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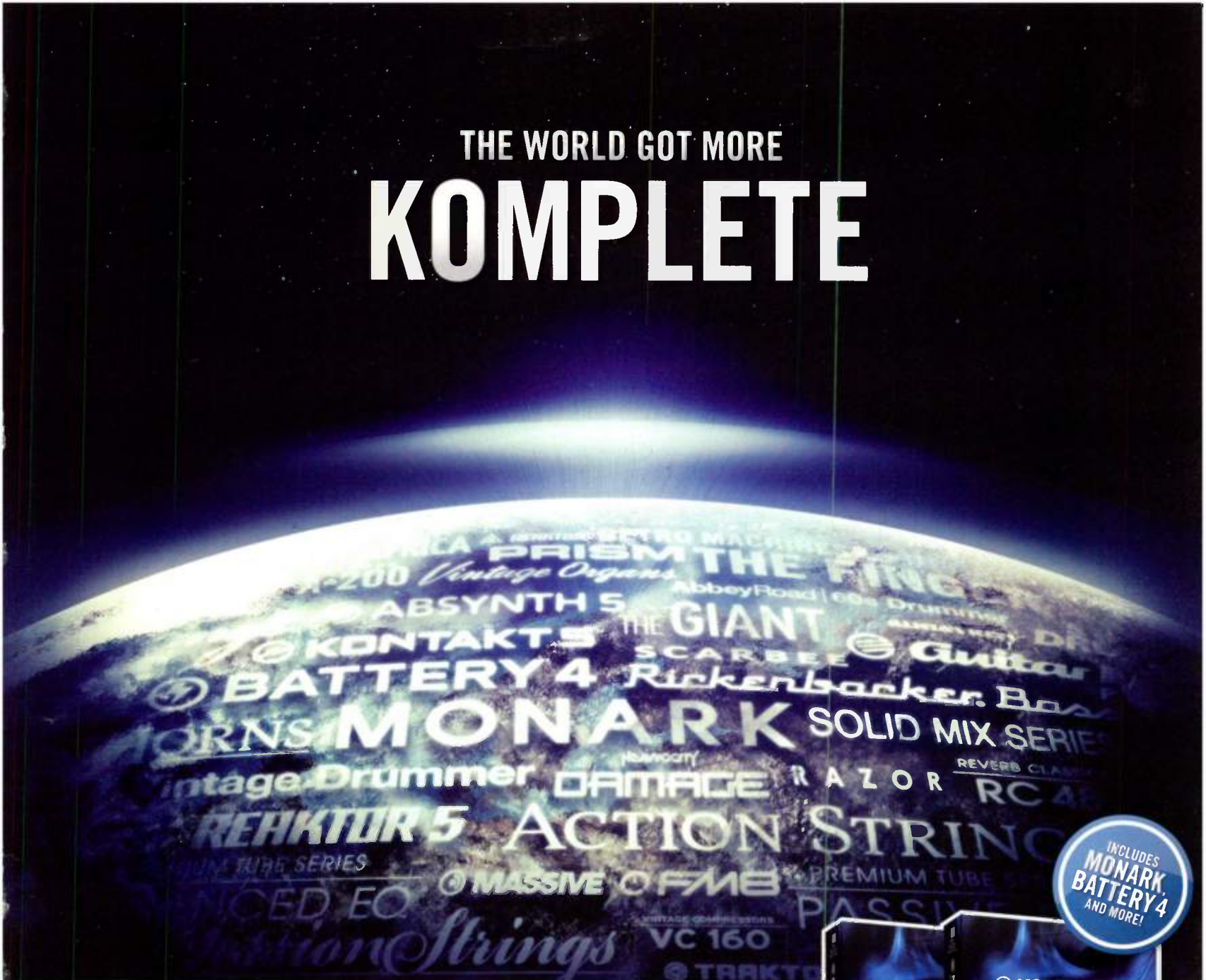
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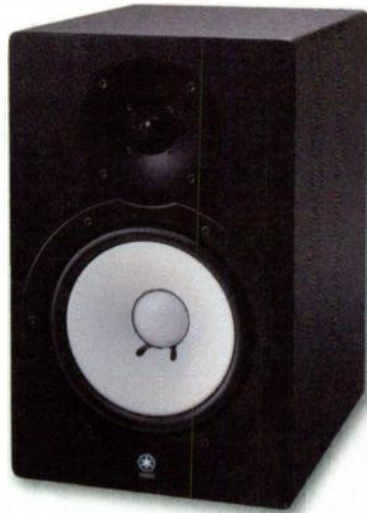
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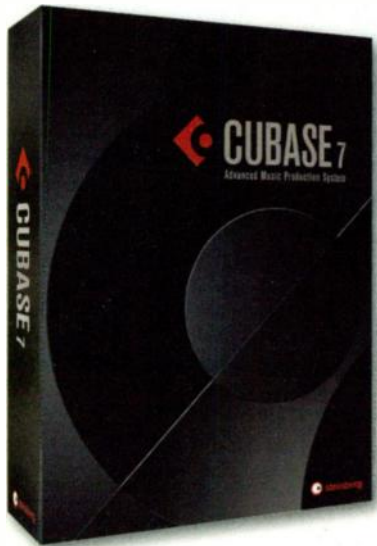
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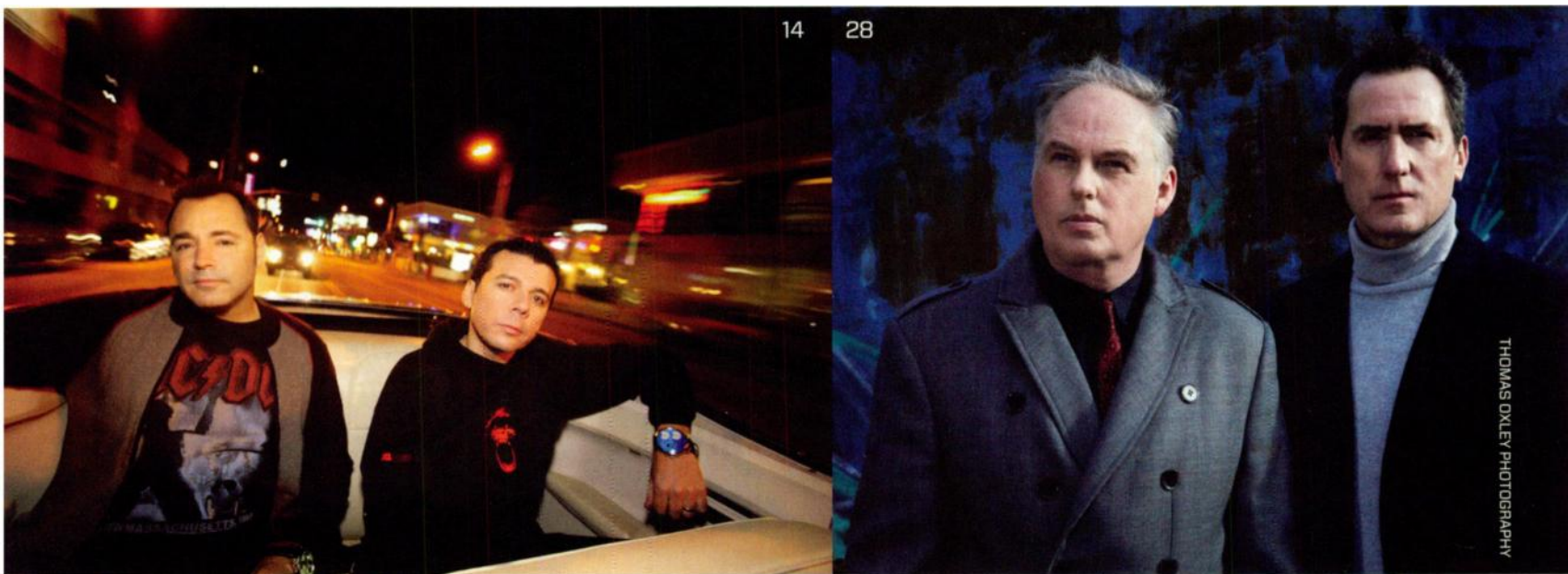
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Your Media, Your Message

THIS MONTH, we look at innovative ways to crowdfund your project (“Crowdfunding Your Next Record,” page 68). Through sites like Kickstarter and Indiegogo, anyone with a spark of an idea can take a shot at fundraising their dream, asking supporters to finance anything from recording an album to shooting a music video to building a one-of-a-kind modular synth. Some entrepreneurs suggest that crowdfunding has the potential to replace traditional music business models; I think it’s too soon for that. But one thing is true: If you do launch a campaign, cultivating *ongoing fan engagement* is key to your success. (This is especially crucial if you launch an all-in campaign in which full fan participation can make or break your project.)

Your messaging campaign needs a narrative arc, and you must engage your audience from point

zero. Make them feel like they are a part of your message, your mission. Borrow “best practices” from big corporations: Set measurable goals. Create a “publishing matrix” incorporating your website, Facebook page, Twitter posts, blog, and newsletter schedule. Assign treatment of project news and events to each of these channels, and stick to your plan. The key here is mindfulness—be strategic, think the story through. Your message doesn’t begin and end



SARAH JONES
EDITOR
sjones@musicplayer.com

with your press release or your latest tweet. Has crowdfunding paid off for you? Let us know.

COMMUNITY

“THE ARTIST WHO STRUGGLES IN OBSCURITY, UNFAIRLY IGNORED BECAUSE HE HASN’T BEEN PICKED— THAT’S A POIGNANT SIGHT. BUT AT SOME POINT, THE ARTIST HAS THE OBLIGATION TO SEEK A DIFFERENT PATH, ONE THAT ISN’T DEPENDENT ON A SYSTEM THAT DOESN’T DESERVE HIM.”

marketing guru Seth Godin in “Seth’s Blog,” April 29, 2013

The Electronic Musician Poll

HOW SUCCESSFUL HAVE YOUR CROWDFUNDING CAMPAIGNS BEEN?

EXCEEDED MY EXPECTATIONS **13%**
I MET MY GOALS EXACTLY **6%**
I COULDN’T RAISE THE MONEY I HAD HOPED TO RAISE **31%**
I DON’T THINK CROWDFUNDING IS WORTH MY TIME **50%**



Correction

In last month’s “Roundup” featuring tabletop synths, we incorrectly stated that the Moog Minitaur has “no downloadable editor to help you edit the 100 internal presets.” In fact, the editor is a free download for registered Minitaur owners, available at moogmusic.com.

DIG MY RIG

Studio 13 has been a vision and a dream of mine for years. I have been playing keyboards for 30 years or so; my first pro keyboard was a Korg Poly-800. I've had many synths along the years, many I wish I'd kept. I have vintage pieces, *i.e.* a Roland R-8 and a Roland TR-50, and also new gear, including Roland Integra-7, Roland Jupiter-8, Korg Kronos, Yamaha Motif XF7, and the others you see in my pics. I use Apple Logic 9 and many plug-ins such as Arturia V, Papien BLUE, and NI Komplete 8. I do this for my own enjoyment, but would like to do paid work someday. This is my Man Cave, my favorite room in the house.

JEFFERSON WEBER
INDIANAPOLIS, IN



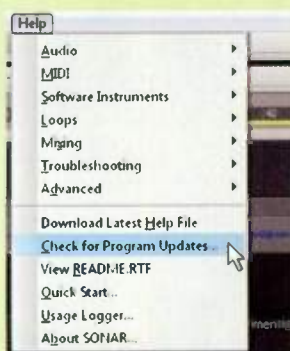
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**SANDRA JONAS
WALNUT CREEK, CA
VIA EMAIL**



Some programs let you check for updates directly from the program itself. It's worth clicking on this from time to time, particularly if you didn't "opt in" to company notifications when you registered.

Much depends on how mission-critical your DAW is, especially if it relates to your livelihood. There *will* be bugs—they're unavoidable. Sure, there may be some tempting new feature; but you may also find tangential issues, like a third-party plug-in that doesn't work properly after upgrading the host. Regardless, if there's a feature that looks like it will dramatically improve your workflow or capabilities, wait a few weeks to see if

there are any issues, then take the plunge.

Before doing a major upgrade, ask the manufacturer if you can do a "dual install" alongside a previous version. "Point" upgrades (e.g., 1.2. 1.3) generally modify the existing program, but a major upgrade, like Version 3 to Version 4, usually requires a new install. Just remember that projects saved in the new version will almost certainly not load in the older version. Create some heavy-duty test projects

that really exercise the new version, and if all is well, start moving your projects over.

Monitor forums for show-stoppers, but take comments with a grain of salt—a lot of issues involve pilot error or system issues that may not relate to you. Finally, there's no law against skipping a version. Often you'll be able to upgrade when the next version comes out for the same price as upgrading to the current version, and then you'll be two versions ahead.

THE EDITORS



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

YEAH YEAH YEAHS ROCK COACHELLA

INDIO, CA
APRIL 12, 2013

Although much attention at the 14th annual Coachella Valley Music and Arts festival focused on the enormous tents housing epic DJ sets, crowds at the main stages crammed in to affirm their love for indie rock, and one of the highlights had to be the Yeah Yeah Yeahs. The fiery Karen O, bedecked in an iridescent embroidered suit, flaunted her larger-than-life persona, roaring and wailing, balancing her mic between her teeth, swinging the mic over her head, and toasting the crowd: "Cheers, Coachella!" Perhaps *Billboard's* Bill Werde best described the set, tweeting: "Could easily argue Karen O is rock's greatest frontman. All the sex and nihilism of Jim Morrison + her own brand of mad, manic joy."

PHOTO BY DAVE VANN



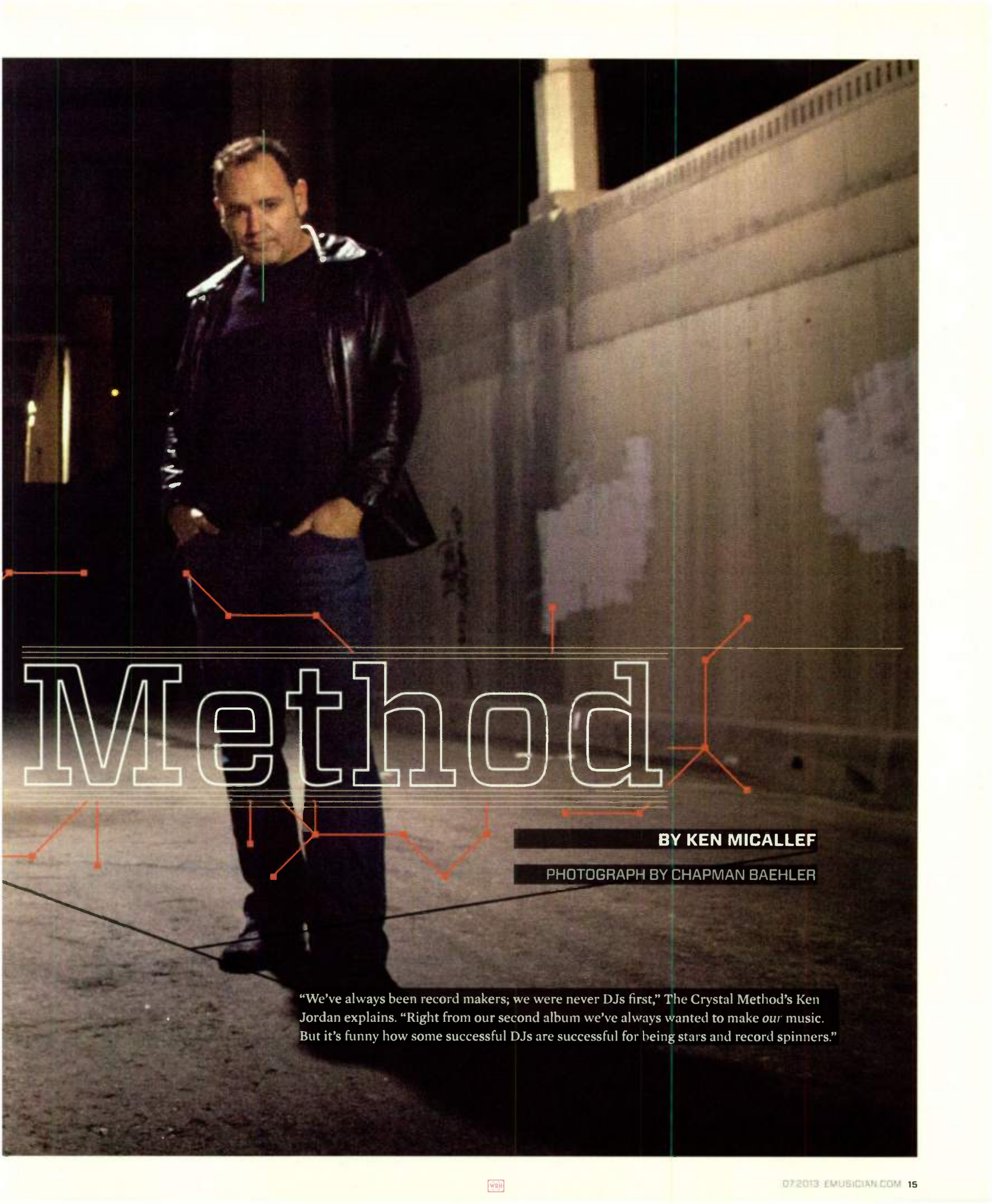




The Crystal

EDM TRENDS MAY COME AND GO AND DJs OF THE MOMENT MAY GET RICH PUSHING BUTTONS, BUT **KEN JORDAN** AND **SCOTT KIRKLAND** HAVE ACHIEVED 25 YEARS OF SUCCESS THE OLD-SCHOOL WAY: SWEATING IN THE STUDIO, PAINSTAKINGLY TWEAKING HARDWARE, AND WRITING SONGS. THEY TALKED WITH *ELECTRONIC MUSICIAN* ABOUT PRODUCING THEIR SELF-TITLED FIFTH ALBUM.

The Crystal Method—Ken Jordan (left) and Scott Kirkland



Method

BY KEN MICALLEF

PHOTOGRAPH BY CHAPMAN BAEHLER

"We've always been record makers; we were never DJs first," The Crystal Method's Ken Jordan explains. "Right from our second album we've always wanted to make *our* music. But it's funny how some successful DJs are successful for being stars and record spinners."

The Crystal Method

The Crystal Method's self-titled fifth album proves once again that the Las Vegas duo of Ken Jordan and Scott Kirkland achieved their

now two-year-old Crystalwerks studio, Jordan and Kirkland enlisted vocalists Dia Frampton for first single "Over It" and AfroBeta's Cristina Elena Garcia on "After Hours." "Over It" may begin with what sounds like demon sprites boxing in a toilet drain, but as the song progresses, garnished with Frampton's baby-like vocal, it fulfills all the classic requirements of traditional song-craft: tuneful verse,

an antelope, a command of "Got to do like this!" and a nasty synth recalling an old Fatboy Slim track by way of an '80s porno.

Throughout, Jordan and Kirkland sound like they are having fun, the time of their lives. Currently scoring the soundtrack to indie film *The Sisterhood of the Night* and prepping for yet another global tour, The Crystal Method make EDM for humans, while DJs stop and stare.



overwhelming success the old-fashioned way: they earned it. Not for them is the sure satisfaction of working entirely in the box, automating effects, and programming synths. No, these EDM industry veterans use a massive cadre of old-world analog synths coupled to some of the best and brightest beat-and-bass-producing software to create songs that fill your head with visions of what Kirkland calls "Silence [and] chaotic bliss."

Behooving their former Bomb Shelter studio, *The Crystal Method* (Tiny e Records) is a bomb maker's delight, a dizzying crash-out of terribly beautiful sounds and anxiety-producing effects, ear-tickling cut-up vocals, and horror-show big beats, like the best of 20 years of dance music compressed into eight songs of head-tripping, id-enlightening, rib-sticking goodness.

Self produced, with remixes by Darth & Vader and Kezwick, among others, *The Crystal Method* follows *Vegas* (1997), *Tweekend* (2001), *Legion of Boom* (2004) and *Divided by Night* (2009), establishing Jordan and Kirkland's oeuvre as among the finest in EDM.

