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JBL LSR308 MONITORS

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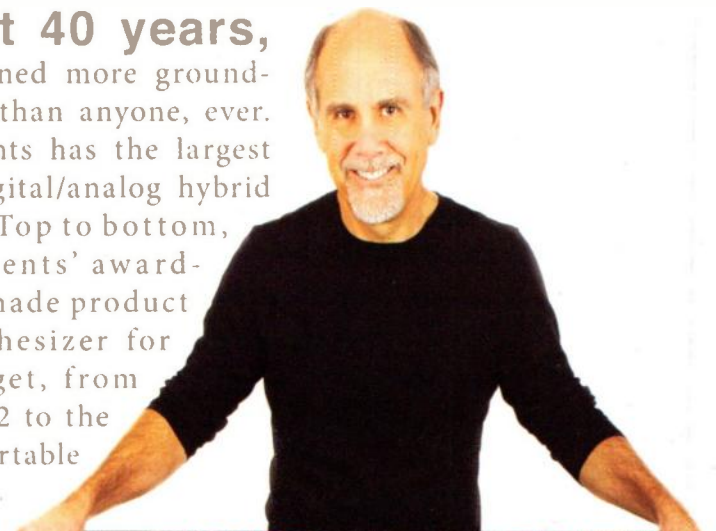
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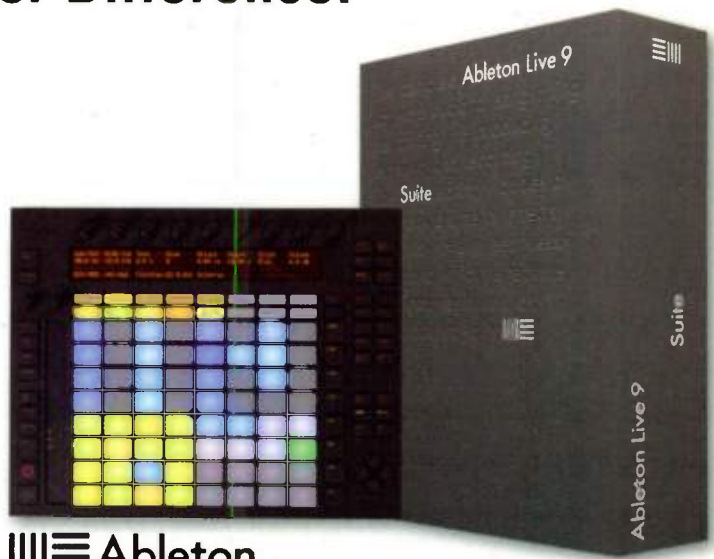
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moog

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Music Instruments & Pro Audio

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COVER FEATURE

- 18 **Music for *Grand Theft Auto V*** Want to score games like the pros, but don't know where to begin? There's no place like the top. We'll show you how three interactive scores, 241 tracks, and 17 radio stations came together on 2013's biggest entertainment title.



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NEW GEAR

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03.2014

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Surround Mixing 101 Multichannel music might not have caught on in the mainstream, but surround work is done throughout the entertainment world, from film, TV, and DVD mixing, to video games, and, yes, even audio-only releases. Here, pro engineers share tips for those considering taking the leap to 5.1.

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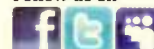
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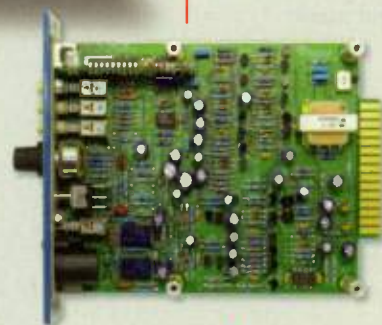
After a year, I'm still impressed... and occasionally startled.

~ Andy Hong, *TapeOp*

The Radial PowerPre is a high performance mic preamp that combines 100% discrete electronics with a vintage style Hammond™ broadcast transformer to deliver warmth, character and detail. Accustate™ gain control ensures quiet performance at any level while driving it into the red adds harmonics. Switch in the Vox control for high-end sparkle or extra meat when you need it. Easy-access front panel XLR, recessed 48V phantom switch and a 10 segment LED for accurate monitoring.



- Compatible with older 500 series power racks and all Radial Workhorse™ racks.
- Full scale 10-segment LED meter for accurate signal monitoring.
- 15dB pad lets you use the PowerPre with high output devices.
- 180° polarity reverse lets you match the phase between two mics.
- High pass filter cuts low frequency resonance from acoustic instruments and cleans up bass tracks.
- Dual gang Accustate™ gain control for low noise at all levels.
- 3-position Vox control adds shimmer on voice or fattens up guitar tracks.
- 48V phantom switch is recessed to prevent accidental switching.
- Front panel XLR mic input for easy access and convenience.
- Rear panel Omniport™ guitar input when used with a Radial Workhorse™.
- 100% discrete for spectacular audio with a Hammond™ broadcast transformer to add vintage character.



radialeng.com

1588 Kebet Way, Port Coquitlam BC V3C 5M5
tel: 604-942-1001 email: info@radialeng.com



~ Kevin Becka,
Mix magazine

"The PowerPre is a must hear. I used it for recording vocals, guitar amps and drums with great results. It is particularly good in high transient, high SPL situations where you can drive it hard for more transformer color. I bought one."



~ Paul Vnuk Jr.,
Recording magazine

"I would call the PowerPre full, solid and clean with a classic vintage sound. If you think of the sound of deep rich vintage radio announcers, you will be in the ballpark. This is a stellar and unique sounding preamp"



~ Andy Hong,
TapeOp magazine

"The PowerPre celebrates its own individuality by offering a carefully conceived set of controls that let you extract an expansive range of character. In practice, I found it to be very quiet at all settings. It should be on your short list."



~ George Shilling,
Resolution magazine

"Vox Control is used for tonal shaping: when linear, the PowerPre has plenty of detail and nothing harsh or unpleasant. Breath adds air and clarity, punch boosts the low end. Very usable and quick to audition."



~ Craig Anderton,
Electronic Musician

"The PowerPre is a fine example of a well designed, low-noise mic preamp that can give a bit of 'meat' or 'air' to a signal thanks to the transformer output and Vox voicing EQ. It may well be your preamp of choice."

PROFOUND SOUND



#1 MONITOR BRAND GLOBALLY

New! ROKIT Generation 3

For a quarter of a century KRK has been the professional's choice for mixing and mastering hit records around the globe. And KRK's ROKIT studio monitors have been the most popular choice for accurate monitoring, selling one million systems over the years. Now KRK introduces the new ROKIT Generation 3, continuing the legacy of performance ROKIT's have become known for. So whether you're just starting out in desktop recording, or you've already laid down a few thousand tracks, give a listen to the ROKIT Generation 3 line of monitors and experience a standard in performance and accuracy that raises the bar once again.

- Soft-dome tweeter provides clarity and extended response up to 35kHz
- Proprietary waveguide technology optimized for superior stereo imaging
- Lightweight, glass-aramid composite woofer delivers clear midrange and tight bass
- B-amped, class A/B amplifier offering maximum headroom with minimal distortion
- Low and high frequency adjustment gives you unprecedented voicing control for optimal room acoustics and mix translation

ROKIT
POWERED



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www.krksys.com

World Radio History

insight

An Epic Adventure

WE DON'T profile videogames often, but when we learned about the massive audio undertaking that went into *Grand Theft Auto V*, we had to dig deeper.

Just how big is this title? The latest installation in Rockstar Games' blockbuster *Grand Theft Auto* crime-adventure franchise was five years in the making and cost an estimated \$260 million dollars to produce; at press time, it was on its way to becoming the best-selling game of all time.

Music has always been part of the *GTA* narrative, but *V* truly takes it to the next level: Three interactive scores evolve with game missions; 241 licensed tracks play on 17 in-game radio stations. Heavyweights DJ Shadow, Tangerine Dream, The Alchemist, Oh No, and Woody Jackson worked with dozens of artists, producers, and music supervisors to produce original

music. But all told, more than 1,000 people touched this project at some point during development.

Not many of us are fortunate enough to work on creative efforts of this scale, but we can certainly learn from *GTA V*'s biggest music challenges: how to craft a score as a "character," collaborate remotely on tight deadlines, and rethink music concepts for an entirely interactive medium. The fun begins on page 18. Tell us



SARAH JONES
EDITOR
sjones@musicplayer.com

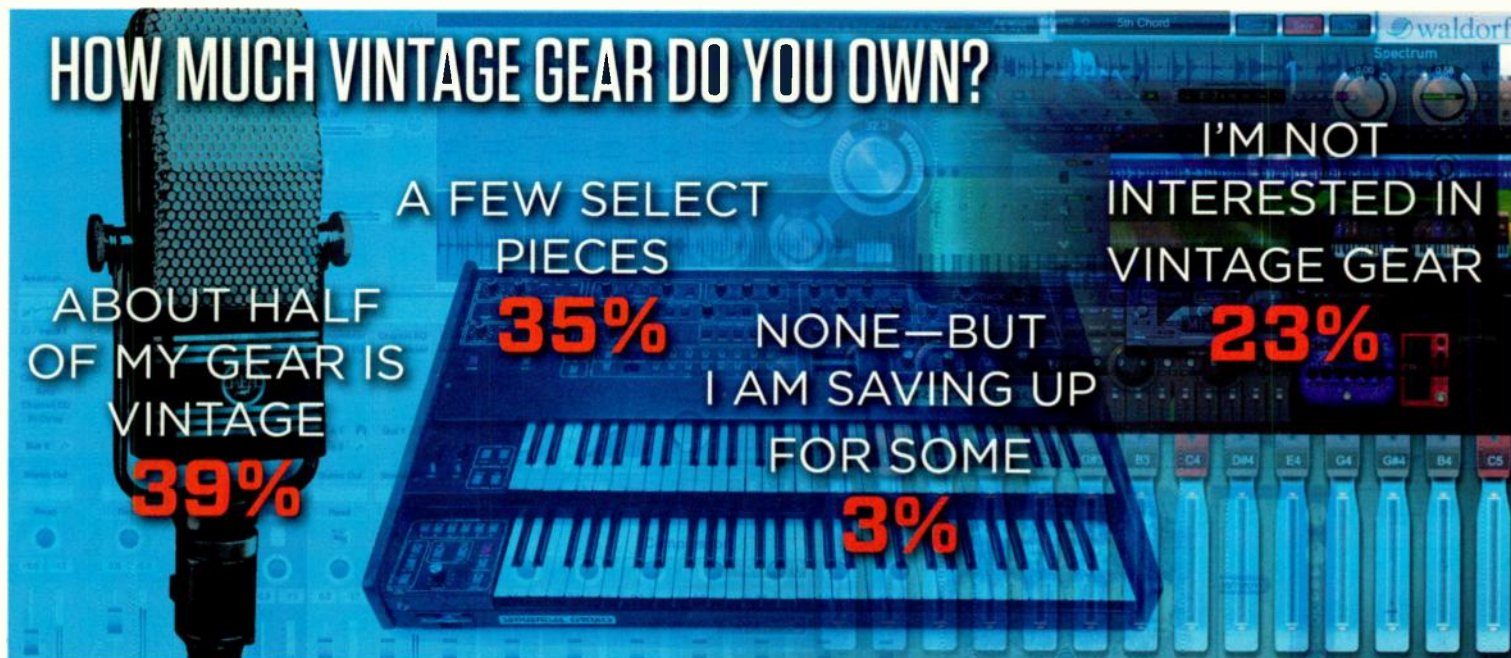
about your biggest scoring challenge! We just might feature you in a future issue.

COMMUNITY

"IT'S A SIGN OF THE TIMES THAT CELEBRITY TRUMPS ACTUAL CULTURE ON TV. IF MILEY CYRUS CAVORTS WITH A FOAM FINGER, I'M A TALKING HEAD ON THE TOPIC FOR THE NEXT THREE MONTHS. IF SHE DOES A SUPERB JOB SINGING A GREAT SONG LIKE "WRECKING BALL," PRODUCERS START LOOKING FOR B-ROLL OF THE KARDASHIANS."

Billboard editor Bill Werde,
December 27, 2013

The Electronic Musician Poll



IN THE STUDIO

Ryan Freeland and the Barr Brothers BY BARBARA SCHULTZ

Engineer/producer Ryan Freeland (Bonnie Raitt, Ray LaMontagne, Carolina Chocolate Drops) is mixing an upcoming album for the Barr Brothers, an alt-rock band led by Brad and Andrew Barr. The project began at Mixart Studios, in the Barrs' adoptive home of Montreal. Freeland packed a suitcase full of mics (Beyerdynamic M160s, Royer 122s, Neumann M49) and traveled from his home base in Southern California up to Canada.

"I like to have a lot of gear up and running," Freeland says. "I used just about every piece of equipment they had or could borrow. Once you are set up, you can move quickly from song to song without pausing. The Barr Brothers are multi-instrumentalists; you never know who's going to grab which instrument for any given song. I like to be prepared for all possibilities"

Working in Mixart's Studio A, Freeland and the band put drums, bass, piano, organ, and pump organ in the main room, and a vocal- and acoustic guitar-recording setup in an adjacent booth. (Lead vocals were tracked through a Neumann U47 into a Neve 1073 and then a Summit TLA-100, into Pro Tools 10, while the acoustic was captured via a Neumann U67.) There was also a harp, which sat in the control room with Freeland; amps were miked up in the studio kitchen.

"I used baffles, blankets, and mic placement to get isolation when



I needed it. I really like bleed between instruments as long as it's pleasant and not creatively limiting," says Freeland. He recorded the band live, and now he's mixing and editing on the hybrid Pro Tools/analog outboard rig in his personal studio, Stampede Origin (ryanfreeland.com), while the band continues recording overdubs and reviewing takes in Montreal.

"A lot of what makes the Barr Brothers extraordinary are their arrangements and instrumentation," Freeland says. "They start with a great song and approach the performance of that song in beautiful and unique ways. It can be tricky to mix, because the smallest shifts can have a profound effect on whether the mix is working or not. You need to focus on exactly how all of the parts interact and how to best get the song across."

ask!

I'M FASCINATED BY VINYL, AND WANT TO DO VINYL RELEASES OF SOME OF MY DANCE MIXES. I DO MY OWN MASTERING (I CAN'T AFFORD A PRO ENGINEER) AND PEOPLE THINK THE RESULTS ARE REALLY GOOD. IS THERE ANYTHING SPECIAL I NEED TO KNOW ABOUT MASTERING FOR VINYL?

**GEORGE VILLIERS
(A.K.A. DJ POWERPLAY)
CHICAGO, IL
VIA EMAIL**



Thinking about mastering some of your music for vinyl? Think again.

George—yes, there is: Use a pro with years of experience in vinyl mastering, because the process is exponentially more difficult than mastering for digital media. For starters, there's a tradeoff among level, low frequencies, and length. You can have a loud master with decent bass if the length is short, but longer cuts require lower levels, less bass, or both. Furthermore, distortion increases and high frequencies deteriorate as the needle moves closer to the inner grooves. Also,

mastering engineers must take the RIAA frequency response curve (a drastic combination of high-frequency boost and low-frequency cut) into account.

Too much bass can literally cause a needle to jump out of the groove, so bass instruments (including kick) need to be in mono and mixed dead center; if the bass is doubled or layered and panned, the needle will have trouble following the groove's excursions. Finally, applying compression, limiting, and

EQ isn't always just about artistic decisions, as these tools are often essential to shoehorn your music into vinyl's limitations.

While musicians with great ears, experience, and a solid technical background can often create decent masters in digital media (although a pro will likely give better results), vinyl is one area where even angels fear to tread. (Note: For more information, surf over to recordtech.com/prodsounds.htm.) **THE EDITORS**



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



1
Elektron
Analog Keys
4-voice analog synthesizer
\$1,849

HIGHLIGHTS 37 semi-weighted keys • 2-pole multimode and 4-pole lowpass analog filters • Aftertouch • joystick • step sequencer controls synth and onboard effects • arpeggiator • DIN sync, CV, and gate outputs • audio input • balanced analog output

TARGET MARKET Musicians who want a versatile polysynth for the studio or stage

ANALYSIS It's hard not to like a fully modern analog synth with I/O that makes it compatible with vintage drum machines and modular gear.

elektron.se



3
Dave Smith Instruments
Prophet 12 Module
Analog/digital hybrid synth
\$2,199

HIGHLIGHTS table-top/rackmountable 12-voice analog/digital hybrid synth • redesigned editing system • five oscillators per voice • highpass and resonant lowpass filters • tuned feedback • stereo delay for each voice • arpeggiator • 16 x 2 modulation matrix • 5-pin DIN and USB MIDI I/O

TARGET MARKET Musicians who want a powerful polysynth in a space-saving form factor

ANALYSIS Although it has fewer front-panel editing controls, the P12 Module offers the same sound quality and modulation capabilities as its keyboard counterpart.

davesmithinstruments.com



2
Yamaha
MG Series
Small-format mixing consoles
\$129-\$929

HIGHLIGHTS Ten new mixers that feature D-Pre mic preamps • pad, highpass filter, and EQ controls on each channel • the XU models offer 24 SPX effects and include USB 2.0 interfaces that support 24-bit/96kHz resolution (the MG06C has six non-editable effects)

TARGET MARKET Musicians and engineers working in studio and concert situations

ANALYSIS Featuring a steel chassis and rugged construction, these mixers are designed to cover everything from installation jobs and personal studio work to live sound.

yamaha.com



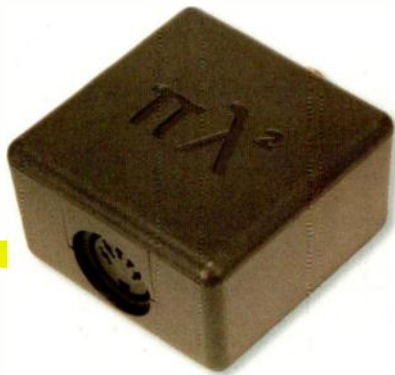
4
Eventide
Mixing Link
Mic preamp/effects loop stompbox
\$299 street

HIGHLIGHTS 48V phantom-powered mic preamp with XLR and 1/4" I/O • instrument and stereo aux inputs • effects loops supports balanced and unbalanced connections • effects switch can toggle on/off or work in momentary mode

TARGET MARKET Singers and musicians who use audio processing onstage and in the studio

ANALYSIS The Mixing Link gives vocalists direct control over their own effects, with the added advantage of having a high-quality DI output for the P.A.

eventide.com



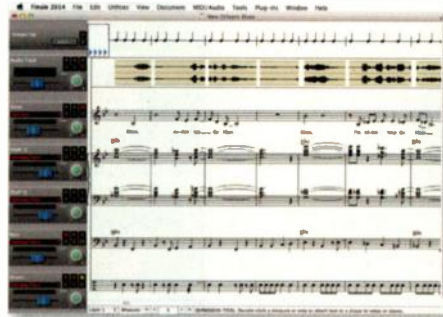
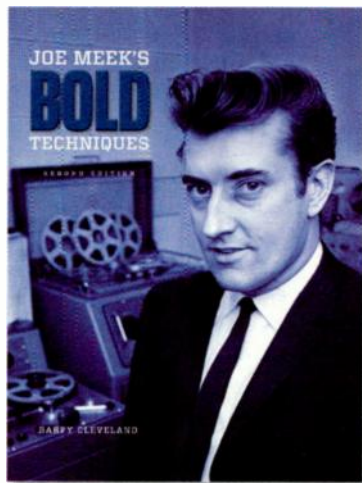
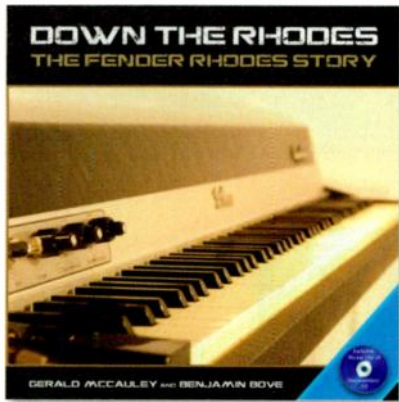
5
 Ploytec
Pi L Squared
 Portable synth module
\$129
HIGHLIGHTS MIDI-controlled, duophonic synth • two square-wave oscillators with four waveshapes • digital and analog filters • analog saturation stage • 32 factory/32 user presets • MIDI synchronized LFO • RCA output • USB port • Mac/Windows editor included
TARGET MARKET Musicians looking for a versatile synthesizer that is small enough to go anywhere
ANALYSIS Attached with a small piece of Velcro, the Pi L Squared could be the perfect hardware-synth companion for your miniature MIDI keyboard.
ploytec.com

6
 Metasonix
R-56
 Vacuum-tube spring reverb
\$499
HIGHLIGHTS Eurorack modular format • features a pair of 12CT8 triode-pentode tubes • separate mix and wet-only outputs • feedback circuit with CV input • CV input for Drive with invert switch • RCA jacks are provided for connecting an external spring tank
TARGET MARKET Modular synth users looking for adventurous sounds
ANALYSIS The only thing better than adding spring reverb to a patch is adding tube-based timbres and a feedback circuit at the same time.
metasonix.com

7
 Magix
Music Maker 2014 Premium
 DAW
\$99.99
HIGHLIGHTS Unlimited track count • 6,000 samples and loops included • Practical Pitch Wizard • Vocal Tune • DN-e1 virtual analog synth • Mastering Suite 4 effects collection with Auto Mastering mode • vocoder • 5.1 surround mixing • ability to import Music Maker Jam projects • support for VST plug-ins
TARGET MARKET Beginner-to-intermediate music makers and beat producers
ANALYSIS There are enough loops, beats, and software instruments here that anyone can get started in music production.
magix.com

8
 TC-Helicon
VoiceLive3
 Vocal effects processor
\$799.99
HIGHLIGHTS Upgraded effects • new Harmony modes: Pedal, Fixed, and Mixed • looper • vocoder • talk-box effect • Adaptive Tone processor • new HardTune styles and delay filters • acoustic guitar mode • guitar input can control harmonization • virtual amp emulations • TonePrint effects • separate outputs for guitar amps and stereo P.A. • download and manage presets with the free VoiceSupport app
TARGET MARKET Recording and gigging vocalists
ANALYSIS A powerful collection of performance-oriented effects that incorporates the latest technological advances
tc-helicon.com

Continued



9
Hal Leonard
Down the Rhodes: The Fender Rhodes Story

By Gerald McCauley and Benjamin Bove
\$44.99

HIGHLIGHTS Full-color, hardcover book with Blu-ray disc • a historical look at one of the most ubiquitous keyboards in modern music • dozens of interviews with influential players • also available as an MP4 download and on DVD

TARGET MARKET Fans of vintage keyboards, particularly electromechanical instruments

ANALYSIS This audio/visual package provides a wealth of technical information as well as entertaining musical perspectives. It's a fun read for anyone interested in how the Rhodes influenced pop and jazz.

fenderrhodesstory.com

10
ElevenEleven Publishing
Joe Meek's Bold Techniques, 2nd Edition

By Barry Cleveland
\$34.99

HIGHLIGHTS A fascinating biography covering the innovative recording techniques used in Meek's 12-year career • newly updated with extra chapter • includes remastered version of the 1959 stereo album *I Hear a New World*, available online

