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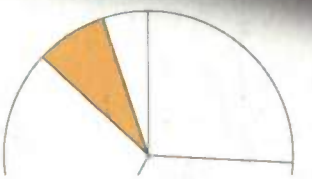
BASE PRO 8
BBLE AND BAM BAM
NCHIRP
.32R
4
UNFILTERED AUDIO
SANDMAN



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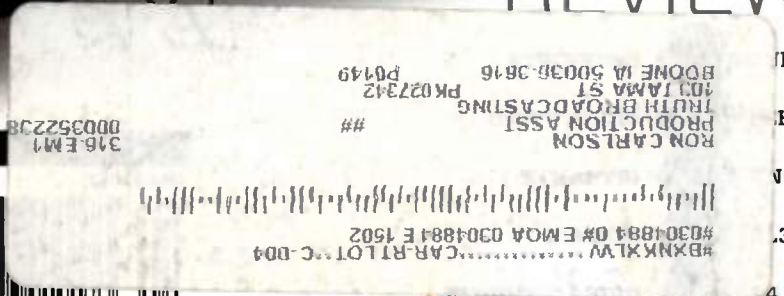

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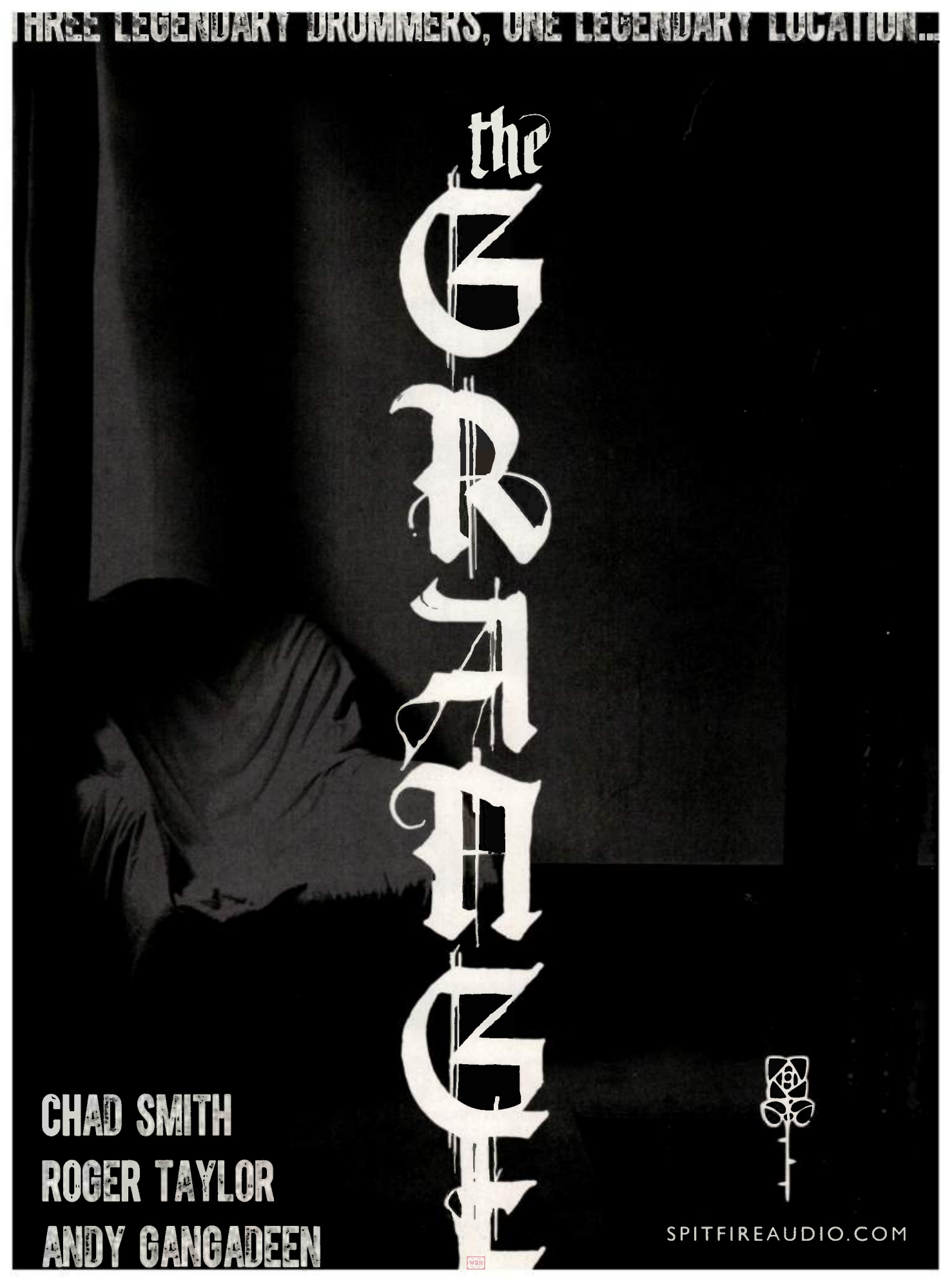
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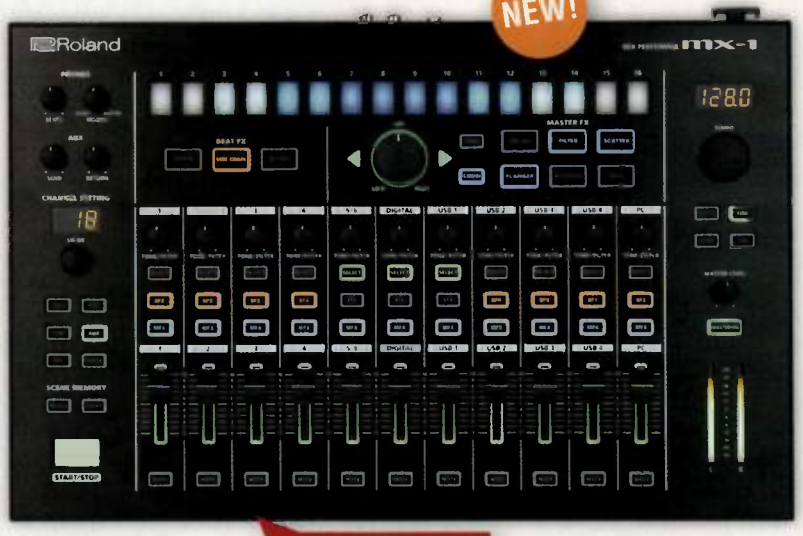