As trends rise and fall, as DJs get rich pushing buttons and issuing shout-outs, the Grammy-nominated The Crystal Method drive songs up from the underground and seemingly down from the mountaintop. Ultimately, Jordan and Kirkland are songwriters, again, of the old-fashioned variety. Working out of their

"I envision sounds antagonizing each other or communicating with each other and working their way through.

Sounds have to get in there and fight for their space within the song."

—SCOTT KIRKLAND

memorable chorus, and mood-altering bridge, with a super sleuth's attention to detail. The urban dread of "110 to the 101" relies on "fear" and "hope" (see below). "Dosimeter" recalls the bang-up action of an antiquated pinball machine outfitted with *Zero Dark Thirty* warfare capability and a comic's vocal timing. "After Hours" is drenched in sex, sweat, and heat, all "ohh ahh" vocals, tungsten haze, and a wraparound big beat worthy of Dave Grohl channeling Tony Thompson. "Funk Muffin" has all the charm of a refrigerator mating with

One thing is consistent about The Crystal Method, and it's unlike much of what is considered dance music: Your albums are comprised of actual songs, rather than tracks.

Jordan: We've always approached our music with the idea that we are making a song, and we often call sections "verse/chorus/—" even though there may be no vocal in the song. We are always asking ourselves, "Does this sound like one of our songs? Does it sound like it belongs on this album?" We want people to listen to our albums over and over again and find new and interesting things each time. It usually takes us a long time to make our albums, but we hope it's worth it.

Often, music by superstar DJs doesn't evoke the idea of a song in the traditional sense, though Skrillex and a few others pull it off.

Jordan: We've always wanted to make songs that sound like humans made them. We've always wanted to make music that didn't sound like computers made them. Skrillex comes from a serious rock and roll background, so he is very song conscious. That's the kind of songwriting we strive to make as well.

Is there a typical Crystal Method songwriting process?

Jordan: We have the best luck when a track doesn't begin with drums. We find cool song

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The Crystal Method

elements, whether it's a synth riff or a melody or a chord progression, or it might be just pads, but if we come up with that first then build a song around it, then we have the best luck. What we call hooks are often just three- or four-note patterns. Hooks are synonymous with a chorus and often none of those will have vocals. But there will be something to build a track around.

“We’ve always approached our music with the idea that we are making a song, and we often call sections “verse/chorus/bridge” even though there may be no vocal in the song.”

—KEN JORDAN

You’ve been working out of Crystalwerks for two years now. What difference has that made in your working process?

Jordan: Everything works better! Of course, we’ve brought over all our old synths and all the gear we had at Bomb Shelter, but we have a machine room now where all the noisy stuff goes, and an actual overdub room for vocalists. We used to send vocalists out to the living room; it was a disaster! So it’s nice to not worry about extraneous things that could hamper the whole recording process.

You and Scott have an incredible, decades-spanning collection of hard synths, including Akai MPC3000; Alesis Andromeda; ARP 2600; Moogerfoogers MF101 & MF102; Clavia Nord Lead and Clavia Nord Modular; E-mu Audity 2000, E4, E-64, and XL-7; Moog Memorymoog; OSC OSCar; Roland Jupiter-6; Sherman FilterBank; Waldorf

MicrowaveXT; and Yamaha CS20 and Yamaha CS80. What made the cut this time?

Jordan: As far as the older synths, we used ARP 2600 a lot, Memorymoog, Jupiter-8, which we didn’t have on the last album. And we were given this amazing old Korg MiniKorg [700], and a Korg [SB 100] Synthe-Bass. They’re half-size keyboards with not too many controls, but they sound great.

And soft synths on the new record?

Kirkland: I am intimidated by soft synths. But we used [Native Instruments] Massive, and Absinthe is something we’ve always loved. But with Massive there are so many things to get your head around, its functionality and capability. I choose not to get entangled, but more recently we had fun with it. And [Native Instruments] FM8—not the big dubstep sounds, but its textural sounds, and [Spectrasonics] Omnisphere, [FXpansion] Geist, and the D-Cam Synth [Squad] has a lot of beautiful, messed-up sounds. I like sounds that have a little bit of sparkle and a lot of dirt. We used the Andromeda plug-in on a couple tracks. [Lennar Digital] Slyenth too, and I love the Arturia Oberheim [SEM V], which sounds amazing.

Do you still create drums from your large sample library?

Jordan: Yes, but we also used Geist, running that in Pro Tools and Ableton Live, as well. Geist has these infinitely variable parameters for programming drums and importing loops and using the feel of the loop to program other sounds. It’s really amazing. It does other things besides drums but it does drums really well. We haven’t even pushed the limits of it yet, but it’s really flexible and very powerful.

Kirkland: Geist has its own algorithm for cutting things up. It guesses where the kick and snare are if you are using traditional drum loops. I like the ability to get a great loop with great timing or feel, then take it and align vocals to those hits. Geist will also switch things around, [estimate] an algorithm, and replicate it with vocals. FXpansion has created so many great products, including the D-Cam Synth [Squad] and the new outboard compressors and effects plug-ins. We’ve built our whole career on putting something through the wrong effect or pushing it too loud.

Is there a new technology that made a big difference in how you worked on the new record?

Jordan: We used the new version of [Celemony] Melodyne. It’s great at allowing

you not just to tune and change vocals but to take any part of anything you’ve played or imported and change up the melody or the chord progression. It will do chords on some things pretty well; it’s a really creative tool, not just something for tuning vocals.

Ken, in an older *Electronic Musician* feature you said, “We love cutting things up and sending them out to other programs like Effectrix Sugar Bytes.” Do you still use that for cutting up sounds?

Jordan: Yes, we do. If we want to set up a breakdown with a fill but have it be particular instruments, Effectrix can cut and slice things up on many levels, such as pitch effects or stutter or scratch effects, and you can save it and mark it and have many levels of each one, and it saves a lot of time.

Did you use more soft or hard synths this time?

Jordan: Up until this album we were more than 50% hard synths, but we’ve crossed the threshold. We’re nowhere near being completely in the box, but we are using more plug-ins as they’ve gotten better. We have an ARP Odyssey and two 2600s and they’re being serviced all the time. Often you go to slide a fader and you hear noise or it doesn’t work at all. If we’re looking for some really earth-shattering bass or super-round sound from a Moog bass, then we go to that source because we have it. But often the plug-in is faster, more reliable and in tune, and it works every time.

Can you hear a sonic difference between soft and hard?

Jordan: On the true analog synths there is warmth and bottom end I haven’t heard any plug-in duplicate. But often you are not looking to create those kinds of sounds, specifically, and the plug-ins can reproduce it just fine.

You work in both Ableton Live and Pro Tools and still use the Digidesign D Command console. What are the major working differences between the two platforms?

Jordan: If you’re playing on Pro Tools and you’re pushing the system to its limits, it will tell you you’ve got an error and why. Ableton doesn’t do that; it has a little graph meter showing your CPU usage, but it doesn’t mean much. And you will hear pops and glitches and you won’t be absolutely sure what’s causing it. When you balance things in Ableton it makes up for all that, but it can be hard to know where you are in Ableton sometimes. And I wish Ableton had the ability to split out the



Ken Jordan (left) and Scott Kirkland pause for a break in their CrystalWerks studio in Los Angeles. On the foreground screen is their previous studio, The Bomb Shelter, circa 2000.

MR. BONZAI

screens to a mix screen that an arrangement screen instead of one screen and you toggle back and forth. We've got two side-by-side monitors but we can only use one with Ableton. C'mon, it's a simple fix!

What was the signal chain for vocalists at Crystalwerks?

Jordan: We used a Neumann TLM 103 through an Avalon VT-737sp pre; it has EQ and compression but we just use the compressor to limit the vocal a little bit. We try to cut everything as cleanly as possible so if we need to recut more, then there's no problem when matching.

How did you create the whirring intro sounds in "110 to 101"?

Kirkland: That began in Ableton; it was in the box from the beginning. It's all [Lennar Digital] Sylenth VST plug ins. That's another song with lots of great conversation going on between the sounds, lots of distorted effects that were frozen and bounced out and brought back into Ableton. We label the sounds. The opening rhythm melody is called "fear," another is called "hope."

"A great producer visited us in the studio and we wanted to jam on our Jupiter-8. He said, 'I have never touched an analog synth before.' 'It's not going to bite you!' I said."

—SCOTT KIRKLAND

"Over It" has a lot of stomping, crunchy Transformer-like drum patterns.

Jordan: Those are heavily processed sounds from our library. We typically send all drums to a common bus where we do compression and limiting. In a song or mix like this, we do a lot of sidechaining of buses off the kick drum, but we didn't do that on this one! There are three kick tracks in "Over It." We used the McDSP

Analog Channel on one of the auxs, a little Brainworks EQ, iZotope Alloy as an EQ limiter, and the [Waves] Kramer Master Tape plug-in quite a bit on drums, bass, and aux returns. We generally have the noise off; I like everything but the noise on tape effects. That is one of the kick drums!

Kirkland: In "Over It" we used an Arp 2610 sequencer, too. It's so quirky, it has a mind of its own. It froze and we looped it around. The spring reverb on it is gorgeous. You can hear it on the end of "Over It" in the big rock groove and the repeat of the drums. It really connects the spacing in that bit at the end.

"Funk Muffin" has all these slide whistle sounds and loopy effects. All of your songs are crammed with ideas and sounds. That's practically your sonic ID.

Jordan: Part of that comes from our old method of recording back when storage was at a premium. We would have a DAT running, one side would go the mix, and the other side would be whatever we were recording at the time. We would do long passes of Scott playing an analog synth, completely freestyling it, then we would take the DAT and sample the

The Crystal Method

cool parts back into the existing version of the track. We still do long overdub passes with hardware synths and cherry-pick the cool stuff on every track. We have had some young guys in here, like Dyro, and they ask, "Wow, you do that?" Most of these guys are so completely in the box they can't imagine recording all this audio and going through it later.

"Dosimeter" has ratcheting noises, then rubbery, ricocheting synths . . .

Kirkland: On "Dosimeter," we used a Univox Traveller Organ, with the filters on the sliders. We hooked a Sherman Filterbank up to that with a bunch of distortion pedals on two different sends. Nick Thayer played the organ and I was controlling the Sherman and we came up with all those metallic, distorted industrial sounds that are so analog. It has this warmth. No matter how clever the virtual synths become, it's really hard to capture the particular wonder of this setup we had. There was some of that in "Dosimeter" and also lots of Geist. We also used [Spectrasonics] Omnisphere and a little Rob Papen's SubBoomBass and Sylenth and [Native Instruments] FM8. Quantizing the groove just won't do it; you have to get in there and carve out the space. That's the big thing with dubstep, the space that exists on those drops and creates such a roller coaster effect. Going to the top and that drop, and that kind of silence and chaotic bliss, that's really what separates great production from the run of the mill.

Perhaps that's why your synths sound so liquid and alive.

Kirkland: When I saw *Star Wars*, everything changed. It has a lot of antagonizing sounds; a sound would stick its head up, and another sound would come, and then, this drop. I envision sounds antagonizing each other or communicating with each other and working their way through. Sounds have to get in there and fight for their space within the song. I like sounds that are aggressive and have a place. And another sound shakes that sound out of its place for a second. We've been accused of being too bombastic with our sounds, and I am guilty as charged. That's what we do.

How did translate with your own keyboards?

Kirkland: You get a great riff and a great bass line and try to find the right instrument, the right frequency, the right notes, and have a



"There is lot of success for electronic music now, but we don't think it will always be this big. Things come in cycles, so we want to be prepared for the next cycle."

—KEN JORDAN

conversation between the sounds. The new generation of producers has the luxury of powerful laptops that do so many things. Our studio was always filled with great analog gear and pedals and drum machines and the most power in the box you could have then. You couldn't have 15 plug-ins running on a laptop in 2006. Now processing power is so high, a lot of talented producers don't even think about it. Sonny [Skrillex] just draws things in. Another great producer visited us in the studio and we wanted to jam on our Jupiter-8. He said, "I have never touched an analog synth before." "It's not going to bite you!" I said.

Your music always has this sense of energy, urgency, and largeness. It's a big sound.

Jordan: On this album we started doing a lot of sidechain compression. Before that, it was

just getting the frequencies to work together between the kick, bass, and all low-end stuff. We always monitor with a few different pairs of speakers, nearfield, etc., and a TV speaker. We think a great mix sounds great on everything; we don't believe that mixes can only sound good in a great listening environment, so we test mixes on all different-sized speakers.

You guys have been around awhile; how have you survived and thrived on the EDM scene?

Jordan: Yeah, wasn't all this success of electronic music supposed to happen in the '90s? [Laughs] We just kept working. And we never thought we had "made it" or that it would all be easy living. Our first album sold well, but we've always had good success with licensing our music, and we've recorded music for TV ads, films, and video games. We try to make music for our albums and assume that it will work for everything else. There is lot of success for electronic music now, but we don't think it will always be this big. Things come in cycles, so we want to be prepared for the next cycle. ■

Ken Micallef has covered music for all of the usual suspects, including DownBeat, The Grammys, and Rolling Stone. His first book, Classic Rock Drummers (Hal Leonard), is currently in reprint status while he ponders the sonic perfection and current resurgence of the vinyl LP.



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Read Ken Micallef's 2004 interview with The Crystal Method.
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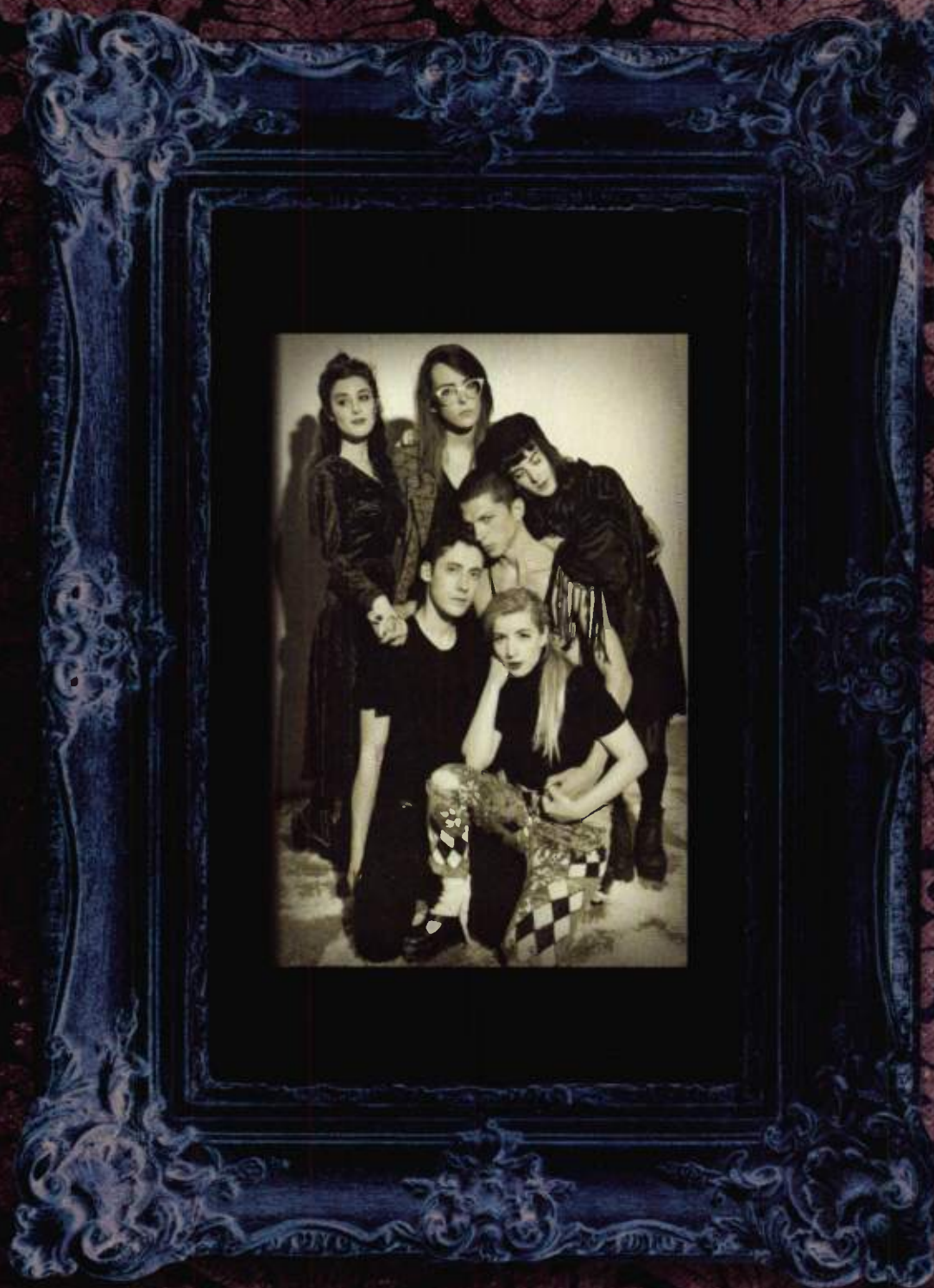
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Austra (clockwise from top left)—Sari Lightman, Maya Postepski, Romy Lightman, Ryan Wonsiak, Katie Stelmanis, and Dorian Wolf.



LISTEN

AUSTRALIA

On *Olympia*, the Toronto sextet and producers Damian Taylor and Mike Haliachuk created a Goth-pop epic where controlled vocals meet twisting, warped synths and pulsing electro-acoustic beats

BY KEN MICALLEF

PRIOR TO generating a huge buzz at the recent SXSW festival, electro-Goth pop sextet Austra wanted to shake things up and break the rules when recording their latest album, *Olympia* (Domino). The Toronto-based band didn't realize their pursuit would involve wheezing analog synths, a '60s R&B icon, blatant criminality, and Steve Albini.

Moving into engineer Bill Skibbe's Keyclub Recording Company outside Chicago with co-producer Mike Haliachuk, Austra was surprised to learn they would be tracking on a custom-built 32-channel Dan Flickinger MOD-N-32 matrix console (circa 1970). This is the very console Sly Stone used to record his classic *Fresh* and Sly and the Family Stone's *There's a Riot Goin' On* albums. Skibbe also revealed his collection of analog

synthesizers, including an ARP 2600, Korg Prophet 5, OSCar, Elka String Synth, and Moog Minimoog. Working entirely in the box on their previous release, *Feel It Break*, Austra's Katie Stelmanis (keyboards, vocals), Maya Postepski (drums), Dorian Wolf (bass), Ryan Wonsiak (keys), and Sari and Romy Lightman (backing vocals) got their own riot goin' on for *Olympia*.

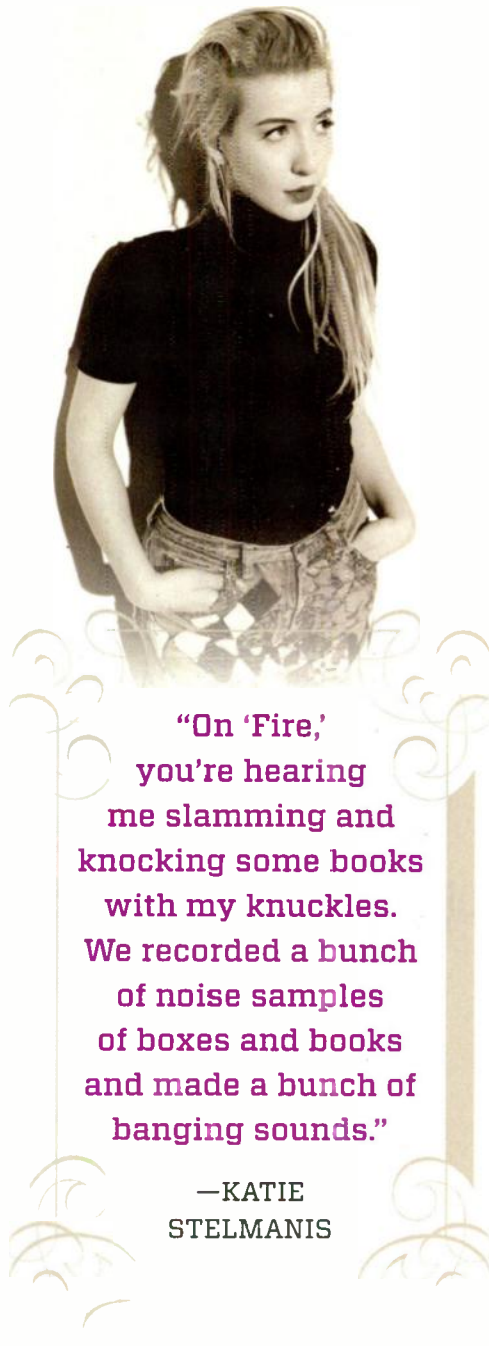
"For us, it was about all the gear in the studio," Stelmanis says. "Bill had an old Linn Drum and all these old synthesizers, which really allowed us to be creative. Working on a computer makes me think more about the structure and the end result of the song, rather than being in the moment. I've always had a problem with recordings sounding icy and I realized it was because we were using soft synths. There's so much more warmth in the analog synths, and it's immediate on the new record."

