

electronic MUSICIAN

RECORD • PRODUCE • PERFORM

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THE BLACK KEYS

Capturing a Vintage Vibe in the Studio

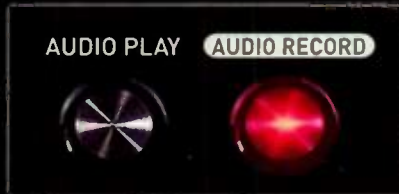
Power App Pro Tools 10
Make Money Writing Jingles
Hot New Synths From Korg, Roland,
Cakewalk, Arturia, and More!

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A MUSIC PLAYER PUBLICATION

The SONGWRITER'S Portable KEYBOARD



WK-7500: 76 Keys
CTK-7000: 61 Keys



Plug in a mic and a guitar, capture your entire song as a stereo audio recording.



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"A knockout to have around for jamming, songwriting and getting ideas down."

- Keyboard Magazine

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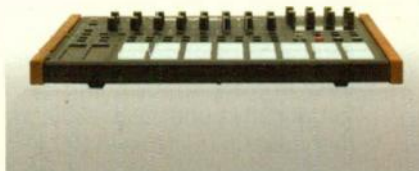
Tempest is an analog drum machine, the first full collaboration between legendary instrument designers Dave Smith and Roger Linn. If “analog drum machine” conjures up images of the pre-programmed, set-and-forget beat boxes of the past, rest assured: Tempest is nothing of the sort. Its innovative, performance-oriented operating system gives you an extraordinary level of control to create, edit, arrange, and manipulate beats in real time as they play. It is a revolutionary new musical instrument.

To see and hear what Tempest is really about, visit www.davesmithinstruments.com.

Tempest. Made to be played.

Dave Smith
INSTRUMENTS

with
Roger Linn
DESIGN



Make more music. Introducing



Two years ago, the world got its first serious new DAW in a long time.

If you're a hard-core Pro Tools®, Logic® or Cubase user, you probably didn't get too excited.

Now you should.

Studio One has won acclaim from reviewers and more awards than any other DAW in its first year. It's attracted the attention of major producers including Teddy Riley who used it to create and master his posthumous Michael Jackson tracks.

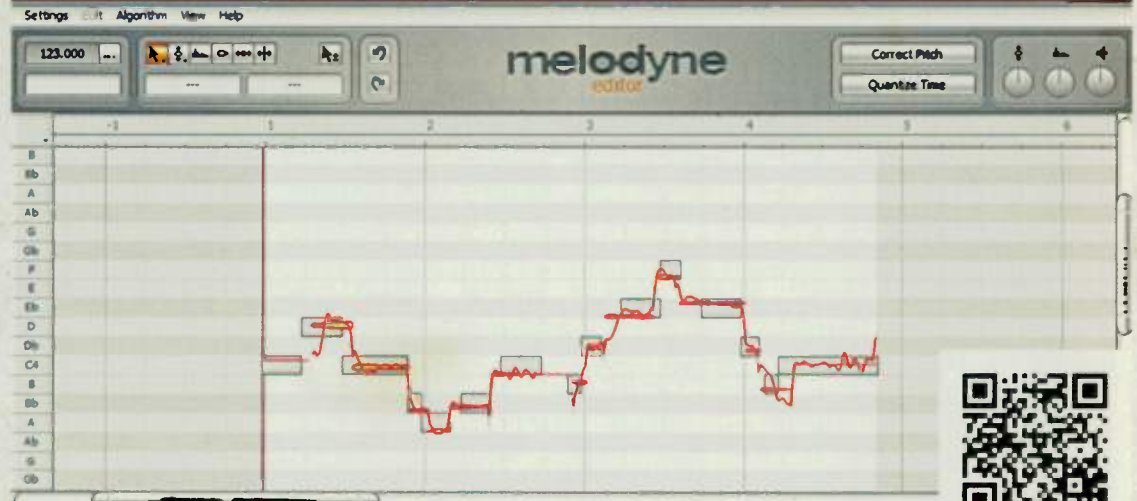
And now it's Studio One 2, a major upgrade that should have you thinking about what you're missing (lots!).

Studio One puts all its creative tools into a single Song window. What requires slogging through menus in other DAWs is instant drag-and-drop from Studio One's on-screen Browser.

You work faster and smarter. Instead of a complex interface that gets in the way of ideas, inspiration can be realized before it's lost.


Visit our new site at studioone.presonus.com and download a free Studio One 2 demo today.

Built-in Melodyne pitch control – a Studio One 2 exclusive.



Celemony's Melodyne is the most sought-after **pitch-correction** solution in the market, and has been the model for propri-

etary solutions in several DAWs. Studio One 2 Professional seamlessly integrates *genuine* Melodyne so tightly that, for all

 **One minute Melodyne integration video**
practical purposes, Melodyne is simply a part of Studio One.




Integrated mastering suite with even more tools.



Studio One Professional provides the necessary tools for **professional production**, including metadata embedding, phase meter, spectrum and peak/RMS level meters with K-System options... and now DDP Export, PQ editing, higher-quality sample-rate con-

version, and other professional features. You can burn Red Book CDs right in the Project (mastering) window, or export MP3s for direct upload to a SoundCloud account.

As you add Songs to a Project (collection of Songs), they're intelligently linked.

 **1-minute Studio One 2 mastering video**
Since changes to one are automatically updated in the other, Studio One Professional keeps track of Song changes and automatically updates all Projects that contain the revised Song. No other DAW can do that!



©2011 Presonus Audio Electronics, Inc. All Rights Reserved. Studio One is a trademark of Presonus Software Ltd. Logic is a registered trademark of Apple, Inc. Pro Tools is a registered trademark of Avid. Other content normally inserted here has been omitted because we're serious about this new Studio One 2 release.

Studio One™ 2 with over 100 enhancements.



Studio One 2

Multitrack comping done right.



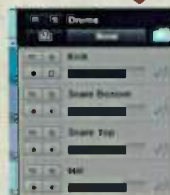
Single and multitrack **comping** are quick and easy in Studio One 2 — and faster than with most DAWs! No tool-switching is needed. Crossfading between takes is

automated, (you can also manually edit the fades. Auditioning takes is as simple as holding *Alt* and clicking on a take—no more manually soloing entire lanes, as in other DAWs.

YouTube One minute Studio One comping video

Other new Studio One 2 Professional features include...

- Folder tracks to keep you organized
- Multitrack MIDI editing
- Browser Search
- OpenAIR Convolution reverb plug-in
- Ampire XT amp modeling plug-in
- Presence SFZ Support
- Over 20GB of custom-made loops, sampled instruments and more



Plus the core features that have won Studio One critical acclaim such as:

- Elegant single-window work environment
- Powerful drag-and-drop functionality
- Unlimited audio, MIDI tracks, buses, virtual instruments and FX channels
- Content browser with sort options and preview player
- Integrated QuickTime video player
- 64-bit audio processing
- Advanced automation

Transient detection, editing and groove extraction.



Sure, you can do **transient detection and editing** in other DAWs—but it's slow, and you often have to make a lot of decisions along the way.

In Studio One 2, you can quantize multitrack drums in two quick steps: group the tracks, then quantize. Studio One does the analysis and phase-coherent quantization

for you—with great-sounding results! Want to quantize audio to other existing audio? Drag-and-drop audio into the Groove panel, then quantize.

Groove extraction is as simple as drag-and-drop; extract a groove from any audio and apply it to any other audio in seconds!



YouTube 1-minute Studio One 2 Transient Detection video



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Baton Rouge USA • studioone.presonus.com

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NEW!

EXCLUSIVE!

Misa Digital Kitarā

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NEW!

Focusrite Scarlett 2i2

Vibrant Focusrite preamps provide a solid front end for this compact USB audio interface!



NEW!

Chameleon Labs TS-1 MKII

Small-diaphragm tube microphone with interchangeable capsules for maximum recording versatility!



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* Please note: Apple products are excluded from this warranty, and other restrictions may apply. Please visit www.sweetwater.com/warranty for complete details.

NEW!

Avid Pro Tools 10

The latest version of the industry-standard recording software adds over 50 new features and enhancements for unprecedented performance in your studio!



HOT!

Alesis iO Dock

Turn your iPad into a portable music creation studio with pro-quality audio, MIDI, and video connections!

NEW!

Propellerhead Balance with Reason Essentials

Compact audio interface with "Clip Safe" technology for no-clip recording, plus Reason Essentials production software!



NEW!

PreSonus Studio One 2 Professional

PreSonus's DAW software has taken the world by storm, and v2 adds built-in pitch correction with Celemony's Melodyne!



NEW!

M-Audio Fast Track C600

Innovative audio interface with hands-on transport control plus built-in DSP for adding delay and reverb to your monitor mixes!



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electronic MUSICIAN

COVER FEATURE

18 **The Black Keys** For Dan Auerbach and Patrick Carney, everything old is new again. The duo talks about recording their highly anticipated new release *El Camino* on the treasure trove of vintage gear in Auerbach's Nashville studio.



LISTEN

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01.2012

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Hearing is *Believing!*

What the pros are saying about the Recoil Stabilizer™...



"The Recoils are remarkable! They seem to clear up the low mids, bring out the ultra highs and the transients come alive with greater detail. Very impressive!"

~ Joe Chiccarelli
(Bon Jovi, Frank Zappa, Tori Amos, Chicago, Poco, Annie Lennox)



"The Recoil Stabilizers are great! A huge difference from regular foam pads. They sound more stationary and connected. I'm quite happy with them."

~ Elliot Scheiner
(Steely Dan, Fleetwood Mac, Sting, The Eagles, Queen, REM, Faith Hill)



"The Recoil Stabilizers work superbly! I feel like the bottom end is very true and clear and that the mids are right where I expect them to be. They took my monitoring system up a significant notch."

~ Ryan Hewitt
(Blink 182, Tom Petty, Robert Randolph, Red Hot Chili Peppers, Natalie Merchant)



"Fantastic! The Recoil Stabilizers really tightened up the sound of my near-fields - clearer low-mids and greater spatial definition. They are great... a good solid product."

~ Mick Glossop
(Van Morrison, Sinéad O'Connor, The Waterboys, Frank Zappa, Revolver)



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

~ Al Schmitt
(Barbra Streisand, Ray Charles, Quincy Jones, Madonna)



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

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



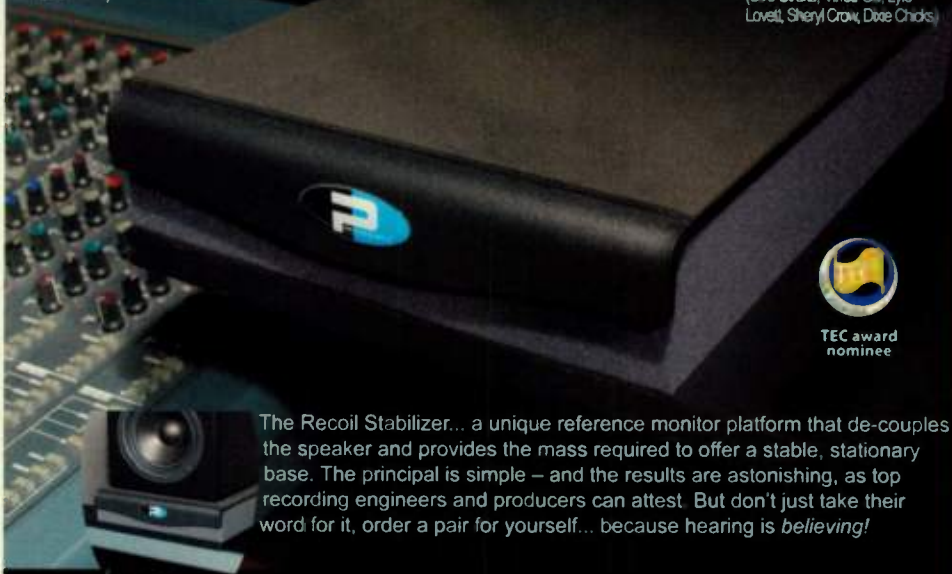
"My nearfields sound better on the Recoil Stabilizers. It's a great product."

~ Daniel Lanois
(Peter Dinklage, U2, Bob Dylan, Emmylou Harris, Robbie Robertson)



"With the Recoils I immediately noticed improvements in the low end clarity - to the point that I no longer needed a subwoofer. Incredibly, high frequency detail and image localization also improved."

~ Chuck Ainlay
(Dire Straits, Vince Gill, Lyle Lovett, Sheryl Crow, Dixie Chicks)



TEC award
nominee

The Recoil Stabilizer... a unique reference monitor platform that de-couples the speaker and provides the mass required to offer a stable, stationary base. The principal is simple - and the results are astonishing, as top recording engineers and producers can attest. But don't just take their word for it, order a pair for yourself... because hearing is *believing!*

*Patent pending



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Representing a new generation of portable recording, the H2n is Zoom's most innovative handheld recorder to date. We've packed ground breaking features into an ultra-portable device.

NEW MICS, NEW SOUND.

The H2n features our best microphones yet and is the only portable recorder with five studio-quality mics on-board.

THE FIRST PORTABLE MID-SIDE RECORDER.

Used for many years in film and broadcast, Mid-Side recording combines a uni-directional Mid mic that captures sound directly in front of you and a bi-directional Side mic that captures sound from your left and right. By increasing or decreasing the level of the Side mic, you can control the width of the stereo field which gives you incredible flexibility over your recordings.

YOU STILL GET X/Y...

And with Zoom's X/Y stereo condenser mics, you'll get great recordings with natural depth and accurate imaging every time.

COMPLETELY SURROUNDED.

Using the H2n's Mid-Side and X/Y mics together in 2 or 4-channel mode, you can create stunning 360° surround sound recordings.

20 HOURS OF BATTERY LIFE.

The H2n provides over 20 hours of continuous operation on just two standard AA alkaline batteries! This astonishing feature enhances the H2n's flexibility and convenience.

WE'VE GOT YOU COVERED.

Never again will you have to worry about losing recorded data to unexpected errors. Whether you experience battery loss or an accidental power-down, the H2n's Date Recovery function will automatically restore your data the next time it's powered on.

PLAY BACK AND LISTEN.

Ensure your recordings are being captured just the way you want. The H2n's built-in reference speaker allows you to listen to your recordings with exceptional clarity.

Zoom H2n Handy Recorder
A new standard in portable recording.



insight

Taking Care of Business

It's a good time to be a musician. Yes, we're continually hit with news of crumbling record labels and tanking CD sales, but broad industry trends are not indicators of success for average musicians.

The truth is, musicians have more career paths and tools at their disposal than ever before. It can be pretty daunting—but it's doable, if you break down your plan into manageable tasks.

As we all seek out ways to improve ourselves in the new year, think about committing to small steps that can make a big difference.

These projects don't have to be time-consuming or expensive. Where to begin? Find out if unclaimed royalties are waiting for you—register with SoundExchange (soundexchange.com). Back up your data. Get your hearing checked. Nail your elevator pitch. Feeling ambitious? Take the “2,000 Things to Generate 20,000 Fans Challenge” (michaelbrandvold.com).

Or, try some ideas in this issue. Learn how to network the old-school way, face to face—check out “Choose Your Own Adventure” on page 84. Build your production chops by tackling a new tool, or hone your skills on the ones you already own. Are you a Pro Tools 10 user? Dig into our Power App on page 94.

We'll keep giving you resources to help you make better music. How you use them is up to you. Here's to a productive 2012!



SARAH JONES
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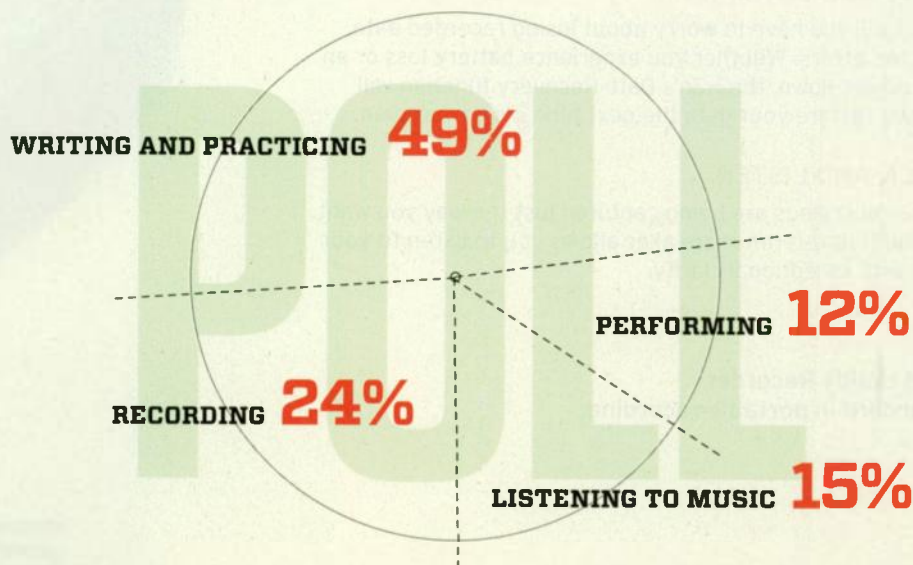
COMMUNITY

“MY FRIENDS AT THE RECORD LABELS ARE GONNA HATE ME FOR SAYING THIS, BUT I’M NOT ACTUALLY SURE WHY YOU’D SIGN TO A RECORD LABEL.”

Napster and Facebook co-founder Sean Parker, speaking about indie artists as masters of their own destiny, at Web 2.0 Summit in San Francisco, October 17, 2011

The Electronic Musician Poll

HOW DO YOU SPEND MOST OF YOUR MUSIC TIME?





Gadget Geek

Feeling like doing some adventurous tracking? The WOWee ONE (\$60 and up, woweel.com) is a small, gel-backed speaker that, when placed on an object with a flat surface—think table, cooler, truck bed—couples with the object, creating a resonance that adds low end to anything pumped through the teeny transducer. While the speaker is officially designed to “bring big sound” to speakers in laptops, phones, and other portable consumer devices, we think it would be a lot more fun to experiment with, say, re-amping your guitar tracks through your car. Starting at \$60.

DIG MY RIG

FOR MORE than 35 years I've been the keyboardist/vocalist for the Detroit-area award-winning band Sweet Crystal (sweetcrystal.com). My three-tier Ultimate Support stand includes:

Top: M-Audio Oxygen49 MIDI Controller (triggering MiniMonsta, Pianoteq, and AAS Ultra Analog software synths)

Mid: Korg KARMA

Lower: Hammond XK1 organ run through a Ventilator Leslie pedal

On the XK1 is a wireless Apple keyboard for triggering samples and tracks on a MacBook running Digital Performer 5. Also seen is a Korg Nano Control that I use to mix certain recorded aspects of the live show.

All keyboards are MIDI-ed together through a MOTU Micro Lite interface, and audio I/O is handled by a MOTU Ultra Lite MkII Firewire interface. Not seen in the rack next to me is a KORG Wavestation SR module, a 5-channel GRM passive direct box unit, and a Monster Power PRO2500 conditioner.

The entire rig is mounted on a wheeled platform assembly I built that allows me to set up the whole shebang (tech term?) backstage and then just roll it into place when it's our turn to play. (Detroit is notorious for booking 5-7 bands in a night with 15-minute breaks between acts—brutal!) I can be on and off the stage faster than you can say, “Hey, there's no bass player!”

Marq Speck of Sweet Crystal
via email



BY THE NUMBERS

The U2 360° Tour

By the time it wrapped in late 2011, U2's monster 360° Tour smashed records for highest-grossing concert tour, with \$736 million in ticket sales, and for highest-attended tour, with more than 7.2 million tickers sold. Here, some more impressive facts about the mammoth two-year run.

110 shows performed

97,000 attendees at the Oct. 25, 2009 Rose Bowl performance in Pasadena, CA

180 trucks used to transport gear

400 people employed by tour

336 speakers in the PA system

27 years front-of-house engineer Joe O'Herlihy has worked with the band

750,000 dollars spent daily on production

30,000 cables needed to create video display

9,700 guitar strings used

400 weight in tons of the "claw" over the stage



YOUR TAKE

What's your best recording trick for getting a big brass sound?

Here's our favorite reader response. David Young wins an Audio-Technica AT2050 mic. Thanks, David!