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CONTENTS

22 MODULAR SYNTHESIZERS

While many modular users prefer to build instruments to meet their individual needs, sometimes a preconfigured system is the way to go. We explore options ranging from basic single-voice instruments to complex composer systems.

DEPARTMENTS

10 **COMMUNITY**

14 **NEW GEAR**
Products from Waves, Roland, Yamaha, and more!

20 **MOD SQUAD**
Expert Sleepers Disting

74 **ROUGH MIX**
Must, Should, Could—Prioritization strategies for every project

HOW TO

62 **MASTER CLASS**
Get an extra cut when you sell music and merch online.

68 **PRODUCTION**
Control your workstation with an iPad

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40
DIRTYPHONICS
In the studio or on the road, these electronic pop artists are always shifting gears.

44
PLAYLIST
New releases from Björk, The Go! Team, Steve Earle, and more!

34

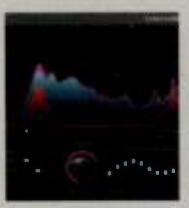
AUTUMN DEWILDE

THE DECEMBERISTS

Producer/engineer Tucker Martine (above) and bandmember Colin Meloy take us inside the sessions for Portlandish alt-folk-rock band The Decemberists' latest album, *What a Terrible World, What a Beautiful World.*

GEAR REVIEWS

46
STEINBERG CUBASE PRO 8
Workstation



50
ZYNAPTIQ UNCHIRP
Plug-In

52
MACKIE DL32R
Wireless Digital Mixer

56
UNITY AUDIO PEBBLE & BAM BAM
Active Monitors

59
RESIDENT AUDIO T4
Audio Interface

60
UNFILTERED AUDIO SANDMAN
Plug-In

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COMMUNITY

insight

Roll With It

YOU'VE PROBABLY noticed some changes in this magazine over the past few months.

Here at *Electronic Musician*, we're constantly evaluating the best ways to educate, inform, and engage readers, and the changing roles that print, online, and events play in that process.

We're all musicians and engineers, too, and we seek out information in the same ways you do. We're guided by the belief that the Internet is the go-to channel for breaking news and rich content, but print's strength lies in providing context and expertise, content that transcends the "everyone's an expert" wild west culture of the web. To that end, in each issue, we're bringing you more gear reviews from top industry experts, deeper tutorials, and a little more "teeth" in the form of opinion pieces like our new "Rough Mix" column on the back page.

We've made some big changes at emusician.com, as well, starting with a complete overhaul of our website design, and expanding our web-exclusive content with our new DIY Advisor career advice column, "5 Questions With..." interview series, in addition to print extras.

It's all part of how we are evolving as a resource to help you make better music.

Let us know what you think. You are all part of the conversation.

SARAH JONES
EDITOR
sjones@musicplayer.com

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WEB HIGHLIGHTS

This month on emusician.com

SXSW 2015: Complete Coverage

Plus...
Dirtyphonics: Expanded Interview
DIY Advisor: T-Shirt Designs that Sell
Q&A: AVL president Tony van Veen

...and lots more!

DIEGO DONAMARIA

gadget geek

Theremin + Matryoska = Matryomin!

Fresh from the NAMM Hall E Land of Oddities

The Matryomin is a single-antenna Theremin built right into a wooden matryoshka doll. The instrument, invented by Japanese theremin player Masami Takeuchi, controls pitch over a five-octave range, is powered by 4 AA batteries, and features a tiny built-in amp and "low" and "high" audio outs.

To hear the Matryomin in action, search for "Matryomin Ensemble" on YouTube to watch 272 players perform to a Guinness World Record for Largest Theremin Ensemble.

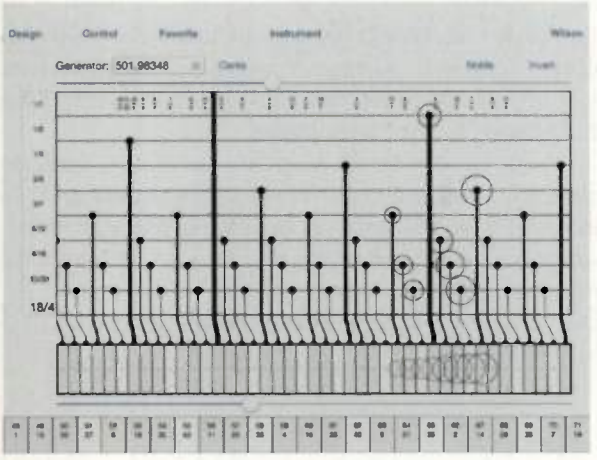
Prices start around $350; mandarinelectron.com.

app tip Marcus Satellite Wilsonic

BY MARKKUS ROVITO

Experiment with infinite microtonal tunings and upload them to a soft synth

A SMALL subset of "microtonal" musicians composes using special scales with many notes per octave, at non-standard intervals. Their godfather is Ervin Wilson, who spent several decades researching microtonal scales based on numeric and geometric relationships between frequencies. Marcus Satellite's Wilsonic for iPad (iOS 8.1 or later, www.marcussatellite.com) now gives you the easiest way to explore and record three of Wilson's complex tuning systems.



