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LUST

Paul van Dyk photo by Dave Vann

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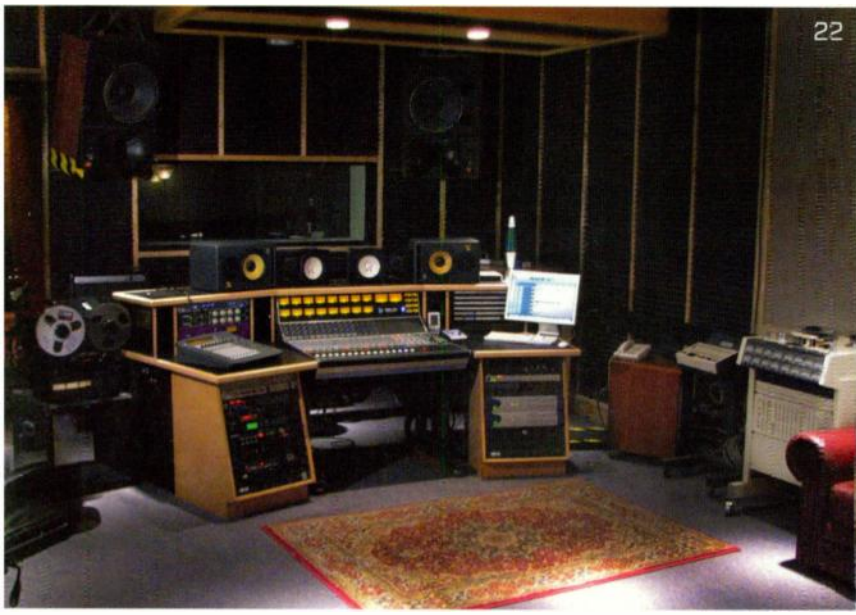

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Continuing Ed

IF YOU'RE considering recording school, chances are, you're hearing a broken record of negative advice: The competition is fiercer than ever. Schools are churning out more grads than the industry can support. There are no jobs in this economy.

But warnings like these, while certainly rooted in reality, oversimplify the situation. As the music industry has evolved, so has the role of the recording engineer. Sure, there are only a handful of jobs tracking rock stars in big studios, but there are more *kinds* of opportunities than ever. And as the industry changes, schools are adapting, tailoring their programs for a new generation of versatile engineers and musicians.

Pursuing an education is a simple matter of defining your goals and setting your course. The right path for you might be an online class, a full-time program, or maybe just a weekend spent actually reading your gear manuals.

If you're considering formal education, check out our "Choosing a Recording School" feature (page 22), which outlines options ranging from short-term courses to advanced degrees. More inclined toward DIY? In "Learn, Baby, Learn" (page 50), we bring you dozens of free and low-cost alternatives to schools.

Either way, remember that education is a lifelong pursuit, so whichever approach you take, boosting your skills will only work to your advantage.

SARAH JONES
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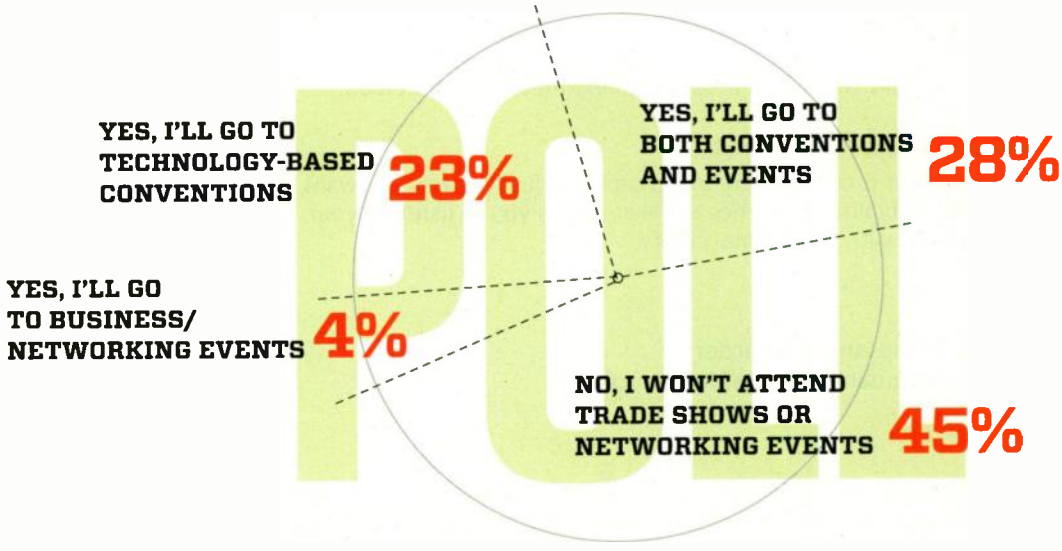
COMMUNITY

"PIRACY MAY NOT BE A BAD THING: IT CAN GET US MORE BUSINESS AT THE END OF THE DAY."

Rovio (Angry Birds) CEO Mikael Hed, discussing lessons learned from the music industry, January 30, 2012

The *Electronic Musician* Poll

WILL YOU ATTEND TRADE SHOWS AND NETWORKING EVENTS THIS YEAR?



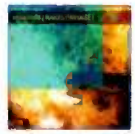
Gadget Geek

Teach music? Check out Chord Dice ($12.95, chorddice.com), a set of dice that lets you have fun explaining (or learning) theory. The makers of Chord Dice have a simple mantra: Music should be simple and fun, and exist for everyone. Five six-sided dice display chords and their relationship to their root key (here, *G* major); just roll, form the chords, and play the song that you just constructed. If you don't know how to play the chords, download the accompanying tab dictionary. According to the company, "if you want to rock, just roll."

FEEDBACK

WHAT'S YOUR STRATEGY FOR FOLLOWING THROUGH WITH YOUR NEW YEAR'S RESOLUTIONS?

Shawne Maynard
No gimmicks, just discipline.



Novachild
I tend to be direction oriented, rather than goal oriented. That way I'm open to twists in the road without necessarily sacrificing my destination.

Will Scott
Spend more time in the studio.

Jefferson Weber
I would like to dig deeper and learn more about the equipment and software I have purchased in 2011.

ask!

I mostly record bands "in the box," and have plug-ins that are supposedly among the best (Waves, PSP, and Universal Audio). I monitor through them while tracking to get the sound I want, record the tracks dry, then use the same basic settings during mixdown. But, I'm just not happy with my overall mixed "sound"—it seems sort of "hazy," and lacks presence. Is this what people complain about when doing everything "in the box"? Would I be better off with some quality hardware processors?

KEITH ALBRECHT
TACOMA, WA
VIA EMAIL

To the untrained eye, these objects look like a mic, some strings, and picks—but they're also tone controls.

Effects can be compared to spices, and it sounds to us like you're more concerned about the horseradish and pepper you're adding to the steak than getting a good cut of meat in the first place. Just as too much spice can ruin a good meal, too many effects can ruin a good performance.

Next time you're tracking, try this: Pretend that none of your plug-ins exist. If you're not happy with the guitar tone, don't reach for EQ; mic and mic placement are basically an infinitely variable EQ. Not enough highs? Then change the strings. If the bass is fighting with the kick, ask the bassist to use a pick, or change from flatwounds to roundwounds. Or during mixdown, nudge the bass 20ms later so that the kick has the first 20ms of attack all to itself. Instead of compressing the vocals, have the singer move further away from the mic when singing loud, and closer when singing softly (yes, you may need to teach proper mic technique). Use fewer, not more, mics on the drum to avoid phase issues and increase coherence.

Optimize the sound as much as you can while tracking, before even thinking about adding effects. Then during mixdown, use effects sparingly to add the extra 10% that transforms a sound from "great" to "outstanding."

They say that less is more: Use *less* processing by getting your sound right at the source, and you'll almost certainly be *more* happy with your mixes. **THE EDITORS**

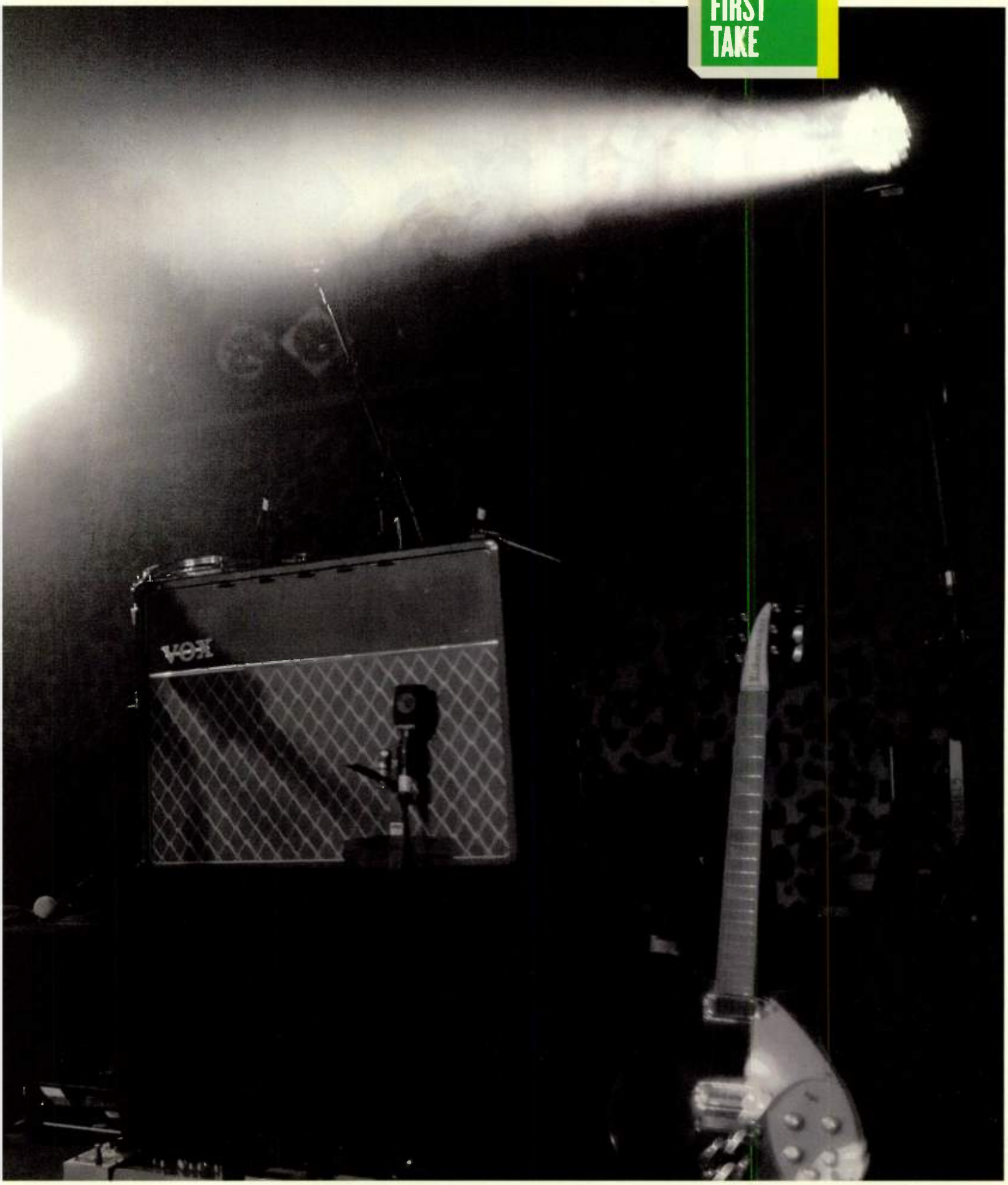
Got a question about recording, gigging, or technology?
Ask us! Send it to ElectronicMusician@musicplayer.com.

THE KILLS

CANNERY BALLROOM
NASHVILLE, TN
APRIL 22, 2011

With vintage effects, meaty amps, and mature craft, Alison Mosshart and Jamie Hince perform sophisticated scuzz-rock with swagger. "It's almost like the songs are less important than the attitude we put into playing them," Hince told *Electronic Musician* last year, when the lean-and-mean duo were recording *Blood Pressures*, their fourth album together. "That's always been the thing, which I guess is the spirit of punk."

PHOTOGRAPH BY ALYSSE GAFKJEN



Soul & Science

Paul van Dyk meticulously constructs dance tracks in the key of life

BY KYLEE SWENSON GORDON

Dave Vann

van Dyk at the North Coast Fest in September 2010.

AS A purveyor and creator of electronic music made from cold, hard machines—as well as a Berliner who grew up in East Germany before the wall came down—Paul van Dyk isn't usually pegged as the sensitive type. But it turns out that his emotions are easily stirred. "I get watery eyes from watching movies and seeing people saying goodbye at an airport," van Dyk says with a laugh. "Seriously, I know it maybe sounds a little cheesy, but in a way that all leads into the emotional side of me making music."

But while a banging beat isn't the only driving force in Paul van Dyk's tracks, the DJ/producer still hits the dance floor pretty hard. He's earned dozens of awards over the years, including the 2011 title of "Longest Running DJ in the Top 10 of *DJ Mag*'s Top 100 DJs" (for 13 years). And he also rules the dance-music airwaves with his radio show, VONYC Sessions, which can be heard weekly on 53 radio stations in 23 different countries.

Meanwhile, songwriting and producing is something van Dyk has been passionate about since the early '90s, before he released his first studio album, *45 RPM*. In fact, he's pretty geeky about it, spending hours in the studio trying out new recording and engineering experiments. But many of his songs are actually conceived outside of his studio as he's performing live. From afar it might seem as though van Dyk is just tweaking a few knobs and pumping his fist in the air, but he's also remixing tracks in real time—composing brand-new hooks on the fly using his two-laptop setup.

Some of those off-the-cuff ideas informed tracks for van Dyk's sixth artist album, *Evolution*.

> "A lot of the productions that are out there now would probably sound very good if they were engineered on a much more careful level with not so much compression on it."

Then, back in his studio, he used those hooks to create rough sketches for tracks and called upon 13 vocal and instrumental collaborators to help him tap into his emotional side, including Adam Young of Owl City, Sue McLaren, and Sarah Howells, as well as electronic producers Austin Leeds and Ummet Ozcan.

Christoph Koestlin

Just back from a U.S. trip playing a massive New Year's Eve party in Anaheim, CA, van Dyk chatted with *EM* to reveal details about his studio geekery, his collaboration process, and why he's pretty much over the whole compression-gating trend.

I love how Sue McLaren's vocals sound on "The Sun After Heartbreak."

It was probably the most expansive vocal production I've ever done. It's like tons of little bits and pieces. I took so much of the little elements because I wanted to have that really intense feeling of the sound of the vocal. And of course, as much as the song says, I believe everybody has felt that once before, and I wanted it to drift away into something with a positive vibe to it. So I took the approach of stretching out every single piece and word bigger than it was, in terms it being angelic and making it just flow and fit at the same time.

How did you do that?

I had one big stream of vocals, and then I chopped it up. And pretty much every other word has some different effect on it. So you have different room reverbs and different delays for those different words, and therefore it develops a different rhythm underneath the actual singing. For example, I tried to make the first syllable a bigger reverb than the rest of the word that's being sung; it needed to flow so both reverbs would end at the same time without going into the next word. In the end, I had something like 25–30 different tracks

"TAXI Taught Me How to Write What the Music Industry Needed."

Vikki Flawith – TAXI Member
www.vikkiflawith.com

My name is Vikki Flawith. I'm a classically trained singer who used to write meandering folk-style songs, and had several demos produced by a Rock guitarist. I spent lots of money on those demos and wasn't very happy when TAXI didn't send them to Nashville for Country opportunities. I was somewhat skeptical about that. But then I realized that other people *were* successful with TAXI and maybe I needed to look at what I was doing rather than blame the messenger.

My fellow members on TAXI's Forum helped me realize the value in writing and producing what the market was looking for. I started using the feedback I got from TAXI's A&R team and my friends on the forum to re-shape and re-focus my music.

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I also started going to the Road Rally, TAXI's free convention for members and guests.

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I listened, learned, and focused my writing at what the music industry really needed. No more meandering folk songs for me. I refocused my efforts on writing music for film and television. TAXI started sending my new material to Film and TV music publishers. I began to get deal offers, and also gained the confidence and skills I needed to start pitching to contacts I developed on my own.

Because of the connections, co-writes and relationships I've made through TAXI, my music industry network has expanded geometrically and my catalog of *marketable* music is growing every year. Thanks to "TAXI U," I've signed over 70 tracks in the past few months to several different publishers.

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Dave Vann

just for the vocal and had things moving in and out. Sue McLaren has such a clear, wonderful voice, and it probably would have been absolutely phenomenal without doing all that, but I wanted to really over-exaggerate the feel of it.

What was the process for working with Adam Young?
With Adam, I sent the first track that I thought, "Okay, that could be really good." He came back to me and said, "It's kind of finished the way it is. I don't really have any idea what I should do with it." Then I said, "Okay, I'll try something else." I sent a second track over, and he said, "Well, again, it's so structured. I don't really find the space for me to vocally breathe." And then we had actually been on the phone a lot talking about how spaced out he sees the world and how things are evolving, his own acoustical universe in a way. And that is when I had the idea of doing something more spaced out but very tight. I sent it over, and he came back and said, "This is it. Exactly what I wanted." It took him probably two days. I got the files back and started to finish the whole production.

So there's some back and forth in working with artists, being sort of like a therapist?
Something that's really important to me—not just with vocalists but with everyone I've ever collaborated with—is that I like the people that I work with. There's never a manager telling me, "Hey, you should work with that person because it's a great marketing plot." I have this really clear idea about what I want to do and how my music should sound. If I invite somebody in, I invite that person for a reason because they have something very unique, something of their own, something that I really like of their work. And I like to have these two worlds collide and merge. That is why I try to be involved in the whole process. It's not really being a therapist for the vocalist or the collaborator; it's more trying to understand them in order to make it all work.

"Something that's really important to me . . . is that I like the people that I work with. There's never a manager telling me, 'Hey, you should work with that person because it's a great marketing plot.'"

Years ago, you said that you would play a melody or riff on six or seven instruments and then layer them to get just the right sound. Is that something you still do?
In my head I know exactly what the sound should be like, so what I do is get to the sound that drives the whole thing, the one that is kind of the meat of the sound. And then I actually develop the whole atmosphere around it with a delay, a reverb, and maybe a chorus effect or a bit-crusher to get some dirt in it. So it's many different things that become one sound, even though it's all these different machines playing together.

You speak with such certainty about what you want your music to sound like. What inspires your ideas?
I know it sounds like a really general answer, but life in general is something that inspires

me. I'm a rather emotional person, and whatever I see or experience, it always ends up having an impact on me, and that impact somehow always leads to a melody or some sort of sound. When I'm in the studio, I try to actually recreate the atmosphere or use that inspirational moment that I had and make a song out of it.

The other thing that's really important, especially in the development and the creation of this album, is the setup that I use when I play live. I have a custom-made Allen & Heath mixer, and I have two keyboards, MIDI controllers, and two computers [running Apple Logic and Ableton Live]. One is full with software synthesizers, and one is full with audio material, and they link with each other. A lot of those big hooks that are on the album are actually something I came up with while I was playing live. I had some punchy beat going on, I played a hook, and I really saw the reaction live from the audience. Obviously, I developed the whole thing further in the studio, but the song started out because I took the chance of composing live in front of my audience.