TARGET MARKET Recording engineers and musicians

ANALYSIS This is a great source of information, especially about the development of the effects used in the '50s and '60s by one of pop music's most adventurous artists.

barrycleveland.com

11
Make Music
Finale 2014
Music notation software
\$600 (\$350 academic/worship price)

HIGHLIGHTS Full-featured scoring program • new file format that ensures backward compatibility and future-proof data creation • updated audio engine and a new mixer with updated playback controls • expanded sample library from Garrigan • new Smart Shapes • Epub support
TARGET MARKET Musicians and composers who want to create engraver-quality sheet music
ANALYSIS Finale continues to set the standard for professional-level notation software while providing high-quality samples with which to hear your work.
makemusic.com

12
Telefunken
DD4 and DD5
Dynamic mic kits for drums
\$1,149/\$1,349

HIGHLIGHTS Preconfigured 4- and 5-mic packs that include a version of the M80 with a smaller body, as well as the M81-SH and M82 large-element, kick-drum mic • includes 15' cables • packaged in a hard-shell flight case

TARGET MARKET Studio and live-sound engineers, drummers

ANALYSIS Whether you'll use these mics in a recording or concert application, these kits offer a convenient way to acquire enough mics to handle a 4- or 5-piece drum kit.

telefunken-elektroakustik.com



Assignable volume knob and data slider

Pitch Bend and Modulation ribbons for enhanced control

32 key velocity-sensitive keyboard allows for two-handed parts

13 velocity-sensitive pads chromatically arranged for triggering loops and playing drums

Transport controls

Crossfader for live and DJ performances

6 assignable knobs

Pan knobs
Mute Solo and Record enable buttons

5 assignable function buttons

8 channel control surface

Master volume encoder

8 assignable knobs and 4 velocity-sensitive pads (2 banks)

Control Change mode to allow further control

Transport controls

M25

Pitch Bend and Modulation ribbons

25 key velocity-sensitive keyboard

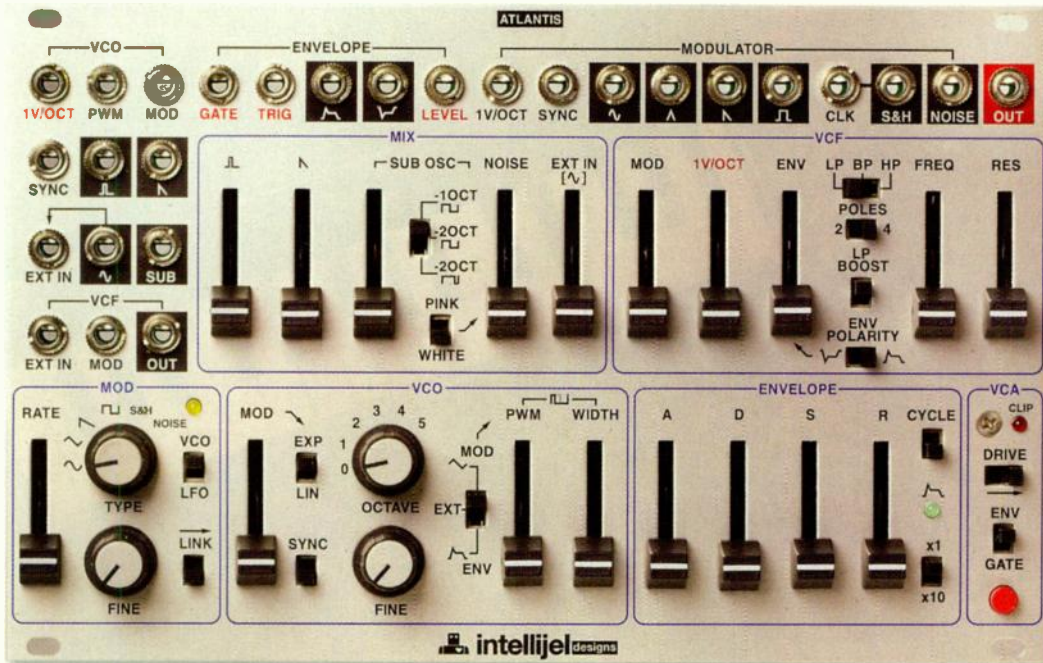
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With options for every level of performance and production, these controllers are constructed to withstand the demands of the "mobile musician" and feature a variety of presets and programmable features that allow for dynamic, easy-to-use integration into your music software.

Graphite MINI USB MIDI CONTROLLERS

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Two oscillators, a resonant multimode filter, a cycling envelope generator, and loads of I/O make the Intellijel Atlantis a musically powerful synth voice for any Eurorack system.

Intellijel Atlantis

A complete synth voice that is more than the sum of its parts

BY GINO ROBAIR

ALTHOUGH THE whole point of having a modular system is that you can build a personalized synth, sometimes it makes sense to add an entire voice to your setup under one panel—a VCO, VCF, envelope, and VCA, with normaled connections—so you can play it without using patch cables: a semi-modular module, if you will. When designed well, a single-voice module can add substantial timbral power in a small space and for a reasonable cost compared to buying each element individually. That's exactly what Intellijel offers with the Atlantis (\$699).

Inspired by the sound and layout of the Roland SH-101, a popular monosynth released in '82, the Atlantis drops the keyboard, arpeggiator, and sequencer but retains important aspects of the signal path and user interface to create a versatile instrument with

a wealth of patchable modulation points. Based around a triangle-core oscillator, the main VCO offers sawtooth and pulse waveforms, noise (switchable between pink and white), a suboscillator (1 and 2 octaves below), and a sine wave that shares the external input, all of which you can mix to taste. The VCO can be switched between six octaves, with hard sync and linear FM capabilities when combined with the modulation oscillator.

The modulation source, also a triangle-core oscillator, has four waveshapes, noise, and sample-and-hold, and it can be used as an LFO or VCO. To get a 2-oscillator synth, patch the mod source running at audio rate into the external input. You can control the oscillators independently with their discrete CV inputs.

In addition to the main output of mixed signals, there are individual audio outputs for each waveform of the VCO and modulator, as well as noise and a sample-and-hold voltage. Check out the heterodyning artifacts you get from the modulation oscillator's direct outputs when you are in VCO mode with the Rate control near the top: This is perfect for creating unstable interactions between the two oscillator sections or other modules in your system.

Like the SH-101, the multimode filter on the Atlantis is a cascaded 4-pole filter that provides a stable sine tone when resonating, which can track over several octaves when using the CV input or the modulation bus for control.

Whether in 2-pole or 4-pole mode, this is a powerful, yet sweet-sounding filter. To further intensify the output, Intellijel added a boost switch to the VCF and two levels of Drive at the VCA. Together these elements are capable of creating a wide range of timbres that cover leads, basses, and bubbly ambient sounds.

The 4-stage envelope can be cycled, or triggered onboard in either Gate or Envelope mode. When cycling, the ADSR sliders determine the speed: I found myself using this section as a quasi-sequencer when controlling the module from an external voltage source. One immediate benefit of having sliders is that they make it easier to control several parameters at once. As a result, the Atlantis will be a very attractive module for musicians who like to perform their patches.

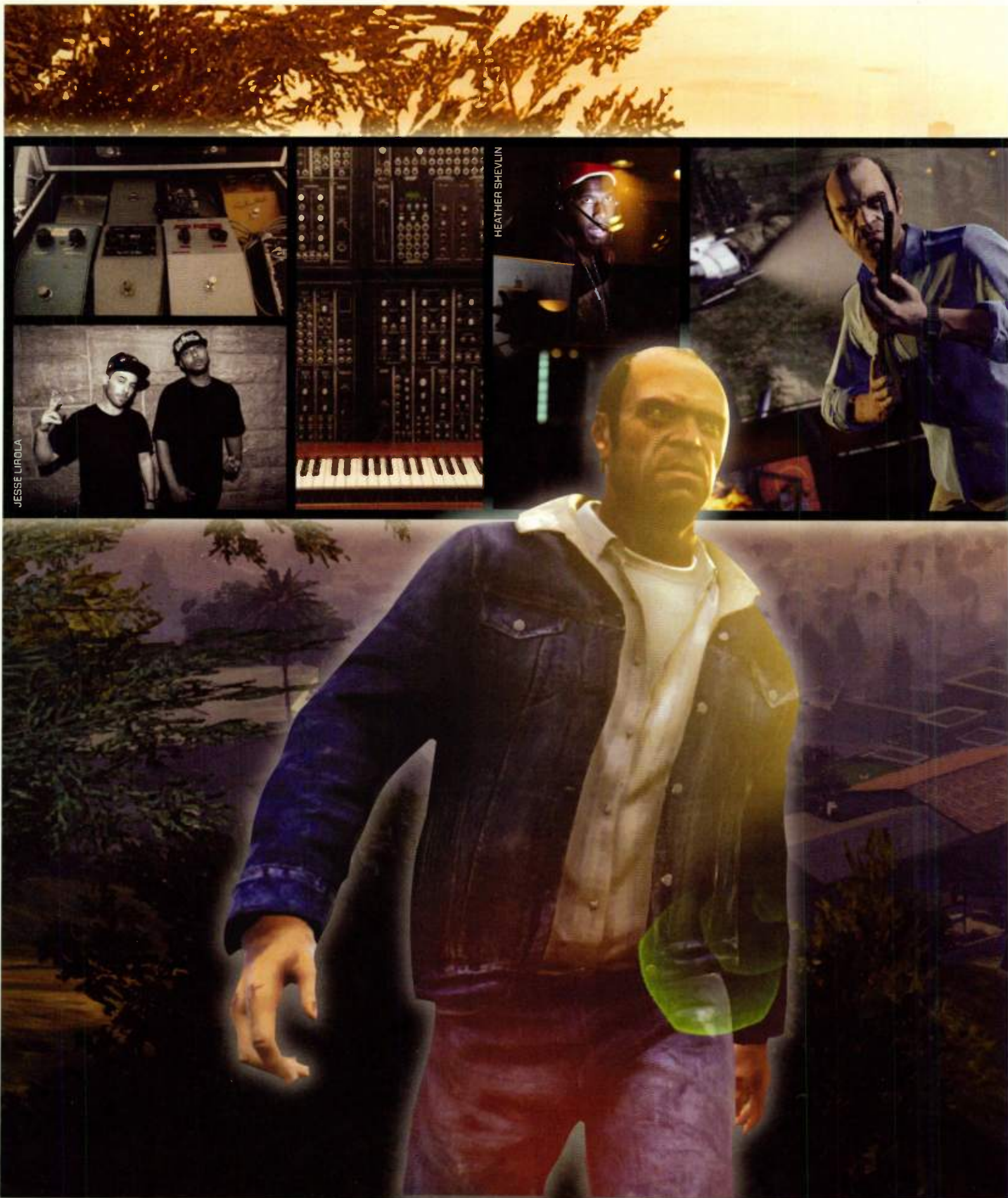
With so many features and such a big sound, the Atlantis would be a perfect starter module for someone breaking into modular synthesis for the first time, while the variety of patch points makes it a suitable companion piece in any system. At 40HP wide, there is plenty of room left over for other modules in the typical rack, and the circuit boards are shallow enough that the Atlantis will fit into a skiff or other horizontal case.

Whether you want a synth for recording, playing live, or both, it'll be hard to find another fully analog module that sounds this good and provides as much functionality in such a small space. ■

SPLITFIRE

2013

HANS ZIMMER
PERCUSSION



JESSE UROLA

HEATHER SHEVLIN



grand theft auto V



MUSIC PRODUCTION ON AN EPIC SCALE: HOW THREE INTERACTIVE SCORES, 241 TRACKS, AND 17 RADIO STATIONS CAME TOGETHER IN ONE BLOCKBUSTER GAME

BY LILY MOAYERI

SMOKY AND shimmering, pools in every backyard, entire city blocks of tattoo shops, palm trees lining wide expanses of boulevards, windy canyons around each corner, vistas of endless cityscapes, and a sky that never quite gets dark—this is Los Santos, the setting for *Grand Theft Auto V*.

The latest installment in the blockbuster *Grand Theft Auto* franchise creates its environment in Rockstar Games' interpretation of Los Angeles County. In *Grand Theft Auto V*—which grossed one billion dollars within three days of its release and ultimately became the biggest-selling entertainment product of 2013—there are three protagonists: Michael De Santa, a successful one-time bank robber pushed to come out of retirement; Franklin Clinton, an up-and-coming criminal who has been taken under De Santa's wing; and Trevor Philips, De

Santa's former partner in crime. Players can switch between the three characters during the course of any of the missions in the game.

In *Grand Theft Auto V*, music is at the forefront of the user experience; character missions feature an interactive score that changes each time the game is played, and the game's soundtrack features hundreds of tracks that can be played on a range of radio stations in cars acquired during the game.

Music for *GTA V* is packaged on three discs. *Volume I: Original Music* features tracks that carefully culled artists have created for the game; these play on the radio stations. *Volume II: The Score* is created by Tangerine Dream, composer Woody Jackson, and hip-hop artists/producers The Alchemist and Oh No, and arranged by DJ Shadow. *Volume III: The Soundtrack* features music licensed for the radio stations.

Volume I: Original Music *GTA V* features 17 radio stations: two talk stations and 15 music stations. Various celebrities appear as DJs: Pam Grier hosts the low-rider '60s/'70s funk-and-soul station The Lowdown 91.1, under the guise Mama G. Grier reads a script co-written by Rockstar co-founder Dan Houser and *GTA* regular Lazlow Jones (who has been writing for the franchise since the introduction of the radio stations in *III*). On Radio Mirror Park, Twin Shadow hosts; he reads Jones' script, but has also created original music for the indie-music station. The same goes for the experimental EDM station FlyLo FM, hosted by Flying Lotus. Then there's West Coast Classics, the '80s and '90s West Coast rap station hosted by the legendary DJ Pooh, where Pooh—a veteran *GTA* entity since the San Andreas installation where he was co-writer and co-producer—also serves as a creative



consultant and a writer for the station. Other station DJs include Soulwax, Lee “Scratch” Perry, Bootsy Collins, real-life radio personality Don Cheto, Kenny Loggins, and Black Flag/Circle Jerks/Off!’s Keith Morris.

Music is programmed to match the locale of each game scene. After five years of game development, including numerous research trips to Los Angeles, the look and feel of the city is captured not just visually but aurally. “The music has to support the city,” says Rockstar’s director of music, Ivan Pavlovich, who also co-founded Chicago house label Guidance Recordings, which provided the music for *Smuggler’s Run* in 2000, the Rise FM station on *GTA III* in 2001, and *Grand Theft Auto: Liberty City Stories* in 2005. “The music connects to the environment; the DJs and hosts do the same. These are people who live here [in Los Angeles], know the scene here, so we want to incorporate them as much as possible, to make it feel authentic to this world we’re creating.”

THE ORIGINAL MUSIC The select artists chosen to contribute original songs for *GTA V* are ones that are not only representative of “Los Santos,” but also ones that Rockstar is fans of and who felt can deliver material that will work for the game.

“[Rockstar] approached me in 2011 to do a track,” says The Chain Gang of 1974’s Kamtin Mohager, whose song “Sleepwalking” is featured on Radio Mirror Park and is used in the official trailer for *GTA V*. “They were secretive at first, wouldn’t tell me what it was for, and were very strict as to how many details they wanted to give out,” he says. “I asked for direction and they said, ‘Just do you.’ When I started working on my new album, *Daydream Forever*, I subconsciously wrote ‘Sleepwalking’ to go with the aesthetic of the game.”

Mohager presented Rockstar the demo for “Sleepwalking,” which was then beefed up by producer Tony Hoffer for *Daydream Forever*. The former leaked—to very little notice, until the game trailer was released, after which things went haywire online as fans found the original demo.

Mohager wasn’t told “Sleepwalking” was going to be the trailer song until a week before it was broadcast. “To be able to present something you’ve created through such a

massive platform is a bit overwhelming,” says Mohager, a committed *GTA* player. “The second you create art and you put it out in the public, it no longer belongs to you. The public has the right to say whatever they want about it and do whatever they want with it. As a human, I have insecurities, but seeing people react positively to ‘Sleepwalking,’ and hearing the song when the game is being played is an incredible feeling.”

VOLUME II: THE SCORE Composers were assigned to each of the game protagonists to create their signature scores. Tangerine Dream’s Edgar Froese created De Santa’s score, Alchemist and Oh No (who worked with Rockstar on *Grand Theft Auto: Chinatown Wars*; Alchemist also contributed an original song for *GTA IV*, “Dirty New Yorker,” with Mobb Deep) for Clinton’s score, and Jackson (who has worked on numerous Rockstar games) created Phillips’ score. But the music heard at any point during the course of the game or on *The*

Score disc is an amalgamation of the composers’ sounds in a true collaboration.

The score kicks in when a mission starts; it is delineated from the radio station music by shifts in action such as getting out of the car and having a conversation with another character. The score reacts to game play throughout the mission: Eight music stems function as tracks within a song; these stems stack upon each other according to action requirements, as well as play on their own. For example, fewer stems play during the initial, stealthy shoot-out of a mission; more play back during the next, bigger shoot-out; and all eight in the final, full-on shoot-out. This way, different music is heard each time. As characters and environments change, the score evolves seamlessly.

“It was really important that the different scores don’t feel disconnected,” says Pavlovich. “We describe each mission in detail to the composer(s). They record music, we go through

THE GEAR BEHIND THE GAME MUSIC

The Alchemist, Oh No, and Woody Jackson share instruments and production tools used to record tracks for *Grand Theft Auto V*.

THE ALCHEMIST

Moog Voyager
Akai MPC 2500 and MPC Renaissance
Ensoniq ASR-10
SPL Transient Designer
Empirical Labs Distressor

OH NO

Apple Macintosh G5
AVID Digi 002 with Pro Tools 9
Open Labs Open Synth Neko
Nord and E-mu synths
Roland 808
Akai MPC 5000
Pro Beats by Dre headphones
Propellerhead Reason 5
Propellerhead Recycle
KRK V8 monitors
Event 20/20 monitors

WOODY JACKSON

1967 UA/API Frank DiMedio console from
Wally Heider, San Francisco
Ampex MM1200 24-track
AVID Pro Tools—no plug-ins

KEYBOARDS (NEW)

Novation Ultranova
Teenage Engineering OP-1

Native Instruments Maschine

KEYBOARDS (OLD)
Electro-Harmonix Mini Synth
1959 Hammond B3
Hohner Clavinet Duo
1969 Fender Rhodes
Roland SH-101
ARP Solina String Ensemble
Minimoog D
Akai MPC4000
E-mu SP-1200
Roland TR-808
RMI Explorer
Farfisa Soundmaker
Memory Moog
Sequential Circuits Pro One
Mellotron M4000D
Orchestron

BASS

1966 Fender P-bass
1966 Fender Mustang Bass
Teisco Bass VI

GUITARS

1963 Fender Stratocaster
1959 Fender Jazzmaster
Travis Bean Artist

it, pull out elements, and place them in the mission. When we find the right moment for them, we go back to the composers and ask them to develop that. Then they're scoring the different movements in the mission with those in mind and start adding layers. We go back and forth a lot. We then start passing everybody's music to each other. It is a complete collaboration, even though they aren't doing it together. They didn't know what was in the game until they played the game."

"Oh No and I were trying to wrap our brains around how this is going to work," says The Alchemist. "Each time you play the game, things are going to happen differently. It wasn't so much about the automation of it, but about creating stems that were interesting. They explained it to us, but we didn't completely understand because there were so many things for us to deliver. It was different from making your own album because as an artist, being stubborn, it's got to go one way or you can't deal with it. It was good to have a task. You just have to deal with it. In the end, it was a trust thing."

Jackson is the bridge between Tangerine Dream's electronics, The Alchemist and Oh No's hip hop, and his own desert rock, putting together a makeshift band of top-notch musicians called The Navin Johnson Memorial Barbeque (a reference to *The Jerk*), featuring Money Mark on Rhodes and Roland SH-101; Joey Waronker on drums; Alfredo Ortiz and Davey Chedwiggen on percussion/drum; Gus Seyffert and Gabe Noel on bass; Zac Rae on Hammond B3, Clavinet, Rhodes, Farfisa Soundmaker, RMI, and Memorymoog; Mike Bolger on Hammond B3; Dan Hastie on Clavinet, Rhodes, and Mimimoog; and himself on guitar. The group recorded onto 2-inch 24-track in Jackson's storied, wholly analog Vox Recording Studios in Los Angeles. Cutting 24 tracks of structured jams, each running between six to eight minutes long, in two days, the resulting material is informed by the early '70s Quincy Jones funk. (Think "Hikky-Burr," the theme song for *The Bill Cosby Show*.)

From these recordings, The Alchemist and Oh No took their samples and choppings. Upon creating their beats, they brought them back to Vox and Jackson's team to record overdubs, including horns, orchestration, bass, and guitar. The music was then sent to Froese for final touches.

Jackson was also the troubleshooter for the three scores; when the hip-hop beats landing intentionally behind the beat sounded off instead of gridded, Froese struggled with the sequencing, because each bar had a slightly different BPM. Jackson had the extraordinary Hammond B3 player Zac Rae play those



The Alchemist sampled Woody Jackson's recordings and overdubbed horns and orchestral parts.



Wavves' Nathan Williams and Stephen Pope record dialog for alternative rock station Vineland Boulevard Radio.

NICOLAS GAZIN

sequences live with the same result that Froese had with his machines.

For his own score, Jackson put together another supergroup called Jaws with Mars with Volta drummer Deantoni Parks, T Bone Burnett keyboardist Keefus Ciancia, Queens of the Stone Age bassist Michael Shuman, Black Keys bassist Gus Seyffert, and himself on guitar. Pulling together ideas on his iPhone while practicing, Jackson quickly wrote and tracked 16 desert-rock-style

songs and had the group play over those as live jams, which they recorded in three days. The result sounded like instrumental songs rather than a score, so Jackson was left to troubleshoot his own creations. To resolve this issue, he first stripped back heavy guitar riffs, bringing bass and drums to the forefront. He then played guitar sequences in the vein of Tangerine Dream, using tempo-synced delays with a Strymon Timeline and a Vox King wah pedal for filter sweeps. Rae



and Palmer added keyboards, and the mix was sent to Froese to complete. Layering Tangerine Dream's sensibilities on top of the other styles pulled everything together.

SCRIPTING IN ACTION Scripting matches the stems to the moves in the mission. Here, there are two main factors to consider: One: In a mission, how can you make each action feel different and also focus on everything happening between the big moments, making it all feel cinematic? Two: With players performing at various speeds and skill levels, how to keep the music from becoming tedious and interfering?

"There are so many different possibilities in an interactive game," says Pavlovich. "Music has an effect, in movies and in video games. If you don't notice it, but you feel it, it's accomplished its job. When you focus on the music too much, it detracts from the game play. This is where we

work with the team at Rockstar North in scripting and scripting again to find a balance. If we start getting sick of the music, we have to re-script and change the music, bring certain elements down and off to the side. For people who have a tough time in the game, the music can really throw you out. Last thing I want to be responsible for is somebody not playing the game."

UNDER DJ SHADOW The methods for mixing stems for the game and *The Score* disc

are completely different: In the game, there is no beginning, middle, end, or structure to the stems. For *The Score*, DJ Shadow created songs out of each mission's stems.