1. Choose a design from the Design menu; touching the design or keyboard at the bottom plays the notes in one of three simple timbres: Sine, Saw Lo-Pass, or Saw.

2. Each design has decimal multipliers, interval numbers, or sliders that will change the tunings, number of notes per octave, interval lengths, etc. You don't need to know music theory or complex math to find something intriguing; just mess around. The visual feedback of the app makes it fun to try things based on shape.

3. When you find a tuning you like, go to the Favorite menu to save the tuning. You can then email Scala files (.scl) or sync them to your Documents from the Favorites panel. Scala files encode musical tunings that you can upload to compatible software and hardware instruments to play your Wilsonic scales on a more sophisticated sonic palette.

4. You can also record Wilsonic's audio into iPad apps compatible with Inter-App Audio or Audiobus-compatible apps such as GarageBand.

Tune into the iTunes App Store to find Wilsonic for $2.99..

ASK!

I'M THINKING OF PRESSING AN LP RATHER THAN MAKING A CD. HOW DIFFERENT ARE THE FORMATS TO WORK WITH? WHAT KINDS OF THINGS DO I NEED TO CONSIDER?

JASON WILLIAMS
CHICAGO, IL
VIA EMAIL

The Neumann AM-32 lathe at Infrasonic Sound, Los Angeles, CA. The large dial on the control panel on the right can be used to manually regulate the number of lines etched into the master lacquer.

There are several elements to take into consideration when putting music on vinyl, particularly if you want to make the most of the medium. To begin with, an LP holds less music per disc than a CD, and the amount of music it'll handle depends on the playback speed and how loud you want your record to be. The louder the music, the bigger the grooves and the more space that is required. In addition, the faster the playback speed, the better it'll sound, though the trade off is less music per side.

Mastering services and pressing plants each have their own recommendations, but in general they suggest keeping the program length between 12 and 18 minutes per side of a 12" LP at 33.3 RPM. The longer the side, the more space you'll use and the quieter (and potentially noisier) playback will be. You can, however, fit nearly 30 minutes per side if sound quality isn't an issue.

Because high-frequency reproduction declines as the needle approaches the center of the disc, consider sequencing your louder songs earlier on each side so that they are closer to the outside edge and are spread across more surface area.

The mastering engineer will likely add dynamics processing and EQ, as well as center the bass frequencies below a particular crossover point to maximize playback. Although you may be tempted to do some of this yourself as you mix, don't: Give the mastering engineer the best sounding mix you can and they will tailor it to the vinyl medium using their specialized tools.

Finally, be sure you listen to your test pressings on a high-quality turntable to make sure no artifacts were introduced, such as hum or distortion. It's not uncommon to go through more than one test pressing, so be patient and don't rush the results. And if you have any questions about the process, ask your mastering engineer..

THE EDITORS

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

YOUR TAKE

CONGRATULATIONS to Shawn Skead, who submitted our favorite EDM tip for our January "Your Take" contest. Sean wins a Novation Launchpad S & Launch Control XL for Ableton Live! Here's his winning tip:

1. First, get your beats, grooves, synth patches and all instrumentation "out of the box."

2. Begin the painfully slow process of REPLACING all of those sounds with your own:

- Go into a garage and record the sound of a car door slamming shut. This will be your kick.
- Fill a large water bottle with water, and bang on it. This will be your toms.
- Replace that "grindy" synth track with a recording of a fan noise.
- Add organic instruments to your synths to give them a special quality.

Everyone is using the same tools, and often not diving past the presets; if you want to sound different, build a set of sounds for yourself, and sample everything you can get your hands on—every strange instrument you find; heck, even go to the music store and rent a viola for the day. Sample every note, bang on it with a rubber mallet. Back in 1998, I went to my local library and rented a cassette tape of Orca noises. I created a drum set from those, eventually a song called "Food for Killer Whales."

We expect everything to happen quickly and easily, and the music suffers because of it. Put in the hard work by building your own sounds, beats, and synths, and surely you will have something that no one else has.

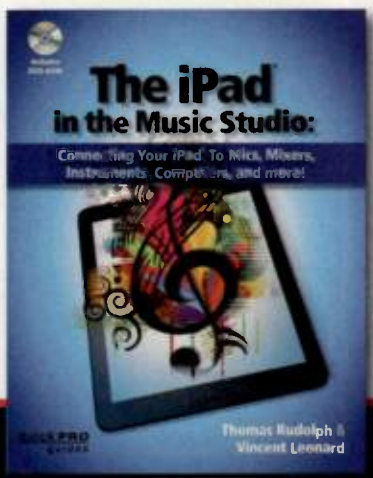
Sincerely, **Shawn Skead**

CORRECTION

SPOTLIGHT | SONAR

In last month's Community section, our spotlight on Cakewalk SONAR erroneously ran under a "Cubase 8" headline. To read spotlights on SONAR and Cubase workstations, visit emusician.com/SonarSpotlight and emusician.com/CubaseSpotlight. *Electronic Musician* regrets the error.

Win This Book!



We're giving away three copies of *The iPad in the Music Studio* by Thomas Rudolph and Vincent Leonard ($19.99, www.halleonard.com), featured in this month's "How To" on page 68. To enter, follow @EM_Magazine on Twitter and then tweet the name of your favorite iPad music production app along with the hashtag #EMbookcontest. We'll pick three lucky winners at random on April 20, 2015! Open to U.S. residents only.