You once mentioned that you used a VocALign plug-in as a gate with a drum loop gating a string sound. What other unusual things have you done with plug-ins?
Something that I've done is, when you compress a vocal very hard to make it really close, then you get those weird, plopping sounds. And what works very well is to take the [Logic] Enveloper, work on the envelope of every single word very carefully, and then put a little, tiny short delay on it. That gives you the feeling that the person is basically singing about an inch away from your nose but still has the whole distance of the world behind them. Just try it and see if it works. If you don't use Logic, I'm pretty sure there are plug-ins where you can take the envelope of an audio signal and make it slightly softer and bend it until the point that the audio is clear without it popping too hard.

It's interesting how one side of the stereo field on "Heart Stops Beating" has a pulsing sound and the other has a contrasting melody. What was the process for that song?
I've known Sarah [Howells] for a very long time, and I think she's one of the best vocalists we have in the dance field. Not many people know this, but she is also touring with her band [Paper Aeroplanes] playing folk-pop songs. With this track, she had a basic demo track that she sent over, and I was inspired by both worlds. She has this very strong, characteristic voice that I love so much, and the way she sings is absolutely beautiful. I tried to combine this folksy, poppy world with a dance-y, punchy sort of tech-y world.

As for the panning, I couldn't really tell you why or what I was thinking because when I start to layer the sound and engineer the track, basically I just try to visualize the sound. It's like I'm standing in the club: Where should the bass drum hit me? Where should the bass line hit me? And then I basically put it there [*laughs*]. It's not something that you can plan. It's one of those magical creative moments where it just happens, and you're like, "Oh, did I just do that? That's cool."

Compression gating is such a huge technique in dance music. Is there another go-to technique that you use?
In terms of compression gating, I try not to use too much of it. A lot of the productions that are out there now would probably sound very good if they were engineered on a much more careful level with not so much compression on it. What we listen to these days is very scrunched together, and in order to get some of the key elements like claps and the bass drum through, you put a ton of compression on it. So the whole thing moves and breathes, but basically what you get is the feeling of an offbeat, regardless of what groove or hook you've done. I'm not really a fan of that, to be honest. It's just not tight.

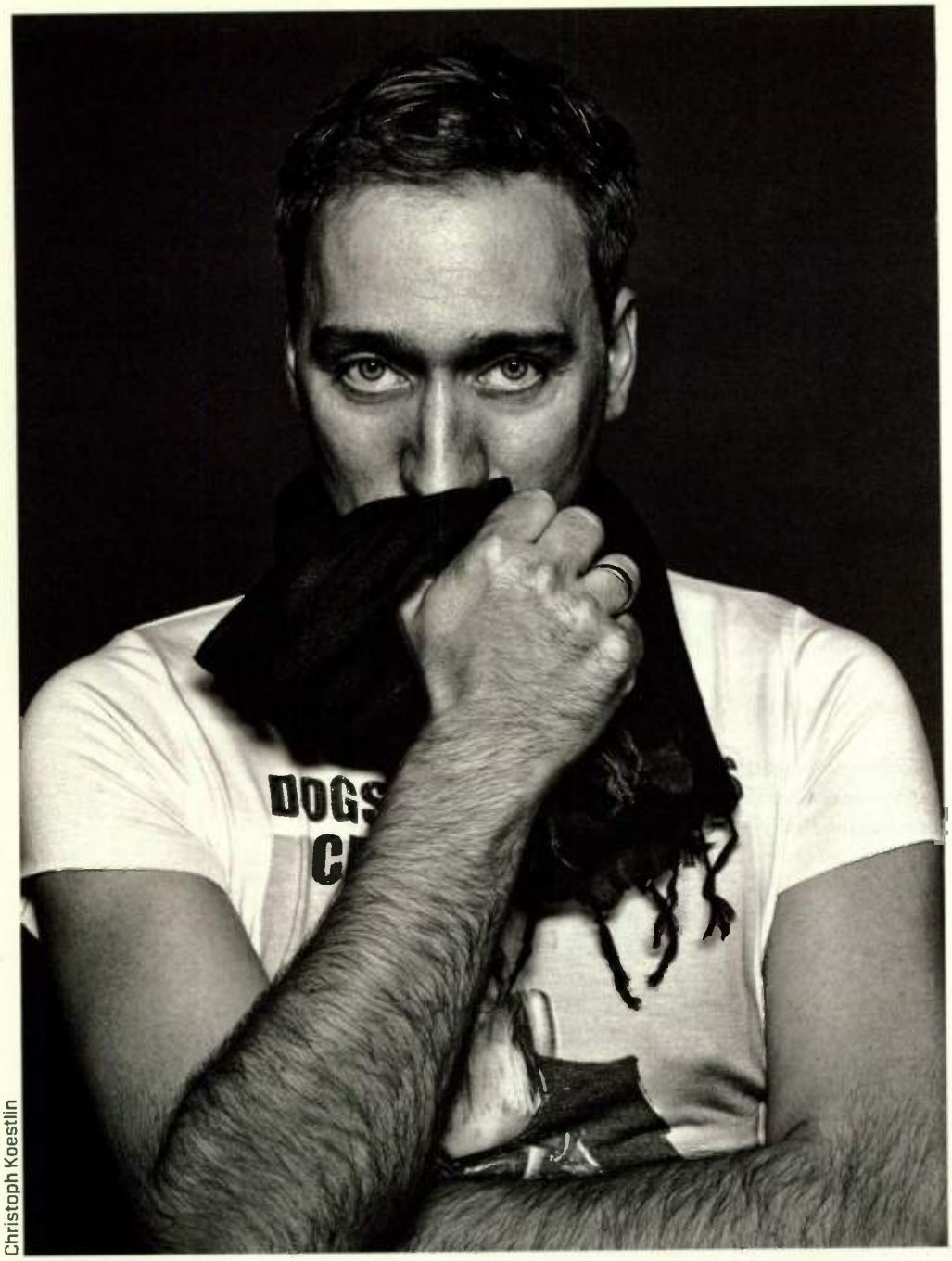
Which soft synths, plug-ins, and hard synths have you been using lately?
To be honest, the only two hardware synths I'm using are the Moog Phatty and the [Access] Virus TI [Pølar]. With the possibilities of sounds these days and the quality of the software synthesizers, it's so convenient to work and still be able to pull off a massive sound. I use the bass plug-ins a lot because I think they're really good, and also the Waves Renaissance compressor, which I like a lot.

And I think one special thing about my studio is that I don't render or bounce things together, so I don't get this digitally merged sound. I have a massive Euphonix [System 5-MC] mixer, and behind every single digital channel is an [RME] analog/digital converter, so every single sound has its own space to breathe, and it's all mixed analog together and comes back as a stereo signal.

"A lot of those big hooks on the album are things I came up with while I was playing live. Obviously, I developed it further in the studio, but the song started out because I took the chance of composing live in front of my audience."

When you find a soft-synth patch you like, how might you tweak or filter it to make it unique?
To be honest, before I even go to that point, I nearly finish the composition of everything. Getting into those detailed elements is what I do when I engineer to finish the arrangement. As an example, the [Logic] ES1 has some phenomenal bass sounds to it, but it doesn't really make sense to tweak the sounds of the bass before you have anything else. Sometimes the bass sounds would sound—on their own—completely lame, but within the production they sound good. So first I make sure that those individual sounds fit within the actual production.

Yeah, sometimes a part sounds tinny or weak when isolated, for example, but next to another element, it sounds right.
Yeah, exactly. I remember at the end of the '90s, there were a lot of really cool hardware



Christoph Koestlin

synthesizers around with very cool sounds, and I was always absolutely amazed by them. I had them in the studio, but I never used them for anything purely because the sounds were so characteristic by themselves, I couldn't really make a track out of them. My main aim is to bring across the overall feel of a track, and if you have a sound that is too characteristic in itself, it just destroys everything else.

Do you use specific studio monitors to help you find that sound?

I used to have the old KRKs, the ones that came from San Francisco, not the ones when they started to manufacture in China. I had six or seven pairs in the studio in case something broke, so I had a whole stock of backup, but I was running out at one point. Then we had lots of different kinds of speakers in the studio, and I checked them out. I felt not good, or I felt *okay*. And then I found a German manufacturer called Klein + Hummel. Their speakers are just as good as the KRKs were back then, and I have a big KRK sub connected to it, and it gives me pretty much what I need.

Are there any important pieces of gear that you use for the mixing process?

I use the whole possibilities my studio setup gives me, so I couldn't really point out one thing that is especially important. I constantly learn and try things. Something that I like is recording a tiny little bit of a hi-hat and then recording it again and shifting it slightly. You get a completely crazy room just from the hi-hat, and that makes the track sparkle much more. It's more the creative way of using what you have rather than a certain machine that does it.

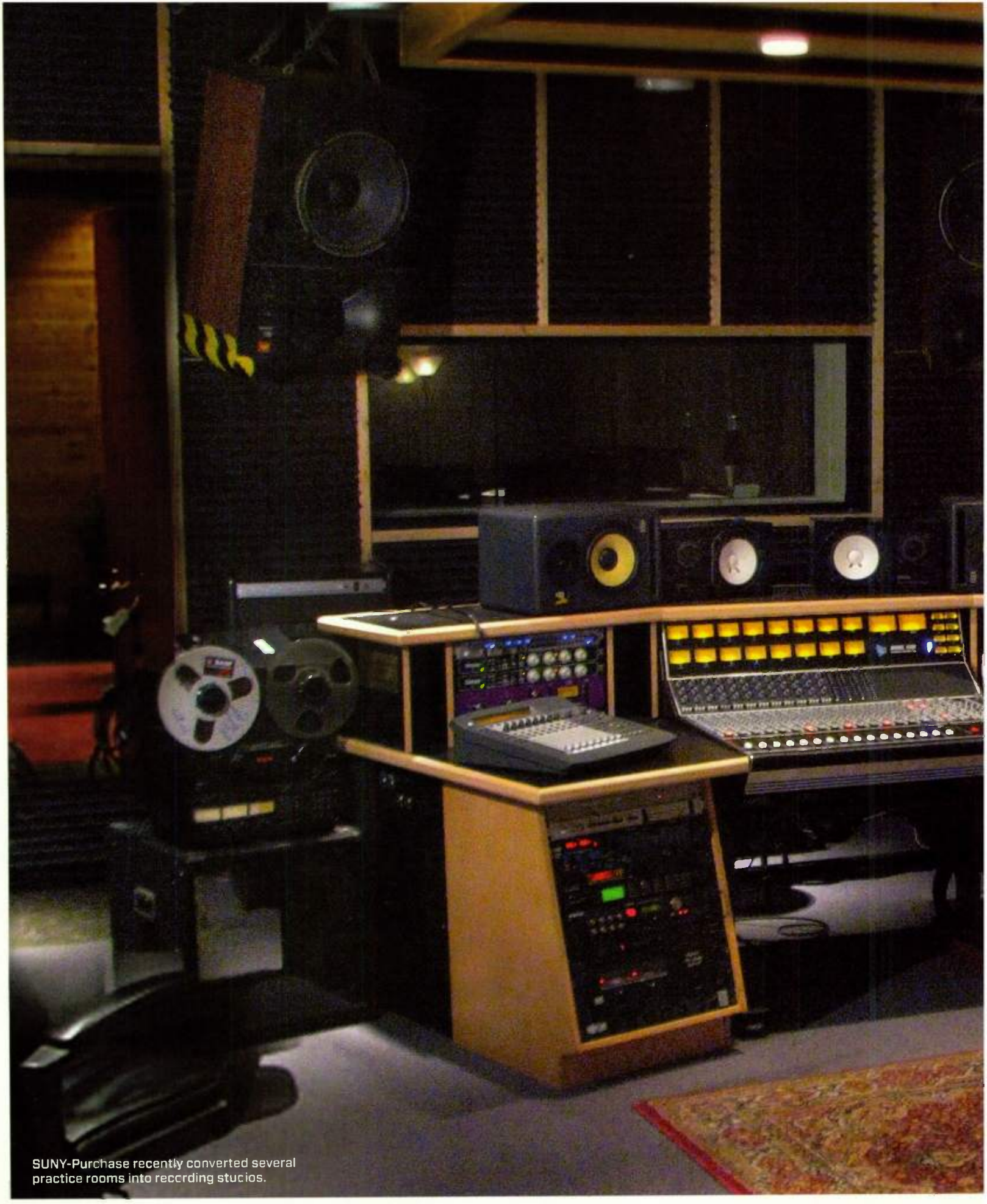
In terms of actually mixing a track, I always try to mix it in a way that I don't really need a limiter or a compressor at the end because if you have that, you kind of lose the breathing of a track. So I try to make sure that I mix everything to 0 dB before I come to the point where I'm going over. And if I actually put something on it, very carefully, I use the Waves L316 plug-in. It's a very minor correction, and it's beautiful. ■

Kylee Swenson Gordon is a Bay Area freelance writer and editor, and performs in the band Loquat.

THE BEST KICK IN A CLUB

Many DJ/producers test-drive their productions in clubs before finalizing and mastering them. But van Dyk had an interesting revelation that other DJs may have missed: A superloud, tight bass drum is not always the way to go with tracks played on club PAs. "On this album, I went much softer on the actual sound of the bass drum but made it really, really intense coming across," he says. "Instead of hard and dry, it's wide and warm. It has much more compression on it, but the sound itself is much warmer, so it feels like this really inviting, warm, *lilly-lally* thing that has a *massive* impact when you listen to on a PA.

"People are listening to music these days on various different PAs and setups, and if you have an MP3 of a track that has one of those banging, tight-ass bass drums, and you play it through your iPhone on one of those iBox speakers, basically all you hear in the end is *kch-kch-kch-kchhhh* and a little bit of the track in the background. So I tried to find the right balance of having a bass drum that gives the whole thing a warm feeling and at the same time is tight enough and punchy enough when you listen to it live on a good PA."



SUNY-Purchase recently converted several practice rooms into reccrding stucios.

Choosing a Recording School

What to ask, where to go

BY BARBARA SCHULTZ

HAVE YOU seen those amusing flow charts where you answer a series of questions, and each one leads you a certain direction down a path, and you find out, for example, which instrument you're cut out to play? If you don't want to cut your hair and you don't care about making money, play cello. If you cut your hair and you want to meet women (or men): bass guitar. . . . No one should actually choose their vocation based on a chart (or a joke), but there are certain common questions to ask yourself before traveling down a new career path. Consider this a sort of guide through the maze of choosing a recording school.

Are you a musician dreaming of a big career shift to the other side of the glass, as it were? Do you simply want to track better demos? Are you a composer who needs to learn more about integrating sound and picture? A project studio owner who wants to drill deeper into Logic? There are dozens of audio education programs all around the U.S., and beyond, to help just about any prospective student, but it's important to define what you want before

A studio/classroom at Miracosta Community College.

you can narrow the field of seemingly endless possibilities.

To start: Anyone who's done a really difficult maze knows it sometimes help to look at the page upside down. Let's start at the end.

Endgame Before you start applying to schools, define for yourself, as best you can, your goals for the outcome. Do you see recording school as a path toward an engineering career? If so, which field interests you most? Music recording and mixing? Post-production for film? Do you see yourself working in a commercial recording studio, or as an owner/operator? The school you choose obviously needs to offer the information and experience needed for your chosen career. Also find out where the school's graduates have found work, and what kinds of career-placement services a school offers.

On the other hand, if you're continuing an already-decent audio education—always a great idea—or want to learn one new technique or piece of gear, you may simply want to choose an online class (of which there are many) or a hands-on seminar close to home. Your ultimate career goal is the biggest factor in determining which school will serve best, but it's certainly not the only one.

Bricks and Mortar vs. the Virtual School A class full of like-minded students, a knowledgeable professor, well-maintained equipment, hands-on learning . . . a brick-and-mortar audio engineering school can be an amazing training ground, but not everyone is at liberty to take a break from earning a living to dedicate two years or more to recording school exclusively. For those students, there are scores of online audio education courses, many of which are less expensive than in-person classes. A lot of long-established brick-and-mortar schools now offer a virtual component, too, so real-life learning can be combined with online classes.

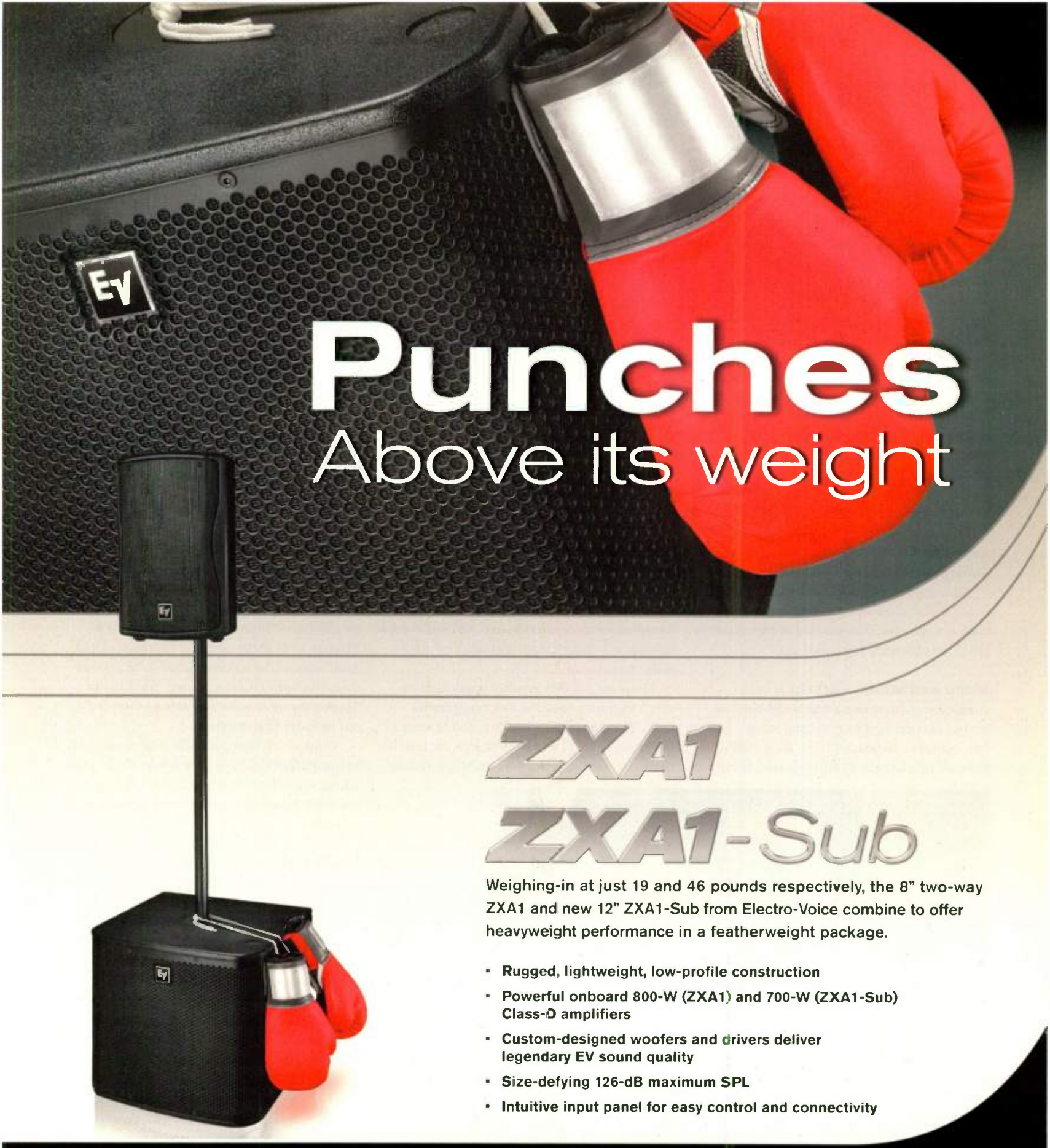
"I was skeptical about online courses in music production until I started designing and teaching online courses," says Stephen Webber, a professor at Berklee College of Music (berklee.edu). "Now I can say that the classes I teach online are every bit as rigorous and applicable as the classes I teach in person—probably more rigorous. Berklee Music's technology delivery system has gotten seriously good, and the content is top-notch as well. Don Was recorded exclusive interviews just for the course, and it turned out stunning. How often does Don come to class? In the online version of Music Production Analysis, he makes an appearance and shares wisdom a few times every single semester."