Before Shadow was handed over the Pro Tools files from each composer, Jackson went through all of the material—a combined six terrabytes worth—and filtered out redundancies, labeled sounds, and organized files; this portion of the process took three times longer than the 10 or so days Shadow had to complete his



Woody Jackson assembled an all-star band to record desert rock for *GTA V*.



Tyler the Creator records tracks for *GTA V*.

part. Shadow was given each mission's eight stems, comprising five to six elements, as well as additional material that didn't make it into the game, titled either with the mission's name or a quote from the mission; he was given free license to work without any consideration for how the stems fit into the game.

"Shadow is a crate-digger, a beat-miner," says Pavlovich. "We liked the idea of taking someone who's not involved, completely unaware of how the music works in the game, and asking him to find samples in our stems and create a song out of them—without adding any production. Some of the songs feel really close to what's in the game, but some of them—the ones we appreciated the most—were the ones in which he dug something out and made the focus the part of the song that we would never have thought of. The elements he pulled out made it exciting to us again, especially after we had spent so much time with it."

VOLUME III: THE SOUNDTRACK

There are 241 songs at the player's disposal on the 17 radio stations of *GTA V*. Just like on a terrestrial or satellite station in the real world, the dialog on the stations includes jokes and references to the virtual world. There are commercials for brands created for the game.

Plus, the stations broadcast news that relates to the progression of the game, depending on a player's progress in the storyline, changing as the player moves through the missions. The radio plays on V's own 24-hour clock, so at any point, players can get back into a car, turn on the radio, and be mid-song, or mid-commercial, or mid-dialog, or mid-news, or at a station ID. The Punk Rock station, Channel X, features 12 characteristically brief punk songs clocking in at far under an hour, total. Elsewhere there could be a 22-song station without a time limit.

For stations such as Flying Lotus' FlyLo FM, the majority of the music is his own and he had input on the tracklisting. Tracks that aren't Flying Lotus' material are chosen by the Rockstar team; still, the balance of the tracks on FlyLo FM flows with his own music.

"It's such an open time to share what you like that I don't believe people judge you based on your playlist," says Flying Lotus, a.k.a. Steven Ellison. "People might try to box themselves to be part of a smaller group. But in this Internet age, you can't be separate. We're all in it together—whether you like it or not. I almost wish there was one station of all random music that was more personality-based, not genre-specific. We're living in

genre-less times where everybody listens to everything. Nobody's into just one thing."

Reading the script Jones and Houser wrote for him marked Ellison's first time doing voiceover. He portrays a stereotyped version of himself: a snotty, self-righteous, self-obsessed, indie musician who hates the mainstream—which may be how the public perceives him, but not what he is at all.

"At first, I thought I was furthering the stereotype. Then I thought, it's always good to laugh at yourself and your peers," says Ellison. "It wasn't the easiest or the hardest thing, but it was a good time, and [Jones] is a really funny dude and such a nice guy."

"It's about picking the right people—not because they're big names, but because they are talented and you have trust in them and faith that they're going to do right by the project," says Pavlovich. "My respect for the composers, for Shadow, for the artists is beyond. To know what the expectations are before starting and being very clear on everything, once you set up these understandings, the working relationship is incredible." ■

Lily Moayeri is based in Los Angeles. Visit her website at pictures-of-lily.com.



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BY TONY WARE

PHOTOS BY STEVE GULLICK

Mogwai

HORROR FLICKS and modular synths influence the increasingly electronic, melodically complex *Rave Tapes*

SPEAK TO any member of Scottish post-rock quintet Mogwai, or the

band's producer, Paul Savage, and they will admit that there were periods that were total horror shows while developing the band's eighth studio album, *Rave Tapes* (Sub Pop).

It wasn't preproduction, tracking, mixing, or even mastering that caused feelings of anxiety or dissonance. Rather, a shared appreciation for the works of John Carpenter, Stanley Kubrick, David Cronenberg, and Dario Argento, among others, as well as the exploration of methodical, roiling buzz from modular synth patterns, bled naturally into eerie, unsettled tonality of the recordings.

Crafted during a period of unflagging activity for the band—in 2012, Mogwai scored the Canal+ French zombie TV series *Les Revenants* and toured performing the soundtrack to the documentary *Zidane: A 21st Century Portrait*—*Rave Tapes* offered its challenges, but nothing that had the band screaming bloody murder.

The band, commonly known for guitar-led dynamics, approached the 10-track, 50-minute *Rave Tapes* with an increased penchant for both minimalism and melody. Demoing separately, then getting together for two months to flesh out the templates, the members of Mogwai allowed a love of detuning, wonky pitch fluctuations, some B-movie nights, and





years of mutual trust to introduce new qualities hard not to describe as “filmic,” especially in light of the band’s acknowledged proclivity for niche film scores.

“I wouldn’t say the entire album is influenced by horror film soundtracks, but *Death Waltz* [Recording Company, a boutique UK-based label] has been releasing the John Carpenter scores on vinyl and most of the band has them,” explains Mogwai keyboardist Barry Burns by phone from his home in Berlin.

“We didn’t set out to recall anyone’s signatures; we’re just all fans of the sound of wavy synthesizer tones from those types of movies, the kind of sounds that can make you think they’re coming from a VHS tape with bad tracking. And I live only one mile away from where everyone in Berlin buys their Doepfer [Musikelektronik GmbH Eurorack analog synth components] modules, so when I bought a bunch of modules a few weeks before writing songs for this album, it all came together simultaneously.”

“A bunch” may be putting it lightly. Burns’ matrix included almost two dozen oscillators, envelopes, phasers, waveshapers, reverbs, and interface components from Doepfer, Cvejman, Intellijel Designs, KOMA Elektronik, Kenton, Malekko, XAOC Devices, and Make Noise. “Initially it was like one of those old telephone exchanges, where you unplug cables and plug them back in everywhere and just go at it trial and error,” muses Burns. “I came up with a lot of songs just by working really hard to not make it sound like a celestial fart.”

Often just selecting a BPM, syncing a delay to that tempo, and experimenting, Burns built up the mono synths into chord structures while tracking live through the RME Fireface UC 36-Channel USB Audio Interface into Logic Pro (though he’s recently switched to Pro Tools to make file transfer easier between Berlin and the Castle of Doom, a facility custom-built and maintained by producer Tony Doogan that acts as the band’s primary studio in the heart of Glasgow). Sometimes he’d use a rotary sequencer, while other times he’d record MIDI into the computer and then play it back into the system to free up his hands for patching cables and twisting filter knobs, etc.

Additional hardware included the Analogue Solutions Telemark SEM modular MKI, Roland Juno-60, Roland VP-330 Vocoder Plus, Philips Philicorda organ, Muse Research Receptor 2, and an Edirol PCR-800 MIDI Keyboard, while in-the-box synths and processing included the AAS Ultra Analog VA-2, Native Instruments Kontakt 5

and Guitar Rig 5, all the OhmForce plugins, plus iZotope Ozone and Trash. Sketches compiled, Burns sent the demos to the other band members.

“I grew up with a lot of music made with modular synths,” reflects Mogwai guitarist/vocalist Stuart Braithwaite a few days later by phone from the band’s ancestral home of Glasgow. “To be honest, one of my first-ever ‘psychedelic’ experiences was hearing [Delia Derbyshire’s] ‘Doctor Who’ theme tune when I was anesthetized as a child when I had my adenoids out, so that kind of sound must have been something I liked, as I remember getting the gas then seeing fractals and hearing that throbbing soundtrack.”

“We didn’t set out to recall anyone’s signatures; we’re just all fans of the sound of wavy synthesizer tones from those types of movies, the kind of sounds that can make you think they’re coming from a VHS tape with bad tracking.”

—BARRY BURNS

“And as I got older, a lot of the music and soundtracks I like reflect that, so I was very happy when Barry got a modular synthesizer setup,” Braithwaite continues. “It looks too complicated for me to play with, so I let him get on with it and I experimented along with it.”

The band—which includes bassist Dominic Aitchison, drummer Martin Bulloch, and guitarist John Cummings alongside Braithwaite and Burns—has always followed a pattern of writing separately, then bringing together ideas and relearning how to play around one another’s motifs. The injection of modular synths into the mix, however, really pushed each member to reconfigure his approach to writing and recording.

For example, Aitchison put aside his bass on several songs for his first set of keys: a

Novation Bass Station II (noticeably burbling and growling on the songs “Remurdered” and “Repelish”). To avoid frequency competition, he played up on the neck, swathed in reverb, for a sound more akin to a baritone guitar (particularly apparent on “Heard About You Last Night”). In addition, synth arrangements informed pulling back on certain elements, including guitars and less-crashy cymbals.

Burns’ demos established parameters for the rest of the band, as several of his home recordings made it in the final mix due to the difficulty of recreating the exact conditions of all the analog settings. Braithwaite, meanwhile, made rough sketches both with a loop pedal and plugged directly into his personal Apple Logic workstation, often using a Fender Telecaster with Native Instruments’ Guitar Rig to simulate a Fender Twin. For the most part, Braithwaite used these sessions merely for rough ideas, as he prefers tone sculpting with hardware to tweaking endlessly with plugins. While a fan of oscillating rains over white-noise drizzles, he finds *Rave Tapes* to be less of a sound design-driven recording in general and that’s a good thing.

“I think it’s a pretty strong record, melodically . . . I think every song has a musical focus,” says Braithwaite. “Maybe at some points we’ve concentrated more on dynamics and sound and epicness, and the melody, you had to listen very hard to appreciate. But melody was really brought to the forefront on the past two records. I know that there is quite a lot of minimalism on this record, and I’m happy about that. In the past there was a feeling that everyone had to be playing, but over the years we’ve realized we don’t all need to be going at once, and it’s a good thing.”

First drafts “complete,” the band assembled in August 2013 and spent two months, five days a week from 11 A.M. to 7 P.M., at the Castle of Doom with producer Paul Savage (who previously worked with Mogwai on 1997’s *Young Team* and 2011’s *Hardcore Will Never Die, But You Will*). “Unlike the last album, the demos I received at first seemed very loose, which meant there needed to be a lot more creation in the studio,” says Savage. “At moments you had to hold your nerve and hope it would all come together, but I had utter faith in them because they are all incredibly inventive and sympathetic with each other in the way they approach things. The new instrumentation definitely required some head scratching as to how everyone would fit in, but it also gave the album a bit of an edge, not in a sonically abrasive sense but meaning the creativity is very fresh.”

AT: GUITAR CENTER



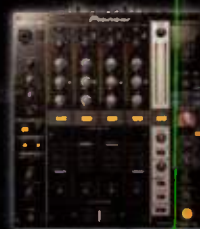
KASKADE

A NEW ALBUM, A NEW TOUR—AND PIONEER POWER

Having started with vinyl, Kaskade had multiple considerations when he moved to the digital world. "I'm very comfortable with the Pioneer gear. I love the 900 Nexus—I've been using this mixer since they introduced it. And I've been using the CDJ—I had the first model—the touch wheel was very different. So I've been [using] these guys for a long time," he says. "I think the reason I chose this equipment is because I learned on [Technics] 1200s. I grew up playing vinyl, so it was very comfortable to have a tactile interface and a tempo control on the side. When [Pioneer] designed these, they were meant to replace the 1200. So when they put the design together, although it looks and feels different than a 1200, it's the closest thing to it."

One of the major advantages of going digital is how much it's simplified life on the road. "Now, this is my preference because it's very quick and easy—I put stuff on an SD card, I load it up, and I know how to move. It's similar to digging through a crate of vinyl and throwing it down," Kaskade says, "[but] this is a lot quicker and easier. I used to have to carry around two 80-pound crates of records. Now it's just a little SD card. I feel very comfortable on this setup."

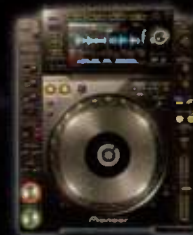
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Mogwai (from left to right)—John Cummings, Barry Burns, Stuart Braithwaite, Dominic Aitchison, and Martin Bulloch.

The Mogwai constituents inevitably come together into a collective vision, a series of twisted and “correct” patterns linked like a story, whether by timecode or click track. However, the process was far from linear. Coaxing alternate approaches and balancing that minimalism-to-melody ratio came in waves as various members cycled through the Castle’s gates.

There would be periods where Burns augmented some of his modular parts, recording through Universal Audio 610 tube preamps and 1176LN limiting amplifiers, as well as an Avalon VT-737sp tube preamp and/or Chandler Ltd. Germanium Preamp/DI. “He’d give me one channel at a time of incredible synth and I’d capture it as best I could, though often we’d use the original stereo file when we couldn’t replicate all the physical and digital manipulation he’d done,” says Savage. “If an arrangement went through tempo changes, though, he’d use MIDI and soft synths to make fluid changes.”

Following the top-tier converters, the synths routed through a Lexicon PCM 42 rackmount digital delay. “When there’s something in mono and I want a little width, I

just send it to that while tracking with a little bit of modulation delay, panning it to the other side, and it widens it out,” reveals Savage. “And it saturates in a nice way, while almost acting as a compressor as well.”

Guitars would most often be tracked with a Shure SM57 dynamic, a Coles ribbon mic, or a combination of the two, running through an API Lunchbox with 512c mic/line preamps in it, as well as either an Empirical Labs Distressor or FATS0 (Full Analog Tape Simulator and Optimizer) to take a couple dB off peaks to maintain a healthy, uniform level and catch problematic frequencies. While the tone of the songs dictated that fundamental parts wouldn’t be massive explosions of noise, there was still plenty of amp/EFX experimentation and compensation.

The FATS0 was also used to soften up percussion. “Sometimes, trying to get the drums just right, I’m a victim of my own style of working,” says Savage. “I want the drums to sound as powerful as they can be, but you can end up with rogue frequencies if you really squash something, so pings of cymbals and hi-hats being caught by the FATS0 was quite handy.”

On the flip side, Savage also worked to

create *additional* response. “The [Castle of Doom] live room is quite different from my room [where Mogwai tracked the *Hardcore* album]; it’s pretty dead as far as the space,” he explains. “So to get a sense of space that isn’t too processed, I had to spend time trying stuff out to get the room more atmospheric. To get a little more life in it, we brought in things like sheets of glass, trying to get the opposite of what a lot of people do and get *more* reflections. I’d also put mics in places like under the piano, distorting them a bit, and I used a lot of that PCM 42 on a crunched room mic plus some Thermionic Culture Culture [valve enhancer] for kick and snare.”

While the songwriting period saw a definite influx of horror film influences, production at times felt like it took prompts from legendary German producer Conny Plank (Kraftwerk, Brian Eno, Neu!, Eurythmics), name-checked by Braithwaite and Savage as a favorite. “I think those records have a really timeless sound, because the production is very unfussy and doesn’t get in the way of the music,” says Braithwaite.

Savage agrees, adding that he appreciates the way drums in those recordings would be

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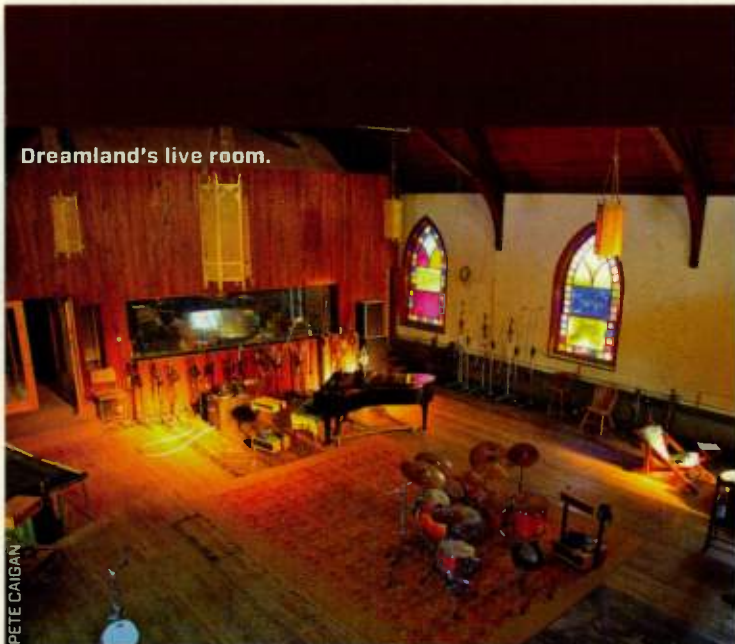
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Dreamland's live room.



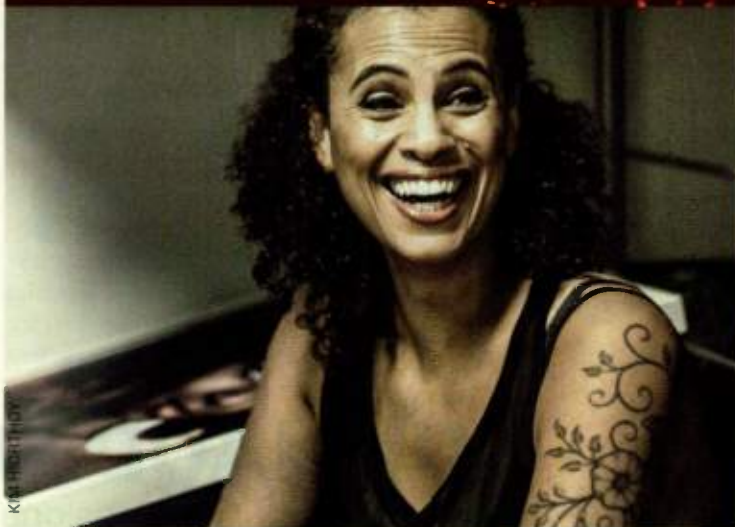
PETE CAIGAN

Engineer Adam Armstrong.



PETE CAIGAN

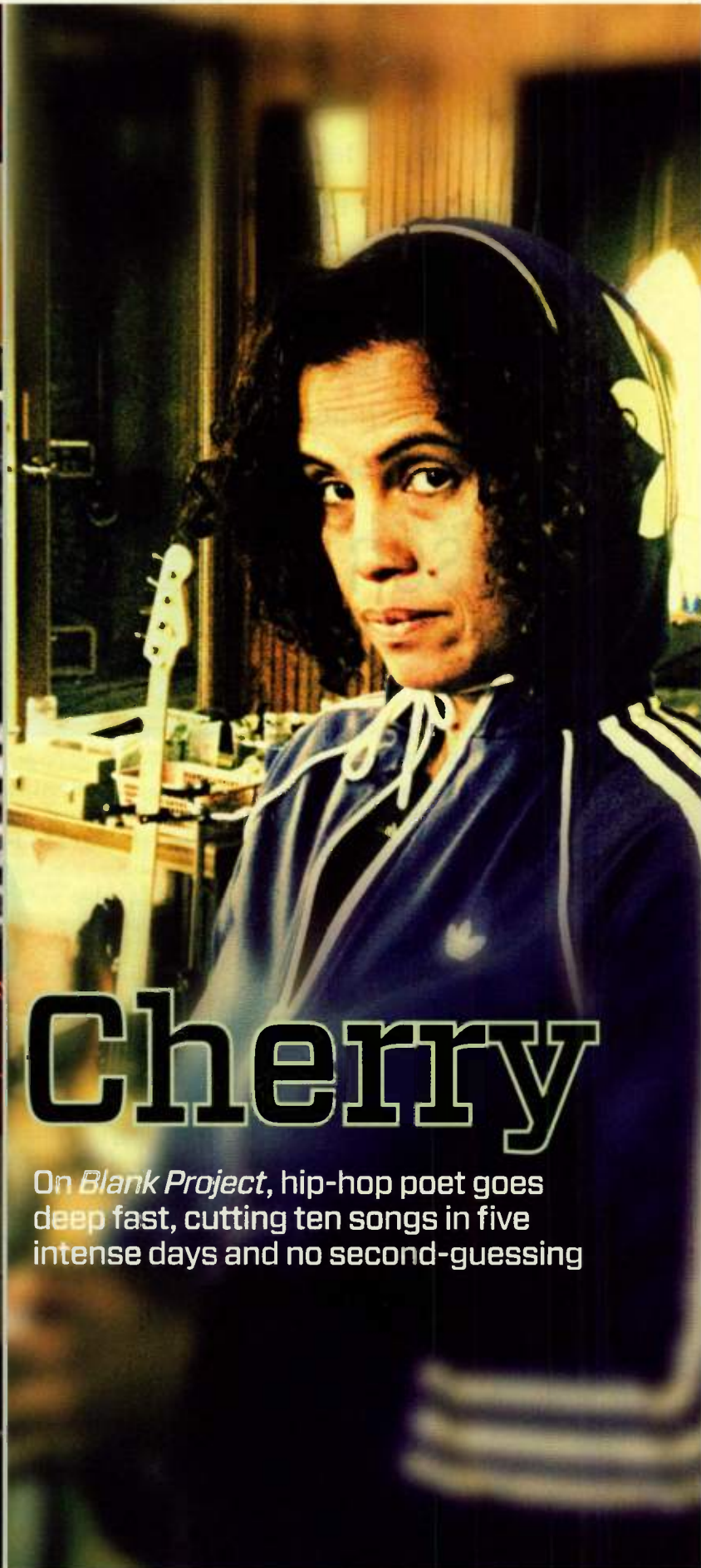
Neneh



KIM HODGSON

Cherry

On *Blank Project*, hip-hop poet goes deep fast, cutting ten songs in five intense days and no second-guessing



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tracked with spring reverbs or tape delays, using contrasting spatial elements to allow them to evolve with their own sense of controlled chaos. Committing to sculping tones in the hardware realm remains of paramount importance to Mogwai, as each processing decision informs how the next part is played.

“Over the past few years, I’ve stopped doing that thing they tell you at engineering school where you should be neutral and safe and don’t put stuff on things because you might want options in the mixing stage,” reinforces Savage. “I don’t want a completely blank, characterless recording, and it makes it easier for mixing because I’ll try to set up immediately after a tracking situation when the sound coming out of the speakers is quite a fair representation of the direction of the song. So when anyone puts something else down, it’s all good; the bass is tight, the guitars sound like they re-recorded with noise and effects, etc. These things all begin to almost mix themselves before the mix, as people have a reaction to the sound of the record before it’s mixed. You don’t have to explain that something is a guide but it won’t sound the same later; people just know the sound and frequencies they have to work with from the beginning.”

The band’s admiration of Plank was

strengthened through their love of the music of German experimental rock band Can, which led to them auditioning a Sennheiser MD441 for brief vocals (as used at one point by Can’s Damo Suzuki). Additional mics included an AKG C28 with a C12 capsule and an AKG 414. Their appreciation for analog techniques is also deeply seated.

“I would keep every track as much an analog tune as possible while using a digital workstation,” says Savage. “I’d sum it in the desk and mix it on the console as much as possible. But some things make sense in Pro Tools, as you have an abundance of plug-ins when you, say, run out of outboard compression. I just prefer mixing in a classic way where you’re at the board dealing with what’s in front of you instead of sitting in front of a screen making things sound different ways, when you’re supposed to be mixing.”

The board in question was the Euphonix CS2000, a digitally controlled analog console, with powerful recall capabilities. Whenever possible Savage would rely on board EQs, while using a Crane Song ibis analog equalizer and API 2500 stereo compressor on the master bus to finalize the mix. Not relying on Pro Tools meant factoring in a bit more time if a few dB needed to be shaved away before a reprint, but the end result maintained nery impact.

