.mil-media.com/docs/products/td1.shtm](http://www.mil-media.com/docs/products/td1.shtm)).

The heavy-duty steel chassis is a half-rack wide, and two rack spaces tall. Options include a padded gig bag, and kits for rack mounting a single TD-1 or two units side-by-side. The stock TD-1 comes gloss black, but a platinum-crackle finish is also available.

In some ways the TD-1 is a scaled-down version of Millennia's ultra-flexible Origin STT-1 channel strip (reviewed Oct. '02) — it has two-band EQ versus the four-band in the STT-1, no VU meter, no compressor, no tube mic pre, and so on. In other ways, it takes the "input strip" concept in a different direction than the STT-1, with headphone out, re-amping, enhanced DI capabilities, and more. If you want a tonally flexible, highly capable mic channel strip with EQ and compression, the Origin STT-1 is your box. For a great mic pre with EQ and tons of



The TD-1 isn't just cute, it sounds great.

electric guitar and bass recording power, the TD-1 is the way to go.

### APPLYING THE TD-1

As a mic pre, the TD-1 has the top-of-its-class, clean-but-big Millennia solid-state sound. I A/B'd the TD-1 against my HV3; the tone and response are identical. The headphone out is handy for mic placement, and quick checks (although I wish it had a real level control knob rather than a volume trim pot). I'd also appreciate a way to mix a stereo signal back into the headphones for latency-free monitoring when overdubbing to a DAW, although how Millennia could cram anything more into the box is anyone's guess. . . .

As a direct box, Millennia's Twin Topology can switch between solid-state and tube circuits. The solid-state path is clean, smooth, and transparent; dropping into tube mode adds girth and chewy-ness, and rounds out the tone's top and bottom — the direct signal gets bigger, which can help with single-coil pickups. The three input impedance settings for the direct input allow more tonal flexibility with acoustic and passive pickups.

The instrument direct in jack also serves as a "Speaker Soak" input, allowing you to feed the speaker level output from a guitar amp direct into the TD-1. Note the TD-1 has no speaker simulation,

so the sound is that of the amp itself. I preferred using it for clean tones, as amp-direct distorted tones sound like you'd expect: fizzy, anemic, and direct sounding. However there's another option: With modeled guitar processing plug-ins, you can record the Speaker Soaked guitar amp tone, then send the resulting track through a speaker modeler. Native Instruments' Guitar Rig 2 worked great for this — you can call up just cabinets (no amp or distortion) and run the direct amped guitar through it. This is ideal for those who find the distortion in modeler plug-ins unconvincing, but need the options offered by different cabinets, mics, and processors.

When re-amping, you have the choice of using either Strat- or Les Paul-flavored outputs — the TD-1's re-amp outs are driven using transformers to emulate (but of course, not duplicate) the output of a single-coil or humbucker pickup.

The TD-1's two-band equalizer is fully parametric, and offers wonderfully clean, smooth, musical tone adjustment. The EQ can be switched on for any of the signal paths, including the direct instrument in and re-amp out, in addition to the line and mic ins. Thus, you can use its EQ both during tracking and mix-down. The two bands can overlap, and each has an "x10" switch for increasing its range.

### THE BOTTOM LINE

If you're looking for an incredibly flexible input device that can also provide useful functions during mixdown, the TD-1 may be your Holy Grail. Furthermore, the \$1,675 price is an amazing deal when you consider how much it includes. Highly recommended — actually, I recommend that you get two, so you can track and EQ stereo sources! **EQ**

**Price:** \$1,675

**Contact:** [www.mil-media.com](http://www.mil-media.com)





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# AUDIO-TECHNICA AT4060

**Marrying a vintage tube tone with flexibility, versatility, and affordability — A-T presents the 4060, and EQ gives you the lowdown on it.**

by J.J. Blair

*Editor's Note: The AT4060, as many of you may remember, was previously reviewed in the September '05 issue of EQ. The review was inaccurate due to improper usage. Somehow the ground lift switch, a feature for use in situations where hum compensation is necessary, was inadvertently engaged. Use of the switch under normal operating conditions will cause the microphone to be noisy — hence the reviewer's statement regarding a "pretty atrocious noise floor" in the September '05 review — well . . . we figured it worth another listen. With the original mic in hand (set to the correct default this time), J.J. Blair retackled the review, and here is what he had to say about it:*

The Audio-Technica AT4060 (\$1,495/street price \$1,099) is a fixed cardioid, dual diaphragm tube condenser mic. It uses a 6922 vacuum tube, and unlike some similarly priced mics, it has a transformer. (For the record, I'm not a fan of transformerless mics.) The mic comes in a matte black finish, with a carrying case, a velvet cover, a cable, a shockmount, and a PSU.

The mic is solidly built, and the construction is very sound. The capsule mount is a design I've never seen before, and is apparently a patented A-T technology. Surrounding the capsule is a metal ring with a fine mesh on one side and holes that run all the way through, sort of like an exaggerated capsule backplate. This is apparently an A-T solution for acoustically controlling the frequency response inside the mic. Typically in mics, grill shape and the size of the grill mesh, not to mention the shape of the capsule mount, have been the ways in which frequency response is controlled acoustically. A-T seems to have a fresh idea here of how to further control the acoustics within the mic's basket grill, so that they do not need to electronically alter the frequency response once the capsule passes signal.

The rest of the package is well



designed, also. The shock mount is ingenious and solid. The PSU comes with rack ears, should you choose to rack mount it. It is also switchable between 110v and 220v, and has the aforementioned ground switch (just in case you forgot about it).

The mic utilizes an externally polarized backplate, with a dual diaphragm capsule and a fixed cardioid pattern. The inability to change the pattern response

of the mic limits its uses somewhat, and it also limits the user's ability to alter the frequency response of the mic through changing the pattern. However, it keeps the price down, and makes the mic affordable to the people who can't spend thousands, yet want a good tube mic.

The frequency response of the mic, while not flat, doesn't have the extreme peaks and valleys of some of the other mics I've encountered that are offered by other companies. The graph indicates a rise in response from about 20Hz to 200Hz, with the peak at 200Hz. Also, from 2kHz to what seems to be a standard roll off for tube mics at 12kHz, with the most prominence in the 6–10kHz range.

The mic had a pleasant tone on vocals both male and female. I recorded these vocalists using an Inward Connections Vac Rac tube pre, through an Apogee AD16X, to Pro Tools HD at 96kHz. I found that there was a great deal of proximity effect with this mic — it definitely likes to have a singer right up on it. I also found, though particularly with the male vocalists, that the mic sounded better the louder you sang; it seemed best suited for aggressive singing. Oddly enough, when I introduced a compressor into the scenario (a Urei 1176LN at 12:1 with fast attack and release) I liked the sound less. Generally, vocals tend to sound better with this type of compression, but it just made them sound woofier and less defined. In my opinion, compression definitely brought out all the wrong frequencies of this mic on vocals.

On an acoustic guitar, the mic has a pleasant and warm sound. It doesn't sparkle like a C12, but I definitely preferred it over the U87 that we compared it to. Because of the proximity effect and fairly uniform off-axis rejection, you'll definitely need to fish around for the sweet spot on any particular guitar — but this is hardly unusual for any LDC mic on acoustic.

I tried the mic with my 1958 Les Paul Custom through my 1952 Fender Deluxe



amp, overdriven to a classic, crunchy rock tone. The presence peak was a little higher and wider than how I generally like my electric guitars to sound, but the mic's headroom amply handled the amp's sound without distorting. It had a good punchy sound, though I had to move the mic a little further from the speaker's center, and more towards the cone, than what I usually do. Because of the brightness of the mic, it didn't respond too well to me trying to EQ some high end in with a Daking 52270, in other words it got a little too brittle for my taste. But with a bright mic like this, you might find EQ unnecessary. In most cases, I would figure that a good choice of preamp and mic placement would better suit the sound than merely trying to EQ this mic for electrics.

With proximity effect being an issue, I didn't care much for the mic trying to capture a mono piano sound from outside the lid of my Yamaha C7. However, when I placed the 4060 over the strings, it sounded warm and crisp. With that in mind, I would definitely need a pair or even three in this application. Furthermore, the close miking on the piano struck me as being very usable for A/B positioning, or even for using three of them near the piano hammers.