Any audio engineering job will require at least some personal interaction, however, and an all-online education might not give you needed people skills. It's all about balance.

BA, BS, AA A traditional four-year university degree can offer a well-rounded approach to education. A targeted vocational school, on the other hand, might not teach music history or economics, but it'll get you plugged in faster. Is it meaningful to you to obtain a Bachelor's degree? Can you learn all you need to by taking a Pro Tools certification program? Try to determine what will matter to you in the long term.

$$$ The price of audio education may, but does not necessarily, relate to the time spent. A two-year course at a top-end, for-profit school with high-class facilities may cost more than four years at a good public college. However, that shiny school may provide equally shiny, new, mint equipment and big-name faculty that others can't afford. Do you get what you pay for? The Federal government has actually been taking a hard look at the relationship between vocational school tuitions and graduates' corresponding earning potential.

At southern California's Miracosta Community College (miracosta.edu), where classes cost about $30 per unit, students can earn an



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"The State of California funds community college education for California residents, and we recently received grants that allowed us to expand and improve our music technology facilities," says faculty member Christy Coobatis. "We don't offer a Master's degree, but all of our instructors possess a minimum of a Master's degree in addition to a wide variety of industry experience. For example, keyboardist Dan Siegel is a full-time Music Technology instructor at Miracosta. He has 19 albums out on CBS Records, performing with the likes of Herbie Hancock, Abe Laboriel, Nathan East, Vinnie Coliuta, etc."

Coobatis himself has been a composer and songwriter for *NBC Movies of the Week*, ESPN, Cinemax, HBO, and more.

So, consider all types of institutions, investigate financial aid options, and make a careful choice. Following your passion is important; so are three squares a day, a roof, etc.

Major and Minor Markets If you're considering attending a brick-and-mortar school (as opposed to enrolling in online courses), location can be meaningful. Schools in southern California may facilitate internships in high-profile L.A. recording studios or film sound companies. Nashville is teeming with A-list musicians, studios and live-performance venues, and Nashville-area schools may have close relationships with those businesses.

However, good internship opportunities aren't exclusive to schools in music/audio hubs. The Conservatory of Arts and Sciences in Phoenix, AZ, places student interns in facilities from coast to coast. "We find that we have the highest percentage of internships in L.A. and Nashville, as well as many in New York City, Chicago, and San Francisco," says Greg Stefus, CRAS' Internship Coordinator and Director of Student Services. "We've also had great amounts of success in mid-level market cities like New Orleans, Miami, and Atlanta. There's the most economic infrastructure for our industry in those towns."

Think about how your school is connected to the market you hope to enter. Also consider where you want to live and make lasting connections. Austin? Seattle? Where do you want to land?


Graduate Joe Caravalho

Speaking of Internships Any audio engineering program worth its salt will require students to intern at a professional company or facility. This usually means that each student has to assemble a résumé, and apply for an internship the same way an applicant interviews for a job; schools may have relationships with wonderful studios, equipment developers, etc.. but internships aren't necessarily just doled out. Think of the intern-application process as an essential part of your audio education, and view the internship as one of the most important chances you'll have to learn, show what you can do, and make connections with pros who may help you on the way to a new career. Paid or unpaid, your internship is your first job.

"We commit 20 hours of the program's 30-week class time focusing on the soft skills like

A student at work in one of Berklee's studios.

studio etiquette and communication in the facility," Stefus says. "We teach how to interview correctly and how to create a résumé that's for internship purposes as opposed to a job. All students who complete the Conservatory's program know how to get signal to tape, but equally as important they also have to be able to show that they can conduct themselves in a manner that fits the particular facility."

The Faculty Some of the high-profile private institutions have very impressive engineers' and producers' names on their faculty rosters. Learning from the best can be really helpful and exciting, can open doors, and may look good on your résumé. But, of course, there are plenty of unfamous teachers with loads of information and real-world experience to share as well. Read faculty bios on schools' websites, and try to get the opportunity to view a few classes in session. A great teacher can change everything.

The Studios Hands-on studio time is crucial to any audio education. Class sizes make a big difference. The relationship between the number of working studios on campus and the number of audio students may also be an indicator of how much time you can expect to get with the gear you're learning. Schools may relegate differing amounts or types of hands-on studio time at different stages as well; third-year students may be trusted with a workstation that newbies don't get to use.

Also, there are as many different types of school studios as there are . . . studios. Do you want to get your hands on analog tape, or will Pro Tools do it for you? Are there vintage ribbon mics in the cabinet? Do you see yourself recording bands live in a large tracking room, or building tracks piece by piece in the control room? Consider the gear, consider the space, consider this a chance to experiment.

Also consider the fact that dedicated audio schools aren't the only institutions offering engineering courses. Peter Denenberg, a Grammy-nominated engineer/producer and chair of studio production at State University of New York at Purchase (purchase.edu) helped spearhead the addition of recording technology courses to the school's music program. The university recently converted several musicians' practice rooms into project studios to facilitate the new emphasis on technology.

"We have many classical, composition, voice, and jazz students requesting to take studio courses at Purchase—more each semester," Denenberg says. "Whether they want this experience for audition reels or maintaining their own websites, or perhaps recording themselves for web-based collaboration, at this point some level of technical proficiency is required for any modern musician/writer."

Multimedia That used to be a meaningful word: multimedia. Now we take it for granted that every piece of audio has a video component and every image has a soundtrack, but it's still worth noting how much integrated media is offered by a given school. Many are the students who go off to audio school with a dream of recording rock 'n' roll bands, only to discover their inner post-production editor, or game-score composer. Will your school offer the opportunity to learn different fields of audio work? Are the equipment and the facilities and the classes all there to support that?

Resources To help in your school search, *Electronic Musician*'s sister magazine, *Mix*, maintains a directory of U.S. audio engineering schools, broken down by state (mixguides.com/education/directory). You should also talk to students and graduates of programs you're considering, in addition to conducting your own online search and talking with admissions personnel. There are loads of questions to consider, and many of the answers are quite personal, but there are also lots of helpful people out there to guide you through the maze. ■

Barbara Schultz is a frequent contributor to Mix *and* Electronic Musician, *as well as a book editor and reviewer, among other things.*

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The Ting Tings Make a Playlist

Jules De Martino and Katie White

LISTEN

Brit duo traveled a long and winding road on their way to *Nowheresville*

BY BUD SCOPPA

Tom Oxley

NEARLY FOUR years have passed between the original U.K. release of the Ting Tings' worldwide breakthrough debut album *We Started Nothing* and the appearance of *Sounds From Nowheresville*, the duo's wildly eclectic follow-up. During that time, Jules De Martino and Katie White nearly called it quits before relocating their mojo on an MP3 player. The only way to understand what was at stake for them is to go back to the beginning.

The pair's previous group, the trio Dear Eskiimo, was dropped by Mercury U.K. in late 2005 after they'd spent a year in the studio. Shell-shocked and embittered, White and De Martino returned to Islington Mill, an artists' conclave in the Manchester borough of Salford, where they'd been living and working on the scrapped record. They took day jobs, and in their free time De Martino painted while White designed clothing. They started throwing parties where their artist friends gathered to smoke weed, have a laugh, and blast the records they loved—Talking Heads, Prince, the Smiths—with everybody taking turns as DJ. In time, these gatherings grew into organized events that became a major attraction for hipsters.

"Slowly, that turned into a creative process," De Martino says of their club nights. "We started to write some songs and perform them at the parties. We put a drum kit on the little stage and I'd play records and drum along to them. Then I started creating loops on my loop pedal, and one day Katie picked up my guitar—she'd never played before. That moment was really the pair of us having gained the confidence to say, 'Have we just become a band again?"

They had indeed. With everything the newly named Ting Tings wrote and recorded, "the attitude was based on spontaneity," De Martino explains. The tracks they were coming up with were not only infectiously in-your-face but also absolutely distinctive; no wonder A&R reps started coming to their parties. In late 2007 the duo signed with Columbia, which released their defiantly DIY *We Started Nothing* in Britain the following May. The partners weren't prepared for what happened next, as their little art project resulted in a chart-topping U.K. album and single, "That's Not My Name." They wound up selling two million albums worldwide. They'd become pop stars by accident.

"When we first started the band, we didn't anticipate being successful," De Martino acknowledges. "Even though we became a commercial outfit, we didn't act or work like one. So when it came to making a second record after all that success, it felt completely different being in the studio, as you can imagine. It felt controlled, not free. We went to Berlin because we wanted to find a new experience, but we got caught up in this situation where we were no longer living and breathing the music. We

Their little art project resulted in a chart-topping U.K. album and single, "That's Not My Name." They wound up selling two million albums worldwide. They'd become pop stars by accident.

were writing and recording knowing that the record label was coming in two weeks' time, and hoping to impress them. And there they are, walking in with bottles of champagne and taking us out to dinner at the best restaurants in Berlin and telling us how amazing we were. It sounds like a cliché, but we found ourselves doing exactly what we swore we would never do again after the Mercury experience.

"Then we woke up and realized we'd written tracks that we didn't like—whether they were hits or not. It felt like we were making groove music. The dance scene was becoming big again, everybody around us was going on about clubs and DJs, and every time we came up with a track that had a dance pattern, the record company was like, 'This is gonna be huge, guys.' And we were thinking, how are we gonna live with this record for the next three years on tour? So we scrapped it. We kept four songs and erased the other six off the drive. Needless to say, that didn't go down too well, but we were lost. It was really the darkest period of this band."

To make matters worse, Columbia took "Hands," a track from the Berlin sessions, and released it as a single. "It was never meant to be this big hit," says De Martino. "But it went on the radio in the U.K. when we were still trying to find a direction. At that point, we were seriously considering dropping the whole idea of trying to be this ongoing band. That first album was so beautiful the way it evolved and the way we toured—just plug in and play, get punked-out onstage. Why not just keep that moment special to our hearts and come up with something new that has nothing to do with the Ting Tings?"

White and De Martino realized they had to leave Berlin, which they associated with losing control. So they packed up their gear in a van and drove all the way to Murcia in southeastern Spain, where they rented a basement and set up their studio. "Everything we've got can be transported—you just rack it all up on these towers," De Martino explains. "Then more gear arrived in a truck. We'd kept adding equipment ever since the first band, and now, with Pro Tools, you can write and record in even the most basic studio. In

"We're starting small again, we're not worried about mainstream radio, so we can go out on tour and be real. But it's been a long process to make the record company understand that you can't treat us like Ke$ha."
—Jules De Martino

good times or bad, we've always got five guitars, two drum kits, a couple of old keyboard synths and a load of outboard gear that we can valve off and get some nice analog sounds. Obviously, the success of the first album doubled the size of the studio and gave us more facilities; that's what we ended up in Spain with.

"And then something clicked," he continues. "On my computer and my phone, I've got playlists: I might have an xx track, MGMT, Led Zep's 'Ramble On,' a Madonna track, all in one playlist. It's what makes me feel good. And because we were listening to music in that way, we realized that we had to make an album that sounds like a playlist. And that excited us—all of a sudden it was like at the beginning again: 'We need to be in a band. We need to write songs for a reason now.' And that's where this record started. It's not easy to do, because you're punkin' out on 'Give It Back' and then you're doing an R&B kind of feel on 'Day to Day,' or a sort of Nancy Sinatra feel on 'One by One,' and you have to get yourself in that mood each time you write and record. That was the challenge. But we started working and the lyrics started to flow. We were angry at our record company, and if you read into 'Hit Me Down Sonny,' it's about Sony.

"They're being brilliant now, both in the States and the U.K. We're starting small again, we're not worried about mainstream radio, so we can go out on tour and be real. But it's been a long process to make the record company understand that you can't treat us like Ke$ha.

"We just did some shows in Paris, and they absolutely rocked," De Martino says with a mixture of pleasure and relief. "It was Katie on the guitar and all the loops, me on the drums, full energy, everybody screaming. I was like, thank God. We came that close to losing it." ■

Bud Scoppa has written for Rolling Stone, Creem, Rock, Fusion, Crawdaddy! *and* Phonograph Record. *He's a senior editor at* Hits *and industry-news site hitsdailydouble.com. His current outlets include* Uncut, Paste, *and* Mix.

"Everything we've got can be transported—you just rack it all up on these towers." —Jules De Martino

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Mike Schreiber

Robert Glasper Experiment

Jazz and hip-hop meet in brazen piano compositions

BY KEN MICALLEF

ASK ANY young student of jazz for his or her current influences and the answer will be short and sweet: Robert Glasper. The 33-year-old pianist has consistently and often brazenly mixed jazz and hip-hop, thrilling fans with his new conceptions. *Black Radio*, Glasper's fifth release, sets the pianist even further apart from his contemporaries, his brilliant band (The Experiment) supporting Erykah Badu, Ledesi, Lalah Hathway, and Bilal, as well as rappers Mos Def, Lupe Fiasco, and Shafiq Husayn.

"Mos Def and I wrote a song for the album titled 'Black Radio,'" Glasper explains. "We talked about how when an airplane crashes, the only thing that survives is the black box, or the black radio. It holds the truth. I felt that was a good title for the album; when everything around us is crashing and burning musically, the true music will prevail. And the record is all African-American urban artists who all get played on the radio. It has a double meaning."

The vocalists recorded live with the Robert Glasper Experiment as they tracked at LA's Threshold Sound, keeping studio trickery to a minimum. Though funky and mellow, *Black Radio* remains true to jazz's improvisational roots.

"I always record live," Glasper says. "I hate overdubbing. This record evolved more through production, but for the most part it's still the same. I am a jazz musician at heart. So I love in-the-moment playing, even if there's mistakes. You can break the spirit if you overdo it and try to be perfect."

Glasper wrote with and for the vocalists and also chose cover songs, resulting in Lalah Hathaway singing Nirvana's "Smells Like Teen Spirit," and Erykah Badu channeling Billie Holiday on John Coltrane's "Afro Blue." Also standard for Glasper, the songs of *Black Radio* are all first takes.

"My last three albums were 95 percent first takes. I'm not into doing a second take for the sake of it. If I love it, I am keeping it, 'cause that's where the magic is. When you do another take, most of the time you are not going to like it. When you play jazz, you're soloing and improvising. When you do that 12 times, you've overplayed yourself. You have to save energy to play jazz or you'll get burned out."

Recording multiple vocalists live with Glasper's band, engineer Keith Lewis (Mint Condition, Billy Preston, After 7) used the same mic

"My last three albums were 95 percent first takes...When you play jazz, you're soloing and improvising. When you do that 12 times, you've overplayed yourself."
—Robert Glasper

throughout and added effects in the mixdown. "Erykah used her own mic at a different session," Lewis says. "Mos Def brought his Shure Super 55. Everybody else sang through a Neumann U 67, which is pretty sensitive. I EQed vocals during mixdown [at his Flyin' Dread Studios in Venice, under the alias Qmillion]. We recorded to 192[kHz]. People say you can't hear the difference, but if there was ever a project to do it on, this was it. It's real music, where you hear the dynamics of the vocal going up and down. 192 gets all the nuances of the performance; just that much more information to the box than 96 or 48.

"My vocal chain is the Teletronix LA2A through a Pultec," Lewis adds. "The LA2A is the first one I hit; you have to make sure you are not hitting it too hard. Everything else we recorded with mad outboard gear, Urei 1176s, Tube-Techs; and it was cut on a vintage Neve board. That all adds to that warmth and cleanness."

After vocals, perhaps the most important element on *Black Radio* was Glasper's piano. "I like the piano to sound dark and moody and warm like a big couch," Glasper says. "I ask the engineer to make it sound a particular way, but often its sound comes from my touch. And I use a damper pedal, which a lot of pianists don't use. It muffles the strings and makes the piano sound warmer and darker."

"We used AKG 414s for piano, 'cause they pick up the body of the sound," Lewis explains. "I put one pointing to the right side of the keyboard about a foot and a half off the strings, that's the high notes. Then one in the middle for the mids, then the third mic at the bass end of the strings. I also use a room mic just to pick up some of the ambience."

The final element in the *Black Radio* chain, after recording bassist Derrick Hodge, vocoder manipulator Casey Benjamin, and DJ Jahi Sundance, was drummer Chris Dave, who uses three snare drums, peculiar cymbals, and a 28-inch bass drum. Dave is renowned for incorporating the feel of the late hip-hop producer J. Dilla.

"That big bass drum doesn't give you a tight sound," Lewis says. "I used a Neumann U87 placed about five feet behind Chris on the floor, aimed at the kick drum to pick up the attack

"I was suspect at first, but after a few minutes with the Recoils I realized how much difference they made. They work."

~ Al Schmitt

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~ Elliot Schelner

(Steely Dan, Fleetwood Mac, Sting, The Eagles, Queen, REM)

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~ Daniel Lanois

(Peter Gabriel, U2, Bob Dylan, Emmylou Harris, Robbie Robertson)

"With Recoils, when I listen to my recordings elsewhere, the results are more like what I hear when I record."

~ Ed Cherney

(The Rolling Stones, Bonnie Raitt, Jackson Browne, Eric Clapton)

"With Recoils the low-end is more defined and I hear fundamentals that I never thought were there. Recoils brought new life to my nearfields—they have never sounded so good!"

~ Bil VornDick

(Bela Fleck, Alison Krauss)

"It really is amazing what a simple little thing like the Recoil Stabilizers can do to a system. Suddenly everything got clearer, punchier and more solid."

~ Frank Filipetti

(James Taylor, Foreigner, The Bangles, Elton John)

"The Recoils cleared up a cloudiness in the bass and mid bass that I had been battling in my studio. This is an affordable and very effective problem solving product. I love these things!"

~ Ross Hogarth

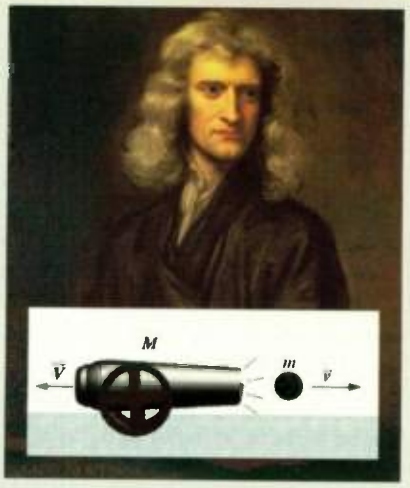
(Ziggy Marley, Melissa Etheridge, Keb' Mo', Jewel)

"I immediately noticed a huge improvement in the spaciousness of the sound field in my mixes. I love my Recoils... from now on, I'm not going to do a mix without them!!!"

~ Bruce Swedien

(Quincy Jones, Michael Jackson, Jennifer Lopez, Sir Paul McCartney)

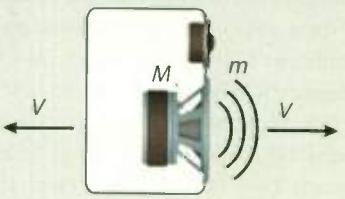
If Newton was an audio engineer, he would use Recoils!