“To get a little more life in [the room], we brought in things like sheets of glass, trying to get the opposite of what a lot of people do and get *more* reflections.”

—PAUL SAVAGE

One hard-learned lesson for Savage during the mixdown came when one song just failed to sound dynamic until he pushed down a fader of Burns’ low-mid synths. “It had so much content outside what we could hear, it was kicking off the compressor on the master bus and throwing it into the red and taking it back too much,” says Savage. “The modular didn’t have the boundaries other keyboards do so there was this incredible low end that wasn’t registering, but that caused these problems, so I had to throw on a filter surprisingly high to compensate. You couldn’t even hear the difference, but it helped curb the extremities that were making the compressor absolutely crazy. After that, I had to make sure I based all my gain reduction on what I was hearing and what I wasn’t, so I’d bring down the synths halfway to test for radical differences.”

Embodying the slowly compounding, simple-yet-powerful refrains of a fine horror flick, *Rave Tapes* shows Mogwai to be ferocious from new angles. ■

Tony Ware is a Washington, D.C.-based writer, editor, and big fan of John Carpenter’s They Live. When not writing about studio sessions, he puts on his special sunglasses and combats frequency interference.



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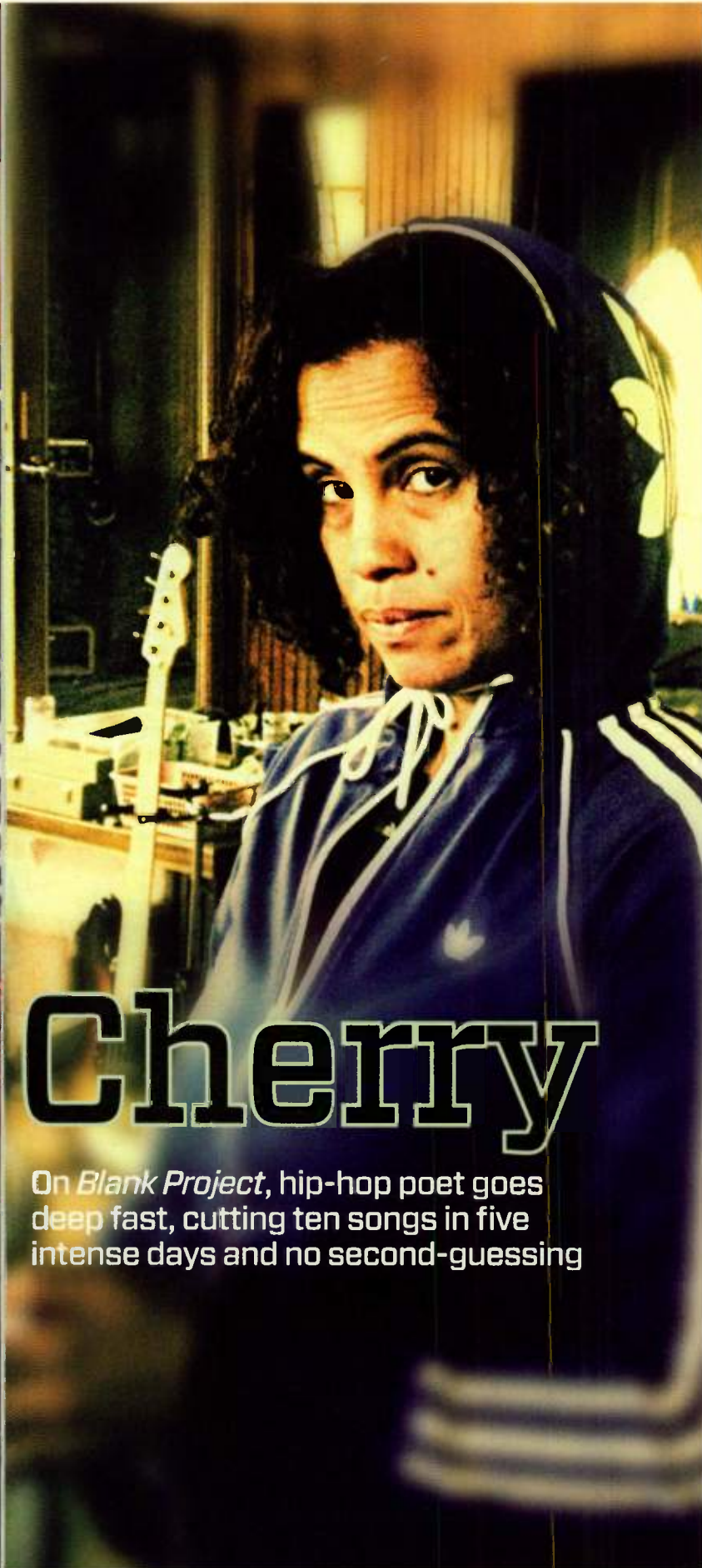
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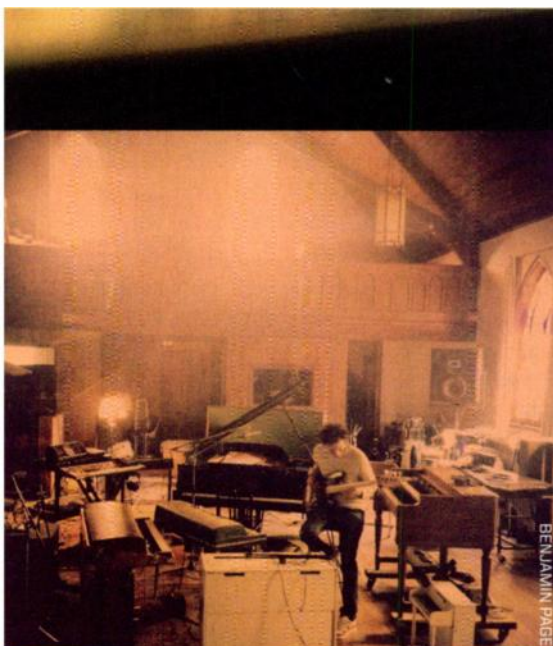
Cherry

On *Blank Project*, hip-hop poet goes deep fast, cutting ten songs in five intense days and no second-guessing



KEN ROBERTSON





BENJAMIN PAGE



BENJAMIN PAGE

BY KEN MICALLEF

WHAT IF you had a nervous breakdown and instead of hiding out, you bared your ravaged psyche for the world to see? An inventive artist perpetually fired by exploration and soul, Neneh Cherry documents her recent highs and serious lows on *Blank Project* (Smalltown Supersound). Produced by Kieran “Four Tet” Hebden, and performed by his protégés techno drum and keyboard duo RocketNumberNine, with songwriting collaborators Neneh Cherry, “Cam” McVey (Portishead, All Saints), and Paul Simm (Amy Winehouse, Tom Jones), *The Blank Project* reveals a troubled beat poetess atop a grungy techno duo channeling Sun Ra.

Neneh Cherry’s enviable track record: the global hip-hop smash, “Buffalo Stance,” her chart topping 1989 debut *Raw Like Sushi*, further hit singles “Man Child,” “Inna City Mama,” “7 Seconds,” and her collaborations with Massive Attack, Pulp, Chrissie Hynde, and Eric Clapton positioned her at the top of the game. But rather than follow trends or seek out the glitterati to enhance her career, Cherry maintained a reflective profile, aiming instead for quality and inspiration. But when Cherry’s mother passed about two years ago, the artist almost went down for the count.

“Neneh basically broke down,” says Cam McVey, who is also Cherry’s husband. “The entire record is about her breaking down then coming out of the breakdown. So to have music that felt too correct made me want to puke. Having Four Tet add his judgment—he has a razor sharp mind, so he kept pulling things out and stripping it down even more—was invaluable. He didn’t add anything; he was always taking away. That was great.”

Cherry’s involvement with Nordic out-jazz troupers The Thing on 2012’s *The Cherry Thing*, and the lasting influence of her stepfather, trumpeter Don Cherry, are also apparent on *The Blank Project*, which sometimes sounds like a free jazz/techno whirlwind married to Cherry’s own post-punk band, Rip Rig & Panic. Songs that sound like a beat poet chanting over exotic rhythms (“Across the Water”), Nina Simone rapping over distorted techno (“Blank Project”), a cooing seductress nailing tribal Latin (“Naked”), a Four Tet-inspired robo-samba

(“Cynical”), and a journey to the dreadzone (“Weightless”) conspire to create an album that is frankly emotional, bruised, frantic, blunt, surreal, and ultimately victorious.

“The constraint was that we only had five days in the studio and they left with ten mixes,” reports engineer Adam Armstrong. “Two songs a day, recorded and mixed, is pretty unusual. We’d record with the three musicians in the room, do quick overdubs, then mix it.”

Cherry, McVey, Four Tet, and RocketNumberNine’s Ben and Tom Page (keyboards and drums respectively) gathered in Woodstock, NY, at Dreamland Recording Studios, operated by former studio drummer extraordinaire Jerry Marotta (Peter Gabriel). A converted church with vaulted ceilings and wooden floors, Dreamland’s live room is large, with the control room on the former altar. The musicians set up in a corner, 15 feet apart and forming a triangle with minimal isolation. Under Four Tet’s guidance (or insistence) the trio cut everything live, in one or two takes.

“I don’t think she realized at first that the first vocals were the final vocals,” Armstrong says. “But she listened back and realized it was okay. Most sessions it would never work, but with Neneh she can nail it and it’s a real performance.”

“Sometimes I get the best vocal when I’m rehearsing when we’re not recording,” Neneh Cherry explains from a Manhattan coffee shop. “I’m not so self-aware then. There is that very weird thing where you know you’re recording and your desire of what it can be gets in the way of the natural process of just feeling the lyrics and the music. Sometimes I can be my own worst enemy, I pick everything apart.

“The thing that makes one take better than another is a kind of professionalism,” she adds, her hands animating her language, “which comes after doing something for a long time. But then there’s that thing that you don’t own, that thing that just happens, and you can’t plan for that to happen.”

Four Tet and Armstrong used three vocal setups at Dreamland. One included a Neumann U47 through a Neve 1073 with “very little compression.” Another was a Beyer M-88, and “we also did a few overdubs where Neneh was

singing into an old green harmonica bullet mic through a Marshall amp,” Armstrong says. “Instead of putting distortion on her vocals, we wanted to record the sounds upfront so she could vibe off of the effect. We put a bullet mic through a Marshall 10-inch amp and a Neumann U87 on the amp. There are these great moments where she has a rap and we recorded it like that.”

For hardware vocal effects, Armstrong and Four Tet used Dreamland’s EMT 140 plate reverb, Eventide H3000, Yamaha REV7, and Lexicon PCM 42, “all on sends, mostly for vocals but we’d change it up for different things,” Armstrong explains. “Sometimes we would have one effect on the left speaker and a different effect on the right speaker and balance between them. That gives a different depth to the effect. It puts a vocal into a unique space. Maybe a plate on one side, and a digital hall on the other side. They don’t sound incredibly different, so you wouldn’t necessarily notice it. It just gives you different depths to play with.”

When recording demos with McVey and Simm, using her trusty Casio PT-40 to carve out melodies, Cherry’s vocal chain consisted of an old AKG “number 99 in a series of 100” microphone purchased from the BBC, according to McVey. “It’s gone up more in value than our house,” he laughs.

“When Cam and I and Paul Simm were writing, I used the AKG handheld mic,” Cherry explains. “That was a really good way to be less self-conscious. As we had an idea I would sing straight into Paul’s laptop. It let me be more raucous. But I used a mic on a stand at Dreamland with headphones. It was cool having the depth you can get in the cans. If you’re using a handheld mic in the studio, you can’t have the sound up too loud because of feedback, so you are guessing in a way.”

After the group presented finalized demos to Four Tet, his method was to record fast, with minimal miking, using Waves TrueVerb, Digidesign DigiRack Pitch Shift, and SoundToys Decapitator as vocal plug-ins. *The Blank Project* sounds very loose, so loose the time becomes bombastically elastic. Pro Tools ran with no click through an API Discrete 48x48 Series console (one of only four made); effects ran live concurrent with RocketNumberNine’s Kaoss Pad-Nord Lead-Roland V Synth/triggers/reamped sound constructions.

Four Tet’s personality looms large in *The Blank Project*—sonically, where his trademark psychedelic loops seem purpose-programmed, and in his ability to suss out exactly what Neneh Cherry needed from a producer as soundscape conjurer and emotional ally.

“Four Tet spoke very openly and knew what he was looking for instead of being vague,” Armstrong recalls. “He went for as little miking as possible. He won’t do 100 vocal takes comping between each one. He wants to get that first take energy and let the take freely exist in the moment. He would work off a quick impulse, attack it, then not second-guess it. The way he likes to use plug-ins is great too. He would say ‘use this preset, then take that knob and move it up there and that knob to there.’ It was quick and easy and minimal, and no second-guessing at all.”

Sometimes the group butted his heads with Four Tet, who butted right back. “We did a deal for ten songs, but on the last day Kieran said, ‘I’m finished,’” McVey recalls. “I don’t want to do the tenth song.’ ‘No way, man, you’re on for ten,’ I said. That was ‘Across the Water.’ So, I did the arrangement while he remixed the first track, which he wasn’t happy with. RocketNumberNine

“Making mistakes is essential. We’re all scared and that’s healthy. Being fearless is a dangerous state of mind. But don’t be scared of taking risks and being experimental.”

—NENEH CHERRY

and Neneh recorded ‘Across the Water’ in one take, and when they came into the control room Kieran said to the keyboard player, ‘I hope you didn’t enjoy playing that ‘cause I didn’t record you. I didn’t like what you were playing.’ That’s why ‘Across the Water’ is just drums and voice.”

Armstrong recorded Ben Page’s Nord Lead-Roland V Synth-Kaoss Pad rig both direct and through Vox and Marshall amps. Drummer Tom Page played a vintage Gretsch kit, with triggers on his kick and snare, abetted by a pad controlling samples.

“We also sent his samples through an amp,” Armstrong says, “and his drums through a Vox AC 30 amp using a Sennheiser 421. He created additional sounds and probably some sequencing too. It all created different colors.”

Keyboard miking was relatively minimal; drums followed suit. The vintage Gretsch kit,

with its bottom heads removed in true ‘70s fashion, was captured using a Neumann FET 47 on the bass drum (placement changing with the song), and a pair of Beyer M 160s three feet off the snare drum as overheads. A Telefunken ELA-M 251 mostly “lived at the left shoulder of the drummer aimed at snare and hi hat”; an RCA 77 “went everywhere, depending on the drum’s focus in the song, whether it was kick-hat-snare centric, or other songs where the toms were more the focus.

“Four Tet wanted that route,” Armstrong adds. “It’s easier to get things like phase correct plus you get interesting sounds with that palette of microphones. There’s no close snare mic, but the Telefunken ELA-M shoulder mic brought out all we wanted. The ELA-M captures the top end without being harsh. I favored the Schoeps 1073 mic pre’s for the drums. The Schoeps is one of the closest re-creations of the Neve.”

But if there’s one element that glues the pieces of *The Blank Project* together, it’s Neneh Cherry’s riveting lyrics:

“To the fickle let it drop we have power to sustain / like the motor needs the food to bring real power to our brain / Now we bought it back so let me make it plain / since our mother’s gone it always seems to rain / And the booze and the friends and the party never ends / No excuse for behavior that no one can defend / We reflect in the quiet times inside our heads and give thanks for our children tucked up sweetly in their beds / inside their heads.”

“I wanted to be blank,” Cherry says regarding the project title. “The album was a vehicle, an important vehicle that I needed to get in and travel with. I tell people to believe your gut; your gut is quite wise. Trust your instincts and stick by your guns. Making mistakes is essential. We’re all scared and that’s healthy. Being fearless is a dangerous state of mind. But don’t be scared of taking risks and being experimental. It’s not about reinventing yourself but moving forward in your creative process. It’s a journey. The thing that comes with success is the pressure to maintain that success rather than being able to follow your natural course.” ■

Ken Micallef lives in New York City, where he shovels snow off his roof onto unsuspecting tourists, and covers sounds for DownBeat, eMusic.com, Autodesk.com, Postive-Feedback.com, and Modern Drummer magazine.



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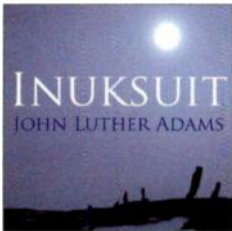
Darkroom

Gravity's Dirty Work

BURNING SHED

The UK-based duo of Michael Bearpark (guitars) and Andrew Ostler (synths) expertly ride the line between luscious, old-school progressive rock and modern ambient electronics. At times reminiscent of early Tangerine Dream, with hints of Fripp and Eno, Darkroom creates clouds of sequenced synths, chewy grooves, and looped phrases to support a variety of acoustic and electric guitar melodies that twist and turn in surprising, occasionally aggressive, ways. Moody and well-orchestrated, this release takes you places.

LAURA PALLANCK



John Luther Adams

Inuksuit

CANTALOUPE

Performed by nine to 99 percussionists banging bottomless-sounding tom toms while issuing mating calls on ram's horns and thunder sheets, *Inuksuit* could be an alternate soundtrack to the "man-apes bludgeoning the enemy tribe" scene in *2001*. The mood eventually chills, the drummers leaving the stage, replaced by chirping birds and reverberating jew's-harps. Included with a stunning DVD depicting the stone cairns or Inuksuit found across the Arctic, beautifully mixed surround sound puts you in the middle of the action.

KEN MICALLEF



Nashville Pussy

Up the Dosage

SPV/STEAMHAMMER

Atlanta quartet Nashville Pussy has been cranking Dixie-fried bar-brawl rock since 1998, redlining through bloodshot, throbbing '70s influences. Compared to 2009's *From Hell to Texas*—which sounded almost like a live soundboard mix, it was so flat—this new album significantly improves depth, width, and clarity. Assisted by Supersuckers bassist Eddie Spaghetti and producer Rick Beato, Nashville Pussy has cut in extra grease and grind to these 13 arrangements, railing through sleazy, sweltering boogie.

TONY WARE



Dirk Powell

Walking Through Clay

SUGAR HILL

Multi-instrumentalist Dirk Powell is a musician's musician—a player who roots icons like Steve Earle and T Bone Burnett want on their projects. Powell's fourth solo album showcases his versatility, as NOLA-style dirges sit alongside zydeco accordions, crunchy electric blues guitar solos, mountain music, and Powell's virtuosic banjo playing. With Powell's plain-speaking, unglamorous but tuneful vocal style, these songs have enough modern edge to find a home with alt-rock lovers as easily as with Americana fans.

BARBARA SCHULTZ



Sharon Jones & The Dap-Kings

Give The People What They Want

DAPTONE

One of the best songs on Sharon Jones & The Dap-Kings' rollicking fifth album is a "do the funky chicken" styled track, "People Don't Get What They Deserve." In a brief 3:27, the band joyfully embraces the '60s styles of Archie Bell and The Drells, Southern funk kings Chairmen of the Board, and the early Spinners with sheer perfection. The song's popping groove, gospel-good vocals, and Jamerson-worthy bass line never lets up. Neither does the rest of *Give The People*... showing Jones & co. meeting adversity head on and partying like it's 1969.

KEN MICALLEF



Shit Robot

We Got A Love

DFA

Comprising the second full-length from Irish-born, Germany-based DJ/producer Marcus Lambkin, these five- to seven-minute excursions throb with historical reverence and revivalist bliss. Entrenched firmly around 120-125 BPM, Lambkin commands dance music tropes from 1975-1995, including disco-house (robo-funk and cosmic varieties), HiNRG, Chicago jack trax, and deep, dubby piano house. Six guest vocalists glide atop both live and synth bass, pitch-bent synths, and supple arpeggios, plus buoyant leads and floor-filler riffs.

TONY WARE



Lydia Loveless

Somewhere Else

BLOODSHOT

Loveless simply has one of the most powerful, thrilling voices in rock 'n' roll, plus she has abundant songwriting talent, sweetness, and soul. She's got a punk sensibility but she's never insincere. And she's 21. *Somewhere Else* is packed with wall-of-sound guitar-driven arrangements that stand up to the artist's massively impressive vocal instrument. Highlights on this young talent's fourth Bloodshot release include the hard-rocking '80s-esque "To Love Somebody" and the punk-via-the-'60s love song "They Don't Know About Us."

BARBARA SCHULTZ

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Derek Lewis - VP Production for Centric TV - BET Network

"Sometimes I have up to 5 drummers on stage playing at the same time. With the D6, I can get the sonic character of each kick drum, giving me the control I need. With other mics, I normally have to use EQ, but with the Audix D6, this is not an issue. Simply put, the D6 is the one mic that every studio or live engineer needs to have."

**Chris Denogean - Chief Engineer,
The Drum Channel**

"The D6 works perfectly whether the kick has a full head, ported head, or no head with a pillow inside. The D6 gives me just the right amount of bass tone combined with just the right amount of attack, all without EQ."

**Gino Banks - Bollywood session drummer, music
arranger and studio owner**

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**George Petersen - Editor,
Front of House Magazine**

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Roundup

Warped Drive



GEAR

Exotic, repurposed, and just plain twisted sample libraries for virtual instruments

BY MARTY CUTLER

THE COUPLING of synthesizer architecture with sample playback makes any distinction between the two forms of sound creation useless. Modern samplers can re-synthesize, modulate, granulate, and warp sounds beyond recognition, producing timbres you've never heard before, albeit with a hint of something familiar.

This roundup covers recent libraries that represent the advanced state of sampling, encompassing a feature-rich synthesis architecture that is bolstered by powerful scripting and effects.



Big Fish Audio

Zodiac

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BIGFISHAUDIO.COM

You could be forgiven for thinking that most of *Zodiac's* sounds derive from synthesizers. In reality, the sources for the library's unearthly collection of pads, evolving soundscapes, melodic instruments, and percussive timbres come from found sounds, heavily processed musical instruments, recycled audio recordings, and other unusual sources. The result is an adventurous, and often breathtaking gathering of sounds ideally suited for cinematic scoring and ambient compositions.

Native Instruments' Kontakt 5 hosts *Zodiac*, whose weathered, metallic, steampunk-influenced design proffers a modest but useful bunch of sliders for the amp envelope, tuning, reverb amount, delay, and bass and treble controls. A drop-down menu at the center of the user interface lets you select from 15 reverb presets of varying size and character.

Most of the action is in the samples themselves: autoharps, guitars, basses, and pedal-steel guitar are found alongside waterphones, soda cans, metal lampshades, gas cylinders, and tank drums. These are all plucked, bowed, tapped, and struck, yielding sounds that develop over time in ways that few synthesized sounds can. The patches divide into six categories: Pads and Atmospheres, Melodic Instruments, Percussive Instruments, Zodiac Kits, and Experimental-Atonal Instruments. There's some functional overlap between pads and melodic instruments, but every instrument has its own personality, in some cases, evolving radically, over time.

With the exception of a few Velocity crossfades, the programming is relatively simple—no tempo-synced content or effects. The sounds and processing are allowed to speak for themselves, and that's fine (although I suspect there is a bit of subtle scripting behind the scenes, as in the Water Gong melodic instrument, which has a beautiful downward pitch swoop that retains a relatively consistent rate across the keyboard map). In Bowed Acoustic Guitar, the low end sounds like arco bass, but it takes on an undulating, organ-like characteristic when played from the middle to the higher registers. And you will be surprised by the lively orchestral-ensemble qualities of the bowed and processed Dumpster Long Drone.

