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On the cover: ALESIS PODCASTING KIT, GENELEC 1030A
Photo by Marty Sconduto

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Talk Box

Vol. 17 No. 10
October 2006

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DO YOU REALLY GET WHAT YOU PAY FOR?

Used to be that if one device cost X dollars, and one that did the same basic functions cost 2X dollars, odds were that the second one had perhaps more features, better construction, or some other element that justified the cost. After all, markets are competitive: If the higher-priced option wasn't better, people would go for the less expensive model and be happy to have money left over for other goodies.

But times have changed. It's amazing what gets factored into pricing these days: Interest on big loans that propped up a company during tough times, a mandatory contribution to a parent company's bottom line, currency fluctuations, offshore vs. onshore manufacturing . . . the list goes on. As a result, we can end up in the paradoxical situation where an American company that doesn't have piles of debt may be able to afford to sell products for less than a multinational company that makes its products in China.

And speaking of which, not all Chinese products are the same, either. I've visited some factories that might give OSHA pause, but by Chinese standards are indeed the proverbial "workers' paradise." Some companies have found that with high-tech products, it's best to offer incentives to keep workers around so they don't have to be re-trained. So they invest money into better facilities and employee incentives . . . which of course has to be reflected in the bottom line somewhere. Yes, China is still a very economical place to build products. But Japan used to be, too. Indeed, the future *is* always in motion.

Bottom line: The name on the box and the price on the package means less than ever; it's the backstory that counts. It's never been more important to judge a piece of gear based solely on performance and real-world results. There are plenty of cases where the high-priced gear is significantly better, and the low-priced products are significantly worse. But there's also high-priced gear that may not deliver value received, and bargains that far outperform expectations. Check out the reviews in *EQ*, solicit opinions on the web, and investigate carefully to make sure you really *do* get what you pay for.

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Punch In

TUNE IN, TURN ON, PUNCH OUT BY MATT HARPER AND THE *EQ* STAFF

by Lily Moayeri

FORT KNOX FIVE

The word "family" is thrown about a lot when talking to any of the members of Fort Knox Five. Drawing members from Thievery Corporation and their Eighteenth Street Lounge Music label (which touts other contributors Thunderball), as well as Fort Knox recording artists Rex Riddim, Speedy Consuela, International Velvet, and Liftoff, the Washington, D.C.-based collective has recently released their first non-vinyl offering entitled *The New Gold Standard* — a compilation from their imprint that's reaching beyond the world of DJ culture into a new, eclectic aural segment made up of dub, indie-soul, psych-rock, and electro Middle Eastern music. These elements have long been mixed and matched to forge what is known as "the Fort Knox sound."

BEAT SURRENDER

Every song that comes out of the Fort Knox camp starts with a basic framework or sketch: generally just a beat or loop, recorded into Pro Tools 6 and then made available to the Fort Knox contributors. These various musicians/producers then use this sketch to play and create against, adding their respective touches that make the finished product(s) as diverse and multi-faceted as possible.

"Once we do a number of passes, work through a groove, [and] pitch out ideas as we're recording, the four of us sit back and see what we have, then sample ourselves again and pull the elements we feel have the magic moments," says contributor Sid Barcelona. "The parts that are laid out previously influence the new parts. If something comes up that we like from a bass session, we might go back and re-record some more guitars. It's organic dialogue going back and forth between the instruments."

TO THE '70S

The Fort Knox aim is to hit a sound circa 1973. This was the time where folk and rock were absorbed into pop, with funk and jazz coming into play as well. The production style is based on the engineers who knew how to mic in the '70s, because they had worked in the '50s and '60s when there was an incredibly organic feel to the recording process. Channeling George Martin and what he might be experimenting with in the current time: It is all about sonic exploration — not limited to the instruments' capabilities, but what different frequencies might do.

"If we have a nice horn section, but it's from a series of different samples, we'll have a horn player come in and play over it again to either replace it or reinforce it — turn it into something organic," Rob Myers explains. "A lot of times, even if it's a splendid horn

sample, it will sound over-recorded . . . too present, like there's too much information to it. You need to put it in its place. We really like to get to the point in the track where we have a rhythm section of the drum kit we made in Pro Tools, then play it against this fake orchestra we created. Mix it the same way you would a live band so it feels like it's happening in one room, as opposed to DJ/dance culture where placement isn't as important because there, sonically, people are happy to have a sample triggering in full frequency, non-acoustic space. We like to place everything in an acoustic space."

PRO-FESSIONAL

While Pro Tools is the main workhorse for Fort Knox, they admittedly limit themselves by running it as if it were still the year 2000 (running their Mac on OS 9). But, they attest, this hasn't restricted what they've been able to conceive. In Raskin's case, though having previous experience in more modern, established studios, the idea of painting the aural picture and mixing with 24 tracks is more than enough for him.

Concerning the approach to mixing at the Fort Knox camp, Raskin tells us, "When we mix drums, a lot of the programs and stock sounds, we approach like it's another instrument in the mix. We'll place things as if [they exist] in the real world. Panning the drums so the hi-hat appears all the way to the left; true-to-form panning that helps with the illusion of it being a real band playing, when in reality we're composing the stuff in post a lot of the time. With the exception of the bass and guitar being performed together in a live scenario, it's rare that any of the other instruments are actually tracked together."

Using vintage amplifiers and assorted classic analog equipment goes a long way in aurally removing Fort Knox's music from the electronic environment in which it's being assembled. For example, a Peavey VC/L-2 Compressor Limiter inserts in the signal path for additional warmth before the sounds are dumped into the computer. At times, running the bass signal through a Tech21 SansAmp Acoustic DI bass guitar pedal is one of Fort Knox's simple but effective techniques for fattening up their sound.

"The main thing with tracks that have the live instruments recorded first, be it a chord progression or a vocal part, is to make sure it's being recorded to a click track," says Myers. "Once we've quantified the BPM, got it on a grid, when we're in Pro Tools, we're very happy experimenting by moving things around. This allows us to play with the BPMs of other samples — take something that's, say, at 85 BPM and throwing in a drum 'n' bass loop that's at 170 BPM."

SAMPLE THIS

"When you play an instrument, your tonal resources are much less hindered," says Jon Horvath, Fort Knox's dancefloor-oriented, go-to man. "There's nothing as good as someone sitting there running a guitar into a microphone. I don't care what kind of computer they have or what kind of program they have, they'll never be able to simulate that sound."

Whether they're using live samples or sound banks, Fort Knox's approach is taking collected sounds and making them their own through strong-armed manipulation. "You have to use a little bit of everything to get a real feeling and real soul," says Horvath. "Just doing it in your computer, it's hard to achieve soul without having something live in there."

Thunderball/Fort Knox figurehead Steve Raskin adds, "Regardless of the track, we start with live instrumentation in mind. Even though we may start with some canned sounds and loops, we make it a point to see beyond that from the get-go, so we start immediately and can add the more organic components to it. We are very rooted in the DJ culture — which is based on this rigid grid, but it's important for us that our sounds exists between, or in, both worlds."

GRAND MIXER DXT

by Robin James

Since recording the hit "Rockit" with Herbie Hancock in 1983 — the first known turntablist performance — the mere mention of Grand Mixer DXT leaves faces lit up and stories conjured up. With the now infamous Grammy Awards performance by Hancock and DXT, an entire generation of musicians had their collective imagination sparked. Now the Bronx native, credited with being the first to fuse hip-hop and jazz, is taking sonic restoration for a spin — effectively demonstrating, once again, the many possibilities for audiophiles in an increasingly sophisticated musical world.

EQ caught up with Grand Master DXT not long after he received an honorary award from Berklee School of Music for his pioneering contributions to the musical realm, both as performer and producer. We spoke with him about his latest extraordinary studio endeavor: restoring the Blue Note Records/Thelonious Monk Records release *Thelonious Monk Quartet with John Coltrane at Carnegie Hall* — a historic live performance recently discovered at the Library of Congress.

EQ: Did this project require any special equipment or new techniques to enhance the original recording?

GRAND MIXER DXT: After talking with T.S. Monk [Thelonious Monk's drummer and son], I personally felt that, if I was going to do anything to the source file, which was the quarter-inch analog tape, I was going to try to make changes without destroying the file . . . without it being noticeable that I made changes. I figured out a way to go into the sound files and surgically edit out ambient anomalies without being destructive to the file itself. I wasn't guessing, I was gambling. But once I tested the theory, it actually worked.

EQ: Your approach reminds me a little of an anthropologist and/or a time traveler.

DXT: I went to 1957. While I was listening, I studied the music as if I was going to play it myself — to actually learn what was part of "the music" and what wasn't. Once I came to my conclusions, I sought out to remove "what was not music" from the file. It was a spiritual thing. I sat with it for a week. I listened for a week before I did anything, made notes and markers, to the point where Monk and Trane began to directly speak to me.

They were saying, "Hey, man, young blood, could you get that hiss sound out of there, cause we're not playing that into the audience. We don't know what that is [*laughing*]." And that was based on the floors and the technology of the time. From a purist standpoint, one could say "leave everything the way it is, tape hiss

and everything," but that's not really pure to me. There was no tape hiss in Carnegie Hall; there was tape hiss due to the imperfections of the recording technology of the time.

EQ: Are there qualities about the older analog recordings that you think make them superior to recordings made in the "modern" sense? Do they actually have more "soul"?

DXT: It depends on what you, as a listener, want. Some people don't want to hear tape hiss anymore, because you can make a recording now without hearing tape hiss. But some people trade off and live with the tape hiss for its personality — the texture and warmth — all of the qualities analog tape can give you.

EQ: What did you think of the musical performances on the recording? Did you reference any other Monk or Coltrane recordings in advance to prep for your work?

DXT: I didn't listen to anything except that CD for a week. I was fasting and listening. I thought it was incredible. I can clearly hear the tutelage between the two: Monk going completely out, in a genius fashion, and Trane understanding that — being inspired to just reach. You can hear that in the performance. That was part of their relationship.

EQ: So what is your approach to restoration?

DXT: My new technique is called Forensic Editing. One must find a way to eliminate any anomaly on the file that is non-musical.

There are many ways to eliminate it. The human ear can be tricked or fooled into not hearing something that you can hear.

EQ: What is most significant, something that you might be able to point out to someone else that's coming up and trying to do what you're doing?

DXT: I think that once you understand that everything is based on levels . . . your volume, compression, EQ . . . it's all about levels. Levels of frequencies in EQs, levels of feeling, the thrust in compression and overall volume; I think once you understand that as an art, then you can appreciate each one of those devices and use them more efficiently.

EQ: As a result of your restoration work on the Monk and Trane recording, what sort of response are you getting from the public, those who may want your help?

DXT: So far, it's been pretty interesting. I just finished a project this week in which a guy found a cassette tape of his wife from 30 years ago. He wanted me to transfer the tape, and then he wanted me to take the words and reconstruct her words into a message to her daughter, because the daughter was getting married. The father's gift to the daughter was her mother's voice, speaking directly to her about getting married and going on with her life. The tape was from Iran, 30 years ago, where the wife was giving a lecture. She died five years after she made the tape and she had a child that was almost one year old. The daughter had never heard her mother's voice. The woman was talking, giving a speech about Iran. I took the tape and we took words and reconstructed her speech into a message to her daughter. It's definitely one of the most incredible projects I've ever done. It was really something special.

ONLINE INTERACTIVE LETTERS FORUM NOW UP!

Got comments? Complaints? Ideas? Something you just *have* to get off your chest? Go to *EQ's* interactive letters forum online at www.eqmag.com **(click on "forum," then navigate to *EQ's* "Letters to the editors" forum)**. We can't promise we'll answer every single one, although we'll try — but we'll definitely read them. See you online!

CORRECTION

Regarding the article "In Search of the Perfect Pitch," in the July 2006 issue, the software version of Antares Auto-Tune was introduced in 1997, so it actually predated the hardware version, which as the article stated, was introduced in 1998. The AT4 plug-in was introduced in 2004. Also, as the article didn't mention specifically that the Auto-Tune software can do alternate scales, Antares would like readers to know that it can.

DEBATE: IS IT VIBRATO, OR IS IT TREMOLO?

by Rich Tozzoli and Vincent Miraglia

Vibrato, tremolo. Tremolo, vibrato. They're the same thing, right? Actually, they are two separate effects that date back to the earliest days of guitar amplifier design. So let's take a look at what each does, how they are different from each other, and explore how you might use them in your productions.

Tremolo is technically known as amplitude modulation, and it's one of the first effects ever built into guitar amplifiers. Both Gibson and Danelectro pioneered the technology of tremolo in their designs of the late 1940s. Slightly more famously, Fender's Tremolux (circa 1955) was the first guitar amp manufactured under the Fender name to employ tremolo.

Tremolo creates a cyclic or recurring level variation in amplitude or loudness. A simple example of this would be rhythmically turning the volume up and down on an electric guitar. Aside from amps, there are plenty of effects that will simulate tremolo, available both as external hardware processors or as software. Universal Audio's Nigel, McDSP's Chrome Tone, and Soundtoys' Tremolator are good examples of plug-ins that offer this on your desktop. Tremolo sounds killer on almost anything — but is quite effective on electric piano, voices, synth pads, and of course, guitars. And a very cool thing about plug-ins is that you can often sync the tremolo speed to the host tempo.

Now let's get technical. Figure 1 shows a basic sine wave. The frequency is constant, yet the amplitude varies. Remember, tremolo is a variation of amplitude (volume) applied to a sound of constant frequency.

There are two classic controls you'll find on most guitar amplifiers and/or plug-ins outfitted with tremolo. The first is speed, which determines the rate (frequency) of the LFO (low frequency oscillator) modulating a gain stage. The LFO's basic function here is to produce a periodic voltage variation at sub-audio frequencies, usually between 1–15Hz, which helps create slow level changes. The higher the speed control setting, the faster the tremolo effect.

The depth control varies the intensity of the effect. By turning it up, the level changes from completely on to completely off, which in turn creates a more intense effect. Turning it down simply creates less of a difference between the maximum and minimum levels.

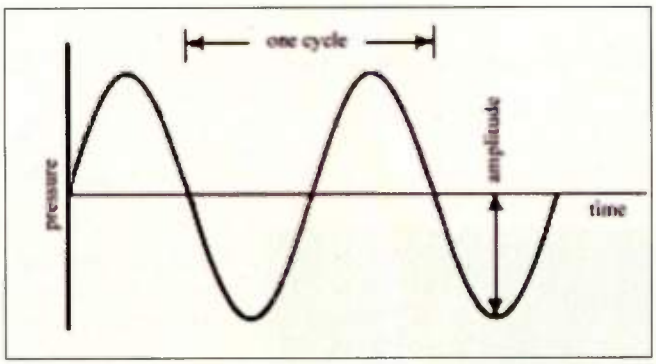


Fig. 1.

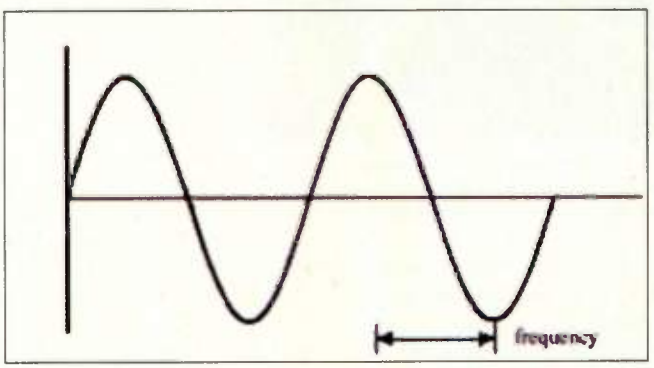


Fig. 2.

Interestingly, early guitar amplifier manufacturers employed a light source and photoresistor combination (in a light-tight case) to achieve the tremolo effect. The LFO drove the lamp, making it brighter and dimmer. As the light brightened, the photoresistor's resistance became smaller, allowing more of the guitar signal to pass and thus increasing amplitude or volume. As the light dimmed, the resistance of the photo resistor became larger, allowing less of the guitar signal to pass — thus decreasing amplitude or volume. Pretty cool stuff. What's more, photoresistors have a natural decay time. So, as you turned up the speed, the tremolo effect would generally become less pronounced without having to actually change the depth.

Next up: vibrato — also known as frequency modulation. It's based upon variation of *pitch* and *frequency*, as applied to a sound of constant amplitude or volume. As a player can create vibrato manually, it predates electronics, with roots dating back to use on early classical instruments and voice.

Magna Electronics Incorporated, which started making Magnatone amplifiers in the 1950s, was the first manufacturer to design, and build, real vibrato into their product. Even Fender's line of famous Vibrolux amps did not have true vibrato — it was simply a modified tremolo circuit. Don L. Bonham is actually the pioneer behind the vibrato design. In 1961, he was awarded one of many United States patents for his work, but his filed designs started as early as 1954.

Referring to Figure 2, we see a basic sine wave. The frequency varies, yet the amplitude is constant. This can also be considered a shift in phase — or phase shifter.

Even though vibrato circuits are more complex than tremolos, they both share similarities, such as a low frequency oscillator (LFO) and a light source/photocell combination to achieve the desired effect. Magnatone later moved onto using *Voltage Variable Resistors* — or Varistors — in place of the *Light Dependent Resistor (LDR)* combination.

Vibrato can be created electro-acoustically through a Leslie's Doppler effect, which simultaneously produces tremolo. A Leslie cabinet's velocity and rotation will raise and lower the pitch of the tone produced through it. Vibrato can be realized through various methods you already know, such as the human voice, string instruments and once again, the guitar (think Angus Young here). Modulating a delay line can also produce vibrato, and plug-ins such as Waves' Mondo Mod can create vibrato effects, while Line 6's Amp Farm has vibrato on the Fender Amp simulations. Ah, but is it true vibrato? Now you'll be able to know. . . .

SESSION FILE: SOUL ASYLUM'S *SILVER LINING*

a similar stereo setup, were miked with Neumann KM 84s.

Hodge caught Pirner's "gargling-with-broken-glass" vocals with an AKG C12 recorded through his Great River mic pres and dbx 160sl compressor, into The Terrarium's Neve. More importantly, Hodge makes sure to immediately "start recording and save everything, because often the best take is the very first one." When editing, Hodge avoids cutting and pasting by syllable. "Most songs are comps of three to five takes," he says. "Danny was in the control room as well, and he knew when we were going in a positive direction and when it was time to move on to something else."

As they had no real deadline, the band spent time experimenting with bass, guitar, and keyboard parts. "We really took the 'kitchen sink' approach — whatever it takes to get that sound, or that idea," says Pirner. "There wasn't anything that we couldn't try, because we were on our own lost voyage, as it were." The only schedule that mattered was Mueller's. Hodge promptly sent him home if the hours wore on too long, no matter how good he felt that day. Mueller made it through all of the sessions with Hodge before he passed away on June 17, 2005. Devastated at the loss of their best friend since high school, the band put the album on hold for a while.

ROUND 2: NEW SONGS, NEW PLAYING FIELD

John Fields, another Minneapolis native, had moved to L.A. in 2002 and had been working with everyone from Switchfoot to Mandy Moore when he got a call from his old friend, Michael Bland. Soul Asylum had a full-length record in the can, but after spending a few months "living" with the material and grieving Mueller's death, they decided to record a few more songs. Bland recommended Fields, who had worked for years in Minneapolis' indie scene as owner/engineer of Funkytown Studios. During the first day of preproduction, they worked out three songs that "weren't even on the docket," as Fields recalls. "We went in the studio the next day and cut two songs. By the end of the week, we had four really great ones."

Tracking sessions took place at Master Mix and the Terrarium, keeping Jeff Victor and his keyboards in an iso booth and Bland in the spacious live room. Fields used an AKG D112 for the kick, a 460 on the top snare, a C24 on top of the kit, and a pair of Neumann KM84s and another C24 "supercrushed through some compression" for the overheads. For toms and room mics, he used "whatever nice mics the studio had around," he says. "To me, it's more about how the kit sounds and how it's tuned."

Like Hodge, Fields knew to get Pirner's first vocal take; in this case, using a Telefunken 251 mic, into a Manley Stereo ELOP limiter into an Empirical Labs Distressor. Murphy's electric guitars got miked with a Royer 121 through an API

mic pre and then a UREI 1176 compressor, while acoustics, overdubbed later, were usually captured through a small diaphragm condenser such as a KM84. With the exception of Bland and Victor, everyone convened in the control room during basic tracks.

"I like to keep the guitars and bass in the control room and make it sound nice and loud and thick," says Fields, who shared bass playing duties along with ex-Replacements bassist Tommy Stinson. "I'll put a nice compressor on the mix, so when you're playing, it sounds like the radio. Generally, we'd have a vocal on tape (or disk) already as a guide vocal, which most of the time would be replaced. Because Michael Bland is so fast, literally after two or three takes we're done. After that, we would just work on guitars for the rest of the day."