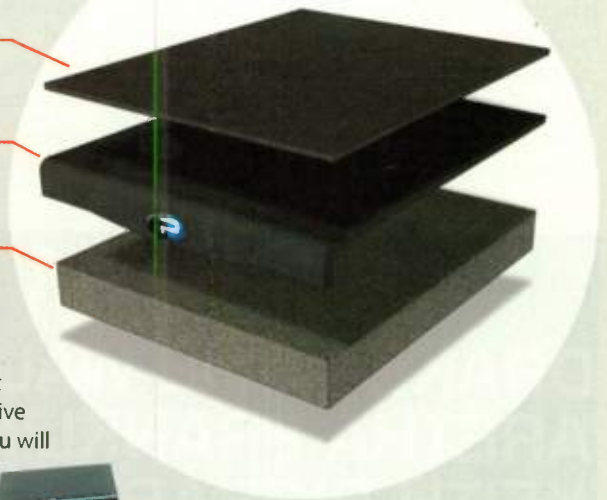
You've bought your new monitors, you put them on your desk and start to mix. However when you listen in your car or on other systems you notice that your mixes are not translating well – they don't sound the same as they did in your studio. Why?

Newton's third law of motion states "Every action is accompanied by a reaction of equal magnitude in the opposite direction."

Your loudspeaker works like a piston, constantly pushing and pulling air as the cone is thrust back and forth. The same energy that pushes against the air also vibrates into the desk, causing resonance. This 'comb filtering' effect makes it difficult to mix as it amplifies some frequencies and cancels out others.



Some would say "just isolate the loudspeaker from the desk with a foam pad" but by doing so, you introduce a new problem—your speaker is now swaying back and forth unhindered on the foam, just as Newton said it would. Energy that could be producing a crisp kick or accurate bass is dissipated into the foam and is lost.



Thin, high friction solid rubber pad *cemented to the platform, securely connects the speaker with minimal vibrational loss.*

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and grab a little more of the snare. I had one mic [vintage AKG D120] inside the bass drum, pretty close to the head. Then for my outside mic, a 414 two feet back from the head. Then I used a reversed Yamaha NS10 to get that subby tone."

A pair of SM57s top and bottom covered the snare drums, the third snare drum alternately triggering a dub delay. A stereo pair of Royers acted as room mics "as far away from the drums as I could get them and a couple feet from the back wall." Sennheiser 421s picked up Chris Dave's toms; a Neumann KM 84 captured the hi-hat.

"Chris uses some crazy cymbals, so I used Sony C-48s as overheads left and right to catch a wash," Lewis continues. "I catch the cymbals individually as well. Sometimes you want to have more control without turning up everything or rolling stuff off. Chris uses broken cymbals, cymbals that are mashed together, cymbals with chains on them. It's easier if I mic each cymbal. I use KM 84s again; I aim one at the bell for the ride cymbal, about a foot-and-a-half off. He has a spiral cymbal that hangs down three feet. I put the mic somewhere in the middle so it will pick up the vibration of the whole thing. Then on the other cymbals, I go a couple feet away."

Black Radio is the sound of modern R&B, subtle electronica, and the harmonics of jazz as filtered through Glasper's unique worldview. Old-school meets new-school with a righteous bump in-between.

"Robert and I didn't have to over-discuss the sound of the album, because we both love jazz and we both grew up in the hip-hop era, so our sonic sensibilities are in sync," Lewis confirms. "The mood and attitude of the piano sets the overall tone: dark and brooding at times and forceful at others. The goal was to create the warmth of the records from the '70s combined with the hard-hitting presence of hip-hop drums. We wanted a very musical record that could still be played next to machine-driven hits." ■

Ken Micallef covers multiple genres of music for various domestic and global publications. He lives in Greenwich Village with his cat Monty and his Shindo hi-fi.

"I catch the cymbals individually . . . Chris [Davis] uses broken cymbals, cymbals that are mashed together, cymbals with chains on them." —Keith Lewis

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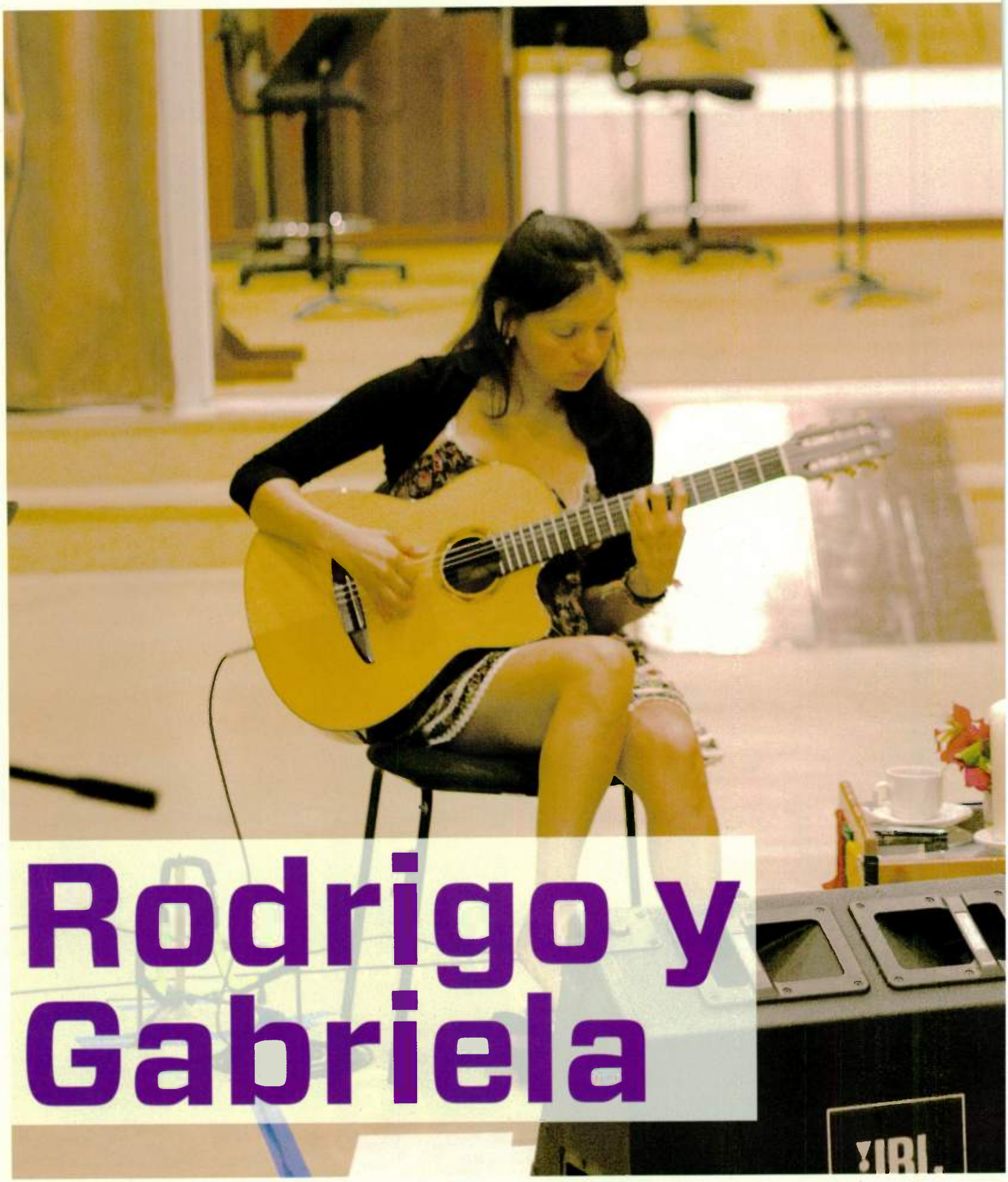

Rodrigo y Gabriela

Niall Muckian

Mexican duo team with Peter Asher and Hans Zimmer to craft a dazzling guitar showcase

BY KEN MICALLEF

IMAGINE A cast of 50 musicians spanning two countries, three recording studios and as many engineers, a superstar producer, a Grammy-winning mix engineer, and a dazzling acoustic gutitar duo—it's Rodrigo y Gabriela and C.U.B.A.'s *Area 52*. Any record featuring the Mexican guitar slingers performing some of their most popular tracks is reason enough to shell out cold, hard cash. But once Rodrigo Sánchez (lead guitar) and Gabriela Quintero (rhythm guitar, percussion) joined forces with producer Peter Asher and film composer Hans Zimmer, this project took on a life of its own.

"The original idea was just to make a project in-between albums," explains Sánchez from L.A. "We thought, 'Let's put this out so we can take a break and the label will be at peace with us.' Then I had to come up with an idea! At the beginning we just laid down tracks, then it grew as the label embraced the idea. Then we really got into the project. We changed all the songs; it grew on us immensely. But it wasn't planned this way."

Like Moby Dick devouring a whale-ship of horrified sailors, *Area 52* was the kind

Sánchez (left) and Quintero (middle) with Hans Zimmer.

Peter "Oso" Snell

of mammoth undertaking that could have easily swallowed up lesser artists. Dial up any track—"Santo Domingo," "Master Maqui," "Juan Loco"—and the music is compelling, startling, like a heavy-metal symphony for hardcore flamenco kids. The duo's custom-made Hermanos Conde guitars race like the wind, brass shouts and Latin percussion blasts assail the senses, drum set rhythms whirl like El Diablo, and sensuous strings tease the cerebral cortex. In true Latin fashion, *Area 52* is over the top, embracing machismo and dazzling musicianship. And with Peter Asher and Hans Zimmer onboard—both of whom employed Sánchez and Quintero to perform on the *Puss in Boots* and *Pirates of the Caribbean* soundtracks—*Area 52* merits a focused technical dissection.

The recording logistics were challenging. Sánchez and Quintero cut basic guitar tracks at their Lumbini Studio in Ixtapa, Mexico. The couple and their files were then flown to Abdala Studios in Havana, Cuba, where the music was played to the assembled rhythm section/percussion ensemble/orchestra. Once arrangements were fleshed out, and translations sorted, Sánchez and Quintero recorded scratch tracks with the rhythm section. Percussion, brass, and strings were then overdubbed. Finally, Sánchez and Quintero re-tracked their parts back at Lumbini. Engineer Rafa Sardina mixed the entire project at his L.A. studio.

"We used DPA mics on the guitars," Sánchez says. "We experimented with different positioning all the time. The best sound is not right on the hole, because it sounds very boomy, especially with these guitars. You should get in between the last frets and the body. That is a good position because you can get the full sound for the guitar. For Gab's guitar, you have to go all the way to the end, where the bridge is. She's a different player, and she does a lot of body percussion stuff. The playing is quite loud. We put the mics probably 10 inches away. Especially with Gab, she needs more room because [when] her right hand moves, she feels uncomfortable if the microphone is too close."

Engineer Gabriel Benitez Herrera manned a SSL Logic 4056 G+ console at Havana's Abdala Studios, one of the city's most prestigious recording environments. While Cuba continues to suffer economically, you almost wouldn't know it here. Abdala's equipment includes a Studer A

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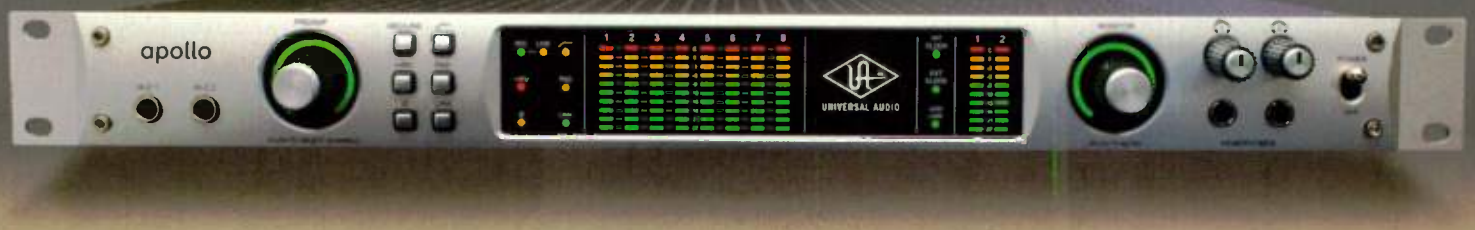

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827, a slew of outboard and software processing, and cherished mics from Neumann and Telefunken, as well as AKG and Shure.

"It's not state-of-the-art," advises Asher, "but they have some cool microphones and a full-on Pro Tools system that worked, and that's all you need these days—along with a good room, which it definitely had. We used their engineer, who was terrific. Occasionally I would suggest a different mic or position for a livelier sound. They tend to record things close and dead, and I am always trying to capture a bit of the actual room, because we were in a really good-sounding room and I like to get that on tape. They tended to be on the safe side, maybe stick something in an iso booth and mic it close. I would say, 'Let's leave the door open and put a mic outside as well.' I was pushing for a bit more live and a bit more room as an option."

Like recording a soundtrack, or perhaps a Broadway show with a cast of hundreds, Herrera had his work cut out for him.

"With respect to how I manage the recordings in such a large recording," he stated (via translator Paul Dryden), "I try to know in advance [whether by phone or email] what it is the artist wants to achieve with the process. For example, what sort of musical style they are looking to record and what format they'd like to do it in. And at the base, I organize my recording location. Even when you've done these sorts of recordings plenty of times, each one is completely different than the next, and you have to be ready for adjusting once the process actually begins."

That left Peter Asher to act as *de facto* producer, therapist, bottle-washer, and one-man clean- up crew. Asher was the final voice, re-editing the arrangements into a cohesive whole.

"One of my biggest concerns about the whole project was not to lose them," Asher says. "We had really brilliant Cuban arrangements and amazing Cuban musicians who can wail away and fill in all the percussion breaks and play wonderfully, but we didn't want to lose what this album is all about, Rod and Gab's playing and their tunes, which people already knew. So part of my duty as an advisor was to not lose Rod and Gab in the mixture. We worked hard not to do that. In the end we totally succeeded, it sounds like a Rod and Gab album with all this cool instrumentation, not the other way around. Every time we rearranged something, that was my test, my guideline. We wanted our stars out front and center but kept the genius of what [arranger] Alex [Wilson] and the musicians added."

In the end, Sánchez and Quintero had the final vote. And as concerned as they were about pulling off this epic adventure of a recording, it was still about maintaining their identity, their style.

"I don't know what our style is, and I am happy I don't know," Sánchez laughs. "I try to get rid of all the labels in my life and that's a difficult one. If I have something in my life that doesn't have a label, it's the music we play. I'd rather keep it that way." ■

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Read interview outtakes and extras.

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RADIO SALONE feels like everything good about radio (still a strong influence in African musical culture)...the excitement of being glued to the dial waiting for what they're bringing next, with fresh-familiar references—reggae, tenory soukous guitar, West African majesty—and that *thing* that makes this everyone's music. From the funky analog imprint of producer Victor Axelrod (Amy Winehouse, Sharon Jones) to the way hands hit drums on the "Goombay" interludes—when this band tells you to shake your booty, you do. These tracks don't strive for perfection but achieve it anyway, in their honesty and ease.

LEAH JONES

Nick Waterhouse

You Can't Say That

INNOVATIVE LEISURE

How can 25-year-old SF bandleader Nick Waterhouse be such an old "soul"? Following throwback powerhouses like the Dap Kings and Charles Bradley, Nick's debut is as Gold Star Recording retro R&B-styled as it gets without having a time machine in your studio. This approach really only works if it's the band making the record, not vice versa; mission accomplished here. A great collection of stellar big-boogie talent sounds both silky and gritty.

CRAIG DALTON

Breton

Other People's Problems

FAT CAT

Forgiving the monotonous spoken-word vocals, London-based Breton's old-school cut-up, stompfoot electronica is a revitalizing antidote in these days of Pro Tools conformity. Collaging samples ranging from queasy strings, harp, and seaside found sounds to overheard conversations and industrial noise, *Other People's Problems* comes on like Coldcut by way of De La Soul.

KEN MICALLEF

The Carolina Chocolate Drops

Leaving Eden

NONESUCH

The latest album from retro string/jug band the Carolina Chocolate Drops was produced by the Americana Association's reigning Artist of the Year, Buddy Miller. Like Miller's other productions (Robert Plant/Band of Joy, Solomon Burke, Patty Griffin), this music is warm, joyful and authentic without being a bit dusty. Of course, it helps that these three young musicians are brilliant players and powerful singers with a palpable connection to the history and beauty of this music.

BARBARA SCHULTZ

Steve Thomas

Audnoyz Project Volume 2

WWW.AUDIONOYZ.COM

Somewhere between *2001: A Space Oddity*, Kraftwerk, and Tangerine Dream lies recording-industry expert Steve Thomas' *Audionoyze Project*, a self-described "aural journey for the inner eye." It's a beautifully rhythmic journey of electronica surfing waves of ambient vocal and instrumental passages. Listening to this fresh approach to multicultural instrumental influences, you start feel like you are experiencing synasthesia, seeing the music. A natural work for filmmakers to explore, this genre-breaking collection pleases, startles, and stimulates the mind.

CRAIG DALTON

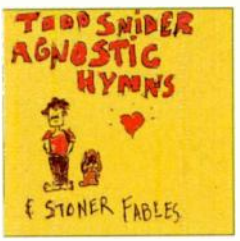
Birdy

Birdy

WARNER

Fifteen-year-old Jasmine van den Bogaerde (aka Birdy) is a seriously old soul channeling haunted songs and angelic vocals in her slight teenage frame. Already a star in England for her rendition of Bon Iver's "Skinny Love," Birdy covers songs by Fleet Foxes, The National, Phoenix, and James Taylor. She sings with the kind of passion and depth of soul that typically come from years of a life well lived. That a teenager pulls off this feat of time travel is nothing short of a revelation.