IN THE STUDIO

BY BARBARA SCHULTZ

>> Two Gallants with Karl Derfler

THE DUO Two Gallants rocked the birds from the trees, recording their latest album *We Are Undone* in Panoramic House—a remote residential studio on a hillside overlooking Stinson Beach, Calif.

"It was an amazingly organic, nontraditional environment for recording, which I think added to the whole excitement," says drummer Tyson Vogel.

"Having to go back into your life every night can have a detrimental effect on your ability to stay focused on the music," observes singer/guitarist Adam Stephens. "Having it just be the three of us the entire time was an important thing for us to be able to focus."

The third "Gallant" was veteran engineer Karl Derfler, whose credits span nearly four decades, and artists from Tom Waits to No Doubt to Smash Mouth.

"That studio is in an old house that a professor built all by hand with all reclaimed materials," Derfler explains. "There are 40-foot-long 12x12 beams that he must have pulled out of some marine yard. The floors are all two-by-fours flipped on their sides. There's some strange construction going on that creates a really ambient sound."

Panoramic includes a tracking room, an echo chamber where the original owner had put in a bomb shelter, and the control room, containing three console choices: a 32-channel API 1608 that Derfler mainly used for monitoring, a Neve 5465 16-channel sidecar, and a vintage RCA broadcast console. Derfler captured the recordings to a JH16 analog tape machine, "And it all also goes thru Pro Tools at 96k," he explains. "I record into the tape recorder and directly out of the tape recorder into Pro Tools. It all ends up in Pro Tools, but I use the tape recorder as my front end."

Instrumentation on the Gallants' tracks may be spare, with just two musicians playing mostly live in the studio, but each song is orchestrated to be as big or as delicate as it needs to be. Stephens, whose main instrument is a Gretsch Tennessee Rose, brought four amps to the studio.

"I have an Ampeg SVT Classic, but I mostly played through a Fender Bassman into my 4x12 Sunn cabinet," Stephens says. "I also used a Fender amp and a Silvertone amp that they had up there."

"On guitars, we had a selection of Royer 121s, Sony C37a's, and I own a bunch of old '60s Shure SM56s. Each amp would be double-miked with a condenser or dynamic, and a ribbon mic, and there were almost always two amps going at once," Derfler says.

Vogel often switched out pieces of his kit, and Derfler matched them with a wide variety of miking schemes and placement to fit the track and the configuration of drums.

"And having spent enough time with Mr. Waits," he continues, "I'm also used to: How can we make it not sound like drums, but still be a drum part."

"On the song 'Heart Breakdown,' we had been stop and go in the studio for hours, but suddenly I started hearing these sounds in my head. I went in the kitchen and started grabbing all these pots and pans and built a little drum set out of a radiator and one pot and a bowl and an empty water bottle," Vogel recalls. "The radiator went where the snare was, and everything came into form. There are only two of us, so most of the time we show up with a very planned-out approach, but that song was a really fun and enlivening reminder for us that being in the studio can be revealing."

SPOTLIGHT | Converse Rubber Tracks Sample Library

Converse, who brought the world the iconic Chuck Taylor, All Star, and Jack Purcell sneakers, and the state-of-the-art, full-service, and completely free Rubber Tracks recording studio in Brooklyn, is providing musicians even more free production resources with the launch of the Converse Rubber Tracks Sample Library.

The collection, launched in partnership with online music network Indaba as an extension of the Converse Rubber Tracks studio program, features free loops, stems, and sounds created by emerging and established artists in Converse Rubber Tracks sessions in Brooklyn and at Converse Rubber Tracks pop-up studios around the world.

The library boasts star-studded list of collaborators: Artists ranging from Vernon Reid to James Poyser, Adam Blackstone, Gary Bartz, Daru Jones, Matrixxman, and Greg Osby have recorded loops and sounds, and 20 artists including RJD2, Com Truise, Body Language, Obey City, Nitemoves, and Shige have released new songs featuring samples from the library. To learn more, visit Converse.com/samplelibrary.

NEW GEAR from NAMM 2015

1

WAVES

H-REVERB

Plug-in

$350 Native; $525 SoundGrid; Introductory price TBA

HIGHLIGHTS A Finite Impulse Response (FIR) reverb plug-in offering analog modeling and a drive control • EQ and dynamics parameters • built-in LFO • ability to produce resonant filter sweeps for creating effects • pre-delay BPM sync • 5.1 surround capabilities • collapsible GUI • quick-reference button • includes presets designed by prominent mix engineers

TARGET MARKET Recording and mixing engineers, sound designers

ANALYSIS A state-of-the-art reverb plug-in that offers a number of useful features for exploring the creative use of reverberation.

waves.com

2

SPITFIRE AUDIO

THE GRANGE

Drum library for Kontakt Player

£149

HIGHLIGHTS Features three influential rock drummers—Roger Taylor (Queen), Chad Smith (Red Hot Chili Peppers), and Andy Gangadeen (Massive Attack)—recorded to 24-track 2" tape in the historic English home known at Headley Grange, where John Bonham cut classic tracks with Led Zeppelin • includes hits and loops with individually close-miked instruments, stems, ambient stereo perspectives, and mix tracks

TARGET MARKET Musicians, songwriters, composers

ANALYSIS Three hard-hitters recorded to tape with vintage gear in a classic room: What's not to like?