MIX, REMIX, MOVE ON

"It really worked kind of spookily, if that's a word," says Pirner. "It resulted in some different songs going on the record and a remix by Chuck Zwicky." Zwicky mixed one song, and the band liked the results enough to let him remix the entire album. He shuttled various versions of the mixes as MP3s via iDisc, iChat, and FTP. "I was listening in Minneapolis, John was in L.A., Dave was in New Orleans, and Chuck was in New York," says Hodge. "You couldn't possibly be more spread out in the States and working on the same thing. It's a good example of how technology has changed the way records can be made." Pirner, an artist accustomed to mixing in large commercial studios, didn't realize until he arrived in New York to approve the final mix that Zwicky worked out of a home/project studio on Apple's Logic Pro system.

"It was frightening as hell when I got there," says Pirner. "I got to his tiny apartment and thought, '*This* is where he makes that big sound?' There was no console, and we'd just had all these arguments about why we should mix on a Neve. He's got a rack of stuff that goes to the ceiling that's all modified by him, and these speakers that he sort of made himself. On one level, it had continuity with the goofiness of the way the entire record was made. But we also realized that you never know what's going to work, and if you just go by what you hear, it doesn't matter what the studio looks like, or what your preconceived notions are of what gear you've got to have. You think you know so much, but your own ears will tell you something different."

They had to look pretty hard, but Soul Asylum found their "silver lining" in the 12 songs that make up their newest effort — an album that serves as a strong testament to their commitment to music making, and to the strength and dedication of their founding bass player.

Heather Johnson is a San Francisco-based professional audio and music journalist. Her first book, If These Halls: A Historical Tour Through San Francisco Recording Studios *(Thomson Course Technology) is available now on Amazon.com and other retailers.*

SUCCESS STORY: TIM HATFIELD

The art and science of capturing great guitar tone

by Christopher Walsh

From his formative years assisting a variety of superstar producers and engineers at the legendary Media Sound Studios, to modern day endeavors with artists like the Misfits and Damnwells, Tim Hatfield has slowly but surely earned a reputation as one of New York City's top studio hounds. Having worked early on with such cornerstone individuals as Bob Clearmountain and Michael Barbiero, Hatfield has moved on in recent years, spreading his wings and amassing an impressive discography in the process.

In the wake of the unfortunate Media Sound dissolution, Hatfield teamed up with Steve Earle alumni and current Yayhoos guitarist Eric "Roscoe" Ambel, as well as engineers Greg Duffin, Dan Pifer, and Martins Folly, to found Cowboy Technical Services, a world-class facility that has hosted everyone from Ryan Adams to Robert Randolph. And it's here that Hatfield has honed his craft as a truly great producer.

Known for his knack at capturing great guitar tones from great guitarists, he explains that it's less about sculpting the track, and more about pulling a great performance out of the artist. "Getting a performance out of somebody, and not being in their way, is one of the most important things as an engineer. I just run the mic down, get the right level, and just make sure I'm ready if they start playing."

CUTTING WITH KEITH

It doesn't get any more rock 'n' roll than recording Keith Richards, whom Hatfield had the pleasure of helping record main tracks and overdubs for on the guitarist's second solo album, *Main Offender*.

"I learned so much on that record," he recalls. "Not only was the band so incredible, but I was working with three of the best engineer/producers around — Joe Blaney, Nico Bolas, and Don Smith. [Guitarist] Waddy Wachtel used a Marshall a lot, and on the first day, I put the mic on the 'wrong' speaker of Waddy's cabinet. It was during this session that I learned how to find the right speaker in a cabinet, and the right *spot* on the right speaker. I had put the mic on the top left speaker, pulled it up, and he really hated the sound. So I moved the mic to the right, went into the live room, listened, and thought, 'This sounds great out here.' Going back into the live room and listening is a wise move. I had noticed that the right speaker sounded better than the left, and when I moved it to the other speaker, Waddy got very excited by the results."

"On any given amp, one speaker might sound better than another; and on any speaker, one spot might sound better than another. Older speakers tend to have more tonal differences among them than some of the newer ones. So, to find the best mic position, I'll typically put on headphones that *aren't* plugged in, to drown out the excess noise, and then sit in front of the cabinet while the player plays a few staccato chords, moving the mic (in this case, an SM57) around the cone until I find the spot I like."

"On some amps, like Fender Twins, it seems to sound best with the mic dead center of the speaker. But on others, it gets a little trickier. It might be that that speaker sounds best with the mic placed dead center. But it also might be best to put it in the 'seven o'clock' position on the outside of the cone."

"My favorite mic pres for electric guitar have always been Neves — the older ones, like the 1070 series; I also like the Telefunken V72. For Keith, I used an SM57 right dead center of the speaker, and then ran through a Neve 1073, into a Fairchild 670 limiter. I prefer 'one guitar, one mic.' I don't like to make things too complicated — but for some bigger sounds I might use two. With Keith, sometimes I'd end up using two 57s: one directly on the amp

Tim Hatfield and Five For Fighting's Rob Arthur at the CTS customized Neotek Elan console.

One of Tim's favorite acoustic guitar miking techniques; a Telefunken RFT M16 placed near the 12th fret.

and one just a little further back, so I'd get a little distance and fatten up the sound."

METAL MIKING

"A second mic on an amplifier can be incredibly useful while recording hard rock and metal," Hatfield says. "The trick is that you need to find the perfect spot so there are no issues with phasing. Here's how I do it: Wherever the first mic is, triple the distance for the placement of the second mic. I read that somewhere years ago, and it really works."

The aforementioned technique has come in handy when recording bands like the Misfits, Pure 13, and Savatage, all bands that Hatfield has worked with in recent years. "Those guys tend to play big Marshalls, where one speaker is probably going to sound much better than the others. So as I said, I'll move from one speaker to the next with the headphones on and see which sounds better. Once I've found the speaker I like, I'll move the microphone from '12 o'clock' to 'one o'clock' to 'two o'clock,' and so on. You can go around and figure out, 'that's a really nice, bright space,' and 'on this other speaker, at five o'clock just outside of the center, it's kind of dark.' Then I'll put a 57 on the dark spot and an AKG 414, which is really bright, on the bright spot, and balance them. But, for these metal guitar sounds, I can tell you one thing — I'm putting that 57 almost *on* the grille.

"That music is so up-front, in your face, and the guitars are really layered — and the guitarist might be using a bunch of different guitars. I've found that an odd number of tracks is the best way to go; sometimes doubling doesn't really make it bigger. I usually stick with the same mics when layering. I'll have the player change guitars, but I keep consistent miking. I might bring in a darker sound for one pass and change that balance a little, but not much."

The Misfits' *Project 1950* is a prime example of this approach. "The record was a bunch of '50s songs, done in the Misfits way," Hatfield recalls. "I recorded all the basic tracks using a 57 for the brighter spot and an Electro-Voice RE20 for the darker spot of the cabinet. I took plenty of time playing with their equipment before they got here, so I knew right where I was going to put the mics."

ROCKING THE RIBBONS

"For the *Jerusalem* session at CTS, Steve Earle was playing his Gibson ES-330, which is a hollow body guitar, and doing vocals at the same time. So we captured the natural sound of the guitar with just the vocal mic, a Royer ribbon that I also put in front of his VOX AC30, about a foot off the front of the grille," Hatfield says while on the topic of mic choice/placement for the singer/guitarist. Elaborating further on his oftentimes non-traditional choice of mics for guitar tracking, Hatfield adds, "At that point, Roscoe was playing through Fender Pro Jrs., so I used an Audio-Technica ATM 23 HE, which is really a drum mic, but great for recording guitars live. It's very 'directional,' so you get very little leakage."

Put the Hammer Down, the new album by the Yayhoos, features another interesting ribbon miking technique regularly employed by Hatfield. "Roscoe and Dan [Baird] used two Pro Juniors, and also had two Dr. Z MAZ 18 amps going into one stereo cabinet that had two 12" and two 10" speakers," says Hatfield. "We miked left and right, but with two ribbon mics, a Royer, and an RCA. Of course, each bled into the other's mic a bit, but it gave a really big, fat sound."

A hard-core analog fan who has nonetheless incorporated DAWs (and even some plug-ins) into his arsenal, Hatfield offers an important thought about contemporary recording with ribbon mics. "Going directly into the computer, I'm more likely to use a ribbon mic and put more space between the sound source and the microphone, to get more air. Digital seems not to register the air quite as much, losing some of the three-dimensional quality to the sound. So, in that case, you just need to mic with a little more space."

FUNKEN IT UP

A recent addition to Cowboy Technical Services' mic locker, a Telefunken RFT M16, has been invaluable in recording acoustic guitars, Hatfield reports — an ideal tool for recording folk artists and the like. "I just recorded Roscoe [Ambel] on two different acoustic guitars with the Telefunken, and knew I had to own one. Though I still use my Audio-Technica 4051 a lot, as well as the 4050, which gives a nice, smooth top end on acoustic guitars — especially when run into an old Neve, a Crane Song Flamingo, or a UREI 1176.

"I'm going to use the RFT M16 if I'm just recording a very pretty acoustic guitar part, but for a more aggressive sound, perhaps with a full band accompaniment, an SM57 is still a great choice. Take for example the Damnwells song 'Death After Life.' Alex [Dezen] was playing an old Gibson J 45, and the 57 just sounded great on it. If it was just going to be a solo guitar performance, maybe I would have used the Telefunken or an Audio-Technica to get that huge sound, but I needed that midrange to really pop through the track, and with the 57 it just naturally sat perfectly in the mix. If you solo it, it might not be the greatest acoustic guitar sound in the world, but it drives in the track; the midrange peeks through. Plus, as it doesn't have all the bottom that can muddy things up, the bass and the other guitars can shine right through."

As for placement, Hatfield starts with the mic at the 12th fret, approximately nine inches from the guitar, pointed at the sound hole. "I've found that, when I am going for a lush guitar sound, the mic will end up pretty much in front of it, and I get the whole sound, which comes closer to the hole and gets more body. Sometimes it ends up right in front of the hole. If you're listening to it and it's boomy, move the mic back a little bit, or up towards the 12th fret. It's the proximity effect: If there's too much bottom, it's because you are miking too close." EQ

Christopher Walsh is a musician, producer, recording engineer, and music journalist based in New York City. He's written extensively for Billboard *magazine, and has covered music and professional audio for various other magazines, newspapers, and websites throughout the years.*

TECH BENCH
Build Your Own USB Hard Drive

by Craig Anderton

Fig. 1

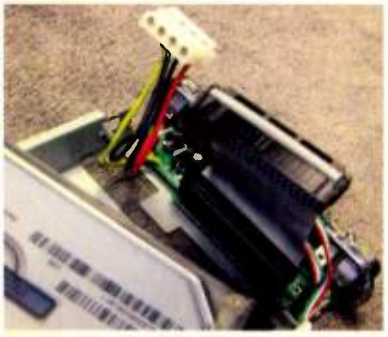


Fig. 2

Fig. 3

Fig. 4

External USB 2 and FireWire drives are great for backup and portability. But why pay several hundred dollars when you can get a hard drive on sale (just make sure it's compatible with your OS), an inexpensive USB 2 and/or FireWire hard drive enclosure, and put your own drive together in minutes? It's really quite simple.

1. Gather your hard drive, enclosure, and a Phillips head screwdriver (Figure 1).
2. Open up the enclosure, and identify the connectors. The power connector has four pins and is white, while the IDE connector is black and has lots of pins (Figure 2). Keep the hard drive in its protective bag until the last minute.
3. Check the drive jumper configuration printed on the outside of the drive, and set the jumper to Master. Figure 3 shows the pin legend on the back of a typical drive, while the insert shows the jumper in the Master setting.
4. Patch the connectors to the matching drive connectors, then place the drive in its enclosure.
5. Don't forget the four screws that secure the drive to the drive tray.

FORMAT TIME

Connect power to the drive, patch a USB cable between the drive and your computer, and power everything up. With a Mac, when an alert tells you the disk isn't recognized, select "Initialize." This takes you to Disk Utilities. As I wanted the drive to work with Mac or Windows, I clicked on "Erase" and under Volume Format, chose "MS-DOS File System" (Figure 6). If you're Mac-only, partition and format as you would a standard Mac disk.

Windows will recognize the disk; when the new hardware wizard appears, choose "Install the Software Automatically" and Windows will install a driver. However, the disk still needs to be formatted. Go *Start > Settings > Control Panel*. Open "Administrative Tools" and select "Computer Management." Under "Storage," click on "Disk Management." Locate the disk in the lower right, right-click on the name of the new disk, and select "Properties."

Under "Policies," you can optimize the disk for quick removal (you don't need to use the taskbar's "Safely Remove Hardware" button) or better performance. Choose "Performance;" click on OK.

Right-click on the disk again, but this time, choose "Initialize." After a few seconds, the disk shows "Online." Right-click in the shaded space and select "New Partition" (Figure 7), then select "Primary Partition." I create one large partition, but do whatever you want.

With Windows XP you have to format with the NTFS file system, so if you want to use the drive with a Mac, you'd better make sure your Mac OS can read NTFS (if not, there are third party utilities that can do this). Close out the wizard, and formatting begins.

Now that your disk is formatted, it's ready to use . . . and you saved some bucks in the process! EQ

Fig. 5

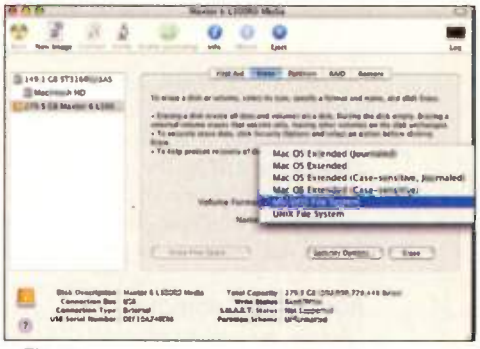


Fig. 6

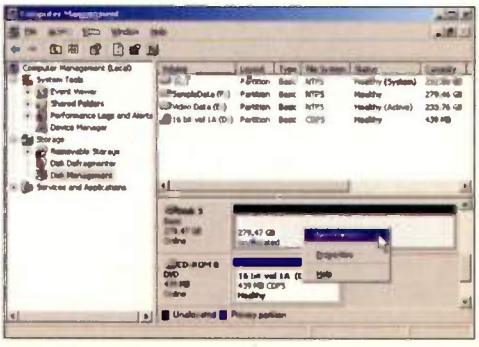
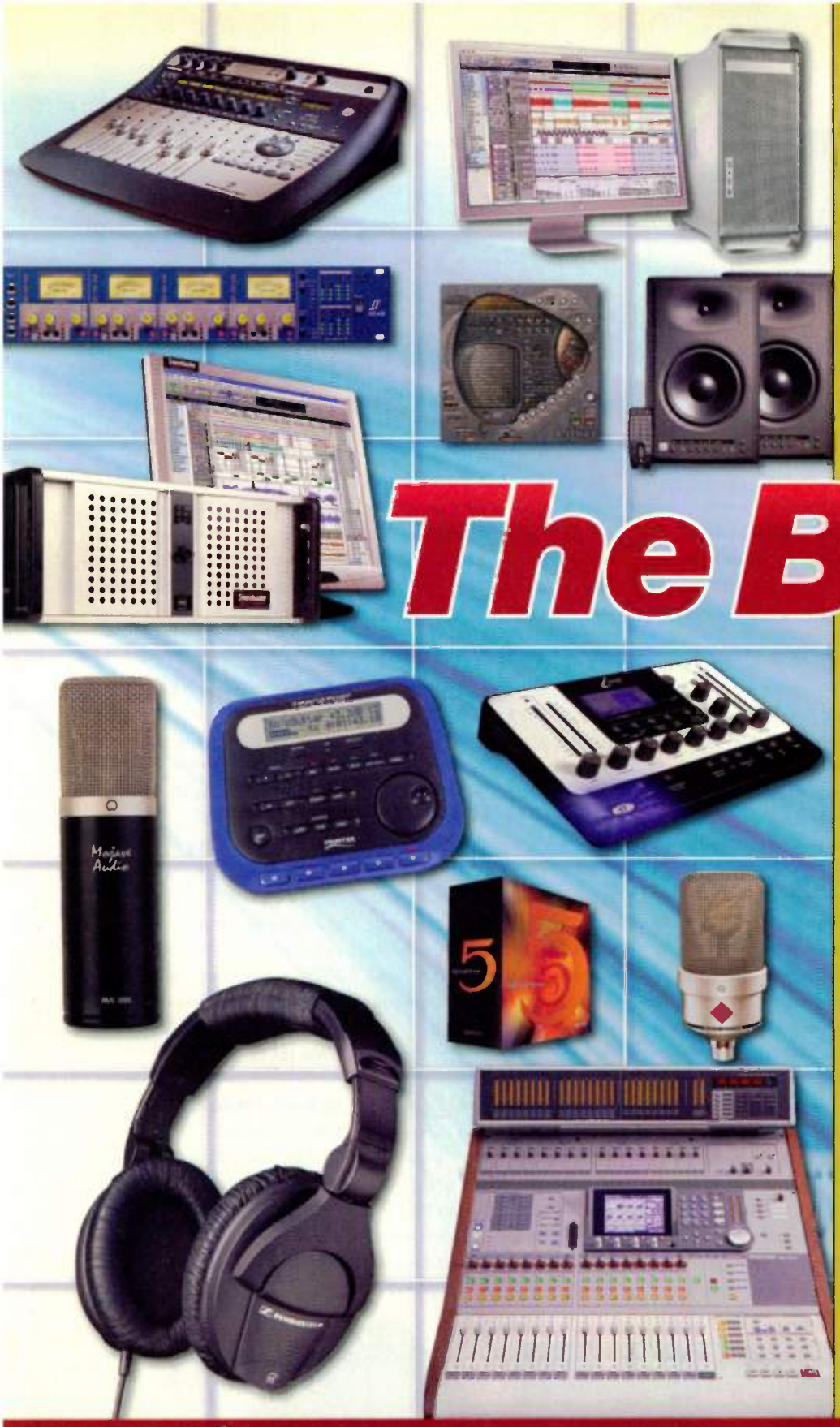


Fig. 7



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The Visualizer 1.0 Beta 2 introduces more functionality and several fixes for this audio analysis tool. Available as a free download to anyone willing to beta test, NuGen Audio will enter users who post comments/suggestions on their website into a drawing to win the full release version. www.nugenaudio.com

MOTU Universal Version of Digital Performer for Mac OS X

MOTU's Digital Performer DAW is now available as a Universal application for Mac OS X version 10.4, and has been ported to work with both Power PC and Intel-based Macs. Available as a free download for registered 5.0 users, this maintenance update provides numerous code enhancements and optimizations. www.motu.com

Samson VR88 Limited Production Ribbon Mic

The VR88 features a fine, pure aluminum corrugated foil ribbon suspended within an intense Neodymium field, producing a warm, natural, smooth response. Capable of handling high SPLs of up to 138dB, the VR88 is recommended for vocals, acoustic instruments, and even guitar stacks. www.samsontech.com/audio

TC Electronic Assimilator Konnekt Plug-In For Konnekt 24D

TC Electronic's audio interface, Konnekt 24D, will now include Assimilator Konnekt, in addition to Fabric R reverb and Fabric C channel strip. Assimilator Konnekt, an equalization tool that "learns" the frequency curve of one piece of audio so it can be applied to another audio file, is available as a free download at the company's website. www.tcelectronic.com

Muse Research Releases UniWire

UniWire technology offloads processor-intensive tasks to your Receptor while retaining integration with your computer DAW system. This allows using Receptor as an external, modular DSP processor to accelerate any computer: UniWire is compatible with most VST host computer programs; AU and RTAS versions are slated for future release. The UniWire software update is a free download to Muse Receptor owners from www.plugorama.com.