KEN MICALLEF



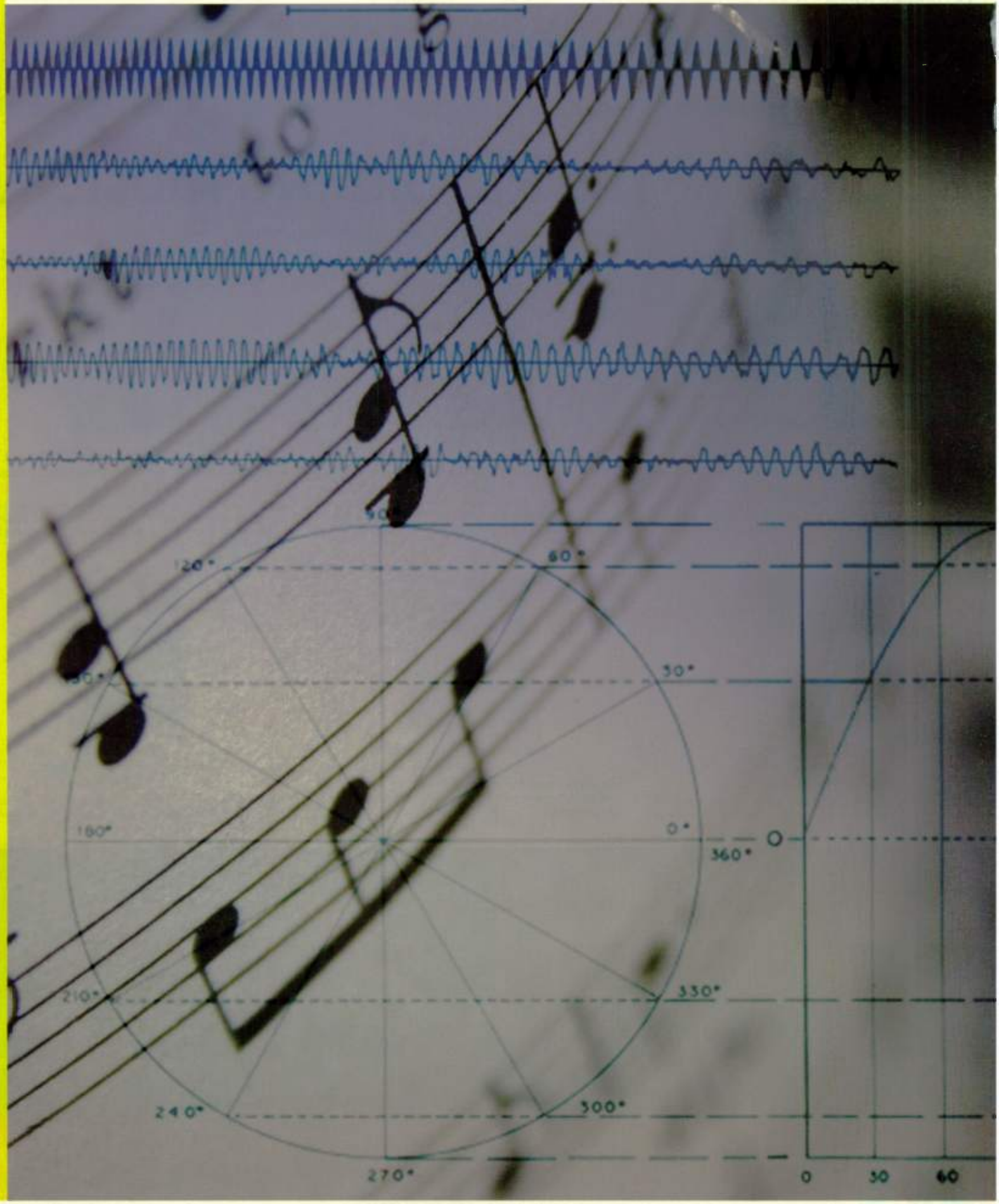
Todd Snider

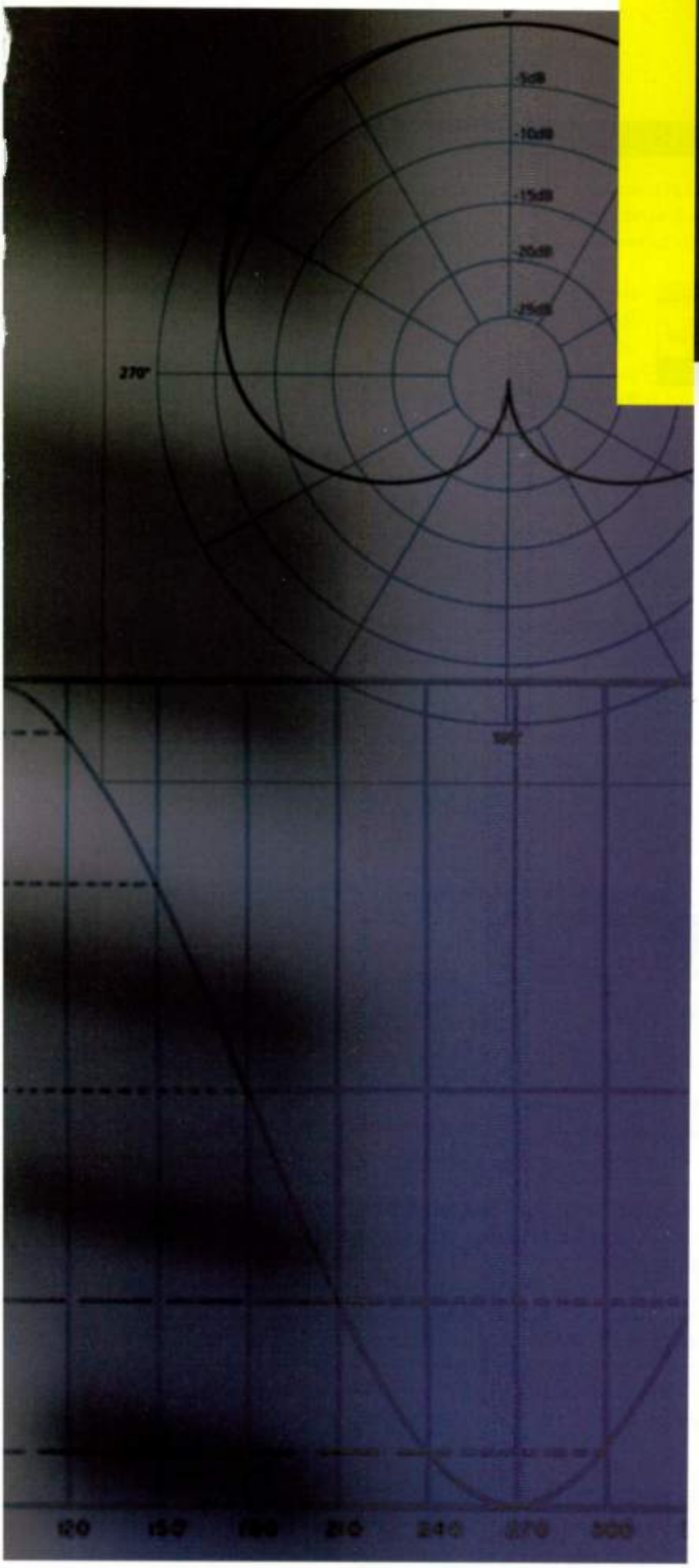
Agnostic Hymns & Stoner Fables

AIMLESS RECORDS

Todd Snider's genius lies in his ability to see more than one layer of irony wherever he looks, to express this musically. His new album points a sharp stick at greed and selfishness, and other human failings, without ever losing a sense of humor. Made in his friend and frequent collaborator Eric McConnell's Nashville-area home studio, the arrangements are a bit more fragmented (bordering on psychedelic) than much of his studio work, but Snider is always worth listening to, word for word.

BARBARA SCHULTZ





LUST

Roundup

Learn, Baby, Learn

DIY educational materials and resources

BY CRAIG ANDERTON

RECORDING, PRODUCTION, and distribution aren't getting any less complex, and that won't reverse direction any time soon. To keep up with the dizzying pace of change, you'll need education—and you can get a lot of it by spending some time on the web, and sitting down in a comfy chair curled up with your laptop and a few good books. (You're already reading *Electronic Musician*—good start.)

We spent hours surfing the Internet, looking through book catalogs, seeking opinions, and using blackmail to persuade publishers to give us advance copies of books to help keep this roundup current—and you're holding the results of that research in your hands. The web resources are free, and for everything else, we tried to find the most cost-effective options for real-world electronic musicians.

Ready to ratchet your knowledge level up a few notches? Keep reading.

WEB RESOURCES

The web is a fountain of information—and misinformation. Fortunately, lots of manufacturers offer useful advice online; while they are understandably slanted toward their products, that doesn't diminish the usefulness of these resources. Following are some of our favorites.

Royer Labs: Using Ribbon Mics

royerlabs.com/usingribbonmics.html

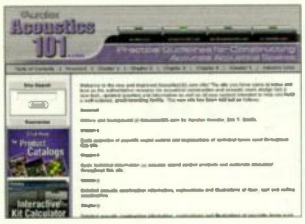
Ribbon mics are hot, but they require somewhat specialized techniques compared to conventional mics. While Royer concentrates on their ribbon mics, the recording tips (broken down into sections for particular instruments) apply to ribbon mics in general. As a bonus, don't miss super-engineer Bruce Swedien's three short talks on music and mics.

Another section, "Inside the Mix" (under the "CDs and Downloads" tab) presents both finished tracks and the Royer-recorded tracks in isolation, often accompanied by mic-placement photos. The audio examples are available as MP3s, but take the time to download the AIFF versions.

Auralex: Acoustics 101 and Auralex University

acoustics101.com/
auralexuniversity.com/

Auralex will be happy to educate you about the physics, materials, treatments, and techniques of acoustics—all in a practical, friendly style.



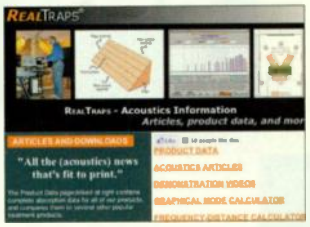
The Acoustics 101 booklet covers the fundamentals, but after that, click on Auralex University to hear audio examples that demonstrate what treatment can do, along with information on room sizes and other aspects of these examples.

An Interactive Kit Calculator lets you you enter room dimensions and desired style, and Auralex generates a list of suggested treatments to get the desired results. You can even take this one step further and get a free, personalized room analysis.

RealTraps: Acoustic Info

realtraps.com/info.htm

Completing our one-two punch on acoustics



education, RealTraps offers information *and* tools—you can even download a free test-tone CD to test the low end of rooms, where most problems occur. You'll also find a virtual acoustics library, as well as videos covering topics like placing speakers in a room, setting up a reflection-free zone, acoustics basics, etc.

RealTraps also offers a test file to help locate the best position to place bass traps, a calculator program (sorry, Windows-only) that displays axial modes for rectangular rooms, and a frequency/distance calculator (again, for Windows) that calculates quarter-wavelength frequencies.

Audio-Technica: Using Wireless Systems

audio-technica.com/cms/site/5821c10324fec931/index.html

Going wireless? You'll find everything from quick tips (avoiding interference, maximizing range, using multiple wireless systems, avoiding feedback, and the like), to wireless basics, to advanced topics.

Audio-Technica: A Brief Guide to Microphones

audio-technica.com/cms/site/9904525cd25e0d8d/index.html

This online booklet covers all the basics: microphone types, pickup patterns, and characteristics; dealing with common problems; and accessories. This is a great little reference for getting up to speed on mics.

Shure: How-To Guides

shure.com/americas/how-to/index.htm

Shure makes a lot of products, so there are a lot of how-to guides—how a phono cartridge works, mic techniques for drums, live sound reinforcement for acoustic instruments, minimizing feedback, EQ for live sound, and more—a *lot* more, so fortunately you can filter articles by areas of interest.

Beatportal: Guide to Synthesis

beatportal.com/tags/tag/guide+to+synthesis/

Keyboard contributor Francis Preve, along with Terry Church, has contributed a series of articles explaining how synthesizers work, and how to program them. While these articles are several years old, the fundamentals haven't really changed—and this series is a quick way to educate yourself about synthesis.

Motifator: Support for the Motif Community

motifator.com

Granted, this is more of a Yamaha general support portal than a solely educational resource. But it also features articles that aren't limited to Yamaha synths—search on "Multi-Band Compressor" and you'll see what I mean. Furthermore, search results are segregated into support articles and forum entries, which is handy if you want forum "sidebars" on the various topics.

FilmSound.org: Post Audio FAQs

filmsound.org/AudiopostFAQ/audiopostfaq.htm

This is a crash course on the terms and techniques involved in audio post-production. If you're just getting involved in video, read this and you'll at least know enough to understand the process and language.

Propellerheads: Record U

propellerheads.se/substance/record-u/

While Propellerheads offers a lot of product-specific tutorials, the Record U section takes

a more general tack with useful knowledge for anyone using DAWs and sequencers. You'll find material on ways to record guitar and vocals, apply reverb, EQ basics and applications, and more—as of this writing, 11 articles in all. Besides, where else are you going to find out why you need a flashlight to record a guitar amp?

While you're in Record U, if you *do* use Propellerheads' software, click on the Tutorials tab to find a wealth of information on specific programs.

No-Shock-Zone.org: Musician Safety

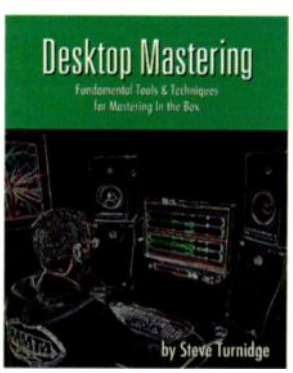
noshockzone.org/category/musician-safety/

Mike Sokol, chief instructor of the HOW-TO Sound Workshops, explains how electrical problems develop and how to avoid them; in a second article, he explains how to use meters to test outlets and electrical connections. This is a work-in-progress with more installments promised, but the existing material is well-worth reading to help make your stage a "no-shock zone."

BOOKS

Desktop Mastering

by Steve Turnidge
Hal Leonard Books
ISBN 978-1-4584-0374-2
halleonardbooks.com
$29.99



What it is This practical, results-oriented book is intended to take people who know about music and audio but not mastering to a level where they can try mastering, and with practice, hopefully get good results.

The content The chapters cover basic mastering and digital audio concepts, the listening environment, how to mix with mastering in mind (thank you!), the mastering process itself, the mastering effects chain, sequencing tracks, typical mastering applications (*i.e.*, the types of projects that benefit from mastering), and mastering as a business. The book closes out with chapters on audio and electrical fundamentals; a companion DVD-ROM includes premastered and mastered versions of files, so you can compare the differences, and have practice material.

The book is "Waves-centric"—for example, there's nothing about Ozone or Har-Bal (popular, cross-platform mastering tools), nor programs like Magix Samplitude or PreSonus Studio One Professional, which incorporate basic mastering functionality. However, the concepts are general enough that you can translate them to similar plug-ins.

The things that make this book stand out from most "how-to" books are the liberal amount of useful philosophizing and incidental tips that relate to the *gestalt* of projects in general, and mastering in specific. Author Turnidge's experience shows; he includes plenty of examples of the horror stories, anomalies, and weirdnesses (of course, with solutions) that come across a mastering engineer's desk. He also concentrates on client relationships and business issues by laying out a sort of "best practices" for you to follow if you plan to pursue mastering not just as a way to make your tracks better, but as a business.

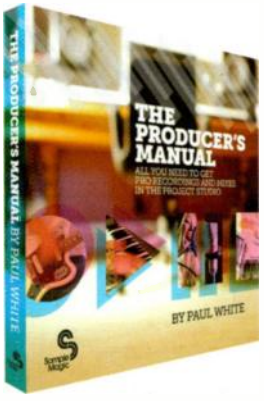
What's missing The section on assembling songs into an album experience is skimpy. Granted, these days, singles reign, but I often assist artists with song sequencing by analyzing the key, mood, tempo, lyrics, etc. Turnidge basically limits this focus to implementing what the artist wants. However, sequencing itself is an art, and one I've rarely seen discussed.

The target audience This book is not for beginners, or those who think a book can show them a few tricks and *voilà*—they're mastering engineers. But if you're serious about applying time, dedication, and effort into the craft of mastering, I highly recommend this book because it will also help you become successful in other elements of your life that are only tangentially related to mastering. Think of it more as *Zen and the Art of Mastering*, and you'll be closer to the scope of this unique book: a rare combination of practicality you can take to the bank, and philosophy that broadens your way of looking at the topic.

The Producer's Manual

by Paul White
Sample Magic
ISBN 978-0-9564460-1-5
samplemagic.com
$46.95

What it is Intended for home recordists coming to grips with learning to create good recordings, the book starts with context: a brief history of recording, classic gear, and the elements that make up a typical studio (with an emphasis on microphones and acoustics).



The remaining three-quarters is divided into Recording and Mixing sections. Recording covers vocals, electric guitar and bass, acoustic instruments, drums, and bands. Mixing handles processing, production techniques, mixing workflow, arranging, mixing, and mastering.

The content The book has a modern "vibe"—techniques like pitch correction, generating artificial harmonies, frequency-dependent ducking, salvage operations, drum replacement, and the like are given equal weight as explaining where to stick a mic (and which kind to use) when miking a cab. This vibe extends to the graphics, which owes more to *Wired* than textbooks.

Paul White makes no apologies for explaining how to exploit the fixes that digital recording allows. Frankly, it's great that he's realistic enough to say, "here's how to fix something that didn't quite work," instead of, "you should have recorded it properly in the first place." While he's careful to caution people about avoiding overkill, the material is relatively free of value judgements: White provides the hammer, but it's up to you to decide whether you want to build a house, bludgeon someone, or just stare at it until you actually *need* to use it.

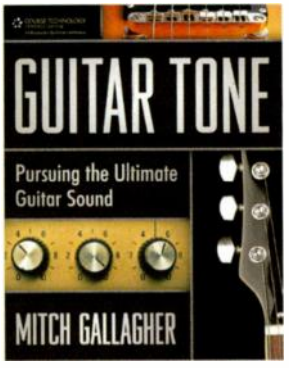
The introduction states you can read the book from front to back or dip into specific sections as desired, but I think calling this a "manual" is on-target—do your recording with the book sitting next to you, and when you need specific advice, find the section that applies. The index and glossary deserve props, as they greatly simplify finding what you want.

What's missing This book focuses almost exclusively on digital audio recording; you won't find anything significant on recording synthesizers, MIDI editing, synth tweaks, and the like; it doesn't offer much material about control surfaces (even how to use your keyboard's faders as one), other than being presented in the context of being a very useful addition if your budget allows. Given the book's scope, this approach makes sense for maintaining a reasonable page count/price.

The target audience This book is for those who have graduated from an all-in-one studio like a Zoom/Boss/Korg unit to computer-based recording; *The Producer's Manual* will get them up to speed on associated production techniques faster than anything else I've seen. Yet even those who've logged hours in the studio will almost certainly benefit from many of the tips presented here, particularly as they're presented in a clear, friendly, and practical manner.

Guitar Tone

by Mitch Gallagher
Course Technology
ISBN-13: 978-1-4354-5615-0
cengage.com
$34.99



What it is No, you haven't opened up *Guitar Player* magazine . . . but if you want to educate yourself about the components of guitar tone in the studio or onstage, this book is an exceptional resource: It covers all the elements that contribute to gear tone, as well as profiles of 15 iconic guitar players, and analyzes how they got *their* tone. So the next time someone says, "I'm kind of looking for a David Gilmour sound," just turn to Chapter 22.

The content The first part of the book covers guitar types and construction, and the tonal influence of wood types, hardware (*e.g.*, bridges and tuners), pickups, guitar electronics, amps, tubes, speakers, cabinets, effects, modeling, and even picks and strings. This is presented with almost obsessive detail, but is informed by someone who knows his science and can explain *why* and *how* these elements influence the sound. Part of the fun is that the content includes historical details and stories behind particular pieces of gear—tidbits like, what the deal is with PAF pickups, and how Mesa Boogie was started because of a practical joke. This kind of "extracurricular" material balances the book's more scholarly aspects.

The section closes with analyses and descriptions of iconic guitars, amps, and effects, and in the process explains their history and the factors that contributed to their signature tone. Then the section on guitar players kicks in, with "tone profiles" of Jeff Beck, Larry Carlton, the Edge, Robben Ford, David Gilmour, Warren Haynes, Jimi Hendrix, Allan Holdsworth, Eric Johnson, Brian May, Jimmy Page, Brad Paisley, Eddie Van Halen, and Stevie Ray Vaughn. The profiles are mostly about gear; these are not interviews, although a few people who've worked with these players offer their insights.

What's missing Graphics—there are virtually no pictures. Granted, artwork takes up space and this book already weighs in at 362 pages, but if a reader doesn't know what, for example, particular amps and effects look like, he or she won't find out here. Also, this should really be called the *Electric Guitar Tone* book, as there's nothing about acoustic guitars—however, there's a lot of information about amps and effects.

The target audience This book is for passionate gear geeks who want to know every detail of every aspect of the factors that make up guitar tone and are as fanatical in their quest for knowledge as the author was in tracking down that knowledge. While beginners might find the detail overwhelming, I learned a ton of things. Dense, deep, often fascinating, and always authoritative, this title is not a quick read—but it's a comprehensive collection of knowledge on everything (and I do mean *everything!*) related to electric guitar tone.