At AES, somebody commented to me how much they liked these mics on drum overheads, so I thought I'd give that a shot as well. In a mono overhead configuration, I actually found that the cymbals were a little too "splishy" sounding, and the snare didn't have enough meat — especially compared to the Neumann U87 we A/B'd against it. It did a nice job handling the transients, but didn't strike me as the killer mic for this application.


In general though, the AT4060 is a really good mic. It's not going to make anybody throw away their Neumann U47s, but I don't think it's intended to. For anybody who wants to have a very solidly built tube mic that is affordable enough that you could get a pair of them for less than the price of a single U87, the AT4060 is definitely worth considering. A-T's philosophy of not electronically coloring the sound made this mic much more pleasing to my ear than some of the Chinese tube mics I have heard, which seemed to have been obviously EQ'd by the mic's internal pre amp. This mic is made in Japan, which has been making quality condenser mics for decades, such as the Sony brand. The packaging is well thought out and all the

accessories are well designed and built, and look like they will definitely prove durable, which I can't even say for some of the recent European mics. If you are looking to get into a tube mic with some warmth and a little more sparkle than you might be getting from any of your current solid-state mics, or you want to upgrade from some of the cheaper tube mics


without breaking the bank, you should definitely check out the AT4060. **EQ**

*J.J. Blair is a Grammy winning producer and engineer, based in Los Angeles. He works from his personal studio, Fox Force Five Recorders, and co-moderates the EQ magazine online forum, "Use Your Ears." He'd love for you to pay him a visit there.*

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Sounds

## BIG FISH AUDIO Nu Jazz Funk

**Contact:** Big Fish Audio,

[www.bigfishaudio.com](http://www.bigfishaudio.com)

**Format:** 1 DVD-ROM with REX2 and WAV loops, WAV one-shots, 24-bit/44.1kHz

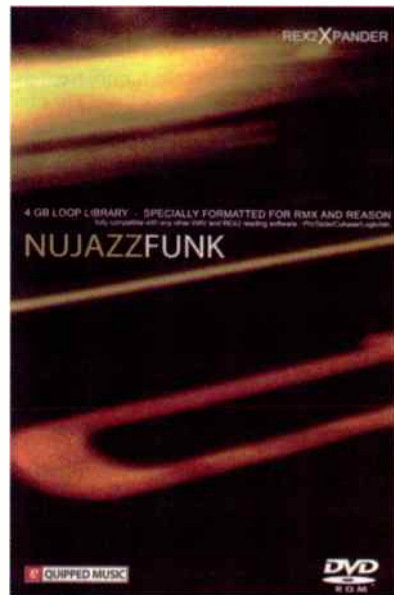
**Price:** \$169.95

Yeah, it has WAV files and hits, but the Big Deal is that this collection features REX2 loops optimized for Propellerhead's Reason and Spectrasonics' Stylus RMX. For the REX format files (but not the WAVs), the elements of the various loops are isolated and sliced individually. This does three groovy things: The slicing quality is great because it's not necessary to slice complex loops, it's easy to mix and match individual parts, and with Stylus RMX, the loops work fine with the SAGE Converter (although the conversion process takes a while) so you

can load up different patterns into the different tracks and create great rhythms.

The loops are mostly drums and percussion of the syncopated, almost Brazilian-like Nu Jazz persuasion, but there are a lot of instruments folded in as well (Rhodes, Moog Bass, strings, etc.). It's 4GB worth o' stuff: almost 3,000 drum, music, and FX Refill-friendly samples, 2,838 REX2 files, and 566 WAV format drums and music loops. It takes a long time to explore everything, but don't worry — pretty much everything works as expected, so feel free to mix 'n' match.

The package includes 50MB of demo files; I've spliced pieces of some of them together at [www.eqmag.com](http://www.eqmag.com), as they give a realistic idea of what to expect. Good stuff, with good stretching too. —Craig Anderton **EQ**



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"I like having a secret weapon... Gefell mics are extremely clear and transparent. They give me the definition that any other mics cannot capture."



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"This is the ultimate compliment when a singer or musician says they've never sounded better. In particular, the sound of the UM900 is sparkling, enormous and exciting. My Gefell microphones have earned this praise time and again."



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**Format:** CD-ROM with 16-bit/44.1kHz Acidized WAV files

**Price:** \$39.95

Think "percussion-collides-with-Native-Instruments'-Reaktor-in-a-studio-with-lots-of-signal-processors," and you get the idea. Or, think of *Rhythmicronics* as "percussion-meets-sound-design," as these are highly crafted and nuanced loops.

There are 15 folders with 262 loops (461MB total) that have surprisingly descriptive names: Ethnotronic, Elektro, Glitched, Minimalism, Darkwave, etc. You'll also find 3.5MB of one-shots, and 11.6MB of promotional loops from other Sony libraries.

The audio example at [www.eqmag.com](http://www.eqmag.com)

gives a good idea of the CD's flavor, but what's not obvious is that the example was thrown together in about 30 minutes. As one DJ said to me, "Choose good loops, because then no matter what happens, you can only fall so far." These loops are sufficiently interesting that you can just sort of toss them together, and they land on their feet.

I wouldn't choose *Rhythmicronics* as a complement to primarily acoustic music unless it had an experimental or world flavor. But these loops *can* add that same experimental flair to dance, hip-hop, and other more electronic genres by imparting variety, interest, and complexity to what might otherwise be static-sounding grooves.

It's also worth noting that these are loops with "personalities." For most music, they're probably best used



sparingly as ear candy. But because they are so carefully crafted and internally consistent, they can even slide into very sparse arrangements.

In any event, one thing's for sure: This one gets copied over to my hard drive, because I'll be using it a lot in the future. —Craig Anderton **EQ**



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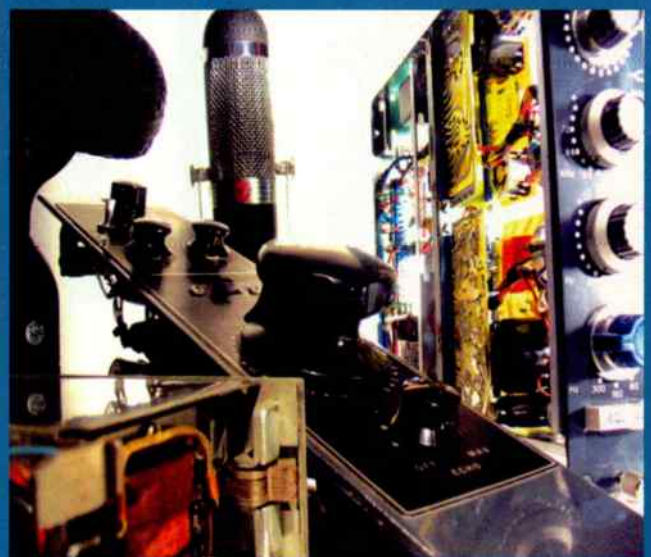
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- Lyric sheet typed or printed legibly (please include English translation if applicable). Sheets not required for instrumental compositions.
- Check or money order for \$30.00 per song (U.S. currency only) payable to John Lennon Songwriting Contest. If paying by credit card, \$30.00 per song will be charged to your account.

Please read all rules carefully, and then sign your name in the space provided. If entrant is under 18 years old, the signature of a parent or guardian is required.

1. Each song submitted must be contestant's original work. Songs may not exceed five (5) minutes in length. Songs may have multiple co-writers, but please designate one name only on the application. Contestant may submit as many songs in as many categories as he/she wishes, but each entry requires a separate cassette, CD, or MP3 file, entry form, lyric sheet, and entrance fee. One check or money order for multiple entries/categories is permitted (Entrance fee is non-refundable. JLSC is not responsible for late, lost, damaged, misdirected, postage due, stolen, or misappropriated entries. The JLSC is not responsible for faulty file uploads accompanying online entries.)
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competition to become the Lennon Award Winner in their respective category. The 12 Lennon Award Winners will receive a \$5000 EMI Music Publishing Contract, and 1,000 CDs in full color, premium 6-panel Digipaks, worth \$1,990 courtesy of Discmakers. Thirty-six (36) Finalists from each Session will receive \$100 gift certificates from MusiciansFriend.com. One (1) Lennon Award winning song will receive an Apple Power Mac G5, Cinema Display and \$20,000 for the "Song of the Year" courtesy of Maxell.