Big Fish Audio has done a stellar job: There is a wealth of fascinating musical and sonic territory to explore in *Zodiac*.



Output Audio

REV

\$199

OUTPUTSOUNDS.COM

I'll admit to being a bit suspicious when I first heard of a sample library based entirely on reversed sounds. After all, anyone with a computer and a basic set of audio tools can reverse a sample, right? As it turns out, there are many more facets to *REV* beyond sample reversal.

REV works with a different patch hierarchy from most Kontakt instruments. Load one of the four patches, and the main window will offer its own browser, with subdirectories of instruments immediately ready for loading. The four main categories are Instruments, Loops, Rises, and Timed Instruments. All of the Instruments and Timed Instruments folders consist of dual-layer presets, with a pull-down menu of interchangeable samples. The Main page and each layer have their own set of toggle switches, which align with triggered effects arrayed below the sample key maps. You can also assign MIDI Continuous Controllers (CC) to the switches.

Clicking on a Layer's tab exposes a thorough complement of sound-sculpting tools: envelope generators, filter parameters, pitch-modulation parameters, and more. Clicking on a Layer's waveform graphic mutes or enables it, so you can tweak the sound in isolation or in context. In short, it's easy to get comfortable with the instrument simply by poking around, but if you need assistance, a click on the question-mark icon brings up an annotated image of the page you're on, explaining most of what is visible.

The Loops section shows compatible fixed-pitch and tempo-synced, construction-kit-style loops arranged across the upper reaches of the keyboard. Two octaves of key switches in the left hand change pitch, adapting the predominantly tonal loops to chord changes. Each loop in the menu can be a different rhythm, so the potential for polyrhythms is great. At the upper right of the patch header, choose from an ample menu of effects, multiplying the versatility of any loop. Timed instruments are ideal for that reversed, sucked-backward effect, but with a twist: You can synchronize it to tempo, choosing whole, half, or quarter-note timing.

The sonic variety of the presets is impressive, with most of the patches geared toward tonal instruments and percussion, rather than special effects. The character of the sounds runs from smooth, animated, and lyrical to abrasive, startling, and attention getting. Timbres blend well and—despite plenty of sonic animation—allow room for other instruments without upstaging anything. In addition to cinematic applications, *REV* is an excellent collection for contemporary ambient musicians.



Camel Audio | Alchemy *Dream Voices and Water*

\$129

CAMELAUDIO.COM

Camel Audio's Alchemy is a virtual instrument whose focus practically defines the theme of this roundup. Its factory soundset merges virtual analog synthesis with an assortment of instruments ranging from the conventional to a variety of bangs and scrapes. You can re-synthesize samples and play with the harmonic content, apply granular effects, and lots more, all through a ridiculously ample modulation matrix. Add your own samples or choose from a growing library of sounds and patches created by a roster of well-known sound designers. It was difficult to pick a single library, so I chose two—*Dream Voices* (\$59) and *Water* (\$59).

If you are expecting choirs and various permutations thereof, *Dream Voices* won't disappoint. But there is far more here—unusual and exotic phrases; loops consisting of tempo-synced vowels; percussion derived from vocals; improvised utterances. These are worked into arpeggiators, pads, polysynths, and percussion kits—sometimes, several processes at once—thanks to the instrument's four-oscillator architecture, and then woven into a single patch.

The overall scope of *Dream Voices* (and most of Alchemy's libraries) runs from meat-and-potatoes patches to eerie soundscapes. One-Note Chord was one of my favorites: By moving through the remix pads (a matrix of eight squares with different modulation settings that you can mouse through), I morphed from tempo-synced quarter-note arpeggiations to a beautiful lead-synth tone, then into a Weather Report-style vocalese effect, reminiscent of the one used in "Badia."

Water blends synthesizer waveforms with samples from frozen lakes, bathtubs, tidal pools, deep-sea recordings, and hydrophones. In many cases, the samples are edited to create attack transients for tonal patches, often providing an ethereal and sensual quality to the patch. At other times, the sounds loop and sustain, providing the high-end sparkle you'd find in classic digital synths such as the Korg M1, or endowing the patches with atonal, low-frequency atmospherics. Such is the case with the patch DeepCurrents23, which blends a smooth, hollow pad with two water sources and something that sounds like whale songs. Create eerie sweeps with this patch using the mod-wheel-activated comb filter.

Every Alchemy sound library has wonderful examples of audio that is repurposed and stretched beyond its limits. If you own Alchemy or the Alchemy Player, you owe yourself a visit to Camel Audio's website, where you can download a nice representative collection of their libraries.



UVI *Complete Toy Museum*

\$499

UVI.NET

It doesn't have any arpeggiators, processing, or one-finger wonders. Instead, with *Complete Toy Museum*, what you hear is what you get: faithfully reproduced toys in all of their cheesy finery. What you do with them, of course, is up to you.

The complete collection comprises two sets: *Acoustic Toy Museum* and *Electric Toy Museum*. The libraries are compatible with MOTU MachFive3 and BPM, and of course UVI's own workstation.

Acoustic Toys includes folders of toy pianos and keys, tuned percussion, an assortment of toy guitars, music boxes, and assorted gadgets, blown instruments, wind-up and mechanical devices, toy drum kits, and a variety of baby toys, including rattles, bellows-driven animal boxes, and other novelties. Instrument subfolders subdivide into folders from different makes and models—each with several variants. For example, the Toy Guitar folder includes an instrument called Children's Guitar, with Hard, Stereo, and Full versions. The Ancient Automates folder has mechanical bears and monkeys and subfolders of loop menus and special effects. I was pleasantly surprised by the overall sound of the drum kits and some very well-played loops, which are available in REX-file format and can be dragged into MIDI tracks. The Mini Drum Kit patch with a bit of reverb and small-room ambience sounded tremendously funky.

The *Electric Toy Museum* follows pretty much the same folder/subfolder hierarchy as its *Acoustic* companion. It is populated with Stylophones, cheap toy keyboards and samplers such as the Casio SK1, and a small handful of speaking devices, which were fun and hilarious. As realistic as they may be, I was disappointed by some of the toy synths, whose tones I could approximate on almost any synth.

By far, my favorites among the Electric Folder were from the Speech group, which offered phrases, animal sounds, numbers, words, and effects, alongside synthetic drum kits and loops. Add the processing capabilities of the UVI Workstation or MachFive 3, and there's no telling how far you can take these unusual sounds.



Native Instruments

Kinetic Metal

\$99

NATIVE-INSTRUMENTS.COM

It's a little hard to believe that a sample collection of this depth and dimension was created by focusing on a single type of material, but Native Instruments did just that for this Kontakt 5 library. And, they fronted it with one of their most innovative and best-looking interfaces.

Kinetic Metal seamlessly and continuously convolves various types of metal—played and recorded in a variety of ways—with synthetic waveforms. Among many other things, metallic sources derive from a drawbridge, Korean drums, calligraphy equipment, rotary phones, running water in a metal drain, clockworks, typewriters, garbage cans, and current traveling through wire.

Kinetic Metal's design invokes a steampunk-flavored alternate world, with its weathered, wood-and-metal skin peppered with virtual switches, illuminated buttons, and animated gears and levers. This is way more than eye candy, however: the user interface encourages experimentation. The large buttons let you shift between three programming pages—Forge, Motion, and FX.

Most of the activities you'll perform with are on the Forge window. A pair of gears flank the Link and Motion switches, which engage the gears. The left-hand gear indicates modulation between the layers in the patch. On the right, the gear sweeps through effects parameters. With the Motion switch off, drag the Forge gear's position to create a desired timbre, whereas a similar move with the FX gear will provide a fixed effects setting. With the motion switch on, the gears will sweep on their own, animating tones in exciting and often unpredictable ways. With the Link button engaged, the FX gear will follow the lead of the Forge.

The default instrument folder relies on the innate animation of the samples, but the real action lies within the Motion Enabled folder, where the presets animate the gears by virtue of LFOs and recorded motion. The metals scrape, swirl, and sing with harmonics and artifacts. Programming your own motions is a breeze, and the FX window avoids technical terms, instead providing levers to adjust such characteristics as Space, Mix, Spectrals, Modify, and Circulate. Just grab a lever and adjust the effect—it's hard to come up with anything boring. The brilliant design and intriguing sounds make *Kinetic Metal* a must-have.



Sonic Couture

Geosonics

\$149

SONICCOUTURE.COM

In *Geosonics*, Sonic Couture combines its sound-design skills with the work of renowned field recordist Chris Watson to create something altogether different. Imagine Australian outback ambiances that were recorded using contact mics attached to long stretches of vibrating wire, rather than miked in the normal way. Such sounds blend with synth waveforms in a robust and deep editing architecture using NI Kontakt.

Top-level folders are based mostly on environmental categories: Wire (recorded as previously described), Ice and Water, Swamps, Wind, and Original Recording Presets—which are single-oscillator instruments derived solely from the recordings. The latter provides a good starting point for building your own patches, or you can use the full-blown three-oscillator patches for inspiration.

With the exception of the Original Recordings folder, patches comprise a combination of an environmental recording and synthesized sources. Depending on the mode (focused or non-focused, activated by a central Focus button), the environmental samples follow the keyboard to sound more congruent to the pitched samples. Not all of the synthetic samples are static waveforms, either; many of them are endowed with graceful and subtle timbral and melodic motion. With Focus off, the pitched samples are muted and the environmental sounds are sliced and mapped across the keyboard, available for individual or group editing, including envelopes, effects, filter settings, and pitch. The parameters are accessible in either mode.

From the Options window, select the Jammer, which provides a sophisticated arpeggiator/step-sequencer hybrid. Choose from preset scales and patterns or record your own. Try it on patches with moderately slow envelopes to create amazing swirling textures. You can further edit the effects, including chorus, delay phase shifter, compression, saturation, and Spaces, which is a generous batch of reverb and environmental impulse responses, many of them taken from the field recordings.

It's almost impossible for me to select my favorite patches among a collection where just about everything is breathtaking in one way or another. Imbued with imaginative sound design and virtually endless creative possibilities, *Geosonics* is a stunning palette for the ambient musician, film-score composer, or anyone in search of truly unique, unheard sonic territory.



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Dave Smith Instruments Mopho SE

A classic monosynth gets an extended keyboard

BY GEARY YELTON

THE BIG word in electronic music over the past few years has been *analog*. Synth builders have been reaching back to their roots, eschewing modern digital wizardry and assembling instruments the old-fashioned way: with discrete electronic circuits. Perhaps it's an effort to balance out studio environments dominated by software instruments, but synthesizer hardware with an all-along signal path is more desirable than ever.

One of the first synth designers to embrace this analog resurgence was Dave Smith, whose groundbreaking Prophet-5 was the most popular polysynth in the 1970s. In 2008, his company introduced its most affordable analog instrument ever, the tabletop Mopho,

SUMMARY

STRENGTHS Terrific sound and feature set. USB connectivity. Compact, lightweight form factor. Free, downloadable editing software.

LIMITATIONS No effects other than feedback.

\$1,029 MSRP; \$949 street
davesmithinstruments.com



The Mopho SE is the fourth instrument to wear the Mopho moniker. By virtually every measure, except voice count and storage capacity, the monophonic SE is identical to the four-voice Mopho x4, but it sells for about \$350 less.

followed by the Mopho Keyboard in 2010 and the polyphonic Mopho x4 in 2012. The new Mopho SE (Special Edition) draws its entire feature set from the Mopho Keyboard and x4.

Black Is Back The Mopho SE is wrapped in a black steel exterior with buffed wood side panels. In contrast to the Mopho Keyboard's 32 keys, the SE has 44 full-size keys that sense velocity and pressure. Pitch-bend and mod wheels are comfortably positioned on the front panel's left side.

The control panel is studded with 25 knobs that feel reassuringly solid and turn smoothly, along with almost as many buttons and indicator LEDs. Whenever you turn a knob, the 2x16-character LCD reveals the associated parameter and its values. A few knobs serve double duty by means of a Shift button, and four knobs address miscellaneous parameters such as glide rate and oscillator slop. The assignable manual-trigger button (labeled Push It!) performs functions such as running the onboard sequencer and entering tap tempo. Like the tabletop Mopho and Mopho Keyboard, the SE stores 384 user-rewritable programs.

Back-panel connections include mono audio in, stereo audio out, MIDI I/O, and connections for a footswitch and an expression pedal. To boost the voice count, a 5-pin DIN socket lets you link the SE to other synths from Dave Smith Instruments. The power switch is tightly jammed between the USB port (which handles MIDI data) and the connector for the wall-wart power supply.

Two analog oscillators, a white-noise generator, a lowpass filter that switches between two and four poles, and three DADSR generators with Velocity tracking provide essential sound-shaping tools. Each oscillator gives you four waveforms, an independent glide setting, and a square-wave suboscillator. Envelope 3 can be looped and routed to almost 50 modulation destinations, and each of the four LFOs can modulate any destination. You can assign three 16-step sequencer tracks to any modulation destination while a fourth track plays a melody. A feedback effect routes the audio output back through the filter, resulting in distortion and clipping that can get quite extreme.

Wrap This Mopho Up With the Mopho SE, Dave Smith Instruments is slugging it out in the marketplace with Arturia, Korg, and Moog, among others. Although the SE's price is near the high end compared with some competitors, its keyboard supplies more notes than most, and that makes all the difference for many keyboard players.

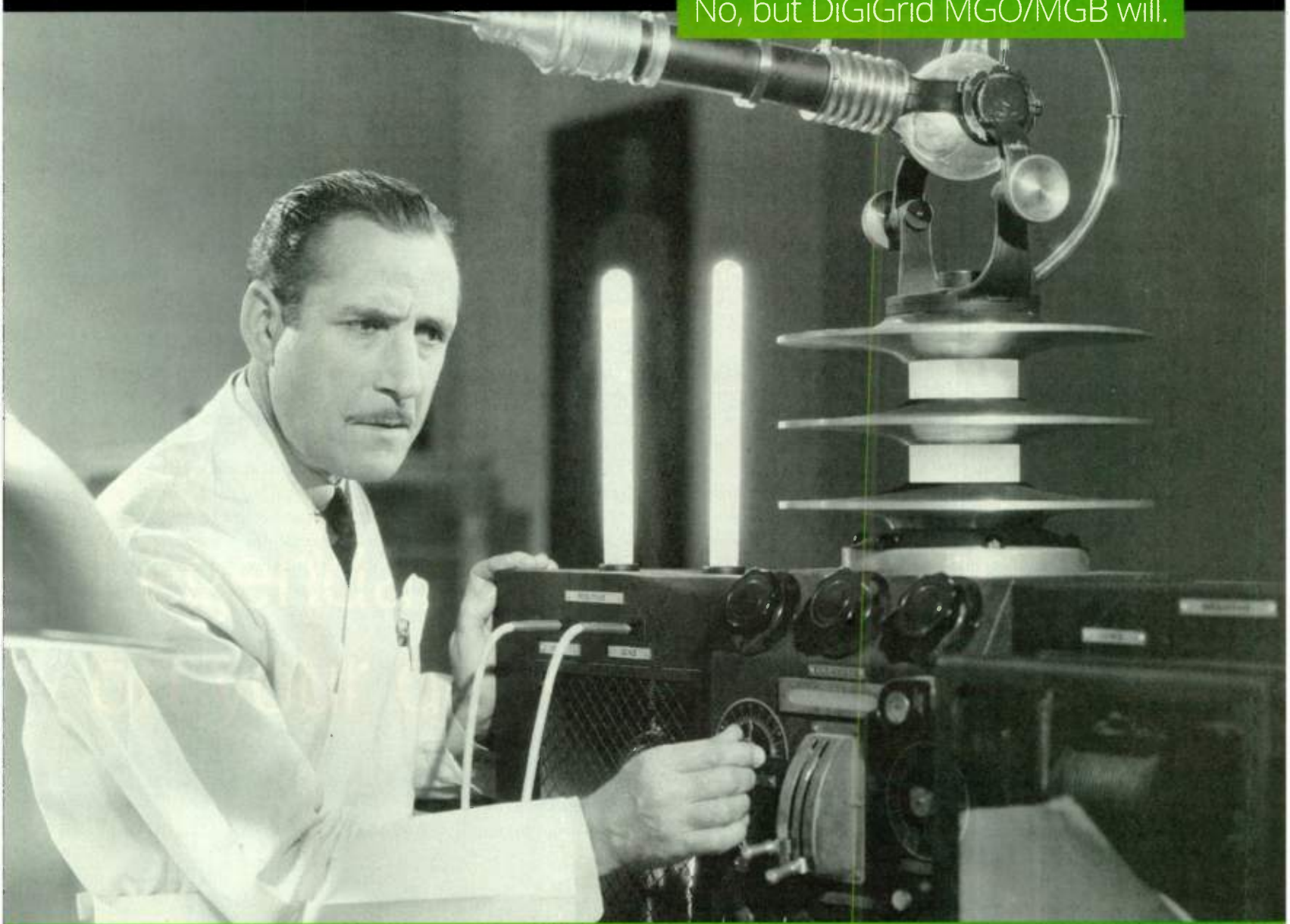
The SE delivers a sound associated with classic synths like the Pro-One and Prophet '08, and its factory patches exemplify exactly what you want in an analog instrument. If you're looking for a versatile analog monosynth with an impressive pedigree, give the Mopho SE a spin. ■

*After reviewing one too many Mophos and Moogerfoogers, Geary Yelton wishes someone would just name their product "Mo****f***r" and be done with it.*



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JBL LSR308 Active Monitors

Imaging and detail
that should cost more,
but don't

BY STEVE LA CERRA

THE JBL 3 Series powered studio monitors are designed to deliver pro performance at an affordable price. The LSR308 is the larger of two monitors in the series, employing a magnetically shielded 8-inch woofer and a 1-inch soft-dome HF driver in a ported cabinet. A 56-watt, Class D amplifier powers each driver, enabling the LSR308 to achieve maximum SPLs exceeding 110dB.

Molded into the LSR308's front panel is JBL's patented Image Control Waveguide. Initially developed for JBL's M2 Master

SUMMARY

STRENGTHS Translates mixes well, excellent stereo imaging, good value for the money.

LIMITATIONS Low-level hiss may be audible under extremely quiet conditions.

**\$325 MSRP/each;
\$249/each street**
www.jblpro.com/3series



Reference Monitor, the Image Control Waveguide was engineered to ensure a broad sweet spot, wide stereo image, and resolution of subtle details—all of which I found to be true. An LED power indicator is recessed into this panel, set between the vertically aligned tweeter and woofer.

On the rear panel you'll find the power switch, XLR, and TRS input jacks, a volume control, and three switches: The recessed switch toggles input sensitivity between +4dBu and -10dBV, while the remaining two switches are HF and LF trim controls with positions for 0, -2, and +2dB. Initially I set these flat. The quick-start guide includes helpful suggestions for placement and for setting the input sensitivity and volume; further information can be obtained from the user guide available from JBL's website.

In the Mix I placed the monitors on Auralex MoPads approximately five feet apart in an equilateral triangle with the mix position. When setting up the LSR308s, I noticed a small amount of hiss emanating from the HF

driver. This was present regardless of the input sensitivity setting, even with my Dangerous Music Monitor ST system disconnected. It was, however, audible only when I had my ear near the tweeter.

Listening on the LSR308s to projects I engineered in the past produced interesting results. I could hear detail in the ambience and depth that I hadn't noticed before, and in general the sound stage extended beyond the width of the speakers. JBL has achieved its goal of an expanded sweet spot: You can listen over a wide angle and still hear consistently without the feeling of "Oh, I have to listen from *here*."

The first mix I created using the LSR308s was a song from singer/songwriter Ernest Buckley's forthcoming CD. I was surprised at how easy it was to create an excellent mix on these monitors, especially since I hadn't tracked this song. I was even more impressed at how well the mix translated to other systems.

The first mix was a bit thick in the low-mids, and over the course of a few days other mixes translated similarly. Changing the LF trim to +2 made me work the low end more carefully, and remixing the song resulted in a tightened, less-congested low-midrange, which made more room for Ernest's vocal and helped define the bass from the kick drum. The bottom end was tight and full, and the overtones on complex instruments like cymbals were reproduced realistically. Initially I was afraid that this might be monitor hype, but the timbres were consistent with what I heard over other playback systems.

Mission Accomplished By providing pro-level playback at a personal-studio price, JBL has clearly achieved its goals with the LSR308. It's an excellent system that makes mixing easier. If you're looking for a new set of monitors, the LSR308 deserves serious consideration. ■

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

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Sonnox Fraunhofer Codec Toolbox

Optimize your mix for data-compressed release formats

BY MICHAEL COOPER

CODEC TOOLBOX is a lite version of the pricier Sonnox Fraunhofer Pro-Codec, but it's no slouch. The Codec Toolbox plug-in lets you audition, in real time, how different codecs will make your mix sound *before* it is rendered (see Figure 1). This removes the guesswork from creating different mixes or masters that are sonically optimized for each data-compressed release format, such as MP3 or iTunes Plus.

Once your mix is tweaked to perfection, use the included Codec Toolbox Manager standalone application to encode your mix and add metadata such as the song title and artist's name. Codec Toolbox Manager can also perform batch processing and *decode* data-compressed files into WAV or AIFF format.

Codec Toolbox and Manager support 32, 44.1, and 48kHz sampling rates and 16-bit audio, and will automatically dither and

SUMMARY

STRENGTHS Realtime auditioning of multiple codecs. Offline encoding and decoding. Batch processing. Automatic level optimization. Writes and edits metadata.

LIMITATIONS Doesn't support sampling rates above 48kHz. Dithers and truncates greater bit depths to 16 bits.

£35 (-\$58 USD) direct, online price
Sonnox.com

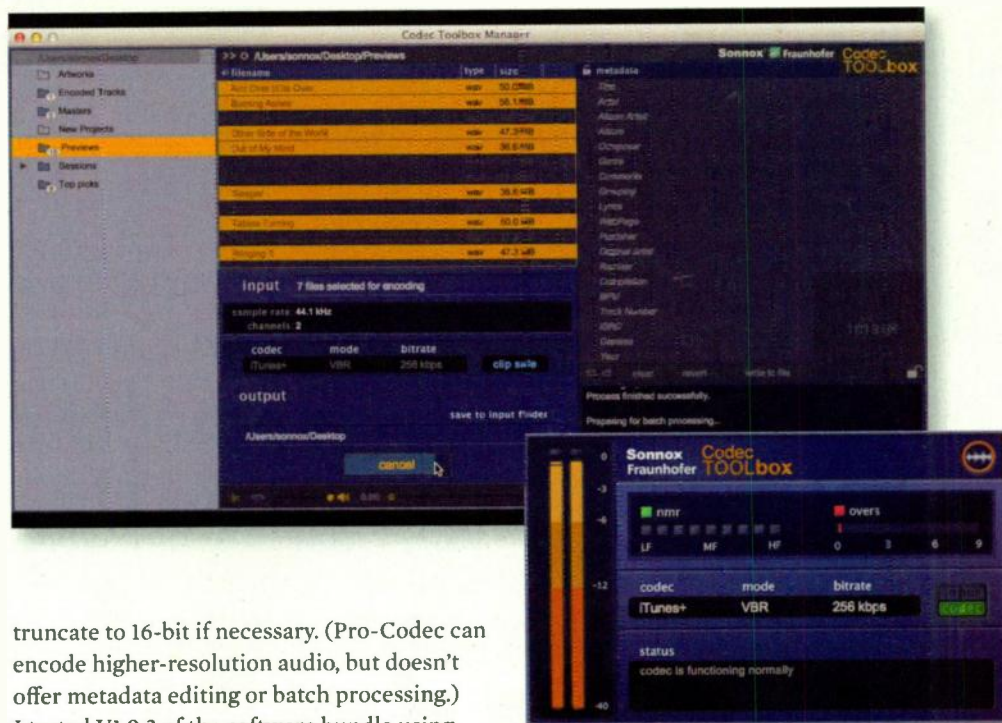


Fig. 1. Codec Toolbox lets you hear how your mix will sound when processed by different codecs before the fact. The included Codec Toolbox Manager encodes and decodes audio and edits metadata.

truncate to 16-bit if necessary. (Pro-Codec can encode higher-resolution audio, but doesn't offer metadata editing or batch processing.) I tested V1.0.3 of the software bundle using Digital Performer 8.05 and Mac OS X 10.8.5.