"Working on all those old synths ruined my approach to making MIDI music," Postepski added. "Working on a computer can be very limiting in terms of creativity. With a hardware synth you get an immediate reaction, but with a computer you have to upload a sample to the synth after choosing from 15,000 samples. An old synth has maybe 15 or 20 sounds, and then you scroll through them, choose one, and just play. The real synths are just easier to work with."

Tracking live in Pro Tools through the Flickinger console, layering Simmons SDS 8 pads and Linn Drum with acoustic drums, Rickenbacker bass through an Ampeg SVT chased with Roland TR-808, and vocals produced by Damian Taylor, Austra created a unique sound world where controlled vocals meet twisting, warped synth sounds and pulsing electro-acoustic beats.

"Katie demoed at home, then we tracked live in the studio," Skibbe explains. "Some drum tracks were done in the computer, some in the Roland 808 and Linn LM1 drum machines. But we tracked everything live. We had a MIDI-to-CV converter, which allowed us to run MIDI sounds through the Prophet 5, Minimoog, Moog Little Phatty, and we also used an EMS Putney VCS3 and EMS Synthi. We experimented with MIDI for different synths to see which worked best and tweaked the sounds."

Skibbe, who helped build Steve Albini's Electrical Audio, took Austra to his former employee's studio where they recorded his Mellotron's flute sounds for *Olympia*. They



**"On 'Fire,'
you're hearing
me slamming and
knocking some books
with my knuckles.
We recorded a bunch
of noise samples
of boxes and books
and made a bunch of
banging sounds."**

—KATIE
STELMANIS

also tracked at John McEntire's SOMA. But the most fantastical story behind the *Olympia* sessions lies with the Flickinger console, which was once left for dead at Paragon Recording in Chicago.

"Flickinger made consoles for Ike and Tina Turner, Funkadelic, Johnny Cash, Muscle Shoals, and Sly Stone," Skibbe explains. "Each one was custom made: they're funky, thick-sounding consoles. They have bottom end, which is why they are used on so many funk records; it's that sound. There were only 22 of them made."

"In the late '60s, Sly wanted to build a studio in his house, so he hired Westlake

Audio," Skibbe continues. "Sly held the guy who installed the console hostage at gunpoint for two weeks when they began recording *There's a Riot Goin' On*. When they decommissioned the console in the late '70s, it was so crazy with Sly, by that point [his crew] just cut all the cabling from the console to the patch bay, and sent it back to Marty Feldman at Paragon Recording in Chicago, where they couldn't reassemble it. There were hundreds of wires, none labeled, all cut, all identical. Marty put it in storage until I found it. It didn't work when I got it; [partner] Jessica Ruffins and I had to rewire the entire thing."

Luckily, the now fully operable Flickinger console and Keyclub's other gear allowed Austra to create a uniquely future-retro epic. The band experimented on practically every tune, mixing and matching synths, layering acoustic drums and drum machines, some effected by the tape delay from Skibbe's Ampex 440B 1/2" four-track, others by Maestro Echoplex and Skibbe Electronics 736-5 preamp and Red Stripe limiter. The band kicked it into gear from the opening track, which recalls the soundtrack to Jerry Goldsmith's *Poltergeist* by way of a white-noise tsunami.

"We tried to make the beginning of the album sound kind of ambient and bizarre to open up the record slowly," Postepski recalls. "We all pressed a bunch of knobs on the ARP 2600 [vintage analog synth] for about an hour. The 2600 comes with a bunch of presets, these paper diagrams that show you how to plug the cables into the patch bays. Some presets have up to 15 cables; it was like a game. If you messed up one cable it would sound completely different. We spent hours patching in the ARP according to the diagrams. We got some cool sounds. We hooked up the ARP up to a sequencer as well; it played this pattern that we were able to adjust while it was going through the ARP."

Several songs on *Olympia* begin with one drum pattern, which is then replaced or layered with another drum source. How did the group manage the layering process?

"I went crazy with drums and percussion," Postepski says. "I recorded as much as I could, and at the end we edited it all down for each song. The percussion is pretty heavy on *Olympia*; we were going for a blended sound. We didn't want bare electronic drums so we paired them with real drums on every track. We were inspired by a lot of old-school house

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records, like the first Marshall Jefferson records that have a live drum set and piano. And the Grace Jones albums and Portishead's *Third*."

Austra used MIDI marimba, Rickenbacker and synth bass, all manner of percussion, and even library books to create unique sounds.

"On 'Fire,' you're hearing me slamming and knocking some books with my knuckles," Stelmanis says. "We recorded a bunch of noise samples of boxes and books and made a bunch of banging sounds."

The recording process became slightly more standardized when Skibbe tracked keyboard, bass, and drums. Keyclub has two rooms for recording drums, the main live room, and a smaller booth. Keyboards and bass were cut in the live room.

"We ran MIDI via an Elka Synthex much of the time," he says. "We ran a couple of Ampeg SVT amps for keyboards, a direct input for the Synthex. Beyerdynamic M88s to the SVT or Ampeg Reverberocket or Roland JC-120 Jazz Chorus for a little rumble. And I always use ambient mics, a Neumann U87 in the room in omni mode."

Skibbe tracked the Rickenbacker/SVT combo with an Electro-Voice RE20 through his custom 736 preamp into his Red Stripe Limiter, which he says resembles an LA2A. DI was also used, and an Ampeg SB-12 Portaflex amplifier. These signals were layered with the Roland TR-808 for electronic/Goth pizzazz. Layering acoustic drums with Simmons pads and Linn Drum presented Skibbe with his biggest challenge, and a chance to exploit his two-room drum recording approach.

"We recorded some drums in the live room, and some in the smaller booth, which is good for layering with drum machines because you get a tighter, focused sound," Skibbe explains. "I used a Sennheiser 421 for the rack and floor toms. No bottom mics; that's excessive drum miking to me. I don't want that hyperactive tom and bottom sound; that's like an era that's strange to me. Recording bands with drum machines, you don't need a full-blown drum sound, and I record with real distortion, just through compression to add some aggression to it. And no front head on the bass drum, either. I used a Neumann FET 47 inside the bass drum and off to the side of beater, and a Yamaha NS10 sub to capture low frequencies. A Shure SM57 on top of the snare to capture the rim, then a really boring Neumann KM-56 on bottom. I put a mic between the hi-hat and

rack tom to capture some snare half an inch back from the rim—that gives you a little more ping and less top head.

"Overheads were Neumann SM 69 FETs in an X/Y configuration," Skibbe continues, "about three feet over the drummer, placed between the bass drum and snare drum position. And a room mic—the 'crazy mic,' I call it—which was a Neumann U87 or Sony C-500 on the floor, five inches high and six feet out, running that through the Spectra Sonics

"We recorded some drums in the live room, and some in the smaller booth, which is good for layering with drum machines because you get a tighter, focused sound."

—BILL SKIBBE

610 [analog compressor/limiter] for a little bit of dirt and aggression. Sometimes I put the drums through a Minimoog filter to give it some dirt. And I run everything through the Flickinger—I like the tone of it."

Skibbe used a similar setup in the larger live room: RØDE SM2s as overheads in X/Y as well, a Neumann U87 for his "crazy mic," two Altec 150 "Coke bottle" mics placed 20 feet apart and 15 feet back as room mics, the latter pair processed with what Skibbe calls "the Albini method," using a 22-millisecond delay on the room mics to "draw them back a little further."

Damian Taylor (Bjork, Killers, Arcade Fire) produced the vocals for and mixed Austra's

Feel It Break album, so the band traveled from Toronto to his Golden Ratio studio in Montreal for a repeat production visit. Katie Stelmanis is a classically trained pianist and former opera singer; Taylor knew exactly how to capture her icy yet emotional vocal quality which imbues Austra with its unique Goth identity.

"Katie comes out of a fully trained background so she really understands what she is doing and doesn't really need any coaching, and she likes a loose approach," Taylor explains. "I used this weird Russian mic on her vocals. I got it from Moscow; it's an old Soviet version of a Neumann bottle mic. As to why I like it, it's more that it doesn't sound like crap. Often when I am recording, a mic might sound beautiful in one way but annoy me in another way. But this mic isn't grainy or sibilant; it works. I have that mic going through a Seventh Circle Audio N72 preamp, which is like a kit-built Neve circuit, then through a Tube Tech LCA/2B, which has got a Fairchild-esque time constant. I hit that very gently. I am into riding gains as I am recording, so I tend to use compression at a threshold almost below where your soft limit would be on your converters. Then I try to keep my gain below that, so I will use a preamp to massage levels. If suddenly there's a mad peak, the compressor might do a little work, but overall it's hardly doing anything. The Tube Tech is good because it has a nice tone without being overbearing."

Fully electronic and fully analog, darting and looping like a Juan Atkins track one minute, melodiously thumping like Human League the next, Austra's *Olympia* is unique for its sonics and its songwriting approach. "Sleep," "You Changed My Life," and "Hurt Me Now" sound like German club favorites circa 1977. Austra embraces the past while remaining present. The future is the question.

"It will be hard to go back to using purely soft synths and computers," Stelmanis admits. "Once your ears become accustomed to the sound of analog, it's really hard to listen to anything else. If musicians haven't heard these analog sounds, they are happy with MP3 and sh*tty Apple earbuds. But when you get good headphones, you can never go back to those earbuds. And when you actually record with real instruments and these beautiful analog keyboards that have real personality, it's hard to go back to digital." ■



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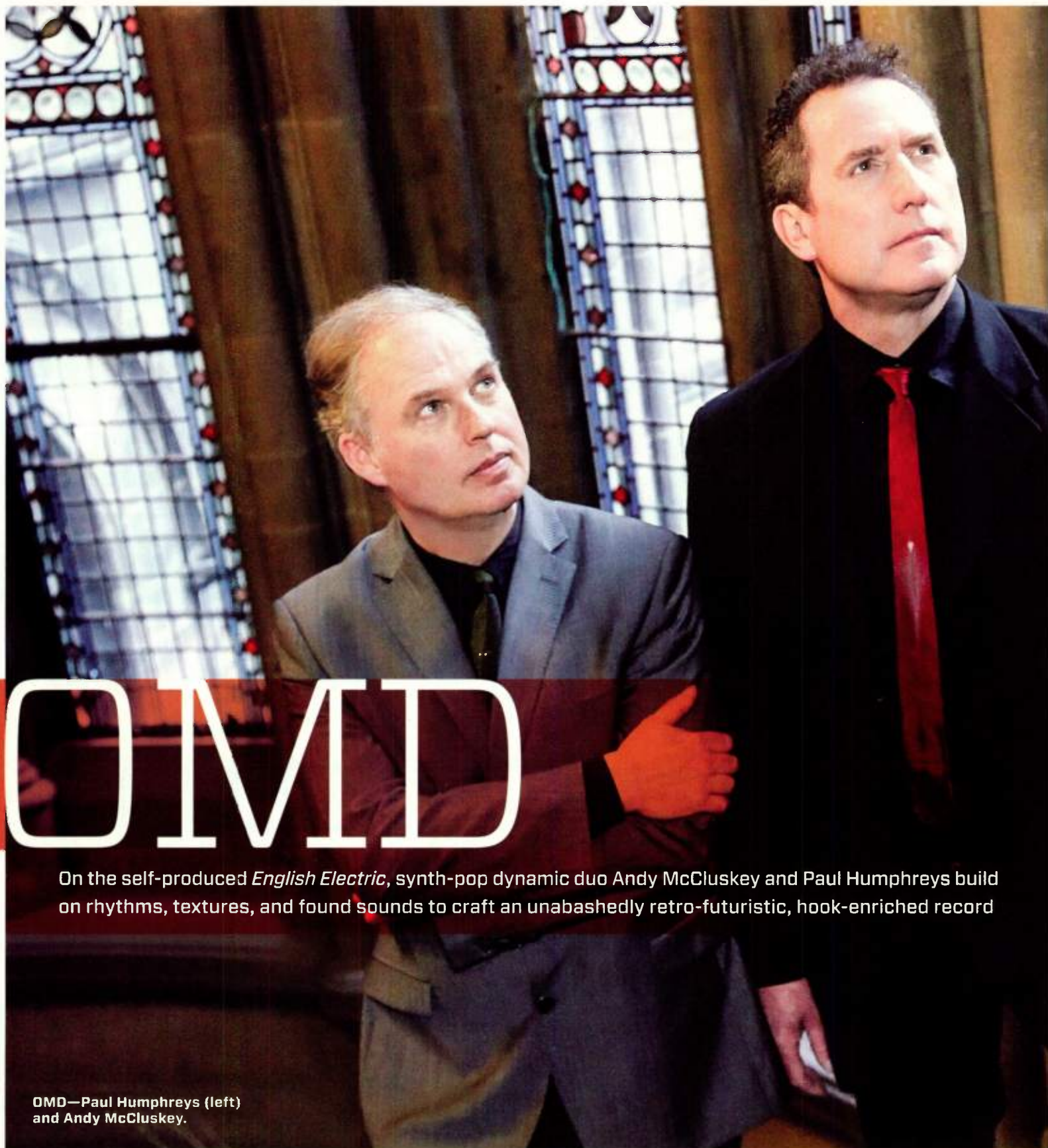


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OMD

On the self-produced *English Electric*, synth-pop dynamic duo Andy McCluskey and Paul Humphreys build on rhythms, textures, and found sounds to craft an unabashedly retro-futuristic, hook-enriched record

OMD—Paul Humphreys (left) and Andy McCluskey.



BY TONY WARE

THE FUTURE is being silenced, but Andy McCluskey and Paul Humphreys are not accepting it quietly.

As the core of *Orchestral Manoeuvres in the Dark* (OMD) since 1978, McCluskey and Humphreys have invested more than three decades analyzing and incorporating found sounds, repurposed circuitry, synthetic textures, and humanist anxieties into harmonic structures. Now, with OMD's 12th album, the self-produced *English Electric* (100% Records/BMG), the duo—again joined by Martin Cooper (keyboards) and Malcolm Holmes (drums, programming), OMD contributors since 1980—has composed a thematically unified nod to the group's sonic roots that also grapples with modern technology's efficiencies.

Since debuting with the Factory Records single "Electricity," OMD has occupied a post-Kraftwerk nexus built atop modernist tone poems contrasted with florid, pop-friendly melodies. Friends since their childhood on the Wirral peninsula (across the Mersey River from Liverpool), McCluskey and Humphreys have long exhibited a penchant for composing synth-pop gems imbued with social commentary and emotional resonance and driven by technology's promise to reveal new avenues of sonic expression.

"I've always been a fan of stereo," recalls Humphreys. "I fell in love with it very early on, and that's kind of how Andy and I got on. Andy would buy a lot of German imports when we were kids, around 15, and because I was a geek I built myself a stereo. Andy only had a mono player, so he'd bring his records to my house to listen in stereo, and those listening sessions are how we both had a love and connection to the German electronic musicians of the time."

For McCluskey and Humphreys, synthesizers represented the future—a future curtailed by the rise of Oasis and Britpop in the 1990s. Whereas synthesizers produced sounds that had never before been heard, and marked a revolution of linear enhancements, the guitar-pop resurgence looked backward to the '60s and '70s, stunting what OMD set out to channel.

"We didn't hate guitars, we just f**king hated guitarists... the ones who played horrible, clichéd, stereotypical nonsense on their instruments," reflects McCluskey, who reiterates that he still plays bass

"We would try things like lobbing a microphone down a long tube and blowing a penny whistle down it, putting that through a fuzz box to see what we could get."

—ANDY MCCLUSKEY

guitar and that OMD was never about eschewing the means, just the ends. However, the guitarists who coveted Beatlesque melodies and other blatant pop music tropes regained the attention of the world, and OMD went on hiatus throughout much of the '90s and 2000s.

By 2006, McCluskey and Humphreys found themselves being cited as influences to a new generation of electro/indie pop artists, and they relaunched OMD to perform pre-1983 material, putting out 2010's *History of Modern* as a clearinghouse

for various sessions recalling multiple eras. *English Electric*, meanwhile, was conceived as 12 allied tracks answering a compositional challenge to unlearn some musical craftsmanship in order to readdress OMD's underlying mantra: What does the future sound like?

"We never learned how to cover another band's songs," says McClusky. "From the ages of 15 and 16 we set out to write our own music, and we didn't know how, so we invented our own way of doing things. And I think we took it for granted, so working on this album we decided to go back to ways we initially worked. Those who know [1986 *Pretty in Pink* soundtrack hit] 'If You Leave,' which is very conventional, know us from our craftsmanship period, when we abandoned our own rules, one of which was the overriding parameter of not repeating what someone else has done, including ourselves. So, for this album we didn't sit down at a piano or guitar, knock out some chords, and say, 'it's time to sing on that.' We invariably started with some kind of textural soundscape or rhythm pattern or found sound we liked.

"When we started, I only had a left-handed bass guitar that I played upside down, because I'm right-handed, and I had that because it was the cheapest one in the shop," continues McClusky. "Paul had these noise machines he made, these circuit diagrams of drum machines he used to create pads we would 'play' with testing sticks, and we would try things like lobbing a microphone down a long tube and blowing a penny whistle down it, putting that through a fuzz box to see what we could get. If we needed a drone, I'd rub my plectrum on the bridge on my bass guitar with it cranked up to 300 on the desk.

"We were making up how to create sounds and write songs, having a conversation with ourselves, and for this album, we returned to making songs that weren't defined by whether they went verse, chorus, verse. They have a beginning, something would happen, I might or might not sing, then some other things would happen until our intuition told us there was enough, and we'd adopt new instruments and technology where needed without resorting to presets or sounds we'd previously used. There are still conventional elements on this album, but it's been fun to strip ourselves back down and to find ways to deal with the dilemma of finding *musique concrète* material

in a world where system redesigns are eradicating noise."

It's apropos for OMD to name an album riddled with the conflicts and concerns of obsolescence *English Electric*, as the now-defunct English Electric company produced the DELTIC Diesel locomotive, which after only six years in service was retired and placed in the London Science Museum, where both McClusky and Humphreys observed it as youths. "It's a beautiful, powdery Nanking pale blue, with these fabulous creamy flying chevrons," reminisces McClusky. English Electric, which also made aircraft and computers, among other things, was

"I almost always use four different synths to make up the melody . . . I'll have one split into the octaves, one really thin, one with lots of modulation, one not . . . then you put it down with some interesting delay and reverb and it creates this huge melody set."

—PAUL HUMPHREYS

producing the machines of the future, using science to redeem a post-WWII world and transport citizens to and from a utopia that never quite materialized. "We wanted to weld our love of throaty, distinctive engines into music," says McClusky.

On the one hand, *English Electric* is an album that openly acknowledges the dystopia and laments the way solid-state has impacted the audio byproducts that make for good sample fodder. Throughout the album, voices intone statements such as "The future you anticipated has been canceled" and "The future was not supposed to be like this," underlining the bittersweet collages and pangs of lost innocence that mark many OMD classics. Simultaneously, the album is an unabashedly retro-futuristic, hook-enriched compilation of virtually constructed vignettes and McClusky and Humphreys' back muscles celebrate the

compact nature of digital. Though proudly DIY, the two are by no means purists.

"To the displeasure and distaste and horror of the younger generation of Moog, Korg, Mellotron, Roland, Sequential Circuits, and E-mu aficionados, etc. . . . we carted these heavy beasts around for years and are perfectly happy to have the soft-synth versions in our Mac computers," admits McClusky. "And tuning them . . . they were a law unto themselves."