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  4. Winners will be chosen by a select panel of judges comprised of noted songwriters, producers, and music industry professionals. Songs will be judged based on melody, composition and lyrics (when applicable). The quality of performance and production will not be considered. Prizes will be awarded jointly to all authors of any song; division of prizes is responsibility of winners. Void where prohibited. All federal, state, and local laws and regulations apply.
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  6. Winners will be notified by mail and must sign and return an affidavit of eligibility/recording rights/publicity release within 14 days of notification date. The affidavit will state that winner's song is original work and he/she holds all rights to song. Failure to sign and return such affidavit within 14 days or provision of false/inaccurate information therein will result in immediate disqualification and an alternate winner will be selected. Affidavits of winners under 18 years of age at time of award must be countersigned by parent or legal guardian. Affidavits subject to verification by JLSC and its agents. Entry constitutes permission to use winner's names, likenesses, and voices for future advertising and publicity purposes without additional compensation.
  7. CDs, cassettes, and lyrics will not be returned.
  8. Winner Announcements: Session I announced on September 1, 2006, Session II announced on March 1, 2007. Announcements will be posted on [jlsc.com](http://jlsc.com).
- I have read and understand the rules of the John Lennon Songwriting Contest and I accept the terms and conditions of participation. (If entrant is under 18 years old, the signature of a parent or guardian is required.)

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# CREATE *FAT* DIGITAL AUDIO WORKSTATION MIXES

## Put some analog pounds on your digital mixes

By Ken Walden

The main goal behind engineering is to make music sound great, and to communicate the artist's sonic vision. Judging by the people with whom I've worked, "tone" is of major importance to the majors. Carlos Santana won't record unless his tone is right: I heard him say it's like trying to walk in bad shoes. James Hetfield from Metallica once said "tone is everything" as I showed him some of the newest plug-ins.

So does the ultimate tone lie in analog or digital? These days, fewer people are talking about analog vs. digital . . . for all intents and purposes, digital has won. But recently, I had an interesting experience regarding this debate.

I was hired recently by Neil Young's studio, Redwood Digital, to help transfer an old 16-track 2" tape (played off a wonderfully maintained Studer machine — arguably the best tape machines made) through some very high-end digital converters into Pro Tools for mixing. I've known Redwood Digital's engineer for years, and he knows I'm very comfortable with analog technology from my early days at the Plant Studios in Northern California. He asked me to manage the transfers, so I found myself in front of a wonderful old Neve console with a fantastic Neil Young recording coming down the channel strips . . . a "best of the best" analog situation.

So how did it sound? Amazing, huge, warm, spacious — all of that. But before you stand up and proclaim "I knew analog was better," note that this is the best analog money can buy, with material recorded by top engineers, and they have very talented techs keeping this gear running (which is no easy job). Compared with a \$3–5k digital audio workstation system, does it sound better? Yes. *But how much of the difference really matters?* I would confidently say not a whole lot, and you save hundreds of thousands of dollars by going the digital route. You'll also save hours when recalling mixes, and you can wave goodbye to spending 45 minutes to calibrate your 24-track machine every time you throw on a new reel of tape.

So let's talk about how to make the best of digital, and get that big analog sound in your digital world — and yes, there *are* ways. Digital is fantastic in many aspects; let's talk about ways to make it thump.

### CORPULENT BEGINNINGS

The first step toward a fat mix starts with great tracks. Not only do you need the right mic, but a quality preamp is crucial. (Don't skimp on this; the preamp is crucial.) Next is someone who can really play or sing, and last is a high-quality recording system, which is pretty easy to come by these days. I wanted to mention this first because too often

people don't take the time to get their tracks sounding good in the first place, because they believe they can edit them into something good later on . . . it doesn't work that way.

### PUT ON THE POUNDS WITH FAT EQ

Not all EQs are created equal — *no way* — and you owe it to yourself to try some third-party EQs when it's time for serious mixing. Talk to someone you trust about recommendations, or at least check out EQs from McDSP, URS, and Sony (Figure 1). These are a few of the companies that make outstanding EQ plug-ins, and this alone can make a *huge* difference in a mix. When you hear a slammin' EQ, you will know it: Every twist of the virtual knob will offer new and exciting variations on a track. A good-sounding EQ makes life easy; just twist and smile.

From there, use your ears to decide which type of EQ you like. I might like a Neve-esque EQ, whereas you might prefer something similar to an API, or a transparent EQ (Neve and API mixing consoles have a distinct tone). Also gear like SSL consoles, Pultec EQs, Urei/Teletronics/Universal Audio compressors, and the like are common in big studios. Use these toys, and you will understand very quickly why so many top engineers rely on them when creating hit tunes.



Fig. 1: High-quality, third-party EQ plug-ins can make a huge sonic difference.



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## CREATE FAT DIGITAL AUDIO WORKSTATION MIXES



Fig. 2: A high-pass filter passes frequencies above a particular cutoff frequency, which can help clean up muddy bass in your mix.

Outstanding mixes often use a variety of EQs and compressors, which is why most "big" studios have outboard racks with this kind of equipment. Nowadays software companies have done outstanding emulations of these classics, so it is relatively inexpensive to cover an entire mixer with a number of excellent EQs. Many of these plug-ins (like those from McDSP and Sony) emulate several different EQs in one plug-in, resulting in a set of very powerful mixing tools.

### CHUBBIFY THE LOW END

First, less is indeed more: Roll off the low end on most of your tracks using a high pass filter (Figure 2). This gives some space to the tracks that are supposed to be the main focus of your mix's low frequency region (e.g., the kick and bass in the case of rock/pop/rap/R&B). If you push up the bass on all your tracks, your mixes will get muddy *really* fast. One of analog's great "features" is that it rolls off the bass at a higher frequency than digital, which helps tighten up the low end. SSL consoles don't pass much below 30Hz, and most mastering engineers will roll off everything below 30-38Hz anyway.

Second, you need to *hear* the low end correctly, so you know what you're doing when tweaking your tasty EQ plug-ins.



Fig. 3: Sony's Transient Modulator takes the sting out of excessively spiky attacks.

Part of this requires a speaker system that can actually reproduce significant low end: Why do you think most major studios have big soffit-mounted speakers with two 15" drivers on each side? Please don't try to do all of your mixing on tiny speakers, then think you're going to be able to know what's happening in the bass; get a sub or multiple subs. Besides, it's a lot more fun to work when you can really hear and feel the bass.

Third is the biggest problem by far: room design and proper bass trapping. The topic is way too deep to get into here, but suffice it to say that if you don't treat your room properly, you will be extremely lucky to get decent bass, or even a good mix in general, out of your studio. [Editor's Note: For more information on room design, check out the author's instructional DVD titled *Modern Recording and Mixing*.]

### ADIPOSE ATTACK

Another difference between analog tape and digital recording is how each technology reproduces attack transients. Digital is very accurate, which is both good and bad. Analog is less accurate, and the good aspect here is that it will often smooth out nasty transients or spiky peaks in a signal, whereas digital reproduces those signals accurately. This can sound especially nasty on instruments like drums and acoustic guitars. If you have a track with a percussive edge to it and it sounds a bit annoying or "pingy" (you know, when you flinch a bit upon hearing the track) this could be the reason.

Plug-ins to the rescue . . . try the Sony Transient Modulator plug-in (Figure 3). This lets you adjust how much attack there is on your tracks, and is fantastic for getting rid of nasty percussive peaks. Just insert it in a track, then move the "ratio" slider.





Fig. 4: Can a digital sing the analogs? These plug-ins can.

Sony did a great job filling a gap in the plug-in world with this extremely powerful tool, it's a must-have in my book.

Tape saturation/analog emulation plug-ins are another option. Two of my favorites are McDSP's Analog Channel and Crane Song's Phoenix (Figure 4). These emulate that smoothness I referred to earlier. Download the demos and check 'em out . . . but listen closely, this is a subtle effect.

#### PLUMP UP YOUR SAMPLE RATE

Working at 88.2kHz and 24-bit sounds better than lower sampling rates (44.1 and 48kHz), and the mixes convert down to 44.1kHz (for CDs) better than 96kHz. This was confirmed unanimously by a half dozen top engineers during listening tests conducted at both Skywalker's scoring stage and Fantasy studios. I've also talked to several Digidesign Product Specialists who conducted similar tests all over the world, and reached the same conclusion. In general 176.4kHz (or 192kHz) was found to be not beneficial enough to justify restricting the track count and power available for plug-ins.