Put it There Codec Toolbox should be placed on the last insert slot for your master output. While I mixed or mastered, I could switch back and forth between hearing the effect of the plug-in's requisite 16-bit word-length reduction (pre-codec input) and post-codec output for comparison purposes, using buttons in the plug-in's GUI.

While my DAW played back, I selected from the plug-in's pop-up menu the MP3, AAC-LC, HE-AAC, HE-AAC V2, and Apple AAC (iTunes Plus or Mastered for iTunes) codecs in turn to hear how they made my mix sound. Where the selected codec offered alternate settings, I could choose either constant- or variable-bitrate mode, and the specific bit rate I wanted to hear (for example, 256kbps for MP3). The HD-AAC codec—which includes both a lossless and lossy core—is also included solely for the purpose of auditioning its 16-bit input signal; its actual lossless core can't be auditioned, but you can hear its lossy core by auditioning the AAC-LC codec in constant-bitrate mode.

Any codec can sometimes cause clipping when fed a hot signal. Codec Toolbox's Overs meter and associated clip LED (both featuring adjustable peak-hold time) showed the post-decoder level. This invaluable visual feedback alerted me that I should lower my master's output level 0.8dB to preclude iTunes Plus encoding causing distortion.

An NMR (Noise to Mask Ratio) meter

indicated whether my selected codec was causing audible artifacts in any of nine frequency bands. This was most likely to occur with a very low bit rate selected (which is unavoidable when using either generation HE-AAC codec). The only consistent solution I found was to choose a higher bit rate; in my experience, you can't EQ a mix differently to prevent these artifacts.

Saving Time and My Neck In Codec Toolbox Manager, I could see how big the file size would be for the currently selected codec, mode, and bit rate before rendering the file—a big time-saver when preparing files for websites with upload-size restrictions. I encoded the audio in the compressed-data format I'd mixed for, adding metadata to the file before rendering. I could also edit metadata in pre-existing MP3 and M4A files.

For archived, full-resolution masters not prepared while using Codec Toolbox, activating the Manager's Clip Safe button automatically applied the correct amount of gain trim needed during the encode process to avoid clipping the chosen codec. This is just one of the many ways in which Codec Toolbox saves time and prevents heartburn. Costing only around \$58, Codec Toolbox is a steal! ■

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littleBits Synth Kit

A versatile modular synthesizer cleverly disguised as a toy

BY GINO ROBAIR

BASED ON her work at the MIT Media Lab, Ayah Bdeir designed a toy called littleBits, which she describes as a “growing library” of magnetically stackable electronic modules, each with a basic (and color-coded) function. The blocks are designed to inspire creativity and make circuit design intuitive and fun to explore.

With the Synth Kit, littleBits offers 12 modules that can be used to build a fairly sophisticated synthesizer. The setup is so well designed that even non-musicians can make music with it. And it's small enough that the entire set of modules fits into a plastic sandwich bag.

It makes sense that littleBits sought the help of Korg for this particular product, as the latter has released plenty of great sounding, low-cost analog instruments in recent years. In fact, the Synth Kit's circuits were designed in collaboration with Korg's Tatsuya Takahashi, who was instrumental in developing the Monotron, Monotribe, and Volca lines.

The Synth Kit includes two oscillators, each of which is switchable between square and sawtooth waveforms; a lowpass filter based on the Korg MS-20, with controls for frequency cutoff and resonance; a delay with time and feedback

SUMMARY

STRENGTHS Sounds great. Easy to use. Expansion modules are relatively inexpensive.

LIMITATIONS Does not include Mounting Boards.

\$159 MSRP
littlebits.cc



The littleBits Synth Kit provides everything you need to build a versatile analog synthesizer. It's great for teaching kids and adults about circuitry and sound design.

controls; a 2-stage (attack and decay) envelope generator; a noise/random-voltage generator; a single-octave mini keyboard with a range control and trigger output; a 4-step sequencer with two performance modes and a trigger output; a 2-to-1 mixer; a 1-to-2 splitter; a speaker module that includes a 3.5mm mono output; and a power module with cable and battery included. You create a patch by snapping modules together. The magnetic polarization on each end keeps you from connecting modules the wrong way.

The package includes an illustrated color manual that explains what each module does in non-technical terms—perfect for introducing newcomers to the joys of subtractive synthesis—and offers patching examples, project ideas, and historical information.

The Synth Kit is compatible with other littleBits modules, many of which you can purchase separately. You can enhance your synth with an inverter, a pulser, a mic, and pressure, bend, and light sensors, among other things. Individual modules are typically priced from \$12 to \$20. As with any modular synth, you will want more of everything.

I highly recommend buying a set of Mounting Boards, which are perforated stands that the modules' feet snap into. These stabilize the pieces so they don't accidentally disconnect as you build and play your instrument.

Fun in Miniature This basic set of modules can be used to build a 1- or 2-voice instrument. It even allows for basic frequency modulation when you place one oscillator after the other. One of my favorite 2-voice patches combined a

rhythm track using filtered noise (sequencer->noise->envelope->filter) and a melodic voice using FM and the delay (keyboard->oscillator->oscillator->delay). The mixer module combined the voices before going into the speaker. By pitching the second oscillator down and selecting the square wave, I could use it to pulse the first oscillator in approximate time to the sequencer until it sounded reminiscent of Raymond Scott's early electronic work.

People interested in circuit bending will enjoy exploring the Synth Kit: The system is powered by a 9V battery, so it is safe to touch the circuit connections on the underside of each module. For example, if you wet your finger and move it around an oscillator's solder points, you'll hear the pitch change in unpredictable ways. There is a lot of DIY potential here.

Likewise, the 1.25" speaker is the perfect size for acoustical experimentation, because it's small enough to cover with cans and cups, as well as put in your mouth for talkbox effects. I set a small paper cup on the speaker, which made it louder and added a nice buzz to the sound of certain patches. A one-cent coin sits nicely on the speaker cone and adds a gentle distortion as you play.

A Synth for All Ages With the Synth Kit, littleBits has succeeded in creating an instrument that is both musically satisfying and easy to use. Despite the simplicity of the parts, which makes patch building very clear, the kit is capable of creating a rich sound palette that you'll find yourself recording and sampling often. Just don't forget to let your kids play with it once in a while. ■

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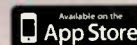
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Surround Mixing

From setting up a proper monitoring environment to learning what to do with the LFE channel, pros share advice for mixing in 5.1

BY BLAIR JACKSON

EVEN IF the “surround revolution” that was supposedly going to save the music industry by hooking us all on high-res 5.1 audio releases never quite comes to pass, there is still much surround work being done throughout the entertainment world, from film, TV, and DVD mixing, to video games and, yes, music-only audio releases. Each of those fields has different and specific surround mixing requirements and conventions, yet the very nature of multichannel audio for any format inspires creative and resourceful individuals to continually push our sensory boundaries. And this much is clear: Engineers and musicians who embrace surround will undoubtedly increase their career options—if not now, in the future. Multichannel sound isn’t going away.

We spoke with a handful of mixers from music, film, and games to learn more about the unique world of surround mixing for different media. You’ll also find expanded coverage of the topic online at emusician.com.



“A bunch of us got together in the late ’90s or early 2000s and wrote a paper for NARAS which is a really good reference for somebody who is starting out and wants to learn what engineers, producers, and mixers who are doing surround suggest.”

—FRANK FILIPETTI

Frank Filipetti A Grammy-winning engineer many times over for his work with popular artists and on musical theater soundtracks, Frank Filipetti was an early proponent of surround sound. A handful of his standard-setting 5.1 mixes include albums for Billy Joel, Polyphonic Spree, Meat Loaf, James Taylor, and more.

“When I did my first surround project, which was James Taylor’s *Hourglass* [1997], it was very difficult to get information about how to set things up, so you did trial and error while you were working at it,” says the veteran New York-area engineer and mixer. “But now you can go to NARAS [National Academy of Recording Arts and Sciences] or several other websites and read a ton about it. A bunch of us got together in the late ’90s or early 2000s and wrote a paper for NARAS which is a really good reference for somebody who is starting out and wants to learn what engineers, producers, and mixers who are doing surround suggest. It’s called ‘Recommendations for Surround Production.’ [grammy.org/recording-academy/producers-and-engineers/guidelines]. We spent about two years writing it, so there’s a lot of data and it’s pretty detailed, but you can also just browse it and learn a lot.”

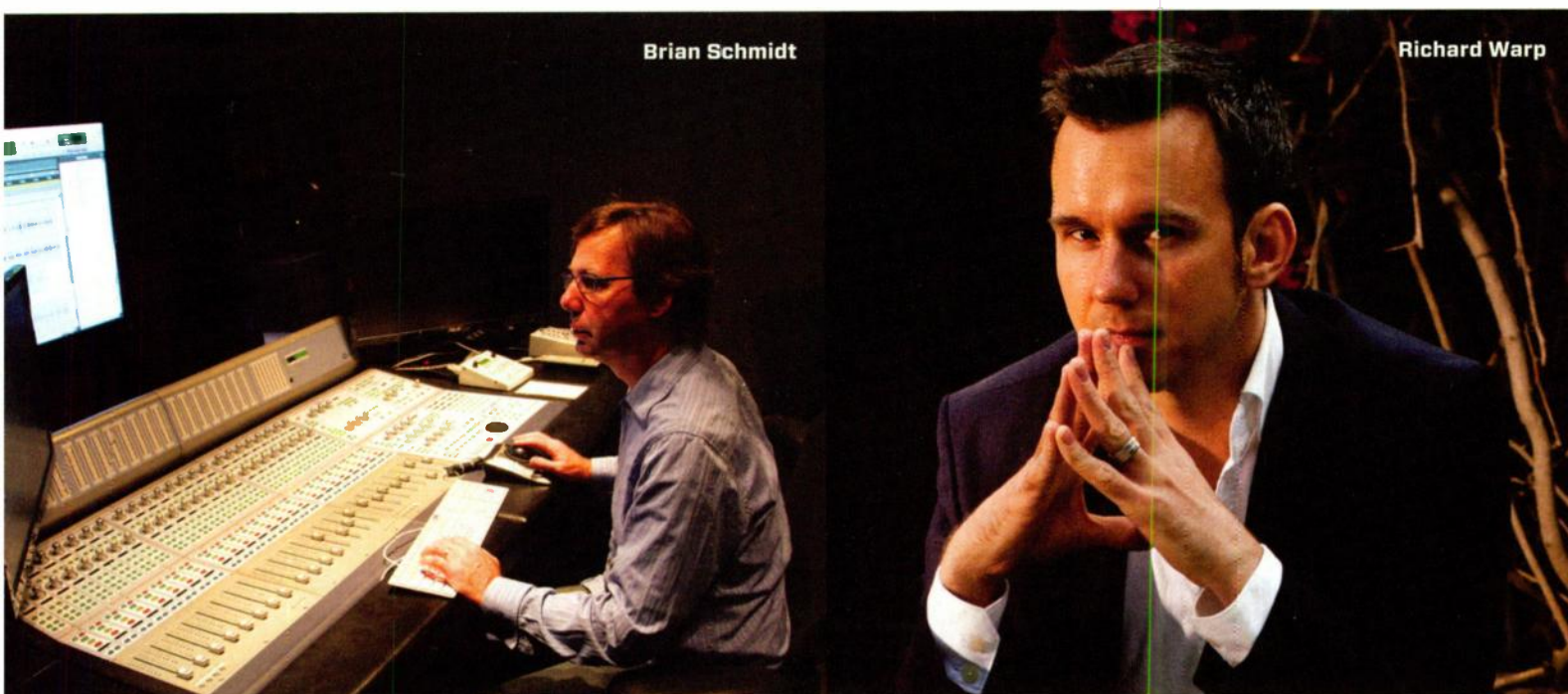
Filipetti notes that some of the recommendations he and his colleagues

came up with for the NARAS paper are at odds with both the conventional wisdom and even some widely circulated specs and guidelines. He also despairs about the lack of agreement on surround formats. “The audio community has really blown it on two or three occasions through the use of multiple formats and the difficulty in setups,” he says. “There’s nobody that wants to agree on anything. I know, for example, that most of us who mix in this format have been saying for years that ITU [International Telecommunications Union] specifications that a lot of the manufacturers publish in their data are not at all in line with the way we actually mix. The ITU specifies the rear speakers in a surround setup at 110 degrees, which is not really the rear, but more like the rear *side*, and at 110 degrees there’s no phantom center at all. Although you’ll also get disagreement on that from people who say you can’t hear a phantom center behind, which is bogus; it’s baloney—of course you can.

“The ITU specifically calls the rear speakers ‘ambient speakers,’ or effects speakers. They don’t consider them equal partners with the left, center, and right. So if you’re using the ITU specs, they don’t even recommend that they be the same size and the same model. I did a Frank Zappa project where I put some of the band in the left, some in the right, some in the center, and some in the right

rear and some in the left rear. I had the band set up like you were sitting in the middle of the band. But if you’ve got a bass coming out of your left rear speaker and it’s only got a three-inch driver, well, sorry—you’re not going to hear it as well. So you always want to have the same speakers throughout the system.”

These days, Filipetti mixes exclusively in the box, using an Avid ICON D-Command controlling Pro Tools 10—at his very well-equipped studio in Nyack, NY. “Pro Tools itself gives you quite a bit of freedom to do things in surround, but I also purchased a plug-in from a New Zealand company called Maggot Software called Spanner, which increases a dozen-fold your capabilities in surround,” he says. It allows you to do all kinds of things you couldn’t with the standard Pro Tools panner, which is a basic algorithm—you can put things in the left, right, and center, and the surrounds, and you have some divergence. But the Spanner plug-in gives you a multitude of other options. You have ways of sending differing amounts of LFE to different [speakers]; it does all kinds of pans you couldn’t do otherwise, and you also have ways of doing fold-ups and fold-downs as you’re doing other things. It’s something I think a lot of the film guys use, and anyone using Pro Tools who is deeply into surround would probably want it.”



Brian Schmidt

Richard Warp

Brian Schmidt When Brian Schmidt was honored with a Lifetime Achievement Award from the Game Audio Network Guild (GANG) a few years ago, it was because he has a résumé second to none in the industry: He's done sound design and/or music for well over a hundred games of every kind, including his latest audio-only headphone surround title, *Ear Monsters*. He developed the sound and music systems for the Xbox (the first with Dolby Digital 5.1) and the Xbox 360; he founded the GameSoundCon conference; he holds patents for an assortment of audio-related processes; and he is well-known as an educator and speaker on all things game audio.

Schmidt notes that working on surround audio for games is quite different from creating surround mixes for film or music video. "The parameters are more liberal than in film, where the screen dominates, so you can use the rears more creatively in games. In a movie, the screen is utterly dominant and everything else tends to be sprinkles or icing, or whatever food metaphor you want to use. In a game, if you think about it, the screen is just a small visual window into the universe that's being rendered for the player. Whereas your visual screen is 3 or 4 degrees of viewing, your sonic screen is 360 degrees. I've always said surround sound is more important in games than it is in traditional linear media because you can literally expand the play-field

with sound, and drive sound as game-play elements you *have* to pay attention to.

"We use the term 'mix the game,' but that's not really accurate. In a movie or TV show, you're literally mixing it—you're setting the volume, you're setting the EQ, you're setting the compression for each of the sounds. In a game, you don't know what those levels are going to be until the instant the game is played, so they're not done in advance. If there's a helicopter in front of me, and I walk toward it as a player, that helicopter has to get louder. If I walk farther away from it, it's got to get softer, and if I turn my head, it's got to go to the left. So when we say we 'mix' a game, what we really mean is we're giving the instructions to the game [engine] for how to mix itself for when different game events happen. So instead of specifying how loud is the helicopter, which you would do in a movie—use a fader—instead you're going to say [to the game engine]: 'Here's how I want the volume of the helicopter to change with distance. Here's how I want a lowpass filter on that helicopter to change with distance.' Or, 'Here's how the panning of the sound should occur if the helicopter is at a certain azimuth and elevation relative to me. How much Doppler effect should there be if it's moving?'"

"Music's a little bit different," Schmidt adds. "You will do a surround mix because, as you play the game, you don't need to change the relative position of the string basses and

the trumpets or whatever. And how you handle that mix gets into the aesthetics of what people like. A lot of people who are delivering their game in 7.1 still like to mix their music pretty much in stereo—maybe have a nice convolution reverb that sends the reverb to the surrounds. Some people think if you mix 5.1 music or 7.1 music where you're in the middle of the orchestra, that's going to be overwhelming in the game, because music is a non-diegetic sound [*i.e.*, not emanating from the world depicted in the game]. So some people are wary about making that too immersive and too surround, because it can be distracting to the game-play. But there's no hard and fast rule about that.

"The other thing is a lot of games have cut scenes, which are like mini-movies [narrative sections with no game-play], and you handle sound for those like you would a film. It's predestined ahead of time and you would want a nice 5.1 or 7.1 Pro Tools mix you deliver as a multichannel .WAV file that exactly syncs with that cut scene. So you still have traditional pieces to do as well."

Richard Warp Working primarily in the "new music" and modern-classical realms, Richard Warp got into surround mixing in a fairly traditional way: "It came out of my composing work more than my producing, really," says

the transplanted Brit, who now lives in San Francisco. “I was doing a lot of chamber music at one point and putting on concerts in San Francisco, and one of them caught the attention of a new-music aficionado, Glenn Cornett, who had a particular penchant for putting on house concerts, and he invited me to come along and start recording these. Originally it was in stereo, but then I suggested the idea of recording the ambience of the live performance spaces; I thought it was an interesting thing we could do. A lot of these were pretty stripped-down—maybe just piano and saxophone, fairly minimal—so what you ended up with was a really interesting interplay in the space. So I started recording the performances in surround. I set up a Decca array arrangement using various different mics to capture certain aspects, and creating a [surround] document of the performance. And, at the time it was in DTS [surround].”

That led to making surround audio recordings, such as his acclaimed recent DTS-CD and Blu-ray release of Luigi Nono’s avant-classical composition *La Lotananza Nostalgica Utopica Futura* for the Urlicht AudioVisual label. Nono designed it as a live performance piece for solo violin and eight channels of various prerecorded sounds and music that are “performed” simultaneously by a tape operator raising and lowering faders as indicated in the score, with the audience seated inside a ring of eight speakers. For this recording, at A Bloody Good Record studio in Long Island City, New York, violinist Miranda Cuckson was accompanied by Christopher Burns, who fired off digital file versions of Nono’s original eight taped tracks from a laptop, with everything captured in Pro Tools. Warp did his initial mix at his home studio in San Francisco, working in Logic (“mostly for cost reasons, to be honest”) and monitoring on his Blue Sky loudspeakers, and collaborating with Burns remotely: “I would send him versions of the DTS mix that he would listen to [in his 5.1 room at the University of Wisconsin] and we’d discuss over email and Skype.”

Warp says that though his home mixing environment “is as treated as I can make it, with [acoustic materials] on the walls and ceiling to catch the reflections, I’m very cognizant that it’s not an ideal mixing space, so I actually went to do the final mastering/listening session up at the studios at CUNY [City University of New York] with Paul

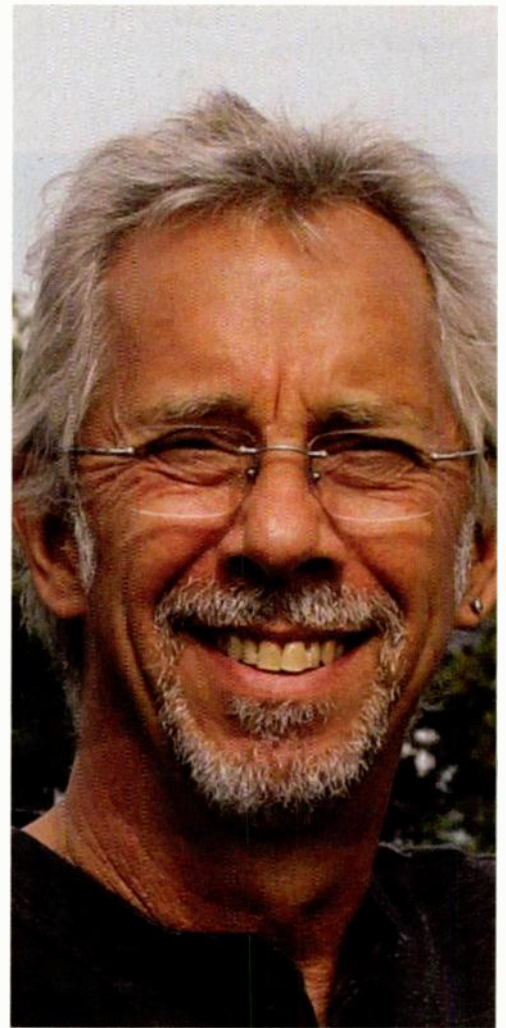
Special, who is a longtime network TV engineer, to basically sanity-check what I’d done and make sure it was going to work in a more clinical environment. I was very happy that it didn’t need much tweaking at all.”

That piece had its own unique challenges as a surround recording, such as trying to mimic the movement of the violinist (who is prescribed to play at multiple music stands within the performance circle) and whittling the eight tape channels down to a 5-channel environment. Also, Warp notes, “I had the LFE [sub channel] off because there is so little low-frequency information in the piece, it didn’t seem appropriate to use it.”

Other surround recordings Warp has worked on have called for different degrees of mixing. For instance, on his latest Ulbricht release, *Melting the Darkness*, featuring violinist Cuckson performing pieces by several different composers, “the surround aspect of it is really just ambience. I used the Waves Renaissance [reverb plug-in] to create a sense of the room, but in a really subtle way. When I was A-B’ing between the surround and the stereo, what I was noticing is you don’t really notice the surround is there until you turn it off. It adds an *impression* of something being there, without banging you over the head with it. It creates a sense of warmth, an additional sense of realism, but it’s not something you can really put your finger on.”