THE BEST trick I've come up with requires double-tracking (or triple-tracking!) all of the horn parts. In the mixing stage, take the best take for each horn, or the best overall take (depending on how much isolation between the different horns that you have in your recording) and set it in your mix so it holds its own, but isn't overpowering. Feel free to add a bit of delay and/or reverb, but err on the side of dry. Now take your other take(s) and/or double-tracked takes, find the best ones, and then soak these bad boys in copious amounts of delay and reverb. Delay times and room sizes are up to you—I find delays of 100-300ms and medium-small plates work well. Now put the super-wet double tracks lower in the mix than the original tracks and pan them further to the extremes of the stereo image. This will give a huge brass sound that is both wide and deep, and doesn't sound like the typical "doubled brass" sound.

DAVID YOUNG
AUDIO DIRECTOR, COMPOSER
LIGHTBORNE LORE LLC



Send *Electronic Musician* Your Stories, Win Gear! Talk to us! Share your tips with *Electronic Musician*, and we'll print our favorite in an upcoming issue. And if we choose your letter, you'll win sweet gear! This month, we're giving away a pair of IsoAcoustics ISO-L8R155 adjustable speaker stands that let speakers "float" in free space for uncluttered sound. Contest open to U.S. residents age 18 and over.

THIS MONTH'S QUESTION: **HOW DO YOU OPTIMIZE YOUR MIXES FOR REAL-WORLD LISTENING SCENARIOS?**

Send your answers to ElectronicMusician@musicplayer.com.



FEEDBACK

WHAT ARE YOUR MUSIC NEW YEAR'S RESOLUTIONS?



Joe Bartone

Learn marketing.
Joe Bartone,
Dub Thief



PA UI

Actually get around
to completing more
songs rather than
starting new ones
all the time!



Krotos Beatz

Go to lots more
live events.



Brad Kinder

Improve my
engineering on
the front end.



Joseph Biener

Start releasing
new songs, build
up a fan base, and
start a personal,
music-based blog.
Not necessarily in
that order.



The Twitter Top Ten: Musicians Rule

Seven of the top ten most followed people on Twitter are musicians, according to [Twitaholic.com](#) statistics. Going further down the list, 44 of the top 100 are musicians. At least the president landed in the top five.

Top Tweeters and Their Followers

1. Lady Gaga (@ladygaga) 15,283,903
2. Justin Bieber (@justinbieber) 14,002,821
3. Katy Perry (@katyperry) 11,581,966
4. Kim Kardashian (@KimKardashian) 10,967,429
5. Barack Obama (@BarackObama) 10,914,099
6. Britney Spears (@britneyspears) 10,736,200
7. Shakira (@shakira) 9,802,132
8. Rihanna (@rihanna) 9,159,584
9. Taylor Swift (@taylorswift13) 8,881,020
10. Ashton Kutcher (@aplusk) 8,169,976

ask!

I am a singer/songwriter/guitarist, and although I am not very accomplished on keyboards, I thought that with MIDI, it would be possible to add keyboard parts in my computer DAW. Without much budget I bought the M-Audio Axiom keyboard, but it has no sounds! I found out it's not supposed to, and now I think I made the wrong decision. What would it cost to get sounds installed in the Axiom?

ADELMO RODRIGUEZ
BUENOS AIRES, ARGENTINA
VIA EMAIL

Actually, you made a good decision. The Axiom is a fine controller keyboard that can send MIDI signals to hardware tone modules or virtual instruments inside your computer, and because it doesn't include onboard sounds, the price is more affordable.

You didn't mention which DAW you have, but most include at least some virtual instruments, and you can play them with the Axiom. There are also

many excellent free virtual instruments, like Independence Free ([yellowtools.com](#)), which even includes a 2.5GB library, and Kontakt 5 Player ([native-instruments.com](#)), with a companion free download of 50 instruments.

If you're not happy with your DAW, consider Mixcraft Pro Studio 5—it's \$150 as a download, and comes with eight



virtual instruments and 22 effects. [vstplanet.com](#) and [kvraudio.com](#) are also useful resources for finding free and shareware instruments.

What's more, your Axiom's faders and knobs can help during mixdown by providing a control surface for fader levels and other parameters. You'll

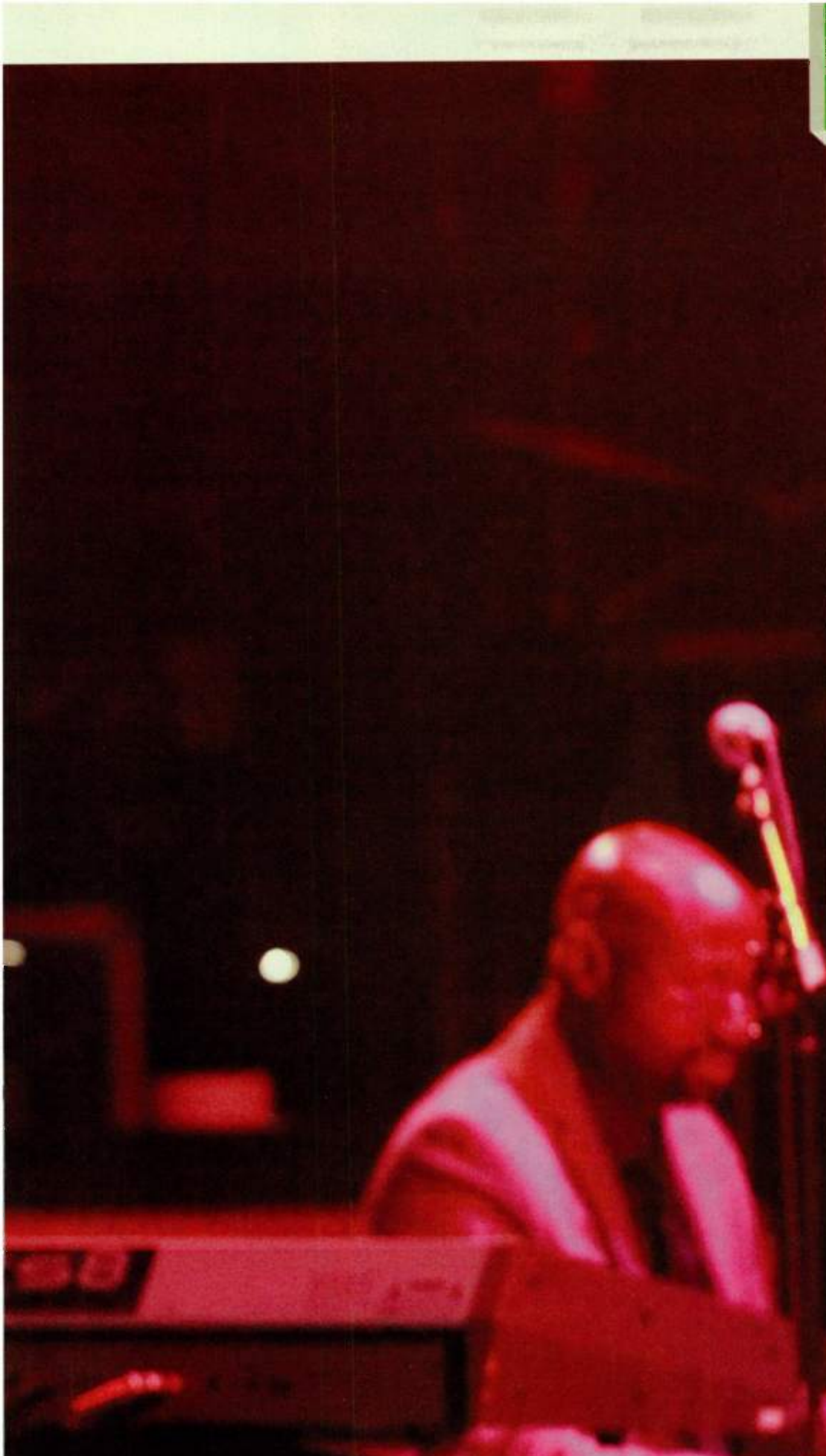
M-Audio's Axiom keyboards don't include built-in sounds, but that lowers the cost and allows concentrating on the controller aspects.

need to learn about MIDI controllers and assignments, but it's not that difficult—check out the *Introduction to MIDI* tutorial at [www.midi.org](#).

THE EDITORS

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

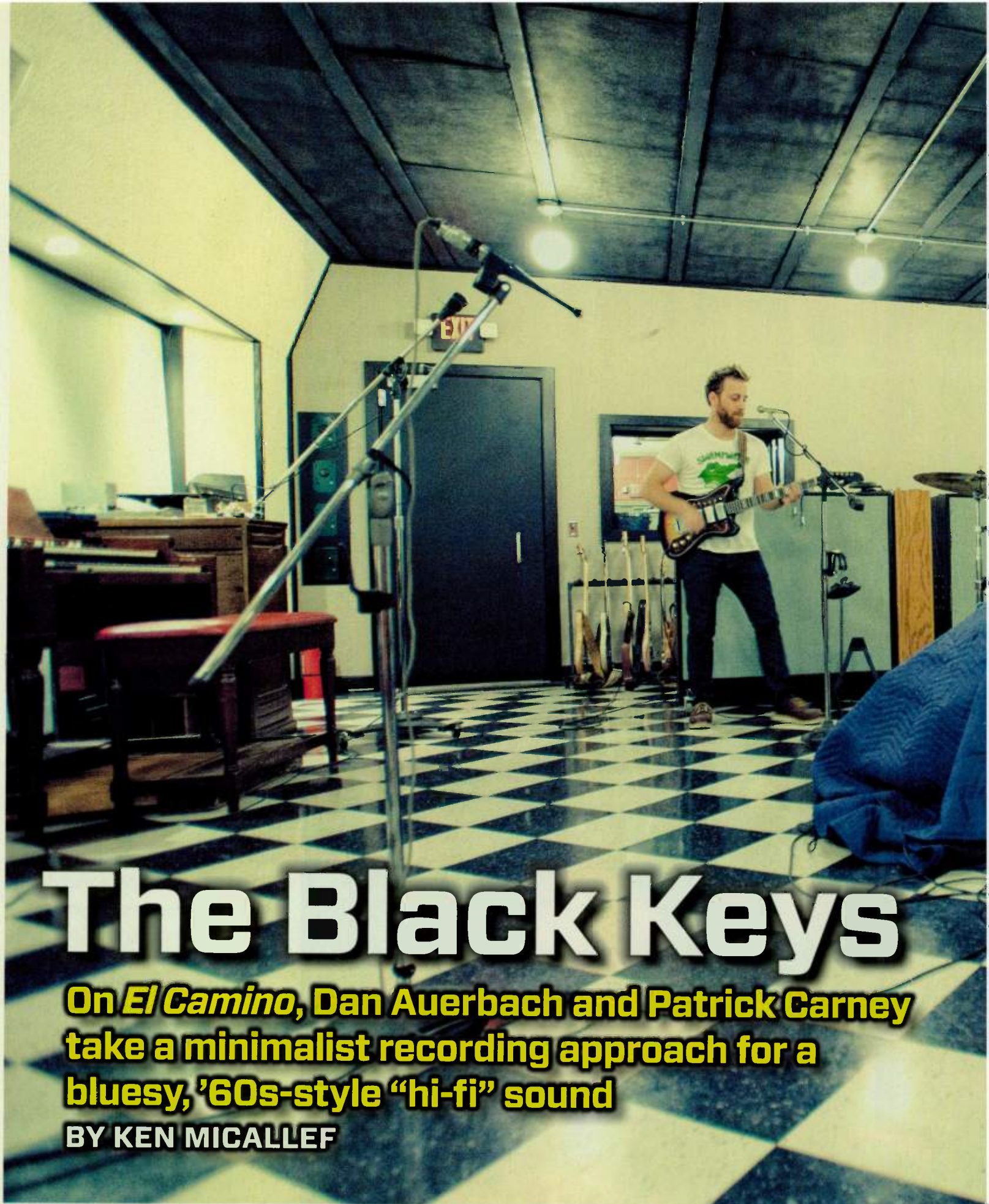




LEDISI LIVES A DREAM
APOLLO THEATER, NEW YORK CITY
OCTOBER 25, 2011

With four Grammy nominations and three White House performances under her belt, R&B artist Ledisi has had some big shining moments. Yet she says headlining at Harlem's legendary Apollo Theater last fall was truly "living a dream." The spirited, jazz-influenced soul singer, recalling Ella Fitzgerald, Sarah Vaughan, and other legends who have graced that stage long before her, delivered a lively, passionate performance that earned her a ten-minute standing ovation. Ledisi has often attributed her successes to "patience, faith, being good to fans . . . but it all comes back to my work—did she sing or did she *sang*?"

photograph by KEN MICALLEF



The Black Keys

On *El Camino*, Dan Auerbach and Patrick Carney take a minimalist recording approach for a bluesy, '60s-style "hi-fi" sound

BY KEN MICALLEF





The Black Keys—Dan Auerbach (left) and Patrick Carney.

“At the foundation of every song on the new record is a live take of guitars and drums. That helps more than anything to give the songs that human element, that live feel.”
—Dan Auerbach

“WE’RE FANS of so many different types of music and different types of producers,” the Black Keys’ Patrick Carney says from San Jose, CA, the morning after attending the CMA Awards. “We love the way that records sound when they just sound good. That can be anything. A Phil Spector record or a Tony Visconti record. We’re a heavily influenced band, song to song and instrument to instrument. We try to reference as many different things as possible. On *El Camino* we’re referencing The Clash and The Cramps but at the same time David Bowie producing Lou Reed. That feeling. Some of the tones. We’re just borrowing little elements from everything. Guitar tones from The Cramps, drum sounds from Stax Records.”

Barely one year after *Brothers* rocketed the Black Keys’ blues-bitten skronk ‘n’ roll into the national consciousness, Dan Auerbach and Patrick Carney return with *El Camino*, a Stax-sanctified, Sun Records-reverberating, wall-of-sound heightened album that betters *Brothers* like color betters black and white, like stereo elaborated on mono, like *Sgt. Pepper’s* expanded *Revolver*. Produced by Brian Burton (a.k.a. Danger Mouse) and the Black Keys and engineered by Kenzie Takahashi and Collin Dupuis at the band’s new Easy Eye Sound studio in Nashville, *El Camino* guarantees hit singles built on inclusion, not dilettante-ism. The songs are wide-ranging, from the opening single “Lonely Boy” to the Pretenders-worthy groove and glowing vocal chorus of “Dead and Gone,” the strangled chords, Farfisa belch, and

Keith Richards-styled guitar of “Gold on the Ceiling,” the lowrider strut of “Money Maker,” and the distressed vocals and *Exile on Main Street* vibe of “Mind Eraser.” *El Camino* is the Black Keys at full force.

Where *Brothers* often treaded in a hazy, psychedelic smog, *El Camino* is a direct soul bomb—all R&B, all the time. Auerbach allowed Takahashi to expand on the Black Keys’ minimalist miking techniques, but he still insisted on simplicity. Easy Eye Sound is a Spartan studio outfitted with a rare 1969 Quad-Eight console, various Urei and Pultec pieces, Auerbach’s beloved Altec 16567A mixers, and other vintage gear. Drums and guitar were recorded mostly live (without baffles) as the bed for each track in Easy Eye Sound’s spacious live room. Vocals were cut in the control room; a tiled bathroom was used as an echo chamber. (There’s copious echo on *El Camino*, though the band largely credits engineer Tchad Blake’s mix.)

“We’ve figured out what we like to use,” Auerbach explains from Nashville. “It’s all very simple, not a lot of stuff, not a lot of mics. We use dynamic mics and old tube line mixers like the Altec 1567A. We wanted *El Camino* to be very simple, no real album effects, just drums, bass, guitar, organ; that’s it. No studio trickery. It’s certainly a studio album, but we didn’t want psychedelic flourishes or anything that isn’t just a band playing live.

“The album was recorded with all the same stuff we’ve used before,” Auerbach

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**“I’d rather be an accountant than spend time sitting around getting drum sounds. I like stuff that feels real.”
—Patrick Carney**

continues, “same amps, same drum kit, same setup. We’ve found the sweet spot in the live room where the drums sound best and we keep them there. Then we lay out everything around it. The guitar amp is in the room with the drums. I like lower, 25- to 30-watt, older amps. At the foundation of every song on the new record is a live take of guitars and drums. That helps more than anything to give the songs that human element, that live feel. No metronome involved. Choruses may speed up a little bit, but [recording without a click track] gives us the feel we’re looking for. We’ve done computer arrangements before but we didn’t do it so much this time, although it is an incredible tool. We tried to get the arrangements down while we tracked. We’d cut a live take, start to finish, unedited, and then add overdubs on top of that.”

Originally, Patrick Carney was the band’s *de facto* producer, as the duo recorded with his gear in his basement. But as Auerbach caught the gear bug, he took over recording duties. “We began by making records in my basement,” Carney recalls. “I had a Marantz 4-track in high school and a couple of tape machines. Since then, every record we’ve made has been on a completely different setup. We’d divide the advance money and I’d buy a piece of new recording gear. Then Dan started buying really nice equipment. But by 2006 we started working in real studios. *El Camino* is the first time we recorded in a real studio but made the way that we used to work, where we’re hands-on with everything. We worked at our own pace and engaged the studio however we wanted.” Carney adds that there’s been somewhat of a technical limitation to every record they’ve made, except for this one. “With *Brothers* we only had 12 tracks because of the monitoring setup in the studio. We had to do very minimal miking and arrangements. This time we didn’t have to do that. So we could do three or four

guitar tracks, and three or four percussion tracks and multiple background vocals. But there isn’t some great sonic change in this record other than maybe it’s a little more hi-fi than anything we’ve ever done.”

Like Carney, Auerbach cites specific influences on *El Camino*. 1950s rockabilly, Johnny Burnette Trio, even The Sweet. But Auerbach was listening to the *feel* of the songs, not the sonics. “I prefer ’60s sonics, but I like hip-hop low end,” Auerbach laughs.

With Easy Eye Sound’s focus on vintage gear, including two rare Daniel Flickinger 351-1 Program Equalizers (“used randomly on guitars, drum overheads, snare, kick,” engineer Dupuis says), an RMI electric piano, and Altec “Voice of the Theater” studio PA, tracking to tape would seem the obvious next step.

“We’re going through all of these tubes and transformers, so tape is not as necessary,” Auerbach says. “Everything is literally either going through giant old transformers that were hand-wound in the late ’60s or ’50s tube gear. Sometimes both. Old tube mics or ribbon mics or a great old dynamic that already pre-EQs things. We’ve gone through a lot of gear; you find out what works for you, what gets those sounds. But it has less to do with tape than it does miking technique and the arrangements. When I record a band, I like to track to a 1-inch 8-track tape machine. But when we do a Black Keys record, I step away from the engineering side of things and try not to think about it so much. So I can just focus on the songs.”

Danger Mouse’s production touch is subtle on *El Camino*. Where his hand can be heard in the sleazier sounds and obscure atmospherics of past Black Keys recordings, *El Camino* is a more straightforward production instrumentally, sonically, and stylistically. Either way, Auerbach thinks the generally close-mouthed Danger Mouse is a misunderstood artist.

“Brian did the *Grey Album* with Jay-Z but he hasn’t done a hip-hop record since then,” Auerbach notes. “He’s not a hip-hop producer. He’s a musician who plays guitar and keyboards, and he listens to The Troggs. We have a lot in common musically. The only thing we talked about was keeping everything simple. There’s things Brian has done in the past with Gorillaz, Broken Bells, and Gnarls Barkley where there’s atmospherics, psychedelics. He’s copping the ’60s feel but making it modern and that’s what we like



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Auerbach at Easy Eye's custom 1969 Quad-Eight console.

to do. We're not trying to be retro, we just appreciate those old sonics. They just feel good. Brian feels the same way, that's why we get along. We challenge each other and respect each other's opinions."

Two mindsets were at play during the making of *El Camino*: The more contemporary, Pro Tools-enabled, multi-miking approach of Danger Mouse/Takahashi, and Quad-Eight-sourced, minimalist-miking style of the Black Keys. Compromise was key, apparently.

"Kennie was the main engineer and he tends to use way more mics than I or Collin [Dupuis] would use on the drum kit," Auerbach says. "When Collin and I do a record, it's one overhead and one kick. Maybe a spot mic on the top. We did insist on a mono overhead for *El Camino*."