MXL.006 USB/Cardioid Condenser Mic

Designed with ease of use in mind, the new MXL.006 ($169.95) features a large gold diaphragm that delivers a big, rich sound characteristic of studio and broadcast microphones, yet is a USB instrument that connects directly to a computer without the need for external mic preamps. www.mxlmics.com

Apogee PCI-Express Driver For Mac Pro

Apogee has announced a new high-performance PCI-Express driver for their 24-bit 192k Digital I/O capable "Symphony" 32-channel PCI-Express card. This Universal Binary driver is compatible with Apple's new Mac Pro hardware, works with all CoreAudio software applications, and comes bundled with Apogee's Maestro Software. www.apogeedigital.com

Music Unfolding's PhaseDelayArray AU Effect

Music Unfolding has announced the release of PhaseDelayArray ($19.99). With three effect units chained together in an interesting configuration (oscillating reverb, modulation, and feedback sections), the PhaseDelayArray is available for OS X as a Universal Binary-compatible application. www.musicunfolding.com

iZotope "Vinyl" Plug-In Update

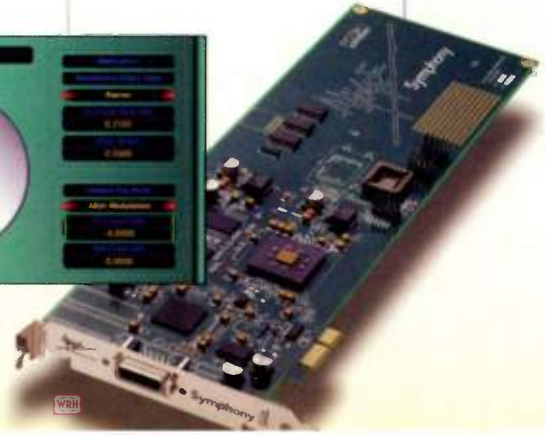
The product of extensive research in analog modeling techniques, Vinyl simulates the sound characteristics of a record player, allowing control and automation of wear to warp, mechanical noise to the year of the record player. A free update is now available from the iZotope website. www.izotope.com

Sonica Audio Labs HUSH-965 Audio Workstation

The HUSH-965 audio workstation ($2,499.95) is powered by the Intel Core 2 Duo Processor running at 2.4GHz per core, with 4MB of cache memory and a 1066MHz FSB. It incorporates Extreme XMS II DDR2-800MHz memory, SATA II, and Dual Display support. www.sonicalabs.com

NUSofting Marimka VST Instrument

The Marimka VSTi version 1.0 is a Windows-compatible virtual instrument that is optimized to create ethnic folk sounds (in this case, marimba and balafon). Much more than an acoustic emulation, at



extreme settings it reveals a strong synthetic timbre, making it useful for hybrid textures. www.nusofting.liqihsynth.com

Universal Audio UAD-1E Express and Expert Paks

The UAD-1E Express PAK ($499) and Expert PAK ($999) with PCI Express DSP Cards both ship with UA's core 15 free Mix/Guitar FX plug-in suite, plus a UAD$100 (Express) and UAD$750 (Expert) voucher that customers can use online. www.uaudio.com

Zaxcom Deva Mix-12 Control Surface

The Deva Mix-12 is a fully digital 12-fader control surface that directly manages the audio mixer embedded within the Deva IV and V location recorders, performing all location mix and record functions. This reduces production costs by eliminating the need for expensive external mixing consoles. www.zaxcom.com

Big Fish Audio's Heat Seekers Hip-Hop Construction Kits

Heat Seekers, a pile of 50 construction kits with more than 1,900 loops ranging from 70–140 bpm in various keys, has just been released. With 4GB of content in WAV, REX, and Apple Loops formats, this package specializes in blazin' beats, thick bass lines, nasty synth, tight horns, strings, and more. www.bigfishaudio.com

Zoom H4 Handy Digital 4-Track Recorder

The ultra-compact H4 is perfect for a variety of mobile recording applications. It performs as a dual function device with a 4-track mode for multi-track recording, and a stereo mode (2 track) for handy field recording. It comes bundled with Cubase LE and multiple accessories. www.zoomfx.com

CAD Trion Line

The CAD line of studio mics has three new members: the Trion 8000 (a multi-pattern, externally biased, large dual diaphragm studio tube condenser mic), the Trion 7000 (a dynamic, dual-element ribbon mic), and the Trion 6000 (a multi-pattern, externally-biased, large dual diaphragm studio condenser mic). www.cadmics.com

Neve Portico 5033 Five-Band EQ and Line Driver

A combination five-band equalizer and high-performance line driver, the 5033 features Rupert Neve's custom input and output transformer designs, five bands of EQ based on traditional curves, ±12dB input level adjustment, five filter bypasses, and is available in either horizontal or vertical formats. www.rupertneve.com

Furman SPB-8C Stereo Pedal Board

Admit it, you use guitar pedals in the studio — so give them a nice home with a hardshell case, multiple outlets, isolated jacks, two levels of surge and short circuit protection, and ultra low-noise performance. The stereo patch bay contains eight 1/4" switching phone jacks, connected in two stereo loops. www.furmansound.com

E-Mu Systems' Platinum 88 Grand Piano Sound Library

This new library ($149.99) offers Emulator X and Proteus X users over 7GB of 24-bit grand piano samples. Based on a Steinway Model L concert grand piano, the Platinum 88 features 12 layers of samples for each of the piano's 88 notes. Also included are 1GB and 200MB 16-bit versions of the piano for sequencing flexibility and optimized performance. www.emu.com

Podcasting, Recording, Surround Workshops

How-To workshops, designed to train worship sound volunteers, praise band, and church media members, now include a 3-hour "Podcasting for Worship" workshop that covers recording, editing, and more. The How-To workshops are produced by audio industry veteran Hector La Torre for Fits & Starts Productions. www.fitsandstarts.com

Fender Princeton Recording Guitar Amp

The Princeton Recording Amp ($1,428.56) is a moderately powered, all-tube amplifier. Features designed for recording include a compressor, spring reverb, overdrive section, and power attenuator that allows cranking up the amp for full output tube overdrive, then setting the speaker volume as low as desired. www.fender.com

All prices are manufacturer's suggested retail price. Toolbox material is provided courtesy of Harmony Central, Inc., and is used with the express written permission of the publisher.

PODCASTING: The Time Is Now

YET ANOTHER USE FOR THE STUDIO . . . YET ANOTHER WAY TO PROMOTE WHAT YOU DO!

by Sherri Hendrickson

So why is *EQ* covering podcasting? Because one way or another, it affects your studio. Podcasts combine music, audio, and sometimes, video to create the Internet equivalent of a broadcast. If you think that means people need a studio to do their podcasting, you're right. Granted, podcasts can be created with a minimal amount of gear, at a very low cost. But they can also be full-fledged productions, requiring full studio capabilities.

And if you want to promote your band or business, or just play DJ, podcasting is a fun and powerful new way to share everything from personal opinions to your band's latest recording. Have you ever wanted your own radio show about your band's antics on tour, or a better way to get your latest live show recording out to your fans? Creating a podcast that can be heard on any MP3 player is an easy way to distribute your own brand of content, while making it easy for subscribers to receive automatic updates. So whether on the production side, content side, or both, this article will show you how to create downloadable podcasts that people can enjoy anywhere in the world.

Just for clarification, despite its name, you don't need an Apple iPod or iTunes to create, subscribe, or listen to a "podcast." Your listeners can choose from hundreds of different feed reader programs and MP3 players, yet still receive the same information and content as those using Apple products.

CHECKING OUT PODCASTS

Before you share your show with the masses, you should be familiar with what your listeners will experience when they subscribe to your show. Typical podcasts are nothing more than MP3 files with some extra information attached in a special type of text file. The file directs podcast subscription programs (such as Apple iTunes) what to do with the audio file and its corresponding show information. The easiest way to see this in action is to subscribe to a couple of podcasts yourself. To do this:

1. Surf over to www.apple.com/itunes/.
2. Click on "Launch Music Store."
3. Under "Inside the Music Store," click on the "Choose Genre" drop-down menu and select "Podcasts."
4. You'll see a "podcast landing page" similar to Figure 1. It features thousands of different podcast shows, all available for free download.
5. Browse categories if you want, click on a show that interests you, and you'll see a page like Figure 2 with a description, user reviews, the option to subscribe, or the option to download individual episodes. If you download or subscribe, iTunes will add that show in the "podcasts" section of your iTunes music library.
6. After it's downloaded . . . listen!

The list of all available episodes of a show is contained in a special type of file referred to as the "feed," which is attached to the MP3 audio. The feed file contains the information about how many episodes there are, and where the MP3 audio file can be downloaded. We'll show you how to create this file later. Also note that the section of text describing the episode's contents is what a typical podcast downloading program (also known as a "feed reader") displays to a subscriber.

The subscriber will also have options to manage how often the feed reader will check in to see if you have a new episode to download, when to download the new episode, and whether the older episodes should be kept or deleted automatically. (In Apple iTunes, access these by going *iTunes menu > Preferences*, then click on the Podcasts button.)

Fig. 1: The podcast landing page on Apple's website.

READY . . . SET . . . PODCAST!

All you need to begin is your show. There is nothing special about recording or editing for a podcast; just have fun and make sure all your speaking hosts and guests can be understood clearly, and any music is mixed properly. There's more about the subject of creating podcasts in other articles in this issue, including info about portable podcast rigs in the "21st Century Recording" column on page 66.

Once your complete show is recorded, you'll need to convert the audio file into a format a typical MP3 player can use. Most podcasts use MP3 files because they are the most common format for portable players. While some other file formats (like Apple's AAC) can give you additional features like bookmarks and changing album artwork pictures, these other formats may not be compatible with your listener's favorite MP3 player.

When selecting a file format, consider which format will allow the greatest number of people to access your show. You can also create two different versions of

Photo by Marty Sconduto

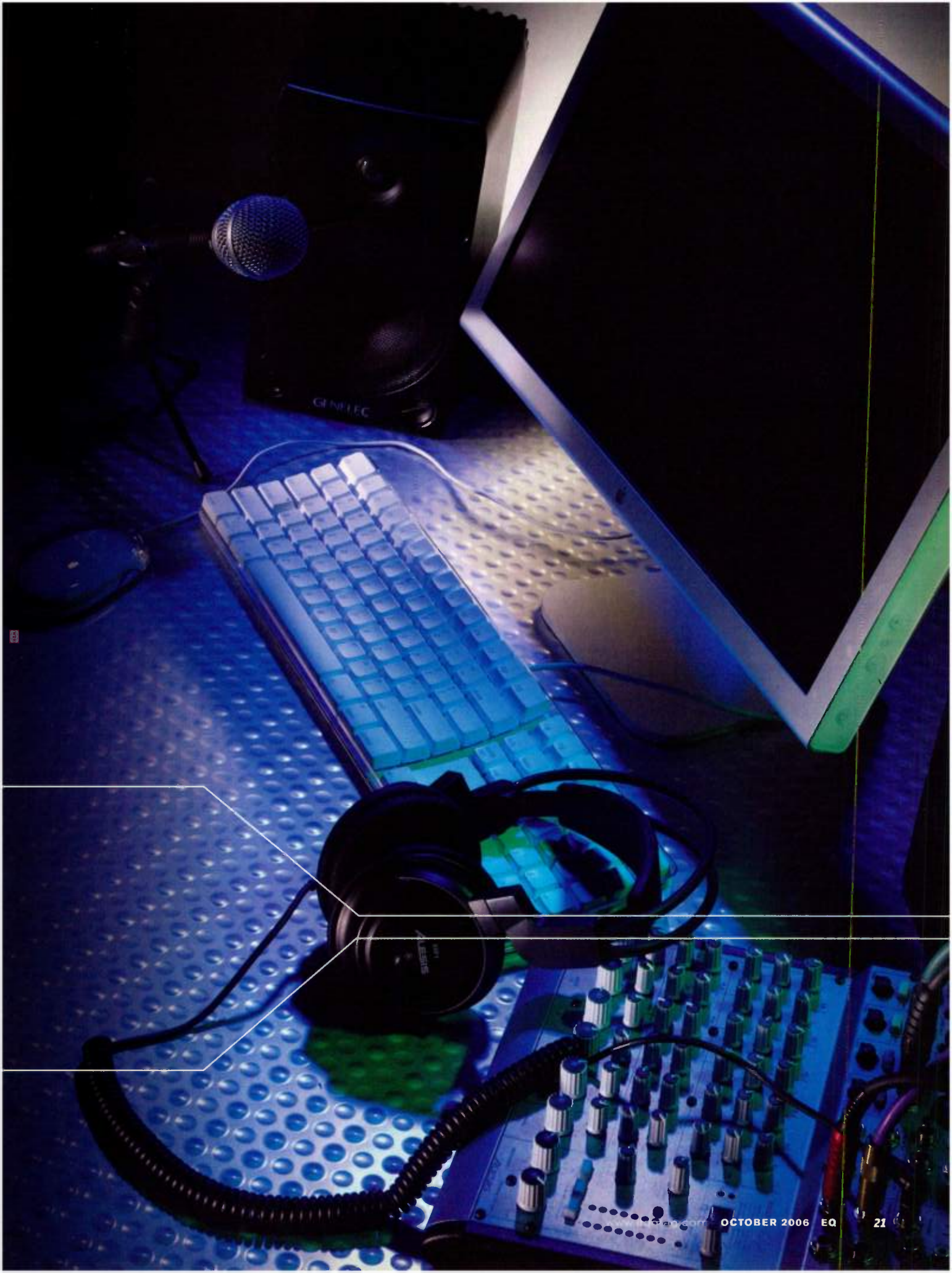

GENELEC

Fig. 2: Typical podcast information you see when you click on a podcast.

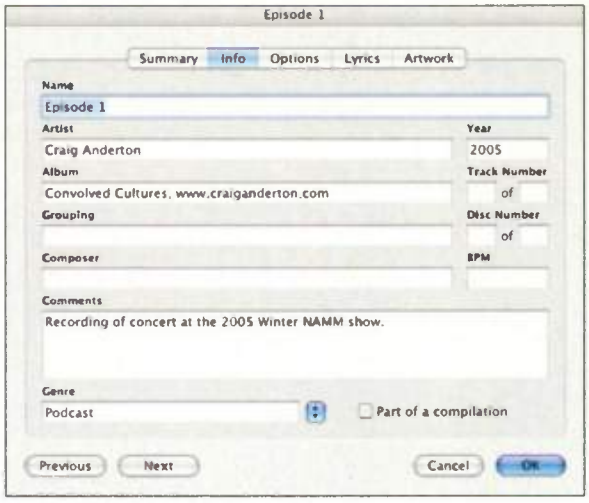


Fig. 3: Tags help identify details about the podcast.

your show — one MP3 and one AAC — but you'll need to create two different feed files, and you'll use twice as much storage space on your web server. Also be aware that this approach may confuse some less tech-savvy listeners who may not know which file formats are supported by their software or portable player.

If you've ever prepared an audio file for the web, you've already dealt with bit rates and sample rates. When choosing what bit rate/sample rate combination to use for your podcast, consider both what type of show you're creating and how much bandwidth you can afford to use. If your show will be mostly talk, you can lower the bit and sample rates down more than for a music show, and still have good audio quality with a smaller file size. Try a few different combinations until you find something that sounds good but won't hog your server bandwidth when hundreds, or even thousands, of listeners start subscribing and downloading. 64 to 128kbps is a good place to start.

MUSIC AND PODCASTING

Are you ready to be a podcasting DJ? Well, you can . . . and you can't. Unfortunately, music licensing is one of the biggest legal hurdles in podcasting. Podcasting is different from streaming Internet media you've already encountered — it creates an actual downloaded copy of the content on your listener's computer. That's significant because the exclusive right to distribute copies of copyrighted material by a copyright holder is one of the traditional aspects of copyright law that hasn't caught up to the realties of podcasting.

There are two parts to the copyright of any song: One part covers the song itself, while the other part covers the sound recording of the music. ASCAP and BMI, who handle the song copyrights, have come up with ways to license songs for podcasting; but the record companies who own the sound recording copyrights have not come up with any way to license their recordings for use in podcasts. Where does that leave you? Out of luck . . . if you can't license a song you want in your podcast, you can't allow anyone to download a copy of your show.

Confused? Disappointed? Frustrated? Most podcasters are, especially because using music (even in a talk show) can spice up your broadcast and make it sound more professional. You have a few options:

- **Create a podcast using your own original recordings of ASCAP and BMI songs, and pay for the song licenses.**
- **Create your own original songs and recordings of music using material you own free and clear.**
- **Just don't use music.**

One workaround is using royalty-free Apple loops in Garageband or Sony's Cinescore. Unfortunately, it doesn't look like the big record companies are going to change anytime soon, so make sure anything you use in your podcast is clear of any copyright restrictions so you don't get yourself into any trouble. For more information:

ASCAP podcasting licenses "Interactive 2.0": www.ascap.com/weblicense/
BMI and podcasting: www.bmi.com/licensing/podcasting/index.asp

PLEASE LABEL IT!

ID3 tags are just as useful for podcasts as they are for labeling your song, artist, and title information in your music collection. The ID3 tags in podcasting indicate the show's title, episode title, give a date, and provide a brief description of the episode. ID3 tags work a little differently in podcasts than in music. . . . Artist? Album? Composer? These don't work for radio shows, so podcasters have adapted these categories for their own uses.

Creating these tags is as simple as bringing your MP3 file into your favorite music listening application (such as iTunes), and editing each category for your show's audio file. In iTunes, select your show's audio file and choose "File" and then "Get Info." You'll see a dialog box where you can fill in all the information about your show, thus creating your ID3 tag (Figure 3). Here's the protocol for filling in your information:

Name: Episode name or number.
Artist: Your name.
Album: The show's name and website.
Comments: Use this for a quick description about the episode.
Genre: Select "Podcast" from the drop-down menu.

All this information will help your subscribers keep track of your shows and find what they want to hear. While you can create a podcast without these tags, your listeners will appreciate the effort.

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FIND A HOME FOR YOUR PODCAST

You now have an MP3 audio file with clear and user-friendly ID3 tags on your computer. Like any other file for the web, you'll need to upload it to a web sever. When choosing a web host for your podcast, remember that podcasting (like any other multimedia file on the web) is a huge bandwidth hog. You'll want to select a service that can handle lots of bandwidth reliably at a reasonable cost. Remember when we talked about selecting your bit rate/sample rates for smaller file sizes? For podcasting, you have to think about bandwidth in terms of total subscribers and new subscribers. Take a look at this:

Week #1
Your show: 10MB.
Number of subscribers: 100.
Total bandwidth: 1000MB.

Week #2
Your show: 10MB.
Number of subscribers: 100.
New subscribers: 100.
Total bandwidth: 2000MB (twice as much!)

We're not done! Your new subscribers want to check out your show that they missed the first week so add 100 more downloads: *3000MB total!*

As you can see, we're talking about major bandwidth. For that reason, consider podcast-specific hosting companies that offer special deals on bandwidth for podcasters. Any web host will work; you don't need a service designed specifically for podcasting, though some companies have designed online services that make podcasting much easier — some feature helpful extra tools and flat rate, per-month bandwidth packages.

Know your web server terms: "Unlimited space" refers to the amount of file storage on the server you can use. "Unlimited bandwidth" refers to how many downloads of your files the server will allow per month. Be cautious about hosting companies that offer "unlimited" bandwidth — many don't live up to their claims, and your subscribers might be left without your show.

XML . . . RSS . . . WHAT?

Once you've chosen a web host, you're ready to step into the new world of RSS — the file that separates a plain old MP3 media file from a true podcast. In the world of podcasting you'll hear the terms "XML" and "RSS" used interchangeably to describe the text file that tells your feed reader (such as iTunes) if there are new shows available and where to get them. XML stands for extensible markup language and is closely related to HTML, the programming language which makes up most of the Internet. RSS — or really simple syndication — is a type of XML that includes all the tags and other elements that make podcasting possible. Describing the detailed inner-workings of RSS is a book in itself, but don't worry about learning a programming language in order to podcast — there are plenty of options for those of us without computer science degrees.

The RSS information you need to podcast can be made in a couple of ways, either with a special program installed on your computer, or by using online podcast production services. If you choose to go with your own standard web host, you can use a special software program designed to help you create your RSS information right on your personal computer. FeedForAll (Figure 4) is one such program for both Windows and Mac that gives you a simple interface to create your RSS information. Programs like FeedForAll generate the RSS code needed for you; all you have to do is enter some basic information about your show and the URL of the audio file on your web server. The software takes care of translating this information into the RSS code feed readers need.

When FeedForAll is done, it will generate a small text file (called the "feed") and all you need to do is upload this file along with your audio. If you go with a standard web host, just upload your audio file and the RSS text file as you would any file. You may want to set aside a separate folder on your .veb server for your podcasts so you can more easily see what you have online. If you have a Mac, you may already know a program that will help: Apple's Garageband 3 features easy podcast creation tools that allow you to record, edit, add pictures, upload, create a feed, and add your show to the iTunes music store directory, all in one program.

Another easy way to create your feed is with online web tools. Some companies will create only the feed file necessary for your podcast, while others offer a full complement of online services. Using their online tools and web interface, you can use a podcast-specific hosting service to create the RSS information and upload your audio all together. Companies like Libsyn.com offer online RSS creation tools, hosting (oriented to high bandwidth needs), and podcast directory listing services (more on that later). Choosing one of these "one-stop-shops" for all

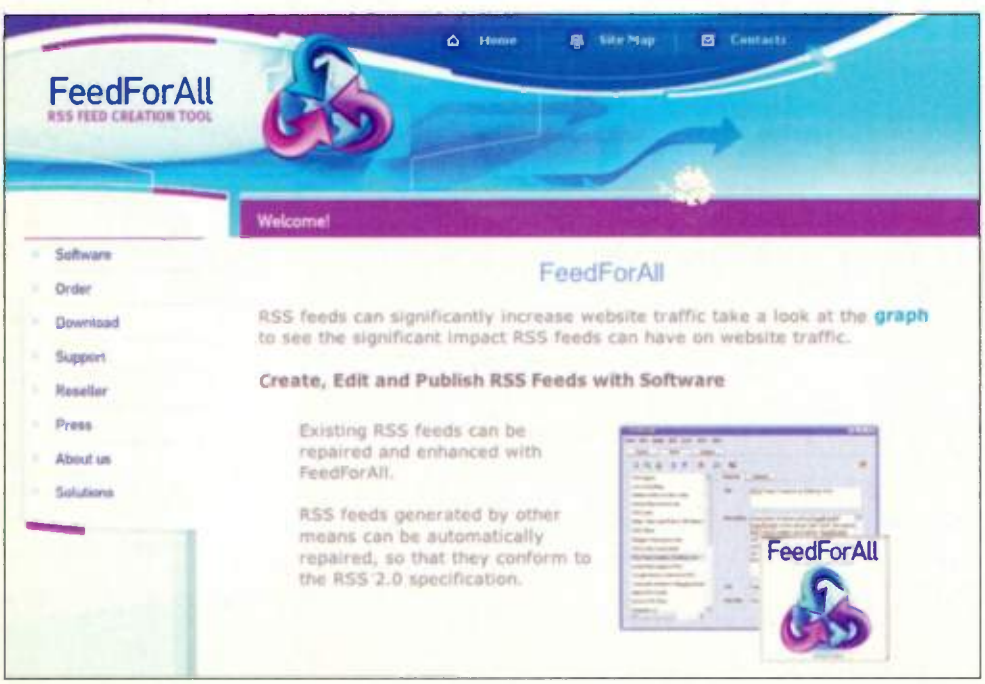
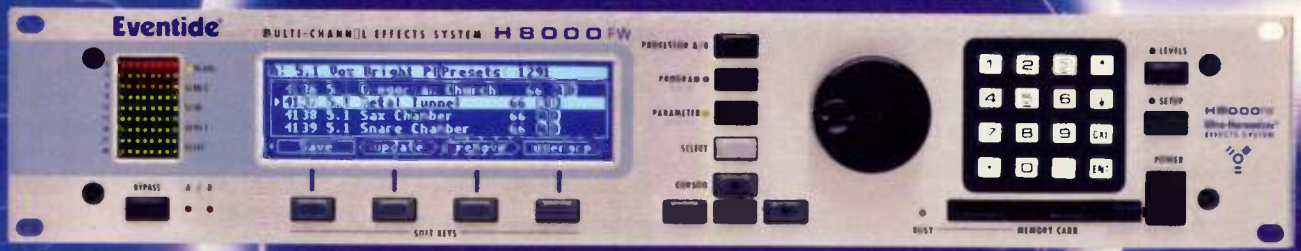


Fig. 4: FeedForAll is an inexpensive, cross-platform program to generate RSS data; you can order it online.