"The whole of *English Electric* was done in soft synths, save for using an Oberheim Matrix 6R and a physical Moog, and we love the flexibility that gives you," reinforces Humphreys, who even admits to incorporating the iPad version of Korg's MS-20 to work done with laptops on train rides. "You can keep everything running live, but you can have five instances of a Prophet 5 and 10 instances of the Jupiter-8 and you don't have to have them in the studio and on MIDI for it to be working together. I love the freedom that gives you, as opposed to committing to one thing that's printed and you have to backtrack to change things.

"It also means, as Andy and I live 200 miles apart, I can commute from my studio [London-based Bleepworks] up to Liverpool [home to McClusky's Motor Museum studio] with all the songs on my laptop and transfer them to his duplicate Pro Tools system," continues Humphreys. "That way, we can carry on without my having to drive up with a van filled with all my synths that I'll then have to set up. It would once have been a logistical nightmare."

Not only did soft synths and DAWs allow for easier collaborations between McClusky and Humphreys, but also it allowed for more mobile, spontaneous recording. "Paul would come up and we wrote much of the album in the Motor Museum, but from the summer onwards it was finished elsewhere; for example, vocals for 'Dresden,' 'Night Café,' and several b-sides were recorded in my bedroom; it just didn't look so good on the credits," laughs McClusky. "I just took my G5 out of my programming room, stuck it underneath a cheap office table in a corner of my bedroom overlooking the garden, took a Neumann [U87] from the studio, and stuck it through an Avalon [VT-737SP channel strip], then wondered why I had never done this before."

Sequencing and recording platforms may have transitioned far from the days of the Fairlight CMI and 16-track 2-inch tape, but



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one thing that never wavered was McCluskey and Humphrey's appreciation for Kraftwerk. Not only does *English Electric* include "Kissing the Machine," a reworked song originally co-written by Kraftwerk member Karl Bartos and featuring Claudia Brücken as the machine voice, but Humphreys reveals he sporadically employed a soft synth, SYNTH-WERK by Best Service, that allowed him to warp a sonic palette of appropriately Teutonic, metronomic sounds (noticeably on "Metroland").

"For the big keyboard melodies, I almost always use four different synths to make up the melody, and one was often SYNTH-WERK," reveals Humphreys. "I'll have one split into the octaves, one really thin, one with lots of modulation, one not . . . then you put it down with some interesting delay and reverb and it creates this huge melody set. We started doing this in the 1970s with the Korg M500 Micro-Preset we bought out of Andy's mother's catalog, multilayered with a harmonizer and the Roland SH-101 and effects to make it sound more glorious than it really was. We'd make

song choruses out of keyboard medleys just because it felt right and we had nobody to tell us that wasn't how you're supposed to arrange."

I just took my G5 out of my programming room, stuck it underneath a cheap office table in a corner of my bedroom overlooking the garden, took a Neumann U87 from the studio and stuck it through an Avalon channel strip, then wondered why I had never done this before."

—ANDY MCCLUSKEY

In the same way they would once "misuse" rototoms as bass drums while pounding on damping-free bass drums with mallets,

McCluskey and Humphreys are just as prone now to sculpt a hard, angular tone in Native Instruments Massive (as well as to add a touch of wobble to "The Future Will Be Silent") while stacking emulators to achieve a grandiose synth motif (such as in "Dresden"). The plan with *English Electric* was for caution to meet wind in order to retain a trademark melodic breadth and plaintive throb while allowing for a return to the shimmering, effected canvas primer of early texture-caked ambience tracks such as "Stanlow" and "Sealand." The former is exemplified on new tracks such as "Night Café" and "Helen of Troy" (a collaboration with Greek electronic musicians/producers Fotonovela), while the latter is best showcased on "Decimal," "Atomic Ranch," and, especially, "Our System." In addition, "Our System" embodies the OMD initiative to identify and incorporate newfound samples; in this case, it is NASA recordings of a transducer attached to the Voyager probe converted interstellar magnetic fields into audio.

In order to best utilize and creatively contrast all sound captures, plug-ins are an ongoing



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investment for both McCluskey and Humphreys. Outside of new synths, the two use modules such as the SoundToys Decapitator and the SansAmp PSA-1 to bring out harmonics from the synths. Antares vocal processing tools tweak double-tracked background vocals that are compressed to death with low end removed and spun out into wide stereo to create a noninvasive “impressionistic halo,” says McCluskey. Waves S1 Stereo Imager opens up instruments without

impacting consistency, assuring bass and kicks go up the middle while the rest populates the entire stereo field. Also used regularly is the Universal Audio SPL Transient Designer emulator, to add punch to a drum kit without compressing it to death. “It’s almost like an ADSR for a drum sound,” says Humphreys.

When mixing, Humphreys combines IK Multimedia’s T-RackS with physical SSL channels and some Urei 1176 compression to

get valve-like warmth (or a little positive “filth for color and feel” adds McCluskey). “First, I do like to ride things intricately, even down to the syllables, to get almost like a hand-drawn compression, then I’ll put something like an 1176 on it so that’s not moving so much as holding it right there,” says Humphreys. A Waves G-Channel on the mix bus complements the SSL hardware EQ, and the Waves Renaissance bundle adds parametric options for more forensic carving.

“I think I’ve actually learned a lot about mixing from working with Tom Lord-Alge, who mixed *The Pacific Age* and coproduced ‘If You Leave,’ explains Humphreys. “I used to watch everything he did, and I’d see an 1176 going into the red with the needle bending and I’d ask if that was all right and he’d always say, ‘Mix with your ears, not with your eyes.’ Another thing I learned from Tom was how he spent most of his time removing frequencies rather than adding them, so I pick the thing I want dominant then remove it from everything else interrupting it. I do an awful lot of shelving. When I mix I’ll solo something and instantly remove frequencies not required. If there’s no low end required but there are low-end artifacts in the sound, I’ll immediately shelf them out. I don’t often boost unless something needs to be brighter or there needs to be more low end; it’s mostly about removing frequencies.”

At the end of the day, however, McCluskey and Humphreys don’t allow the songs to be diluted by overly squashing dynamics or what McCluskey describes as “the tyranny of choice.” For *English Electric*, the duo did “a ruthless amount of self-editing to keep things relatively simple, down near 24 tracks per song rather than the 128 channels you can take to add three synths playing counter-basslines, if you can sift through the presets and find the tone you want. We did the opposite, keeping the process uncluttered and finding just the right amount of tension for each song.”

The world may be slowly leached of its “naturally occurring” hum and crosstalk, but the albums of *Orchestral Manoeuvres in the Dark* will sound off as a testament to what happens when musicians and producers get a buzz off the gloriously selfish quest to sketch the days of future past. ■

Tony Ware is a writer, editor, and unabashed fan of prom-scene themes, based out of Washington, D.C.



Alloy 2

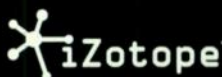
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APPLE 30-PIN-TO-LIGHTNING ADAPTER

Apple's new Lightning connector is small, fast, and power efficient, but may leave many of your older iPad and iPhone accessories disconnected. This 30-pin-to-Lightning adapter gives your accessories a new lease on life, enabling you to use them with the latest generation of iOS devices. (HD8232M/A)



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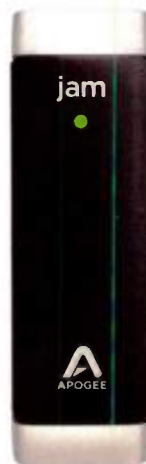
APOGEE MiC

Once again, Apogee's dedication to impeccable audio quality shines through with MiC, a compact condenser mic with a direct connection to your iOS device. Once you hear the results, it will become an integral part of your mobile recording toolkit. (MiC)



APOGEE JAM AUDIO INTERFACE

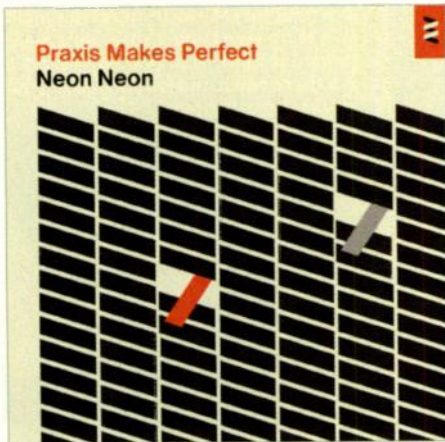
One of the best-sounding ways to get guitar or bass into your iOS device, Jam uses Apogee's PureDIGITAL connection and renowned converters for the pristine sound quality you've come to expect. Best of all, it's completely plug-and-play with any Core Audio compatible application. (JAM)



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Neon Neon

Praxis Makes Perfect

LEX

Gruff Rhys and Boom Bip return with music of '80s dance music-sized portions, with soothing vocals and shimmering melodies. A joyous record that goes by faster than a Lamborghini, the album features Asia Argento, Cate Le Bon, Josh Klinghoffer, and follows Neon Neon's 2008 debut, *Stainless Style*. Neon Neon's use of chunky '80s dance grooves, period synths, and drum machines borders on parody, but the music, inspired by left-wing activist and *Doctor Zhivago* author Giangiacomo Feltrinelli, offers an exuberant journey through electronic-pop craft. From the Bowie-esque "The Jaguar" to the sweetly hilarious "Dr. Zhivago," the zippy "Shopping," and ethereal Kraftwerk-ian closer "Ciao Feltrinelli," Neon Neon makes everything aglow anew.

KEN MICALLEF



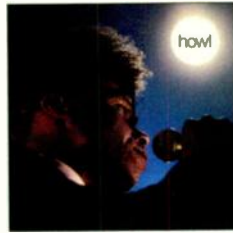
Deerhunter

Monomania

4AD

If Bradford Cox, Lockett Pundt, Moses Archuleta, and company collectively hold a single-minded obsession, as their fifth album's title suggests, equilibrium it ain't. Across 12 oscillating tracks, the band manifests pressurized tendencies, congesting eight-track recorders with physically demanding skronk and psychedelic residue peppered with brazenly concise, unforced harmonies. Riffs influenced by Television, T. Rex, the Method Actors, and Wire, among others, flare throughout the lacerated awakening of Deerhunter's most enthrallingly feral songs to date.

TONY WARE



JC Brooks & the Uptown Sound

Howl

BLOODSHOT

The title track on *Howl* is mindblowing, and whoever had that idea—of having this particular group of musicians fuse neo soul with Buzzcocks-style punk—should get a medal. Most other tracks on the record have more familiar soul/R&B arrangements, with tight, funky guitar riffs and vocal styles that range from high and breathy to raw and earthy. It's all fantastic, and all have a hint of that secret modern-rock ingredient that makes "Howl" so unusual, and so killer.

BARBARA SCHULTZ



Mount Kimbie

Cold Spring Fault

Less Youth

WARP

Dominic Maker and Kai Campos were branded "post-dubstep" for enriching pensive bass with portamento wobble, pitched vocal samples, and syncopated jangle. From an alcove littered with workstations, an Electro-Harmonix 2880 looper, EHX Cathedral reverb, and Line 6 DL4 delay modeler, among other components, the duo has saturated a less hermetic sophomore album with maws of synths, vintage drum kit resonance, hazy chords, static-spangled furrows, and insistent vocals. The treatments elaborate on physicality without ducking spectral composure.

TONY WARE



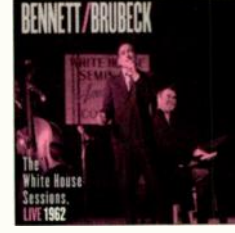
Quadron

Avalanche

EPIC

Calling Quadron "blue-eyed soul" would be an insult. The Danish duo has an authentic understanding of soul music. It is the clever doctoring of those sounds with studio enhancements, however—not to mention vocalist Coco O's stunning, honeyed tones—that makes their sophomore album an R&B exemplar. With nods to jazz and the extensive use of orchestration, the two sound smooth and polished on "Neverland," chilling on the moody title track, and in the throes of new love on "Hey Love."

LILY MOAYERI



Tony Bennett and Dave Brubeck

The White House Sessions, Live 1962

COLUMBIA/RPM/LEGACY

There are dozens of stellar moments on these recordings, recently discovered in Sony Music's archives. A rapid-fire rendition of the Brubeck Quartet's "Take 5" swings mightily; Bennett's voice is perfection on standards such as "Just in Time" and "I Left My Heart in San Francisco," just a few weeks after the latter was originally released. But the highlights are the singular, impromptu collaborations with Brubeck backing Bennett on "Chicago," "That Old Black Magic," and more—priceless.

BARBARA SCHULTZ



Solter Resets Friedlander

No Compass

SKIPSTONE

New York City Downtown bassist Erik Friedlander gives up control to renown engineer Scott Solter and the results are well, spooky. Friedlander has always been an inventive avant garde musician, but when Solter manipulates the barest elements of the bassist's 2008 *Broken Arm Trio* CD, it's like a slow-moving cinematic nightmare, an alternate soundtrack for *The Hills Have Eyes* where the mutants spin yarn instead of sucking milk. String sounds clang and reverberate; beats spin, dissipate, and die. An eerie calm pervades.

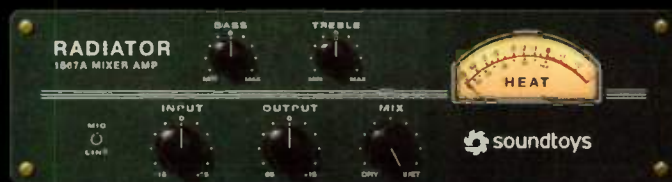
KEN MICALLEF

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Virtual Instruments Roundup





LUST

From software suites to grand pianos, we put the latest and greatest to the test

BY CRAIG ANDERTON

THE FIRST virtual instrument I ever saw played back one, and sometimes two, voices on a Mac with about 200ms latency. We've come a long way, baby . . . between multicore processors, 64-bit operating systems, and some brilliant programming, we now have software instruments whose capabilities not only rival—but in many cases exceed—what had been available in hardware.

Whether you want a sampler with virtually unlimited memory, spot-on emulation of analog subtractive synthesis, re-creations of classic synths, or instruments with capabilities that never existed before, virtual instruments fill those needs—and then some. Lines are blurring, too; it's getting harder and harder to differentiate between sound libraries and virtual instruments (see the sound library "Roundup" in our March 2013 issue).

The end result is a cornucopia of sonic options, all for considerably less than the price of a single hardware synthesizer. Ready to find out what's hot in synth-land? So were we . . . and here's what we found.

Native Instruments Komplete 9

NATIVE-INSTRUMENTS.COM

\$559 COMPLETE 9

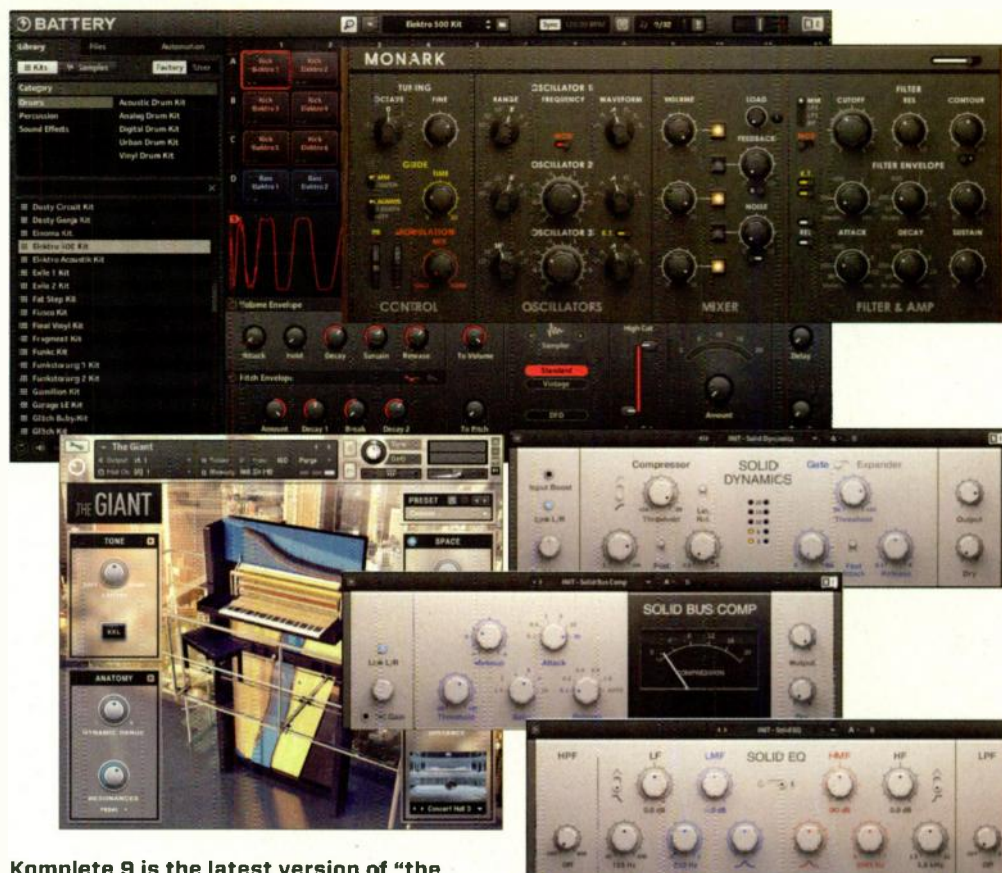
(\$1,099 COMPLETE 9 ULTIMATE)

We reviewed Komplete 8 Ultimate in the June 2012 issue, and if you were paying attention, you'll remember how impressed I was with what I called "the mother of all plug-ins." This time around, we'll look at Komplete 9 (K9)—the "budget" version of Komplete 9 Ultimate.

Overview Compared to Komplete 8, Battery is now at Version 4 and offers an expanded library; the new Reaktor-hosted Monark is a Minimoog-style mono subtractive synth with a rich sound; and the Solid Series (SSL emulations) plug-ins—which now include features like sidechaining and parallel compression—don't necessarily need Guitar Rig Pro as a host. The Giant piano and Session Strings Kontakt libraries are also included. While those additions aren't earth-shaking, they're definitely useful, and the reasonable update price will likely induce many Komplete 8 owners to upgrade.

You'll need to decide whether the Ultimate version offers enough extras to justify costing about twice the price; NI makes that task easier with the comparison chart at www.native-instruments.com/en/products/komplete/bundles/komplete-9/k9-vs-k9u/. The standard version has fewer Kontakt libraries: much less cinematic content (no Heavycity products, and only Session Strings), three Kontakt drum libraries instead of nine, fewer basses, and no Alicia's Keys virtual piano or George Duke Soul Treasures loop collection. Although you get the "flagship" instruments (Kontakt, Reaktor, and Guitar Rig Pro), the package is missing the Reaktor-based Scanner and Razor and several effects.

Realistically, though, K9 delivers a lot—it's just that the Ultimate version is . . . well, ultimate. You can mix and match, as most of K9 Ultimate's components are available individually; however, if you want to add the outstanding Damage (\$299) and Razor (\$99), you might as well stretch to K9 Ultimate and get everything. Although K9 needs to make no apologies for what it bundles, Ultimate is much more cost-effective if you need even just a few of the extras it offers.



Komplete 9 is the latest version of "the best of Native Instruments," yet the price remains the same as Komplete 8.

K9 was clearly designed to be a useful product in its own right, not just a "little brother" to Ultimate. Do you really need six bass libraries if you have one really good one anyway? However, another reason for going Ultimate is that it arrives on a hard drive. With K9, you'll be feeding double-layer DVDs into your computer for quite a while.

Specs and Caveats Plug-in formats are VST/AU/RTAS (Pro Tools 9/10) and 32-bit AAX, which works in Pro Tools 10—but not Pro Tools 11, until they're updated to 64-bit native operation. Presumably NI is working on that, but nothing official has been announced as of this writing. You'll need at least a dual-core processor, Windows 7/8 (32/64-bit) or Mac OS X 10.7 or higher. Although Kontakt can stream from disk, more RAM is always better. (Sample attacks are stored in RAM.) I wondered if the Service Center would go crazy authorizing K9's extras compared to what had already been registered with K8 Ultimate, but the authorization process went without a hitch. The instruments can also work standalone.

Copy protection is quite painless, using NI's Service Center and online activation. I've mentioned it before, but I'll say it again: the Service Center went from being one of my least favorite forms of authorization to a valuable,

helpful addition to the authorization process that also notifies you of updates and makes it easy to transfer authorizations to a different computer.