Takahashi shared a decidedly broad overview of his miking choices and setup for *El Camino*: "Some fatter mic for the boom foot. Something a bit throaty for the snare. Something with a bit of attack for the toms. Something brighter with the hats. Something less bright or gluey for the overhead. As for room mics: omni, figure-8, cardioid, dark, bright, far, near; various combinations were used. Even mics around the piano were used—it adds a weird resonance. It's basic and doesn't matter. Pat [Carney] is about feel. I could've probably done the record with an

SM58 somewhere in the room and [it'd] still be awesome. I think."

Carney reveals the Black Keys' preferred mic setup for guitar and drums, which included 1950s-era WFL and Gretsch kits and an early-'60s Ludwig kit. "There were a couple Electro-Voice Model 668 dynamic mics on guitar amps," he says, "and we use a Unidyne 57 on the bass and snare drums. We use ribbon mics on overheads sometimes or an AEA R44, the RCA rip-off. Occasionally we use a brighter-sounding condenser. Dan used a lot of dynamic mics on vocals. Usually an SM58. An even balance of ribbons and condensers and dynamics. The microphone I love the most is the Beyerdynamic M160; that is the best microphone for guitar. It just sounds really rich and it has a nice bite to it but it's not too bright. For drums I like dynamics obviously for the kick drum; that can be a Beyer M88, or a Shure 55SH, one of the big ones. That's what we used on *Brothers*. I like 57s on the snare drum. We always do the drums in mono, and for overheads I like RCA 77s or KM184s, a small-diaphragm tubeless condenser in mono right at eye level. I like drum mics that can take compression, and don't sound too bright but still have a slightly spitty sound that can cut through compression. We both like darker tones.

"There are sounds that I hate," Carney continues. "When you walk into a studio, 90 percent of the time an engineer will put a 57 on your snare drum and whatever on the kick drum and listen back with Pro Tools and it will sound so distant and boring. We like things that sound really thick and dull but defined. Maybe a kick drum that has no tone but that hits you in the chest. I don't like attack. My favorite drum records are definitely from the '70s: T. Rex's *Electric Warrior*, Led Zeppelin, Jackson Five, Black Sabbath's first four records. I don't care for the '60s drum sound, honestly; it's too old-timey and retro. Lowell Fulson's 'Tramp' is my favorite of the '60s drum sounds. It just sounds like a four-track recording."

As far as his method for getting a good drum sound, Patrick Carney is more Zen than Zeppelin, preferring to play his kit with less volume and impact in the studio than in concert situations. Seasoned drummers know that drawing the tone out of the drum is preferable to beating the sound into it. Carney concurs. "I play completely differently in the studio than in concert," he explains. "The second half of 'Little Black Submarines' was kind of loud. That's how I play live. But

Alyse Gafkjen

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* AIR Users Blog (January 18, 2011)

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“Ever since the ’70s people have been isolating instruments, but the great records that I like from the ’60s all have a lot to do with the controlled bleed creating a stereo spectrum.”
—Dan Auerbach

normally in the studio I hit the drums way softer. I simplify the drum beats. I’ve found that if you have a less-dense arrangement and hit the drums lighter, they come through and sound a lot bigger. For this album we would get the rhythm tracks together—guitars, drums and percussion—then it was all about all of us writing the vocal melodies and the lead melodies. That was the majority of the focus and time spent on this record, writing those melodies. I’d rather be an accountant than spend time sitting around getting drum sounds. I like stuff that feels real, and if something feels wrong or homemade then I like it more.”

Regarding Dan Auerbach’s vocal chain, he used an Electro Voice RE15 and the Altec 1567A tube mixer into the Quad-Eight. Takahashi ran general miking and processing for the session.

“We had Neumanns, RCAs, old EVs, Coles, Royer, Shure, Sennheiser in the studio,” Takahashi says. “I believe we even used an Oktava—pretty decent, depending on the application. A ton of mics just hung on stands; we just moved ’em around to get what we wanted. Typically, Neumanns were used when we wanted a touch more clarity. Want less tickle in the cymbals? Grab an old RCA ribbon or Coles. Royers tended to smooth out the high mids. [Their] Unidynes kinda sound good on anything that doesn’t need too much bottom. If we needed more room [sound] in a mic, we’d either move it away from the source, or in the case of some of the ribbons, simply turn it so the lobes were pointing out. Nothing fancy, literally as quick and easy as possible so that the guys could get going and rip. Things get out of focus when an engineer starts nit-picking over some 67Hz ringing or strange midrange phase relationship between a stereo pair. Just f**king move or switch the mic

quickly or go to mono. People forget the plot is about the songs and artist.”

Processing was also about getting it done—fast and quick. “Processing such as reverbs and delays were temped up in the box; basically, whatever was quickest,” Takahashi explains, “almost never complex and completely un-boutique. I believe the most complex effect was a long delay with a sidechained compressor on the output. All of this was done to get roughs to make sure they got the songs and the feel that they wanted to get. Obviously there were effects on the guitar via pedals and maybe some external plates or chambers, but those were just bused together.”

Befitting their no-nonsense, stripped-down approach to recording *El Camino*, the Black Keys offer equally compelling and seasoned advice to anyone looking to replicate their grizzled blues and soul-drenched hi-fi sounds on the cheap. “I am not precious about brands or techniques ’cause everyone who has a technique learned it from someone else,” Carney says. “Very few people come up with their own techniques. But there are some great mics you can get for five or six hundred bucks—a few great mics for 100 bucks. That list starts with the Shure SM57. You can make an entire record with that mic. You can do vocals, kick, snare, guitars—you can even use it for an overhead. Of course we were using a bunch of fancy preamps and fancy microphones, but with Pro Tools and the right plug-ins you can get a lot done. I like the SoundToys stuff. Those are the best. I also like the Waves SSL compressor for drums and if you’re mixing in the box, as a mix bus.”

“Experiment with miking,” Auerbach adds. “Most of the time the large-diaphragm tube mics are not the sound we get. We use our dynamic mics; they’re not really expensive. They give us the sound that we like. Even on the drums. And you can find those tube mixers—even the old ’50s off-brands like DuKane, which are essentially the same RCA rip-off circuit designs; you can find those inexpensively. There’s a misconception about gear. Obviously, people use Neumann mics, but for a lot of the records that we like—Stax and Sun—they used a shit-ton of dynamic mics and simple miking techniques. And you should really think controlled bleed. That’s a lost art form. Ever since the ’70s people have been isolating instruments, but the great records that I like from the ’60s all have a lot to do with the controlled bleed creating a stereo spectrum. There’s plenty of options out there, even if you don’t have a lot of money.” ■



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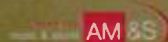


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Snow Patrol (left to right)—Nathan Connolly, Paul Wilson, Gary Lightbody, Jonny Quinn, and Tom Simpson.



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Snow Patrol

The UK pop rockers find recording inspiration in unconventional spaces for *Fallen Empires*

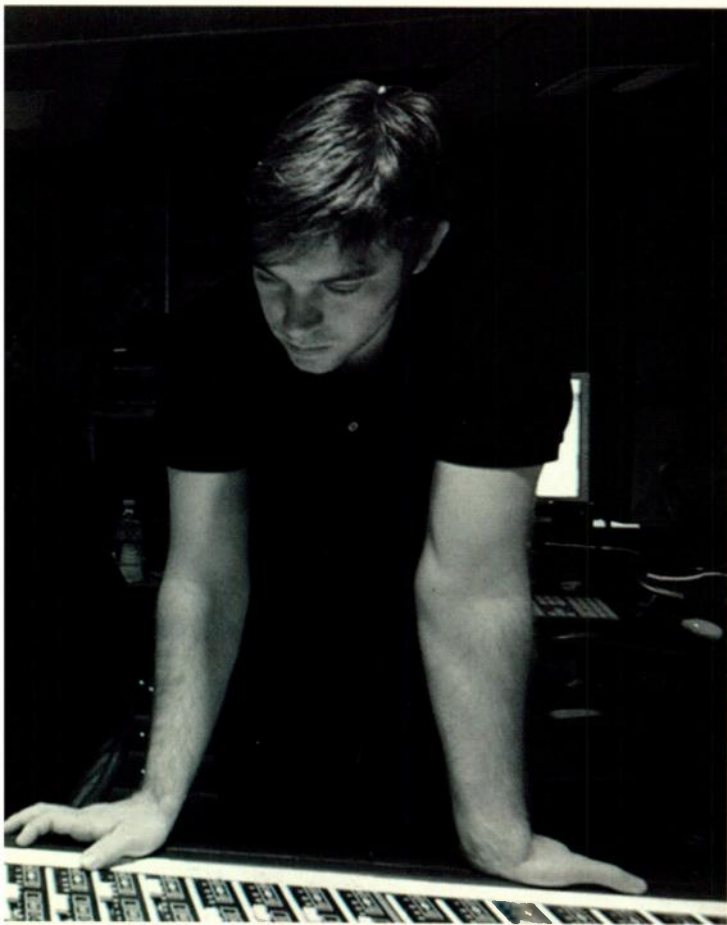
BY KEN MICALLEF

WHEN SCOTCH-IRISH superstars Snow Patrol envisioned their next mega-selling opus, where did they look for inspiration? To the Far East? To the near west? The group's anthemic rock owes its power to Gary Lightbody's honeyed vocals and the group's epic, textured palette approach which leaves room for fans to find their own sonic interpretation. But at the heart of their latest album, *Fallen Empires*, it turns out that Snow Patrol are fans, just like everyone else.

"Gary loved Arcade Fire's *The Suburbs*," bassist Paul "Pablo" Wilson says. "It's a complete art album, a total concept album. We went for the same idea. We recorded 25 songs, narrowed them down to 12 and they all fit really well. We wanted *Fallen Empires* to be great from start to finish, a record that can be listened to as a journey. It's a cliché, but we really tried to do that. It's a journey because there is so much variation on the album."

Eschewing the gloom and familiarity of their native UK, Snow Patrol descended on Joshua Tree National Park in the California desert in October of 2010, and with two guitars and a handful of rough song

Gary Lightbody
listens to a mix.



ideas entered Rancho De La Luna Studios (home of Queens of the Stone Age, among others) to record foundational tracks. That was only the beginning, and in some ways, the easy part.

After a few weeks in the heat, Snow Patrol—including Lightbody and Wilson, guitarist Nathan Connolly, drummer Jonny Quinn, and keyboardist Tom Simpson—headed to Santa Monica and took over (and totally retrofitted) Eagle's Watch, an upscale ranch house in Malibu with ginormous windows and panoramic views of the Pacific Ocean. With longtime Snow Patrol producer Garrett "Jackknife" Lee and engineer Sam Bell guiding the proceedings, the sessions

expanded to include the LA Inner City Mass Gospel Choir of Compton, R.E.M.'s Michael Stipe, vocalist Lissie Trullie, and Queens Of The Stone Age guitarist Troy Van Leeuwen. Orchestral overdubs were tracked at Threshold Sound + Vision, mixdown and vocal overdubs at Ocean Way and Lee's Topanga Canyon "hacienda," a former hippy commune and prior home of Neil Young and Woody Guthrie.

"We wanted to make a massively ambitious record," says Lightbody. "Arcade Fire's last record made us realize that we had to up our game." But before digging into that ambition, Snow Patrol had to remember who they were.

"We went to Rancho De La Luna to learn how to play as a band again," Wilson recalls. "Gary already had a lot of ideas together but we had to figure out if a particular song worked best fast or slow, as a rock song, a waltz—songs can start any way, it's just choosing which feel really suits. Then at this beautiful house in Santa Monica we did most of the recording on a Neve [50 Series] desk and Apple Logic. We'll never record in a regular studio again! Proper studios are horrible, and so expensive."

Once Snow Patrol got their groove back, they focused on Lightbody's songs. Creating basic arrangements in Logic, Snow Patrol added or subtracted as ideas fell into place using

Elektron MachineDrum, and Native Instruments Battery and Guitar Rig.

"We don't arrange songs beforehand; we do that on the computer," Wilson says. "That way we know what works as we put the whole thing together. We start with guitars and soft synths. But on the record it's all hardware synths. Often the drums are programmed then we redo them live, and a lot of the rhythm guitars we cut up in Logic. But the lead guitar parts can change."

Fallen Empires' 12 tracks explode like fireworks, incorporating all the hit-making machinery of a well-oiled pop powerhouse. "Fallen Empires" grooves with bubbling, Depeche Mode-worthy synths at a breakneck 170 bpm pulse. "In the End" soars with arms-outstretched vocals and a galvanic dance groove; "New York" virtually mashes Sarah McLachlan and U2 in a sentimental twilight reverie; "Called Out in the Dark" features a buzzing, Cake-like guitar riff, skulking dance beat, and Lightbody's sensitive, man-boy vocals. Throughout, *Fallen Empires* balances Lightbody's natural, present-sounding vocals against a glossy production sheen, from robo-tinged drums and a choir of swelling synths to guitars of every The Edge-worthy stripe. That sweet/salty dichotomy gives the album a quixotic punch that its ear-candy songs only amplify.

"We actually tried to make *Fallen Empires* sound less produced," Wilson says. "All the guitars are single-tracked. There's no multi-tracking, and all the synths are played live. It doesn't have that synchronized feel to it. A lot of drumming is real, most of it. There are a couple of kick drum and snare drum samples triggered with the real drums.

"Gary's voice is easy to record, to be honest," Wilson continues. "There's no magic. We put up any microphone that's lying around, maybe an [Shure] SM58 in the live room. If it's a softer, quieter song, we'll go for one of the really nice microphones in a secluded area. But most of the time it's whatever's around."

"Gary's vocals are so recognizable that we didn't want to alter them," Bell adds. "We used an [AKG] C12, a [Neumann] U47, [a Shure] SM7, and one of the newer-model [AKG] 414s. And it would have been a Neve board mic pre

"We tried to make *Fallen Empires* sound less produced. All the guitars are single-tracked. There's no multitracking, and all the synths are played live. It doesn't have that synchronized feel to it."—Paul Wilson



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profile



Snow Patrol retrofitted a Malibu beach house for recording.

“We’ll never record in a regular studio again.”

—Paul Wilson

or a [Neve] 1073 or [Urei] 1176. Gary’s voice is naturally great, but we did EQ in post. I like to keep recording singers simple and quick. A mic pre and a compressor to level things out. Then we’ll do a little reverb after that.

“The house in Malibu was mad,” Bell continues. He and “Jacknife” Lee have recorded R.E.M, Bloc Party, The Editors, Weezer, and all the Snow Patrol albums. “The house had multiple bedrooms and bathrooms with marble and tiled walls and ceilings. We had to build acoustic baffles and panels, and we wired the whole place out. It was quite an undertaking. But the surfaces gave us lots of interesting-sounding spaces we could drop the drums into with

two mics. Same with guitar amps. We didn’t really do anything in a traditional way; we experimented to see what we could do.”

Luckily, Eagles Watch lacked symmetrical surfaces so flutter echo was no problem. Bell isolated the drums and occasionally removed the baffles to create a titanic drum sound. Recording in a house of glass walls and marble floors presented enough problems, but “Jacknife” Lee prefers a guerilla approach in general.

“Garrett likes to do things that engineers wouldn’t necessarily do,” Bell confides. “So we’re quite experimental. Sometimes guitar sounds were achieved with crappy mics and practice amps. If they sounded interesting we

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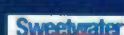
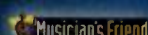
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just went with it. And we didn't change the sound, if it was good we kept it. That's what we do most of the time. We're going for good sound, but sometimes a crappy sound can be a good sound. We don't track a lot of things and then repair it later."

With that sense of immediacy ruling all their decisions, Lee and Bell tracked most effects during the sessions, trusting their well-honed instincts throughout.

"We used a lot of compression and distortion when recording drums and guitars," Bell explains. "But we do a load of stuff while we're recording so we pick the sound as we do it. With a few things, we treat a DI later or do cra-

zy effects. But we tend to say, 'this is the sound, pick it, and commit to it.' We work in a modern way but in an old-school fashion. If you play around with plug-ins it can be an endless process. But I do like UAD plug-ins, the 1176s, the Fatso, and I am big fan of proper [Empirical Labs] Distressors, [SPL] Transient Designers, [Thermionic] Culture Culture."

"Crappy" mics and quick decisions gave way to seasoned choices when tracking drums. Though they occasionally put up two room mics and ran with it, the sensual drum textures of *Fallen Empires* arrived from a more classic approach.

"I have a traditional setup of a mic inside the kick, usually an AKG D112, then the mic

**"The house's surfaces gave us lots of interesting-sounding spaces."
—Sam Bell**

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outside of the kick would be an RE20 or FET 47," Bell explains. "And a subkick. A SM57 or a SM7 on the snare with a 414 on the bottom head. Sometimes I would stick three mics on the snare top like a SM57 and a [Neumann] KM84 and a [AKG] 451, then the 451 might be heavily compressed to give us some room or attack. For hi-hats I like a large condenser like a 414. Toms would

be [Sennheiser] 421s with maybe an additional 421 underneath to give more body to the toms. Overheads are [Neumann] U67s; room mics really varied, we used everything from Coles 4038s to SE ribbons to [Neumann] U87s. Sometimes, for a crunchy drum sound, just a couple SM57s close to the kit."

Didn't the brightness of the marble and glass

surfaces affect the drum sound for the worse?

"It was a really nice tone, actually," Bell says. "I thought it would be ridiculously bright but it wasn't. I did use the Coles 4038s and the SE ribbons to make up for a lack of transient response in the high end. They're ideal for that sort of problem. Royers are amazing too, but they are very bright and posh-sounding. Sometimes you need something that sounds a bit crunchier. I'm changing mics all the time. We experimented as well, like recording the drums in the bathroom, or cutting up a kick, hat, and snare drum, machine-like. If you do that, you're making new sounds every time; it's not just a stock drum kit. All the live drums on the record are played. Even if it was programmed, it's still played by hand. Just like everything on the record. We also ran the soft and synths through a Fender Twin to make it sound cranky."

Bell used multiple mics on guitar cabs (typically Vox AC30s), preferring blend over EQ. Shure SM57, Sennheiser 421, and Neumann U87 were go-tos, with a focused 57 and 421 if he wanted "something a little harsh or straight-ahead rock and roll." A U87 was used if the guitar sound was too clean.

An Ampeg B15 provided amplification for Paul Wilson's bass, as did an Ampeg SVT rig. There, Bell ran "a [AKG] D112, an [Electro Voice] RE20, a 421 and FET 47, and I would blend them depending on the song, maybe two at a time. Sometimes we were going for a midrange-sounding bass tone without a lot of bottom end. A 57 and a 421 is perfect for that."

Though *Fallen Empires* will sound familiar to most Snow Patrol fans, the band was aiming for reinvention, hoping to add the concept-album scenario to their long list of million-selling releases.

"There's so much great new music that is inspiring," Wilson concludes. "And great older stuff that you rediscover. The main thing is that everyone in this band has very varied musical taste. Some musicians only like one style of music, but we're all into different stuff. Because of that, it's quite easy to come up with different ideas for each album." ■

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fan of the Shadow Hills Optograph compressor, which I'll put after the 1176 to catch anything that the 1176 didn't catch. It just rounds it out and makes it sound a little more mixed immediately.

On just about everybody, I use this one mic that Telefunken custom-made for me and completely knocked out of the park. It's a vintage 47, but all the parts are new except for the vacuum tube. That thing just sounds like God. I also had another microphone made for me by the same folks that is a vintage Telefunken 251, which is kind of the Holy Grail of female vocal mics.

I was on a hunt for about three years looking for the Holy Grail Neumann U47. I called Alan Veniscosky at Telefunken to help me find an old U47, and he said, "I know this is not what you were looking for, but I promise you, I can make you what you're looking for, and if you don't like it, you don't have to buy it." And he went to town. He sent the mic out to me, and I couldn't believe what I was hearing. I was skeptical because it was new, but it sounded better than my favorite 47 rental. That mic is what I'm using on everything. But every once in a while, if someone's got too full a voice or if you want something super-pretty with that lovely air on top, then we'll use the 251.