EATS COMPLEX ALGORITHMS FOR BREAKFAST.



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Eventide's signature 5.1 reverbs and effects require sheer processing power for dense reverbs and complex algorithms — the kind that can crush mortal effects processors. If you're ready to push the boundaries of creativity, meet the new super-heavyweight champion: the 8-channel, 24-bit/96kHz Eventide H8000FW Ultra-Harmonizer® effects processor.

Built on a foundation of nearly sixteen hundred preset-algorithms, it encapsulates the last 30 years of digital effects processing. And with over eighty 5.1 presets, this baby's ready to take the future head-on with headroom to spare. If, for example, a complex algorithm gets a little too big for its britches, Monolithic Tandem™ runs it on two DSP chips. With that kind of parallel processing power, your creativity is unrestrained.

Despite all that brain and brawn, the H8000FW is remarkably friendly and easy-to-use, optimized for flexibility and control. Virtual racks have been crafted which give you up to five stereo effects processors combined in one preset-algorithm. Search functionality helps you sort presets for easy retrieval.

The H8000FW combines the advantages of the H8000A with the H8000 and adds seamless FireWire connectivity with your computer.

So, crank up an Eventide H8000FW Ultra-Harmonizer and feast your ears on the most amazing effects you've never imagined.

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- Up to 96kHz sampling frequency
- PC and OS X graphic editor/development tools included
- 4 channels of pristine analog I/O; s/n >110dB

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your podcasting needs is an easy and affordable way to get started. Some companies also have bonus features like your own blog, or add the ability to call from your mobile phone and create a podcast automatically. You'll also find a helpful user community and support forums where you can share information, and meet fellow podcasters.

THE IMPORTANCE OF PROMOTION

Once your podcast is online and your RSS feed is set up, get ready to conquer the Internet! But how will anyone know you're out there screaming into the void? The answer is to get your show listed in podcast directories. Getting listed is a pretty simple process; out of the hundreds of podcast directories out there, the two most popular are Podcast Alley and the 800 lb. gorilla known as the iTunes music store. Getting your show listed on one of these sites will help listeners who would be interested in your show find you among the thousands of other podcasts.

Doing a listing is as easy as submitting an online web form containing basic information about your show, such as your website, the location of your feed file, and a brief description of your content. You'll want to get listed on as many directories as possible so potential listeners can find your show. You may also want to check back in with directories on which you are listed when you make changes to your show such as adding a new co-host, new subject matter, or especially if you change web servers.

Now that you have the basics down, you can create and share podcast shows featuring your ideas, music, or anything else about which you are passionate. Just remember that podcasting is a new medium that is developing as you read this. Keep checking in with a good podcasting news sites, such as podcastingnews.com, to stay up-to-date on the latest techniques and technologies that will help your show grow. EQ

Sherri Stacy Hendrickson is a member of the National Public Radio West audio engineering team, and technical director for News and Notes with Ed Gordon. Her audio services company is Valkyrie Sound (www.vsoundinc.com).

PODCASTING RESOURCES

ALESIS. Offers a complete podcasting kit, along with a site to host your finished podcasts. See related story in this issue. www.alesis.com

Apple's podcasting with iTunes. www.apple.com/podcasting/

AUDIOFEEDS. A roll-your-own RSS feed tutorial and music podcast directory. www.audiofeeds.org

BLOG MATRIX. A web-based blogging, podcasting, and videocasting solution. www.blogmatrix.com

Feed Burner. Web-based service to create RSS feeds. www.feedburner.com

FEEDFORALL. Windows/Mac compatible software for creating RSS feeds. www.feedforall.com

iPodder. Podcasting history and directory. www.ipodder.org

LIBSYN. Offers podcast hosting with unlimited bandwidth and easy tools for creating your RSS information. www.libsyn.com

M-AUDIO. Offers a new hardware/software/RSS feed burning package. See related story in this issue. www.m-audio.com

PODCAST ALLEY. Podcast directory. www.podcastalley.com

PODCAST411. Podcasting tutorials, directory, and news. www.podcast411.com

PODCASTING NEWS. News, directory, and articles. www.podcastingnews.com

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NATIVE INSTRUMENTS

THE FUTURE OF SOUND

M-Audio Podcast Factory

THE FAST TRACK TO PODCASTING

by Jeff Anderson

It was not long ago (late 2004, to be exact) that websites started offering Internet surfers the ability to subscribe to a service known as "podcasting." A catch-term derived from Apple's ever-popular iPod units, Podcasting became a new means of distributing files via the Internet for broadcast purposes on remote devices.

Fortunately it takes very little, hardware and software-wise, to begin podcasting, and chances are you already have all the necessary tools for creating your own. If you don't (or if you need a setup that's separate from your main studio), you have many options. As described in the "21st Century Recording" column on page 66, it's possible to turn a laptop into a portable podcasting setup. However, quite a few pro audio companies now offer podcasting setups complete with a mixer, a mic, headphones and/or monitors, and bundled software.

This review covers M-Audio's recently released Podcast Factory. It's a hardware/software bundle intended to provide all of the hardware and software necessary for making a podcast. The bundle includes:

- **M-Audio Broadcast Bundle.** Includes a dynamic microphone with on/off switch, a desktop stand, cable, and soft case.
- **USB audio interface.** A small, portable USB bus-powered interface/mixer with mic input, switchable instrument/line input, headphone out, and stereo out. It records at rates up to 24 bit/48kHz.
- **Audacity.** Mac/Windows software that allows for basic recording, editing, and file conversions for podcasts.
- **Podifier.** Mac/Windows software that automatically posts a podcast to the web. This program creates the necessary RSS feed that contains all of the tags and information pertaining to your podcast.
- **Ableton Live Lite.** Pro-level MIDI/audio software that can create soundtracks and backgrounds by integrating loops and sound effects into a production.
- **Sound and Loop Libraries.** A large selection of loops and pre-recorded material for use in a podcast production.

Fig. 1. M-Audio's new Podcast Factory packaged up all nice and neat. Containing the Broadcast Bundle, USB audio interface, Audacity, Podifier, Ableton Live Lite, and Sound and Loop Libraries, the Podcast Factory is a one-stop destination for podcasting neophytes and professionals alike.

It's a fair assumption that anybody reading this article has already become amply initiated into the world of recording, so we need not waste time explaining how to record material for a podcast. The set-up described above is bare-bones and incredibly simple — signal to USB interface; interface to computer running Audacity (or a similar program); Ableton Live and the Sound and Loop Libraries for effects/loops; finished recording to Podifier for web publishing. It doesn't really get much easier than that.

AND THE DIFFERENCE IS . . .

One of M-Audio's big "hooks" is the inclusion of Ableton Live Lite and the various sound and loop libraries. Podcasts benefit greatly from music, and maybe you have fantasies of being a DJ, spinning other people's tunes into a cool set. But the whole concept of "who owns what" comes into play here. There's a lot of gray area because the Internet, being global, is without a governing body. The country of location of the web hosts (and of the companies owning the domains) currently serves as the de facto governing body. So, you are at the mercy of the laws of the land you inhabit, and these laws vary widely across the globe.

For example, if I used a Metallica track in the background of my news podcast, which was hosted by Yahoo, it would be

much easier for Lars Ulrich to have my podcast removed from the server, as I would be violating U.S. law. However, if my hosting company were based in a country with far less stingent copyright laws, it would be much more difficult to force removal of my podcast.

You also have to be very careful about "fair use." Generally, you won't get into trouble if you're doing something educational and non-commercial, and use restraint. For example, if you used a clip of a song to illustrate a particular music technique, it's highly unlikely that anyone will come after you. Or, if you took a piece of music and applied "creative input" to demonstrate the power of digital signal processing, again, you're probably okay. But don't believe any of the myths that using less than a certain amount of music is okay; if you use *anything*, you might as well hang out a sign saying "Lawyers, please call."

Sherri Hendrickson's article on page 20 mentions some ways to deal with the music issue, but there are some additional fine points. For example, assuming you are a U.S. citizen, using a U.S.-based web host, you might think that using public domain material would be okay. For the most part, the public domain contains songs and lyrics that were written in the U.S. before 1922 or earlier. But be careful in doing your research, as there are a lot of re-makes of public domain songs that are under copyright. And there's always "canned" production music, for which you can pay a one-time fee for use, and not worry about royalties. But always read the fine print, as caveats differ for different companies.

Which is why including Live and a sound library is a good move on M-Audio's part, as you can put together your own sound tracks easily. In fact, M-Audio has an extensive library of royalty-free loops available separately, so you can really put together a convincing musical production without much effort. Furthermore, Live can "time-stretch" the music to fit various tempos, so if you want some intense, fast music in one part and you have an ideal drum part but it's mid-tempo, Live can solve that problem for you.

THE MP3 THING

With Podcast Factory, Audacity handles all needed MP3 conversions. We all know there's a tradeoff between file size (less or more download time) and quality, but here's what's used for most podcasts:

- 48–56K: Mono speech, talk radio
- 64K: Stereo talk programs
- 128K: Stereo music
- 320K and above: High-quality stereo music

For maximum universality, you should probably encode using a constant bit rate (CBR) rather than the variable bit rate (VBR) supported by some software. Variable bit rates produce better sound quality for a given file size, but not all players support this.

Once you have converted the file to MP3, you must now upload the file to a website, either your own site (assuming you have the bandwidth, which you probably don't), or one of the many online MP3 hosting sites such as garageband.com, ourmedia.org, or archive.org. Just make sure that after uploading your MP3 file, you check to make sure that everything is in proper working order by downloading the file

Fig. 2. A quick walk through RSS feed generation using the Podifier software. From filling out your feed details (step one) to MP3 files (step two) to the ftp details (step three), it's podcasting publishing at it's simplest.

and playing it back using an MP3 player.

REALLY SIMPLE SYNDICATION

RSS basics are described elsewhere in this issue, so let's look at the M-Audio way of doing things. The Podifier RSS feed software included in Podcast Factory is a very user-friendly piece of software. (If you have not purchased a podcasting kit and are instead opting to use your existing studio gear, you can hop online and download the Podifier for free at www.podifier.com, or seek out any of the other RSS feed generators offered for free download on the net.)

Now that you've opened the feed generator, all you have to do is type in the feed details, the MP3 file(s), and the FTP details, and the program will output an RSS file (Figure 2). Also, now that you've done all the necessary legwork in creating your first podcasting file, you can use your work as a template, replacing only the applicable information for your most current updates. Upload these RSS files to your website in the same manner in which you uploaded the original MP3, and you've published your first podcast.

Promotion is also touched on elsewhere; make sure when describing your podcast that any description is riddled with choice key words that will appeal to your targeted demographic. Some of the larger, more popular podcast directories are: http://podcasts.yahoo.com, www.apple.com/itunes, www.ipodder.org, www.podcastalley.com, www.podcast.net, www.odeo.com, www.podcastpickle.com, and www.podnova.com.

Given the rather tumultuous nature of the modern recording industry, the onset of podcasting as a popular means of entertainment can mean great things for all of us. M-Audio has certainly made podcasting both easy and affordable, and I'm sure Podcast Factory will serve to get many people involved in this exciting new art form. EQ

Product type: Podcasting studio with software for Windows XP/Mac OS X.
Target market: Podcasting neophytes who want the easiest, lowest-cost way to create podcasts.
Strengths: User-friendly. Proven M-Audio gear. Includes facilities (Ableton Live Lite, loop libraries) for making your own music free of copyright hassles. Simple to connect.
Limitations: Audio interface has limited mixing capabilities.
Price: $179.95 list.
Contact: www.m-audio.com

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Alesis Podcasting Kit

CAN A PODCASTING NEWB ACHIEVE SUCCESS?

by Craig Anderton

I was at the Summer NAMM show, visiting the Alesis booth. I talked a bit with a representative about their podcasting kit, and I said I thought it would be worth reviewing in *EQ* . . . and in fact, *I* wanted to review it, because they said it could turn anyone into a podcaster. I'd never done any podcasting, so I seemed like the ideal person to test that thesis.

At this point, some manufacturers who claim to make something "anyone" can use start backtracking, and throw around phrases like "well, maybe someone who's more familiar," "the review should be, ahem, fair," "uh, we don't have the quickstart manual done yet," and the one that makes me *really* suspicious: "Hey, we know someone who would be an excellent reviewer!"

But he turns to me and says, "Sure, where should we send it?"

So could I *really* go from 0 to 60 in one day as a neophyte podcaster? Let's find out.

WHAT'S INCLUDED

The podcasting kit is cross-platform, and comes with an Alesis AM1 dynamic mic, Alesis MultiMix 8 FireWire or USB (your choice) 8-input mixer with effects, desktop mic stand, mic cable, FireWire or USB cable, Alesis AHP1 headphones, carrying bag, the more-powerful-than-most-people-realize Cubase LE, demo software from NI, Arturia, and AAS, and drivers for the mixer. Bottom line: It's a small recording studio; you supply the computer.

There are some differences between the USB and FireWire versions, aside from price. The USB mixer buses all the channels down to two stereo tracks, with 44.1kHz/16-bit resolution. The FireWire mixer records all eight channels discretely to the computer at 44.1 or 48kHz sampling rates, with 24-bit resolution. However, note that while Cubase LE can take advantage of the increased resolution, it accepts no more than four inputs simultaneously.

But that's just the hardware/software. What makes the "kit" really interesting is that you also get free 30-day hosting of your podcast, along with complete instructions on how to make it happen. Alesis has partnered with Cyberears.com, and you can simply upload your audio to the site. All the RSS

Fig. 1: The podcasting kit, set up and ready to go. The Rain Recording laptop on the left is running Cubase LE, with a track of music and another of narration. To its right are the MultiMix8 FireWire mixer, headphones, mic, mic case, and carrying bag. Not shown: desk mic stand.

voodoo is handled for you, which I find immensely appealing. And there's more . . . but we're getting ahead of ourselves, so back to the hardware.

WHO NEEDS ANOTHER STUDIO?

I already have a very nice studio quite capable of generating podcast-friendly files, thank you, so I thought the FireWire mixer and such would be redundant. But as I was editing Gus Lozada's column on portable podcast setups, I started thinking of the possibilities of doing something like live podcasts from trade shows. So I set up the Alesis podcast studio with my Windows laptop (Figure 1) to get a feel for what's involved. The carrying case is pretty small, and I could easily see tossing this "studio" into a corner of a suitcase.

After the MultiMix was installed, I installed Cubase LE. Short form: 24 bits, 8 virtual instrument slots, 48 audio tracks, 64 MIDI tracks, comes with a bunch o' plug-ins. It won't replace your big desktop sequencer, but it's way more than what you need to bop out a quick podcast.

Incidentally, the manual and installation procedure for the drivers and software seem pretty close to idiot-proof. Everything is spelled out in detail, and nothing is left to chance. The only issue I had was that the FireWire cable is 6-pin to 6-pin, but my laptop has a 4-pin FireWire port. Luckily I had 6-to-4 adapter, so I could keep going.

What's more, there were full instructions for selecting the MultiMix within Windows and Cubase, and instructions on creating a project in Cubase — none of this "refer to the manufacturer's manual" stuff. Kudos. About the only negative I found is that the FireWire mixer runs pretty hot, so whatever you do, don't throw your jacket over it.

OH RIGHT, THE PODCAST ITSELF . . .

Well if I was going to upload a podcast, I needed a podcast. I checked what I had that might be suitable, and found a live recording from the Winter 2005 NAMM show. So I added a few seconds of narration at the head explaining the techniques and gear used in my performance, added some compression and EQ to the voice, did a little limiting to the overall track, and exported it as an MP3 file (160kbps stereo).

Cubase LE said I had only 20 MP3 conversions before I had to buy the MP3 upgrade; I clicked on the "Buy now" option, but it took me to a dead end, and I didn't find any opportunity to upgrade on the Steinberg site. No big deal; I have plenty of ways to encode files. But hopefully, there will be a fix for this soon, so Podcasting kit owners aren't left without an export option with Cubase LE.

So there I was with the raw materials for a podcast, a couple hours after opening the box and using only the gear supplied by Alesis. Impressive, but now came the scary part: Uploading.

RELEASE TIME

The uploading procedure is described in the

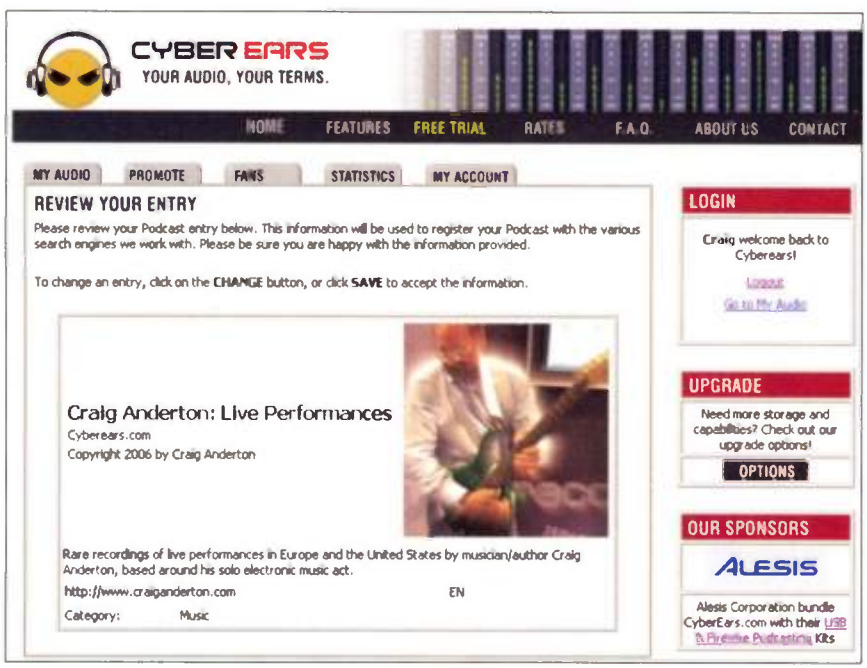

Fig. 2: When you create your podcast, you can attach an image, as well as add descriptions and edit it if there are any errors.

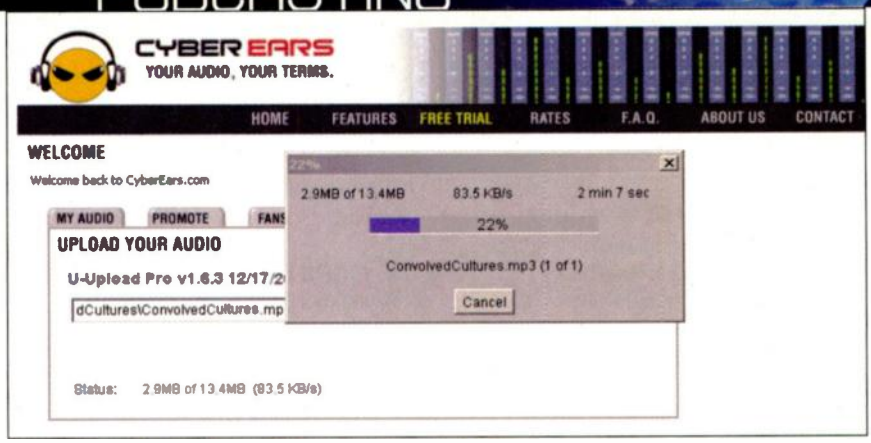

Fig. 3: Success! The audio is being uploaded to the site. Cyberears takes care of the rest.

manual, so I went to www.alesispodcast.com and registered. This took me to Cyberears.com, who do the actual hosting. You get 30 days free to have your podcast hosted (only one podcast, but you can have multiple episodes and use up to 512MB), and then you're asked if you want to sign up. At that point, it behooves you to check out the various options; I'm no expert on hosting services, but presumably Alesis did some vetting before making their choice, and Cyberears was very quick and helpful about answering questions.