Ready to get fat? I hope this information helps take your mixes to the next level. With the proper skills and some carefully selected plug-ins, you too can achieve analog-type sound quality in the digital world. **EQ**

Ken Walden is President and Founder of *Secrets of the Pros, Inc.*, a company that produces training DVDs for the audio production industry ([www.secretsofthepros.com](http://www.secretsofthepros.com)). He is also a producer, engineer, mixer, and songwriter.

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# AMPLITUBE2 MEETS DRUMS

## Amp modeling: It's not just for guitars any more . . .

By Craig Anderton

There's a lot of excellent modeling software these days: WAVES GTR, Native Instruments Guitar Rig, Universal Audio's Nigel, Line 6 TonePort, and more — not to mention a bunch of fun freebies on the net. This time around, we'll check out some tricks with IK Multimedia's AmpliTube2 (AT2 for short), although many of the following tips apply to other modeling software as well.

By the way, if you're into the "modeling vs. real thing" debate, nope, not gonna go there. You can make sounds with modeling software that no amp can match, and amps can deliver some things that modeling can't. This is the same principle that explains why ice cream manufacturers make both vanilla and chocolate ice cream: Some people like one, and some the other. Then again, there are the people who get a scoop of chocolate *and* a scoop of vanilla, and I'm definitely in that category.

But amp modeling with *drums*? Well, AmpliTube2 isn't just about guitar and bass: As any keyboard player will tell you, a little judicious grit and really add character to sterile synths. And I've had great luck using guitar modeling on drums (the original AmpliTube was one of the "secret ingredients" in my *Turbulent Filth Monsters* drum loop sample CD). So, drum roll, please. . . .

### CLONING TRACKS: A GOOD THING

Generally, I use modelers to provide support for an existing drum track rather than to "take over" the sound. The easiest way to do this is to copy your drum track, then insert AT2 as an effect in *one* of the tracks. Varying the level of the straight and processed tracks lets you determine the intensity of the processed sound.

An even more important reason for doing this is that while AT2 is a stereo device at the output, it sums stereo into mono at the input. As a result, the processed sound is centered, while the original track provides the stereo spread. This is actually not a bad thing, as centering the sound can add some real "body." Of course, if you add a stereo effect within AT2, such as delay, this spreads the processed sound across the stereo field.

If you *must* have stereo processing, there's an easy workaround: Bounce the drum track's right channel to a new track, the left channel to another track, and insert an instance of AT2 into each one.

### WHICH KIND OF AMP?

Of course, that's a matter of taste. Overall, distorted presets sound great for nasty applications, but can also add a kind of tonality to the drums by distorting the

decays. Go to the Preset window; *Complete Rigs > Crunch* has a bunch of useful presets. A good place to start is the "Blues and More" preset, as it's crunchy without getting too nasty. If you push the copied drum track subtly in the background, you'll get a nice crunch that doesn't overwhelm the drums.

On the other hand if you have a yearning for hardcore techno, be my guest! "Fuzzace2" is the kind of preset that takes your drums back to a Belgian rave in the late '90s.

Cleaner presets, while more subtle, can add body and depth. Try the "DarkSoloing" preset under *Styles > Jazz* for hip-hop type drums; it adds major fullness.

### THE CABINET

One of the most important switches in the amp is the Bypass switch. This allows you to bypass the amp completely, and just use the Cabinet and Mic modeling. These two can add a lot of variety to drums, in a subtle way.

For this application, I often use Configuration 2, which creates a parallel chain (Figure 1). I'll bypass all the effects and the amps, and use two different cabinets and mikings to create two different tonalities. The Level control toward the lower right affects whichever module you've chosen, so it's easy to



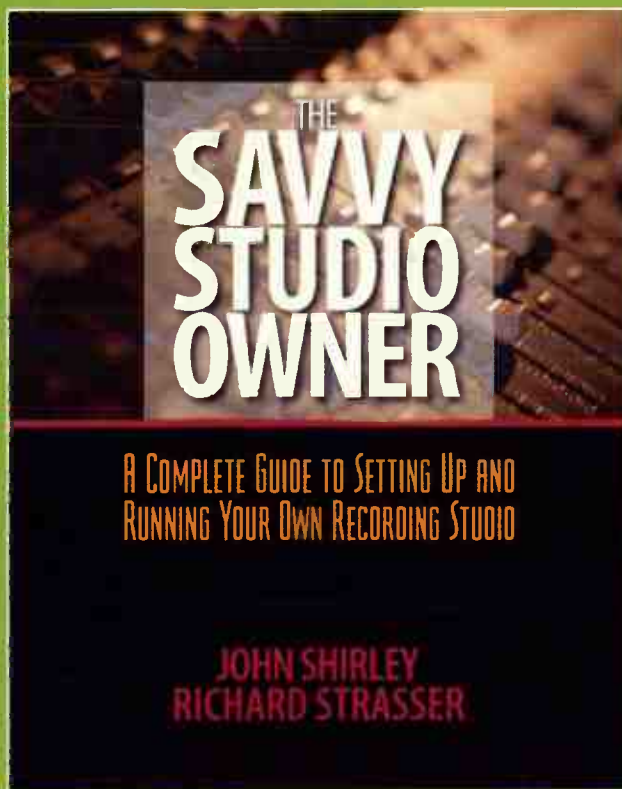
Fig. 1: This patch is set up with two parallel effects chains so that you can have two different cabinets and mikings.



Fig. 2: Envelope filter effects work really well with drums. Here, a drum track has been copied, with the effect added to the copy only.



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**JOHN SHIRLEY** is a composer, professor, recording engineer, record producer, author, and studio owner. He holds a PhD in Music Composition and is a contributing editor for *Recording Magazine*.

**DR. RICHARD STRASSER** is coordinator of the Music Business program at the University of Massachusetts-Lowell. He earned a Master of Music and a Doctor of Musical Arts at the Manhattan School of Music.

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### EFFECTS! COOL!

AT2's stomp box effects can really help spice up the drum sounds in, uh, interesting (some would say perverse) ways. My flat-out favorite is the Envelope Filter, which can sound superb on drums —

funky, greasy, and squishy (Figure 2). AT2's filter offers lowpass, bandpass, and highpass filtering; with drums, using LP mode with 24dB/octave slope creates the most obvious, funky sound but try the other options as well.

For ultra-percussive effects, check out the Noise Gate function. By setting the threshold really high, you can pretty much

nuke the lower-level drum sounds, and let through just the loudest peaks. It's fun to add reverb or delay to just these sounds — the overall result is sparser than affecting all the drums.

The Pitch Shifter is another goodie on drums, particularly with toms. Move the Coarse control around, and you'll get "talking drum"-type effects. Note that the Level control is kind of a misnomer; it's more of a wet/dry control. If you're using the Pitch Shifter in a copied track, turn Level up all the way so that you hear the pitch shifted effect only.

Considering how great the Pitch Shifter sounds, you might expect the Harmonator to be even better. Although the Harmonator is indeed more flexible, it isn't really as predictable with drums. But it does do some really bizarre things if you're into more experimental sounds.

### AUTOMATION

I mentioned moving the Pitch Shifter's Coarse control, but of course, you don't want to have to do that every time you play the track. Fortunately, just about everything can be automated using standard VST automation protocols (*i.e.*, set up to record automation, and tweak the control). However, there are a few fine points involving automation.

AT2 does not respond directly to MIDI control; in other words, you can't do something like invoke a "MIDI learn" function for a particular parameter, then move an external pedal. The workaround is that with some hosts, you can tie a MIDI controller to the host's automation. For example, in the Sonar 5 (Producer Edition) Console view, there are four sliders for each inserted channel effect that can be assigned to particular parameters, and these sliders can in turn be remote controlled via MIDI. This allows for "hands-free" parameter control, which is important for guitarists.


It's also important to note that an effect can be automated once in each of the two "rigs" (A and B). If you insert two instances of the same effect in the same rig, only the first one can be automated.