Dennis Leonard In the first half of Dennis Leonard’s career, he was a music tech and mixer known as “Wiz,” short for Wizard. But since the late ’80s, he’s mainly (but not exclusively) been working in film sound, usually as a supervising sound editor and/or re-recording mixer based at Skywalker Sound in Marin County, CA. His CV spans more than 60 films, including *Cast Away*, two Harry Potter movies (*Chamber of Secrets* and *Goblet of Fire*), *Flight*, and many popular animated features, from *The Polar Express* (which earned him an Oscar nomination) to *Madagascar* (2 and 3) to both *Despicable Me* blockbusters.

Leonard knows that when it comes to surround mixing, he’s been spoiled by working on the best high-end equipment available: Skywalker’s mixing theatres are equipped with enormous AMS-Neve DFC consoles. But he also does a lot of work in his personal surround room at Skywalker. “You can really do a lot with Pro Tools and a small control



“The last thing you want is someone to recognize something and snap their head and look at a wall in a movie theater, and transient sound stimulates that response; we’re built to localize on things because it’s a survival instinct. So I want the surround information to be more ambiguous.”

—DENNIS LEONARD

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surface, like an [Avid] D-Control, and there are a number of surround panners that you can use with that. The critical thing is getting some sort of monitor controller so you can EQ the monitors and make sure all the speakers sound correct, and ascribe to the SMPTE EQ and level standard if you're doing film work. It's unbelievable what you can do now. I've mixed films in my room and I don't even have D-control. I just mouse-click and have a couple of fader packs that have knobs on them." His monitor setup? "It's all Meyers: three UP Juniors, a USW for the sub, and I'm doing a little bit of bass management because the UP Juniors only have an 8-inch woofer, and then I have four UP4s for surrounds; when I'm in 7.1, two are the sides and two are the rears." Leonard says that a vital aspect of creating a surround mixing environment "is making the room fairly acoustically neutral. Ideally, if it's a rectangular room, you'll want to get some bass traps in the corner—there are tons of manufacturers making those, or you can also make them yourself fairly easily."

When it comes to mixing films, "You have to be very careful about what you put in the surrounds and when you put it there. The last thing you want is someone to recognize something and snap their head and look at a wall in a movie theater, and transient sound stimulates that response; we're built to localize on things because it's a survival instinct. So I want the surround information to be more ambiguous.

"For me, films are like enhanced mono; I want to keep most of the sound on the screen and keep people sucked into the screen. That doesn't mean you don't move things around on the screen. If you've got a three-shot [three characters] across the screen, you're thinking about putting one left, one center, one right. Of course following characters on- and off-screen has to be considered panning, as well. And on this film I did called *War Story*, in Sundance this year, I had a two-shot and they were talking over each other at times, and it was disturbing to hear both voices only coming out of the center speaker, so I panned each of them ever so slightly left and right and that made it

work. This is not always the case; you've got to experiment and you've got to stay open to whatever works in a given situation. In my world, the film world, it's all about the story."

When it comes to surround music mixing, he says, "My take in mixing music for 5.1 is to put the listener at an ideal seat in the audience. Some people like to put the listener onstage, and have instruments behind you, but I'm fairly conservative. My approach is pretty much to put reverb returns in the rears, or if it's a live concert, to put the room mics in the surrounds, so it becomes immersive. I've heard snare drums in the surround and I want to barf! To me that's the antichrist of mixing." He'll often put the kick drum, bass and vocal elements in the center channel, and make sure that if he pans, he moves them among the left, center, and right channels, and notes that an advantage of having three channels across the front is, "One has less time domain corruption panning between left and center, and then center to right, rather than just left to right. You get a much more articulate image using all three of those speakers."

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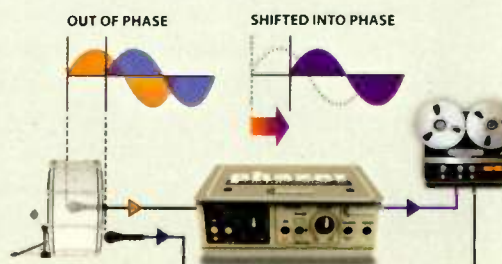
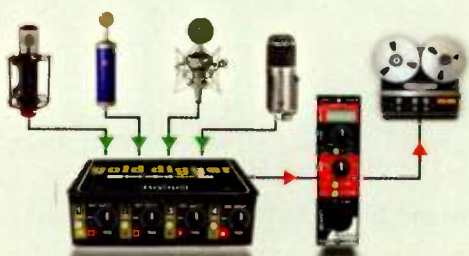


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Chuck Ainlay Nashville-based engineer/mixer/producer Chuck Ainlay has worked on a zillion records by the likes of Mark Knopfler, George Strait, Steve Earle, the Dixie Chicks, and scores more, and he's done quite a lot of surround work, both audio-only and with picture. That list includes artists such as Vince Gili, Peter Frampton, Eric Clapton, and Dire Straits, whose *Brothers in Arms* surround remix earned Ainlay a Grammy in 2006. Ainlay was also part of the blue-ribbon panel that put together surround mixing recommendations for NARAS (see Frank Filipetti's description on page 58).

Ainlay freely admits that he has perhaps a different view of the center channel from most mixers in 5.1. "It's a hard thing to wrap your head around, because as far as being able to translate from what we're used to hearing the center image to sound like [in a stereo mix] and what comes out of the center speaker, there's like a 2k rise from the center speaker—a midrange bump—that you get coming out of a discrete speaker that's not



there as a phantom image. So all of a sudden, vocals can seem almost harsh. What I tend to do is more phantom imaging for things I want soft in the middle; and for things I really want to poke, I'd use more of the center speaker. A rule of thumb I've come across is, if you've

got something in the center speaker, as well as the left and right speakers, bleed it out a bit and take away that focus of the center speaker. If you keep the left and right speakers down about 6dB or more from the center image, it gets away from a phasing issue that can happen. You don't want to have the source equal in the center speaker and the left and right speakers.

"I've gotten blowback from surround aficionados that I'm not using the center speaker, but I tend to like a phantom image better. Also, many home systems are more set up for home theater than music listening, and the center channel speaker can be entirely different because it's actually voiced for speech. My thought was that you could get a more musical sounding mix by avoiding the center channel in a lot of cases—using it, but as more of an FX speaker than a center image."

Ainlay says that for his *Brothers in Arms* surround mix, "I was very sympathetic to the original mixes, and we remastered the stereo mix, but didn't remix the stereo because it's so

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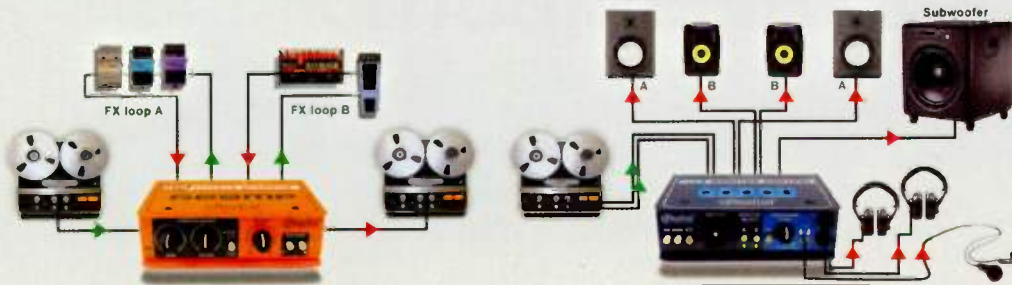


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“Many home systems are more set up for home theater than music listening, and the center channel speaker can be entirely different because it’s actually voiced for speech. My thought was that you could get a more musical sounding mix by avoiding the center channel in a lot of cases—using it, but as more of an FX speaker than a center image.”

—CHUCK AINLAY

iconic. When I was doing the surround mix, I spent a lot of time A-B’ing my mix—the fold down of my mix—to the stereo mix. I didn’t want to completely duplicate the stereo mix, because I felt there were things with time and technology I could do better, and I wanted to warm up the original record a bit. But when

you’re dealing with mixing iconic records, you can’t forget what the original was. If you listen to *Brothers in Arms*, it is very discrete in the rear and it sounds really interesting, yet it doesn’t destroy the record.”

Asked for advice for people just getting into surround mixing, Ainley mentions the

NARAS white paper and adds, “Having a great monitoring environment is really, really critical to getting it right. So get some good speakers and learn how to set them up right. It’s all there in that document.

“Beyond that, forget what you traditionally think about creating a stereo mix and forget the idea that you have to carve out the sound and compress the sound to squeeze everything into a stereo field. Dynamics are definitely more enjoyable in surround, and sounds can be more full. If you squeeze everything and compress everything in surround it becomes very bland and hard to listen. Use the space you’ve got!” ■

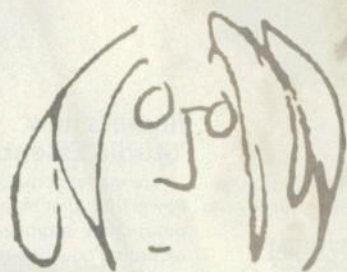
Blair Jackson is a San Francisco Bay Area-based writer.



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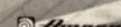
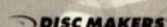
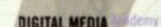
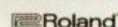
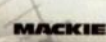
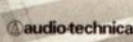
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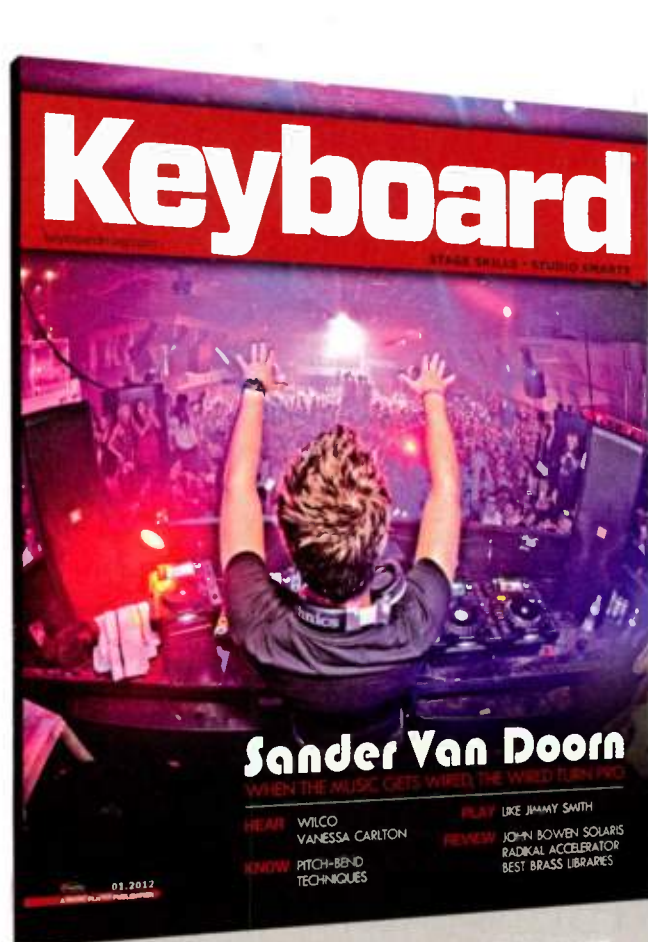
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Vocal Time-savers

Rein in erratic singing in a heartbeat using these tools and techniques

BY MICHAEL COOPER

CRAFTING A killer lead vocal track at mixdown can be a protracted process, especially if the singer's technique was inconsistent during recording. Distracting mouth noises and inappropriate fluctuations in level and tone all need to be ironed out before delays and reverb are splashed on. Here are a few plug-ins and techniques to speed up the process—and stave off tedium—on your way to the perfect vocal track.

Catch Your Breath A heavy breather can sound downright asthmatic once compression is applied to his or her track. Before you put on the squeeze, make sure you tame any excessive gasping (unless you want to preserve it to create a sense of urgency for the track).

Automating the track's fader to dip on each breath will give you good results, but it will take forever to accomplish when every breath in a four-minute track needs to be subdued. Ditto for manually erasing each breath in your DAW. Garden-variety gating can be hit or miss, sometimes throwing the baby out with the bathwater. The fastest and surest way to silence the puffing is to bounce the entire track through either the Waves DeBreath or iZotope Breath Control plug-in. (The latter is available in the new Nectar 2 Vocal Production Suite bundle.)

Putting Breath Control in Target mode produces natural-sounding results (see Figure 1). Raise the Sensitivity slider until the plug-in begins to detect unwanted breath noises; you'll see the meter to the left of the slider register signal and the orange gain-reduction trace at the top of the GUI dip in the noisy

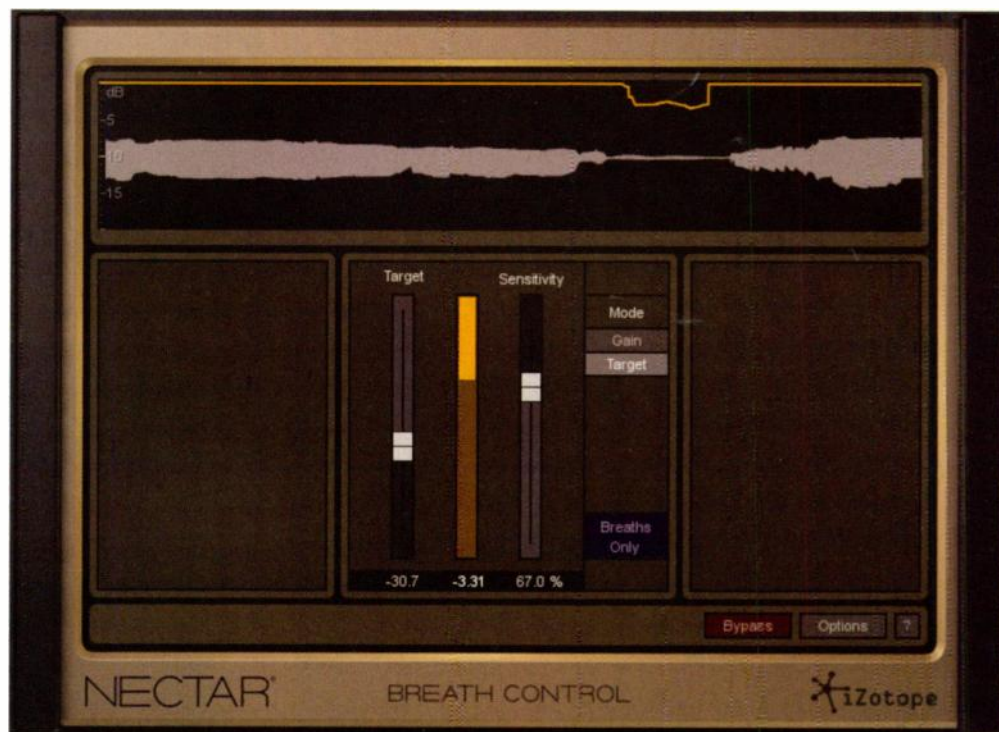


Fig. 1. With only a couple quick adjustments, iZotope Breath Control reduces excessive breath noises throughout an entire track. The orange gain reduction trace at the top of the GUI confirms the track's level was reduced where it should've been: between vocal phrases.



Fig. 2. Waves Vocal Rider dynamically adjusts levels for a vocal track. Here, the plug-in automatically rides an objectionably quiet vocal phrase 3dB higher.

gaps between vocal phrases, as indicated by the attendant waveform display. Set the Target slider to the level that you want all detected breaths to be reduced to. Click on the Breaths Only button to hear only that part of the track the plug-in is reducing in level; if you hear any spectra for actual singing in Breaths Only mode, lower the Sensitivity slider until you hear only breathing. Then deactivate the Breaths Only function to process the track. To ensure consistent results, I like to bounce the track in real time while listening.

Keep a Level Head When faced with a vocal track's wildly fluctuating levels at mixdown, it's important to tame them before compressing. If you compress before executing this task, you'll squash the bejesus out of the loudest phrases when you lower the threshold enough to affect the quietest ones. Automating fader moves line by line—and placing the compressor on a post-fader insert afterwards—does the trick. But the process is as exciting and speedy as watching an ant cross a parking lot.

Luckily, there's a quicker and more appealing solution. Use the Waves Vocal Rider plug-in to automatically ride the gain on your vocal track (see Figure 2). As your track plays back, set the plug-in's Target slider at the median peak signal level you see registering on the meter (in yellow) behind the slider. Lower the bottom Range slider if loud vocal phrases are not being attenuated enough, but exercise restraint: Too low of a setting will hamper Vocal Rider's ability to sufficiently boost the level of quiet phrases. Excepting the foregoing, the higher you raise the top Range slider, the greater the maximum amount of boost the plug-in will apply to low-level phrases.

You'll generally get the best results if you use Vocal Rider's fast attack setting to control explosive rock singers and the slow attack

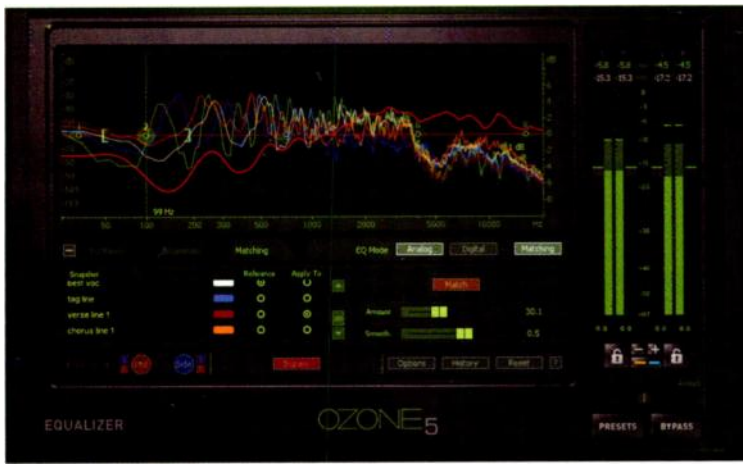


Fig. 3. To match one vocal phrase's tone to that of another that sounds superior, use the Matching EQ tab in the Equalizer plug-in for iZotope Ozone 5 Advanced.

refinement. Adjust the Amount slider by ear; a value between 30 and 50 percent usually sounds good. If the EQ still sounds a little peaky (sharp-edged), raise the Smoothing slider. Bounce the EQ'd vocal phrase to a new, empty track to render the processing. Then apply Matching EQ to the remaining tonally challenged phrases in turn, bouncing each as you go. It's a wrap! ■

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

setting for crooning balladeers. Once the vocal track's dynamic range is dialed, use the plug-in's output fader to bring the overall performance up or down in level to tuck it into the mix. Follow Vocal Rider with a compressor to fatten the sound, and you'll be on your way to a great-sounding track!

Set the Tone Singers with poor mic technique will often unconsciously vary their distance from the mic while singing. If the mic is directional (as in a cardioid model), its inherent bass-proximity effect will cause some vocal phrases to sound too bassy (when the singer is eating the mic) and others possibly too thin (when he or she has backed away). You can automate an EQ plug-in line by line to correct the track's tonal fluctuations, but that's about as much fun as stubbing your toe repeatedly on a cinder block. And tight budgets and deadlines don't always allow using such a fine-tooth comb.

Luckily, iZotope Ozone 5 Advanced's Equalizer plug-in (and the Equalizer module in Ozone 5's Standard Edition) provides a lickety-split solution (see Figure 3). Select the plug-in's Matching EQ mode. In the Snapshots tab, capture the spectrum for the best-sounding vocal phrase in the track and name it "best voc." Find the phrases that need equalization, and capture and name their spectra in turn (for example, "verse line 1," "chorus line 1," and so on). Click on the plug-in's Save Set button to save all your captured spectra for safekeeping.

Select the plug-in's Matching tab. To the right of the "best voc" snapshot, click on the Reference button. Select the Apply To button to the right of "verse line 1." Click on the Match button, and play the beginning of the first verse. The timbre of the first line of the verse should now sound close to that of the best-sounding vocal phrase for the track, but it might need further

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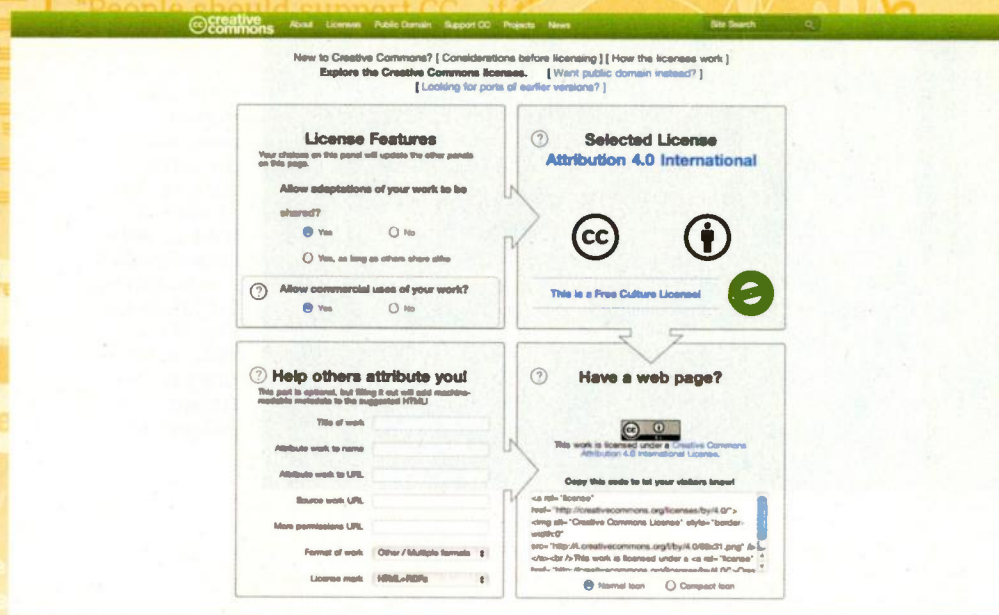
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But if you're comfortable using these licenses, they can allow you to participate in entirely new types of creator communities. For example, ccMixer (ccmixer.org) dominates the remix communities on the web, and lets musicians release source tracks in a way that

remixers know exactly what they may and may not do with the music. And sites like FreeMusicArchive (freemusicarchive.org) curate free music, allowing fans to discover new music and content creators to find music to use in their videos, podcasts, and other artistic works.

Also, the machine-readable license terms under Creative Commons added a unique new dimension to the web: a search engine that can distinguish how a work is *licensed* (search. creativecommons.org). This allows content creators to find video, images, and music to use in their media to share with their audiences. Feeding these engines are major music sites like SoundCloud (soundcloud.com), which makes it easy for their users to license their music under these terms. And YouTube has built-in tools for video creators to discover Creative Commons licensed work to use in their videos (youtube.com/yt/copyright/creative-commons.html). Using this tool, YouTube will automatically handle the attribution in the credits of the video, pointing people back to you.

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Randy Chertkow and Jason Feehan are authors of The Indie Band Survival Guide (St. Martin's Griffin), now in its second edition.