spitfireaudio.com

3

ROLAND

JD-XI

Hybrid keyboard synth

$499 street

HIGHLIGHTS Play and sequence four parts—one analog voice, two SuperNatural-based PCM digital voices, and drums—in real time or step mode • analog filter • sub oscillator • effects (reverb, delay, ring mod, bit crusher, slicer) • vocoder (gooseneck mic included) • AutoPitch capabilities • TR-REC programming mode • USB audio and MIDI • digital synths offer 128-voice polyphony

TARGET MARKET Keyboardists, DJs, beat producers

ANALYSIS A remarkably powerful and versatile, yet affordable, instrument featuring a full analog synth voice as well as a vocoder.

rolandus.com

4

AUDIO-TECHNICA

ATH-R70X

Open-back reference headphones

$489

HIGHLIGHTS 45mm drivers • 5Hz to 40kHz frequency response • 470-ohm impedance • lightweight, with acoustically transparent honeycomb-mesh housing • self-adjusting wing-support headband • fabric earpads • detachable locking cable that can be used on either side of the headphones, while retaining the proper stereo channeling

TARGET MARKET Musicians, engineers, sound designers

ANALYSIS Audio-Technica's first open-back headphones, designed for comfort and to provide a more natural-sounding listening experience compared to closed-back designs.

audio-technica.com

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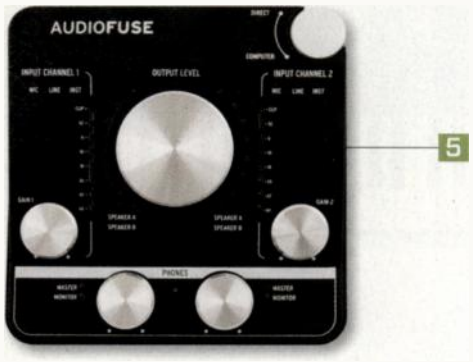

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7

6

8

5

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$599

HIGHLIGHTS 24-bit/192kHz resolution • 3 USB/MIDI ports • 2 mic preamps on combo jacks • 2 1/4" TRS analog inputs • 2 RCA inputs with RIAA phono preamps and ground • two pairs of balanced 1/4" speaker outputs • 2 1/4" and 2 3.5mm headphone jacks • direct monitoring • ADAT and S/PDIF digital I/O • two inserts • talkback • available in black, gray, and silver

TARGET MARKET Musicians recording at home and on the road

ANALYSIS A compact and portable audio/MIDI interface that can also act as a USB hub.

arturia.com

6

SPECTRASONICS

OMNISPHERE 2

Software synthesizer workstation

$499; $249 upgrade; $199 VIP upgrade

HIGHLIGHTS Audio import features • expanded browser and arpeggiator • more than 3,000 new sounds • granular synthesis and morphable wavetables • 25 new effects; 16 effects units per patch • Sound Match feature for locating related sounds in the library • Sound Lock feature retains chosen parameters as you search for related sounds • 8 new filter types • unison drift feature models the behavior of analog polysynths

TARGET MARKET Composers, sound designers, keyboardists, musicians

ANALYSIS The increase in features and power make this instrument tough to beat.

spectrasonics.net

7

DAVE SMITH INSTRUMENTS

SEQUENTIAL PROPHET-6

Analog polysynth with digital effects

$2,799 street

HIGHLIGHTS 6-voice synth with two analog VCOs per voice • 4-octave semiweighted keyboard offering velocity sensitivity and Aftertouch • resonant analog 4-pole lowpass filter for each voice • resonant 2-pole highpass filter for each voice • Unison mode • extensive modulation capabilities • 24-bit/48kHz digital effects include reverb, delay (standard and BBD), phase shifter, and chorus, all with true bypass • analog distortion • multimode arpeggiator • polyphonic step sequencer

TARGET MARKET Keyboardists, composers, performers

ANALYSIS Classic analog polyphonic synth sounds coupled with modern conveniences and build quality.

davesmithinstruments.com

8

YAMAHA

AG06

USB interface and mixer

$249

HIGHLIGHTS 6-input mixer • 24-bit, 192kHz audio interface • 2 D-Pre mic preamps • instrument input • 1/4" and RCA line inputs • stereo aux input • DSP effects with footswitch control • separate headphone and monitor controls • To PC switch and loopback capabilities for routing inputs to the stereo USB output for podcasting/webcasting • runs on batteries or AC power

TARGET MARKET Home studios, schools, mobile, gamers

ANALYSIS Designed to be lightweight, portable, easy-to-use, and rugged, while providing useful routing capabilities between analog devices and your computer.

usa.yamaha.com

NEW GEAR from NAMM 2015

9

MACKIE

FREEPLAY

Stereo P.A. system

$499.99

HIGHLIGHTS Bluetooth-enabled, full-range stereo P.A. • 2 mic/line/instrument inputs • 8" woofer • AC or battery powered (optional rechargeable lithium-ion pack) • 4-channel digital mixer • FreePlay Connect app for iOS to control speaker voicing modes, feedback elimination, and 16 vocal/instrument effects • kickstand/pole-mount and accessories available

TARGET MARKET Singer/songwriters, musicians, educators

ANALYSIS Designed to provide maximum versatility in a highly portable P.A. speaker that can be used anywhere, thanks to its battery operation.

mackie.com

10

FOCUSRITE

CLARETT

Thunderbolt audio/MIDI interfaces

$499.99-$1,299.99

HIGHLIGHTS Preamps modeled after Focusrite's ISA design • 24-bit/192kHz resolution • metering • MIDI I/O • interface latency below 1ms • Red 2 and Red 3 plug-in suite (AAX, AU, VST) • Clarett 2Pre (10x4): $499 • Clarett 4Pre (18x8): $699 • Clarett 8Pre (18x20): $999 • Clarett 8Pre X (26x28): $1,299