There is no substitute for a Neumann U47 or a Telefunken 251. But having said that, there are some really fantastic, less expensive microphones that are trying to be a 47 or a 251, and they're pretty damn close. The Microtech Gefell UMT70S kills. That was my lead vocal mic for years on every early record I produced. It doesn't exaggerate the top end, but if you EQ it, all that really gorgeous-sounding, pristine kind of top stuff is there. And a 47 is like that, too. I couldn't recommend it highly enough.

What tips can you give other producers to overcome problems in the studio?

Don't overthink things. Try to keep the spirit of, we've got a train moving. This all feels like surfing to me: If you're on the surfboard trying to catch a wave, if you stop and start writing in a notebook, all these waves are going to pass you by. Approaching music that way lets some kind of flow in and lets stuff happen.

Also, objectivity is destroyed the minute you hear a song more than once. I'm not sure how objective you are after seven hours of listening to a song. Certainly by the end of the day, I've heard the song dozens and dozens of times. For that reason, I only work an eight-hour day, and I don't work on the weekends. It's not because I'm lazy; I love working on music. But I have learned that whatever I do or don't do in



the studio gets so much better when I shorten my hours. When I was in my 20s, I'd be in the studio 15 hours a day, seven days a week. I think I learned a lot from doing it, but I'm not sure how great the results were of that approach.

Recording in the studio is a terribly unnatural process. It makes you self-conscious and fearful, and it makes you go to all the places you should not go to when you're trying to be inspired musically. Headphones make you self-conscious. What's going to make you more self-conscious than speakers pinned up against your ears with your voice really loud so you can hear every little breath, snort, and wrong note? It's a complete recipe for the worst vocal ever. So get the singer to take one headphone off. That improves pitch and self-consciousness massively.

To me, music is truly music when it's live. When you see people performing live, there's an energy or vibration coming off of them. Then they react to your applause, and there's a feedback loop that happens. To make music feel really sincere and impactful and exciting coming through speakers, you have to jump through all these hoops. You have to stand in a certain way facing the mic, do certain things soni-

cally.... An uncompressed vocal always sounds weird and amateurish coming out of the speakers, so you have to contain, shrink, and narrow the focus to then make it big again and make it feel alive and natural.

You once said, "A song that's okay but not amazing is always a struggle." How do you deal with that?

I don't really want to notice that I'm listening to a song; I want to have it wash over me. It's just like when you're watching an amazing movie. After 10 minutes, if the movie is really incredible, you completely forget that you're watching a movie. You don't want to see the actors aware of the camera. You want to trust it and go on that journey. So when something feels like a road bump in the writing of a song, if something feels incongruous, I'm really sensitive to that.

It's so easy to come up with a bad idea. You have to be willing to make a fool of yourself, which is why most people can't stand doing this for a living. Most of my career has been complete abject and utter failure. [Laughs.] I think I've been blessed with a degree of ability and talent, but to have that translate to where people are willing to spend money on it is a whole other thing. I have produced lots of records that I'm really proud of that didn't sell. Luckily, I've also had a lot of hits, but for all of those hits, there are 10 times more examples of things I did that didn't connect with people. For me, the best way to learn anything is to not do it well a bunch of times and then finally figure it out. I've learned so much by listening to other records and writing with really inspired songwriters.

Some of the best songwriters we've ever seen are pretty terrible musicians, but my God, they're amazing songwriters. And I think it's fair to say that some of the best musicians are terrible songwriters. I recognize that I really wanted to become a songwriter, but it wasn't as natural to me as playing music for hire in other people's bands. It can take a long time to get that awareness of what needs to happen. It just doesn't come overnight. Some people sort of pop out with this gift, but for me, it's really been brick by brick. I watched people around me sometimes go flying light years ahead of me career-wise, much faster than I ever did, and I would go, "What is my problem?" But if you're crazy enough not to quit, the tortoise can sometimes win the race. ■

Greg Wells Selected Discography



- **Adele** "One and Only" (co-writer)
- **Katy Perry** "Waking Up in Vegas" (producer)
- **OneRepublic** "Apologize" (producer)
- **Celine Dion** "The Reason" (co-writer)



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Morgan Page

Clearing the path for creativity

BY KYLEE SWENSON

"I PROBABLY disagree with every point of view I had about ten years ago," says Los Angeles-based DJ/producer Morgan Page. "I think I've broken all of my rules."

Not that it's a bad thing to change your artistic views and let go of stubborn, preconceived notions: Given his Grammy nominations, *Billboard* Dance/Club Play Songs chart honors, and his discography of 200-plus remixes (including Coldplay, Katy Perry, and Madonna), it's served Page well to be open-minded to transformation.

Recently, he reworked his production workflow. Page used to look down on creating Pro Tools templates, but he's since changed his mind. "I thought it was cheesy to have structure, and now it's crucial: it's absolutely essential to the process," he says. "I have markers in [my templates] for verses, choruses, turnarounds, and bridges. And you can move those around depending on what the song calls for, but by having a starting point, you can make it that much quicker, and that's the only way I've been able to do a draft-a-day process."

With his streamlined methodology, Page flies through creative ideas. For *In the Air*, his third solo album on Nettwerk (due in February), he was able to come up with 80 or 90 draft ideas and then whittle them down to 18 full songs with lyrics.

But it wasn't Page's intention to use templates in order to crank out tracks as if through a cookie-cutter song factory. Rather, he wanted to avoid technical distractions, so that he could get to his best ideas. "The next stage is [making] a patchbay and patching in guitar pedals into compressors and things," he says. "I don't want to run around changing 9-volt batteries in guitar pedals and lose that creative process. I always tell people: It's important that you don't go back and forth between left brain and right brain with all of this stuff. You want to get in your creative mode and get into a workflow

that makes sense, not sit behind all your gear going, 'Aw, man! What channel's this going into? Why is there this ground hum?' You can just continue to tinker around like that for days . . . and years."

Earlier this year, Page built a studio in the two-car garage of his new house, and he hired an acoustic consultant to tune the room. Other improvements included scaling back on his gear lust. Aside from Pro Tools (he was using a Digi 002 for years, but he's since moved to HD Native), his go-to gear and software include a Dave Smith Prophet 08 keyboard, Waves Maserati and SSL Channel plug-in bundles, an M-Audio Sputnik mic, Prism Sound Orpheus interface, and Dangerous Music 2-Bus and D-Box analog summing units.

But there are a few Craigslist finds that he's kept, too. "My favorite is the Alesis 3630, which is the Daft Punk compressor," Page says. "It's like \$60 on Craigslist, so I went out and got four of those and a power strip. The rack enclosure cost more than the compressors. So it's just funny: For the price of a plug-in, I have these amazing-sounding, really dirty compressors that I use for parallel compression. The 3630 basically sends stuff out and then sends it back in through the Pro Tools converters. It really compresses stuff hard and raises the level of the compressed version of background vocals or guitars—just adding a little bite in controlled doses."

By limiting his gear and improving his workflow, Page was able to concentrate on production techniques that would benefit the songs. For "In the Air," Page teamed up with BT, who shares his love for contrasting organic and electronic elements and added organic timpani and dulcimer parts to the pulsating synthetic sounds. Then



“The mix is just really highpass and lowpass filtering. To me, it’s about casting the right instruments that blend well with the vocal, and the vocal is the top priority.”

Page blended everything seamlessly. “In the mix, it’s just really highpass and lowpass filtering,” he says. “So maybe I’ll highpass the acoustic elements, where I want just the high transients, and I’ll lowpass the keyboards where I don’t need a lot of high end. To me, it’s about casting the right instruments that blend well with the vocal, and the vocal is the top priority.”

The vocal in the case of “In the Air” features Angela McCluskey (of Télépomusik fame), who has a very distinctive voice. “That was a long process, very difficult and very interesting ‘cause with a voice like that, it’s so distinctive that you can’t really stack it,” Page says. “We tried doing layers, and it just sounded crowded. Because she has a lot of breaths and a lot of rasp, she takes up a lot of the frequency spectrum, so it just sounded better to have one voice in there.”

One solution was to beef up the character of her vocal with Waves Vocal Rider. “It’s kind of like what a compressor can do, but it does it a little more transparently,” Page says. “I busbed the instrumental to this plug-in, and it would ride her vocal relative to what was happening in the mix. It brought up the vocal presence and really interesting nuances in it.”

Page worked remotely with Tegan and Sara for “Video” and “Body Work,” sending them six instrumental drafts to choose from. The twin sisters sang on three, and Page chose two for

the album. Like McCluskey, Tegan and Sara’s voices were challenging in terms of mixing. “It took a lot of processing because they have a very different kind of voice than I typically work with,” he says. “Both are shrill, so I wanted to soften it up but make sure it punched through the mix. I had some Waves JJP Pultec emulation that I put on there. It’s basically like a Fairchild with character, and some vintage EQ worked well for their voices to thicken them up so that they weren’t too thin.”

Testing tracks on the road, Page saw what got the crowd worked up, and made adjustments. “In the Air” went through five or six different versions. “I was just like, ‘Ah, this isn’t sitting right; the kick drum isn’t big enough.’ It took a lot of different variations to find the one that suits the song well and works on the dance floor. The kick needed some leveling and a little more grit. Also, I wanted to make sure that things weren’t competing with the kick in that central channel, so I had to make a wider snare and a wider clap.”

To add depth to the rhythm sounds, Page generated a layer of white or pink noise—on a separate track—using Pro Tools’ stock Signal Generator plug-in. He then opened the noise on the rhythm hit by using volume automation or by keying a gate. “Because it’s random with white and pink noise, and pink noise has a bit of low end to it, I’ll do a highpass filter to cut above 300Hz, and I draw in the envelope in Pro Tools. Essentially what the noise is doing is, because it’s panning randomly and it’s random frequencies, it feels wide because it’s randomly jumping around the spectrum and the frequencies.”

Although Page does a lot of the mixing himself, he got help on a couple tracks from Phil Tan (Rihanna), who helped get the vocals to sit just right. And then, even in the mastering phase, Page remained engaged in the process. “It’s shocking what [engineers] can do at mastering when it’s done right. But on that same note with non-album stuff, with remixes and things, I’m shocked at how bad the mastering can be. Sometimes I hear my test master, and I hear the masters provided, and I’m like, ‘Wow, how did they make this worse?’” ■



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Check out Morgan Page’s daily production tips.
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Dirty Rice (center, with trophy), surrounded by (left to right) Erick Mendleson, Coko Korinne, Johnny Juliano, Omar Grant (Rocnation), and rapper MIMS.

Chris Mackey a.k.a. Dirty Rice

Soundtrack Beat Battle winner dishes about producing and competing in Nashville

BY TONY WARE

CHRIS MACKAY, a.k.a. beat producer Dirty Rice, was born in Shreveport, LA, and close examination reveals how both the Louisiana-bred dish and man represent hip-hop.

Slow-cooked, dirty rice is a mix of simple ingredients, but one that's highly personalized. Peppering his productions with fleshy samples and stacked percussion, Dirty Rice beat out past champions and underdogs alike to win the 2011 Soundtrack Beat Battle Grand Finale on October 8 at Limelight in Nashville, TN. "You have to be screened to get in, so I really started stepping up my craft when I got involved with [the Soundtrack Beat Battle], and my production level has just skyrocketed because I haven't wanted to lose," emphasizes Mackey.

The Soundtrack Beat Battle was launched in 2009 by music entrepreneur/singer-songwriter/producer Coko Korinne to bring attention to the strong urban music scene in Nashville. The Soundtrack Beat Battle, "Where producers go hard . . . or they go home," promised musicality, rivalry, and showmanship, and thanks to participants like Mackey, the 2011 edition delivered, impressing judges including MIMS, whose "This Is Why I'm Hot" was flipped by participants as part of the competition.

Making beats with Fruity Loops and Cool Edit Pro since he was 19, Mackey moved to Nashville to go to Middle Tennessee State University, at which time he also became more serious about producing. Informed by his location deep in the Bible Belt between the hip-hop scenes of Memphis and Atlanta, Mackey absorbed the gospel, blues, rock, and R&B production, and live music traditions of the area, filtering them through a setup that grew around Pro Tools 9, Sony Acid Pro 7.0, a DigiDesign Digi 003 interface, a Korg Triton keyboard, a Shure KSM44 mic, and Universal Audio LA-610 MkII Classic Tube Recording Channel.

"I think making music on a PC had a positive effect on the way I stack sounds," reflects Mackey. "I know plenty of producers who would take an 808 sub, a clap, and a snare, and that's their drums, but I can have seven different claps panned before the beat, after the beat, and I'll mix that with a lot more from the kit to establish a big, fresh sound that stands out."

Dirty Rice productions are lobbed like a box of snap 'n pops, laying down a blanket of fluctuating hits singed with positive sibilance. There's a lot of varying motion, expressiveness, and humor, which Mackey admits is

inspired by producers such as Timbaland and Kanye West. Mackey balances an appreciation for crunchy, quirky rhythm characters with the way he smoothly juggles and cuts on the beat, giving Dirty Rice tracks a two turntables-and-a-microphone sense of old-school party-rockin' authenticity.

Recently relocated to Atlanta, GA, Mackey has been soliciting collaborations with singer-songwriters and MCs to build hooks-anchored songs to audition for Sony ATV. (A pitch meeting was one of the Soundtrack Beat Battle's prizes.) He's looking beyond beats toward the ultimate goal of placing full tracks into film and television. "Hip-hop has a tendency to be primarily a party, club type of music, and I love that type, but I really want to put my heart into music with a positivity, a good message and that speaks life into people." ■

To learn more about the Soundtrack Beat Battle, visit soundtrackbeatbattle.com.



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Check out a video of Dirty Rice's setup.
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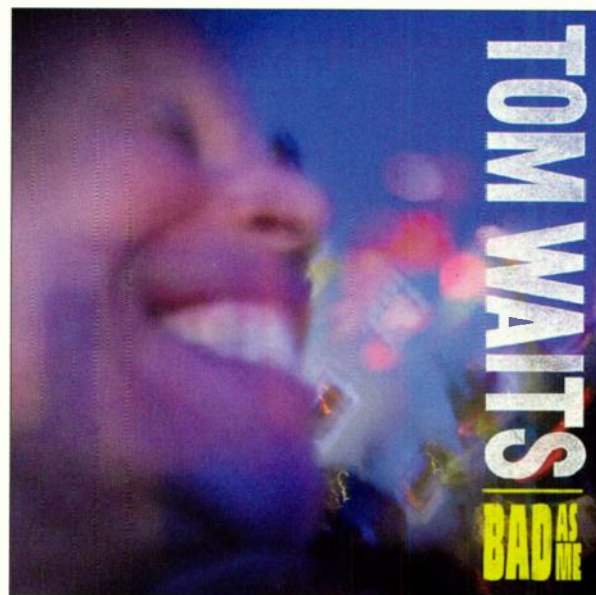
Tom Waits

Bad as Me

ANTI

ON HIS first studio album in seven years, Waits returns to compact, tuneful song shapes that echo the sounds of noisy streets, smoky nightclubs, and lonely rooms. You could call these “retro” Waits songs, but they still reach so far beyond the musical and conceptual scope of most artists—*Bad as Me* puts a fine point on his genius as a vocalist, songwriter, and sonic inventor. Frequent collaborator Marc Ribot adds some beautiful guitar work, as does guest star Keith Richards. Don't miss the raucous, Screamin' Jay Hawkins-style “Chicago” or the painfully beautiful ballad “Kiss Me.”

BARBARA SCHULTZ

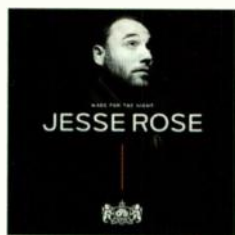


Plaid
Scintilli

WARP

The opening notes of *Scintilli* recall—egad!—a Goldberg Variation by Bach, not a squiggly electronic doodle by longtime English pranksters Plaid. The duo “calculate that each beat has taken approximately one day to construct,” and that’s more like it. Soon enough, *Scintilla* is awash in demented children’s-game-show versions of the macabre sample tricks and loony dance giggles we’ve come to expect from this totally daft electronic duo.

KEN MICALLEF



Jesse Rose
Made for the Night

MADE TO PLAY

UK-born, now LA-based Jesse Rose, aka “Made to Play,” established himself as a cheeky DJ/producer informed by hip-house and deep techno. Now he launches a new party brand with a husky two-disc set. *Mixed for the Night* condenses various artists’ deep, jackin’, tech-tinged house toying with clipped grooves and tweaked resonance—4/4 funk infused with soul without neglecting the sole. *Produced for the Night* highlights a decade of Rose’s wonky remixes and knobby edits—swollen bass bombs, gnarled synths, nervy palpitations.

TONY WARE



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T Bone Burnett Presents the Speaking Clock Revue

SHOUT FACTORY

The concert documented on this album took place in October 2010 at New York City’s Beacon Theatre; the show and album benefit the Participant Foundation’s music-education funding. With just one song from each of the performers—Elvis Costello, Gregg Allman, Neko Case, Elton John with Leon Russell, Karen Elson, Jeff Bridges, John Mellencamp, more—it’s barely enough to whet your appetite. But every track is superb, no-holding-back, in-the-moment real music for an excellent cause.

BARBARA SCHULTZ



Arco Iris
Amina Alaoui

ECM

Impassioned and sensual, Moroccan singer Amina Alaoui interprets Andalusian classical music with a supporting cast of daf, violin, oud, flamenco guitar, mandolin, and percussion. *Arco Iris* sets the mind on a journey of arid climes, opulent surroundings, and the constant tug of mystery, time, and stillness. Her voice is lush and dusky, winding serpentine-like among the sparse instrumentation. Alaoui’s fifth album, *Arco Iris* is a feast for the senses.

KEN MICALLEF

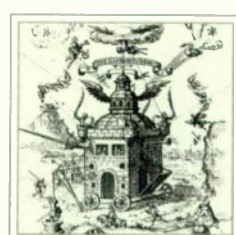


They Might Be Giants
Album Raises New and Troubling Questions

IDLEWILD

Is it best to describe the almost 30-year career of They Might Be Giants as weirdly prolific or prolifically weird? The latest addition to their huge-discography features mostly extras from their recent *Join Us* sessions, along with other rarities that will please fans young and old. There is a ridiculous cover of “Tubthumping” (“I get knocked down!”) and a re-release of the classically silly (or is it profound?) “Particle Man” with a horn section replacing the original keys.

BILL AMSTUTZ



The Barr Brothers
The Barr Brothers

SECRET CITY

Led by brothers Brad (guitar, keys, vocals) and Andrew (drums, percussion) Barr, this group melds a bit of the technical tinkering of Wilco with Delta blues-style riffs and rhythms, and soft, intimate vocals. Rumor has it the Barrs do everything from effecting a classical harp with a fuzz pedal to fashioning instruments from found objects, but they also leave enough quiet space. Highlights are the lovely “Beggar in the Morning” and the Blind Willie Johnson song “Lord, I Just Can’t Keep From Crying.”

BARBARA SCHULTZ

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MOGAMI
THE CABLE OF THE PROS



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Little Labs



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You might not have Keith Emerson's epic rig, but you can re-create these sounds (and so much more) with modern synths.

Keith Mari-Kawaguchi



LUST

Roundup

The Future of Synthesis

Seven instruments that are paving the technology path

BY CRAIG ANDERTON

SYNTHESIZERS WERE once big, expensive, instruments that carved out a unique sonic niche. Over time, the technology multiplied—wavetables, FM, sampling, modeling, phase modulation, and more—culminating in a digital takeover that inspired a “race to the bottom” to see who could pack more features, at the lowest possible cost, with the fewest buttons.

But introducing a huge number of people to synthesis created a backlash to the race to the bottom, where people wanted more—and were willing to pay for it. Once again, we’re seeing keyboards that have the “legs” to become classic instruments, and even budget keyboards—like Casio’s surprising workstations or Yamaha’s MOX series—couple sound quality with a user interface that invites, rather than discourages, tweaking.

This month’s roundup is a bit different because these aren’t reviews *per se*. I’ve worked with all of these instruments, and frankly, they’re all excellent for their intended purposes. But each one stakes out a particular territory and, it seems clear to me, is driven by a specific, identifiable vision. As a result, we can look to these for clues of what to expect from not just the present models, but also from . . . the future of synthesis.