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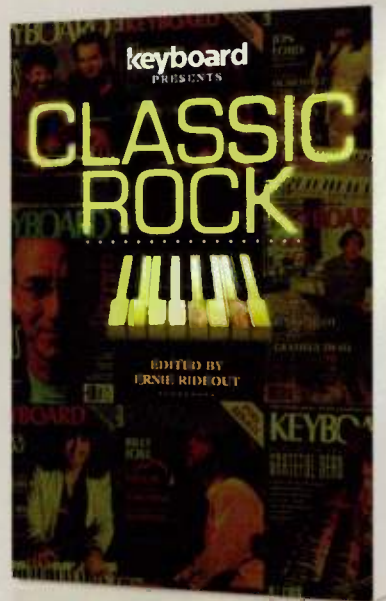
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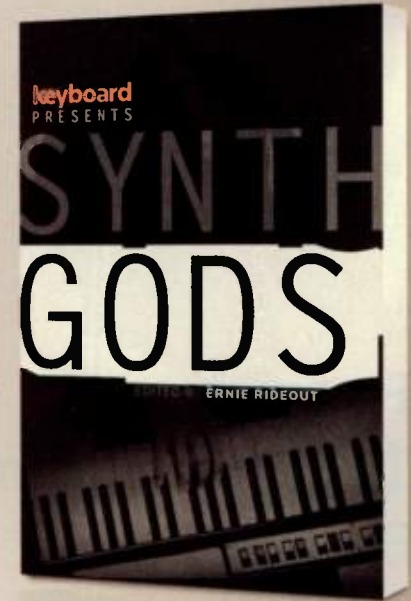
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Recording Techniques for Small Rooms

Essential tips for instrument, amp, and mic placements

BY MICHAEL COOPER

AT THE start of a recording session, many engineers position musicians and their equipment based solely on ergonomics before placing mics. That might do in a large tracking room, but in a small space—where suboptimal acoustics can make a damaging imprint on the sound—it can lead to flawed recordings that are impossible to fix at mixdown. Here are some essential points you should consider when setting up musicians, gear, and mics in a small studio.

Optimize the Source In a small room, the position of the sound source you intend to record (for example, an amp) can have a far more dramatic effect on sound quality than mic selection. Room modes—severe notches and extremely narrow peaks in the room's frequency response—can wreak havoc on an ill-positioned amplifier or instrument's bass reproduction. These powerful and

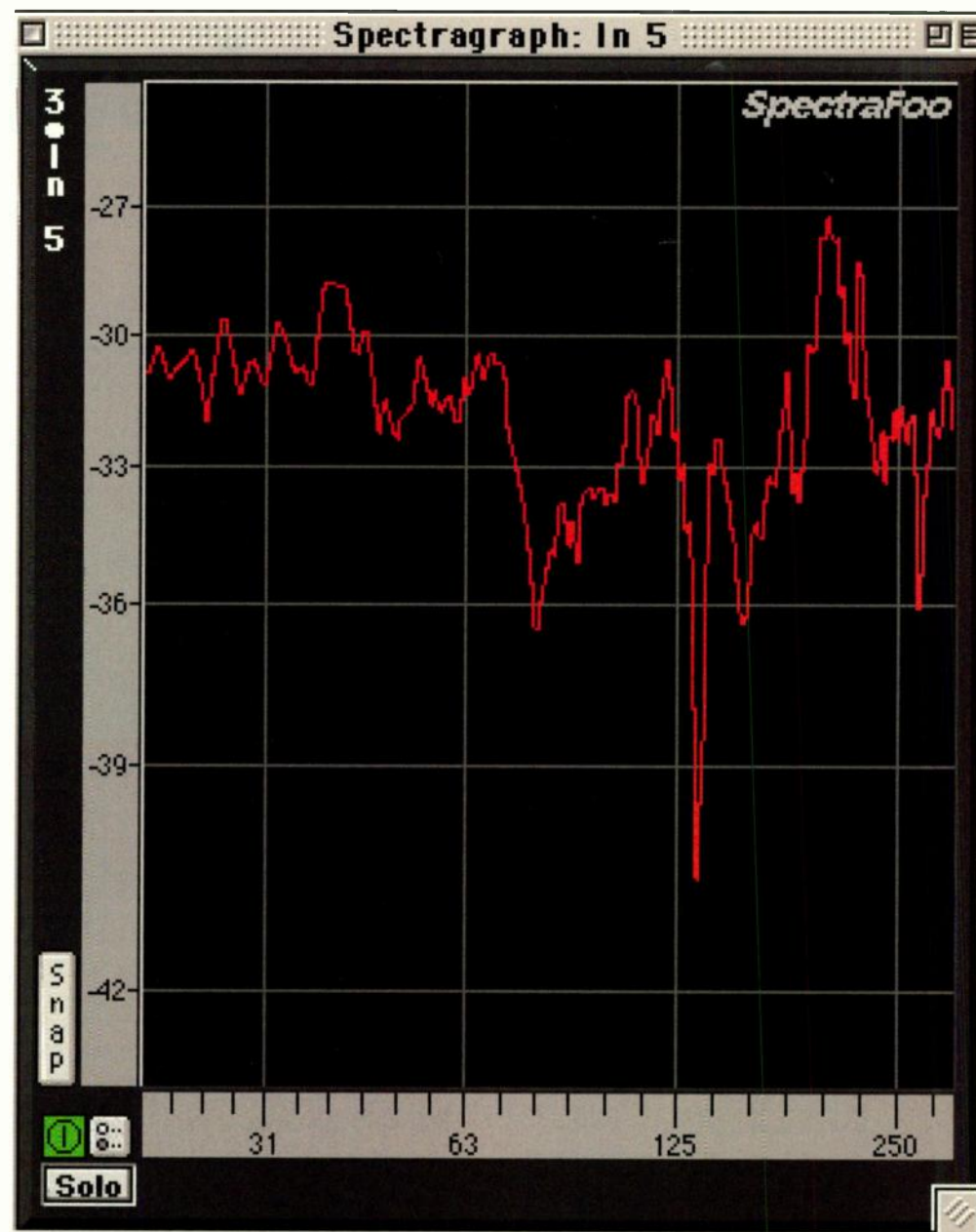


Fig. 1. The spectragraph in Metric Halo SpectraFoo Complete shows deep notches in frequency response at 73 and 128Hz, due to room modes occurring at a specific spot in a studio. The horizontal axis delineates frequency (limited here to the bass band), while the vertical axis denotes amplitude. The severity of these notches is typical for a small room.

immutable variances in sound pressure at specific frequencies—most problematic in the bass band—exist at specific locations throughout every studio but exert the greatest influence in small rooms (see Figure 1). The frequencies at which they occur vary according to room proportions.

If your source sounds thin or boomy, try moving it one foot forward or backward, or left or right, and see if that improves the sound.

Moving an object only one foot on an axial plane to walls can remove it from the powerful influence of a room mode.

You can determine where room modes occur in your studio by playing back bass-heavy music on full-bandwidth speakers while walking the room. Wherever you hear a peak or dip in the reproduction of an isolated bass note, that's where a room mode exists. And that's also where you should avoid setting up

that's also where you should avoid setting up instruments, amps, and mics to record.

Establish Boundaries If a bass amp, for example, needs more bottom end overall, move it closer to a wall. Doing so will boost its reproduction of bass frequencies, courtesy of what's known as the boundary effect. A room's corner will boost overall bass response even more, but don't put the amp there—room modes terminate in corners in their travel, so placing anything in a corner is a recipe for uneven bass response.

You can decrease excess bottom end from an acoustic guitar, for example, by moving the performer farther away from a wall (making sure you don't place them where a room mode exists farther out into the room). You can make a guitar amp sound less bassy by moving it off the floor (which also produces a boundary effect) and onto a sturdy chair; doing so will yield a far better recording of the guitar than if you had messed with the amp's tone controls to fix the imbalance. (The filters' bandwidths and slopes are highly unlikely to provide an exactly inverse effect to the boundary effect exerted by the floor.)

Avoid Glass and Diffusors Try not to place your sound source near an observation window; sound reflecting off the glass will cause comb filtering at the mic. (Comb filtering involves nasty phase cancellations that hollow out the sound and are impossible to fix at mixdown.) And while acoustic diffusors are excellent acoustic solutions to liven a dead room and prevent slapback echoes off of hard walls, you should avoid miking up a sound source within six feet of them to avoid a phase-y sound.

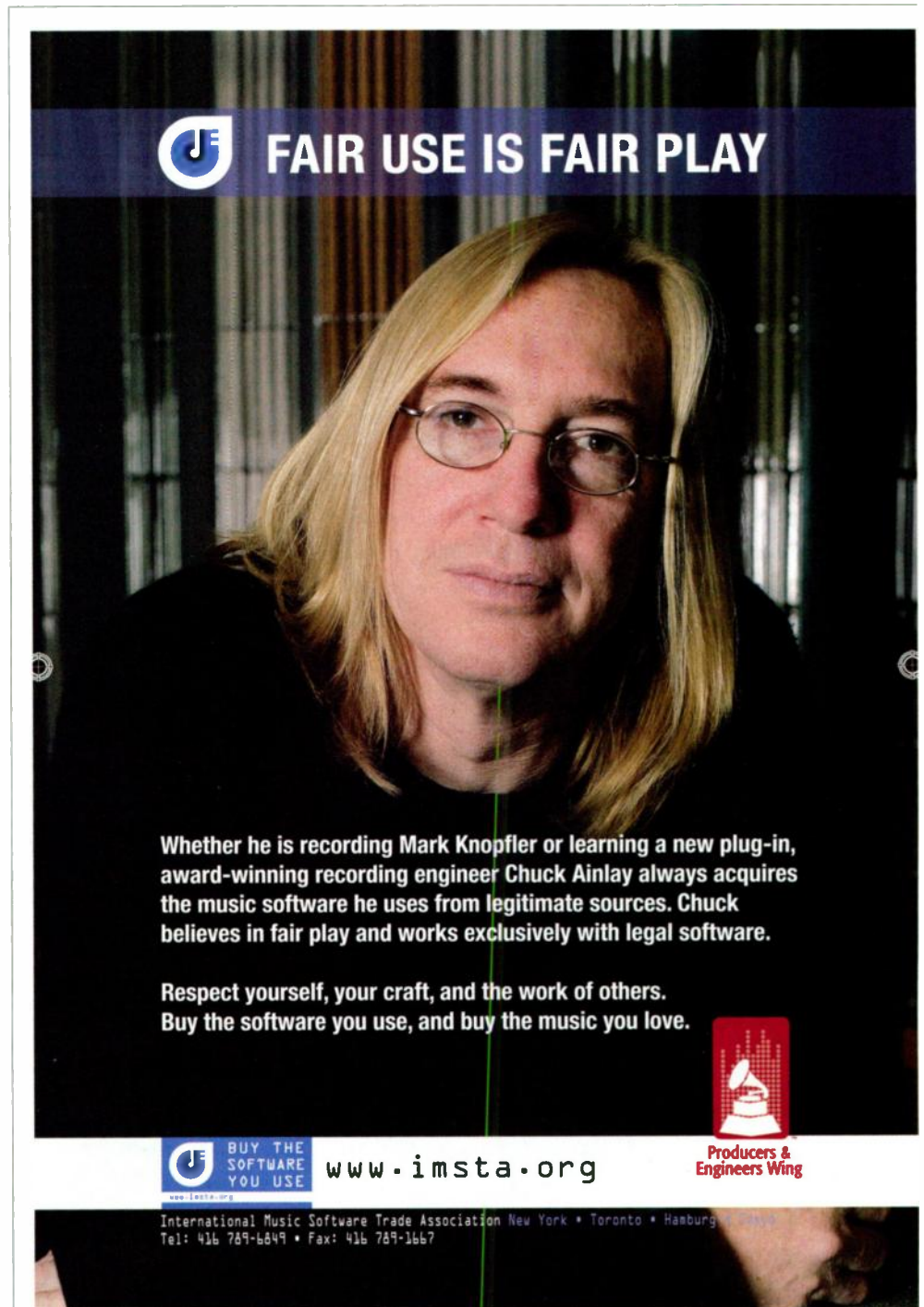
Lend an Ear Now that your sound source is positioned in the studio for the best sound possible, it's time to position your mic. In order to avoid capturing a horribly uneven bottom end, you'll want to place the mic where a room mode doesn't occur. Aim one of your ears at the sound source and move your head around: left and right, up and down, and closer and farther away from the sound source. Listen to how the sound changes, and note the spot where it's the best. That's where you should place your mic.

There will often be *two* great-sounding spots to mike up a large instrument or amp cabinet, and the different attributes accentuated by each spot (for example, the resonating body of the instrument and the

pluck of a string) may strongly suggest using two mics to capture the composite sound. If you want to make a stereo recording using a spaced pair of mics, try to position the two mics so that the distance between them is at least three times the distance of each mic to its sound source. Observing this general rule will minimize phase cancellations in the stereo recording, but it may mandate that you place the mics very closely to the sound source. If practical considerations decide you can't follow the 3-to-1 rule,

consider using a coincident or near-coincident pair of mics—placed at the position your ear determined sounded the best—to record the instrument in stereo.



Selecting the most flattering mics and their configuration (such as a coincident pair) is an important part of recording, but it should never be your starting point. The best mic in the world can't correct a room mode or comb filtering. Get the sound right at the source, and you will make great recordings. All the rest is secondary. ■



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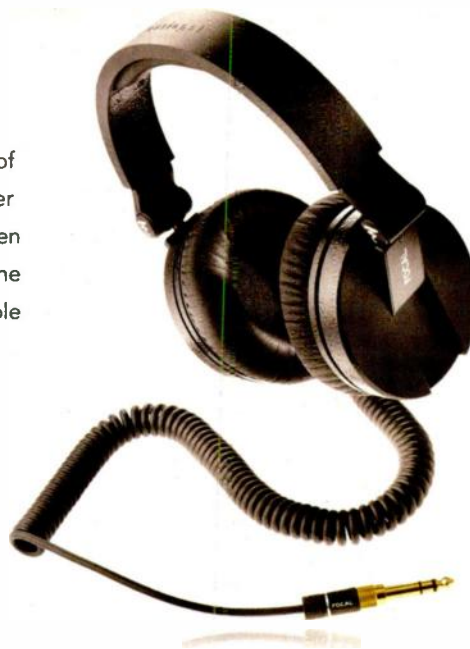
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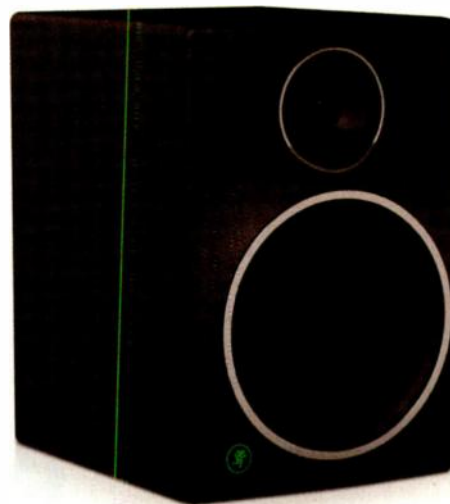
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DJ Effects for Production

Spice up your original music by processing tracks in DJ software

BY MARKKUS ROVITO

EVEN IF you're not a DJ, the effects within many DJing programs can lend your own music—either individual tracks or full mixes—some finishing touches that you may not find in your regular DAW and plug-ins (see Figure 1). Almost all of the programs offer uncompressed audio recording, so you can record your effects and bring the audio

The effects within many DJing programs can lend your own music some finishing touches that you may not find in your regular DAW and plug-ins.



Fig. 1. Image Line Deckadance 2 works as a VST instrument within a DAW, but its other advantages include the ability to effect the high, mid, and low frequencies independently. A demo version is available.



Fig. 2. Traktor Pro 2 offers all the basics, as well as wild, professional sound-design-grade effects. In Single effect mode, they offer the most variety of any DJ software and are amazing for remixes or transforming any song into usable but unrecognizable samples. A demo version runs for 30 minutes at a time.

For incorporating into full mixes or individual tracks of a song, the stutter effect tends to work best in the shorter loop lengths.



that when an effect or other performance technique is applied, the song continues to play in the background. So when you turn off the Brake effect, the song resumes play in the position it would be in if the effect was never applied.

A knob controls the length of the Brake effect, ranging from a few seconds to near-instant. You could of course use this effect simply as a different kind of fade-out to end a song, but in combination with slip mode in DJ software, you can get a lot more creative with it. By playing with the effect length and engaging/disengaging the effect rhythmically, you can use Brake as a sound effect to give vocals or instruments an alien, paranormal sound, enhance the lead-up to transitions within a full mix, or add a twist to part of a drum loop. While mastery of the effect is rather simple, it holds plenty of potential.

Brake could also be used to censor words if you're creating a clean version of a vocal. You can hear an example of this effect on the vocal of Will.I.am's 2012 single "Scream & Shout."

Traktor Pro's version of this effect, called Turntable FX, includes the option to add back-and-forth record scratching with variable speed, or to do a simulated quick record rewind with the touch of a button.

Did I Stutter? Let's have some more fun with slip mode. Another common DJ software effect is called Roll in Cross (see Figure 4 on page 76), Repeater in Serato DJ, or Stutter in One DJ. When engaged, the song plays in a repeated loop of varying length, and when disengaged, the song resumes playback in the position it would have been in without the effect. An effect amount control will vary the

length of the continuous loop. Loop length usually ranges from 1 bar to 1/32nd note.

For incorporating into full mixes or individual tracks of a song, the stutter effect tends to work best in the shorter loop lengths. Engage/disengage the effect quickly at loop lengths of 1/16 or 1/32 to add quick fills to drums, stutter effects to vocals, or again as a creative way to censor lyrics for radio-friendly versions. With the effect engaged, play with the loop lengths going from slower-to-faster or faster-to-slower to create dramatic build-ups or transitions. If your software allows you to turn off slip mode, you may enjoy this even more as a tool for inserting build-ups. In any case, try combining this effect with other tempo-synced effects like a flanger or LFO filter.

With Traktor Pro's Beatmasher 2 stutter effect, you have the added abilities for slices to loop in reverse playback, to warp the timing of the stutters, and to mix in gated playback of the track while the effect is on.

Effects for Sound Design Many DJ programs have effects that will allow you to mangle either your music or any music you choose into unrecognizably twisted raw sound material that you can record and pump back into your own productions. However, Traktor Pro gets a special shout out here for having the most creative and infinitely tweakable palette. Try the Reverse Grain effect, where every bar of a track can be instantly

back into an editor. Native Instruments' Traktor Pro (see Figure 2) sets the gold standard for DJ effects, but there are also very valuable effects in Serato's various iterations, MixVibes Virtual DJ and Cross, One DJ, etc. You may have a limited version of one of these lying around from a MIDI controller you purchased, or you can often try a demo version before buying.

Fun With Torque Even digital-age kids know the sound of a song slowly coming to a stop as a turntable winds down. It's been used on plenty of popular productions, and in many DJ programs, it's available as an effect. For example, in MixVibes Cross 2.6 and Virtual DJ, it's called Brake (see Figure 3), and Braker in Serato DJ. Turn the effect on, and the song comes to a "stop" as if it were being played on a turntable. However, the song doesn't actually stop. It's still playing in what some software calls "slip mode," meaning



Fig. 3. The Turntable Braker, or Brake Effect, as seen here in MixVibes Virtual DJ, works great for creative pitching, transitions, censoring words, and more. The free Virtual DJ Home version includes effects.



Fig. 4. DJ software offers simple effect interfaces, like the Roll stutter effect in MixVibes Cross 2.6, and uncompressed audio recording so you can bring the results back into a DAW. The Cross DJ Free version includes effects.

transformed into a granularly psychedelic copy of itself, or reversed and inverted so heavily it can become a new glitch-hop loop guaranteed to evade the ear of sample traspotters. Use Transpose Stretch to turn source material into

perfect fodder for dub or downbeat remixes. Traktor Pro's macro effects, like Laser Slicer, Bass-o-Matic, Event Horizon, and others, combine different tempo-synced effects into one-knob wonders that sound like magic even

to those who think they've heard it all. ■

Markkus Rovito is a frequent contributor to DJTechTools.com, and a drummer, electronic musician, and DJ.

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Avid Pro Tools 11

Create a ghost delay to give a track a wider ambience

BY MICHAEL DUKE

OBJECTIVE

Delay a track and pan the delayed signal opposite of the source track in a stereo mix, in order to give the track a subtle feeling of width without it seeming like an obvious “effect.”

BACKGROUND

Although this effect is being demonstrated in Pro Tools 11, this technique works equally well in any version of Pro Tools, or essentially any DAW. You don't have to pan the source and aux tracks hard left and right, although the wider the panning differential, the bigger the track will sound.

TIPS

■ The combination of two parameters: Experiment with delay time and the level of the delayed signal to find just the right amount of opposite-side ambience.



Step 1 Create an Aux Track: Select the track you want to delay and then go to Track > New. Next, select a mono aux input and create it. The aux track will appear next to your selected track. Pan it opposite to the source track.



Step 2 Create and Route the Delay Send: On the source track, create a send that's going to any unused mono bus. Here I chose Bus 13, and then renamed it “G Delay.” Then select Bus 13 as the input for your aux track.



Step 3 Insert a Delay Plug-in: Open a delay as an insert on the aux track (100% wet). Here I used Pro Tools' Mod Delay III, which is the basic delay in PT11, but you could use any delay for this. Delay length is up to you, and depends on the type of track. For a lead instrument, I would recommend a relatively long delay, such as a quarter-note.

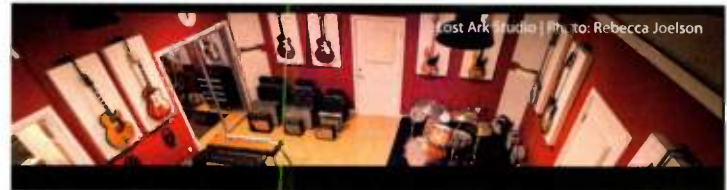


Step 4 Adjust the effect: Slowly bring up the bus send until the track begins to widen, but doesn't sound like you have a delay on it. It's often helpful to solo the source track and the delay, get a balance that way, and then put the rest of the tracks in so you can hear how it sounds with the full mix.

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Five Reasons Why Dance Music Will Never Die



Over a half-century ago, it was said “rock and roll will never die.” Well, don’t plan any funerals for dance music, either... here’s why.

1

They already tried to kill it. Didn’t work.

Remember “Disco Sucks?” Well, disco was killed—but like a crazed, drug-resistant mutant strain of bacteria (or Cher, for that matter), dance music came back *stronger*. And then it metastasized into different forms of music—sort of like a happy tumor. Take *that*, Steve Dahl!

2

Rise of the machines.

Technology has not only given us cool dance music-specific instruments like MPC boxes, Maschine, and Live+Push, but has also birthed pitch correction—so just like rock and country, we now have a level playing field where super-buff guys and drop-dead gorgeous girls can become dance music stars without actually being able to sing!

3

Trance music has been around for at least 1,200 years. Yup, it’s pretty much a straight line from the Sufi mystics who saw trance music as a way to reach ecstasy, to smiley-faced Berliners dancing to trance music while whacked-out on ecstasy.

4

Dance music venues have practical uses. Dance floors are usually so crowded with what seems like the equivalent of paramecia in pond water that no one will be able to see if your dance moves are truly *horrifying*—so they won’t be judging whether you have the moves needed to be, shall we say, an energetic and coordinated partner in certain nighttime activities.

5

Humanoid bipeds have a pulse. Yes, even the people who *hate* dance music have to admit their body’s heart is a drum machine. Whether it’s beating at an ambient-friendly 60 BPM or an Olympic rower’s 185 BPM (simply *marvelous* for drum ‘n’ bass!), no one can escape The Beat. Well, until your heart stops beating and you die . . . which by itself is a good enough reason to appreciate your own personal four-on-the-floor kick drum.



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