TARGET MARKET Musicians, recording engineers, educators

ANALYSIS Using the latest Thunderbolt technology, Clarett products have extremely low latency, combined with a surprising number of I/O options.

focusrite.com

11

NORD

ELECTRO 5

Keyboard synthesizer

$TBA

HIGHLIGHTS Expanded memory, keyboard splitting, and layering capabilities • programming section designed for live performance • available in three models: 5D 61, 5D 73, and HP 73 • the 5D 61-note and 73-note keyboards include drawbars • monitor input for stereo playback devices • 1GB piano library • included sample editor

TARGET MARKET Gigging keyboardists

ANALYSIS The Electro 5 is designed for the stage, with many new features that enhance the keyboard's real-time performance capabilities.

nordkeyboards.com

12

NOVATION

LAUNCHPAD PRO

USB MIDI controller

$299.99 street

HIGHLIGHTS 8x8 grid-based performance controller for Ableton Live • grid is enhanced with 3-color (RGB) velocity- and pressure-sensitive pads • melody and chord capabilities in Note Mode • create custom configurations within User mode • apply effects in Device mode • trigger and combine clips using Session mode • control other software using Standalone mode • USB bus powered • comes with cable and software

TARGET MARKET Beat producers, DJs, musicians

ANALYSIS A pro-level button box that is surprisingly easy to use, thanks in part to the colored pads.

novationmusic.com

All prices are MSRP except as noted

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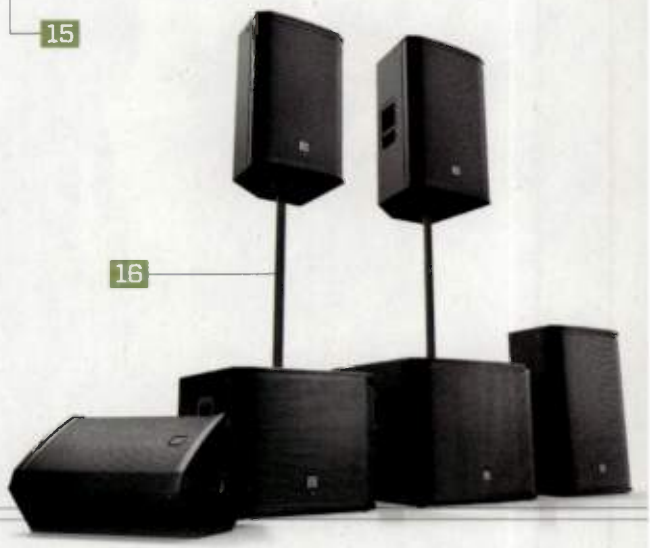

13

PEAVEY

XR-AT

Powered mixer with Auto-Tune

$899 street

HIGHLIGHTS 9-channel powered mixer offering 1,000W RMS and built-in Antares Auto-Tune technology • 8 mic/1/4" combo inputs with pads • mic-channel monitor sends • subwoofer line out • Feedback Locating System • MidMorph features • digital FX • effect-to-monitor return control • two 9-band graphic EQs • analog record outputs • Bluetooth • USB input for MP3 playback • KOSMOS bass enhancement

TARGET MARKET Performing artists, small- to medium-sized venues

ANALYSIS A solid and powerful mixer with built-in pitch correction: Perfect for open-mic nights!

peavey.com

14

VIENNA SYMPHONIC LIBRARY

VIENNA SOLO VOICES

Sample library/instrument

$540

HIGHLIGHTS Covers complete range of the human voice • four female voices (coloratura soprano, soprano, mezzo soprano, alto) and three male voices (tenor, baritone, bass) • "ah" and "oo" vowels in staccato, legato, and sustains at four dynamic levels • staccato repetitions • effects include sforzatos, diminuendos, crescendos, glissandi, and trills • Full Library includes 55,000 samples

TARGET MARKET Composers and sound designers

ANALYSIS Top-notch recording quality and performances make this a must-have vocal library.

vsl.co.at

15

KORG

KAOSS DJ

USB DJ controller and audio interface

$299.99 street

HIGHLIGHTS A DJ controller (USB-based or standalone) that includes A and B decks, a built-in KAOSS effects pad, a 2-channel mixer, and 24-bit/48kHz interface • 1/4" mic input • A and B stereo RCA input sections • RCA master outputs • 1/4" headphone jack • includes Serato DJ Intro, but supports any DJ software app

TARGET MARKET DJs, beat producers, musicians who want to explore DJ products

ANALYSIS A convenient way to add powerful KAOSS effects while using a digital 2-deck software controller.

korg.com

16

ELECTRO-VOICE

EKX

P.A. series

$TBA

HIGHLIGHTS Available in passive and powered models, each with 12" and 15" 2-way configurations and 15" and 18" subwoofers • Class D amplifiers provide up to 1,500W • single-knob QuickSmart DSP processing built-in • Cardioid Control Technology in the subwoofers for focusing the sound towards the audience

TARGET MARKET Musicians, DJs, clubs, and installations

ANALYSIS Positioned above the ZLX and ELX series, but below the ETX product line, the EKX speakers provide a lot of bang for the buck in terms of power and portability.

electrovoice.com

All prices are MSRP except as noted

SAMSON MTR201 CONDENSER MICROPHONE

With stunning clarity, a wide dynamic range and the warmth of a gold-sputtered large diaphragm, Samson's MTR201 brings accuracy and transparency to your recordings. Whether you're looking to capture every nuance of a vocal performance or the full harmonic timbre of a grand piano, the Samson MTR201 is a superior choice.

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SAMSON

The Expert Sleepers Disting has backlit jacks that indicate the voltage status as you work with any of the module's 16 useful algorithms.