### DRUM FUN

I could go on, but I'll spare you some even stranger options. There's a lot you can do with guitar processing and drums, and AT2 is just as happy bending your rhythms as it is a guitar or bass . . . check it out. **EQ**

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# Power App Alley by Craig Anderton

## STEINBERG CUBASE SX

Time-stretch loops using "hit points"

**OBJECTIVE:** Allow drum loops and similar material to follow tempo changes.

**BACKGROUND:** Cubase SX offers many ways to time-stretch material; adding Hitpoints is a process like Propellerheads' ReCycle program that works best with fairly sparse, percussive material (drum loop, bass line). It separates each element in the loop (kick, kick+snare, other hits) into "slices," which are then triggered further apart for slower tempos or closer together for faster tempos. The advantage over other stretching methods is that the audio is untouched by DSP unless you need to invoke the "Close Gaps" function (described later).

### steps

Open a loop in the Sample Editor by double-clicking on it, then select the Audio Tempo Definition Tool.

Enter the Time Signature and number of Bars/Beats in the toolbar. Cubase calculates the loop's tempo automatically.

Go **Audio > Hitpoints > Calculate Hitpoints**.

Move the Hitpoint Sensitivity slider so that each transient has a hitpoint (indicated by a line with a triangular handle at the top), or at least comes as close to that ideal as possible — we can edit these later.

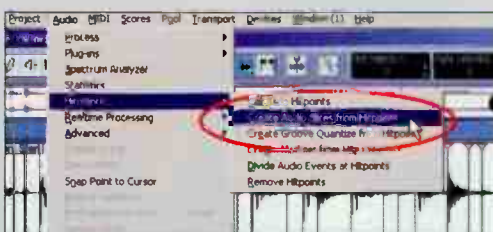
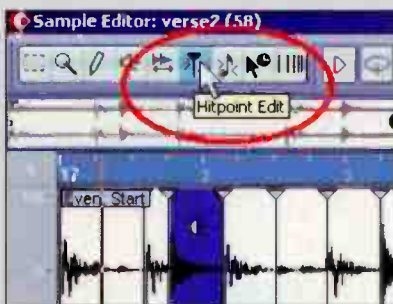
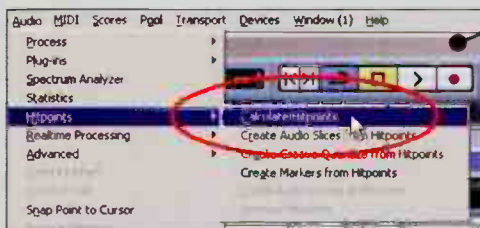
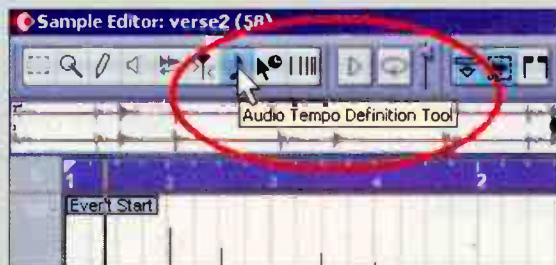
You'll probably need to edit the hitpoints with complex loops, so click on Hitpoint edit. The cursor turns into a speaker; click within a hitpoint "slice" (it turns blue temporarily) to hear whether it's a single, discrete sound. If not, it's time to edit hitpoints.

To delete a slice, hold the Alt/Option key, position the cursor over a slice's triangular "handle" so that an X appears (as shown), and click. To add a slice, hold the Alt/Option key, position the pencil cursor just before an attack transient, and click. To move a slice, click on the handle and drag it.

Addition all the slices and if each is a single, discrete sound, go **Audio > Create Audio Slices from Hitpoints**. This closes the sample editor, and converts each slice into a separate audio clip.

### tips

- To have the loop follow tempo changes, make sure the track's Musical Timebase (note symbol) is active in the Inspector.
- If slowing down the loop results in audible gaps, set the desired project tempo, then right-click on the selected clip or track and go **Advanced > Close Gaps**. Another possible solution is to add automatic fade outs by choosing the **Process > Fade Out** function instead of, or in addition to, Close Gaps.







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# Power App Alley by Craig Anderton

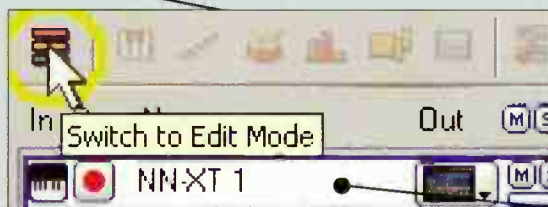
## PROPELLERHEAD REASON

Use Reason's NN-XT as an aid to practicing

**OBJECTIVE:** Repeat sections of a song so you can play over them and practice.

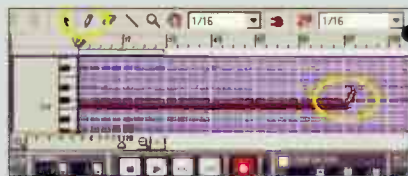
**BACKGROUND:** Reason's NN-XT sampler can load just about any file that will fit in your available RAM, including entire songs. And because you can set a sample start point and do looping, you can repeat any section within that song, turning the NN-XT into a handy practicing tool if your main digital audio recorder isn't available or is otherwise tied up. The following assumes you've created a Reason rack with an NN-XT feeding the audio out.

### steps



In the NN-XT, click on Load Sample, navigate to the song you want to practice with, then click on "OK." The sample now sits within the NN-XT, with its root note at C3.

Go to the sequencer and switch to Edit mode by clicking on the Arrange/Edit button.



Select the Pencil tool, then draw a note at C3 that's long enough to last the entire length of the song.

Double click on the Stop button (circled in yellow) to send the Play cursor to the beginning of the sequence; click on the Transport Play button, and you'll hear the file.



Set the sample Start point for where you want to be practicing, and edit the Loop Start control to the same value.

Set the Loop End control for where you want loop playback to end.

Set Play Mode to FW-Loop (forward looping).



Repeat Step 4 to hear the looped portion repeat over and over and over and over and over and...

### tips

- This technique is really handy if the vocalist wants to practice singing while the guitarist is doing overdubs — give the singer a laptop, a set of phones, and a premix of the file.
- The NN-XT accepts WAV or AIFF files, 16- or 24-bit (but not MP3).
- Note that you always have to return to the sample start to begin playback; you can't start in the middle of the sequence, as the NN-XT would miss the initial MIDI note-on.
- If the pitch is a little off compared to your instrument, rather than retune your instrument, just change the file's tuning with some pitch bend.



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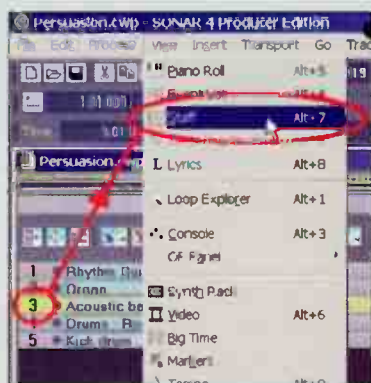
# Power App Alley by Craig Anderton

## CAKEWALK SONAR 5

Create tablature from a score

**OBJECTIVE** You know the old joke — Question: How do you get a guitarist to shut up? Answer: Put sheet music in front of him.

**BACKGROUND** Which maybe explains why *tablature*, which shows note fingerings on a symbolic guitar neck rather than standard notation, is popular with guitarists. Sonar 5 can generate tablature from MIDI data; here's how.

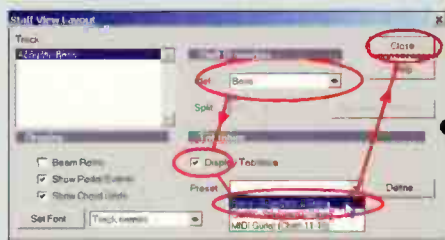


### steps

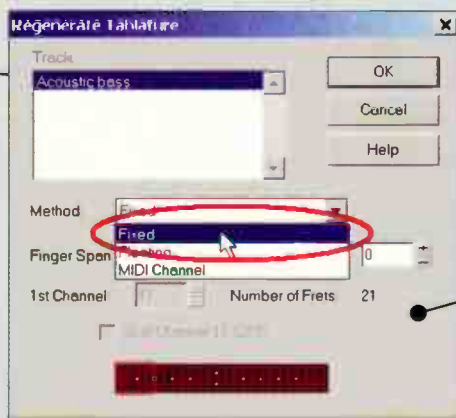
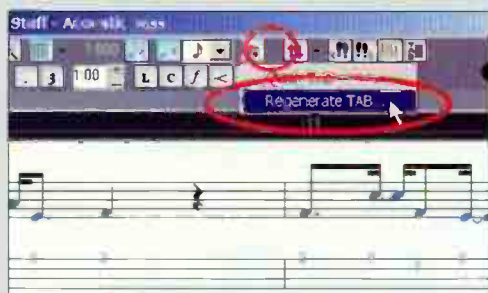
Select a MIDI track (click on its track number), then go View > Staff (Alt-7).