The terms of service seemed straightforward, except a red flag went up with a mention that all content on the site is copyrighted by Cyberears' parent company. No worries, though; this does not refer to the content you upload, where you retain copyright (and you better make sure that you indeed have the rights to post your content, or you'll be in trouble). It simply refers to the material Cyberears generates, and their technology.

Creating the podcast was so step-by-step I think anyone capable of reading this magazine could do it. First, you create the podcast itself. It's all form-driven, so if you can type, you can create a podcast. You can also upload an image to accompany your podcast (Figure 2).

However, note that a podcast is not the same as an episode in a podcast, so you need to create that as well. As one more example of Cyberears' hand-holding, once you create the podcast, you're sent an email reminding you that you need to upload audio to it. The process really is about as error-proof as you can get when dealing with something involving computers and the Internet.

So I created an episode, uploaded the audio (Figure 3), and . . . done! The total elapsed time from knowing *nothing* about podcasting, to opening up the box and setting up the studio, to installing the software, creating the podcast, and making it live, was under three hours — and no glitches. *Under three hours!* That's pretty amazing.

After the podcast was released to cyberspace, Cyberears displayed the URL so I could link to it from my site; and if you click the Promote tab, you're walked through the process of how to make sure the rest of the world has a chance to hear your podcast. You can also check on statistics, to see how many people have actually checked out your work.

CONCLUSIONS

I can't say enough about how this product and process have blown me away. I'm now a podcaster, but a word of warning: *addiction.* I had planned to upload a podcast to make sure the system worked for the purposes of this review, let it sit up there for 30 days, quietly let my free trial period lapse, and move on. Wrong. I'm already thinking about what to do for the next episode . . . and I'm pretty sure I'm going to keep going when the 30 days expire. (Incidentally, you don't have to buy an Alesis podcasting kit to check out Cyberears; you can do a 7-day trial, without even having to submit a credit card.)

Alesis set out to do "podcasting for dummies," and they have pulled it off 100%. This is one cool concept, implemented as one cool product. EQ

Product type: Podcasting studio with software for Windows XP/Mac OS X.
Target market: Those just getting started with podcasting, as well as veterans who want a low-cost, portable podcasting/recording studio.
Strengths: The kit also provides free hosting for 30 days for your podcasts so you can get started. Mixer, headphones, and mic are of better-than-expected quality. Exceptionally user-friendly. You really can go from opening the box to uploading your first podcast within hours.
Limitations: USB mixer not as capable as FireWire mixer. Adapter or other cable required to mate with 4-pin FireWire port (6-pin ports are okay). Mixer runs hot.
Price: USB Podcasting Kit $399 list, FireWire Podcasting Kit $599 list.
Contact: www.alesis.com

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AVANTONE MIXCUBES

It Hertz so good . . .

by Phil O'Keefe

Back in the '70s, when I was getting started with audio engineering, it seemed that nearly every studio had a pair of Auratone 5c monitor cubes. These small speakers were among the first nearfield monitors, and were commonly used to provide an indication of how the mix would sound on bandwidth-limited playback systems, such as transistor radios, car stereos, and televisions. With their lack of bass and far-from-flat midrange response, no one I knew thought they were particularly good-sounding speakers (hence the common nickname, "Horrortone"), but they served their intended purpose as a "real world" reference.

WHAT'S OLD IS NEW AGAIN

Larger, multi-driver, nearfield speaker systems have become the norm in most studios, and the old Auratones have long since faded from production as well as widespread use. But today, limited bandwidth playback systems are once again common — think MP3 players, desktop computer speakers, and boomboxes. And so, enter the Avantone MixCubes.

The MixCubes bear a strong visual likeness to the old Auratones, excepting color — the polyurethane paint is a buttery shade of yellow, kind of like the finish on a white guitar that has endured too many nights in smoky bars. You'll love or hate the color, but at this price point, the quality of the high gloss finish is impressive. The 5.25" drivers mount in a 6.5" cube made from 5/8" MDF (medium-density fiberboard, made of wood fiber and glue).

The driver's frame's outer rim is polished; around back, the three-way binding posts accept spade lugs, banana plugs, or bare wire up to 12 gauge. Another welcome addition is a 7mm thick neoprene pad on the bottom of each MixCube to provide mechanical decoupling from where they sit. There's also an insert in the bottom of each cube that allows mounting on a standard 5/8" mic stand. That's it: no ports, crossovers, or tweeters.

FIRE UP THE FLASHBACK

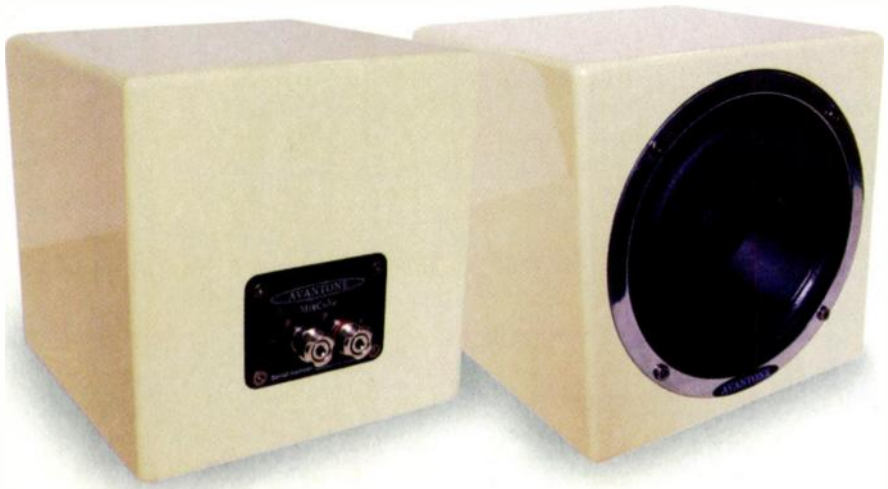
Avantone recommends the MixCubes be powered with a 10–200W amp, so I tried an Alesis RA-100, Crest FA901, and (just to get really ugly) a little 10W Radio Shack stereo power amp. I listened to a variety of old and new songs, starting with McCartney's *Band on the Run* and Nick Lowe's *Cruel to Be Kind;* it was an instant flashback to the '70s, when I used to spend endless hours listening to music on small "full-range" speakers. Very fun. And very revealing: While switching back and forth between the MixCubes and my other monitors, I was surprised by how well some mixes held up when played on the 'Cubes, and how much the bass and kick dropped out on others.

The sonic similarity to Auratones was instantly recognizable, although the MixCubes seem to have a little more extension in the very top and bottom of the frequency range, and a bit smoother midrange frequency response. Avantone specs the frequency response as 90Hz–17kHz (with no deviation listed), which seems about right — there's not much below 100Hz. That's intentional; again, the goal is to let you hear what your mix will sound like on a small playback system, and that's indeed what the 'Cubes do. With bass and kick drums, you don't get distracted by the deep, fundamental thump of larger speakers, and instead have to concentrate on getting the first harmonic and overtones to punch through if they're to be heard in the mix.

CONCLUSIONS

The midrange detail is surprisingly good for such inexpensive speakers; the extreme highs are not as well represented, but that's expected from a single-driver system. While they're reasonably efficient (93dB @ 1W/1M), they seem best suited for moderate playback levels — when I cranked them up past 95dB they started to sound fairly compressed, as is typical of small, sealed enclosures.

I had a lot of fun with the MixCubes, and I'll be purchasing the review units. They're cooler than a boombox, have a five-year warranty, and are very reasonably priced. Are they going to replace my ADAM S3-As? Not hardly — nor are they intended to. But if you're concerned about how your mixes will translate on smaller speakers, check out a set of MixCubes and "get back." EQ



Product Type: Nearfield reference monitors.
Target Market: People who want a secondary speaker system to hear how their mixes will sound on limited-bandwidth playback systems.
Strengths: Good midrange clarity. Honest "small system" real-world reference. Very affordable.
Limitations: Not intended for use as your only monitor speakers, nor for ultra-high SPLs.
Price: $169/pair.
Contact: www.avantelectronics.com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MXL V67i MICROPHONE

If two heads are better than one, then . . .

by Phil O'Keefe

The inexpensive large diaphragm condenser mic market has seen an explosion of new products, making it difficult for companies to differentiate their products from the competition. The MXL V67i's clever design doesn't use identical dual diaphragms to provide multiple polar patterns, but instead uses two differently-voiced cardioid capsules, one on each side of the mic. The goal: provide two unique and useful sounds from a single mic.

Upon opening the included velvet-lined wood storage box, the V67i looks like a normal large diaphragm condenser. Sure, the gold-on-green color scheme is striking, but the main difference is those dual 1" capsules. Look closely, and you'll see engraving at the bottom of the grille, with the front labeled "Wm" and the back labeled "Brt." You select which side of the mic is active with a small switch; depending on its position, one of two red LEDs on either side of the mic (just inside the grille) lights up once it receives the required 48V phantom power. This makes it obvious which side of the mike is "hot." The extra visual feedback is welcome, especially under low light conditions — and the geek in me thinks it looks cool, too.

The back of the mic has two switches, a –6dB pad and a low frequency rolloff. Unfortunately, there's no mention of the slope or knee frequency in the two-page manual, but it sounds like it kicks in around 100–150Hz, with a fairly gradual rolloff. It definitely helped reduce the proximity effect when getting in really close.

An included clip attaches to the bottom of the mic body and does a good job at holding the mic where you put it; but as the mic is still somewhat susceptible to stand-borne vibrations (even with the rolloff), I recommend the optional shock mount. The only other included accessory is a brief microphone guide booklet, which offers basic tips on mic placement and use to help get a novice recordist (the V67i's main target market) up to speed.

APPLYING THE V67i

So do the two different sides of the V67i really sound different? Yes. The "warm" setting seems flatter on the highs, with more bass extension below 150Hz, while the "bright" setting has a wide boost to the highs, with a very noticeable presence peak in the 8–10kHz range. I tried the mic on vocals, acoustic guitar, and guitar amps — probably the areas where it will see the most use in the average home studio — and being able to choose between two different sounds came in handy. I generally preferred the more neutral "Wm" setting for most vocals, but the "Brt" setting can be useful with a deep-voiced singer who needs the cut through a busy mix. That setting also brought out the articulation on an acoustic guitar with an old set of strings.

I also used the pad and "Brt" setting when recording some loud, overdriven guitar amp tones. When paired with an Audix i5 dynamic mic, the V67i blended well as an additional tonal color, delivering extra sparkle and sheen. I didn't have a chance to test the V67i with drums, but I'd be concerned about getting it into stick range — while the fine mesh gold grille looks good, it's pretty thin; you can see it flex if you poke it with even a slight amount of pressure. One good stick hit could result in at least a dented grille, or worse, a dead mic. As noise was not a problem, though, it would likely do okay as a compressed drum room mic.

CONCLUSIONS

The two distinct tonal flavors, and resulting flexibility, will be appreciated by those on limited budgets who need both a neutral and bright mic. The cardioid pattern is fairly wide, so if your room acoustics are lacking, getting it in close to the sound source will help reduce the pickup of unwanted room reflections and off-axis sound. The mic seems solid and well-engineered, which makes the flimsy grille perplexing when compared to the overall build quality. But the sounds are there, even when compared to the competition, and I would have no hesitation recommending the MXL 67i as a versatile, first or second condenser mic purchase for those on a tight budget. EQ

Product Type: Dual capsule, large diaphragm cardioid condenser mic.
Target Market: Those with limited budgets and mic options who want more than one sound from a single device.
Strengths: Two distinct and useable tonal flavors. Inexpensive. LED indicators look cool.
Limitations: Head grille a bit thin and flexible, and easily dented.
Price: $199 list
Contact: www.mxlmics.com

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SONY ACID PRO 6.0

Acid has gone on its own trip — and it's a good one

by Sam Wheeler

Acid has come a long way since its humble beginnings as a 4/4-only loop-based software sequencer. I first got on with Acid Pro 2.0 back around the dawn of the millennium, and found it remarkably capable for recording stereo or mono tracks, as well as arranging loops. Its ability to do on-the-fly loop time stretch/compression, pitch transposition, or both, all with a graphic waveform display that sure beat messing around with the jog wheel on my antiquated hardware samplers, were unique at the time.

Although Acid didn't do MIDI until version 4 (nor did it do MIDI particularly well), and originators Sonic Foundry never leveraged its hard disk recording capabilities beyond recording one stereo track at a time, the excellent user interface, powerful editing features, and relative versatility and affordability were the main draws for most users.

As other DAWs began adding loop functionality, Sony kept their competitors in check by including ASIO compatibility, video and surround sound support, and ReWire functionality. I didn't upgrade until last year's V5.0, by which point Sonic Foundry had been acquired by Sony, and the application had already evolved into something far more than just a loop sequencer: Sample rates up to 24-bit/192kHz, enhanced file compatibility, greater overall versatility, and plug-in support took it out of being just a "groove" program.

So, I was not entirely surprised when Sony announced the arrival of Acid Pro 6.0 as a full-fledged DAW. And it is: V6.0 is more like a makeover than an update, adding in-place MIDI editing, external controller support, multitrack MIDI and audio recording, VSTi parameter automation, MIDI track envelopes, automatic keyframes, and even a custom edition of Native Instruments' Kompakt — a very nice deal, especially given the price. You can see the full list of features at www.sony.com/mediasoftware.

APPLYING ACID

Why would anyone choose Acid over other DAWs? For groove-oriented musicians, the answer is obvious: great looping capabilities and loop editing, along with all other traditional DAW functions. But it's also an audio-for-video powerhouse. Given some decent loop libraries, you can throw together soundtracks almost as fast as you can paint in loops, and alter tempo to match up with hit points. Did the producer cut a few frames? Speed things up a bit. Acid's audio engine was greatly improved in V5.0, so stretched audio sounds better than ever. And even if you don't care about looping, Acid delivers almost all the same features as the "big DAWs" for less money.

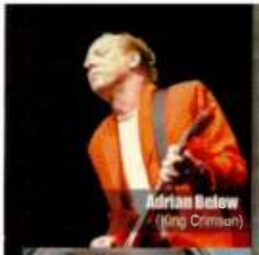
In keeping with its stretching orientation, Acid has redone MIDI (the original way to stretch time and pitch). In fact, the most surprising and impressive new feature for me is the MIDI sequencing. ACID Pro 6.0 provides the same precise control and editing on MIDI tracks as it does on audio, with the same basic interface. This is great for setting up MIDI backing tracks and being able to transport them to other MIDI instruments. As if that weren't enough, the Sony ACID Pro Edition of Kompakt provides a host of instrument sounds, and works seamlessly within the Acid interface.

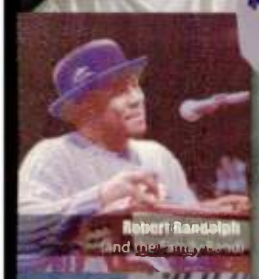
My Pentium 4 laptop runs XP Pro at 3.2GHz and has 1GB of RAM; I was able to run over 30 tracks at once (audio, MIDI, and virtual instruments combined) with no problems. It takes a while to build the graphic image of the tracks when you scroll through the tracks afterward, but its recording process is flawless, even when monitoring with effects.

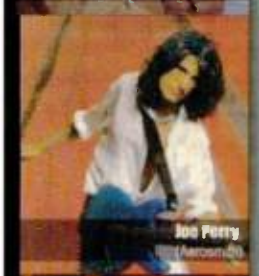
So how much can you record at once? I brought over two associates with diverse talents to play various acoustic instruments into an array of five mics, plus direct inputs from five analog electric instruments, plus two tracks of MIDI (one from the keyboard, one from the drum machine) *and* a stereo S/PDIF feed from the DJ mixer. We ended up making a fearsome racket, like three dueling one-man-bands all trying to get as many things going at once as we could. Unfortunately for any potential listeners, the software had no problem recording every nuance of our asinine behavior and playing it back precisely — with not one stutter.

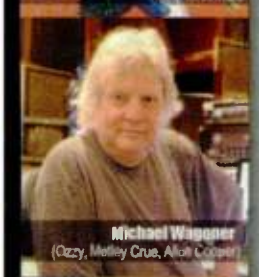
Dumping effects onto these tracks by the barrelful did slow things down a bit on my machine, but there really isn't any need to use four different reverb plug-ins at once, plus multi-tap delay, compression, EQ, and flanging on every single track in real life, is there? For more "normal" use, V6.0 runs smoothly and without hassle. A limited, admittedly unscientific survey sample (two other friends with older computers) indicates that the

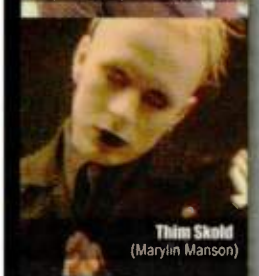
You're not hallucinating: Acid now features robust, in-place MIDI editing. Peeking out from the right side is the Sony edition of Kompakt, which is bundled with Acid 6.

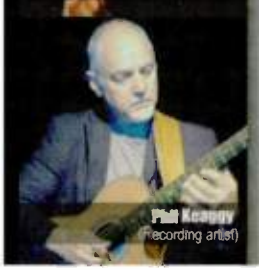












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Radial J48 Active DI - suggested list $199 USD
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Radial JDI Passive DI - suggested list $199 USD
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Radial X-Amp Re-Amplifier - suggested list $199 USD
Ever wish you could go back and change the sound of a pre-recorded guitar track? Now you can with X-Amp. When tracking, record a spare dry track and play it back through the X-amp after the guitarist has gone home. Two outputs lets you drive amps and pedals to create thick new textures. X-plosive.

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

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WRH

Acid software suite itself still has remarkable stability even on less robust systems (one of Acid's hallmarks has always been the ability to run on just about any computer with a pulse). The number of tracks that can be supported effectively does seem lower with lower processor speeds, but most home or laptop users will likely run out of inputs on their interfaces before this happens anyway. True pros with dual CPUs and outboard effects processing may, for all practical purposes, never run out of tracks.

Speaking of interfaces, all three of the main interfaces I use (RME MultiFace 2, E-mu 1616m, and MBox 2) worked just fine with V6.0, but of course, only one at a time. This versatility is important to me, as different interfaces have different strengths in certain applications.

CONCLUSIONS

This may sound a bit over the top, but I think Acid Pro 6.0 is taking aim squarely at the other pro DAWs. It may take some time to earn the same respect as some of the major, obligatory software suites (Pro Tools, Nuendo, etc.), but Acid has clearly stepped into a whole new league by keeping all the elements that made the program unique (ease of use in particular), while adding all the elements expected from today's advanced DAWs *and* upping the audio quality associated with stretching. Its ability to work with just about any file format or interface is another exceptional strength. In fact, given its stability and versatility, I expect to see Acid making ever-greater inroads into the professional digital recording world. Although the lack of a traditional mixing console view may irk some old school engineers, I don't miss it at all.

If this sounds good to you, Sony makes it easy for you to "get acidized" by offering a downloadable, full-function 30-day demo. If you liked Acid but drifted away, it's time to come back. If you've never used Acid before, you're in for a major surprise. Indeed, it's not just a DJ tool any more. EQ

Product type: Digital audio workstation for Windows XP or 2000 SP4.
Target market: Anyone who wants a pro-grade DAW with exceptional looping capabilities for under $400 street price.
Strengths: Support for high sample rates (up to 192kHz/24-bit). Powerful, easy-to-use interface. Can edit loop markers in Acidized files. Compatible with most major file formats and interfaces. Excellent multitrack and (finally!) MIDI recording/editing. Video and surround support. Bundled with Native Instruments' Kompakt Sony Acid Pro Edition. Comprehensive soft synth support.
Limitations: No notation. Doesn't support REX files. Lack of traditional console view may bother some.
Price: $499.95 list (boxed version), $374.96 (download).
Contact: www.sony.com/mediasoftware

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SE ELECTRONICS REFLEXION FILTER

Tighten your vocals with portable acoustic treatment

by Craig Anderton

I like things that solve problems. In my case, I'm in a temporary studio setup, but life goes on so I've still been cutting lots of narration and some vocals. Unfortunately, this is without the benefit of much acoustic treatment, so I do a lot of close miking or record into a DigiTech GNX4 (no moving parts) and transfer over to my computer. When the computer *has* to be on, I sometimes resort to using Audition's noise reduction to remove low-level garbage like fan noise. It works, but . . .

Enter the sE Electronics Reflexion Filter. It would seem ideal: Portable treatment for recording vocals and other single-mic sources. In practice? Here's the deal.

MECHANICAL FILTERING

The Reflexion Filter (RF) is a semi-circular baffle. It comes with a mounting arm that clamps on your mic stand and extends outward. There are two "spindles": One for mounting the RF, and the other for mounting mics in a standard shock mount. This all weighs a fair amount, and as the weight is to one side, you need a stable mic stand (or secure the base with weights).