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The future Despite advances in workstations, instruments like the Stage 2 remain relevant for live performance. But the key to

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Nord has done a fine job with the Stage 2’s companion software;

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\$3,499 (61 keys), \$3,200 (tabletop)
arturia.com

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In the process of turning virtual into physical, Arturia also revived several physical concepts and made them virtual—Origin is a semi-modular synthesizer in which you can mix and match modules from the various virtual synthesizers, modules designed specifically for Origin, and effects processors. Also, the display is highly graphic, as if you were actually playing with a synthesizer rather than entering parameter

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Of course, Arturia had an advantage with a stable of respected software instruments that they could port to a hardware host. But, we will likely see a general trend for software companies to move into hardware, or at least forge partnerships with hardware companies. Despite predictions of the paperless office, we still have paper—and musical instruments still need physical control. Origin manages to hit the sweet spot between the synth heritage of the past, and what we expect from an instrument of the present—and in some ways, even the future.



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Korg Kronos

Have it your way

\$3,750 (61 keys), \$4,360 (73 keys), \$4,650 (88 keys)
korg.com

At Summer NAMM I asked Korg product manager Rich Formidoni to talk about the Kronos from the perspective of a lifelong keyboardist who plays live and in the studio—not someone with a corporate affiliation. When I asked him why he liked the Kronos so much, his answer was simple: “It can do anything I want it to do.”

Korg invented the modern-day synth workstation in 1988 with the M1, which aggregated disparate functions into a single instrument. The concept hasn't changed—only the depth of the implementation. Musically, the hook is the group of nine audio engines: Superb acoustic piano, electric piano, clonewheel organ, virtual analog, PolySix, MS-20 (the latter two from Korg's Legacy Collection plug-ins), “variable phase modulation” (think FM with a twist), and physically-modeled string synthesis. The *coup de grâce* is the HD-1 sample-based/wave-sequenced engine (including all sample libraries) that formed

the core of Korg's OASYS synth, introduced as the company's flagship keyboard of 2005. Its technology has trickled down to numerous Korg products; in a way, Kronos is like an advanced OASYS, at half the price.

From a technical standpoint, you could make a convincing case that Kronos is a computer-based, virtual instrument—wrapped in the body of a keyboard workstation. Its Intel Atom processor runs a Linux variant, with a 30GB solid-state disk drive for fast, easy sound loading, and (with OS 1.5) up to 3GB of memory, of which about 2GB is available for samples. As expected from most Korg synths, Kronos has a companion editor for computer-based sound tweaking, and can serve as a “physical” VST/AU plug-in for software hosts. Highlighting the computer heritage even more, the “sequencer” isn't just about 16 MIDI tracks; it can also record 16 24-bit/48kHz audio tracks. And the sound . . . well, it ranges from beautiful to edgy, as needed.



LUST

roundup

The future For a while, it seemed like the battle would be virtual vs. physical instruments. When veteran sampler-based keyboard lines (E-Mu, Ensoniq, and Akai) ceded extinction at the hands of computers, it seemed all keyboards might follow eventually. But instead of submitting to the computer, Kronos has co-opted it. Clearly, Kronos is designed to be transportable from studio to stage, and back again, by incorporating elements of both: It dedicates the computing power of a typical DAW to a keyboard, while offering the physical controls and playability expected from a musical instrument.

This fits in with the trend of packaging “computers” into dedicated devices—iPhones,

videogame consoles, or even a Firebird X guitar—that successfully masquerade their heritage. Kronos does the equivalent of packaging your laptop computer, peripheral drives, the extra memory you installed, and a bunch of software instruments into a single, transportable keyboard that looks, feels, and plays like a musical instrument—not a computer. And unlike standard computer-based setups, it's not a house of cards that topples over whenever Apple or Microsoft sneezes. The future will give us more instruments that, while becoming more dependent on computer technology, will break further away from traditional computer paradigms.



Roland Jupiter-80

Got live if you want it

\$3,999 (76 keys)
roland.com

The Jupiter-80 doesn't try to be all things to all people—you can

look for a multitrack sequencer all day, and you won't find one. What you will find is a laser focus on live performance. This isn't just about control, though; what's sometimes been overlooked in the attention to its SuperNatural sound engine and Behavior Modeling Technology is the stunning sound quality. They say in live theater, you have to be twice as good just to get through to the back rows; the Jupiter-80 reminds me of that, as

Chuck Leavell

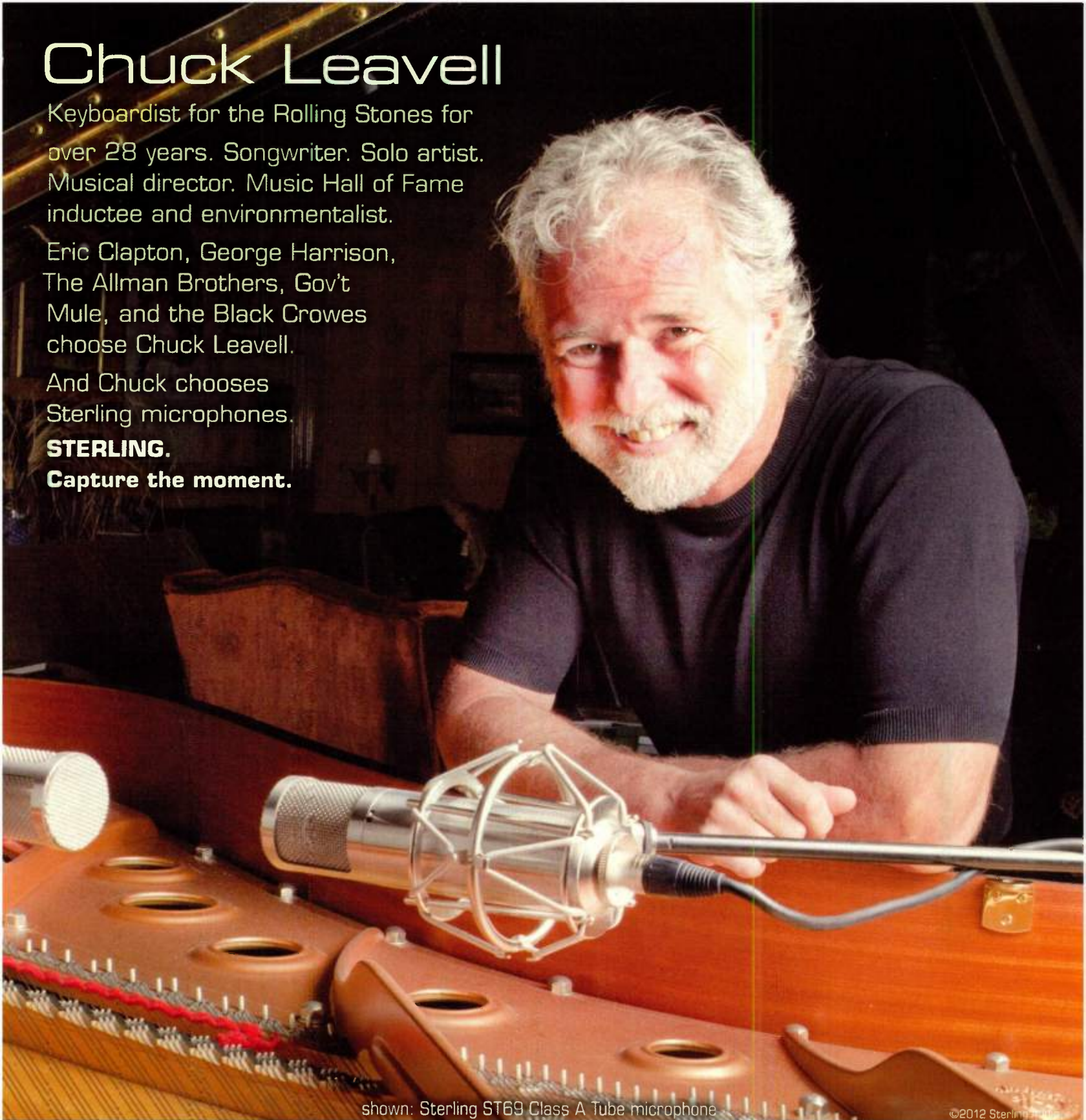
Keyboardist for the Rolling Stones for over 28 years. Songwriter. Solo artist. Musical director. Music Hall of Fame inductee and environmentalist.

Eric Clapton, George Harrison, The Allman Brothers, Gov't Mule, and the Black Crowes choose Chuck Leavell.

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World Radio History



its sound is so detailed it could indeed survive the onslaught of sonic abuse from typical live performance venues.

But “live performance” doesn’t mean “stage only.” In the studio, a live, realtime keyboard part bests laying down a sketchy MIDI part (or playing a virtual instrument with loads of latency), then editing it afterward. Sit down with a Jupiter-80, and you’ll find both its sound and playability inspiring. With the Jupiter-80, I often found myself playing a part, and when it was over, realizing I had my take. Done.

The Jupiter-80’s emphasis on expressive acoustic emulations has been a big deal, but quite a few people have missed the point, thinking this is only

about trying to imitate acoustic instruments. Granted, composers and soundtrack writers will relish producing “Is it live, or is it Memorex?” scores—but the emphasis is on expressiveness as an end unto itself.

The analogy I make is comparing SuperNatural to CGI graphics. CGI is about emulating the real, but it also has a veneer of “perfection” that’s not of this world. SuperNatural’s guitars have no dead spots on the neck, and the brass sounds like it was recorded with a theoretically perfect ribbon mic in a theoretically perfect acoustic space. The sonic clarity and perfection befit the description “super-natural.” If you’ve ever

bumped up the saturation in a paint program, the Jupiter-80 can do the same for sound—yet somehow, without sounding artificial.

The future Devices like the iPad are pointing a direction for the future of live performance instruments. As touchscreens and tablets become less expensive, instruments can have amazing control surfaces. The Smithsonian-Martin giant touch screen for DJs is just a start—this technology will continue to come down in price, and provide more points of entry into an instrument.

The Jupiter-80’s touchscreen is almost like having a monitor in your instrument, but a monitor with which you interact—and it complements the set of controls in a well-thought-out manner. As people like the Jupiter-80 engineers are turned loose with even more capable and affordable interface technology, the result will be live performance instruments with the nuances and expressiveness of acoustic instruments—not just from a sonic standpoint (and make no mistake, the Jupiter-80 has taken gigantic strides in that direction), but from a performance gesture standpoint as well.



Clavia Nord Stage 2

An extreme makeover

\$4,299 (76 keys),
\$4,599 (88 keys)
clavia.com

Stage piano, circa 1970: A big, heavy, temperamental instrument that sorted sound like a piano.

Stage piano, circa 2011: Everything we’ve learned about synthesis, modeling, and sampling, but applied to a live-performance, on-stage context.

Frankly, there’s really nothing the Stage 2 does that, say, the Kronos or Motif XF can’t do: It has great sounds and a fine keybed, and you can take it to the gig without having to pack a

chiropractor. But it’s included in my futuristic roundup because it shows how familiar technology can be packaged to focus on a very specific scenario.

Despite an exponential increase in functionality over its ancestors, the Stage 2 user interface keeps all crucial functions no further than one button-press or control-tweak

away. Also, a lot of technology has been thrown at the piano and organ sounds (including an excellent rotating speaker); for most people, that alone would justify the “stage piano” moniker. But as more stage pianos also include other “bread-and-butter” sounds like strings, choirs, brass, and the like, the Stage 2 adds a comprehensive synthesis section for virtual analog, wavetable, and FM synthesis. You’ll also find a full roster of effects—again, easily controllable in the heat of performance—and master keyboard capabilities.

The Stage 2’s 384MB of flash RAM comes pre-loaded with sounds, and the system includes Sound Manager software for transferring other samples, including ones you create. (Sample Editor software is also bundled.) It’s compatible with the online Nord Sound Library, and DVDs with additional sounds come with the unit. Note that Nord’s sample library sounds are free, and the library continues to expand with

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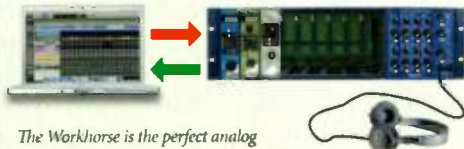
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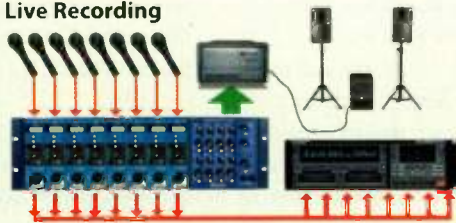
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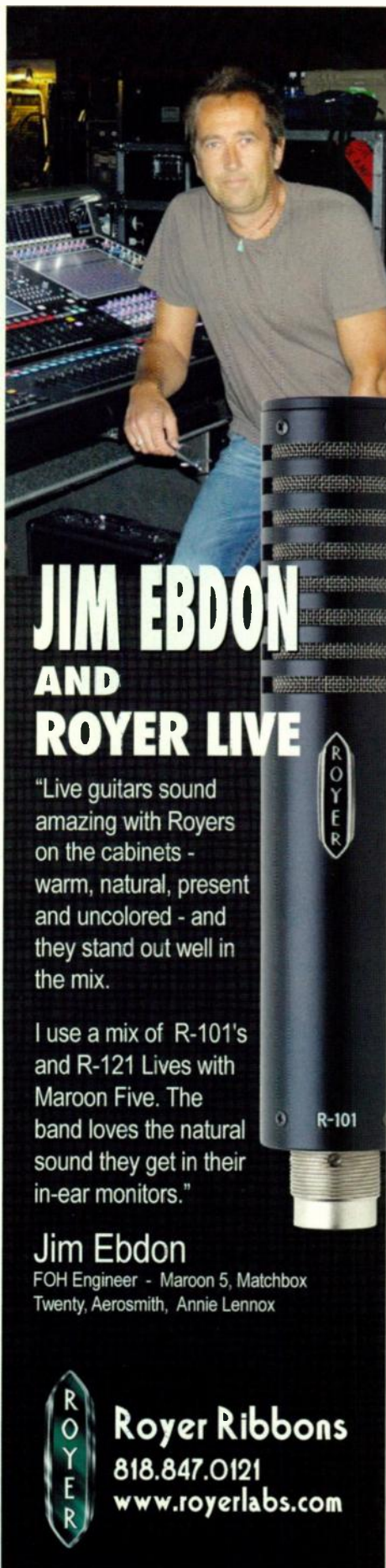
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\$499
spectrasonics.net

Before Spectrasonics' Stylus groove software, loop libraries came on CD-ROM. Stylus changed all that by combining a huge sound library for its time (about 3GB) with an audio engine with controls that were optimized to work with Stylus, thus turning it into more of a realtime instrument than just a library. Stylus also launched the sample-library-meets instrument genre adopted by Native Instruments' Kontakt Player, Ueberschall's Elastik engine, East West's Play, IK Multimedia's SampleTank platform, and others.

Omnisphere was introduced with an approximately 40GB library and thousands of sounds. However, it blurred the line between sound library and instrument even further, as Spectrasonics went way beyond "standard" instruments to produce immensely evocative, novel sounds that were equally at home in sound design and multiple kinds of music.

The version 1.5 update adds another dimension to the sound library/instrument/sound design core by incorporating live performance components and even deeper sound programming capabilities. One of these is support for polyphonic aftertouch, an incredibly underrated technique for expressive playing. Another is a new control method called The Orb.

Perhaps the closest description would be a joystick on steroids that responds to MIDI controllers and mouse movements, but if you also have an iPad, you can run the Orb in the OMNI TR app and end up with a touchscreen

joystick on steroids and psilocybin. As you move a dot around the Orb, the sound changes in ways that make musical sense—it's not just randomization. Or, let the Orb do the work: After you move it, with the Inertia button on, it will follow a "trail" based on your initial Orb movements as it wanders around within its little circular universe. If you don't like its sound-morphing choices, click the "Dice" button and generate a new set. Orb analyzes how the sound was originally created, and generates intelligent modulations; it can also be used as a mod source within Omnisphere, and the movements are recordable.

The synthesis aspect is enhanced as well, with 780 new patches that bring the total to more than 5,000, and the ability to expand the Waveshaper, Granular, and Harmonia editors for more detailed programming control.

The future Actually, 1.5 has already shown what the future of this genre is all about: accommodating live performance. The complaint about sound libraries (whether loops or instruments) was that despite their convenience, they locked you into a specific sound. While of course not a loop library per se, Omnisphere often incorporates movement into its patches—sometimes rhythmic, sometimes subtle. But you have a great deal of control over this movement, not just with the Orb, but with velocity, aftertouch, other controllers, and deep modulation possibilities.

You can think of Omnisphere as a sound library that came to life, and in the process, became an innovative keyboard synthesizer, a sound designer's dream, and now, an onstage companion. \$499 may seem a bit pricey for a virtual instrument, but it's a bargain for an Omnisphere.

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Ryan Hewitt On the New MA-300

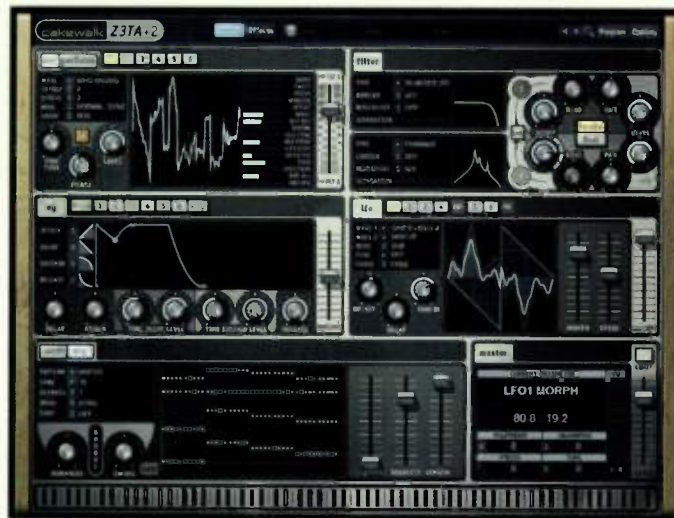
"I've had a pair of Mojave MA-200s for years now and use them on all sorts of sound sources, but I've been begging the company for a variable pattern version for almost as long. I am really amazed with the MA-300's performance. The ability to tailor the response of the mic, along with the new high pass filter and pad has greatly increased its versatility. I'm now able to use the MA-300 even more creatively."

Ryan Hewitt

Engineer: Avett Bros., Red Hot Chili Peppers, Flogging Molly, blink-182

www.mojaveaudio.com

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Cakewalk

Z3TA+ 2

The first digital synth "re-issue"

\$99

cakewalk.com

Guitar players know about re-issues, where a company realizes they had a pretty cool guitar some time ago so they re-issue it—often with tweaks such as better pickups, a new choice of finishes, more versatile electronics, and the like. While virtual instruments started off mainly by "re-issuing" classic analog, and then digital, synthesizers, the genre is old enough that we're now seeing Z3TA+ 2.1—a re-issue of, for lack of a better term, a classic virtual instrument.

What makes this a "re-issue" rather than an "update" is that more than nine years have elapsed since the original Z3TA+ hit the world under the aegis of rgc:audio. Its unique waveshaping options, non-traditional interface, and non-stereotyped sound set it apart from the virtual analog synths so common during that time. Although it had multiple updates over the years, even after Cakewalk bought the company in 2005 the core of the instrument remained unchanged.

The original Z3TA+ had a truly cult following, especially among electronica fans. And as guitar companies know, when you do a re-issue, it has to be either down-to-the-last fret authentic or represent a significant improvement that remains faithful to the original design. We're dealing with software, so if you want the vintage Z3TA+ you don't have to scour pawn shops, as it will still work

in today's computers—which leads to the "faithful to the original. but better" aspect.

Version 2 has a much more open graphic user interface, with the downside being that it tends to take over your screen. But the main point is that this builds on the original. You like waveshaping options? You have all the originals, and four more, with more flexible modulation options—particularly as they relate to modifying the waveshaping parameters. The filter, LFO, and envelope sections are improved, with much better visual feedback. You can also load your own files, and there's a new performance module for realtime control. Z3TA+ 2.1 even has Scala tuning support, with a full library of Scala tunings; and the arpeggiator patterns can be dragged out of the Z3TA+ 2.1 into MIDI tracks, making it easy to double a line with a second, different synthesizer. (You can also import MIDI files into the Z3TA+.)