The Audio Expert

by Ethan Winer
Focal Press
ISBN 978-0240821009
ethanwiner.com/book.htm
$54.98

What it is Lots of books tell you "how," and that's fine. But Ethan Winer goes further to get into *why*. It's one thing to say, for example, that a compressor adds artifacts like pumping; it's another to tell you why pumping occurs, how to minimize it, how to use it creatively if you

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www.BandH.com
Shop conveniently online

The Secrets of House Music Production

by Mark Adamo
Sample Magic
ISBN 978-0-9564460-0-8
samplemagic.com
$49

What it is This is the "one of these things is not like the other" book in this roundup. It's graphically beautiful, almost like an art book, but it also has a magazine vibe, as it includes how-to techniques, opinions, interviews, and "walkthrough" sections (very much like *Electronic Musician*'s "Power App" features). And to top things off, it comes with a 600+ megabyte sound library CD of house samples and loops drawn from Sample Magic's repertoire. (For what it's worth, I'm quite a fan of their sample libraries.) The publisher refers to the book as a "reference manual," and in many ways, that description fits.

The content Dance music walks a tightrope: The music has to be familiar, yet different; keep a hypnotic groove, but not become boring; and provide tension and release that works when tracks are played alone or in a set. The book takes a similar tack, as it covers each element of house in its own chapter—drums (including drum programming), bass, vocals, synths, track structures, effects, mixing, and mastering. Within those chapters, you'll find a description of the "rules," then info on how to break them. For example, the book recommends the venerable 909 kick as the "industry standard" point of departure, but then describes layering kicks in Native Instruments' Battery, and explains how to create your own kick in Ultrabeat.

You'll find recommendations *not* to squash the living daylights out of everything when mastering, and learn why locking everything to the grid isn't always a good idea. Overall, the content provides a solid foundation on house music, but encourages taking it further by offering tips that fall under the "why be normal?" category.

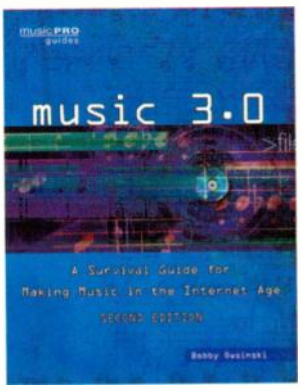
One of the coolest aspects of the "structure" section is pictures of arrangement screens, with numbered callouts that indicate which parts are being brought into the arrangement, when, and why. It's a brilliant way to get the point across.

What's missing This isn't about dance music, but *house*. If you want to strike off in, say, a trance direction, you're better off with something like Sound.org's *The Trance Experience*. Tutorials are limited to Live, Cubase, Logic, and Reason, but realistically, that's not much of a limitation, as those are the most popular options for creating house music.

The target audience People who are getting into computer-based recording because they want to create house music tracks, DJs who yearn to go from playback to recording their own tracks, and musicians who want to branch out into a new genre. This book has the aesthetic of the dance scene, and yes, it's aimed at a limited audience—but it delivers what that audience needs.

Music 3.0: A Survival Guide for Making Music in the Internet Age, 2nd Edition

by Bobby Owsinski
Hal Leonard
ISBN 978-1-4584-0289-9
halleonardbooks.com
$24.99



What it is Bobby Owsinski surfs the wave of seemingly non-stop change sweeping over the music industry, from the rise and fall of labels, to radio (or the lack thereof), to building a fan base in the Internet age. It's telling that this extensively revised edition is based on a first edition released way, way back in . . . 2009.

The content The book's first three chapters cover the way things were, why they changed, and where we stand today. Then just when you're about ready to contemplate changing careers, chapter four tells the stories of artists who got it right—like Radiohead and Trent Reznor. From there, Owsinski moves rapidly to practical advice on how to work within the world of "Music 3.0"—maximizing networks, finding non-obvious ways to derive income, building a fan base, managing social media like Facebook and Twitter (did you know there's a best time of the day to tweet?), using email lists, and the like. You'll know some of this material, but you probably won't know most of it, like how to set up an easier way to deal with transactions at the merch table than traditional credit cards. Owsinksi also includes useful interviews with industry movers and shakers.

The book reads almost like a newspaper, with collections of tips based loosely around particular topics. Some of these tips are general, while others are specific and detailed. Some fall under the category of "Why didn't I think of that?" while others analyze various strategies, and draw salient conclusions (like the benefits of "tiered" sales) that might never occur to you without reading this book.

What's missing If you need a linear narrative, look elsewhere; reading *Music 3.0* is more like parallel processing, as you bounce like a pinball amongst all the factors involved in today's music business. But, that's also its value: You'll have a solid, broad overview of the multiplicity of elements that go into planning a career in today's world.

The target audience This book is not *Ten EZ Tips on How to be an Overnight Sensation in the Music Biz*. Owsinski makes no apologies that you'll need talent, luck, a keen business sense, a bunch of supporters, and a serious level of motivation. *Music 3.0*'s contribution to your career is defining just how hard you're going to have to work, and explaining which options will maximize the results of that work.

If you're serious about getting your music out into the world, this book is a no-nonsense, concise companion (it's required reading in a number of MBA programs) that eschews fantasy in favor of analysis—and guides you with an accurate assessment of what's really going on in the music industry.

Recording and mixing instructional videos

Secrets of the Pros
secretsofthepros.com
starting at $4.95

I hadn't planned to review videos, because so many are geared to specific products or topics rather than being general. However, Secrets of the Pros (best known for their Pro Tools tutorials) produces a wide range of videos, from beginner-oriented (as in not knowing which part of the mic to sing into) all the way up to expert.

I received several links to sample the company's wares. SOTP foregoes scripted and heavily produced videos, which is part of the reason why the prices are so reasonable. Instead, they take a conversational approach that doesn't present information quite as compactly; however it is non-intimidating, and in some ways easier to absorb, as the pace is more leisurely.

We don't have the space to provide details on everything SOTP do, but they offer several free videos on their YouTube channel (youtube.com/user/secretpros), which give an idea of the videos' *gestalt*. You don't have to commit to buying an entire DVD; you can purchase a download of an individual chapter, and if you like it, buy more . . . or just download the sections that interest you.

My favorite was the *Pro Recording and Mixing* series. For example, the "Drum Recording—Advanced" tutorial ($4.95, shown in the screen shot) includes about 30 minutes of tutorials on drum miking—the narrators basically empty out a mic locker, set the mics up around Dennis Chambers' drums, and compare and contrast them. The tutorial includes audio files and a Pro Tools session so you can audition the drum sounds yourself, then compare what you hear to what you see, in terms of mic placement. SOTP offer eight of these tutorials so far (including acoustic guitar, electric guitar, vocals, advanced compression techniques, etc.); they're $4.95 each (seriously) but the set of eight is $29.95, which is a screaming deal.

SOTP's videos are definitely targeted, so make sure you check out the freebies and previews to find the ones that might be a good fit for you. Overall, though, there's a wide range of videos, many with serious value. ■

Waves Bass Rider Plug-in

Make your bottom sit pretty in the mix

BY MICHAEL COOPER

Fig. 1. Bass Rider automatically rides levels for bass-instrument tracks.

MOST MIX engineers like to slap a compressor or limiter—or both—on the bass track at mixdown to breed big tone. But if the bass player's dynamics are all over the map, the quiet notes don't get compressed at all, while loud notes get squashed flatter than Metallica's *Death Magnetic* album.

Traditional solution: Place the compressor post-fader, then ride the track's fader so that its level is always in the threshold's sweet spot. Better solution: Insert Waves' Bass Rider plug-in (Figure 1) pre-fader (before any EQ and dynamics processing), and it does the fader moves for you automatically in real time, saving you time and foregoing tedium. The cross-platform Bass Rider supports TDM, RTAS, AU, VST, and Audio Suite formats and can be purchased alone or as part of the Waves Mercury bundle.

Looks Familiar Bass Rider's GUI is similar to that for its kissin' cousin, Waves Vocal Rider. But unlike Vocal Rider, Bass Rider has no sidechain or built-in automation features because, frankly, it doesn't need them. The streamlined feature set makes Bass Rider very easy to use.

On DI'd electric bass tracks played by ace session players, Bass Rider's effect often sounded very subtle. That's because those players had very steady dynamics that needed little if any correction. But used on a part played very poorly by an amateur bassist, Bass Rider helped even out the jerky levels. It wasn't a perfect cure, but the plug-in remedied about 90% of the yo-yoing. Slapping Waves L1 limiter on the track downstream from Bass Rider took care of the rest. Bass Rider also made a big difference on a seesawing synth-bass track, leveling the dynamics very effectively and saving me a lot of time and hassle.

When a player would intentionally goose a few notes for emphasis, Bass Rider would automatically dip them to keep the levels steady. I could override this unwanted action by clicking and holding the Rider fader (or dragging it upward to increase gain) with my mouse for the duration of the passage for which I wanted to preserve the original dynamics. As soon as I released the mouse, Bass Rider resumed riding levels. Sweet!

Transparent Sound In a blindfold test listening to a smoothly-played bass phrase, I couldn't tell whether the plug-in was active or bypassed as long as it was set to Slow response. The Fast response setting produced a hair less air and depth, but provided the best control of levels on busy bass tracks.

Bass Rider produced negligible CPU drain. Digital Performer 7.21 and Pro Tools 9.0.5 each compensated for the plug-in's inherent 42ms latency. Use the included low-latency version of the plug-in, Bass Rider Live, when you hit the stage.

If you work only with unfailingly rock-steady bassists, you probably don't need Bass Rider. For the rest of us in the real world, Bass Rider is another useful Waves plug-in that takes the tedium out of mixing. ■

Michael Cooper (myspace.com/michaelcooperrecording) is a mix and mastering engineer and the owner of Michael Cooper Recording in Sisters, Oregon.

SUMMARY

STRENGTHS: Saves time and fuss at mixdown. Transparent sound (using Slow response). Super-easy to learn and use.

LIMITATIONS: Probably not necessary on virtuoso tracks.

TDM $300, $200 MSRP
waves.com

Reminder.

This is the m101 microphone preamplifier from Grace Design. Maybe you own one, or perhaps you have heard or read about it. We originally introduced it way back in 2000. Since then we have sold thousands upon thousands of them. Not simply because they are affordable, but because they are one of the best values in pro audio. While its big siblings are in service in many of the most illustrious recording facilities in the world, the m101 dutifully serves to make any recording sound better, regardless of budget.

For relatively little money, the m101 gives you one channel of gloriously detailed, open, musical mic amplification. With it, a thoughtfully placed microphone, and an honest musical idea, **YOU** can make a beautiful recording.

GRACE DESIGN

www.gracedesign.com

Fig. 1. Hybrid Reverb combines convolution reverb in series and parallel with algorithmic reverb. This shows the author's setup for gated-room reverb.

Vienna Symphonic Library Vienna Hybrid Reverb

Cross-breed plug-in creates unique sense of space

BY MICHAEL COOPER

SUMMARY

STRENGTHS: Sounds great. Creates composite virtual spaces not possible using other reverb plug-ins. Innovative parameter controls for IRs. Can import third-party IRs.

LIMITATIONS: Can't sync any parameters to host. Can't create gated algorithmic reverbs. Only one algorithm available for the reverb tail. Can't purchase alone.

$570 MSRP
vsl.co.at

CAN'T DECIDE whether a convolution or algorithmic reverb would sound best on your project? Then try both at once—Hybrid Reverb lets you choose an impulse response (IR) and combine it with an algorithmic reverb inside a single (AU/VST/RTAS, 32/64-bit hosts) plug-in. The IR provides the early reflections, and the algorithm the reverb tail for the composite stereo effect. A host of sound-warping parameter controls make Hybrid Reverb a compelling tool for both music production and sound design.

Hybrid Reverb is a free update to the Vienna Symphonic Library (VSL) Vienna Suite plug-in bundle. Vienna Suite's other plug-ins include a convolution reverb, compressor, exciter, stereo imager and spectrum analyzer; two different equalizers; and wideband and multiband limiters. Unfortunately, Hybrid Reverb isn't available separately. Vienna Suite requires a ViennaKey or Steinberg USB dongle.

Breakdance You can modulate your chosen impulse response's volume, panning, decorrelation and low- and high-pass filter corner frequencies over time by creating and dragging breakpoints along respective graphic curves for each function. For example, I could de-correlate the early reflections midway through an impulse's timeline to make them bloom into a wider stereo image. Another application is to modulate the low-pass filter corner frequency in sync with panning modulation to create unnatural ambiences (think sci-fi and supernatural thriller sound FX).

I crafted an excellent gated-room reverb by plunging the volume envelope for a room IR midway through its length, and muting the algorithmic tail. (Muting the tapered algorithmic tail prevented it from masking the gated-reverb effect, as the tail's volume envelope can't be edited to dip it quickly; see Figure 1.) Unfortunately, you can't resample an IR in Hybrid Reverb to extend its length as you can in Vienna Suite's Convolution Reverb, making it infeasible to create convincing gated-reverb effects with short IRs. Happily, you can import third-party IRs into Hybrid Reverb.

I could also fashion multiple steep peaks and valleys—lessening in amplitude over time—in the IR's volume envelope. Programming the panning envelope to modulate in sync with the volume peaks created a diffuse ping-pong delay. Unlike discrete ping-pong delays, the result was a repeating reverb—a far more complex and rich sound. I wish breakpoints and pre-delays could be synced automatically to the host DAW's tempo, but they must be calculated and edited manually.

Any breakpoint edits you perform are applied to subsequent IRs you recall (unless and until you click a button that resets all functions to their static default states). I could create outstanding automatic double-tracking (ADT) effects by modulating a plate IR's volume and pan envelopes in rapid and synchronous succession while muting the algorithmic tail. Subsequently recalling different room, stage, and studio IRs in turn retained the ADT effect, superimposed on a different IR. Easy!

Looking for Tail Vienna Suite's Convolution Reverb plug-in offers the same breakpoint editing as the IR section of Hybrid Reverb; where Hybrid Reverb differs is in the ability to route the IR both in series and parallel with an algorithmic reverb tail to create an evolving space. I was a bit disappointed to learn that Hybrid Reverb offers only one algorithm for the reverb tail, but changing the density and other parameters changes its sound fairly dramatically. The result is a morphing space-scape not achievable with any other plug-in—and that makes Hybrid Reverb a winner. ■

From Live Mixing to Studio Recording,

The 01V96i's Faders Move Smoothly.

Yamaha just (re-)invented the small format digital mixer. Over ten years ago, we were the first company to make an affordable moving fader mixer for stage and studio. When you are mixing live, motor faders let you easily see exactly where your main, aux and monitor levels are at the touch of a button. In the studio, they let you take full control of the powerful automation features of your DAW. The 01V96i continues our tradition of digital mixing innovation with 16-in/16-out USB 2.0 computer connectivity, Virtual Circuit Modeling effects and advanced DAW control for Cubase® (as well as Pro Tools,® Logic,® Sonar® and Digital Performer®).

So if you need a mixer that moves easily between live mixing, live recording and home studio, you need to check out the 01V96i.

- 24-bit/96kHz digital mixing console with 40 mixing channels
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- 16-in /16-out USB 2.0 audio streaming at 96kHz
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- Studio Manager Editor with complete mixing control via PC, Mac® and even iPad® (with Air Display)
- Advanced DAW control
- Improved studio-quality head amps
- 100mm motor faders
- Mini YGDAI expansion slot

For more info visit 4wrd.it/01VEM3

96 kHz / 24 bit

Virtual Circuitry Modeling

DAW control

motor Faders

CUBASE AI

01V96i EDITOR

YAMAHA

Scan code for 01V96i info

NEW GEAR FROM WINTER NAMM

1
WaveMachine Labs
Auria
iPad multitrack recorder
$49.99

HIGHLIGHTS 48 tracks of playback with iPad 2 • record up to 24 tracks simultaneously with optional camera connection kit adapter • channel strip from PSP Audioware • optional plug-ins available • 64-bit double-precision engine, path delay compensation

TARGET MARKET On-the-go recording, desktop recording replacement

ANALYSIS This was a huge hit at NAMM, as it sealed the deal on portable recording being in the same league as desktop recording—and for some recordists, Auria will replace standard recording setups. Although using the original iPad halves Auria's track count, its capabilities (especially given the price) are outstanding.

auriaapp.com

2
Casio
XW-P1
Keyboard synthesizer
$699

HIGHLIGHTS 8-oscillator monophonic solo synth and standard PCM playback engines • drawbar organ mode • advanced step sequencer • 16-step arpeggiator • USB and MIDI ports • mic and line inputs for external signals • four realtime controller knobs

TARGET MARKET Recording and performing musicians; the XW-G1 companion synth is similar, but optimized for groove and DJ-oriented applications

ANALYSIS Casio's comeback as a serious synth manufacturer has been rapid and well-deserved. The multiple audio engines, step sequencer, and arpeggiator scream "live performance," but the XW-P1 is also a great fit for recording. Keep your eye on these.

casio.com

3
Mackie
DL1608
iPad-based mixer
$1,249.99

HIGHLIGHTS 16 channels, each with Onyx preamp and plug-ins (EQ, dynamics, effects, etc.) • 12 XLR, four combo mic/line inputs • 6 aux sends with graphic EQ and limiter • undock iPad from base and control the mix remotely (wi-fi router required) • snapshot automation recall • record the mix to your iPad • integrate music from other apps • save, load, and share channel presets

TARGET MARKET Live performance, but also studio crossover

ANALYSIS Integrating iPads was a recurring theme at NAMM, but the DL1608 garnered a lot of attention for using the iPad for control, particularly remote control from up to ten iPads.

mackie.com

4
Line 6
StageScape M20d
Digital mixer
$2,499 MAP

HIGHLIGHTS Touchscreen, image-driven visual mixing environment with X-Y interface • 20 inputs • records 16 channels+main mix to SD card, USB drive, or computer • iPad remote control • complements the Line 6 StageSource speaker systems via digital networking, but can be used independently • auto-sensing inputs and outputs • dynamics, EQ, and effects for each channel • multi-band feedback suppression

TARGET MARKET Live performance

ANALYSIS While the NAMM attention was focused on Line 6's integrated system, the M20d mixer component re-invents live sound mixing and can work stand-alone with non-Line 6 amps and powered speakers. Impressive.

line6.com

All prices are MSRP except as noted

5
Akai Pro
MAX49
Keyboard controller
$699
HIGHLIGHTS USB MIDI, 5-pin DIN MIDI, and control voltage/gate interfacing • Mackie Control and HUI protocols • four banks of eight backlit LED touch faders • 12 backlit/velocity MPC pads with swing and note repeat • 49 semi-weighted keys with aftertouch • expanded arpeggiator • transport controls • rubberized pitch and mod wheels • AkaiConnect mapping software
TARGET AUDIENCE Virtual instrument control in studio or on stage
ANALYSIS Akai has taken a different tack compared to other keyboards, offering multiple control options including LED touch faders, step sequencing, and interfacing with vintage analog synthesizers.
akaipro.com

6
Universal Audio
Apollo
Audio interface with UAD-2
$2,999 Quad, $2,499 Duo
HIGHLIGHTS Includes UAD-2 processor (Duo or Quad) • ins: analog 4 XLR, 8 TRS, 2 TS, digital 8 via ADAT, stereo S/PDIF • outs: analog 10 TRS, digital 8 via ADAT, stereo S/PDIF • less than 2ms latency with FireWire 800, optional Thunderbolt interface card • expand DSP with UA's Satellite • cross-platform
TARGET MARKET Studios that want to combine interfacing and processing, live performance
ANALYSIS While Apollo is an obvious candidate for studios, being able to process signals through UA's powered plug-ins with near-zero latency—and the plentiful I/O—also make this a logical option for computer-based live acts.
uaudio.com

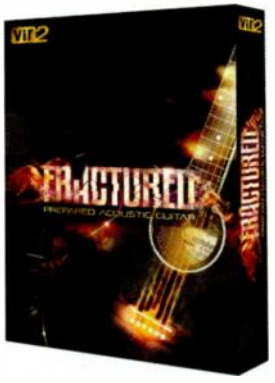
7
Radial Engineering
Cube
500 Series frame
$400
HIGHLIGHTS Holds three 500 Series modules • includes 800-milliamp, external global (100–240V) power supply • offers standard XLR connectors, supplemented by 1/4" TRS types • feed switch provides inter-module signal path • 14 gauge steel enclosure • unique Omniport takes advantage of unused pins in the API spec
TARGET MARKET Those who want a cost-effective, portable home for 500 Series modules
ANALYSIS Radial's Workhorse was the first of three 500 Series frames from the company. The PowerStrip mounts three 500 Series modules horizontally in a single rack space, while the Cube is easily transportable and mounts them vertically.
radialeng.com

8
Apogee
MiC
USB/iOS microphone
$199
HIGHLIGHTS For use with iPhone 4/4S, iPad with iOS 4.3 or higher, Intel Mac with OS 10.6.4 or higher • gain control knob • all-metal construction • clip/status LED on front of mic • onboard A/D conversion interfaces with iOS device's digital, not analog, input • bus-powered, no batteries required • includes cables and desktop tripod
TARGET MARKET Vocal and instrument recording, as well as podcasts and interviews
ANALYSIS iOS-compatible mics are plentiful, but few have the Apogee pedigree for A/D conversion, and MiC also works as a USB mic with Macintosh computers.
apogeedigital.com

Sounds Like NAMM to Me

BY GEARY YELTON

One aspect that distinguished NAMM 2012 from other shows of recent years was the relative dearth of sound libraries. Nonetheless, a few soundware developers were on hand, and *Electronic Musician* was there to check them out. Here's a brief look at five new products available now or a few months down the road.