Expert Sleepers Disting

The 16-in-1 utility module that is as slim as a mult

BY GINO ROBAIR

No matter what modular format you use, space is always at a premium. Consequently, modules with a dense feature-to-space ratio are highly prized when they are as efficient as they are slim.

One of the top Eurorack modules in this regard is the Expert Sleepers Disting ($175), which packs 16 individually available functions into a mere 4HP (with the help of a PIC controller and 24-bit converters). Select the algorithm you want with the upper (S) knob and adjust the relevant parameter with the lower (Z) knob. The Z jack, below, accepts a control signal; the signal going into the Z input and the level of the corresponding knob are added together. The module's X and Y jacks are inputs, and the A and B jacks are outputs. What you get from each output depends on the algorithm you've chosen.

All of the jacks are backlit and provide visual feedback by changing color to indicate the voltage state—red for positive, blue for negative. Eight LEDs at the top of the module indicate the selected algorithm (corresponding to a matrix in the manual: Group 1 through 4 on the left, algorithm A through D on the right), as well as voltage offset, quantizer scale, and so forth, depending on the mode.

I was happy to find that Disting includes two VCO modes (one with sine and sawtooth outs and a linear FM input; the other with saw, triangle, and pulse outputs and waveshaping), two LFO modes (one offering through-zero capabilities with waveshaping; the other, a clockable LFO with CV-controlled waveshaping and integer-based multiply/divide functionality), as well as a sample-and-hold with noise and an adjustable slew rate. Right away you have several audio and control options to choose from.

Disting also includes a clockable echo/delay effect (with a delay-only output, a mix output, and a feedback control); a ring modulator/VCA (aka the Four Quadrant Multiplier); a slew-rate limiter with linear and exponential options; a pitch and envelope tracker with a slew control for the envelope; a quantizer offering 15 scales/pitch configurations; and the linear-to-exponential converter that can be used to change Hz/V signals (from Korg, Metasonix, and Yamaha synths) to or from V/octave, as well as adjust a signal destined for an FM input from an exponential to linear range. In this mode, the Z control is used for fine-tuning.

Last but not least, Disting provides a dual Waveshaper mode; a gated comparator, which is great for creating rhythmic variety; a full-wave rectifier; and the minimum/maximum (or half-wave rectifier), which accepts two inputs and gives you the minimum at output A, the maximum at output B, a gate signal from Z, and the ability to freeze the level.

I've only scratched the surface of what Disting is capable of doing. Yet, with so many options available, the module is surprisingly easy to use. The toughest part is recognizing which algorithm you've chosen when viewing the LEDs: I printed out a cheat-sheet to help me remember. I also found that changing the algorithm at random when everything is patched leads to very interesting surprises: If I like where I landed, I check which mode I'm in and make a note of the patch.

If you have programming chops, you can add your own code to Disting's internal PIC controller and give this feature-rich module additional functionality. However, there are already plenty of useful features in Disting. And at this price, you'll probably want more than one in your case. ■

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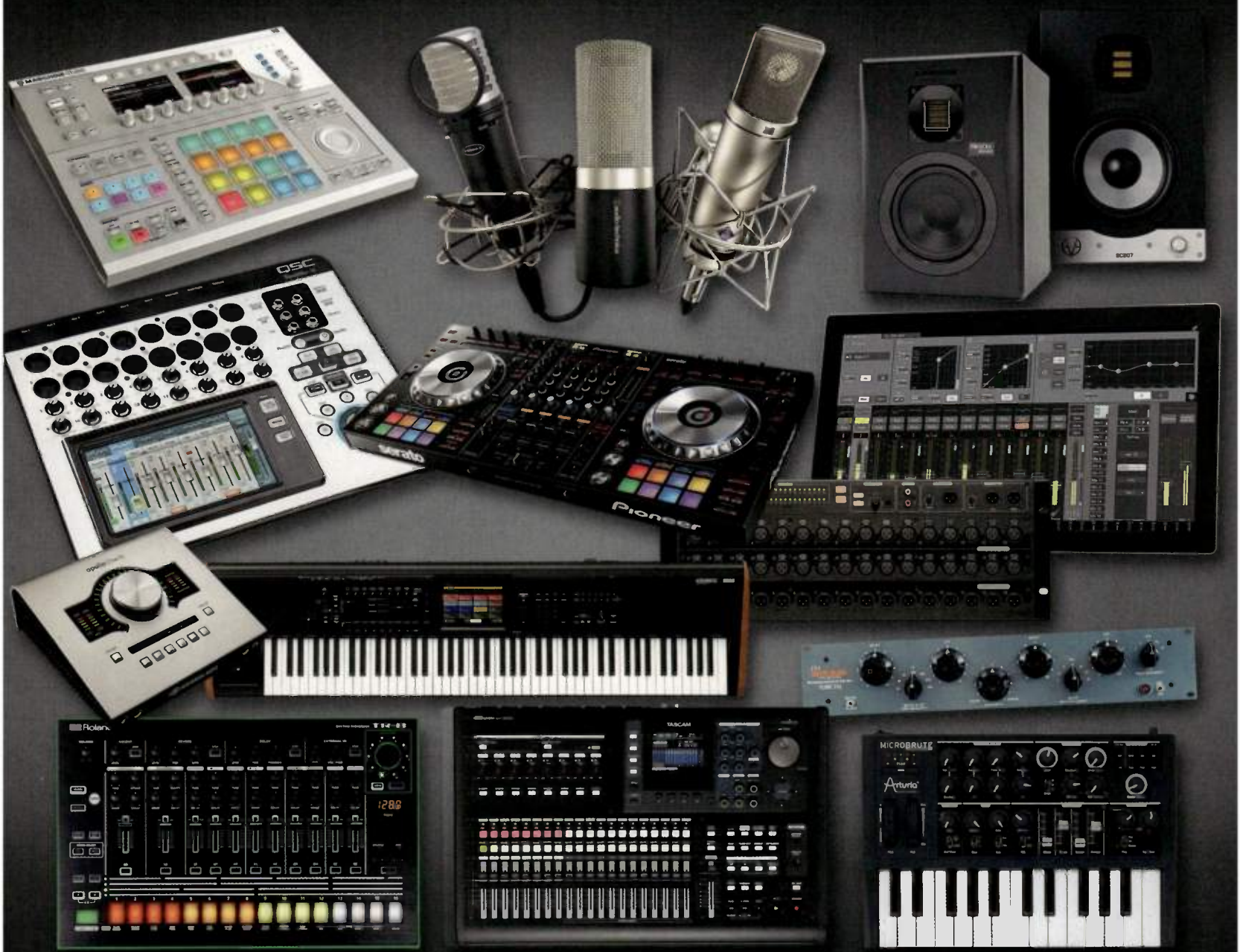