Although sE emphasizes that the RF reduces the amount of energy hitting the walls and bouncing back into the mic, it also helps isolate the mic from external sounds (see Figure 1). If your mic has good back rejection, the RF makes it better.

The construction is high-tech, starting with a punched aluminum outer layer to diffuse sound waves. There are additional layers: wool, aluminum foil, an air gap, more wool, another layer of punched aluminum, and four panels of sound absorbers separated from the rest of the RF by a small air gap.

APPLYING THE RF

The review started with a problem: I have several older mics whose mounts are incompatible with the RF mounting bracket. But there was an easy workaround.

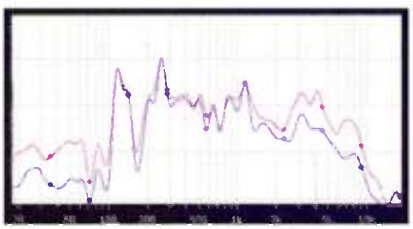

Fig. 1: The violet line is recorded background noise without the Reflexion Filter; the blue line is the same noise with the Reflexion Filter in place. The maximum variation between peaks is a little over 2dB.

Instead of mounting the RF on its designated spindle (see product picture), I mounted it on the mic spindle (the screw threads are the same), faced the RF toward the mic stand, and mounted the mic on the mic stand itself. It worked just fine, and when I asked sE about this, they didn't see any potential problems. If all else fails, simply use two mic stands: one to hold the RF, and the other for the mic. As long as the mic sits in the center of the RF's arc, it works as advertised.

When testing the RF with vocals, the sound was definitely tighter and less "scattered" than without the RF, as far fewer reflections were getting back to the mic. But I was pleasantly surprised that it's possible to "tune" the effect by sliding the mic (or in my case, the RF) along the mounting arm track. Putting the mic closer to the baffle deadens the sound more (but introduces some frequency peaks), while moving the mic further away "lets in" more of the room ambience. While I think the preferred position is best, the variability can come in handy.

I also recorded percussion. Tambourine in particular benefited from recording in front of the RF. Although I don't play wind instruments, sE mentions that the RF is well-suited to recording reeds/horns and provides additional isolation. Based on my experiences, that's easy to believe. Also, some singer/piano players use it to provide additional mic isolation.

CONCLUSIONS

If anything, sE underhypes the RF. Even in an acoustically-treated room, you can get additional isolation. I kept thinking about Lee Flier's August column on recording a band and not worrying about leakage: If she'd had a couple of these, leakage would have been even less of an issue. Overall, this is a clever and useful accessory that earns major "cool useful gizmo" props. EQ

Product type: Portable, single-mic acoustic treatment device.
Target market: Smaller studios with less-than-ideal acoustics, in particular those doing close-miking of individual instruments and vocals.
Strengths: Tightens up recorded sounds. Portable. Relatively affordable. Also reduces ambient noise coming from behind the RF. Provides additional isolation when recording multiple mics.
Limitations: Requires a little ingenuity to mount mics not accommodated by the mounting system.
Price: $399 list
Contact: www.seelectronics.com

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- Bundled with Cubase LE

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INTEGRATED

FABRIK C
INTEGRATED

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UNIVERSAL AUDIO SOLO SERIES 610 & 110

If your checkbook says it can't afford the UA "sound," show it these

by Jeff Anderson

Up next, two of the absolute coolest pieces of gear to arrive in the *EQ* mailbox lately: The Universal Audio Solo/110, a precision class A mic pre and direct box, and Solo/610, a classic vacuum tube mic pre and direct box. Each of these portable units boosts the signal from a mic, or impedance/level-matches the signal coming from high-impedance instrument outs (*e.g.*, guitar or bass with passive pickups, and some older keyboards), to a line level signal. Add to this the celebrated UA sound, characterized by enhanced warmth and clarity, as well as that characteristic UA gloss, and you have two worthy — and rugged — additions to your studio.

The UA Solo/610 Classic Vacuum Tube Mic Pre & DI Box (pictured left) and the Solo/110 Precision Class A Mic Pre & DI Box.

OVERVIEW

The Solo/610 is derived from the Putnam UA-610 Console, and offers an XLR mic in and out, as well as a 1/4" unbalanced jack for direct inputs. As a direct box, the 610 has a 1/4" thru jack so that you can send the signal to an amplifier.

The front panel boasts the essential pre features: 48V phantom power, a low-cut filter, phase reverse, a switch to select between high and low impedance, and another switch to select either mic or DI inputs. On the back, you can choose a mic or line level output signal, and have the option to lift the ground.

The two huge knobs gracing the front panel (which add to the vintage aesthetic) control both gain and level — with an emphasis on the gain (of which there is an incredible range). This "range of gain staging" is how you effectively dial in the amount of gloss or color you choose to add to your signal. Unlike most mic pres and direct boxes, there is no input pad; but this is because UA has essentially built the pad into the gain control, allowing for precise, wide-range level setting.

The Solo 110 offers the same features and controls as the 610, with only one major difference: The 110 ancestry is UA's flagship Precision 110 mic pres, as opposed to the vintage tube console technology dropped into the 610. The Precision 110s (class A, all discrete pres) are known for their "ultra-fidelity" — a sound both clean and clear, yet still offering a wide tonal range, to deliver the warmth and beef associated with Universal Audio.

APPLICATION

I recently had the privilege of really putting the 610 to the test. The band I was working with wanted a "thick, phat, beefy, glossy tone" for their bass tracks, so of course it was time to utilize some old-fashioned tube technology. I plugged the bass directly into the 610, and then routed the signal into the bass amp using the thru jack. As the bassist played, I turned up the gain while simultaneously adjusting the level so as to not distort the signal to tape. The more I upped the gain, the thicker the sound — and once you really cranked it, you could get some great tube saturation, a finding that ended with the gain being turned nearly three-quarters of the way up. The tone was everything the band had voiced as their desire — thick and warm, while providing a perfect complement to the direct track and miked amp track we ended up mixing with the 610 track.

Shortly thereafter, I ended up using the 110 for a vocal overdub session, and was once again very satisfied with the color that it added to the signal. As we compared five mics to determine which was most appropriate for the artist, I noticed the 110 seemed to add a tremendous amount of much-needed color to the less expensive denizens of my mic locker. Sure, this application may be of limited use when you're running a very colorful, high-end mic. But for those on a budget, the 110 is great tool for warming up your vocal signal, as it can compensate for what your lower-end mics may lack in terms of tone.

CONCLUSIONS

The Solo 110 and the Solo 610 are each an extraordinary value, and a great addition to large studios and hobbyist spaces alike. Versatile in that they work well in many applications, both units double as mic pres and direct boxes. Each unit was designed for portability and, due to the tank-like exteriors, can be placed confidently in the live room with even the most rocking of bands. Both pieces offer that warm, fat, and unique UA sound for both mic and line signals at a fraction of the price compared to the equipment from which they were derived.

Product Type: Solo/110 Precision class A mic pre & DI box, Solo/610 classic vacuum tube mic pre & DI box.
Target Market: Those desiring that characteristic UA sound without spending an arm and a leg.
Strengths: Exceptional value for money. Great tones. Portability.
Limitations: Not rack mountable.
Price: $799.00 each list
Contact: www.uaudio.com

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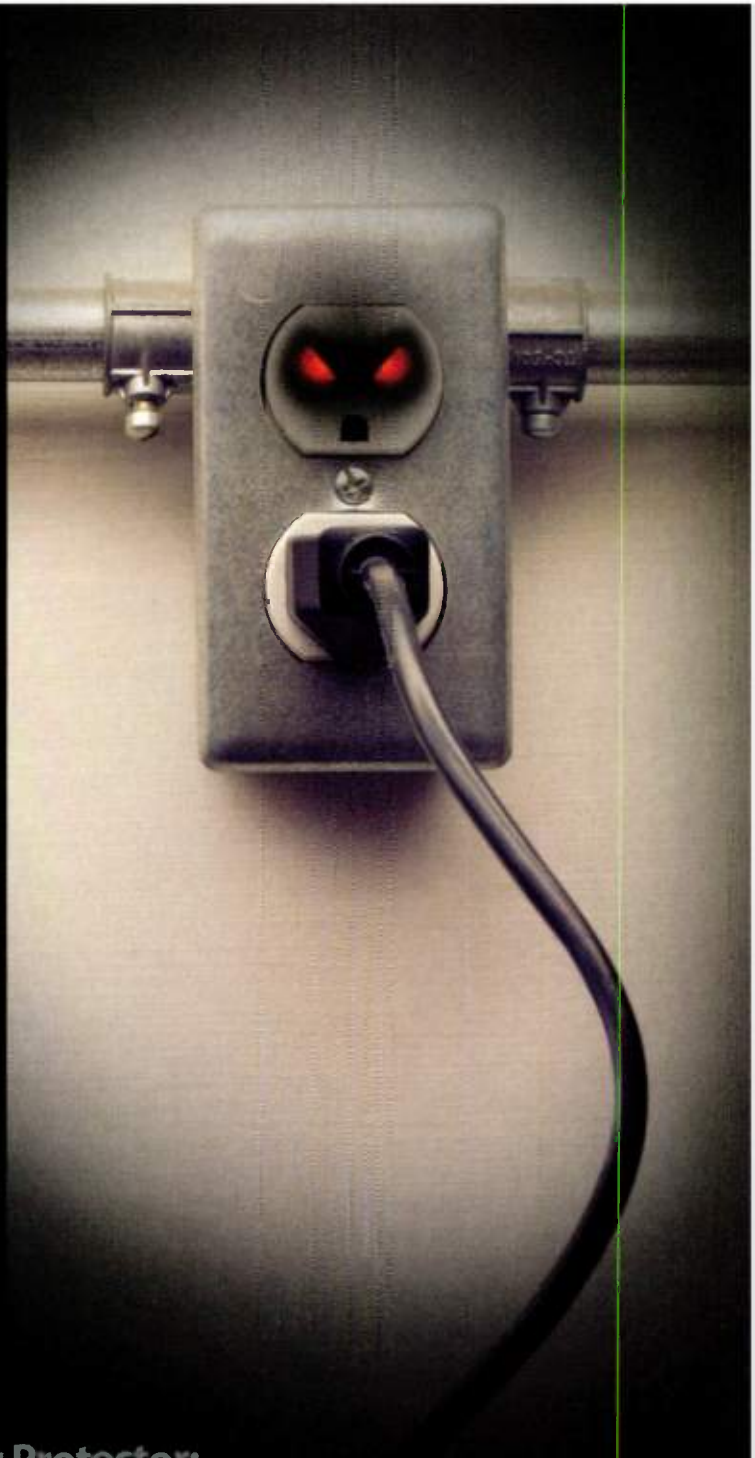

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MOTU ETHNO INSTRUMENT

There is truly a world of sounds out there . . .

by Craig Anderton

Bias alert: I'm a sucker for world instruments. They can add just the right amount of spice to otherwise ho-hum dance tracks. Elsewhere, hip-hop is folding in more ethnic elements (particularly Middle Eastern flavors). Bhangra is even working its way into the mainstream.

Ethno Instrument (EI) is a cross-platform plug-in/standalone instrument with a 4GB library of keyboard-mapped sounds and 4GB of loops (for the specs, visit www.motu.com). It's quality all the way: The samples are well-recorded, looped, and mapped.

EI searches for installed components during installation (but not afterward), so if you have big hard drives, the program may seem frozen. It isn't — be patient. As for copy protection, the program uses iLok.

APPLYING ETHNO INSTRUMENT

EI is a one-stop instrument, with 64 parts and 17 stereo outs. If you need to instantiate multiple instances (which you can do), you probably need a course on arranging. As such, it's a "program within a program" when hosted in a DAW, and is also quite complete as a standalone device. Parts can stream from disk or load into RAM to strike the best balance of disk and RAM usage.

The selection of instruments covers a wide range of styles and geographical locations, and the browser makes it easy to select loops or instruments. Most of the instruments have limited ranges that match the instruments being sampled; I would have preferred to have the lower and upper limits stretched — I don't always want authenticity. In any event, transposing the samples is a workaround. Better yet, it would have been nice to fill up those empty keys with idiomatic riffs and articulations.

For those who do enjoy warping things, there's a synth engine with filter, amp, LFO, EQ, etc. Nice. And you can do MIDI automation, as well as "MIDI learn" for external control. Furthermore, you can apply velocity and keyswitching to layered instruments.

The Plate algorithm's Advanced mode has buttons to select various editing screens.

But the big deal to me is the way EI handles loops. The concept of slicing a loop into pieces and assigning each slice to a keyboard key is not new, but it's particularly applicable here as you can create expressive variations on loops. You can also drop and drag loops (as MIDI data or audio that tempo syncs — very cool) into your instrument tracks. After dragging MIDI data, you can edit it to create useful variations. Again, this isn't necessarily a new concept; many programs treat REX files this way. But the execution here is superb. Even with extreme stretching, sound quality remains intact. Granted, the loops are stretch-friendly to begin with, but that doesn't minimize the work that must have been put into the slicing process.

EI also includes a convolution reverb, and particularly in standalone mode, strengthens the "one-stop" vibe. It's bus-based, so each part can have different amounts of reverb, and adds value to the package.

Finally, it's worth adding that the 120-page printed documentation is excellent. It not only takes you through all aspects of the program, but almost half the manual is devoted to describing the instruments and listing the various sounds and patch mappings.

CONCLUSIONS

The main competition for EI is East West's Ra, which lists for over three times as much but has a 14GB library. I think Ra is great (and it includes more variations in articulations), but EI is so compelling — and handles loops so well — that it's an excellent program by any standards, not just with respect to cost-effectiveness. I have the same kind of feeling with EI that I get from Stylus RMX, in the way that you can throw loops together and end up with cool rhythms and patterns; just layer some instrument parts over it, and you're good to go. (The audio example at www.eqmag.com is a little African-flavored riff I threw together in about 15 minutes — that's how easy it is.)

Just as cooking benefits from the occasional exotic spices, so does music. At this price, and with this kind of library, Ethno Instrument is a superb (and painless) way to get into world-class world sounds.

Product type: Plug-in/standalone instrument for MAS/VST/RTAS/DXi/AU; MacOS X 10.3.9 or later, Windows XP.
Target market: Studios needing easy-to-use, cost-effective ethnic sounds; stage musicians who use a computer.
Strengths: Handles loops exceptionally well. Lots of variety. Tempo-matching drag-and-drop loop integration with host for both audio *and* MIDI. Includes convolution reverb. Synth-based processors for editing.
Limitations: More samples of articulations would have been welcome.
Price: $295 list
Contact: www.motu.com

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ADAM A7 NEARFIELD MONITORS

The Adam for the rest of us

by Craig Anderton

I don't like to review speakers, because past a point, you're dealing with quantitative rather than qualitative differences. To use an analogy, take two beautiful women. One has superb eye makeup, the other, exceptional hair styling. You can't really say one is more beautiful than the other — just that one has better eye makeup, while the other has better hair styling. And even that's in the eye of the beholder.

But to carry the analogy further, what intrigues me about Adams is they're like a woman who looks great *without* makeup. I first heard Adam speakers at the Frankfurt Messe many years ago, and they had a certainly quality that made me take notice. It's too easy to use words like "transparent," "detailed," or "open," because a lot of speakers do that. It was the high end: You know what an acoustic guitar sounds like when someone plays it in your room? The Adam's highs had a kind of "this is the *instrument*, not a reproduction of the instrument" sound that appealed to me instantly.

So I asked about the price. My credit card looked at me with shock and dismay. I filed Adam speakers under "maybe someday, when I'm rich." Well, someday is here, and you don't have to be rich. The A7s sell for under a grand per pair, but they sound like they cost a lot more.

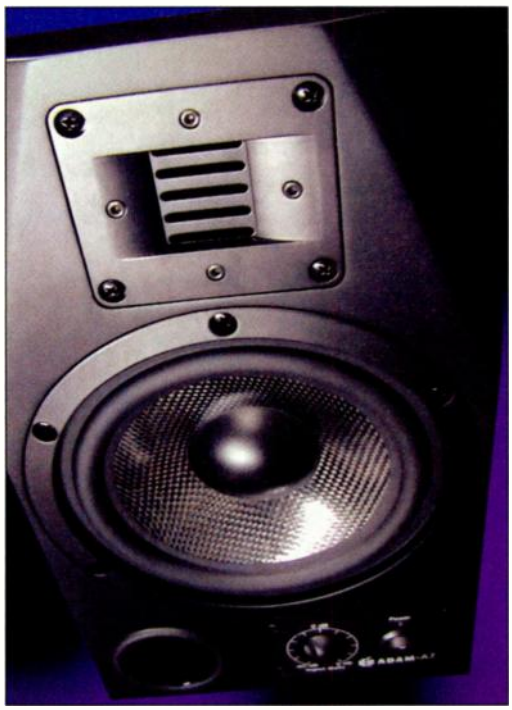
Another Frankfurt story, this time from 2006: I had heard about the A7s, so I went to the Adam booth. They had a display with a bunch of their speakers, from the Big Guys to the Little Guys, with a switchbox for A-B comparisons. I heard that unmistakable Adam sound, and thought I'd check out how the A7s compared. So I asked the representative to please switch over to the A7s instead. "They *are* what you're hearing," he replied.

That did it.

THE SPECS

You're adults and know how to use computers, so go to the Adam website for details. The short form is two-way active monitor, 50W amp per driver, some woofer voodoo, and Adam's proprietary tweeter.

That tweeter is responsible for what I consider the "Adam sound." The website explains how this works; to paraphrase, it squeezes air out like an accordian instead of pushing air out like a piston. Whatever; I'm not sure I get the concept, but I can definitely hear it.



My only beef is that although there's a balanced XLR in, the unbalanced in is RCA. I know the tech reasons — you can't short out an in or out when plugging into an RCA — but I would have preferred a combi LXR+1/4" input.

APPLYING THE A7

I won't utter the usual speaker review cliché of "It revealed sounds I never heard before!" — because it didn't. But playing a variety of mixes through the Adams did highlight the *differences* between those mixes to a greater extent than other speakers. In other words, the Adams did not impose their personality onto the mixes; the *mixes'* personalities imposed themselves on the Adams. The Adams just pass along the mix to your ears, without making value judgments, tarting it up, or dressing it down.

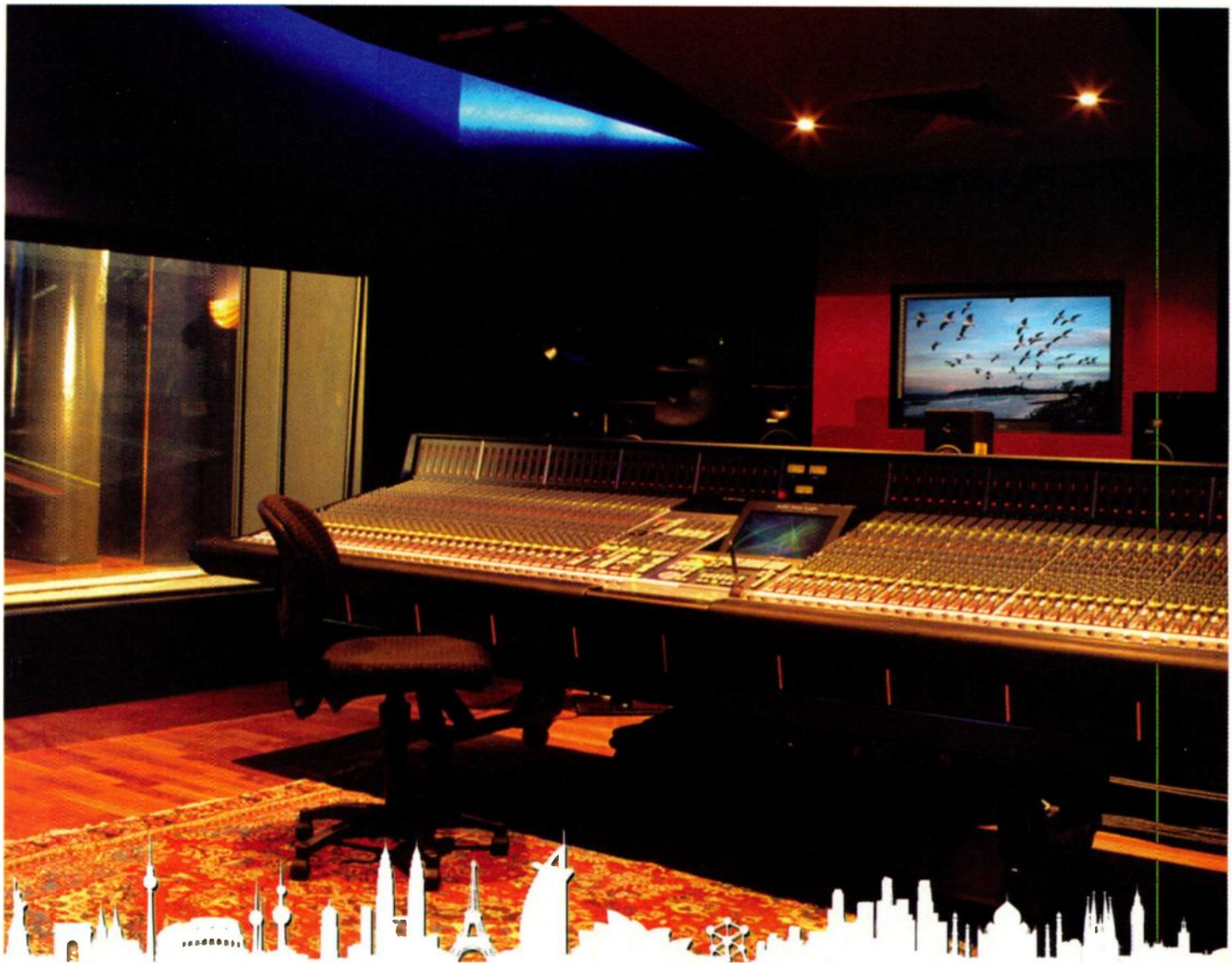
I've already described the high end, but the lows are surprisingly forceful and accurate for such a small speaker. The balance among highs, lows, and midrange sounds close to textbook-perfect; what you hear is what you mix, and while that can sometimes be unflattering, it also means that a mix that sounds good on the A7s will transport well.