After the notation appears, click on the Layout icon (or type "L").

In the Staff View Layout window, choose the clef (Bass or Treble), then check the "Display Tablature" box, and choose a preset. As this is a bass part, we'll choose "Bass — Standard 4-String." When you've entered all the values, click on "Close."



Although tablature appears under the staff notation, the fingering may not work with real-world instruments and players. To fix this, first select (i.e., draw a marquee around) all the notes in the track to select them.



Click on the drop-down menu to the right of the Staff Layout icon, and select "Regenerate Tab."

Choose "Fixed," and specify the "Finger Span" (the total number of frets your fingers may need to stretch) as 4. "Lowest Fret" is 0 if you're playing on the lower part of the neck. A small red outline appears around the section of the neck where the notes will be played. Click on "OK," and the tab should be properly regenerated.

### tips

- Between Step 1 and 2, type "V" if you also want to see a virtual guitar neck.
- To voice notes higher on the neck, set "Lowest Fret" (last step) to a higher number.
- If there are problems in translating to tab, check for doubled notes. Sonar knows a guitar string plays only one note at a time, so it will try to play the same note on two different strings.



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# CHOOSING YOUR WEAPON

## Cool tools for hot tones

Like it or not, the recording industry has reached an era of sonic anarchy where the public's definition of a "good" sound can include just about every kaboom, clatter, and snap imaginable. On every medium from radio to iTunes, you can hear massive hits adhering to supreme measures of old-school audio quality, as well as lo-fi platinum smashes that sound as if they were recorded through a Playskool "Record-A-Sound." This aural free-for-all is very much in play during the quest for striking guitar tones, as Jack White's punch-drunk squall can excite just as much awe and envy as Alex Lifeson's exquisitely constructed textures. Furthermore, option anxiety is often exacerbated by, well, all the options available to those attempting to document guitar sounds: mics, modeling processors, direct boxes, and more.

So, given all this, how do you approach actually getting something on tape or disk without collapsing into spasms of self-doubt? As with most multi-layered challenges, breaking down the core activity into bite-size conceptual chunks can save you from blitzkrieging your neural network. Here's how I typically deal with the tools and theory of documenting (hopefully) groovy guitar noises.

### PRODUCTION STRATEGY

There are two basic steps for conceptualizing guitar sounds. First, don't assume that you have to develop a guitar tone from scratch. Beatles engineer Geoff Emerick always advocates trusting the guitarist.

"Obviously, the guitarist's input is there with his sound and the way he's playing," the studio legend (and author of *Here, There and Everywhere: My Life Recording the Music of the Beatles*) told me a while back. "Not only do I accept that, but I feel it's up to me to capture what the guitarist is doing. I don't want to interfere with what he likes — that would be the infiltration of a producer trying to be the artist. I like to draw as much out of the artist as possible, and if it sounds quirky — good. Make the most of it."

Second, ensure that the sonic path you take supports the song's atmosphere. Study the groove, the lyrics and timbre of the vocalist (if applicable), the band's energy, and the instrumentation to determine whether meaty, punchy, or shimmering guitar sounds (or any combination thereof) will fit evocatively into the mix.

### MIC MOVES

The ease of digital modeling has made it a pain in the ass to set up, audition, and position microphones, but putting an amp and a good mic or two in an interesting acoustic environment remains, to my mind, the hippest way to document a guitarist's sound with all its vibe and energy. This isn't about pristine isolation, so experiment with mic positions that capture the optimum combinations of amp sound, signal reflections, groovy phasing anomalies (if you employ two or more mics), and room characteristics. (Just think about how many classic guitar tracks resulted from live-in-the-studio performances where every sound in the room bled through the guitar mics, and vice-versa.)

On "Rock Star" — a track I recorded for Deirdre Jones

that made the soundtrack CD of Top Cow's "Proximity Effect" comic — the über-snotty intro-lick tone is basically a Les Paul through a Vox wah and a Marshall JCM 900 combo. (Hear the song at [www.myspace.com/michaelmolenda](http://www.myspace.com/michaelmolenda).) But the spittle factor was intensified by positioning the amp in front of a picture window, and positioning an AKG C414 five feet from the glass at a 45-degree angle. I also crammed a Shure SM57 into the amp's open-back cabinet, and miked the speakers from behind. My view: If you're just gonna stick a mic in front of a speaker, you might as well use a digital amp model. The fun of miking is either nailing how the guitarist sounds "live," or discovering how different rooms and mic positions produce distinctive and surprising tones.

### DIRECT INJECTION

Sometimes, the absence of ambience is a cool way to document the subtle phrasing of the player, as well as the guitar's minute tonal details. For the verse lines on "The Rarest Thing" from Eva Jay Fortune's "Suspiciously Blue" (also on my Myspace page), I plugged a Guild X-160 hollowbody into a Danelectro echo (for a hint of slapback), a Jensen JD-1 direct box, and then directly into the board. The clean tone commands space, without interfering with the vocal.

### SUPER MODELS

Modelers are excellent tools for getting great guitar sounds very quickly, and, due to digital parameter controls, many of these devices allow precision tone sculpting that typically can't be matched by futzing around with mics or going direct. Having said that, I love blending miked tones with modeled sounds to produce fat, punchy sonic layers. Jones' rhythm guitars on "Rock Star," for example, are a combination of a miked Les Paul/Marshall combo and a dry "Rectifier-style" model from a Line 6 PODxt. I also dialed in her flanged, third-verse counterpoint line using the PODxt's equalization controls to "thin out" the tone enough to fit the effected snarl into a dense mix. For squeezing textures into tight spectral spaces, few options beat the sonic control of modeling.

### GET THERE!

Whatever tools you choose, *experimentation* is the killer app. You don't have to invent a "new" guitar tone (although that would be cool), but you should aspire to track a sound that wakes up a listener, rather than document a sound they've heard a gazillion times before — even if you're merely "polishing up" the guitarist's natural tone. Any tools can get you there. The trick is making sure that what you're doing actually *means* something. **EQ**



Michael Molenda is a seminal San Francisco punk, multimedia artist, and producer who has recorded tracks for everyone from NASA to Paramount Pictures to various major and minor labels to hundreds of bands you've never heard. He currently co-owns Tiki Town Studios with producer Scott Mathews, and is signed to M15 Recordings.



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## YOU WANT GOOD SOUND? GO TO THE SOURCE

**All the processors in the world won't help  
if the fundamentals are lacking**

I've always felt that getting a good sound isn't just about plug-ins, tweaking, or editing: It's best to start at the source. By that, I mean:

- The players and their parts
- The instruments themselves
- The room, or other environment in which they record

Sure, if you're good at editing, you can comp and edit until something works. I'm certainly not against using any tool in the toolbox when appropriate, but if you start with a great



**Got tube?** If one of these babies goes, better have a replacement handy to keep your session from grinding to a halt.

performance, done on a good (or at least "appropriate for the sound you're after") instrument in a good acoustical space, you'll nearly always end up with more satisfying results than if you have to assemble and manipulate.

For that reason, I've also spent a fair amount of my finite gear funds on instruments and amps. In a perfect world, artists and clients would provide those for us — but that's not guaranteed. Taking matters into your own hands can at least give you some options, and in extreme cases, save a lot of grief.

### **BEFORE THE DRUM TRACK: THE DRUMS THEMSELVES**

For example, last year I purchased a studio drum kit.

I'm not really much of a drummer, so it doesn't benefit me directly. But I've seen enough crummy kits come through my door that I figured it would be a good investment, and it really has come in handy. No matter how many times you tell clients the importance of good instruments and having a pro-level setup job done on them before they come in to record, it seems that some people just don't get it. And going back to my "sound sources matter" philosophy, you can either bang your head against the wall trying to make a sub-standard kit sound decent, replace all the sounds with a program like Drumagog (and the client probably doesn't have the budget for you to spend all that time anyway), or be proactive and have a good drum kit at your beck and call.