The Gestalt I've often said that if you pair your DAW of choice with Komplete, you don't really need much else. Sure, you may want to pick up some other specific synth emulations, and some "character" plug-ins that can round out what Komplete offers. But if you do the math, you get a tremendous amount of instruments, effects, and content for the price. (And it's worth noting that without much fanfare, NI has become a source of A-list content as well as plug-ins.)

Another consideration is that Kontakt has become the *de facto* standard for sound libraries. If Komplete doesn't have something, odds are some company, somewhere, makes what you need—and offers it in Kontakt's format.

Komplete 9 isn't a huge leap forward from Komplete 8, but NI has held the pricing—so like previous updates, you get more for your money. Unless you already have a really extensive collection of plug-ins and effects, it's hard to imagine anyone whose music productions wouldn't benefit from having Komplete installed. My only advice would be to stretch to the Ultimate version if you can, due to its huge amount of high-quality content.



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Arturia V Collection 3.0

ARTURIA.COM

\$449 BOXED, \$399 DOWNLOAD

“V” for Vendetta? “V” for Victory? With Arturia, “V” is for Virtual—and the company has been at the virtual-instrument game for more than a decade. While their early software sometimes had stability issues as CPU-hungry programs met sketchy processing power, today’s multi-core processors provide the right home for these rich-sounding, sophisticated instruments.

Overview This software suite is “Arturia’s Greatest Hits”: the Mini V (Minimoog emulation), Modular V (Moog Modular), CS-80V (the famous Yamaha synthesizer), ARP2600 V, Prophet V & Prophet VS, Jupiter 8-V, Oberheim SEM V, Wurlitzer V electric piano, and Spark Vintage (30 classic drum machines—Linn, Korg, Yamaha, Roland, etc.). Note that the Spark Vintage drums aren’t limited to working with Arturia’s Spark controller; they’re just as much at home with NI’s Maschine or the various keyboard controllers that incorporate playable pads.

In addition to the synths, the Synth Laboratory takes a page from their Analog Laboratory hardware/software combo by providing more than 4,000 presets and 200 “scenes” that feature two synths, drum loops, and arpeggiation. In keyboard synth terms, you can think of it as a “combi” or “performance” as opposed to a single instrument.

Given that the instruments themselves cost \$129 each, if you want only three of the synths contained in the collection, then it makes sense to buy them individually. However, the instruments are differentiated enough that the typical user would find at least four or more favorites (although those “favorites” might be different for different players). For example, I find the Modular V to be a must-have (if only because I started my life in synthesis on a Moog Series III but could never afford one—what a great machine!), but I’m also a big fan of the Prophet VS, Spark Vintage drum sounds, CS-80V, and ARP 2600 V. Those alone justify the V Collection, but I use the other synths as well—right tool for the right job, and all that.

Specs and Caveats Arturia added native 64-bit operation (up to 96kHz) to their



All of Arturia’s vintage synthesizer emulations have been collected into a single, comprehensive suite of instruments.

repertoire, but the 32-bit (or both) versions can be installed if you prefer. Formats are standalone, VST 2.4, RTAS, and AU 32/64-bit. The Oberheim SEM V and Wurlitzer V also support VST 3. As to AAX . . . not yet.

Regarding operating systems, XP and Vista remain supported (which I think is considerate), as well as Windows 7 32/64-bit.

Authorization is done through Steinberg’s eLicenser, which gives you a choice of dongle or “soft” authorization. Given how much I update operating systems and computers, I’ve taken the dongle route and I haven’t regretted it.

The Gestalt What’s interesting about Arturia’s synths is that they start off emulating the originals, but they don’t stop there. Typically, you’ll find features like a step sequencer, modulation matrix, additional modulation sources, categorized browser, and

the like. And of course, there’s no reason why mono synths can’t be polyphonic in the virtual world. However, the main attraction is a warm, “liquid” sound quality that truly recalls the great analog synths of yesteryear.

The one caution involves Pro Tools. Arturia’s RTAS implementations have a reputation for hit-or-miss. (They worked for me with Pro Tools 10, so I can’t comment on issues.) AAX hasn’t happened, and now AAX plug-ins need to be 64-bit anyway. Fortunately, all Arturia synths in the V Collection can be downloaded for a 15-day free trial with no limitations, so you can make sure the synths work properly with your host of choice.

If you’re a classic analog synth fan but know you’ll never be able to afford the originals, let alone fit them in your studio, the V Collection is as close as you’ll come to making those classics part of your musical life.

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Waves Element

WAVES.COM

\$99

There was a lot of speculation about Element, given that it's Waves' first virtual instrument. Expectations were high, but there was some question about what Waves could do to distinguish itself from a crowded field.

Overview On one level, Element is elementary: It doesn't offer anything you haven't seen before. It uses a subtractive synthesis engine with two oscillators, filter, VCA, effects (distortion, bitcrusher, chorus, delay, and reverb), four multi-mode LFOs, EQ, modulation matrix with six slots, three envelopes (for VCF, VCA, and modulation), and arpeggiator/step sequencer.

In other words, this is an ideal synth for gear snobs who want to post all over the Internet that it's boring without ever having played it. But when you play it, several, uh, elements become apparent.

I like to program sounds, and Element has a super-obvious interface. Everything is at your fingertips, controls are the right size, the visuals are appealing, and if you've used a subtractive synth before, there's no need to open the manual to get going. Within a couple of minutes, I had one of those punchy, Moog-y bass sounds (shown in the screen shot). If you don't like to program sounds, the presets are not made to impress; they're made for production. Granted, I'm picky about presets, and these were no exception—but the same painless interface for programming is equally painless for tweaking.

Next is the sound: It's detailed, rich, and pure. Even the hard sync is musical, whether you're going for a "ripping circus tents" sound, or something gentle. (Yes, it's possible.) There's no stairstepping, even when feeding the filter cutoff from an external 128-step MIDI control source. Overall, in terms of "analog feel," Element has more in common with a Moog Voyager than the typical analog modeling synth.

Dig deeper, and there are lots of things that Waves just plain got right. Granted, Element has only two oscillators with four waveforms, but you have an FM option, sub-oscillator for Oscillator 1, and a Unison mode that creates a thicker sound. It offers a choice of DCO or VCO if you want a little variability in your life, and an eye-candy "oscilloscope" that



When Waves announced they would be introducing their first virtual instrument, people weren't sure what to expect—but Element indeed brings something unique to the plug-in world.

displays the waveform. The distortion can go pre- or post-filter, and the LFOs (two with rate controls, two with tempo sync) have six waveforms and tempo sync. I also like being able to reverse the modulation signal polarity in the mod matrix.

The Arpeggiator/Step Sequencer is exactly what you'd expect, although it does include swing.

Specs and Caveats Waves has their famous online compatibility spreadsheet (the most detailed in the industry, for sure), but the bottom line is: VST on Mac 10.6.8 or higher and Windows 7/8, AU, VST3 where supported by the host, and native-only for Pro Tools (RTAS and Audiosuite—no TDM or AAX as of this writing). It also runs standalone, and operation for me was rock-solid.

My only caveat is its EQ. Having highpass and lowpass filtering is great, but the EQ's four bands have fixed bandwidths that are too narrow for general tone shaping, so the EQ is more of an effect. If you want gentler tone shaping, you'll need to follow the synth with a general-purpose EQ in your DAW.

As Element is a Waves 9 product, it performs authorization via the user-friendly Waves License Center application.

The Gestalt When I first saw Element at NAMM, one of the developers said that it was all about getting the vibe of analog. I assumed that meant the ability to add some grit, and Element can do that. But more importantly, it has analog sweetness. When I first started playing with Element, I assumed I wouldn't need it, as I have plenty of other subtractive synths. However, the sound quality is in its own world; it's almost like an idealized version of analog, compared to synths that try for the most accurate analog sound. It reminded me of when I was doing some guitar emulations, and in A-B tests experienced guitarists would often pick the emulated sound as the "real" one—because it was intended not to emulate (for example) a Strat, but the "perfect" Strat sound you heard in your head.

Element is very much a balance of analog purity and digital precision, it's easy to program, and at \$99, it's priced competitively. Is it for you? Download the demo and find out.

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LUST

roundup

Synthogy Ivory II American Concert D

SYNTHOGY.COM, DIST. BY ILIO.COM

\$199 MSRP, \$179 STREET

Synthogy has earned quite a bit of acclaim over the years for the realism and playability of their pianos, and they continue to expand their line. Their latest is the American Concert D—a 1951 New York Steinway Model D, which has been a favorite of many concert artists for decades.

Overview A Synthogy piano is not just a piano, but a very flexible instrument. It offers a great deal of control over various parameters (key noise, resonance, stereo width, dynamic range, audience or performer stereo perspective, and more), as well as more than two dozen presets that take advantage of the software's flexibility. An additional



There's more to virtual instruments than synthesizers; Synthogy's pianos are essentially samplers that are optimized to create acoustic piano sounds. Note the Effects page detail shown below the Program page.



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The 45000 is a true multi-track looper that allows instant creation, storage or overdubbing on any of its tracks.

It boasts four mono tracks and one stereo mixdown track per loop with instant, seamless switching between up to 100 loops. All that recording real estate, plus features like octave drop, speed adjust over a two octave range, reverse playback and recording—all usable on the fly—give you incredible control.

The 45000 records CD-quality audio directly to an SDHC card (4 to 32 GB). Each card holds up to 100 individual loops, accessed with the optional Foot Controller. For extra convenience, a built-in metronome to a separate Monitor Out and a Headphone Out are also included.

FEATURES:

- ▶ 4 tracks / 1 mixdown track per loop, up to 100 loops per card
- ▶ 4 GB SDHC card (included) provides up to 125 minutes of recording time
- ▶ MIDI clock sync + MIDI controllable user parameters
- ▶ Import/export .WAV files via USB with PC or Mac
- ▶ Quantize or non-quantize (free running) recording modes
- ▶ Overdub or punch in/out recording

Optional Foot Controller delivers hands-free control and instant access to up to 100 loops.



Catch Looper Superstar *Reggie Watts'* demo: www.ehx.com/blog/watts45000

electro-harmonix

MADE IN NYC, USA



synth engine lets you layer pads along with the piano—it may be a little weird to do your strings-and-piano lounge act with a spot-on concert Steinway, but hey, whatever works.

What's more, it offers a separate effects page with EQ (high and low shelving with gain and frequency, along with a parametric mid), chorus, and ambience. Again, you'll find a bunch of presets if you don't want to take the time to do your own adjustments. A Session page sets up overall parameters—velocity curve, tuning, transposition, memory allocation, number of voices, and the like.

All these pages are presented with simple, clear interfaces; there's no need for a manual for the instrument itself, although a full-length digital manual is installed automatically with American Concert D, and there are FAQs on the Synthogy website.

Specs and Caveats The American D runs standalone as well as via VST, AU, RTAS, and 32-bit AAX; for Windows, it's one of those rare

breed of programs that supports Windows XP, Vista 32/64, and Windows 7/8 (32/64). On the Mac, it works all the way back to 10.5.8 (Leopard).

There are two caveats: Installation takes a while (86 minutes for me) because the library itself is almost 50GB; the other is . . . iLok. Now, I've actually gone from considering iLok a willfully installed virus to getting along with it okay after iLok 2 came out, but knowing how much some people dislike iLok, it needs to be mentioned.

The Gestalt As with Element, I thought I knew what to expect. Synthogy's pianos sound wonderful, and while to my ears, no sampled piano can match wood and metal vibrating in a beautiful acoustic space, recording a Synthogy piano on a track gets scary close. It will also sound better than whatever "default" piano came with your DAW.

That said, we all get better in our craft, and apparently, Synthogy's designers are no exception—the Steinway American D is,

without a doubt, the best sampled concert piano yet to load on my hard drive (and that's a lot of sampled pianos). It's also the closest I've come to being fooled into thinking I'm in the studio, listening to a really well-miked piano on headphones. The sound quality is, well, almost sensual.

I think part of Synthogy's secret (I'm speculating here) is that they don't "smother" the piano by miking too closely; Synthogy's pianos have a certain openness that's not dependent on ambience. We don't listen to a piano by sticking our ears a couple feet away from the sounding board, and I suspect Synthogy has figured that out. But whatever mojo they've put into this piano, it's exceptional.

At under \$200, the American Concert D will probably cost less than hiring someone to move a piano into your studio. If you haven't bought an Ivory II-series piano, you'll be glad you waited because to my ears, this one is Synthogy's best—and they'd already raised the bar pretty high. ■

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se·lec·tion [sə'lekSHən]

noun

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2. a number of carefully chosen things
3. what you get with Vintage King

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Kemper Profiler Amp

Modeling meets sampling—and no, it's not a synthesizer

BY CRAIG ANDERTON

SUMMARY

STRENGTHS: Works as claimed. Semi-automated profiling process. Lots of effects to complement your amp sounds. Can download additional profiles. Extensive I/O. Novel. Also available in rack configuration and with power amp.

LIMITATIONS: Some functions not yet implemented. Takes almost a minute to boot up.

\$2,025 MSRP, \$1,975 street
kemperamps.com

THE BUZZ around the Kemper Profiler Amp (KPA) has been so over the top, I thought, “it can’t be that good.” And indeed, it isn’t—it’s better.

I’ve used amp sims for a long time, and they’re like wild animals. They usually snarl and bite at first, but applying some tweaking, filtering, de-essing, and other tricks—as well as matching them to my playing style—domesticates them. What I like most about amp sims is being able to create amp sounds that don’t exist in the physical world; for a real amp sound, I use a real amp.

But the Kemper Profiler Amp changes all that. First, it’s loaded with tone right out of the box, even if you’re a nit-picking amp-sim elitist like me. Second, it sounds shockingly close to “real” amps. Third, you can profile your own amps—essentially, sample their souls—and download new profiles. (Many are created by Kemper users, but note that the profile’s quality depends on the care of the person doing the profiling.)

User Interface Yes, it’s a digital box: It takes a while to boot up, you should check the web for updates, and there are unfinished functions (Performance mode and undo/redo). The user interface is relatively painless, albeit initially daunting; but once you learn your way around, it’s second-nature. There’s some whimsy, too—the multi-colored LCD for the stomp-type effects is pretty cool (eight colors, each representing an effects family) and there’s also something wickedly retro about its short-wave-radio-meets-lunchbox look.

Elements There are three main “signal path” sections toward the front-panel top. The heart is a “stack” with amp, EQ, and cabinet, preceded by a section with four slots for stomp effects. Each slot can choose from a rich roster of traditional and nontraditional effects. Two post-stack slots can also choose from among these effects, followed by two more slots for delay and reverb.

Profiling The KPA sends tones and noise into an amp; mike the speaker, and feed its signal into the KPA—it analyzes the “data” to define the amp’s sonic signature. Of course, the way you mike the amp affects the quality of the profiling, and while you can profile with effects, you’re usually better off using the KPA’s internal effects.

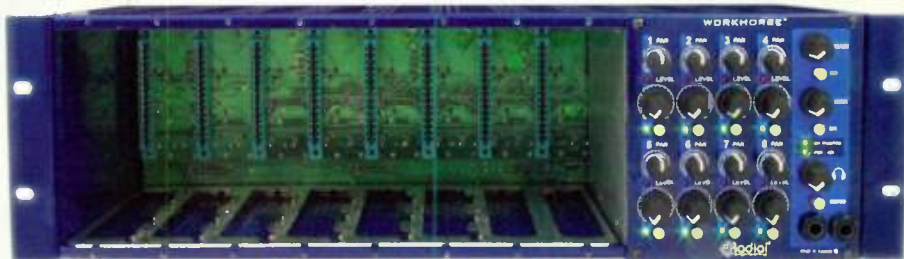
One particularly useful feature is that KPA has a way to “clean up” a profiled sound; it seems like it’s basically shaving away at intermodulation distortion. Overall, with a little practice, it’s not hard to profile an amp and capture it accurately.

Conclusions The KPA includes extras, like MIDI control, expression pedal and footswitch jacks, a “pick” parameter to soften or enhance pick transients, room simulation, and plentiful I/O. Granted, KPA isn’t cheap—for comparison, you can buy Line 6’s excellent DT25 amp with speaker, cabinet, tubes, and a cleverly designed hybrid of digital modeling and analog tube voicing for half the price. But there’s absolutely nothing like the KPA, which is why it won the coveted Music International Press Award’s Best Innovative Product category for two years in a row. The fact that it sounds great is enough—but add the profiling aspect, and you enter the rarefied atmosphere of “unique.” ■

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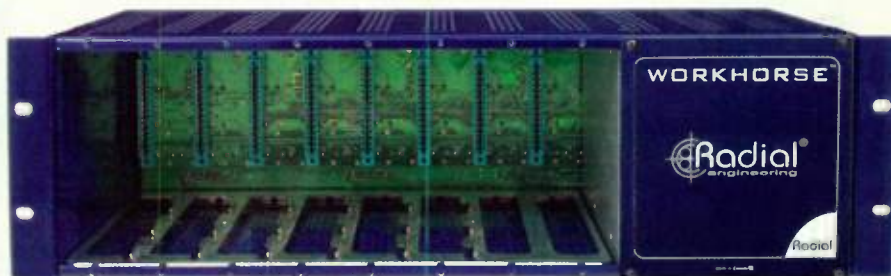
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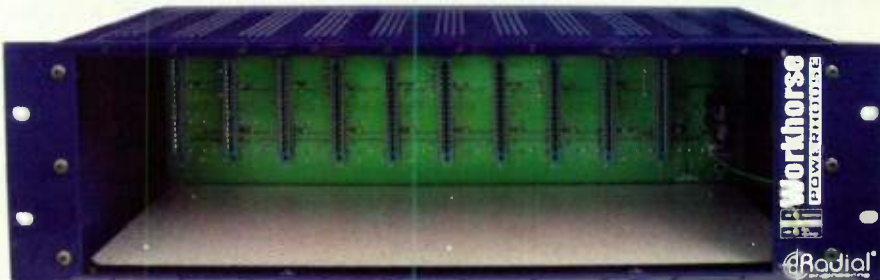
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"The Workhorse certainly lives up to its name. The feature set is deep, the system is scalable, construction is solid and it sounds great. What's not to like?"
~ Mix



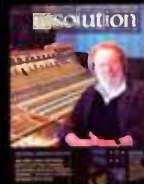
"From its build quality to its feature set and open-ended architecture, the Workhorse is currently unrivalled for supremacy."
~ Recording



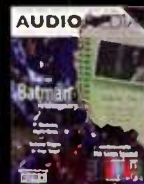
"Radial can't seem to leave well enough alone! Oftentimes, they take what might be otherwise mundane and turn it into a must have."
~ Tape Op



"Every connection and function worked as promised. The Workhorse is truly professional grade and worth the cost."
~ Pro Audio Review



"The Workhorse makes a terrific host for modules - solidly built with useful routing features and extensive connectivity."
~ Resolution



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"The Workhorse is one of the most versatile and well equipped racks I've ever tried, and exudes the typical Radial Engineering detail and thoughtfulness..."
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* Modules shown are not included!

View the Workhorse Videos at:
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Rain Computers Steinberg Pro Studio RainPAK

Audio ecosystem bundles computer, software, interface, and support

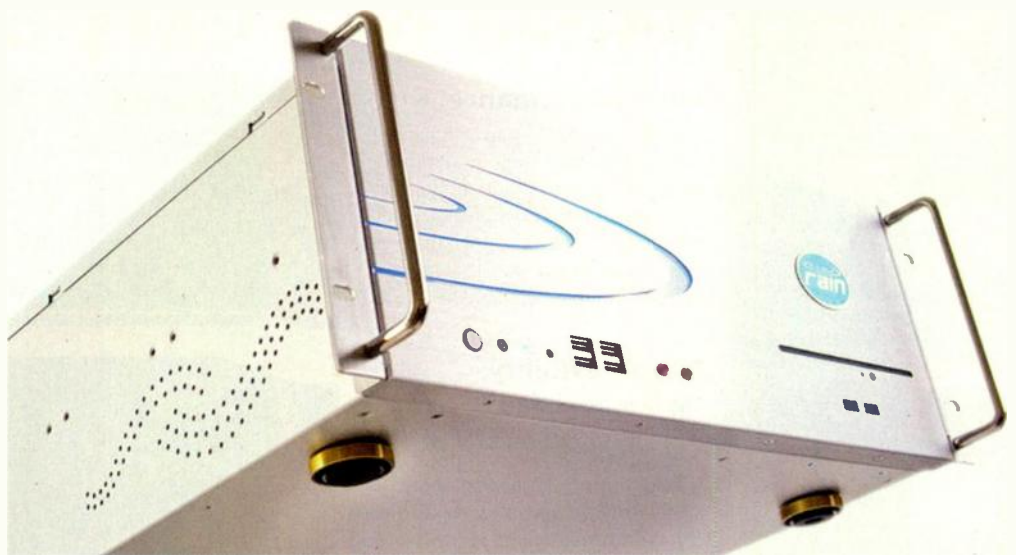
BY CRAIG ANDERTON

SUMMARY

STRENGTHS: True plug-and-play bundle. Cost-effective compared to buying each element separately. Extensive, US-based support. Well-chosen computer hardware. Lots of I/O, including dual Thunderbolt ports.