The future It wouldn't surprise me to see more re-issues of virtual synths in the years ahead—in fact Wolfgang Palm has just re-issued Plex, originally a commercial product sold by Steinberg, as freeware. Can Music Mouse be far behind?

It's good to see companies not just tossing the old on the trash heap. The original Z3TA+ was a groundbreaking synth, but the concept that drove it is still groundbreaking today, and made even more so by judicious additions. Who knows? Maybe in 2019 we'll see the "20th Anniversary Limited Edition" of Steinberg's Neon (which is currently a free download). Meanwhile, it's great to have a Z3TA+ for the 21st century. It's a honey of a virtual instrument.

OMNISPHERE

1.5



- Innovative new "Orb"
- Expanded Synthesis
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Yamaha

Motif XF

Networking as a way of life

\$2,999 (61 keys), \$3,539 (73 keys),
\$4,039 (88 keys)
yamaha.com

The Motif series—one of the most successful and longest-lived keyboard lines—is a special case here, because it’s the “past” of synthesis. But many of the concepts it introduced, which are enhanced in the XF series, are shaping the future.

The Motif emphasizes not only the standard workstation fare of sounds and sequencer, but integration and networking: The XF series can network via Ethernet, FireWire (using Yamaha/Steinberg’s FireWire protocol that has replaced mLAN as the interface for the FW16E expansion card), and USB.

The interfacing isn’t just for show. Yamaha introduced bi-directional, computer-based editors early on, offering them for free to Motif users, and augmented the communication with DAW remote control based on using the faders and knobs as a control surface. (The Motif also includes templates for other DAWs.) And Yamaha adapted Cubase into Cubase AI, a specialized version with extremely tight Motif integration. Not only can you use all the control surface options, but also import sequences—including audio and MIDI data—into Cubase. With the FireWire interface, it’s even possible to stream 16 channels of audio from the XF into Cubase, which automatically recognizes the incoming sound sources.

The Motif also kept refining the workstation sequencer; the XF includes 128MB of internal memory for integrating audio recordings (triggered via MIDI) as part of a sequence. You can record directly into the Motif or import WAV/AIFF files, and interestingly, the sequencer offers both linear (tape-type) and loop-based workflows, which you can jump between within a single project. Time- and pitch-stretching are available, as is “resampling” the output (i.e., mixing down through the equivalent of an onboard Yamaha digital mixer).

Although the concept of non-volatile sample memory isn’t new, the XF accommodates 2GB total. This capability isn’t trivial to implement; the RAM has to be fast enough to play back a plethora of voices. But the end result is that you can customize what is ostensibly a synthesizer the same way you did with samplers, but without the load times.

The Motif also helped establish a “human network” of users through Motifator.com, which goes way beyond the usual manufacturer web portal. Operated independently but with Yamaha’s participation, it’s the center for free downloads, exchanging tips, and keeping up on the latest news. Yamaha has even embraced the iPad, producing programming and performance tools to complement the XF.

The future The emphasis on instrument-as-network element will continue to be refined. Many of today’s pro synthesizers can serve as “physical” plug-ins with DAWs, and allow using their controls as a control surface. However, few can do DAW integration as deeply as the way the XF partners with Cubase AI. We can also expect flash RAM to become standard; sure, you can load samples into dynamic RAM or perhaps an external memory device, but having those samples live within the keyboard, and be accessible as easily as you would access onboard ROM sounds, is a very different experience. And we can hope more companies follow Yamaha’s Motifator example as the future of user support. ■



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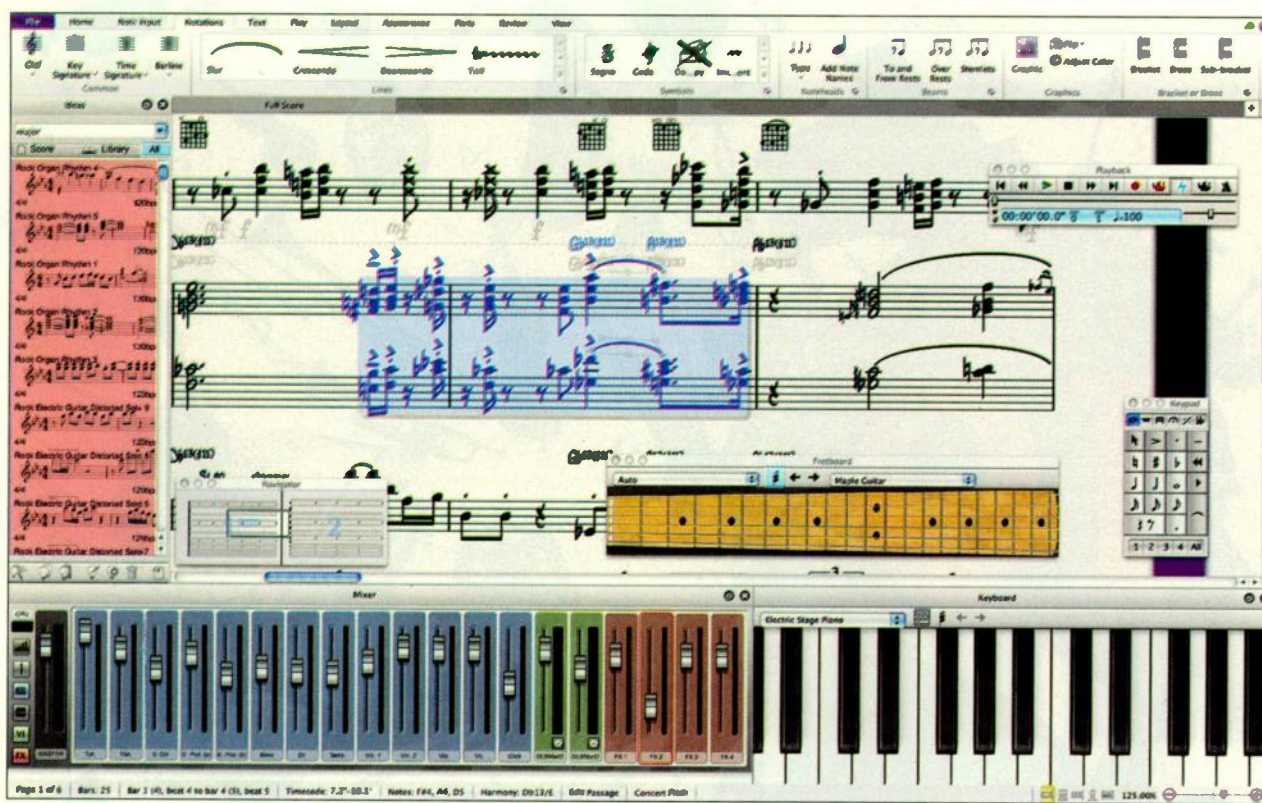
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A R I A
P L A Y E R





The redesigned interface for Sibelius 7 makes scoring music much more intuitive.

Avid Sibelius 7

An industry standard gets a facelift as well as new features for collaboration

BY GINO ROBAIR

ALREADY A mature notation program (and multiple-Editors' Choice Award winner), Sibelius built its reputation on being easier to use than the competition, while offering powerful features and great-looking results. Nonetheless, while previous versions of Sibelius were *relatively* easier to use, beginners still had to spend some serious time learning how to navigate various menus and tool palettes. That's where version 7 makes the most noticeable difference.

Taking its cue from Microsoft's tabbed toolbars, Sibelius 7 features a "task-oriented" Ribbon at the top of the screen, filled with the features that used to reside in pull-down menus. The 11 tabs—File, Home, Note Input, Notation, Text, Play, Layout, Appearance, Parts, Review, and View—are dedicated to the major workflow areas. Their order from left to right is intended to mirror the order in which users work on their scores: from setting up and saving

score info (File) all the way to comparing different versions of the score (Review).

Each tab in the Ribbon reveals a palette of sub tabs with words and symbols that make it easy to locate the tools you need. If you don't know what something does, hover over the name and the Help bubble will explain, as well as display the hot-key command for accessing it next time. Not only is the Ribbon great for beginners, longtime users will likely find features they didn't know existed in Sibelius.

I found it particularly handy to have the appropriate plug-ins appear in a pull-down menu under each tab. For example, the plug-ins used with notes, chords, accidentals, and so forth appear under the Note Input tab. In addition, the new status bar at the bottom of the window displays various aspects of the score that you would have viewed previously using the Properties palette. The information is contextual and changes based on where your cursor is in the score.

So What Else Is New? The updated text features are sure to make an impression on Sibelius users. Text operations now work more like a word processor. For example, you can specify the text alignment (right, left, center, or fully justified), and the words in a text-box

SUMMARY

STRENGTHS: New user interface is more intuitive to use. Improved text and graphic support. Excellent sound library. Lite version of library provided.

LIMITATIONS: High-level audio playback requires up-to-date computer.

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sibelius.com

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Fig 1: New text-box features function like a word processor.

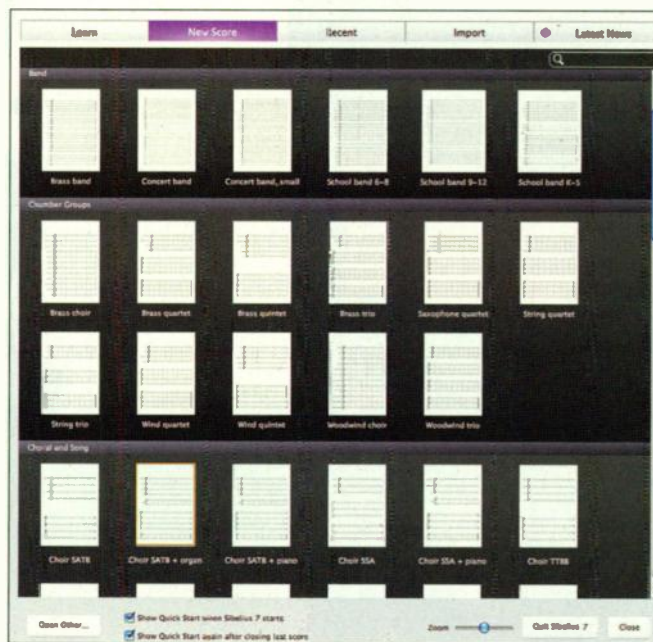


Fig 2: The Score template.

will automatically update as you resize it. You can also change the angle of the text box easily, which is pretty slick. That and a number of other cool features are in the Inspector palette, which is found on the Home tab. The Inspector is also contextual, showing only the options relevant to what you're currently working on (see Figure 1).

The support for graphics in Sibelius has also been enhanced in version 7. Importing graphics files into a score page is as easy as drag-and-drop, and the program supports common file formats (GIF, TIFF, PNG, JPG, and SVG). Once you've imported a graphic, basic editing features allow you to scale, resize, rotate, flip, and adjust its color and opacity. You can even use the graphic as a symbol in your scores. And if you link a graphic to an external file, the one in your score will automatically update when the external file is modified.

Sibelius 7 has added features that make it easier to share your work. Integrated MusicXML (compressed or uncompressed) support lets you exchange scores with people using other notation programs. In addition,

version 7 can export scores directly to PDF. (Windows users no longer need to have a separate PDF driver.)

New Sounds A defining aspect of a modern notation program is the sound of its orchestral sample library. Although Avid already has a variety of sound libraries across its various product lines, the developer notes that Sibelius 7 Sounds contains more than 90-percent new sample content. Among the added instrumentation are newly recorded grand piano and harpsichord patches, jazz-style brass and winds, and a variety of pitched and unpitched percussion. Much of the orchestral content was recorded in a European concert hall by a professional orchestra (the name of which they won't share), using two mic positions at 24-bit/96kHz. The sounds used in Sibelius 7 were lowered to 16-bit/44.1kHz, with only one of the mics used. Additional in-house content was created by Avid's AIR team in Germany.

Sibelius 7 includes quite a bit of third-party sample content. A lovely sounding pipe organ collection is provided by the developers of Hauptwerk. And to support its users who do

arrangements for drum core and marching band, Sibelius added instruments from SampleLogic *Fanfare and Rumble* collections of marching brass and percussion featuring DCI world champs, the Blue Devils.

To audition instruments, simply call up a score template that features the sounds you want, and the instruments automatically load with the page (see Figure 2 on page 66). Sibelius includes a wide variety of band, orchestral, choral, and mixed ensemble templates to get you started. It even provides templates for mariachi and salsa band, Orff-instrument ensembles, and handbell choir.

The sound library, which spans three DVDs, is top-notch across the board. With all the tweaking they've done to the articulations in the library, it's possible to get fairly realistic playback from your score. However, you'll need to dig into the sound charts and dictionary in order to take advantage of all the programming Sibelius provides. A Lite version of the library can be used if your system has trouble playing back your scores.

Sibelius' redesigned playback mixer resembles one you'd find in a DAW such as Pro Tools, with faders, Solo and Mute buttons, and pan pots. Chorus and reverb effects are included, and the reverb sounds particularly good.

I tested version 7 on a MacBook Pro (3.06GHz Intel Core 2 Duo), with 4GB of RAM, running OS X 10.6.8. The only issues I had were occasional hiccups in the sound library when playing back dense instrumentation while other apps were vying for my computer's resources. To get the most out of Sibelius 7 Sounds, Avid recommends you have a 64-bit operating system on a compatible processor, with at least 4GB of RAM.

Score! Remarkably, full installation and registration of Sibelius 7 and its library was a breeze. The install disc includes Scorch, the company's app for making your scores Internet-compatible, as well as lite versions of Neuratron PhotoScore and AudioScore. Together, it forms quite a bundle for anyone interested in taking advantage of the capabilities of modern notation tools. And with version 7's added MusicXML and PDF support, you'll be more inclined to collaborate.

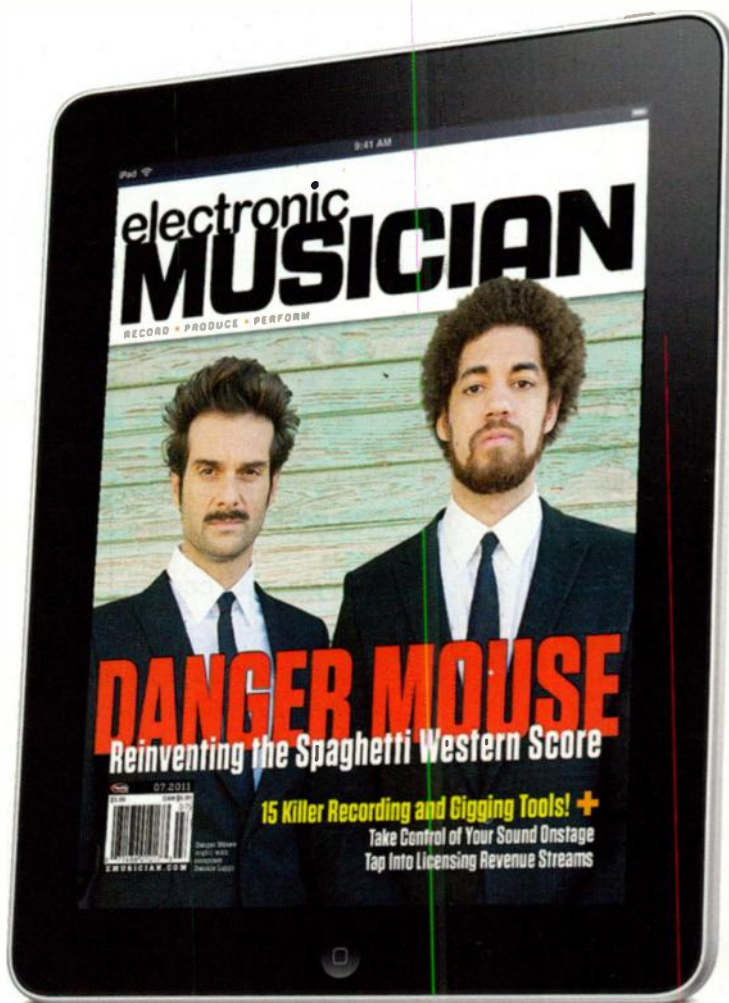
Sibelius 7 should be a no-brainer for newbies and previous owners alike. Not only is the sound library outstanding, the new text and graphics features, combined with the simplified interface, make it easier than ever to create great-looking scores. ■

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Waves Kramer Master Tape models a rare '50s-era analog tape recorder with tube electronics.

(input meters pinned), the sound is smeared and phasey. When the virtual VU meters read roughly -5 to 0 VU on peaks, you're in the sweet spot.

You can get a wide range of tape-saturation effects—from ultra-clear and punchy to very squashed and distorted—by setting the plug-in's flux control low or high, respectively. For vocals, clean electric guitars, and mastering, I didn't stray out of the nominal (low) flux range of 185 to 250 nWb/m (nanowebers per meter) for Scotch 207 tape. But for burpy bass, bombastic drum subgroups, and 2-bus compression on aggressive rock productions, I pushed the flux control as high as 520 nWb/m (+9dB over Ampex Standard Operating Level) to increase sonic girth. Extremists can set the flux control as high as 1020 nWb/m.

I much preferred using the plug-in on a drum subgroup instead of on individual tracks for traps; that way, I could blend the original tracks with the processed sound to preserve transients. Used on the insert for a kick drum track, Kramer Master Tape made the kick sound too tappy and midrange-y. On snare drum, it softened the stick strike too much. But while a high flux setting made a drum subgroup sound mushy, it also made it bigger and thicker. Blending the subgroup with the percussive original tracks sounded genuinely analog and fantastic.

Speed Thrills As to tape speed, I loved how the 7.5ips setting gave bass tracks a pillowy sound, but on most other tracks I preferred the 15ips setting for its relatively extended high-frequency response. I usually preferred the over-bias setting for its greater clarity and detail—but nominal bias sounded great on drum subgroups, and warmed up a strident lead vocal.

On all tracks, Kramer Master Tape broadened the midrange and made high frequencies sound softer. Tracks became more colorful and less clinical. Best of all, I never had to demagnetize the heads, clean the tape path, or run out of tape! ■

Waves Kramer Master Tape

"Analog" plug-in for a digital world

BY MICHAEL COOPER

ALTHOUGH THEY may produce interesting and useful sounds, few tape simulator plug-ins successfully mimic an analog tape recorder's ability to "broaden" a vocal or instrument's midrange frequencies—an effect you can't achieve with EQ. This "fattening" capacity is the much sought-after remedy for thin-sounding digital tracks, and difficult to emulate in a digital context; yet Waves' new Kramer Master Tape plug-in succeeds in capturing this elusive essence—and more (including the option to add wow, flutter, and hiss).

Kramer Master Tape, available for TDM, RTAS, Audio Suite, VST, and AU, models the characteristics of a rare 2-track tape recorder that combines an Ampex Model 350's 1/4" transport with Model 351 tube electronics (Figure 1). 3M Scotch 207 tape was used with the hybrid recorder during plug-in development.

Levels Matter The plug-in's input level makes a huge sonic difference. If it's too low, you don't get the magical imprint of tube saturation. (The flux control, and not the input level, determines the degree of tape saturation.) If it's too hot

SUMMARY

STRENGTHS: Really does sound like tape. Flexible and varied controls. Easy to use. Reasonably priced.

LIMITATIONS: Can sound unflattering on percussive tracks processed in series.