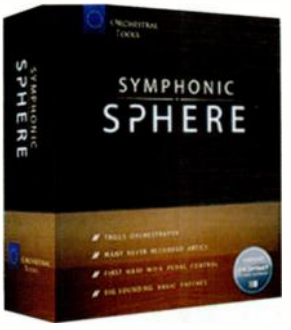


Big Fish Audio

Fractured: Prepared Acoustic Guitar

Big Fish Audio was at NAMM to announce the *Vir2 instrument Fractured: Prepared Acoustic Guitar* ($149.95). Using techniques such as striking the strings with mallets and pouring rice over them, Fractured's designers modified, manipulated, and mangled several guitars to produce 105 instrument presets that deliver 2.3GB of loops, arpeggios, pads, and drum kits, each with a custom set of onscreen controls. Fractured runs standalone or as a plug-in, and you can open its content in Native Instruments Kontakt 5.

bigfishaudio.com

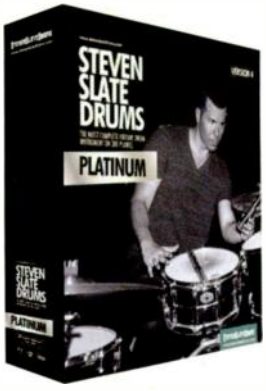


Orchestral Tools

Symphonic Sphere

Tucked away in a corner booth, Orchestral Tools demonstrated the Kontakt-compatible *Symphonic Sphere* ($335.29). This collection fills in gaps left by other orchestral soundware by furnishing embellishments and articulations such as flourishes, trills, and fingered tremolos. Alongside a full string section, you get orchestral percussion, a woodwind ensemble, and symphonic harp. The harp samples supply beds, sweeps, and scale glissandos with full pedal control. Also included is the unique Trills Orchestrator for strings and woodwind. The entire 24-bit, 48kHz library comes as a 23GB download that expands to 43GB.

orchestraltools.com

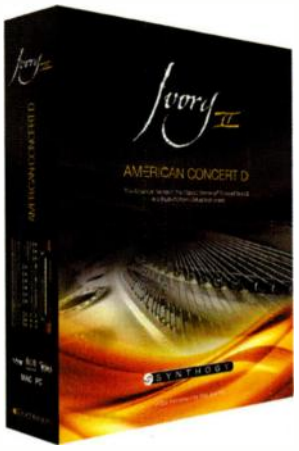


Steven Slate Drums

Steven Slate Drums 4

Now you can choose from two editions of *Steven Slate Drums 4*. The Platinum version ($299) features 100 kits in a variety of styles, including drum sets modeled after kits from Dream Theater, Steely Dan, Nirvana, and Metallica. The EX version ($99) features 25 kits designed for rock and funk, including a Led Zeppelin kit and a single dance kit. At the heart of the library is SSD Player, a plug-in that lets you load, customize, and mix kits and MIDI data within your DAW.

stevenslatedrums.com



Synthogy

Ivory II—American Concert D

Synthogy was at NAMM demonstrating its forthcoming *Ivory II—American Concert D* ($199). Master sound developer Joe Ierardi and his team sampled every nuance of a New York Steinway Model D specifically selected for its pure tone and expressive dynamic range, recording it in the François-Bernier Concert Hall at Le Domaine Forget in Quebec's Charlevoix region. Like *Ivory II*'s three previous instruments, *American Concert D* will run standalone or as a plug-in, and its content will install into an existing *Ivory II* user's library.

synthogy.com

UVI

Emulation II

If you're looking for that '80s sound, you can't go wrong with the 8-bit glory of *Emulation II* ($199.95). UVI captured samples from a restored *Emulator II* keyboard, enhanced them with studio processors, and created a user interface that duplicates the original's look and feel. More than 250 sounds supply everything from drums and basses to orchestral hits and effects. But wait, there's more: You also get *Drumulation*, a virtual re-creation of E-mu's popular 12-bit drum machine, the Drumulator. Both libraries require the free sampler player UVI Workstation and are also compatible with MOTU's MachFive 3.

uvisoundsource.com

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KRK SYSTEMS

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Dave Vann

Funk band Lettuce performs at Camp Bisco X in 2011.

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Ready for the Road

Gearing up for summer gigs

BY STEVE LA CERRA

THERE'S NOTHING better than being busy gigging—and nothing worse than a having a gig mishap that could have been avoided. The busy season is right around the corner, so now's the time to look at things you can do to make life on the gig easier.

Testing 1-2-3 Part of your routine should be checking out your gear after it comes back from a show. Of course no one wants to start testing gear at 4 A.M., but at some point

Space blankets can be a big help for keeping gear cool when it's sitting out in the sun.

you need to make sure everything made it back without damage. It's easy to get lazy, but there are several reasons why you're better off performing this check soon after returning than you are doing it right before the next gig. First, if something needs repair, you'll have the time to address it. Second, if some knucklehead spilled a beer into a piece of gear and you didn't notice it last night (or maybe it happened on the load-out), you have a far better chance of saving it if you get to it before the liquid dries and corrosion starts. Third, when you get an unexpected last-minute gig, you can pack and go without worrying whether your gear is ready. Fourth, if you discover missing items, you can make a prompt phone call to the venue to see if they're still there. (More about that momentarily.) This is also the time to load digital mixer system updates so you have time to test them. (Save your files to a couple of memory sticks for backup, and make sure that more than one person holds copies of your files.)

Your traveling tool kit should include a cable tester or a simple multimeter that can be used to check cables and electrical outlets (see Figure 1). When using a multimeter, check XLR cables pin-to-pin for continuity and cross-check the pins for shorts. (Ditto for TS and TRS cables.) There are several different types of TS cables: those used for connecting instruments to amps, those for connecting "line-level" gear such as outboard and mixers, and those used for connecting speakers to power amps. Speaker cable is heavy-gauge, unshielded, two-conductor cable, while the other two types are typically lighter-gauge, with a single conductor and a shield. If these cables are difficult to tell apart, label them so you won't mistakenly use them for the wrong purpose. You should carry spares of all kinds. Questionable cables should be left home until they can be repaired.

Fig. 1. Carry a multimeter to check cables and outlets.

Scout the Gig If you've never played a particular venue, do a bit of pre-production. (This is especially important for outdoor venues that may not normally host live bands.) What's the load-in? Is there a stage? Does it have a roof? If not, what will you do if it rains? Is electricity easily accessible? Are you expected to supply music when the band is on breaks? Does the venue have a house P.A., or are you expected to bring your own? Is there a safe place to locate your mixing board and speakers? Obviously it's less work for a band to use the house P.A. system, but some bands will bring their own "front-end" (mics and mixing board) and either send a submix to the house mixing console or plug into the power amplifiers. If you plan to do the latter, make sure that you have the proper cables.

In situations where the house is providing P.A., sending a stage plot and input list ahead can help the house tech understand your band requirements. The input list is self-explanatory. The stage plot is a bird's-eye view of the stage setup, showing the position of each instrument and performer. It doesn't have to be a scale drawing, just something to show the general idea. An example stage plot is shown in Figure 2; notice that the position of the monitors is outlined and the monitor

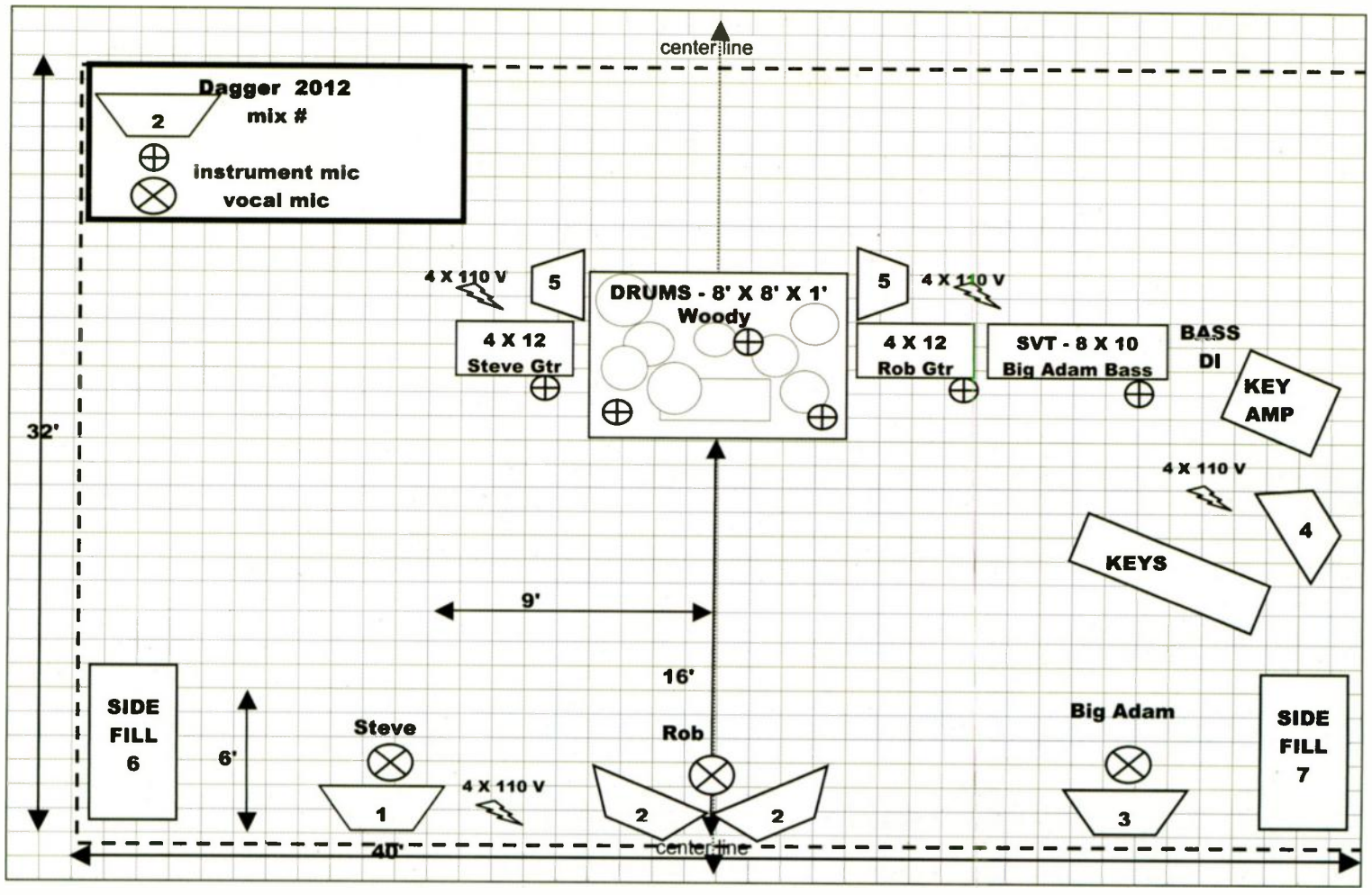

Fig. 2. Sending a stage plot can help the house tech understand your band requirements.

mixes are numbered to facilitate communication between band and engineer.

Electronic equipment—particularly anything with a microprocessor—doesn't like heat, especially the kind generated by lying out in the sun all day. Keyboards and digital mixers are especially vulnerable to malfunction or damage from heat. You may find that some LCD screens will turn completely black when they reach a certain temperature, making them useless. (They usually return to normal once they cool down.) Space blankets can be a big help for keeping gear cool when it's sitting out in the sun.

Splurge Whether you are bringing your own P.A., using the house system, or a combination of both, everyone in your band who sings needs his or her own vocal microphone. Using public microphones is unsanitary (okay, it's disgusting), and you never know what you're gonna get. Spend time trying different vocal mics, and when you find one that suits your voice, buy it. These days, you don't have to spend five hundred bucks to get a good vocal mic for live use. There are a multitude of great choices in the $125 range from Shure, Sennheiser, Audix, Equation Audio and a host of other manufacturers. If you own a vocal microphone, you'll have consistency from show to show, and you won't have to worry about getting an abused mic that no longer functions properly.

One of the most annoying problems on a gig is a microphone stand that doesn't stay put. Give some love to those forsaken mic stands! Take some time to figure out what's wrong and fix them. A replacement clutch for the height adjustment costs about two bucks, takes five minutes to install, and spares you the hassle of dealing with a mic stand that falls while you're playing. The boom pivot also tends to wear down most frequently, but this is an equally easy fix. Take a look at Figure 3, a close up of the pivot on a typical mic boom. Notice the two leather disks in between the metal flanges of the boom and the mic stand. (You can see the stitching in the photo.) These disks (which are sometimes plastic) are the culprits when it comes to booms that sag. They are easy and cheap to replace. If you want to extend the life of the boom in the first place, don't over-tighten.

Keep it Simple Your setup time can be decreased if some of your gear is pre-configured. For example, if your band is carrying a mixer, outboard gear, and power amps for house speakers and monitors, load all of the gear into a single rack and pre-wire as much as possible. You'll still have to run cables into and out of the rack for microphones and power amps, but even that work can be simplified by making or purchasing a rack panel with the requisite connectors and mounting that on the rear of the rack. This helps avoid visiting the interior of the rack every time you set up (in the dark, in small uncomfortable spaces, with drunk people hovering over you). A mic input panel may be financially out of reach (at around $200 for 16

female XLRs on a 2-space panel, *sans* extensions), but a panel with speaker output connectors helps reduce wear and tear on the power amp and can be had for well under a hundred bucks. In cases where power amps employ binding-post output connectors, you have the option of "converting" the binding posts to the infinitely more durable and secure Neutrik speakON connector. If you are concerned with heat inside the rack, a panel-mounted fan can keep things cool.

A road-case rack is overkill if you are handling your own gear; stick to a molded case with a metal frame, which costs way less than a road rack and saves your back on the load out. On the inside lid of each case, tape a list of every item that belongs in that case to avoid leaving items behind (especially small items) and alert you immediately if anything goes missing. Damage to speaker cabinetry can be avoided by using padded covers, which are far lighter than cases and take up less room in your vehicle.

Using public microphones is unsanitary (okay, it's disgusting), and you never know what you're gonna get.

A Word to the Wireless As of June 2010, it is no longer legal for the audio community to use wireless microphones, instruments, or ear systems that operate in the 700MHz band. (You can find tons of info regarding wireless regulations online.) Some wireless manufacturers offered limited trade-in programs so that people who already owned these systems had opportunities to exchange them for systems that operate in other frequency ranges. Some folks got stuck with wireless systems that can no longer be used. Unfortunately, shady characters use Flea Bay and Craigslist (not Anderton's!) to try to unload this obsolete gear. If you decide to purchase a used wireless system, make sure that you know exactly what you are buying. Something that appears to be a good deal could end up being an expensive paperweight. It'd also be a good idea spending some rehearsal time "coordinating" your band's wireless systems to ensure that the lead vocal is not stepping on the bass player's transmission frequency.

The Musician's Emergency Kit Assemble a small tool kit that lives with your gear. Pack the usual suspects like flat-head and Phillips-head screwdrivers, pliers, and a hammer. A set of hex wrenches and miniature screwdrivers come in handy for guitar or bass work. Other items to pack include the aforementioned meter, a soldering iron, solder, and a wire stripper for making cable repairs; extra TRS, TS, and XLR connectors; diagonal and needle-nose pliers; heat-shrink tubing in various sizes

Don't bite the hand that feeds you. Respect yourself, your craft and the work of others. The software community made it possible to record an album on your laptop. If you want to make sure there is a future version of the software you are using, buy the software you use. It's the smart thing to do.

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(to insulate wire and provide strain relief on cables); UL-listed electrical tape; a work light; flashlight; utility knife; and of course, duct tape. It's also a good idea to pack items such as a drum key, spare guitar tuner, peg winder, bass and guitar strings, drumsticks, cymbal felts, ear plugs and sun screen. A ground lift can help temporarily solve a ground loop issue. Don't forget fuses *in the proper values* for the instrument amps, P.A. amps, and mixer. It might not be practical to carry an owner's manual for every piece of gear you own, but you can probably find PDFs to put on your iPad or laptop. Ditto for re-initialization procedures for synths and digital gear—information that may not always be found in the manual. Dutch Light & Sound Engineering has a great web page that includes re-initialization procedures for a plethora of gear (dlse.nl/synthrepair/reset.html). Most important: don't forget to pack your sense of humor! ■

Steve La Cerra is the tour manager and front-of-house engineer for Blue Öyster Cult.

Figure 3. The disks between the metal flanges on your mic stand will stop it from sagging.

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Fig. 1. Use these settings for SPL Transient Designer to permanently cripple your lead guitarist's sense of self-worth.

Practical Jokes For Mixdown

An April Fool's guide for the technically savvy musician

BY MICHAEL COOPER

AS APRIL Fool's Day approaches, musicians gleefully plan novel ways to torture their hapless bandmates. Nothing presents a better opportunity for nurturing your dark side than your band's critical mixdown session.

Every musician is concerned about how his or her performance and track will sound in the final mix. But invariably, someone won't be able to attend the mix session to help guide the process to a flattering finished product. This presents a golden opportunity for you, the mix engineer, to prey on the absentee's worst fears.

Create two mixes. Mix A will be the real mix: your best effort toward a sonic masterpiece and *not* what your absentee bandmate will hear. Mix B will be your prank mix, the one in which you purposefully destroy all positive attributes of your absentee bandmate's track while making everything else sound great. At your following band meeting (on April Fool's Day, of course), playback Mix B and watch the horror spread like wildfire across the face of your punk'd bandmate.

Of course, we at *Electronic Musician* would be remiss if we didn't provide technical tips for demolishing your bandmate's finest performance. Read on.