In practice, I never had much of a problem with transportability. I used my knowledge of a set of speakers, and spectrum analysis as a reality check for when I didn't totally trust the speakers, to produce mixes that my clients felt were extremely transportable. But with the A7s, you don't have to *work* to create transportable mixes: They just happen.

CONCLUSIONS

Although I've met only a handful of people who didn't like Adams, I've met a ton of people who couldn't afford them. However, the A7 isn't a "lite" or "budget" version; it's a great speaker that, frankly, makes it hard to justify spending more. Granted, nearfield speakers in general have never been better, or more cost-effective. Still, even in a crowded field where the bar is set high, the Adam A7 sets the bar just that much higher. They're sweet, detailed, accurate, and affordable. Bingo. EQ

Product type: Nearfield monitoring speakers.
Target market: Project studios, higher-end home studios.
Strengths: What you hear is what you mix. Less expensive than previous Adams, with no drop in sound quality. Uncanny realism in the high end; tight low end.
Limitations: No 1/4" input for unbalanced (RCA only).
Price: $999 per pair.
Contact: www.adam-audio.com



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Nu Metal City

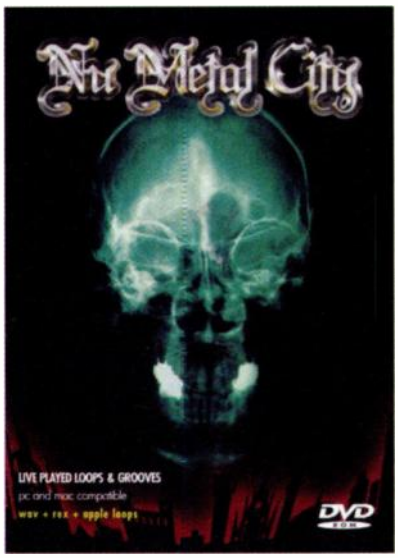
Contact: Big Fish Audio, www.bigfishaudio.com
Format: DVD-ROM with 30 construction kits in three formats: WAV, REX, and Apple
Loops: 16-bit/44.1kHz
Price: $69.95

Averaging around 23 files per construction kit, *Nu Metal City* has the usual Big Fish format: a mix file with all elements, and each element broken out separately. Because it's Nu Metal, you'll find some scratches and synth textures, along with power drums, snarling basses, and buzzsaw guitars.

The loops are all played live by real humans, which gives them an authentically killer vibe — although the downside is that sometimes the timing doesn't line up precisely when you're mixing loops from different kits. *As if you care:* This is about crushing the listener, not finessing him, her, or it with metronomic precision.

The music spans the range from heavy and powerful, to sounds capable of destroying rodents at 30 feet (or perhaps are part of some CIA mind control experiment). You can often rely on a single kit to get through a couple minutes; but if you want to go longer, you'll probably need to combine elements of different kits. However, some of the stylistic, tempo, and key variations discourage a mix-and-match loop mentality, so putting together a long or complex piece takes more work than usual.

But so what? The proof is in the sounds: Go to www.eqmag.com and check out the demo I put together. First, though, sign the document releasing me from all liability. You've been warned. —*Craig Anderton* EQ



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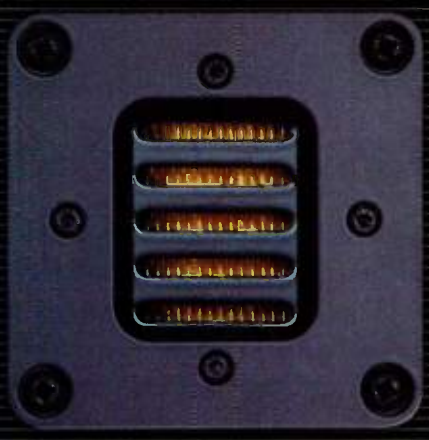

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8-Bit Family II

Contact: Discovery Sound, www.discoverysound.com
Format: CD-ROM with 267 REX2 loops, 277 Acidized WAV loops, 27 Kontakt .NKI files, R55 Reason .RNS files, and 1 Battery .KIT file; 16-bit/44.1kHz
Price: $55

If you like the Casio VL-Tone, video games, Commodore sound chips, bloops, noises, and scronks, you've found heaven. But if you hate the lo-fi, 8-bit memories of a bygone era when waveforms varied all the way from pulse to square (with an occasional dose of sine) — better turn the page.

It's impossible to audition this CD without smiling. Despite the premise, this is a serious project. There's a broad array of sounds, from Pac-Man-type gobbling to what sounds like outtakes from "Da Da Da." And, there are plenty of those totally weird arpeggio thingies that were the hallmark of video games.

So, how do you use this musically? Good question. The sounds are so idiomatic, and so evocative of a particular time, that you're locked into a time warp as soon as one of these samples appears. But as contrast/relief in a dance track, a goofy interlude in a comedy flick, or a left-field element in an otherwise, uh, "normal" track, these samples get their game on — literally. Some of the "mix" loops make pretty good breaks for any kind of music; and it would make sense to layer some of the drum loops right in with heavy rap drums, especially if you do a little downward pitch-shifting to make some of the toy-like sounds more substantial.

Okay, I admit it: I love this downright charming CD, which isn't just old school quirkiness but also lets you use the sounds with tools like Reason. Check out the audio example I created at www.eqmag.com; if it spins your crank, you're gonna flip when you hear what this baby can really do. —*Craig Anderton* EQ

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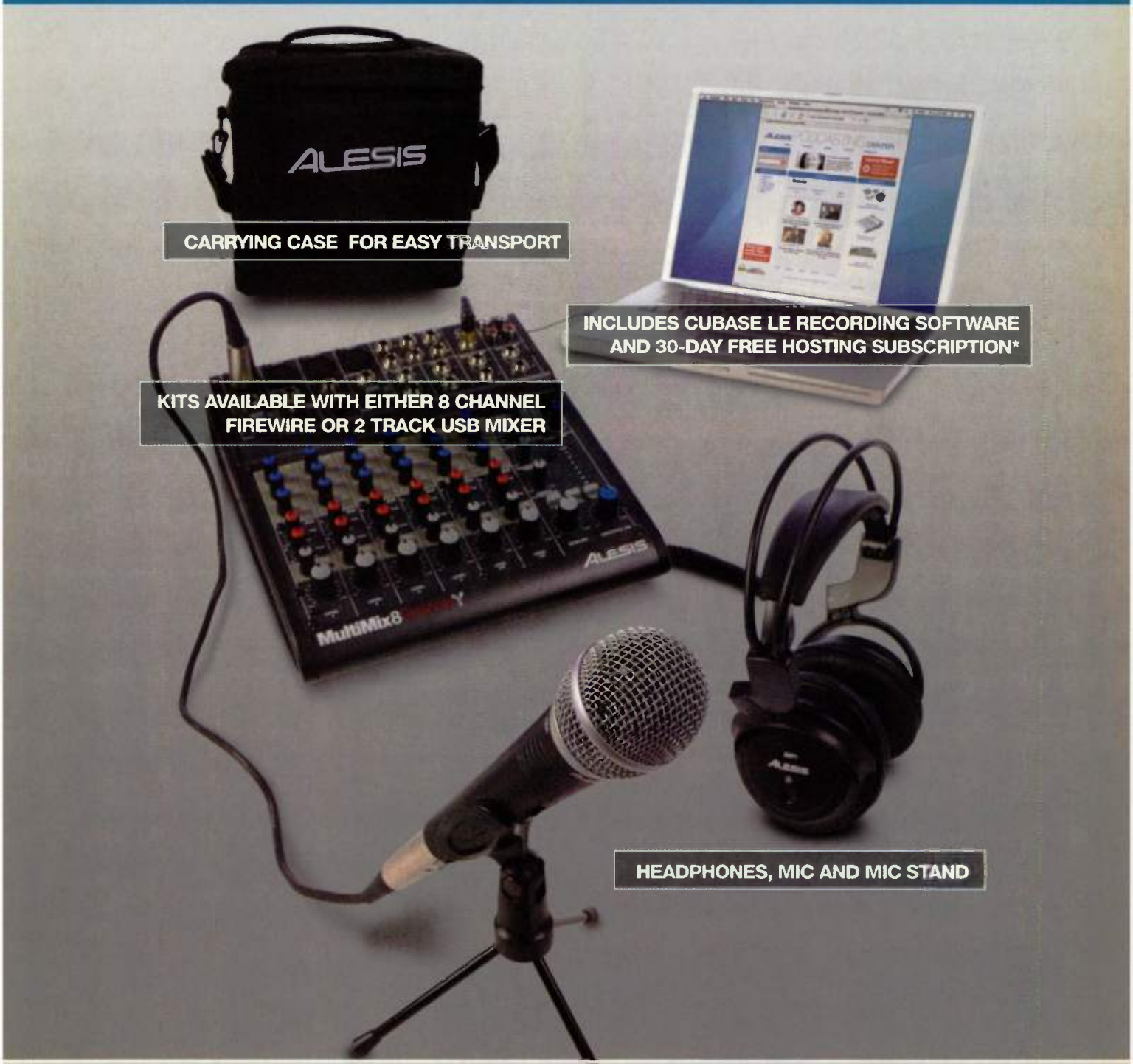

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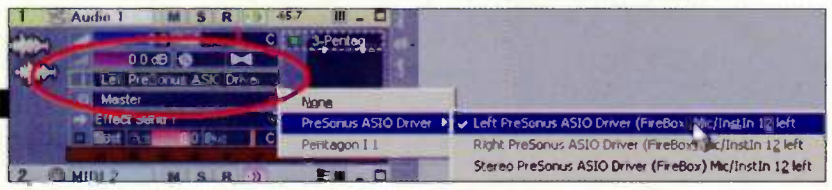
Power App Alley
by Craig Anderton

CAKEWALK SONAR 5

There's a versatile vocoder lurking in Sonar's Producer Edition

OBJECTIVE: Use the Pentagon I soft synth as a vocoder.

BACKGROUND: The Producer Edition of Sonar 5 bundles the Pentagon I soft synth from rgc:audio; one of its little-known features is the ability to do vocoding. The Pentagon I provides the carrier, while an audio input or audio track provides the modulator. Here's how to set up Sonar for vocoding.



steps

1. Right-click in an audio track FX bin and select Pentagon I from the Soft Synths category.

2. Create a MIDI track, and assign its output to the Pentagon I.

3. Assign the Input of the track hosting the Pentagon I to the audio interface input to which your mic connects.

4. Turn on the Input Echo function. This sends the track's audio input into the Pentagon I's vocoder.

5. Select the bank containing the Pentagon I patch you want to use as the carrier, then right-click on the Pentagon's front panel to select a patch from within the bank.

6. Click on the Pentagon I logo, and set Voice Modulator to "on." Hold down a chord to trigger the Pentagon I, speak into your mic, and you'll hear the vocoder effect.

tips

- Use a patch that's rich in harmonics for the most realistic vocoder effect.
- You can load or record audio into the track hosting the Pentagon I, and this can serve as the vocoder's modulator. Input Echo does not need to be on in this case.
- For a more "vocal" effect, click on the Pentagon I logo and set Formant Filter to "on."

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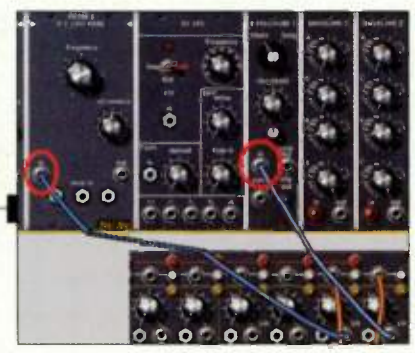
Power App Alley
by Craig Anderton

ARTURIA MOOG MODULAR V

It's not just a synthesizer, but a signal processor

OBJECTIVE: Process external signals using the Moog Modular V's modules.

BACKGROUND: Arturia's Moog Modular V isn't just a fine modular synthesizer, but a signal processing playground for all types of signals. This simple application shows how to use it as an envelope-followed filter, but this only hints at the many possibilities.



steps

1. Select the audio input to be processed. In stand-alone mode, select the audio interface input and output; with a DAW host, insert audio you want to process into the instrument track hosting the Moog Modular.

2. The Envelope Follower doesn't default to being in the synth. Right-click on the label for an Envelope module (*e.g.*, Envelope 1) and select Env. Follow. 1 from the pop-up menu.

3. With lower-level external ins (*e.g.*, guitar), you'll need gain. Patch the external audio signal to two mixer module inputs (these should not be linked).

4. Patch one mixer output to a Low Pass Filter audio input. Patch the other mixer output to the Envelope Follower input.

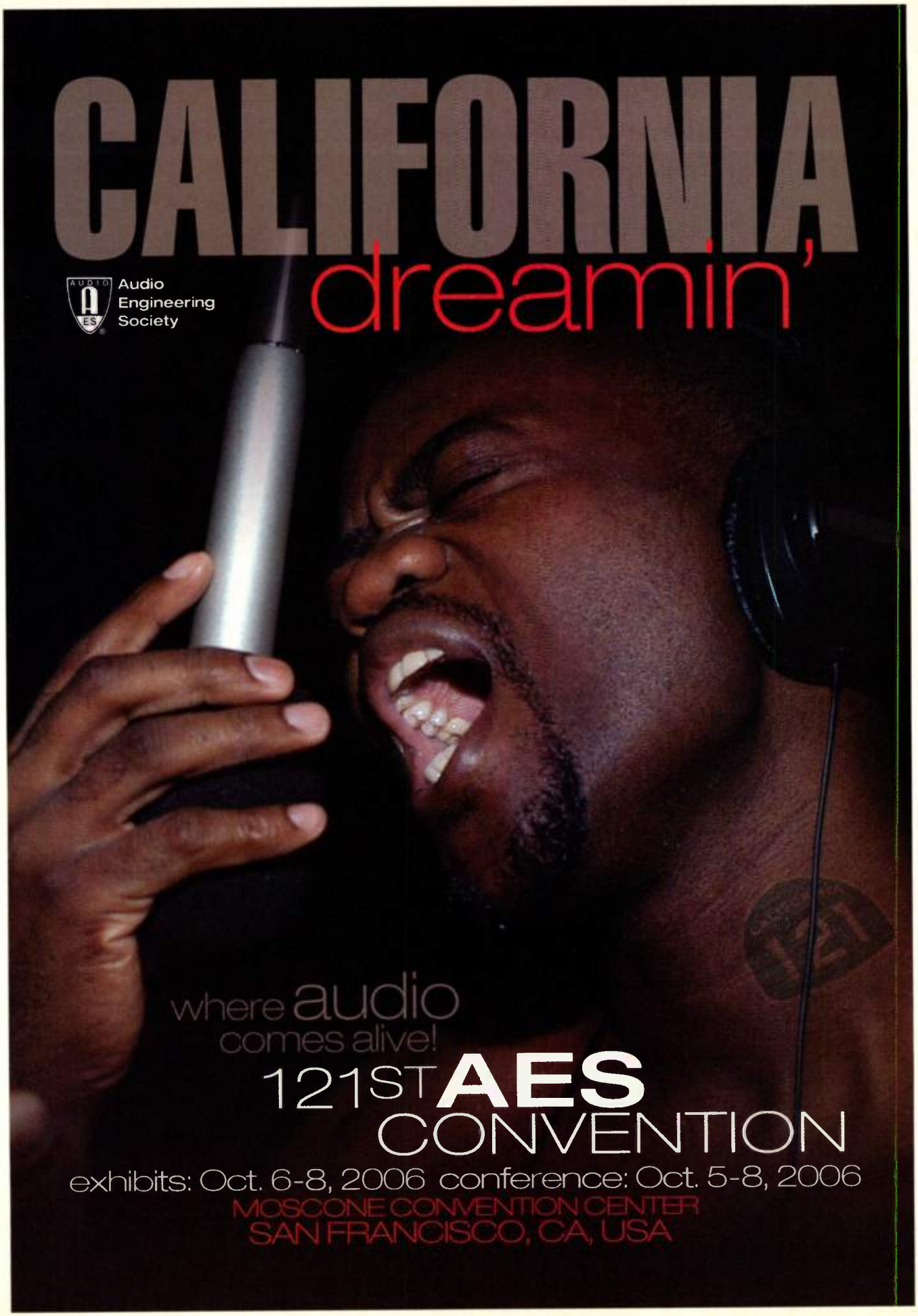
5. Patch the Envelope Follower Cont Out to the Filter Mod In, then click on the mod in jack and drag up to turn up the modulation amount.

6. Patch the Filter Output to a main Envelope input. Set the envelope controls to Attack = 0, and Decay, Sustain, and Release to maximum (full clockwise).

7. Play a key on your MIDI controller, or the Moog Modular's virtual controller; this will open up the main Envelope, thus opening up the associated VCA and allowing you to hear the audio input. Tweak the filter, mixer, and envelope follower controls as desired.

tips

- For the tightest envelope tracking, set the Short/Long control to Short and use the minimum Time Control setting that doesn't give "ripple" (usually about 15 ms).
- It's generally best to turn off keyboard tracking to the filter (choose No instead of K1, K2, K3, or K4).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by Phil O'Keefe

THE PURSUIT OF CLEAN TRACKS

Playing in the mud can be fun, but not always

Last year, I had the pleasure of recording Julie Day's debut album (www.julieday.org). Julie wanted the sound of a small jazz combo playing in a small, intimate environment. Most tracks were recorded live, with drums, upright bass, rhythm guitar, and piano, usually recorded simultaneously, along with a scratch vocal. Lead vocals and some solos were the main overdubs.

Due to the relatively sparse arrangements, any noise on individual tracks would definitely stick out, so keeping things *clean* was a priority. Here are some of the steps we took to make sure we had truly "sanitized" tracks. (Also refer to my column in the August issue, "You Want Good Sound? Go to the Source," which deals with getting good sounds before you even hit the record button.)

BE QUIET!

Isolation from outside noise is crucial: While you may be able to edit out some noises, that's not always possible, and rarely ideal. If your regular room suffers from outside noise problems, try to record during quiet times, move the essential gear to an alternate location for the tracking, or rent time in a different studio for recording really quiet tracks. Some other tips:

- Don't overlook noise sources and issues inside the room. Fluorescent lights and CRT monitors can cause hum or "hash" in electric guitar and bass pickups, and transformers can induce hum. But there are also some trickier issues. For example, in a post-production situation, video might be monitored on a standard NTSC television as a "reality check." Yet televisions produces a fairly loud signal at 15.734kHz (NTSC) or 15,625kHz (PAL or SECAM), so doing that little "fix-up" narration in the control room might well record the horizontal oscillator sound as well. The "sledgehammer" solution is a steep notch filter, but the easiest solution to a variety of problems is an LCD monitor, which doesn't emit the same kind of radiation (and also uses less electricity and gives off less heat).
- Avoid ground loops when connecting your equipment. Create some cables with the shield disconnected *at one end only,* mark them carefully, and patch them in one at a time to check if the "broken ground" can interrupt a ground loop (but never try to stop a ground loop by lifting the ground pin on an AC cord).

  Use high-quality AC line filters and conditioners (*e.g.*, from Furman, Equi=Tech, etc.) to reduce EMI and RFI noise that can come in over the electrical lines. If you measure the before-and-after noise of some pieces of gear, you'll find this can cut noise by several dB.
- Consider using close-miking techniques to achieve a higher sound source-to-noise ratio. The further the mic is from the sound source, the more preamp gain you'll need to get decent levels into your DAW. But also remember mic placement is always subservient to musical considerations. Because Julie's CD was a jazz project, I used the more overhead mikes as the drum sound's foundation (although I did fill them out with a bit of judicious close miking).
- Although you can bypass mic and preamp noise altogether with many instruments by recording direct, make sure you can afford to give up the "air" that recording from an acoustic sound source or amp delivers.
- Experiment with your keyboard's volume level, as most output controls have a place where they produce the best balance of strong signal and low noise — usually in the upper 20 percent of their range.

ALL THE GAIN'S A STAGE

Optimizing levels at each stage of the signal chain is vital. Too little signal at the start of the chain will require too much gain later on in order to get good levels to your recorder, which means added noise. Any self-noise that is present in the mics will be amplified and accentuated by the preamps, and especially by compression, as compression brings up the relative volume of any low level noise. The more of *anything* you put in the signal path, the more noise you'll hear. Less is more (and noise is cumulative), so unless there is a good sonic reason to stick something into the signal path — don't.