LIMITATIONS: UR824 interface lacks 5-pin DIN MIDI I/O. Only one internal hard drive. Optical drive doesn't handle Blu-Ray.

**\$3,326.97 MSRP,
\$2,999.99 street**
raincomputers.com



SOMETIMES COMPUTERS seem as unpredictable as the weather. Any DAW forum has some people claiming their software is useless, while others say “works great for me.” So what’s the variable? The hardware—especially with Windows computers, which resemble a combination lock. The right combination gives performance and cost-effectiveness, but if one of those tumblers is off...

The Concept RainPAK takes a leaf from the Mac’s playbook—create a solid, predictable hardware ecosystem, then build software around that. However, RainPAK takes the concept further by including an audio interface, DAW software, and US-based tech support.

There are several different RainPAK systems: laptop, desktop, or rack server-type enclosure. The Steinberg Pro Audio RainPAK (reviewed here) may seem pricey at about \$3,000 (all prices given are street prices), however that includes the ION A2 rackmount computer, a full version of Cubase 7 (\$500), Steinberg UR824 USB 2.0 interface (\$800), Steinberg CMC-TP USB transport controller (\$100), 3-year warranty, and tech support. Do the math; the RainPAK is cost-effective.

Users also get three “Ensemble Plug & Play” sessions, where Rain can log in remotely and optimize the system for a particular combination of hardware and software—not just the software around which the system was based. This is huge.

The ION A2 The computer is serious: quad-core Intel Core i5 3470, 8GB RAM, dual Thunderbolt ports, 8 USB 3.0 ports (two on the front panel), 4 USB 2.0 ports, HDMI, surround audio, ethernet, and both VGA and DVI video. There’s no FireWire, but you can use a Thunderbolt adapter or insert a card into one of

the many slots (including a standard PCI slot).

The operating system is 64-bit Windows 8, and while I initially didn’t warm up to it, I *had* to use it, and now I’m now finding it’s actually pretty cool. Furthermore, you get a real OS disc, not some “restore” disc as found with many off-the-shelf computers. Also worth noting: The computer is very quiet (despite multiple fans), and the aluminum keyboard is sturdy—and shiny!

For storage, there’s an internal 1TB boot drive, and an optical drive. This computer is clearly designed to allow for lots of external devices, whether it’s data hard drives, interfaces, control surfaces, etc. However, there’s room for three more internal drives.

Using RainPAK This is the most boring part of the RainPAK: Hook up UR824 audio interface. Open Cubase 7. Make music.

The UR824 has six rear-panel mic/line inputs using Neutrik combo connectors, two front-panel ins that also accommodate instruments, individual pads, and switchable +48 phantom power for input pairs. Eight line outs use TRS 1/4” balanced jacks; you’ll also find dual ADAT optical I/O (capable of SMUX mode for up to 96kHz sample rates). There’s no 5-pin DIN MIDI I/O—a curious omission, considering Cubase’s mighty MIDI editing—but MIDI over USB is common these days, and USB to 5-pin adapters are easy to find.

Conclusions The RainPAK is indeed a turnkey system, and more are on the way. (There are already versions for PreSonus Studio One Pro.) I’d like to be able to comment on whether their customer service is any good, but it all went together and worked as expected—Rain has done an excellent job of taking the pain out of music computers. ■

One Sweet Microphone!

Audix SCX25A



"I first tried out the Audix SCX25A as a group vocal microphone during a recent Hot Rize tour. The results were so stunning that we started using it on the e-Town radio show for vocals, piano, and acoustic instruments. In addition to its great sound, we also like the SCX25A's small profile even though it is a large diaphragm condenser mic. We nicknamed it the lollipop!"

*Nick Forster, e-Town Show Host,
National Public Radio*

The Audix SCX25A has become one of the audio industry's best and most versatile large diaphragm condenser microphones. Its flat frequency response (20 Hz – 20 kHz), wide cardioid polar pattern, and patented capsule suspension system make the SCX25A well suited for both studio and live applications. This compact and rugged mic accurately captures all the intricate nuances of vocals and acoustic instruments.

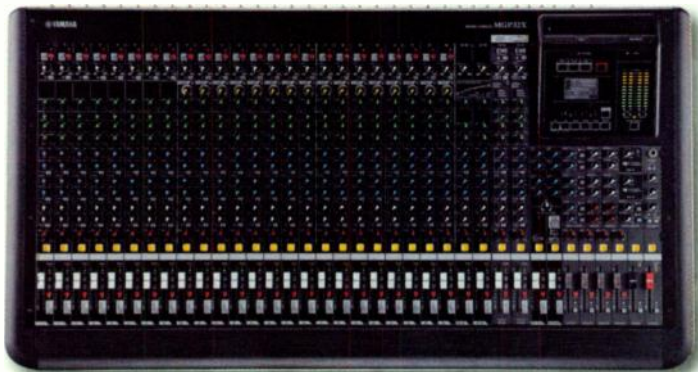
Demo the SCX25A for your customers and they will see why artists and engineers call it,

***"One Sweet
Microphone!"***

AUDIX
MICROPHONES

www.audixusa.com

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1
Korg
Volca Series
Analog synthesizers
\$205 each
HIGHLIGHTS Three models: Volca Keys lead synthesizer, Volca Bass synthesizer, and Volca Beats rhythm machine • each instrument features a loop sequencer for generating/recalling phrase-based performances • vintage-style sync in/out, as well as MIDI In • optional battery operation and built-in speakers • analog signal generation technology
TARGET MARKET Musicians who want compact instruments for portable music applications or tight spaces
ANALYSIS Korg has done well with their Monotron, Monotribe, and MS-20 Mini synths; the Volcas are a logical extension of the line.
korg.com

2
Yamaha
MGP32X
Mixing console
\$1,699
HIGHLIGHTS 24 mono/4 stereo line ins • 6 aux sends, 4 group buses • 2 FX sends • onboard DSP (REV-X and SPX multi-effects) • USB device recording and playback • X-Pressive and graphic EQ • multiband compressor • VCM technology emulates classic analog gear • 24 mic pres with Class A preamps and per-channel phantom power
TARGET MARKET Small- to mid-sized venues, touring bands, educational institutions, houses of worship
ANALYSIS The MGP32X (and MGP24X) are larger-format versions of Yamaha's highly successful MGP12X and MGP16X compact mixers.
yamaha.com/products

3
Genelec
M030
Active monitor
\$695
HIGHLIGHTS 5" woofer and 0.75" metal dome tweeter • bi-amplified with 50W and 30W Class D amps • Intelligent Signal Sensing power management with auto power-off/auto power-on • standby power consumption of less than 0.5W • automatic global voltage selection • intuitive room response controls and system calibration • XLR/TRS and unbalanced RCA inputs
TARGET MARKET Project studio owners who are concerned about sustainability
ANALYSIS These speakers retain Genelec's trademark sound, yet follow sustainable initiatives with enclosures made from wood fiber and recyclable material.
genelecusa.com

4
Universal Audio
Apollo 16
Audio interface
\$3,499
HIGHLIGHTS 16x16 analog I/O • FireWire interface with optional Thunderbolt card • onboard UAD-2 QUAD processing with as low as sub-2ms latency • DB-25 connectivity and multi-unit cascading via MADI for up to 32x32 analog • I/O dedicated XLR monitor outputs and stereo AES-EBU digital I/O • virtual console software for routing and processing
TARGET MARKET High-level recording requiring lots of I/O and onboard signal processing
ANALYSIS The original Apollo combined I/O and processing; Apollo 16 retains the concept, but augments the I/O.
uaudio.com



5
BOSS
RC-505
Loop Station
\$799

HIGHLIGHTS Five phrase tracks can play simultaneously • independent record/overdub/play and stop buttons • up to three hours of stereo recording • input and track effects • 99 phrase memories • 85 onboard rhythms can route to the rear-panel phones jack only, providing a dedicated click track • XLR mic in with phantom power • mono/stereo instrument inputs
TARGET MARKET Looping-oriented live performance, backing tracks
ANALYSIS Loopers keep gaining in popularity; Roland has been at the game a long time, and it shows in the RC-505.
rolandconnect.com

6
Novation
Bass Station II
Analog synth
\$624.99

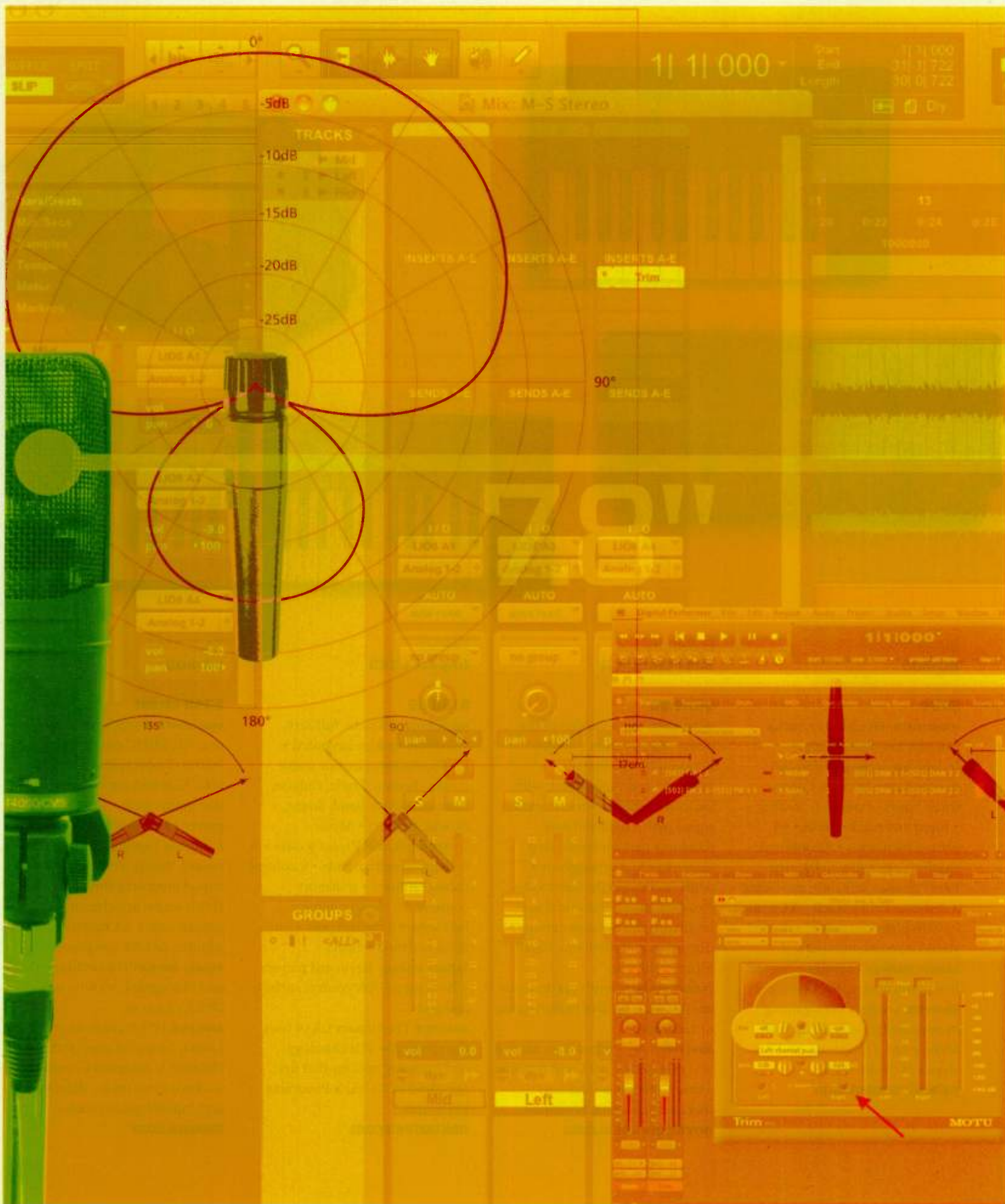
HIGHLIGHTS New version of the classic Bass Station • switch between two analog filters, “Classic” and “Acid,” each with built-in overdrive • mono analog signal path • load and save patches • pattern-based step sequencer and arpeggiator • dedicated tweakable controls • two oscillators, additional sub-oscillator, and noise generator • distortion and oscillator-based filter modulation
TARGET MARKET Synth players who are into bass for live performance or recording
ANALYSIS The original Bass Station was released in 1993, and remains a true collectible—and now there’s a 21st-century version.
novationmusic.com

7
Nektar
Impact LX49
USB keyboard
\$159.99

HIGHLIGHTS 49-note, full-size, velocity-sensitive keyboard • intelligent mapping for major DAWs (Reason, Logic, Cubase, Nuendo, Garageband, Sonar, Bitwig, Reaper) • Mixer, Instrument, and Preset modes • 8 velocity-sensitive pads • 9 control faders (30mm) • transport controls • 5 preset memory locations • 8 control pots • pitch bend and mod wheels
TARGET MARKET Keyboard players who want a DAW control surface and pads
ANALYSIS The Impact LX49 uses the same type of technology and mapping options that first appeared in Nektar’s Panorama keyboards.
nektartech.com

8
TASCAM
DR-60D
DSLR audio recorder
\$349 street

HIGHLIGHTS 4-track recorder uses SD/SDHC media • up to 96kHz/24-bit resolution • two 1/4”/XLR locking combo mic/line inputs with +48V phantom power • soft-touch keys help eliminate handling noise • dual-record “Safety Track” mode • tripod mounting threads and DSLR screw attachment • operates on 4 AA batteries, AC adapter, or USB bus power
TARGET MARKET On-set filmmakers and videographers who use DSLR cameras
ANALYSIS DSLR cameras aren’t known for audio quality; the DR-60D is designed to mount unobtrusively under the camera and capture quality audio.
tascam.com





LEARN

master class

Advanced Stereo-Miking Techniques

Add realism and detail to your recording

BY STEVE LA CERRA

STEREO RECORDINGS can deliver a realistic soundstage and convey impressions of size, detail, and depth that cannot be captured through other recording methods. Last month in our Recording column, we explored basic stereo recording techniques. This month, we explore some advanced stereo mic configurations.

Mid-Side Recording Originally developed by Alan Blumlein, Mid-Side or “M/S” stereo is a powerful coincident recording technique, providing very good localization, a strong middle image, and excellent mono-compatibility. M/S enables you to control the balance between direct sound from the source and reflected sound from the room boundaries. Mic placement is simple, but implementation requires a bit of deeper understanding.

M/S stereo is the only coincident technique that allows use of two different microphones, generally one cardioid and one figure-eight (bidirectional). The cardioid “Mid” microphone is placed directly in front of, and on-axis to, the source. The bidirectional “Side” mic is placed directly above or below the cardioid mic, 90 degrees off-axis to the source (see Figure 1 on page 58). The pickup lobes of this mic face the side walls of the room, and one of the rejection points of this mic faces the source; the other rejection point of the bidirectional mic faces the rear wall. Sound captured by the Side mic is almost completely reflected; the mic receives little to no direct sound from the source.

Your wheels should be turning at this point: We now have a direct “dry” signal plus a separate signal containing room ambience. Each mic will be recorded to a separate track, giving you the ability to balance direct sound with room sound, but this is *not* a stereo signal. They are two very different mono signals. If you adjust the balance of these tracks, you’ll hear the relationship between direct and room sound change, but you’ll get no sense of left-to-right imaging. Panning the tracks—for example, placing the cardioid on the left and the bidirectional on the right—might prove interesting, but would not be stereo.

The “trick” with M/S relies upon the relationship of the side mic to the source. In a manner of speaking, each side of the bidirectional mic captures a different signal: one set of reflections bouncing off the left side of the room, and the other set of reflections bouncing off the right side of the room. They just happen to be captured by the same diaphragm. These signals are by nature out of phase, due to the fact that they are pushing the diaphragm in opposite directions at the same time. If this sounds confusing, it may help to think about what happens when you speak into a figure-eight mic at exactly 90 degrees off axis: At most frequencies, sound bends equally around the sides of the diaphragm, pushing it in two opposite directions at the same time. Air pressure on one side of the diaphragm cancels air pressure on the other side, so the diaphragm doesn’t move (see Figure 2). This is how the nulls at 90 and 270 degrees off-axis are created on a figure-eight microphone. (Some mics do this better than others, and the null is not always perfect. Performance can vary with frequency and angle of the source to the microphone.)

We need a way to duplicate this “out-of-phase-ness” and treat sound from the left side of the bidirectional mic separately from the right side of the mic. There are several ways to do this. The easiest way (and in my opinion, the way to achieve the most control over the process) is to split the signal from the bidirectional mic, record it onto two separate Side tracks, and pan them hard left and hard right. Again, I have to hurt your brain: Think about what happens when you have identical sounds of equal level panned hard left and hard right in a stereo mix. They add, and the sound appears in the center. This is identical to having one track of the bidirectional mic panned center. The trick comes when you *reverse the phase* of one of the Side



Fig. 1. This photo shows two microphones placed for Mid/Side Stereo. The bottom microphone is a Lawson L47 MP set to figure-eight and facing the side walls of the studio. The top mic is a Lawson L47 (cardioid-only) and is directly facing the source.

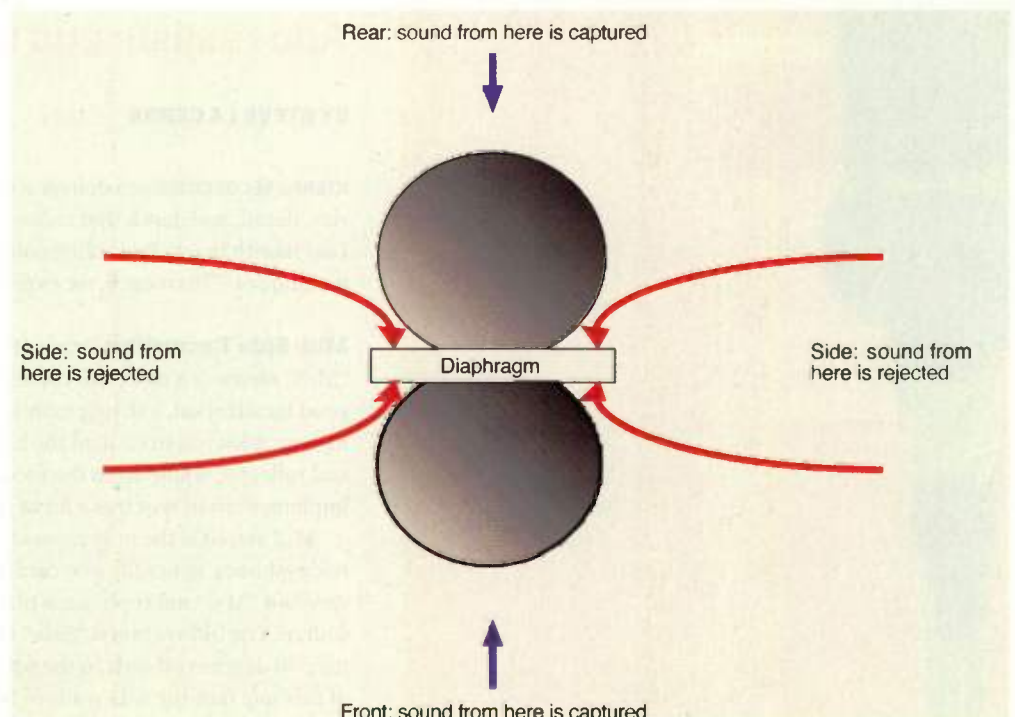


Fig. 2. This illustration shows how sound bends around the sides of a bidirectional microphone. Air pressure on one side of the diaphragm cancels air pressure on the other side, so the diaphragm doesn’t move.