Additionally, as my friend Lee Flier likes to say, having a kit on hand is great "drummer bait." It can be a lot easier to get local drummers to come over to your place to lay down tracks if all they have to carry over is a cymbal bag and an alternate snare or two.

### **THE STUDIO DRUMS EMERGENCY KIT**

Even if you decide not to purchase a studio drum set, keep some essential drum-related tools and emergency supplies on hand, such as:

- Extra snare drum head
- Snares
- Moongel (a sticky, rubbery blue gel that you can apply to drum heads and cymbals to dampen the overtones a bit, or to control excessive ringing. Caution: A little goes a long way)
- Gaffer's tape
- Mallets
- Brushes
- Sticks of various sizes
- Felt pads
- Wing nuts
- A can of WD-40 for squeaky pedals
- Drum key

Items like these can make the difference between a problem quickly solved, and an extended break in the session while someone heads to the nearest store. In addition to the drum key, knowledge about how to *tune* drums is an important skill for a studio engineer. I'm still amazed by the number of drummers I've met who really don't know how to tune their own instruments.



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## THE GUITAR AND BASS EMERGENCY KIT

Guitarists and bass players are not always immune to lacking instrument options and/or having poorly set up and prepared instruments. I have over a dozen guitars and basses, as well as several different amps and amp simulators at the studio, to help with the tonal options. I also recommend keeping around:

- Electric and acoustic strings in various gauges
- Thin, medium, and heavy gauge flat picks
- Thumbpicks
- Speaker cabinet cables
- Preamp tubes (12AX/ECC83 and 12AT7 types are particularly common)
- 9 Volt batteries
- "Universal" AC adapter with multiple tips and voltages
- Spare strap or two
- Diagonal cutters for trimming strings
- String winder

**Knowledge about how to tune drums is an important skill for a studio engineer. I'm still amazed by the number of drummers I've met who really don't know how to tune their own instruments.**

- Standard and metric Allen wrenches
- High-quality electronic tuner

Speaking of tuners, make sure everyone uses the same tuner so that they're all working off a common pitch reference. With an accurate tuner and a little self-education, you can even do quick action and intonation setups on these instruments. On big budget albums being recorded in major studios, it's common to have in-house instrument techs to deal

with these concerns. In the project studio, if the musicians don't get it right, it's up to you to fix the problem.

## FIND THE WEAKEST LINK . . . AND FIX IT

Not everyone can afford to buy everything they want all at once, so decide where your system is weakest and what needs to be addressed first. While great mikes, the latest plug-in, or acoustic treatment (another oft-overlooked area in project studios) are nice to have and even very important, the quality of what you'll be recording is crucial. So until next time, dig in, make the magic happen, and feel free to say hello. **EQ**



*Phil O'Keefe is a producer/engineer, and the owner of Sound Sanctuary Recording in Riverside, California. He can be contacted at [www.philokeefe.com](http://www.philokeefe.com), or via the Studio Trenches forum at [www.harmony-central.com](http://www.harmony-central.com).*

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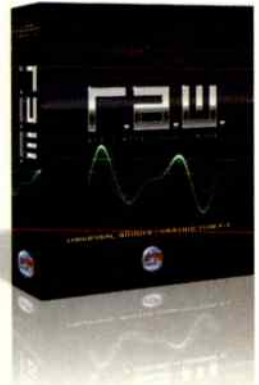


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## CAPTURING THE ROCK ENERGY IN THE STUDIO

### Why not let bands be bands?

The trend in recording has tended ever more toward "control" on the part of the producer or engineer, and less toward musicians actually playing together and making creative decisions on the fly. Yet a great deal of a rock band's appeal depends on its ability to play with unbridled energy, and to interact without the restrictions of click tracks, headphones, or being crammed into a tiny dead room. In other words: *the modern engineer's nightmare*. My band is on a mission to record our next CD as "live" as possible, so I'm foregoing the engineer's chair through most of the tracking to focus on playing. This



The studio setup used for true "live in the studio" recording.

requires engineers who are on the same wavelength — who love to let bands be bands in the studio, and relish the challenge this brings to the recording process . . . like my friend Han Swagerman, who owns and operates Beaufort Recording in the Netherlands.

"Many engineers are reluctant about

recording a band in one take because of 'spill' or 'bleed,'" Han says. "But when one uses the right mics for the job and puts them in the right spot, it's doable. There's a huge [emotional] benefit in recording 'live' . . . it gives me goosebumps [in a way that] would never have happened in an overdub while playing with cans. Bottom line: The music is all that counts, the rest is of minor importance." This is our kind of guy!

#### THE BASIC TRACKS

Han's big tracking room has a fair bit of live ambience, and hasn't been overly treated or deadened. There was no fighting the room acoustics to get the right sound; we started jamming and almost immediately, everything felt comfortable and conducive to playing actual rock music.

Our singer sang a "scratch" vocal while we tracked — not just as a guide, but if the performance felt better from singing with the live energy of the band in the room, we were open to using it as a "keeper." As we weren't using headphones, Han set up a couple of floor wedges under our singer's mic. Blasphemy! *But we didn't care*. We experimented a bit with mic selection and placement, made our choices within a couple of hours and were ready to roll tape (yes, 2" analog tape. Oh yeah baby.)

To record this way, though, you have to be well prepared. If you can't get through the song without somebody screwing up or getting out of time, you lose all the benefits of recording live. So . . . know the material, check that your gear is maintained well and sounds good, and if it's all together, you can make excellent use of a few hours of studio time. We had the basics tracked for five songs by the end of the day, and were thrilled with the results.

#### THE VOCALS

My band does a lot of vocal harmonies, and we thought it'd be great to do all the vocals together, as we did with the instruments. But it'd be tough to maintain the feel of a live show when tracking with cans.

Fortunately, Han wasn't afraid to ditch the phones, and neither were we. We lined up the three mics across the room, in cardioid pattern, with the null sides pointing at the tracking room speakers. Han gave us enough of the mix in the speakers that we could hear the track (including the vocals) and we let fly. With no cans it was much easier to stay on pitch, as we hear our vocals the way we're used to hearing them. And being able to cue each other vocally was fantastic. Without technical hurdles to consider, we had the harmonies we wanted with very little effort.

#### LET IT BLEED

In a good sounding room with the mics well placed, the bleed found on some of the tracks doesn't sound bad — in fact it *adds* to the sense of space and energy. We'll have less "control" over the sound while mixing, but who cares? We got both the sounds and *feel* we wanted at the source, so there's little need to alter the sounds much in the mix.

No band that is accomplished in playing together live should be afraid to try this method — the results may surprise you. And with time, hopefully engineers and producers will become more willing to encourage bands to take the gloves off, and let fly!



Lee Flier is an Atlanta, Georgia-based guitarist, songwriter, engineer and producer. Her band, *What The . . . ?*, is a fixture in the Atlanta area, has released two independent CDs, and of late has been performing in other states and countries. She can be contacted via the band's website at [www.what-the.com](http://www.what-the.com), and also moderates the "Backstage With the Band" forum at [www.harmony-central.com](http://www.harmony-central.com).



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## A Better Computer — For Free!

### Some updates can be almost like getting a new machine

Some lucky cats have full-featured studios. Some of us have only the most basic tools to create, record, and produce music, but there's no question that using a computer-based setup gives the most bang for the buck. Remember how you used to run out of tracks? And fight with obscure soundcard configurations? Nowadays we have awesome little marvels — just plug a box into a computer via USB, an instrument into the instrument preamp,

then click on "record" in your favorite DAW software.

Oh, and let's establish something from the outset: PCs are not better than Macs. Just to make things clearer, Macs are not better than PCs, either. So there! These days, *who* is driving the computer matters, not the platform.

Also, let's admit that the only real rule for computers is "bigger is better." Of course, we can make very interesting music with simpler machines, especially if you record a limited number of tracks. But as a consultant, the first thing I say to my customers who want to get into computer-based recording is not "go buy the best analog mixer you can" but "buy the most powerful computer you can afford." This is especially true for laptops, as upgrading a laptop is harder — and more expensive — than upgrading a desktop. It's worth paying for a gigabyte of RAM instead of 512MB, an optical drive that can write DVDs, and a 100GB instead of 60GB internal drive.