With Julie's voice, I used a Soundelux ELUX 251, Vintech Dual 72 pre, and a touch of Aphex 106 compression when tracking. We didn't need EQ going in, so we didn't use any. As we were going for a close and intimate sound, Julie used a soft and breathy voice, and I placed the mic in really close to capture the detail and intimacy we sought. Julie knows how to work a mic — leaning in closer for quieter passages, and pulling back a bit when letting it rip, which helps a great deal. If only all singers knew good mic technique, engineers (and gear) wouldn't have to work so hard.

The compression wasn't slammed; on average I kept it to 2–4dB of reduction on the peaks, and never more than 6dB. I could have done away with the compression and had a bit less noise on the vocal tracks, but the slight increase in noise from the compression was a worthwhile tradeoff to achieve a more intimate and detailed vocal where you could hear all the nuances of Julie's singing. The goal is to be musical, so I'd rather have a musical track with a hint of noise than a completely clean track that isn't as musical. As you all know, making a record involves thousands of tradeoffs.

Next month, we'll cover a few more ways to "keep it clean," with an emphasis on working in the digital domain. 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, or via the Studio Trenches forum at www.harmony-central.com.

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by Michael Molenda

WIDE OPEN SPACES

Stereo miking tips for speaker cabs

Last issue, we dealt with monaural miking concepts for guitar speaker cabinets using one or two mics. Now, we'll move on to more expansive and dimensional sonic strategies involving stereo mic placement. For this mission, a diverse collection of mics definitely improves your creative options. You don't have to acquire the armament of a big commercial studio, but it helps to have two large-diaphragm condensers, one or two dynamics, and an affordable ribbon in your trick bag.

ENVIRONMENTAL ISSUES

We discussed the importance of listening for the effects of different sonic spaces last month, and that task is arguably even more critical for capturing expansive stereo spectra than for documenting the predominantly close-miked timbres achieved through conventional monaural miking. You see, what's cool about a stereo sound field is that it's animated — the sound blossoms and moves and bounces between the left and right perspectives to produce ear-catching textures. Of course, the quality of your room determines how much "animation" is audible, and small spaces present more challenges to documenting spacious sound than large rooms.

But whether you're blessed with a huge basement or damned by the confines of a dinky bedroom, careful listening to every nook and cranny of your recording space can provide valuable perspective when you start positioning mics. So before you pull out your microphones: Blast that amp and cabinet, walk around your recording space, and take note of the areas where the sound is utterly beautiful, where it sucks, and where interesting sonic anomalies occur. When you get down to actually positioning microphones, pay heed to your notes, and put those mics where they're going to do the most good. Here are some basic recipes from which to launch your efforts. Don't forget to experiment fearlessly, and don't be a stereo wimp — stereo effects are maximized when you record each mic position to a separate track, and then mix the two tracks hard left and hard right.

AUDIENCE PERSPECTIVE

- **Mic Types:** Two large-diaphragm condensers set to their cardioid patterns.
- **Position:** Pretend your two condensers are the ears on a giant's head, and the mammoth cabeza is facing the speaker cabinet. (Those with somewhat vivid imaginations can envision the cabinet as the tip of the giant's nose.) Place each mic five to 10 feet from the center point of the cab, at a distance of approximately 10 feet.
- **Tonal Characteristics:** A pretty organic — and rather "wet" — stereo picture. The characteristics of your room will determine the timbre and amount of ambience, as will the volume at which you're driving the guitar amp. This is a good choice for live-sounding tracks, and a rather hopeless option if you're looking for a dry punch.
- **Variations:** If you're using multi-pattern mics, click the two condensers to their omni settings to increase the sense of depth.
- **Ear Training:** While maintaining a basic left-right perspective, move one mic forward or back — or a bit wider out — to seek favorable changes in ambience or overall tone.

STAB & DANCE

- **Mic Type:** One dynamic and one condenser or ribbon mic.
- **Position:** Position the dynamic right on the cab's grille, pointing at the center of the speaker cap. Place the condenser (or ribbon) — set to its omni pattern — at least seven to 10 feet away from the front of the cabinet. Move the condenser farther to the right or left to taste.
- **Tonal Characteristics:** The dynamic provides the "stab," or attack. The condenser is the "dancer," delivering an ambient texture. When each track is mixed hard left and right, the effect should be a vicious punch in one speaker, followed by a nasty, but sensual wash in the other speaker. The feeling of natural movement is yummy.
- **Variations:** Try different dynamic models to fine-tune the midrange or low-midrange punch. Move the condenser or ribbon farther back to increase the slight time delay between the initial attack and the onset of ambience.

ORGANIC SNAP & SHINE

- **Mic Type:** One dynamic and two small-diaphragm condensers.
- **Position:** Close-mic one of the cab's speakers with the dynamic. Place the two condensers approximately seven feet from the cabinet, with the mics positioned as an "x/y" (or coincident) pair — which means placed as close together as possible, with the rear end of the mics angled outwards at about 90°. The mics should look like an upside-down "V" for victory sign. (Note: The x/y position diminishes the "hole in the middle" effect often produced by placing stereo mics very far apart, as in the "Audience Perspective" example.)
- **Tonal Characteristics:** A nice wallop from the dynamic that morphs into a tight, shimmering wash from the condensers, as small-diaphragm models typically enhance high end. Nice if you want to retain as much impact as possible, but subtly treat it with an organic ambience that sits nicely in the mix. 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 MI5 Recordings.

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OF AMPS AND SIMULATORS

What makes the ultimate rock guitar track?

by Lee Flier

It's no secret that amp simulators have found a home in hit records, TV and movie soundtracks, jingles, and onstage — in fact, in just about every pro situation (as well as in home studios). And why not? They're convenient, versatile, way easier to haul around than a stack of amps, consistent, require no maintenance, and can be used at 3 A.M. without disturbing your neighbors.

Producers love them because the guitarist can cut a track "clean" and the producer can choose the amp model during mixdown, offering unlimited sonic possibilities. Besides, most amp sims include effects, speaker and/or room simulations, and other paints for the tonal palette. Still not enough? Amp sims can bridge the gap between guitar and synthesizer, forging unique sounds never before possible.

But for many guitarists, particularly rock and blues guitarists, the Holy Grail of tone remains the classic tube amp. And although many have made a valiant effort to make modelers sound like tube amps, the reality is they really don't *behave* like tube amps. Sure, you may get a sound you *like* out of them, but if your heart is set on vintage tube tones, for now there simply isn't any other way to achieve that sound but with a tube amp.

Moreover, there are some performance issues with sims. Many guitarists are bothered by the latency inherent in tracking with a modeler, which persists in spite of many improvements. Modelers also respond differently to the guitarist's fingering than an amp, and while the ability to re-amp is a boon to producers, to a guitarist it can be like flying blind — the musician is trying to record a performance without knowing the ultimate instrument sound. This removes a lot of the visceral impact of playing, which can result in a less than inspired performance.

BUILDING A BETTER SIM

If you have to use an amp sim, but wish you had a tube amp, here are a few tips to get the most out of your sim:

- **Patch a tube preamp in front of the sim.** Not only might this help with the tonal character, but most sims benefit from a strong signal coming from the guitar. If the guitar has single coil or other low-gain pickups, this becomes especially important.
- **Try higher sampling rates.** Although I haven't been able to discern much difference in recording ordinary audio at 96kHz and up, vs. 44.1, it does seem to make a difference in amp modeling.
- **Modern high-gain distortion and very clean sounds seem to be easiest to model.** Lower gain distortion, such as those found in classic rock and blues recordings, is where sims are most likely to fall short. Again, this is particularly true if the guitarist is using lower output pickups. If this is the sound you're going for, you really will be better off with a tube amp. I often like to use my Line 6 POD to cut scratch tracks when tracking live with a band, as there's no bleed into the drum tracks; but then I re-cut the track later using a tube amp (except where I need a heavily effected or other weird sound that I couldn't get from an amp).

WARMING UP TO TUBES

There are even more tube amps on the market these days than there are simulators, and many of them are excellent. But simply having a tube doesn't make an amp great. Many so-called tube amps have tubes only in the preamp section, while the power section is solid state (which isn't necessarily a bad thing, but it will sound different from a 100 percent tube amp). And different amp circuits and speakers sound radically different from each other. Guitarists spend a lifetime experimenting with different tubes, speakers, and bias settings for good reason: They all change the tone. And that's before you even put a mic on it and start playing with mic selection, placement, room sound, etc. So, spend a lot of time auditioning different tube amps before you decide on one (or several).

Also, a tube amp that hasn't been maintained won't sound good. Changing tubes and/or capacitors doesn't have to be done often — I have 35–40 year old amps that have only been in the shop a handful of times — but any amp has to be checked out periodically to maintain peak performance. Amps shouldn't be left in storage or unplayed for too long either, as that tends to dry out the capacitors.

Lastly, although engineers have a tendency to want consistency and control, tube amps and stomp boxes are noisy, heavy, loud, and not always predictable. But that's rock 'n' roll! Quite often, I track with not only a tube amp but with the amp's reverb or tremolo, and analog stomp boxes. Most engineers would prefer to add these effects from a quality processor during mixdown, but the sound simply isn't the same, and putting the effects before the amp creates a unique alchemy of its own when interacting with the amp distortion. And hey, if you're that nervous, you can always record a "clean" track direct at the same time so you can re-amp later. There are even some heretics who use an amped track *combined* with a sim track. Whatever works. . . . EQ

Lee Flier is a guitarist, songwriter, engineer and producer based in Atlanta, Georgia. Her band, What The...?, is a fixture in the Atlanta area and has released two independent CDs. Contact her via the band's website at www.what-the.com. She also moderates the "Backstage With the Band" forum at www.harmony-central.com.

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by Gus Lozada

PODCASTING MADE SIMPLE

You already have the tools to make your own... what are you waiting for?

We all have an inner voice that talks to us . . . and an outer voice that talks to us from our portable audio devices with news, movie reviews, talk shows, politics, fashion, technology stories, and much more. Yes, we're talking podcasts — "syndicated audio files" served from a web server to subscribers. The best part of podcasting is that it's easy to create your own podcasts, whether in a full-blown studio, or on the road with a laptop. Indeed, now your inner voice can become someone else's outer voice!

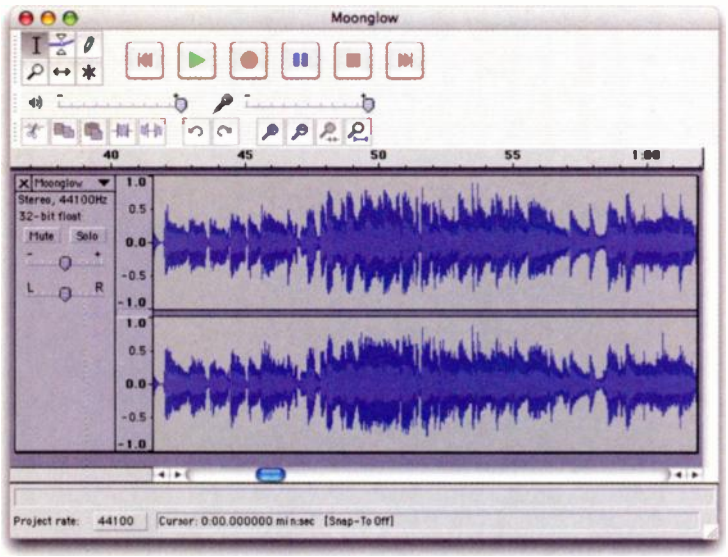

Fig. 1: Audacity is a free, cross-platform digital audio editor that provides the tools needed for podcasting. For MP3 encoding, you'll need an extra piece of software, like the LAME encoder.

A TYPICAL PODCAST

Basic podcasting consists of at least three steps:

Content preparation. The structure, subject, content, and duration define your podcast. A typical podcast may have a structure like:

- Intro music or audio (10 seconds).
- Introduce the podcast's title, your name, and mention where your podcast can be found; you can also mention your sponsors here (20 seconds).
- Brief outline or mention of what you plan to talk about (20 seconds).
- Main content: 5 to 10 minutes.
- Summary, thanks to guests and if desired, sponsors (20 seconds).
- Close with music, which could be "podcast-safe" (royalty-free), or your own original music.

Recording/producing/encoding. Most of us have the minimum tools for this job: DAW, audio interface, mic, and monitor speakers or headphones. But what if we're traveling and need to get the podcast done *right now?* This is when a mobile, laptop-based studio and portable recording device become essentials. As podcasts consist mostly of a main voice(s) and background music, there's no need for an entire Pro Tools|HD rig to produce a podcast. Actually, most podcasts are done with minimal equipment.

A simple USB/FireWire interface with a mic pre, together with a basic (even free!) audio editor like Audacity (http://audacity.sourceforge.net) installed in a laptop, will do the job. You could record something like a press conference or interview on a portable device (*e.g.*: M-Audio/Edirol/Roland solid-state recorders, Sony Minidisc, etc.) or even record straight into your iPod using Gemini's iKey, then transfer the files via USB into the DAW to be mixed/edited together with any background music or other audio tracks — no additional transfer steps or conversions required.

Almost any laptop manufactured within the last two years can handle multi-channel audio without a dedicated audio interface, but having an interface like the Echo Indigo, M-Audio Fast Track, or for upscale applications, E-mu 1616M will give lower latencies with better sound quality.

For music, there are plenty of possibilities: Open Propellerheads' Reason and do something with several instances of Dr.Rex, mix several of your favorite loops within Ableton Live, or use a MIDI controller to play a tune using virtual synths and record/render the performance into the DAW. Sony's impressive new Cinescore program will even generate a score for you! After mixing the music with the voice(s), the penultimate step is to render the file and convert it to MP3.

Publication (syndication). We've reached the final step. The RSS feed is what converts your MP3 file into a podcast, as this is the technology that lets people pull the content from your server automatically as soon as it's uploaded. You can hand-code your RSS feed, but this can get very difficult. If you don't want to do all this work manually, there are software tools specific to podcast creation, like *FeedForAll* (www.feedforall.com) that really simplify the process.

Just a few years ago, recording and publishing something for mass distribution took at best several days. In the 21st century, it takes hours or even only a few minutes. Podcasting can be the ticket to reach entirely new audiences, so maybe it's time to use your studio for more than just recording music. EQ

Gus Lozada fronts the band WoM (www.wom.com.mx), which recently debuted under the Universal Latino label in the U.S.), hosts clinics around the world about music production, and moderates "Nuestro Foro," Harmony Central's Spanish-language community. His email is gus@guslozada.com.

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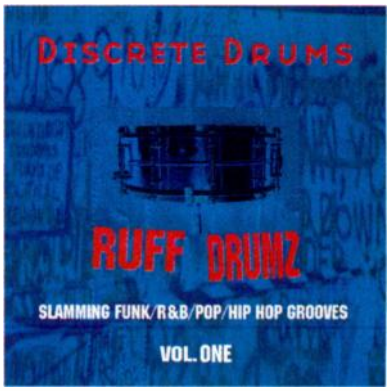

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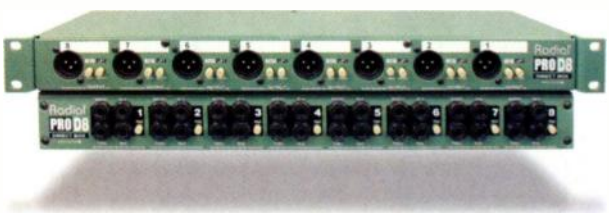

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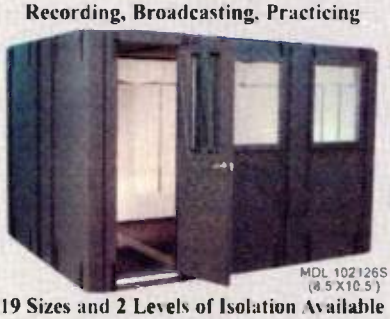

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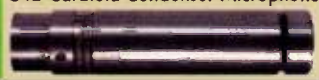

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by Matt Harper

STUDIO NAME: Sunrise Sound Studios
LOCATION: Houston, Texas
KEY CREW: Skip Burrows, Ben Hargrove, Jacob Meador, Cedrick Courtois, Adam Keho
CONTACT: www.sunrisesound.com
CONSOLES: Focusrite Control 24, Mackie Analog 32/8, SSL 4000G+ w/Total Recall (72) Channels w/ Complete Motionworks Filmnet Syncro System.
COMPUTER WORKSTATIONS: Digidesign Pro Tools Mix system, 24-bit with 40 I/Os, Digidesign Pro Tools Mix system, 24-bit with 48 I/Os.
RECORDERS: Apogee PSX 100 96 kHz 24-bit converter, Denon Studio Cassette Desk (w/ Auto Calibrate), Fostex CR-200 CD recorder, Marantz 610 Pro CD recorder with Automation, Otari MTR 10 Mk II 1/2-inch two-track (w/ Dolby SR), MTR-90 Analog 24-track recorder, 48 tracks w/ Lynx II Synchronizers, TASCAM DA45HR 24-bit DAT, DA-88 digital recorders (96 tracks), 48 I/O 24-bit Pro Tools Mix Plus system.
MONITORS: Auratone Cubes, Genelec 1031s, Yamaha NS-10s.
PRES: Focusrite Channel Strip (two channels), Grace 201 (four channels), Groove Tube Vipre (single channel), Universal Audio 2-610 tube (two channels).
MICS: AKG 414s, C12 Tube, D-112s, Crown Custom PZM, Earthworks TC30s, Groove Tubes Md1b, Neumann TLM-170, U87s, Rode Classic IIs, Sennheiser 421s, Shure SM7s, SM57s, SM58s.
EFFECT PROCESSORS: Alesis Q2 Multi Effects Unit, Dynachord DRP-20, Eventide H-910, HD3000 SE, Korg DRV-2000, DRV-3000, Lexicon 300 (Software Version 3.2), LXP-1, PCM-70, PCM-80, SuperPrime, TC Electronics D2, M-2000, Yamaha SPX-90 MkII.
DYNAMIC PROCESSORS: Aphex Studio Dominator II, Stereo Compellor, dbx 165, Empirical Labs EL8 Distressor, EL7 FATSO Stereo, Joe Meek Stereo Opto-Compressor, Manley Stereo Mu Tube Limiter, Neve 9098 Mastering Compressor, SPL Transient Designer, SSL Dynamics Package (72) Channels, TC Electronics Finalizer, Tube Tech Three-band All-Tube Mastering Compressor, UREI 1178, 546 EQ (four channels).
SPECTRAL PROCESSORS: Amek Mastering EQ with Recall, Aprex Exciter Type C, BBE Sonic Maximizer, Dolby 740 Spectral Enhancer, Drawmer 1961 Tube EQ, Manley Massive Passive Tube Mastering EQ, Night Technologies EQ-3, SPL Vitalizer with Stereo Enhancer, UREI 546 EQ (four channels).

NOTES: If you were to rewind 25 years into the past, when Sunrise Studios — a simple eight-track facility nestled in the Houston, TX, city limits — first came into existence, you would probably be unable to grasp how this once-humble project studio grew into the world-class facility that it is today. From one room built with meager means, to four totally decked out "rooms," Sunrise has become a true dream studio — playing host to a wide range of artists from Lenny Kravitz to Clint Black, Too Short to Yolanda Adams, Beyonce Knowles to Kings X. What's more, it's the home of the acclaimed Mediatech Institute, one of Texas' finest recording engineering schools.

Each of Sunrise's four rooms serve different needs and purposes: The 72-channel SSL 4000G+ driven "Grey Room" boasts a large performance live room complete with a Yamaha Grand, a B3, and a legion of drum kits (not to mention some truly classic outboard gear). The "Green Room," which has been designed primarily for overdubs and mixing, has a sweet Control-24 and Pro Tools HD4 system that runs a vast array of plug-ins. The "Purple Room" has been custom-tailored for all purposes of the pre-production persuasion (especially beat programming), and is packed to the brim with sound modules. Last but certainly not least, the exquisite "Gold Room" was designed by chief engineer Skip Burrows, and fashioned with some of the finest absorption, bass trapping, and diffusion strategies in mind.

However, according to Burrows, "it's not the technology that makes the facility great, it's the people. Whether it's a simple voiceover or a full orchestra synced to picture, Sunrise Sound listens to each person's needs and works diligently to accommodate their requests. Thanks to all their clients over the years, Sunrise hopes to provide another 25 years of *Sound* service."

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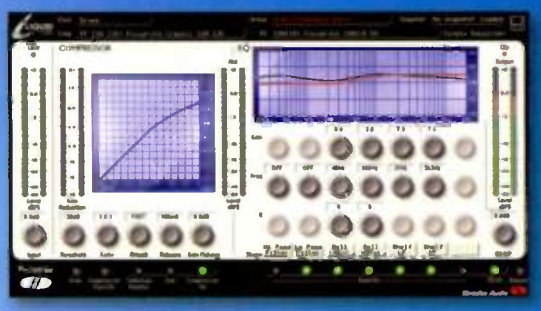

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