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The Vocoder really sounds amazing"

Stephen Fortner, Keyboard

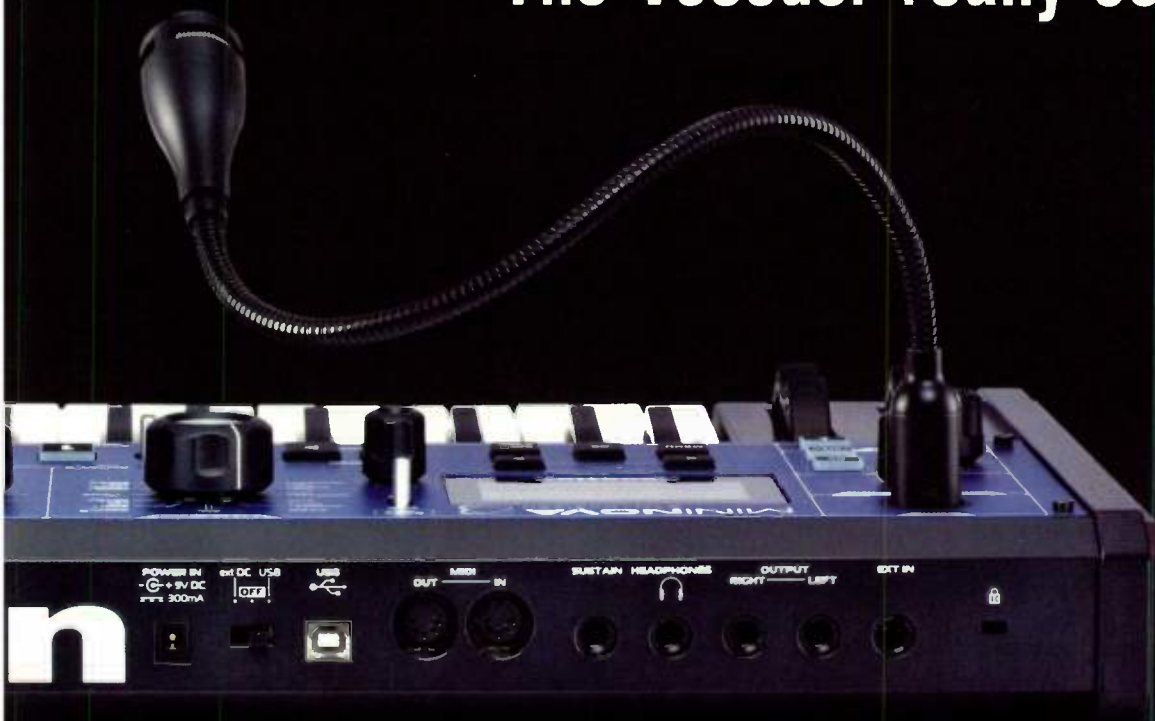
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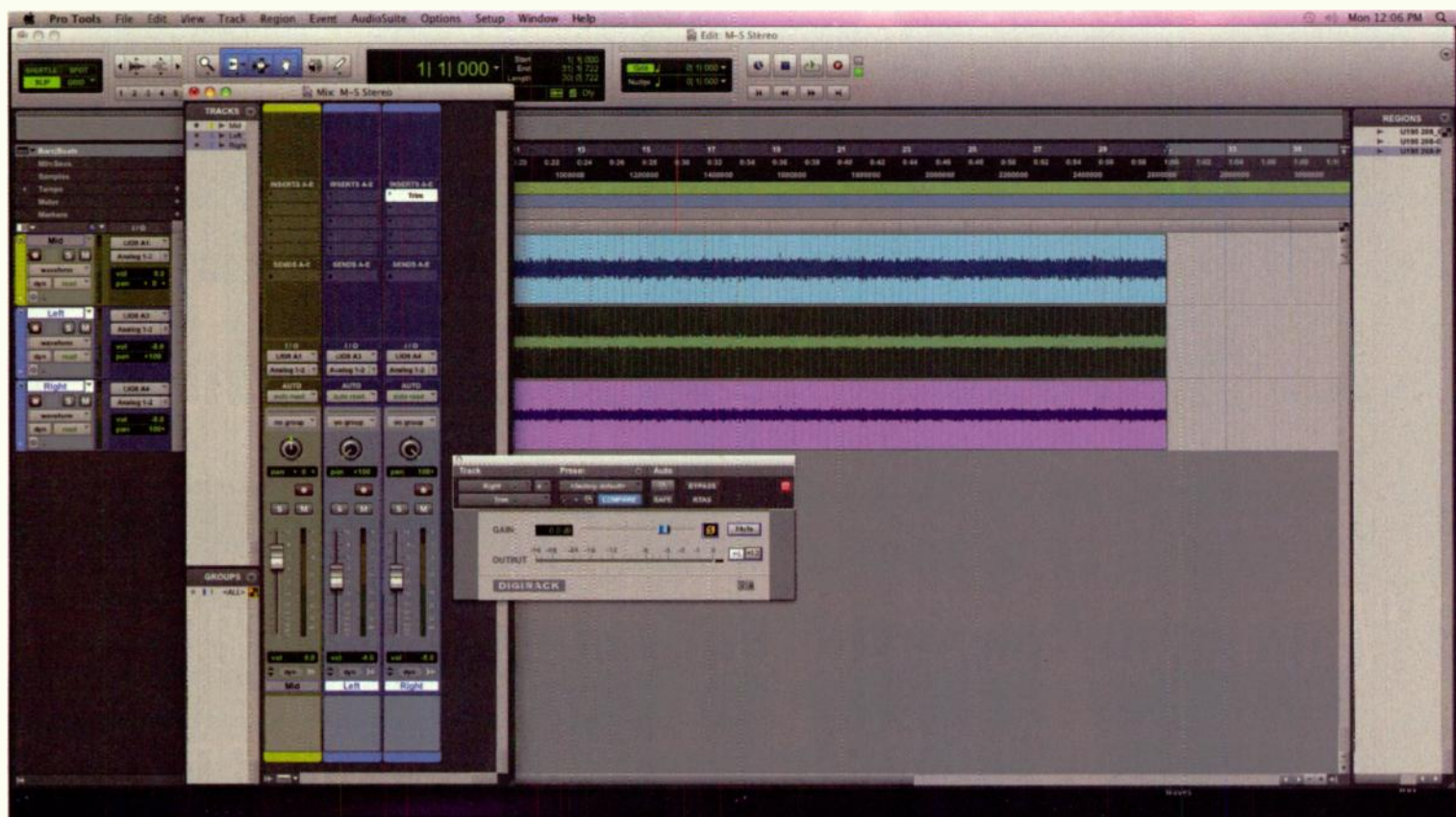


Fig. 3. Three tracks used for M/S shown in Pro Tools. The first track is the Mid track (yellow). The other two tracks are the Sides, left and right (blue). Note that the right Side track has a trim plug-in with the phase reversed.

tracks, thus mimicking the phase relationship between your ears. Most DAWs include several plug-ins that feature a phase reverse button. I suggest using a trim plug-in (as opposed to an EQ plug-in, for example) because trim plug-ins use minimal processing power and minimize the risk of introducing unwanted changes to the signal. The trim plug-in is inserted on *one* of the bidirectional Side tracks, and the phase is reversed (see Figure 3).

When you listen to these three mics, you'll have a mono signal until the moment you reverse the phase of one of the Side tracks. When you hit that phase button, the stereo image will open up like the parting of the Red Sea. The two Side tracks give you independent control over the level of the room ambience, and of course you can EQ and/or compress them for special effects. (More on that in a second.) If you pan the Side tracks to the center, or check the mix in mono, the ambient information is summed and disappears, leaving only the signal from the Mid mic and making M/S totally mono-compatible.

M/S Execution Most of us will use our DAW to create this M/S “matrix.” The Mid mic is recorded to a mono track and panned center. The Side mic can be recorded to a mono track and duplicated later, in theory yielding two identical Side tracks—though I have experienced one or two DAWs that for some inexplicable reason don't maintain precise timing between duplicated tracks. This part is critical, as is ensuring that neither Side track is ever shifted along the time line. You can split the output of the mic pre and record the Side signal to a stereo track *if the plug-in provides separate phase reverse for each channel* (see Figure 4 on page 62). Remember you need to reverse the phase of *only one* of the Side tracks. If *both* Side tracks are phase-reversed, the effect is nullified. Another option is simply recording the Side mic to two mono tracks simultaneously by setting their inputs the same.

M/S can also be created using a hardware matrix. This is an outboard processor usually providing an input for the Mid mic and an input for the Side mic. Internal circuitry handles the

splitting of the Side mic and phase reversal of one of the resulting signals, and allows adjustment of the balance between Mid and Side levels. The output of the processor is stereo L/R, so you won't have control over the relationship between the Mid and Side signals later. Some M/S encoders feature built-in mic preamps while others accept line-level input. Often the matrix gives the user the ability to change the output to XY, since audio from the mics can be electronically manipulated to create the same signal that would result from using two cardioid mics in XY.

Variations Depending upon the output polarity of the two microphones, the M/S stereo image might be reversed when you listen back. If so, rotate the bidirectional mic 180 degrees. The cool thing about M/S is that you don't need a matched pair of mics. For example, you can create great M/S recordings using a Shure SM81 for the middle and a KSM44 for the sides. In fact, you don't even need two *similar* mics. You can get excellent

ex·cel·lence ['ek-sə-ləns]

noun

1. the quality of being outstanding or extremely good
2. a state of possessing good qualities in an eminent degree
3. what you can expect from your experience at Vintage King Audio



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Warm 2nd-harmonic metal tube character with an exceptionally low noise floor



when incorporated into a variety of surround sound formats. The Decca Tree requires a specialized mounting bar that holds the left and right mics two meters apart, with the center mic a meter and a half in front of the left and right, forming a “T”. (AEA manufactures several Decca Tree mounting systems.) The distance between the two mics provides the impression of space, while the center mic adds clarity and detail to the center

image. Since the center mic is actually closer to the source than the left and right mics, the center image is very strong—preventing a “hole in the middle” that might otherwise occur with other spaced-pair techniques. Each mic is recorded to a separate track and panned to its designated location.

At its time of development, the Decca Tree was typically used with three Neumann M50 omnidirectional microphones; if you

aspire to that standard, you’ll definitely need that second mortgage, because the M50 was discontinued long ago and fetches high prices on the used market. Whether you use vintage Neumann or newer microphones, the Tree is suspended on a mic stand a few feet behind, and approximately eight feet above, a conductor’s head. In situations where reduced ambience is desired, the pickup patterns of the left and right mics can be changed to something more directional, such as cardioid or sub-cardioid. Some engineers have had success using the Decca Tree in conjunction with close mics for recording drums, but you’ll need a room large enough to move the thing around, and a mic stand sturdy enough to hold a considerable amount of weight.

Suggestions for All Stereo Miking Techniques

Any time a sound is recorded with more than one microphone, there is potential for phase cancellation and comb filtering, so it’s important to check mic placement with a few test recordings. Monitor the recording while switching between stereo and mono. Ideally you’ll hear only that the image collapses when you switch to mono. Listen for instruments or frequencies that sound hollow, swishy, or (at worst) completely disappear. Cymbal recordings are helpful indicators of when overhead mics are out of phase, because crashes will “swish” and sound flanged. If you hear any of these symptoms, move the microphones. You are not going to be able to fix such problems in the mix. It’s also helpful to have microphones that are very closely matched in frequency response and output level. Some manufacturers specifically offer “matched” pairs of mics (sometimes for extra cost, sometimes not), while other manufacturers maintain that their quality control is tight enough that any two of a particular model are close enough to form a pair. You’ll have to decide how critical “close enough” is, but when a pair of mics matches, stereo imaging is way more accurate than when they don’t. That said, don’t be afraid to experiment and do some research! ■

Steve La Cerra is an independent audio engineer based in New York. In addition to being an Electronic Musician contributor, he mixes front-of-house for Blue Öyster Cult and teaches audio at Mercy College, Dobbs Ferry campus.

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Although GarageBand began as an entry-level program for Mac users, its iOS features may astound you.

Who Says You Can't Take it With You?

Transfer GarageBand files from iOS to Apple Logic 9

BY GEARY YELTON

IMAGINE BEGINNING a studio recording by assembling tracks wherever inspiration strikes you, whether you're commuting on a train or camping in the backcountry. If you own an iPad or iPhone with GarageBand, that capability is already in your hands. With Logic Express or Logic Pro 9 on your Apple computer, you can begin a project on your iOS device, export it to your Mac, and import it directly into Logic.

Another Garage-Based Startup Aside from sheer portability, why would you want to start a project in iOS? In addition to onboard MIDI and audio recording, GarageBand for iOS offers some very useful capabilities that Logic and GarageBand for the Mac do not—in particular: Jam Sessions and Smart Instruments. With Jam Sessions, you can sync GarageBand on your device with someone else's using Bluetooth, so that one device records parts played on multiple devices in real time.

Most Smart Instruments present a palette of related chords and a selection of note patterns and individual instruments. Touching a chord launches a repeating pattern, making it quick and easy to record and arrange a song on the fly. With Smart Drums, you can vary the loudness and complexity of a drum track by where you position percussion instruments on a grid. At first blush, working with Smart Instruments may sound contrived, but you'd be surprised how quickly you can throw together tracks that actually sound good.

The Import/Export Business Once you've begun creating a song on your iPad

or iPhone, press the My Songs button in GarageBand's upper right corner to save it. You'll see graphic representations of every GarageBand song stored on your device. By default, your new song will be called "My Song," but you can change it by touching the title and typing a new one.

Touch the Edit button in the upper-right corner and select the song you want to export. Touch the Share Song icon on the upper left and select Share Song Via iTunes. Choose the GarageBand format and touch Done.

On your computer, select the iOS device in iTunes and sync it to your Mac. Select Apps on the iTunes menu bar, and then scroll to GarageBand in File Sharing on the bottom left and select it. The exported song should appear in the list of GarageBand Documents. Select the song and drag it to a folder on your Mac. To open the song file in Logic Express or Logic Pro, drag it to the Logic icon on your Dock or in your Applications folder. In Logic, save the song file and give it a new name.

After your song is in Logic, you'll discover all kinds of ways to improve your tracks and add to them. You can even turn MIDI tracks that play software instruments in GarageBand into MIDI tracks that play hardware instruments in Logic. You'll probably want to re-record any audio you recorded with your iOS device's onboard mic, but at least you'll have captured your original inspiration. ■

Geary Yelton is the former senior editor of Electronic Musician. He lives in Asheville, North Carolina.

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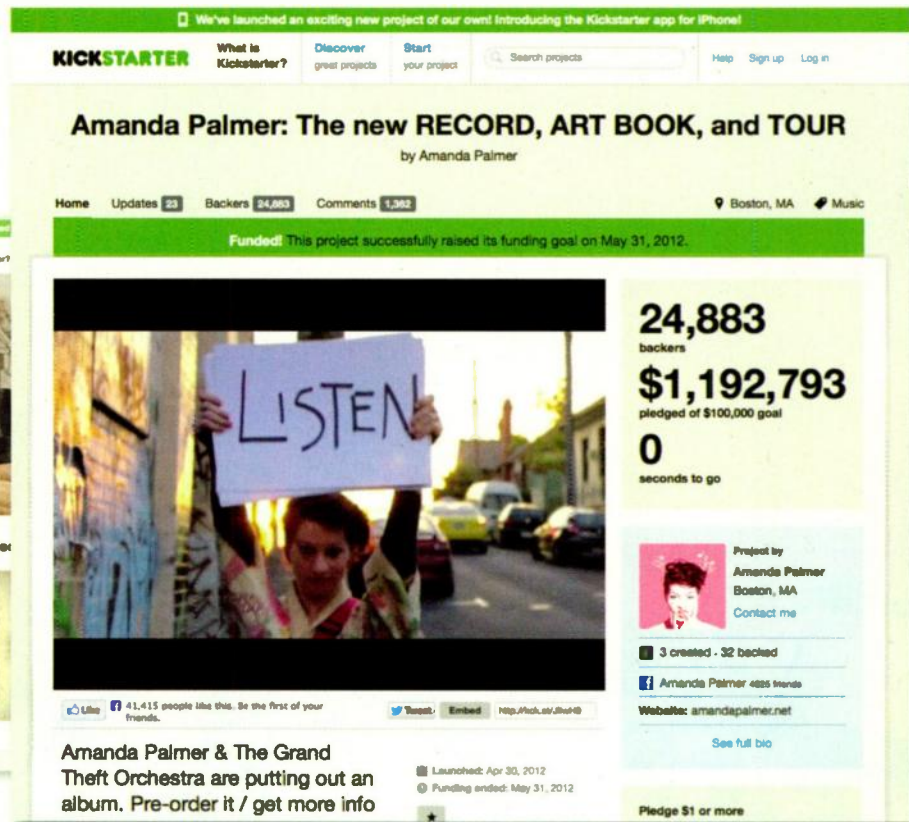




Crowdfunding Your Next Record

Make the most of
Kickstarter and
Indiegogo campaigns

BY OWEN O'MALLEY



Amanda Palmer raised more than a million dollars during her highly publicized Kickstarter campaign.

GIVEN THE state of the music industry, my band Bailiff is doing pretty well. No, we haven't quit our day jobs. We're not even on a label. But we just spent two weeks recording our second album in a pro studio and we aren't in debt. See, we asked our fans to pay for the record before we stepped foot inside the studio. And they said "yes." This wouldn't have been possible without Kickstarter.

Crowdfunding has the potential to democratize the business side of the music industry. Case in point: Amanda Palmer's Kickstarter campaign for her 2012 album *Theatre is Evil* raised more than \$1.1 million. But while crowdfunding sites make it easier than ever to fund your next project, success isn't guaranteed. According to Kickstarter's published data, less than half of the projects launched on their website reach their funding goals. If you want to maximize the potential of your crowdfunding campaign, you're going to have to do a lot of legwork.

State Your Mission First, decide what you're trying to fund. Are you looking to cover the entire cost of production, from pre-pro to publicity? Or have you recorded most of the record yourself but really want to be able to pay Alan Moulder to mix it? Either approach has the potential to succeed, as long

as your goals are well-defined and effectively communicated. My band launched its first Kickstarter campaign because we ran out of money before we got to mastering and reproduction; that's exactly how we pitched it to fans, and the campaign raised 121% of its \$4,000 goal.

Pick Your Path Once you know what you're funding, you can start thinking about your project budget—both Kickstarter and the similar Indiegogo incur fees for their services—and determining which crowdfunding model will best suit your needs: keep-it-all or all-or-nothing. Kickstarter adheres to the latter model; the project creator only gets to keep the funds raised if the target fundraising goal is reached. If this concept is made clear to your potential project backers, it can act as an incentive, especially if you ask your fans to spread the word. The obvious downside is if you fall short of your goal—even by \$1—you get bupkis.

Alternatively, Indiegogo offers a keep-it-all model, wherein the project creator keeps every cent raised whether or not the fundraising target is met. Falling short of the goal simply incurs a higher service fee rate (9% vs. 4%). While it may seem like a less risky strategy than all-or-nothing, the keep-it-all model has



“How I Got My Music Licensed 1,205 Times”

Barry French – TAXI Member – BigBlueBarry.com

I took some time off from music, then my grandfather passed away and I re-evaluated what I was doing with my life. I felt the “call” of music, so I started writing again, decided to get serious about my music career, and joined TAXI in 2008.

Honestly, I Was Skeptical at First...

I did some research. I lurked on TAXI's Forums, and found that TAXI's successful members were real people just like me. Though I'd co-written with an Indie artist, and charted at #15 on the Radio & Records Christian Rock charts. I was clueless how to even *get* a film or TV placement— a complete newbie!

But TAXI's Industry Listings gave me goals to shoot for and helped me stay on task. I became more productive and *motivated* to get things done because I didn't want to feel like I “missed out” on an opportunity.