#### UPDATES ARE GREAT

For the most robust operation, keep your machine updated. Regarding your operating system (OS), for PC users Windows XP is the first (some would say only) OS choice, and it's worth updating to Service Pack 2. To see what you're running, right-click on "My Computer," and under the General tab, look for "System." For Mac owners, OS X 10.4.6 rocks.

It's also generally best to keep your OS updated as new software appears. With an always-on Internet connection, the easiest way for PCs is to surf to [www.microsoft.com](http://www.microsoft.com) and in the "Microsoft Update" section (Figure 1), allow the computer to auto-upgrade to

the latest version. For Mac OS X, just click on the Apple button (menu bar, upper left), then click on "Software Update" (Figure 2).

What about the horror stories of updates that cause more problems than they solve? Truthfully, these are relatively rare with operating systems; and if there is a problem, a patch usually appears within days. With Windows, any update will typically add a system restore point before making any changes anyway.

After updating your OS, with Windows set a system restore point "just in case" (go *Start > Programs > Accessories > System Tools > System Restore* and follow the directions), reboot the computer, then check for driver updates for several items: your audio interface, anything related to USB or FireWire, graphics card (crucial), and applications. *However, before downloading, check for "known issues" and compatibility notes regarding your OS.*

You can often solve stability issues just by updating, so even if the process takes an hour or two, it's worth the effort. I have found enormous differences between version 4.0 and 4.1.3 on certain programs, and most of these upgrades are free.

#### FASTER AND BETTER

Want a faster PC? Nuke all those active icons toward the right of your taskbar. All of them steal some RAM, so it's a good idea not to have MS Office ready to launch 24/7 (or QuickTime, for that matter). With PCs, go *Start > Run*, then type MSCONFIG and under the "Startup" tab, uncheck anything that seems unrelated to system functions, virus protection, or your music applications. Or if you're the daring sort, uncheck everything. Should the computer need something you unchecked, it will call for and load the application when required. (Besides, there's always Safe Mode.)

I can't tell you how many clients complain about slow performance, then send me a screenshot of their startup items: MSN, Yahoo toolbar, ICQ, printer managers, and several other active applications . . . and they're chatting on Skype, downloading music, editing pictures, and trying to mix a multi-track project. Score a big "doh!" here.

Great! Your OS, drivers, and applications are now fully updated . . . so you'll be ready for next issue's column. **EQ**



Fig. 1: Updating Windows XP requires a quick trip to the Microsoft website.



Fig. 2: Updating your Mac OS X machine is only two clicks away.



Gus Lozada is a contributing editor to several magazines and websites. When not touring as the frontman of the band WoM ([www.wom.com.mx](http://www.wom.com.mx)), which recently debuted under the Universal Latino label in the U.S., he hosts conferences and clinics around the world about music production. He also moderates "Nuestro Foro," Harmony Central's Spanish-language community. His email is [gus@guslozada.com](mailto:gus@guslozada.com).



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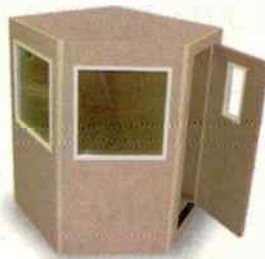
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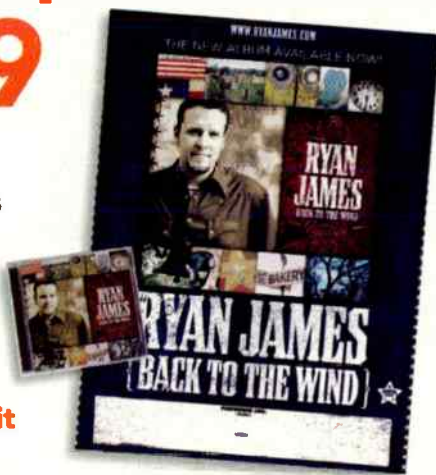
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## Room with a VU

by Matt Harper

**STUDIO NAME:** 20/20 Music

**LOCATION:** Northern Westchester County, New York

**KEY CREW:** Saul Zonana

**CONTACT:** [2020music.com](http://2020music.com)

**CONSOLES:** Digidesign Command 8, Mackie 1402 VLZ, Sony RMX 100 digital console

**COMPUTERS:** Mac G4 dual 800GHz, G5 dual 2.3GHz, Powerbook G4 1.25GHz

**HARDWARE:** Digidesign 192 I/O, Mbox 21, M-Audio 410 FireWire, Pro Tools Digi 001, HD 3 Accel

**SOFTWARE:** BIAS Peak 5.0, Final Cut Pro HD, Pro tools HD 7, Reason, SampleTank 2, Sylus RMX, plug-ins galore

**MONITORS:** Genelec 1029A, 1031A, 7060A Sub, KRK 7000B passive, K4

**MIC PRES:** Amek 9098, API 3124+ (4 channels), Avalon 737 SP, U/5 Tube DI, Bellari Dual Tube Mic-Pre RP220, Langevin Dual Vocal Combo, Manley Vox Box, Universal Audio 2-610

**MICS:** AKG C 451 B, D112, Audio-Technica 4033, Audix D4, D6, Neumann TLM 103 Rode NTK, Sennheiser 441, Shure Beta 56A, Beta 91, KSM 32, SM 57, SM 58

**DYNAMICS:** Drawmer 1968 Mercenary Edition, TC Electronic Finalizer 96K, Tube-Tech Stereo Multiband SMC 2B, Universal Audio 2-1176

**EFFECTS:** Line 6 Echo Farm, Korg Kaoss Pad, TC Electronic System 6000 5.1 Audio processing system, TC-Helicon Voice Live Harmonizer

**EQS:** Manley Massive Passive, Sony Oxford EQs

**MISCELLANEOUS:** Apogee Big Ben, Behringer Power Play Pro 4-Channel Headphone Amp, BOSS Doctor Sample SP-303, Furman Headphone Distribution System, HHB Burnit Plus CD Recorder, Little Labs PCP Instrument Distro 3.0

**TIME TRAVEL:** Delorian with a 2006 Flux Capacitor

**STUDIO NOTES:** "I've been an artist/musician my entire life," says Saul Zonana, owner and operator of 20/20 Music. "I was raised in the studio."


And in the studio he will likely stay. Having a world class

facility like 20/20 (with two FLOORS of various live and isolation rooms) at your disposal would likely turn a lesser man into a total shut-in. Tracking, mastering, mixing in 5.1, general studiohound-ery . . . well . . . there are simply not enough hours in the day when you have a place this sweet.

Conveniently located just a hop, skip, and a jump from New York City, yet nestled cozily in, as Brad Roberts from the Crash Test Dummies describes it, "a rural paradise," the studio is prided on its deliberately-constructed and well-cultivated atmosphere, something owner/operator Saul Zonana considers of paramount importance. "I learned early on that making the studio experience relaxing and fun was the key to a great session. When the artist and/or band are comfortable and enjoying themselves, that energy comes through in the music. So, when I built this studio, I had that mostly in mind."

Obviously it takes more than just a grand sense of aesthetics and the nearby proximity of beautiful countryside to make things work — check out that Sony console and the mountain of Genelecs, for example. "Of course it was important to make sure that all of the tools I needed to make great recordings were here," Zonana adds, "but it was just as important to create an environment where the professional musicians that I knew would be coming through here would want to come back."

And they keep coming back. We're talking real musicians too, from Adrian Belew to Doug Yowell. Zonana manages to make quite an impression on all who walk through his door. "The musicians that do sessions here usually lobby to make 20/20 Music the place that they record," Zonana offers. "I'm flattered to know that they enjoy working with me, and it's rewarding to know that I have created a studio environment that is a favorite among my peers."

Aaron Comess from the Spin Doctors gladly attests: "Saul has created an extremely musician-friendly studio. Every gadget known to man seems to be here — even his coffeemaker is high-tech." 

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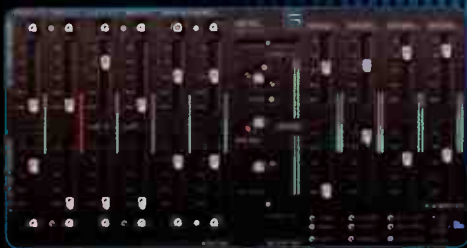
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