Bankrupt the Money Track If your lead singer can't attend the mixdown session, they become your victim. Slap Celemony Melodyne Editor on their track, and use the pitch tool to drag every single note in their track either sharp or flat. Spare nothing; every single note should be noticeably out-of-tune by the time you're finished. On playback at your next band meeting, enjoy the deepening look of panic on your lead singer's face as their sabotaged vocal track lurches into the spotlight.

Melodyne Editor can also be used to deep-six your fiddle player's masterly track in absentia. Plunge the pitch modulation and pitch-drift tools to completely flat-line all vibrato and every gliss in their virtuoso performance. In short, make the fiddle sound like an organ.

Let's say you guys are a rock band and your guitarist played a soaring solo à la Pink Floyd's David Gilmour. Too bad he can't make the mixdown session! Activate the SPL Transient Designer plug-in at the start of his solo, and nosedive the sustain control to its absolute lowest setting to reduce every note to a split-second-duration whimper (see Figure 1). On playback at your band meeting, you'll relish the intensifying look of terror on your six-stringer's face when his rock star moment of glory arrives.

If country music is your band's forte, re-record the electric guitar track through a wah-wah pedal while the guitarist is away. This effect sounds especially impressive on a chicken-pickin' solo. Fast and erratic pedal movements work best and lend an unshakeable air of anti-street cred.

Shatter the Foundation If your drummer can't make the mixdown session, copy an overly simple bar of drumming from an outtake and paste it so it repeats throughout the entire song. (Feel free to move the kick and snare hits around a little so that they become painfully off-beat.) When your drummer hears the mix, he'll surely freak out and ask what happened to all of his track's fills, rolls, flams and hi-hat work. Tell him you thought it sounded too busy.

I would offer more tips, but I'm occupied at the moment drowning a bass guitarist's track in a humongous cathedral reverb. Oh yeah, he's gonna love that! ■

Michael Cooper (myspace.com/michaelcooperrecording) was a formerly respected mix and mastering engineer whose career ended on April Fool's Day.

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Fig. 1. While recording this tam-tam, the author wrapped the mic in a towel and coiled the cable to minimize handling noise.

Microphony Made Easy

Exploring the hidden sounds in cymbals and gongs

BY GINO ROBAIR

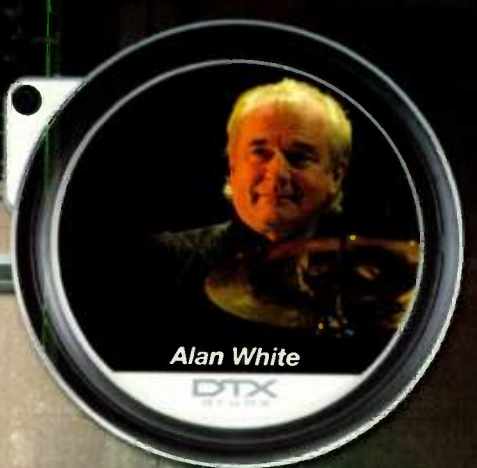
MICROPHONES ALLOW us to hear and record sounds that are otherwise imperceptible to the naked ear. Just as a doctor uses a stethoscope to listen to a patient's cardiopulmonary system, a recording engineer can use a mic to explore an instrument for unique sounds.

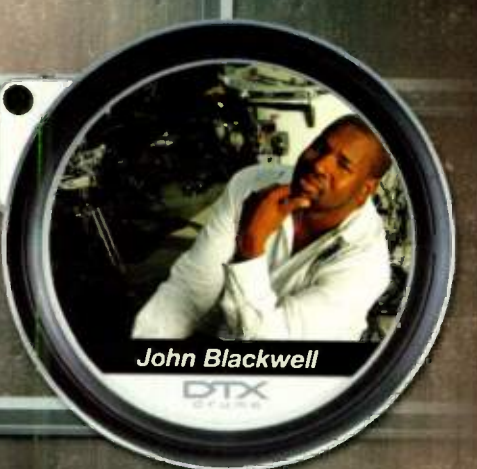
The vibrating body of an instrument produces numerous localized spectral components that can only be heard when a listening device is in very close proximity. By focusing on specific areas, we can capture unusual harmonic combinations that change over time, and enhance the effect by moving the microphone by hand while we record. In this article, I will explore this idea using cymbals and gongs, which offer harmonically rich timbres that are fun to work with.

Good Vibrations An instrument's timbre is defined by the resonating characteristics of the materials from which it is built. The 19th-century physicist Ernst Chladni demonstrated the vibrational modes of solid surfaces by bowing the edge of a metal plate that was covered in a fine layer of sand. As the surface resonated, the sand formed into patterns that showed the positions of the nodes and anti-nodes at a specific resonating frequency. Search for the term "Chladni" on YouTube and you'll find videos that demonstrate this phenomenon and give you some insight into why you'll hear different sounds as you move a mic over a vibrating surface.

The definitive example of this miking technique is Karlheinz Stockhausen's classic work *Mikrophonie I* for tam-tam (a type of gong with a flat center) and six musicians. (Two musicians play the instrument, two move microphones, and two process the sounds in real time.) The impetus for the work came when Stockhausen used household objects to play a large tam-tam he had acquired. While he scraped and tapped the instrument, he moved a handheld microphone

There's Only One Thing These Great Drummers Have in Common.





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over the surface to pick up the complex resonances being produced, while a colleague filtered and recorded the sounds that the microphone captured. Although the initial experiment was improvised, Stockhausen went on to compose a piece that utilizes metal, wood, rubber, glass, cardboard, and plastic to excite the tam-tam's surface, ranking the types of sounds created from low and dark to high and bright. The technique can be performed on just about any object that resonates, and the method used to excite the instrument plays a role in the sounds you'll hear.

Close Miking Although the attack of various materials and playing techniques are interesting, an instrument's decay characteristics can be just as fruitful. The trick is to move the mic in as close as possible to the cymbal or gong as the vibration decreases. Your ear will guide you to the right spots if you monitor the mic input through headphones.

Any microphone that is easy to hold and move can be used. The main thing to avoid is handling noise, which is generated at the mic or by cable movement. You may have to wrap the mic body in something that mitigates the noise, such as a towel or soft foam (see Figure 1). You should also coil up a portion of the cable in your hand so that the cable doesn't scrape against anything.

Mic type and polar pattern play a major role in what you'll hear. If the mic has a directional pattern, you can focus more precisely on interesting timbres. However, you will also get an increase in lower frequencies due to the proximity effect. If that bothers you, try using an omni pattern.

Spend time finding the sweet spot on the instrument. Each playing technique will excite different vibrational modes in different parts of a gong or cymbal. Don't simply put the mic over the area you're playing. Try hitting the edge of the gong and moving the mic around the center of the instrument. Or tap the center and move the mic slowly to the edge and back again to exaggerate the timbral shifts the instrument offers as it decays.

Explore Dynamics Typically, the harder you hit a cymbal or gong with a wooden stick, the higher the harmonics you'll hear. As the sound decays, the timbre gradually changes as the higher harmonics fade. I often find the sustaining portion to be as interesting as the attack, and I look for ways to excite a tam-tam or cymbal that help it sustain longer, such as using soft yarn, rubber, or wool mallets. Hitting it with a knuckle or closed fist can produce darker tonalities that shift subtly.

You can elicit higher harmonics without resorting to loud hits by tapping or scraping the instrument gently with a blunt piece of metal, such as a triangle beater or bolt. (Pick something that doesn't damage the instrument.) Another technique is to place the open end of a paper tube flat against a gong and scrape it. When done correctly, it generates a shriek that is rich with harmonics.

You can get a similar effect by dragging the head of a drumstick flat against the surface of a cymbal, or by using a violin or cello bow on the edge. Pulling a superball, stuck to the end of a chopstick, across the surface will produce a variety of high-frequency tones, depending on how hard you press down and how quickly you move.

Envelope Moving the microphone quickly towards and away from the instrument helps shape the envelope of the sound. The results can be a tremolo effect that includes spectral shifts, and the father away from the instrument you go, the deeper the effect will be. You can also move the mic toward a different spot each time you get close to the cymbal.

My favorite envelope shape involves rushing the mic towards the instrument immediately after it's struck, then gradually slowing the mic movements as the instrument decays (the opposite of the way a ball would bounce off the ground). Non-linear, arrhythmic mic moves yield the most interesting results, though moving the mic in time with the beat is also nice.

To exaggerate the decay or create a reverse envelope, add a compressor in the signal path. A high ratio and slow decay will further transform the sounds. ■

Gino Robair writes about and teaches audio recording in the Bay Area. Check out his music at ginorobair.com.

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Listen to Karlheinz Stockhausen's *Mikrophonie I.*
emusician.com/april2012

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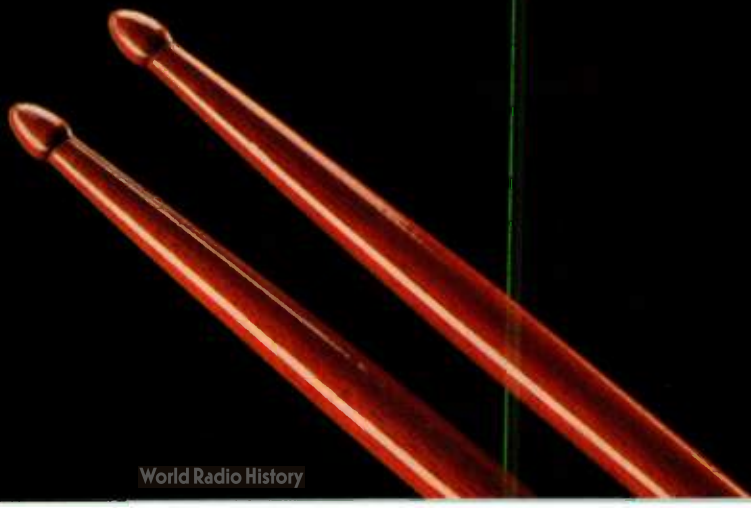

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Apple Thunderbolt Display

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The fastest, most flexible I/O ever lets this display do things others simply can't. Thunderbolt I/O technology lets you move data between your devices and your computer with unprecedented speed — up to 20 times faster than USB 2.0 and up to 12 times faster than FireWire 800.

Run Digital Performer 8 as a 64-bit native application, along with 64-bit plug-ins and instruments like MachFive 3, on Mac OS X 10.7 (Lion).

Apple MacBook Pro

State-of-the-art processors. All-new graphics. Thunderbolt I/O. Three big leaps forward.

The 13-inch MacBook Pro now features a 2.4GHz Intel Core i5 processor or the fastest dual-core processor available — the 2.8GHz Intel Core i7. The new 15- and 17-inch models bring quad-core power to Digital Performer, MachFive 3 and your other instruments and plug-ins. The available 2.5GHz quad-core Intel Core i7 processor — with Turbo Boost speeds up to 3.6GHz and up to 8MB of shared L3 cache — enables these MacBook Pro models to run your MOTU studio up to twice as fast as their top-of-the-line predecessors.

MOTU MicroBook II

Studio-grade personal recording

Connect a premium mic, a guitar, and a keyboard, and start tracking with sound quality that rivals audio interfaces costing hundreds more. The amazing and compact MicroBook II delivers studio-grade features and sound.

MOTU

MOTU MachFive 3
Universal sampler for creative production

MachFive 3 is out and awards are coming in, along with words like *astounding*, *unbeatable*, *tremendous* and *unparalleled*. Keyboard Magazine just gave MachFive 3 their Key Buy award, saying that "...no other sampler better integrates synthesizer functions." Could MachFive 3 be the new go-to sampler for Pro Tools users? The editors of the AIR Users Blog, a leading independent Pro Tools user community, gave MachFive 3 their Editors Choice Award, saying that "MachFive 3 is by far the easiest way to get the biggest sound."

Shure Beta 181 Stereo Set
Ultra-compact side-address instrument mics

Designed for discrete placement and control in live or studio environments, the Sweetwater-exclusive Beta 181 Stereo Set includes interchangeable cardioid, supercardioid, omnidirectional, and bidirectional capsules for superior versatility. The small-diaphragm design provides superior audio with consistent, textbook polar response in a form factor small enough to get close to the source in the tightest conditions.High SPL handling, ultra-smooth frequency response, and interchangeable polar patterns make this the perfect stereo mic pair for any technique in the book. This must-have mic bundle comes with two mic bodies and eight capsules in a custom case.

Genelec 8040A
Active bi-amplified studio monitor

With performance comparable to much larger systems, but in a compact package, the bi-amplified Genelec 8040A is ideal for use in MOTU studio situations where wide frequency response is needed but space is limited. Use the 8040A for nearfield monitoring in project/home studios, edit bays, broadcast and TV control rooms, and mobile production vehicles.

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MOTU Digital Performer 7

Strengthen your stereo mix's bass

BY CRAIG ANDERTON

OBJECTIVE

Narrow the bass range to mono, while the rest of a mix's stereo imaging remains intact.

BACKGROUND

Stereo mixes generally center the bass frequencies, which are non-directional. Also, centered bass is essential when mastering for vinyl. However, some bass parts (like synth bass) may be in stereo, and low frequencies of instruments panned left or right may not be centered—but we can fix that.

TIPS

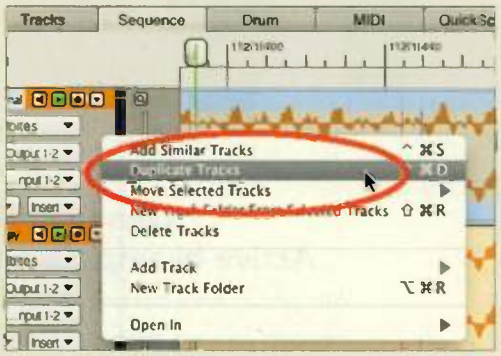
■ Step 5: You may need to reduce the low band fader a bit, as narrowing to mono can cause a center buildup.

■ Step 5: Once everything's adjusted as desired, go to the Audio menu. Use Bounce to Disk to bounce the two files into a stereo file suitable for playback or subsequent mastering.

Step 1 Import the stereo mix into a DP stereo track, and insert the MasterWorks Compressor. To defeat compression, set each band's threshold to 0 and ratio to 1:00. The MasterWorks Compressor now serves as a frequency crossover.

Step 2 Solo the low band, and set the low/mid crossover frequency between about 100 and 200Hz to isolate the bass.

Step 3 Click on the Sequence tab, then duplicate the track.



Step 4 Open the MasterWorks Compressor in the duplicated track, solo the mid band, and set the mid/high crossover point as high as possible (all the way to the right).

Step 5 Insert the Trim processor *after* the MasterWorks Compressor in the bass band, then center both Trim panpots. The bass range is now centered.

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Five Misconceptions About DAWs

BY CRAIG ANDERTON

1

DAWs are responsible for the decline of music.
Actually, this is true. I went into the studio and caught my DAW online in an Avid chat room, having a heated discussion with other DAWs about ways to destroy music as we know it. This is the *real* reason experts advise against connecting your music computer to the Internet. *Beware. They have an agenda.*

2

DAWs have amazing editing options so that you can take garbage and turn it into really good-sounding garbage.
No, they have amazing editing options so you can make a truly excellent part even better. Great parts aren't created—*they're recorded.*

3

He who has the most plug-ins, wins!
Studies at McGill University have shown that the quality of music created on a DAW is inversely proportional to the number of installed plug-ins. Okay, I made that up, but you *know* I'm right. You're better off being an expert who really knows a dozen plugs than a dilettante with 100.

4

Going into a forum for software you don't like and telling everyone how much you think it sucks will win friends and influence people.
Good idea! Now, take it to the next level—saunter into a police station with an "Off the Pigs!" t-shirt.

5

DAWs are a religion, and demand proselytization of the unbelievers.
Don't you get tired of people who are on a crusade because the DAW *they* use is so much better than the one *you* use? Yea, though I walk through the valley of the shadow of Blue Screen, Sad Mac, and DAW fanatics, I will fear no evil—because I am comforted that DAWs are for *making music.* ■

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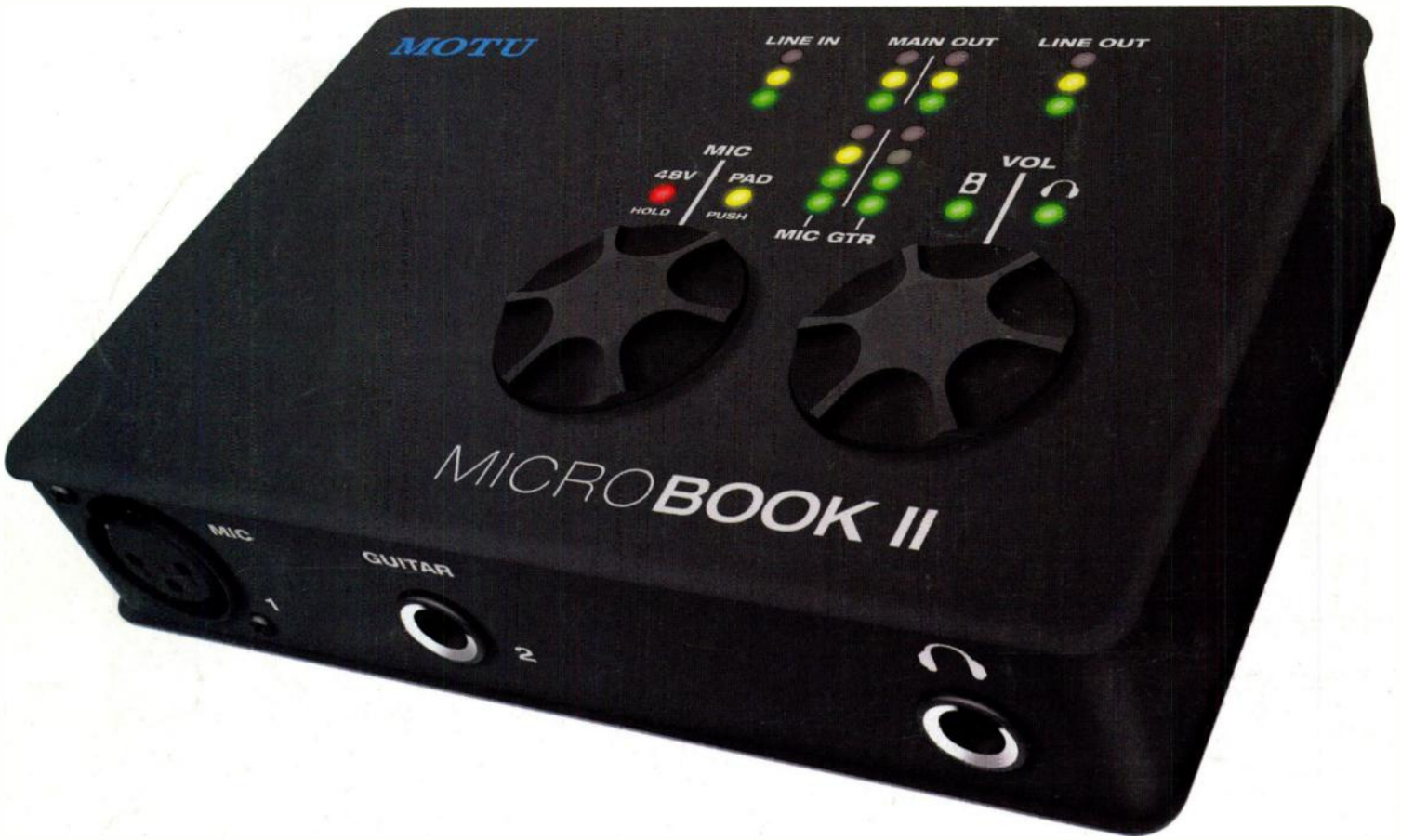

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