How to Build The Right Catalog

If you want to create music for art's sake, then by all means, go ahead and do that. But, if you want to have a music *career*, why not use TAXI to learn how build the *right* catalog full of music the industry actually *needs*?

Expand Your Possibilities...

TAXI can help you learn to write for genres you never thought you could do. I used to do mostly Hard Rock and Metal. Because of TAXI, I branched out into other genres— first Pop/Punk, and then Tension and “Dramedy” cues. I used the feedback from TAXI's A&R staff to improve my work. In many cases, my tracks improved to the point that they got signed *and* ultimately *placed* in TV shows!



350 Placements in the Last Year!

The first placement I ever had resulted from meeting a Music Library owner at the Road Rally— TAXI's free convention. In a little more than 3 years, my music has been licensed more than 1000 times, with nearly 350 placements in the past year *alone*!

A “Lucky Duck?”

My 1,000th placement was a Southern Rock track on A&E's hit show, *Duck Dynasty*. A TAXI connection resulted in me becoming a “go to” composer for a company that provides music directly to that series. How cool is that?!

TAXI's Listings, community, convention, and networking opportunities have helped my career *immensely*. The *ONLY* regret I have about joining TAXI is that I didn't sign up sooner! If you're willing to invest in yourself, call TAXI and let them help you too.

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its own, less-obvious risk: If you come up short and aren't able to cover the minimum costs of your project, you'll still be expected to deliver promised rewards to your backers.

Do Research/Stay Realistic Once you know how much capital you *want* to raise, you need to figure out how much you think you actually *can* raise. Both Kickstarter and Indiegogo keep successful project pages live, providing case studies. Research them, and scale your fundraising expectations to your own network's size. Don't be afraid to reach out to successful bands to pick their brains. Study how successful projects crafted their message. Decide if their approach will resonate with your audience. Feel free to steal other projects' funder reward ideas whole-cloth or let them inspire your own.

Get Your Promotional Ducks in a Row Defining your campaign and drafting your message are just the first steps in your fundraising journey. Once the campaign

launches, get the word out: Craft a press release, email newsletters, and social media posts before you hit the Go button. Compile a list of magazines and blogs you hope will give your project a shout-out.

Once fans pledge to your campaign, they are invested in your success, so don't hesitate to recruit your backers to help spread the word. My band's fans were more than happy to share our Kickstarter campaign, whether or not they made a pledge; we offered an exclusive track to anyone who shared on their Facebook page or Twitter feed.

Your launch itself has its own inherent newsworthiness, and you're bound to get an initial rush of pledges from the campaign's outset. Keeping the funds coming during the weeks that follow is harder. Come up with clever ways of reminding your audience about the campaign without becoming annoying or redundant. Halfway through our campaign, we released a short montage of (entertainingly embarrassing) rehearsal footage we'd shot on our iPhones. It gave fans something else

to share, while bringing attention to the Kickstarter campaign.

Stay on Your Toes Regardless of how well you plan your campaign, there's no way to predict how it will go. You'll need to track your funding progress and react accordingly. With Kickstarter's built-in web analytics tools, we were able to determine that Facebook was the source for most of our funding. In our final campaign week, we shifted from passive posts to more direct messaging and saw an exponential increase in pledges.

I won't speculate as to whether crowdfunding is the "future of music," but it's easy to see how the crowdfunding model gives bands access to greater creative autonomy. I know we'd all rather be making music than raising money. At least services like Kickstarter and Indiegogo are making the business of music-making a little easier. ■

Owen O'Malley is a writer, musician, and freelance audio handyman living in Chicago.

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January, 2013



Micro-Editing Vocals

Catapult your singer to greatness using these techniques

BY MICHAEL COOPER

EVER WONDER why most famous singers sound so much better on their records compared to performing live? It's not just pitch correction responsible for their transformation. Deep composite editing and dozens of edits at the syllabic and sample levels have been implemented in the recording. Standout vocal excerpts have been cherry-picked and combined and blemishes removed, creating a track that consistently presents the singer's very best capabilities from moment to moment. You can do the same. Use these micro-editing techniques to make your vocal track the *crème de la crème*.

Mix and Match Record several takes of the lead vocal track—more than a dozen, if the singer can handle it without flaming out. Listen to every take in turn as you play back the first vocal phrase. Copy the best parts—even if they're just fleeting syllables—to a new, blank track reserved for your final composite vocal. In choosing the gems, you should generally be listening for five things: intelligible lyrics, great intonation, strong projection, excellent tone, and a strong vibe that conveys the emotional essence of the song. But don't overlook momentary dross. It's not uncommon for me to snap up a breathy syllable, a momentary crack in the singer's voice, or other ostensible imperfections that ooze emotion for a nanosecond in an otherwise unfeeling phrase.

Once you have the first vocal phrase cobbled together, move on to the next and repeat the process. But don't worry about poorly assembled snippets with slapdash transitions that cause clicks and pops in the composite track. We'll address all those pedestrian issues later. Your sole focus should be on creative cooking until you've worked your way through the entire song and have the best vocal bits assembled in one track.

Slip and Slide After you've built the composite vocal track, you're ready to start micro-editing it in your DAW. Pay attention to how crisp the phrasing is; it should propel a rhythmic, uptempo song along or lay back a

bit for a ballad. Within each phrase, cut up and nudge syllables milliseconds earlier or later along the timeline where necessary, to make them lock to the beat. Don't go overboard, though, or the vocal will sound robotic.

Copy and Paste In your composite track, listen for consonants that aren't clearly voiced, making the lyric unintelligible. Replace any swallowed consonants with the same ones articulated more clearly elsewhere in the song by copying the champ and pasting it in place of the lemon. If the consonant in the composite track should occur at the start or end of a word or phrase, be sure to paste it so that it voices squarely on a beat or strong subdivision of the song. While nudging one syllable or consonant may not make a noticeable difference in the overall performance, slide a couple dozen bits in a four-minute song and the result will be a more authoritative vocal that's firmly in the pocket.

Bump It Up or Down Your composite track is bound to comprise bits and pieces sung at different volumes. If any snippet dips or leaps out even slightly in an unnatural way, bump the region's volume up or down to even it out with surrounding ones. Doing this will preclude the need to use heavy vocal compression during mixdown, preserving depth and nuance. If your DAW doesn't allow non-destructive volume adjustments for regions, draw fader-automation curves to smooth out the ride. The goal here isn't to beat the vocal dynamics into submission but to mitigate any dips that make the lyrics unintelligible or peaks that sound jerky.

Smooth the Seams Don't rely on crossfades to hide poor-sounding edits; subdued clicks and pops have a nasty habit of resurfacing when dynamics processing is subsequently applied during mixing and mastering. Instead, optimize each edit seam by adjusting region boundaries so that each transition occurs at a zero crossover for both the leading and following waveform. If possible, place the edit seam so that the waveform on each side of the

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splice is trending toward the same polarity (that is, consistently rising or falling; see Figure 1); an instantaneous reversal in phase will often cause a pop even when it occurs at a zero crossover (see Figure 2). If the edit still causes a click after finessing its placement, implement a crossfade on the seam.

Transitions between audio regions often sound the smoothest where waveforms have mild slopes on either side of the seam.

(You can often get away with instantaneous polarity reversals if the amplitude is low and the slope very mild to either side of the edit seam; see Figure 3.) The exception is with hard consonants: Placing the seam right before the amplitude spike for a *t* or *k* usually sounds best. And an edit that doesn't occur at the zero-crossover point, if artfully placed, can sometimes enhance a following hard consonant that wasn't inherently loud enough.

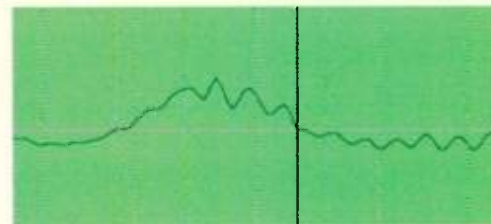


Fig. 1. The waveform to either side of the edit point is trending downward, toward negative phase, avoiding producing a click.

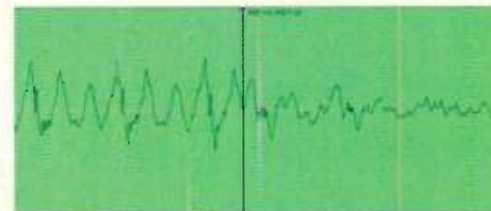


Fig. 2. This splice, made at the zero-crossover point for both the leading and following waveform, nevertheless produces a click because of a phase-trend reversal and high-amplitude spikes with steep slopes on either side of the edit seam.

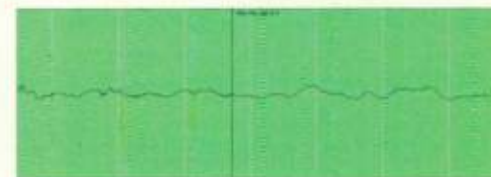


Fig. 3. This splice produces no click despite the reversal of phase trend (from positive-going to negative-going) at the zero crossover because the amplitudes and slopes are mild to either side of the edit seam.

Let It Breathe Take care not to place edit seams in the middle of breath noises, as that will make them sound artificial. Don't completely eliminate breath sounds either, unless they're distracting in some way. Extinguishing all breathing will make the vocal sound unnatural—who doesn't breathe for four minutes?—and, for uptempo songs, bereft of urgency.

Enjoy the Fruits of Your Labor If skillfully and artistically rendered, you can make a hundred or more edits to a vocal track without anyone realizing it's been touched. The total effect of all your nips and tucks will be a vocal performance that far surpasses the quality and impact of any one of the original takes. It typically takes hours of work to build such a virtuosic track, but the huge payoff is totally worth the sweat. ■

Michael Cooper is a contributing editor for Mix magazine.

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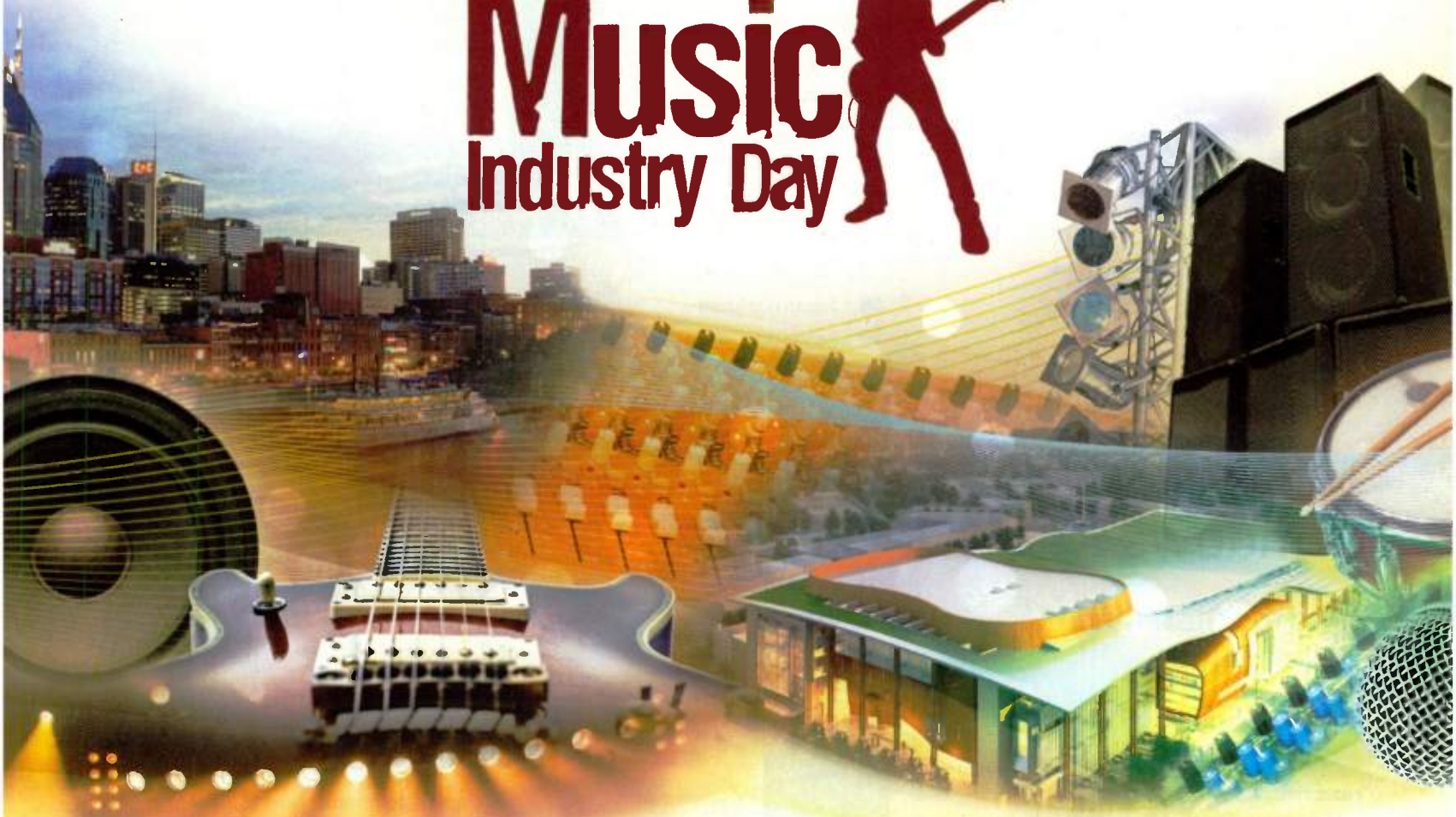
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Microsoft Windows 8

Miss the Start menu? Go one better

BY CRAIG ANDERTON

OBJECTIVE

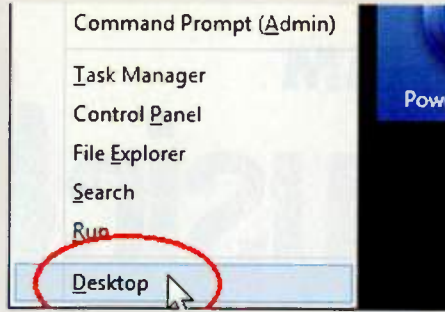
Add functionality that is similar to the pre-Windows 8 Start menu

BACKGROUND

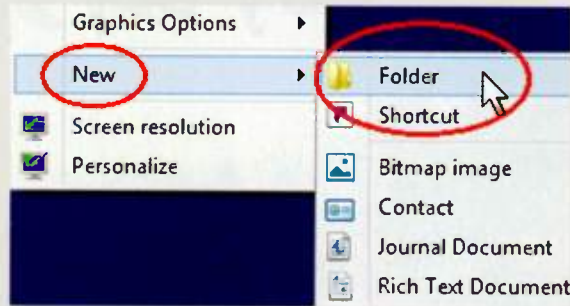
The Windows Start menu was a great way to launch programs, but Microsoft ditched it in Windows 8 in favor of the tile-laden, touch-friendly "start screen." We can't give you back the Start button, but you can have two-click access to your favorite programs and files from the Windows desktop.

TIPS

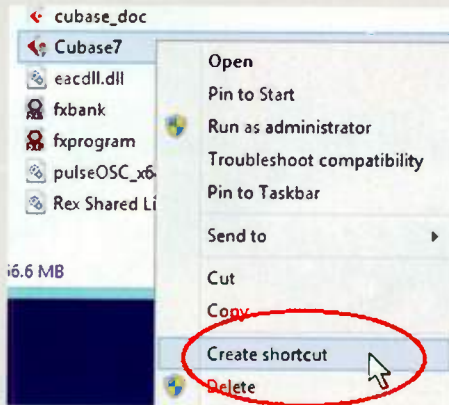
■ Step 3: You can create sub-folders in the Start Menu folder to organize the shortcuts even further, but it adds another click to select a shortcut within a nested folder.



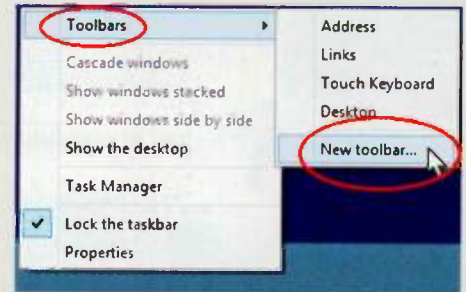
Step 1 Type Windows Key + X, then click on Desktop.



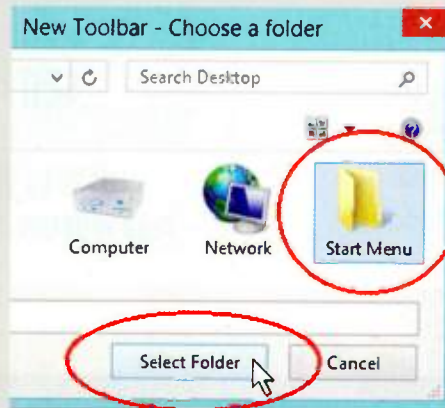
Step 2 Right-click in the desktop, choose New > Folder, and name this folder Start Menu.



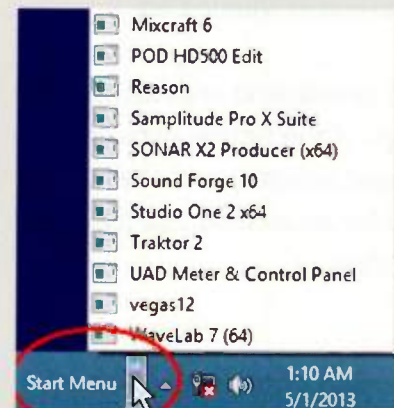
Step 3 Right-click on a program or file you'd like in your new "start menu," then choose Create shortcut. After creating all desired shortcuts, drag them into the Start Menu folder.



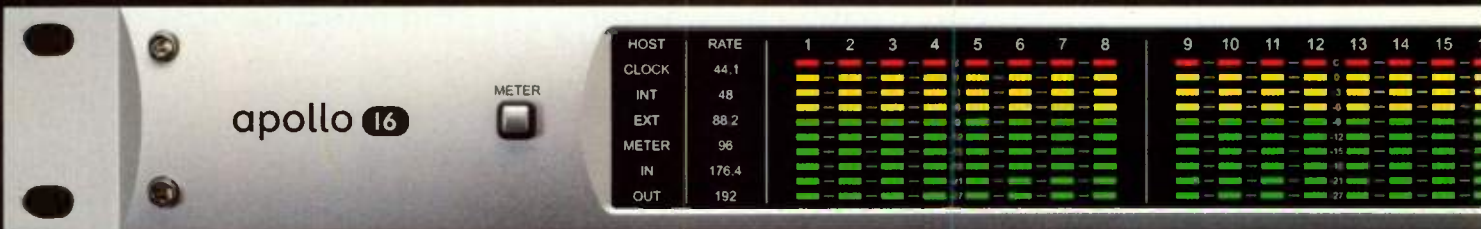
Step 4 Right-click in the Taskbar; choose Toolbars > New toolbar.



Step 5 Navigate to the Start Menu folder and select it. Click on Select Folder to create the toolbar.



Step 6 Click on "Start Menu" in the Taskbar, then choose your program or file.



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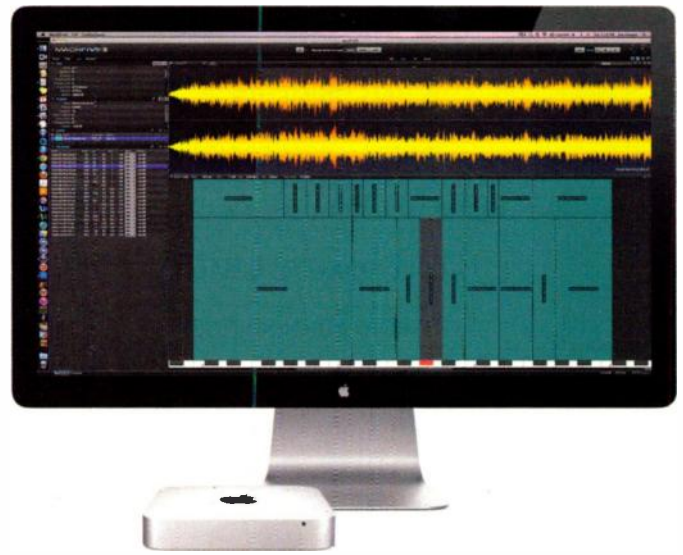
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Five Ways to Reduce Stress in the Studio

BY CRAIG ANDERTON



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