\$200 NATIVE
\$300 TDM MSRP
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1
iZotope
Ozone 5 Advanced
Mastering/analysis plug-in
\$999, standard version \$249
HIGHLIGHTS Revamped interface • maximizer now switches seamlessly among three limiters to use the best option for the audio being processed • dynamics module with enhanced visualization • improved reverb with initial convolution and synthesized reverb “tail” • “meter bridge” monitors the various modules
TARGET MARKET Mastering, mixing, and analysis
ANALYSIS iZotope doesn’t release a lot of updates, because they tend to get things right the first time around. While Ozone 4 is a great tool, Ozone 5 Advanced takes digital audio processing to today’s state-of-the-art.
izotope.com

2
TASCAM
iXZ
iOS audio interface
\$49.99
HIGHLIGHTS Audio interface for iPad, iPhone, iPod Touch • compatible with Core Audio-compliant iOS applications • Combo XLR+1/4” jack accepts mic or instrument • provides phantom power for condenser mics • headphone jack for monitoring • input level control
TARGET MARKET Those using iOS devices as a portable music platform
ANALYSIS While there are many iOS audio interfaces, the iXZ is very musician-friendly, thanks to its ability to handle a mic (including those requiring phantom power) or musical instrument. At about 3 ounces, it’s also compact and highly portable.
tascam.com

3
Celemony
Melodyne 2.0
Pitch-processing software
\$399
HIGHLIGHTS The True Scale & Tuning function offers tuning options beyond the usual even-tempered scale • Scale Detective can analyze any music and transfer the scale and tuning of one recording to another • ReWire compatible • Attack Speed tool allows transient editing • Time Handles can reshape time progressions, even within individual notes
TARGET MARKET Recording engineers who require non-realtime pitch processing, particularly on vocals
ANALYSIS Melodyne is an extremely flexible pitch processor, and its ability to use alternate tunings is unique. ReWire allows integrating Melodyne with some programs that were previously incompatible.
celemony.com

4
Cloud Microphones
Cloudlifter Z
Variable-impedance preamp
\$369
HIGHLIGHTS Phantom-powered preamp suitable for ribbon, dynamic, and condenser mics • direct-coupled, discrete JFET circuitry • input impedances range from 150–15k ohms • variable highpass filtering from below 20Hz up to approximately 250Hz • adjustable output level (+12, +25dB) • steel enclosure
TARGET MARKET Ideal for ribbon mic owners who need extra gain and protection from accidental patching with phantom power enabled; also useful for those who need to drive long mic lines
ANALYSIS This clever preamp expands on the Cloudlifter line, adding variable impedance options for extra functionality with dynamic and other mic types.
cloudmicrophones.com



5
Waves
H-EQ
Native plug-in
\$150 native, \$300 TDM
HIGHLIGHTS Seven EQ bands; seven filter types per band • asymmetrical bell filter • realtime spectrum analyzer • TDM, RTAS, Audio Suite, VST, AU • MS matrix mode can apply different EQ to Mid and Side content • choose frequencies by clicking on virtual keyboard notes • can introduce harmonic distortion
TARGET AUDIENCE Recordists requiring a versatile EQ with multiple filter types
ANALYSIS Some EQ plug-ins aim for a modern sound, while some aim for a more vintage sound. The H-EQ (“H” as in hybrid) includes both types, as well as analysis tools.
waves.com

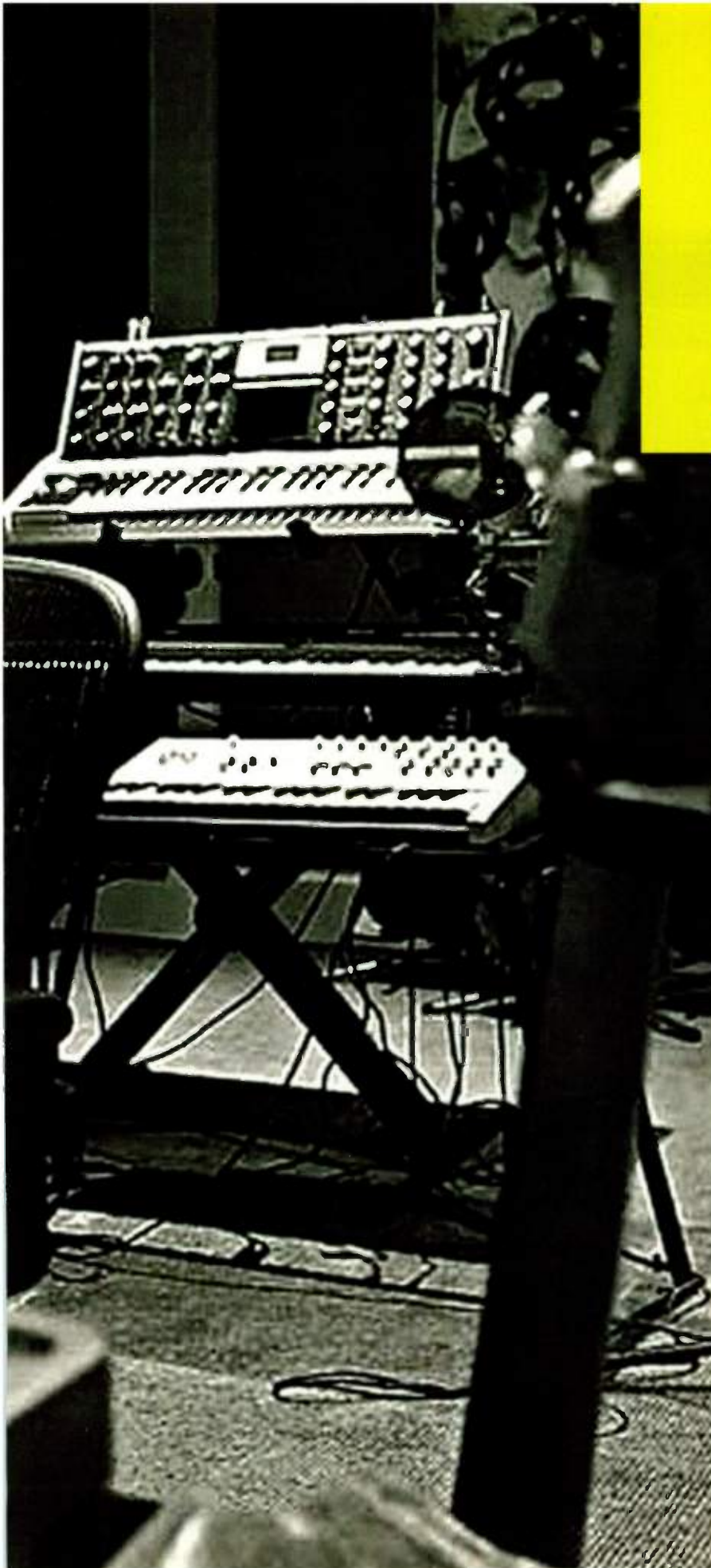
6
Radial Engineering
MC3
Monitor controller
\$229 street
HIGHLIGHTS Selects between two monitors passively to avoid audio coloration • each has individual level controls • subwoofer in/out button with level control and phase adjust • mono and dim switches • headphone amp with 1/8” and two 1/4” outs
TARGET MARKET Smaller studios that need simple monitor switching without coloration, and the option to add a subwoofer to see how it affects a mix
ANALYSIS While many monitor controller boxes are available, the MC3 is a compact model that won’t break the bank. The mono button is particularly helpful.
radialeng.com

7
Avid
Pro Tools 10
Production software
\$699, \$299 upgrade from v9
HIGHLIGHTS Clip gain is independent from, but works with, standard mix automation • 32-bit floating point audio engine • can use multiple file formats (including interleaved) and mixed bit depths in the same project without conversion • realtime fades • includes Avid System 5 EQ/compressor channel strip
TARGET MARKET Existing Pro Tools owners, and those who use other DAWs but want Pro Tools project compatibility
ANALYSIS Pro Tools 10 isn’t just about what’s on the surface, but what’s under the surface—a reworked audio engine and new AAX plug-in format that’s forward-looking to 64-bit operating systems.
avid.com

8
Moog Music
The Ladder
500 Series filter
\$769
HIGHLIGHTS Brings Bob Moog’s original ladder filter design—the source of the famous Moog filter sound—to a 500 Series module • includes both highpass and lowpass filters • built-in envelope with Attack and Release controls • drive control adds “grit”
TARGET MARKET For live use or studio processing, the Moog ladder filter adds a different type of sonic filtering mojo to 500 Series signal chains
ANALYSIS Moog’s original filter design defined the sound of the Moog modular synthesizer, and the records made from it. The Ladder brings this venerable design into a 21st-century context.
moogmusic.com



Linkin Park's Mike Shinoda works in the box at NRG in Hollywood.



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Processing in the Box

Techniques for incorporating
effects while recording in
your DAW

BY STEVE LA CERRA

IT MAY not be obvious, but when you record into most DAW software, any plug-ins that you insert in an audio track are in the *monitor* path. They affect *playback* of audio, and not the file that is being *written* onto disk. For example, when you apply EQ to a track during recording, that EQ affects only what you hear in the monitors. Furthermore, when recording guitar or bass tracks using amp simulator plug-ins, you are *always* recording unprocessed instruments and not committing “your sound” to the audio files.

This “nondestructive” processing means good news and bad news. The good news is that you have the option at any time to remove or alter that plug-in or amp simulation simply by removing or bypassing it. The bad news is that if you spend a lot of time working on the sound, and then for some reason it changes or you lose it (maybe the session



Fig 1. Plug-in routing for recording, using MOTU Digital Performer as an example.

crashes), you will have to manually re-create it. (Note: One of the great things about recording guitar or bass using an amp simulator plug-in is that—the recorded file preserves the unprocessed sound of the instrument—you have the flexibility to change the tone later in the production. You can even split the guitar output while tracking, then route it separately into the session and to a real amp for monitoring. This configuration lets you hear and interact with your amp for sustain, etc. while recording, but still gives you the option of re-amping the dry track later on.)

Computer crashes notwithstanding, there are several valid reasons for committing an effect to the recorded file. You may be recording on someone else's DAW and they have plug-ins (or hardware processors) you don't own. If you save the session with their plug-ins and take it back to work with it in your studio, those plug-ins will be inactive, making your session sound different. As you're probably aware, plug-ins consume DSP resources. The more plug-ins you use, the more DSP resources are required, whether the DSP is happening on the host processor ("native") or on a processing card such as an HD Core or HD Accel card ("TDM"). By

recording the plug-in to the audio file, you can later play back the track *without* instantiating the plug-in, which frees up DSP. If you are "old school" and grew up EQing to tape, you may feel comfortable "printing" EQ and/or effects.

I have no problem EQing or compressing to tape, but I have never been comfortable recording echo or reverb into a sound file because such effects are very difficult to "undo." If you're concerned with running out of the horsepower required for quality 'verbs, we'll examine ways you can record reverb (or echo) onto separate audio tracks to free up DSP. During the early days of my recording career, I worked with a singer who insisted that we record his lead vocal track with his favorite echo. (I think it was a Lexicon Prime Time!) It always freaked me out. When the track was isolated you could hear discontinuity in the echo where we punched. Fortunately most of it was masked when the vocal track was placed in the mix.

Don't Be Late! Some of the ideas that follow can cause latency when used with certain combinations of CPU, software, track count, and plug-ins. (As a refresher, latency is the slight delay introduced when a sound is routed into a DAW, through a record-enabled track, the back to the monitor output.) Latency can affect a performance, so you may need to play with the allocation of resources such as buffer size and/or number of processors dedicated to the audio app in an effort to make latency tolerable. (This will be system-dependent.)

It pays to be up-to-date on the latest drivers for your hardware, and if multiple drivers are supported (WDM, WaveRT, ASIO, etc), it's worth trying *all* of them to see if one may outperform the others. Some audio interfaces eliminate latency by routing the input signal directly to a separate monitor output as well as into the computer. This is known as "zero-latency monitoring" and may be enhanced by the interface's ability to provide DSP-based reverb (or other effects) for the monitor path. Keep in mind that these effects too, are not being recorded to the file.

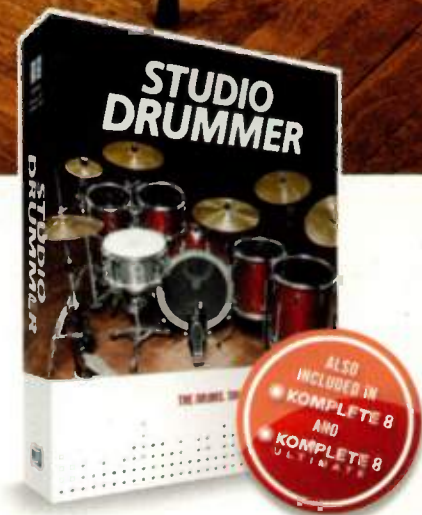
One more important point: If you record with a compression *plug-in*, you are *not* compressing the input to your audio interface, which means you still need to set your input level with care. Compressing via plug-in while

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Fig 2. Recording an effect to a separate track.

recording can help even out the *dynamics* of a track but—unlike using an analog compressor after the mic preamp—it will absolutely *not* keep the input of your audio interface from *clipping*. If your goal is to do the latter, you'll need to patch a hardware compressor into the signal chain between the mic pre and audio interface. (More about this later.)

Software Setup Here's how to record plug-ins with most DAW applications. When you are ready to record a new track, you add *two* new tracks to the session: one aux track and one audio track. The live signal is routed to the *aux* track, *not* the audio track. The output of the aux track is set to a bus. Any unused bus will do, *except* the main L/R output bus that you use for monitoring. Set the *input* of the audio track to the same bus as the *output* of the aux track. The output of the audio track should be set to the “normal” monitor bus. Figure 1 on page 74 shows this routing in Digital Performer.

In this example, the track on the left (blue) is an aux track that accepts a microphone input. The output of this track is set to Bus 1. The track on the right (red) is an audio track. The input to this track is set to Bus 1 and the output is set to Analog 1-2. Signal from the microphone comes into the aux track and is processed with the Parametric EQ that is inserted on the aux track. This processed signal is routed to the audio track where it is recorded. If you are doing this with reverb or echo, pay careful attention to the plug-in's “mix” control. You don't want to have the plug-in at 100% wet or you'll get none of the original (unprocessed) signal.

Fear of Commitment What if you like the idea of recording the effect (especially when you are visiting a friend who has a great reverb plug-in), but you don't want to marry the effect to the dry signal? Record the effect to a separate track. Here's how to record reverb to a separate track while recording a snare drum, shown in Pro Tools (see Figure 2).

First, add three tracks to the session: one mono audio track, one stereo aux track, and one stereo audio track. Route the snare microphone to the input of the mono audio track (“Snare Mic,” framed in red) per “normal” procedure. Add an aux send on the snare track as shown. The output of our aux send is set to Bus 1-2. On the aux track (“Aux 1,” framed in blue), the input is set to Bus 1-2, and a reverb plug-in is inserted. Make sure that the reverb is 100 percent “wet.” We don't need any dry snare because we already have that on a separate track.

The output of the aux track is set to Bus 3-4. Input to the second audio track (“Reverb,” framed in yellow) is set to Bus 3-4, and its output is set to Analog 1-2. The snare microphone comes into the first audio track. The main fader feeds the signal to the L/R mix. The aux send fader routes the snare to the aux track where it is processed with reverb. This processed signal is routed to another audio track and recorded. Note that the aux send is set to pre-fader (notice the “P” highlighted in blue to the right of the small fader), so you can adjust the level of the snare without changing the level being recorded on the reverb track. It's also worth noting that this type of routing can add a few milliseconds of latency, but we're talking

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Fig 3. integrating outboard gear with your DAW.

about reverb here, so a few ms aren't going to hurt anyone.

Such additional routing can be scary if you are tracking a live session with a lot of instruments. You can always record the effect separately using the above routing after the session has been recorded. In fact, you can do this several times with different reverb or delay tracks, giving yourself or your client a few choices, plus you get the bonus of freeing up DSP resources. If you like that idea, entertain the idea of bouncing a track with effects over to a new audio track. Alternatively, you can "freeze" the track to accomplish the same thing, and freezing tracks (particularly instrument tracks) often frees up quite a bit of DSP resource. Once the new track is recorded, you can disable the plug-in on the original, mute the original, or even delete it.

Processing Using Outboard Gear There's a trend for audio interfaces to include insert points on the inputs, greatly simplifying the use of line-level processors when recording mic- or instrument-level signals. You'll probably need a TRS-to-dual-TS insert cable to accomplish this because invariably the insert will be send and return on a single TRS jack. Simply patch the interface's insert to the in and out of the processor, and the processor becomes part of the recording chain. Remember that anytime you involve a hardware processor with your DAW session, you must process and bounce in real time, even when using an external plug-in processor such as a Universal Audio UAD-2, SSL Duende, or TC Electronic PowerCore.

Sonar supports easy integration of external processors with its External Insert plug-in. Instantiating this plug-in opens a routing dialogue where you can set send and return jacks for your interface's audio I/O, effectively making the hardware device part of the session. External Insert provides a delay offset to compensate for latency that may result from routing the track to and from the interface. Ableton Live's External Audio Effect feature

functions in a similar manner.

If you're lucky enough to have an arsenal of outboard mic pres, simply route the output of the pre into a compressor or EQ, etc., and then route the output of the processor to the input of your audio interface. The signal will be compressed or EQ'ed before it's recorded. You now have a reason to keep some of your old hardware around.

When it's time to mix, integrating outboard gear with your DAW requires a different setup. Figure 3 shows mixer routing from Digital Performer to a Lexicon PCM90 hardware reverb. We can see several audio tracks of drums highlighted in red (Kick, Snare, Tom 1, Tom 2, Overhead L/R). The snare and tom tracks have an aux send ("PCM90") that is routed to analog out 3 of the interface. Analog out 3 of the interface patches to the input of the PCM90. Output from the PCM90 is connected to analog inputs 3 and 4 of the interface. In DP, we have an aux track called "PCM90 Return" (blue) with input set to Analog 3-4. This is where the PCM90 comes back into the session. The aux sends on the channels are raised to get signal from the snare and toms *into* the reverb, and the aux track fader is raised to bring the output from the PCM90 into the mix. Note that the PCM90 track's output is set to Analog 1-2, so that it becomes part of the mix.

You can easily create a session template with routing to outboard hardware, where aux 3/output 3 feeds a reverb, aux 4/output 4 feeds a delay, etc. Note that we skipped outputs 1 and 2 because outs 1/2 are typically used for the main L/R mix bus. If we want to make the PCM90 reverb a permanent part of the session, we can simply record it to a stereo audio track.

Any of these tracks may be automated during recording or mixdown, which gives rise to special effects such as adding delay to a long sweeping note at the end of a guitar phrase, etc. It's a bit different from your typical DAW application, but it's not so scary. Now, premixing ten drum mics to two tracks on an analog 8-track machine . . . *that's scary!* ■

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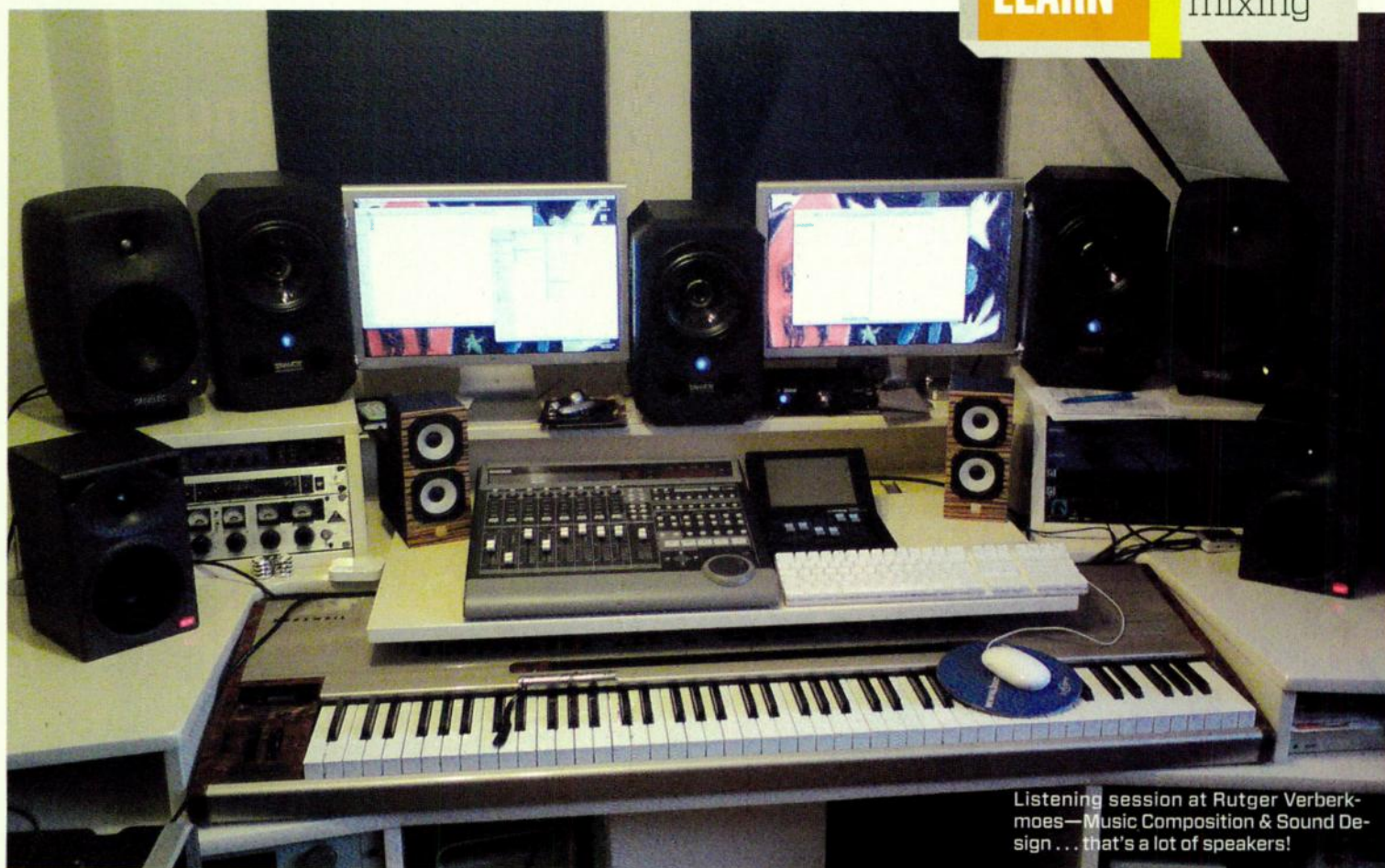
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Listening session at Rutger Verberkmoes—Music Composition & Sound Design . . . that's a lot of speakers!

Now Hear This

Monitoring techniques for crafting the perfect mix

BY MICHAEL COOPER

IN YOUR mixes routinely fail to achieve the level of excellence you strive for, maybe the problem isn't with your skills in juggling faders, equalizers, and compressors. You might just be listening the wrong way. Use these simple strategies for changing the way you listen, and nail your next mix.

Let it Suck It's a misconception that your mix should sound great on all consumer playback systems. If a killer mix for a major-label release in your music genre sounds boomy on your car stereo, *your* mix should also sound boomy—to the same degree—on that system. If you were to EQ your mix so that the low end sounded balanced on that lopsided equipment, it would sound paper-thin on most other stereos. Learn how great mixes sound on each of your monitors, professional and consumer. Then aim for those benchmarks in your own mixes.

Turn Down the Volume Resist the urge to work with your control-room monitors cranked up. Listening at a loud volume introduces three stumbling blocks that are sure to trip up your mix. First, it causes ear fatigue. Second, it excites room modes. And third, the

Fletcher-Munson Effect comes into play.

When your ears get fatigued from listening to loud music for an extended period of time, your ability to hear high frequencies becomes compromised. Your natural reaction will be to boost highs on your tracks so you can hear them more clearly. The next day, after your hearing has recovered, your mix will sound piercing and brittle. To mix highs in proper balance with mids and lows, keep your playback volume quiet as a mouse for most of your mixdown session.

Loud sound pressure levels (SPLs) also amplify the effect of room modes. Room modes are acoustic phenomena that cause very narrow dips and peaks in your control room's frequency response. (Even the best studios suffer from room modes to some degree.) The dips and peaks occur at different frequencies depending on the dimensions of your room and are most troublesome in the bass range. A room mode causing a boost at 100Hz, for example, might trick you into cutting that frequency in your mix to reduce boominess. When you listen to your mix in other rooms that don't exhibit a peak at 100Hz, your bass-starved mix will sound thin. Fortunately,

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listening at a low volume makes room modes sound less prominent. Turn down your monitors, and you'll hear a truer representation of your mix's spectral balance.

Mixing at loud levels also introduces the Fletcher-Munson Effect, a phenomenon wherein our ears become progressively more sensitive to very low and high frequencies as SPLs increase. Listening with monitors cranked, you can easily be tricked into thinking the bass and highs are muscular when in fact they may be weak relative to midrange frequencies. To avoid a dull and thin sound, EQ the top and bottom ends of your mix while listening quietly. When you crank the playback level later on, the intensified bass and highs will blow you away!

Cruise the Room If a room mode or other acoustic anomaly makes it hard for you to evaluate your mix's bass balance at a certain frequency while sitting in the mix position, sit or stand somewhere else to suss it out. You can bet that frequency is going to be

reproduced truly at some other place in your room. (The "true" spot will be different in each room.) Listen to bass tracks on major-label releases while walking the room to figure out where that frequency sounds right. For example, I can't get a true read on how prominent 43Hz (roughly a low *F* on the bass) is in my mix while sitting at my mix position. But standing three feet from the back and four feet from the left wall of my control room, the picture becomes clear. I always stand in that spot at some point during the mix process and initiate playback on my DAW using my Frontier Design TranzPort remote control. I evaluate the 43Hz neighborhood while at the back of the room, return to the mix position to tweak its EQ accordingly, and repeat the process until the low bass is perfectly balanced with the other spectra.

Leave the Room It's sometimes hard to tell whether or not the lead vocal and guitar solo are at the proper level in the mix. To gain perspective, stand outside your control room—

leaving the door open—for a listen. You won't hear much detail, but you'll get the big picture.

See What Disappears Last Listen to your mix on bass-deprived, midrange monitors such as the Yamaha NS-10M or Avant Electronics Avantone MixCubes. Slowly turn down the monitor level until your mix is almost inaudible. If the lead vocal and guitar solo disappear before other elements of the mix, they're mixed too low.

Make a Switch Wire all your reference monitors to a speaker switchbox that allows you to hear your monitors separately and in combination. Engaging the switches in turn while mixing, listen to your near-fields with and without your subwoofer in-circuit. Switch between your full-range speakers and consumer-playback proxies (your midrange monitors) often, listening to each pair separately. You'll know your mix is in the can when it sounds great on every reference system, big and small. ■



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Making Connections

Old-school networking rules still apply

BY KAITLIN MCGAW

IN THE music industry it's all about "who you know" and "who knows you." If you find yourself counting your industry contacts on two hands, it's time to roll up the sleeves, get out of the house, and meet some quality people who you can count on. This won't require employing the newest social-networking tips from the latest guru—it will come down to old-school personal communication.

In the six years I spent producing networking events in the music industry, following this principle of genuine connection, kindness, and thoughtfulness has brought me together with some of the finest people I know. In my work I communicated regularly with both students and executives, and we all found success when taking genuine interest in a person and his or her goals. Of course, I witnessed the worst traits, as well—for example, the student who convinced me to check out his band on MySpace (strike 1) because he was so much better than the band I had selected to perform at my event (strike 2). The statements, while bold, came across as pushy and rude, and needless to say, didn't fly with me.

But rather than talk don'ts, let's think opportunity. Whether initiated through an

exchange of business cards at a music conference, or inspired by a random conversation about music in line at a coffee shop, your network can grow at every turn. You'll always have a common love of great music and drive toward financial and creative success. The rest is just details, as far as how we can help each other get there. Here are my top tools for old-school networking today at industry events:

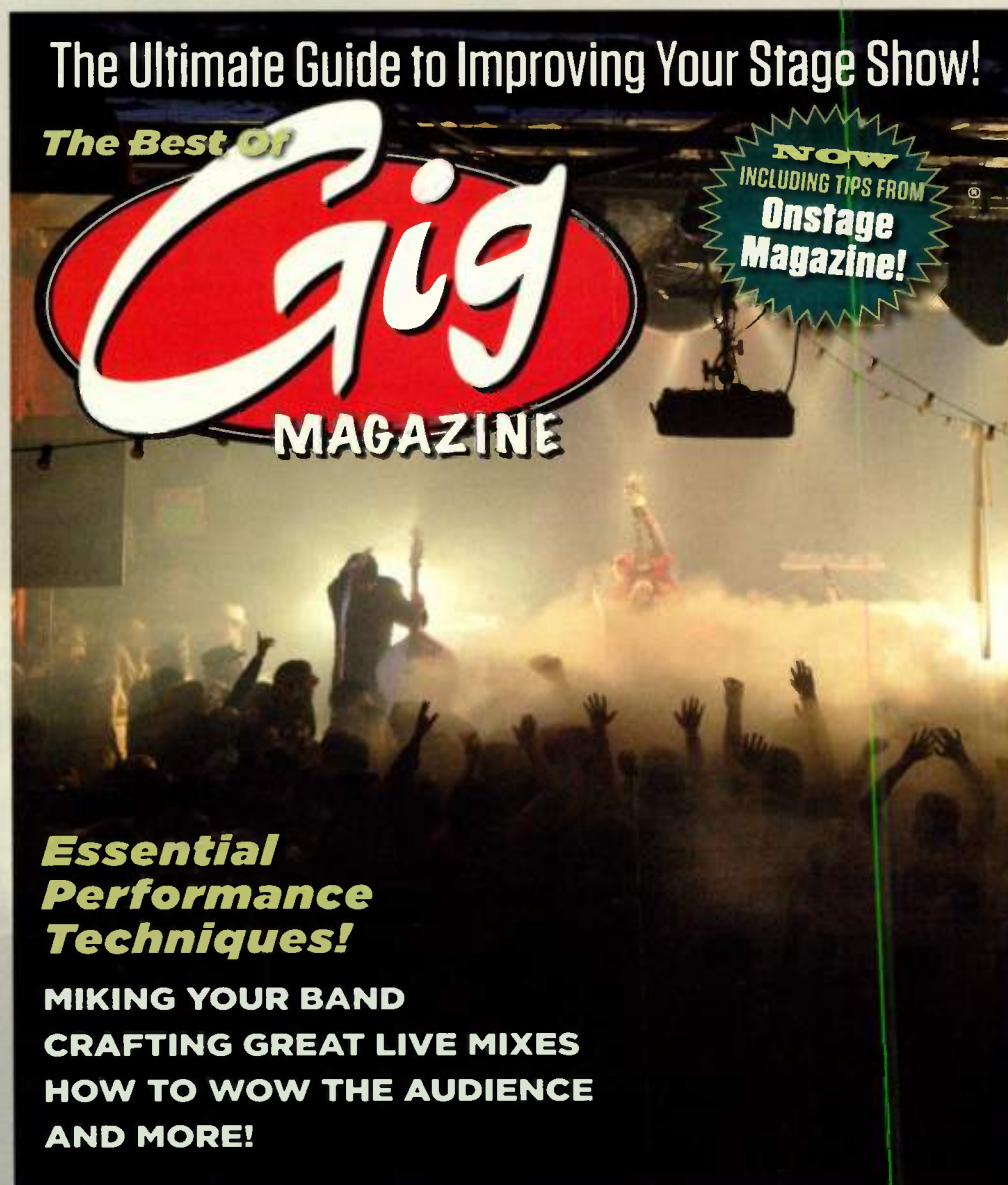
Start with get-to-know-you conversation.

At my first music conference (West Coast Songwriters), I didn't know who were experts vs. attendees, and just decided to meet people, period. I introduced myself to someone and broke the ice by talking about just that—ice (hockey). A month later, I was singing harmonies onstage with him, and we remain friends today. I met my lawyer in a similar way, by striking up simple, light conversation. In this case, he was alone at an event, and I just asked him what he hoped to get out of the evening. He said he was looking to help independent artists with better agreements. A month later I needed the exact kind of help he had described, and we've been happily working together for the past four years as both colleagues and friends.

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Look people in the eye, and remember their names. Simple, but true. There is nothing squirmier than talking to someone and having the person look over your shoulder the entire time. Don't be that guy. Stay engaged with the person, even if only for two minutes. To add to this sincerity, when you meet people, have a system for remembering his or her name (whether via voice recording, scratched notes, or e-notes) Avoid being remembered as the person who can't remember someone.

Take time to look dapper or however you want to be perceived. If you are an artist, dress like an artist. If you are an attorney trying to meet indie bands, don't wear a suit, but don't try to look homeless just to fit in. When I was starting out in the industry, I was told I looked really young. I therefore made a point of always dressing up—business professional—so that my age wouldn't be a deterrent from my authority.

Use a pen every once in a while instead of a text. Everyone has the capacity to write a quick thank-you email from an iPhone or a Facebook friend request to the conference speaker. But why not send a handwritten note after your next meeting—or as an introduction to someone you respect? You'll stand out. One way to start is sending holiday cards. It's not old-fashioned, it's classy.

Hold your cards—save CDs for snail mail. CDs and download cards may be your marketing piece, but when you meet someone, have a real conversation. Talk about life. Hold your cards and save the distribution for the mail. If you sense interest, follow up via email with the offer to send the CD (or top song) that person's way. Even better, follow up by sharing interesting points or resources you might have mentioned. Even if it was just a link to the best Tenacious D video online, send the link with your follow-up note.

Don't be afraid to be funny and honest. Recently, I had a meeting with someone who is very high up in the industry. An old-school pro, he initiated a conversation about my life experiences and passions, and we talked about sports. When he asked if I was "one of the guys," I responded, "Yes, and just like in the locker room, band rooms are the same . . . as a woman outnumbered by guys, you'd better be ready to handle dirty jokes, or you're out of luck." I am paraphrasing it, but the point is, I took a risk and said something somewhat inappropriate in front of one of the most influential industry-makers. Point taken: My contact knows I have a personality and can hang with the tough guys. Obviously, use common sense and evaluate each situation individually.

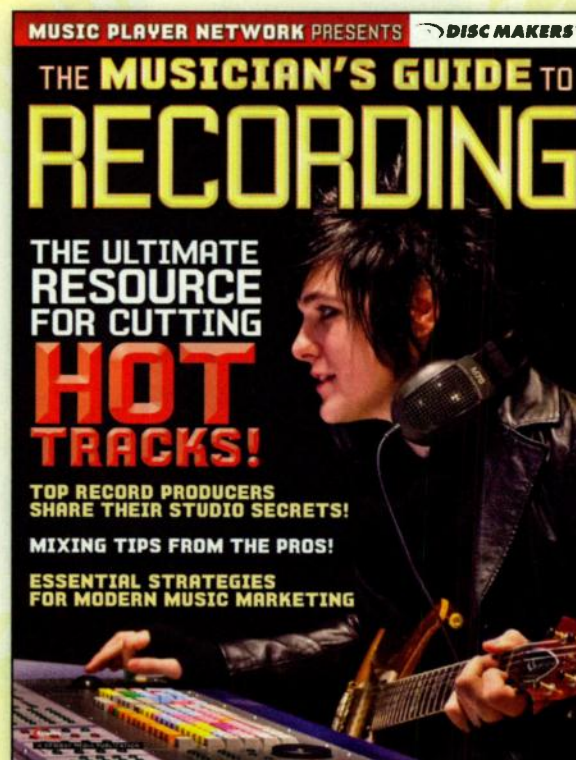
Word to the wise: In get-to-know-you and business communications, be the best version of yourself. You'll attract people like you. If you act fake, you'll attract fake people. If you are enthusiastic, you may build a buzz around you. Your connections may not happen overnight, but you will build a life-long network of meaningful relationships. ■

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A close-up of Harned's workstation.

wants," Harned says. "You can run into the dilemma of trying to be too cool or do too much, when what you really want to do is distill what the client needs. You have to process the information, the direction or the music references you're given, and figure out what's gonna work in the time you have. Most of it's about creating the right vibe for the message they're trying to convey, and usually if the vibe is simple, it's probably right."

Harned takes one of his most well-known spots, Subway's near-ubiquitous "Five-Dollar Foot-Long" campaign, as an example. "I think I did that in an

afternoon," he reveals. "It started here in the studio with just an acoustic guitar and a simple beat, and I sang on it with some of the people in the office. If you think about the commercial jingles that really drove you nuts in the '70s and '80s, they always had these big harmonies that were oversung and super emotive, and I guess I was just trying to do something more indie-sounding, where the delivery was dry, with some vocal harmonies that were atypical. Subway picked it up, and it was only supposed to run for 12 weeks. Here we are more than three years later, and it's still running."

Depending on the terms of the contract, a spot like this can generate a tidy sum in residual royalties for the composer, on top of the original production fee. But aside from the additional income, what really floats Harned's boat is that he's constantly pushing his abilities in different genres of music, from hip-hop to techno to indie rock and beyond. It takes wide-open ears and a lot of time and commitment to reach that level of versatility, but perhaps most importantly, you really have to love music.

"I'd say very often, our clients are looking for something that they'd call 'unexpected,'" Harned observes, "which means that the track is a little more noticeable as the *character* of the spot. When you look at these spots without music, you realize how much the music is actually driving it. I mean, commercials are manipulative, for sure, but what's interesting is that you're helping people feel the way that somebody wants them to feel. I think you can always get an emotional response—the one you intended—if the music is done the right way." ■

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Avid Pro Tools 10

Alter dynamic gain of individual clips

BY CRAIG ANDERTON

OBJECTIVE

Add automation to individual clips prior to mixer automation and prior to any processing by plug-ins.

BACKGROUND

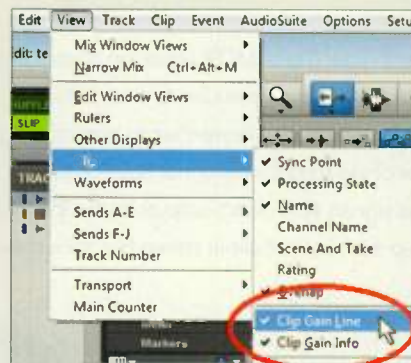
Pro Tools 10 adds extensive clip gain options. Among other uses, this is great for adjusting the drive amount going to distortion plug-ins, and for making detailed fixes that are subsequently controlled by the overall mixer automation.

TIPS

■ **Step 3:** To delete a node, alt-click (Windows) or option-click (Mac). You can also change an existing node's gain with click-on-node + drag.

■ **Step 5:** It's possible to cut, copy, paste, and nudge Clip Gains. See the Pro Tools reference documentation for more information.

Step 1 Go *View > Clip* and select both *Clip Gain Line* and *Clip Gain Info*.



Step 2 Select the Grabber tool.



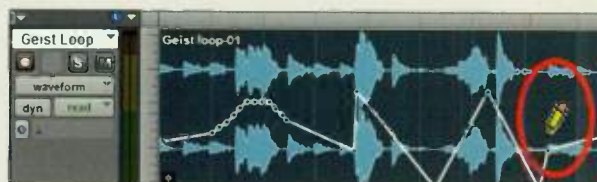
Step 3 Click on the Clip Gain line to create a node, then drag up or down to change gain. (This works like standard automation breakpoint editing.)



Step 4 To move all nodes up or down simultaneously to increase or decrease overall gain, respectively, select the Trim tool, then click within the gain range covered by the Clip Gain line and drag up or down.



Step 5 You can also use the Pencil tool to draw gain changes or add periodic changes (triangle, square, line, or random).



Step 6 To render the gain changes you've made, right-click on the clip gain fader icon and select *Render Clip Gain*.



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1

Mac vs. PC.

Okay, so the operating systems are a little different . . . but if the first thing you do when you turn on a computer isn't leaving the operating system as soon as possible and opening your program of choice, I highly recommend *Computers for Dummies*.

Five Totally Pointless Audio Forum Arguments

BY CRAIG ANDERTON

Sure, Internet music forums can be great fun. But avoid these totally pointless arguments, and you'll be able to spend more time *making actual music* instead of talking about its technological support system.

2

Virtual analog vs. analog synths.

Is it really analog, or does it just *sound* analog or is it really a *digital* synth that has *some* analog or an analog synth with digital control or . . . *for chrissakes, stop!* The question isn't virtual analog vs. analog. The question is, "Hey, do you like how it *sounds*?"

3

Amp sims vs. tube amps.

Fact 1: An amp sim can't sound and feel *exactly/completely/totally* like an amp/cab combination.
Fact 2: A tube amp can't do all the things an amp sim can do.
Fact 3: People with ears so good they put dogs and bats to shame often can't tell the difference between a virtual amp and physical amp on playback.
Fact 4: Your listeners couldn't care less.

4

Tape vs. digital recording.

Tape is a signal processor. If you like that sound, you like tape. If you don't like that sound, you don't like tape. If you think digital recording sounds nasty . . . you know, you really should consider replacing that blackface ADAT. Just sayin.'

5

Winning vs. losing the loudness wars.

Either engineers are going to try to win the loudness wars or they aren't, and there's nothing you can do about it. Consumers will vote with their wallets—and if they don't like music that pretends that CDs have a 12dB dynamic range, they won't buy it. Oh wait, that's right . . . they *aren't* buying it. ■



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