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Preconfigured Modular Synthesizer Systems

Factory-designed setups for nearly every application

BY GINO ROBAIR

While many modular users prefer to go a la carte and build an instrument to meet their individual needs, there are situations where a preconfigured system is the way to go. For example, they can serve as a suitable introduction to the world of modular synthesis for musicians who are new to the field by providing the basic system elements (oscillator, filter, envelope generator, etc.) needed to start exploring sound without getting lost in too many options or esoteric functionality.

However, the novice is not the only one who could benefit from a preconfigured system. Educational institutions with courses in sound design often invest in a complete system in order to get a turnkey instrument where everything is fully compatible and ready to use.

The systems in this article range from basic single-voice instruments designed for newbies to fairly complex composer systems that require a major investment in time to comprehend fully.

But no matter which way you go, a preconfigured system is extensible. Because you're working in a modular system (as opposed to a semi-modular system where all of the features are built into one large panel), you are encouraged to modify or expand your setup, either by swapping out individual modules for other sounds and functions, or by adding modules to increase your system's potential. In fact, several manufacturers leave open slots in their cases just so you have room to grow without having to sacrifice other modules to make space—win-win!

Fig. 1. Utilizing its newly released 200h (half-size) modules, the Buchla LEM3 Spider includes MIDI-to-CV and CV-to-MIDI modules so you can integrate the 252e Polyphonic Rhythm Generator into any other modular or MIDI system.

Fig. 2. The Blacet Puma 15 includes enough modules for a single MIDI-controlled synthesizer voice, with empty rack space to expand your timbral palette.

BUCHLA ELECTRONIC MUSICAL INSTRUMENTS
BUCHLA.COM

Buchla & Associates (now Buchla Electronic Musical Instruments or BEMI) has offered modular systems for years. Although they are priced higher than configurations of a similar module-count by other manufacturers, the company's founder, Don Buchla, will tell you that the feature density is much higher in his designs, so you get what you pay for.

Nonetheless, to the uninitiated, the 200e System 7's price tag of $29,999 is jaw dropping in a world where many Eurorack modules are cheap enough to be impulse buys. Again, Mr. Buchla will point out that a serious concert instrument, such as a pedal harp or violin, is similarly priced, and he's right. And there is no denying that a Buchla 200e has a unique sound and demands dedication from the user if he or she plans to get the most out of it.

Until recently, the company's intro system was the 200e System 1 ($5,299), with a 261e Complex Waveform Generator (oscillator), a 292e Quad Dynamics Manager, and 281e Quad Function Generator with the 225e MIDI Decoder/Preset Manager in a 201e-4 powered boat (the rackmountable case). From there, the systems quickly increase in size, complexity, and price with the portable 200e Skylab ($14,999) being the next step up.

At NAMM 2015, BEMI unveiled its new line of half-size, 200h-series modules. Available in more-affordable packages, the h-series modules were developed with interconnectivity in mind, allowing Eurorack or other modular users to easily incorporate Buchla modules into their setup. (Besides having a 4U panel height with banana jacks for signal flow, Buchla systems use a 1.2V/octave standard rather than the 1V/octave industry standard supported by the majority of modular manufacturers).

Under the name LEM (a nod to the American space-exploration craft, the Lunar Excursion Module), BEMI currently offers the LEM3 Spider ($2,999), the LEM4 Snoopy ($2,499), the LEM4 218 Snoopy ($3,499), and the LEM7 Aquarius ($899). These systems use the LEM3 powered boat with external supplies and are designed for desktop use.

With its 225h MIDI to CV Interface and 226h CV to MIDI interface modules, the LEM3 Spider opens up external control possibilities via USB or DIN MIDI connectors with 6 channels of CV to MIDI conversion and a patchbay converter with common connector types (see Figure 1). By packaging these utility functions with the new 252e Polyphonic Rhythm Generator, BEMI opens up this powerful sequencer to exploitation by any DAW or modular system—nice!

The LEM4 is a basic 200e synth voice, with the 225h MIDI to CV interface and 202h Utilities modules and the 261e Complex Waveform Generator as the sound source. The newly released 292h Dual Lowpass Gate provides characteristic Buchla color when paired here with the voltage controllable (and cyclable) 2-stage EGs of the 281h Dual Function Generator. The LEM4 218 Snoopy system adds the LEM 218 capacitive touch keyboard, which also provides 3.5mm and MIDI DIN I/O connectors for intersystem connectivity.

The LEM7 Aquarius is a base system ripe for expansion. It leaves enough space for up to four additional 200h modules or two 200e modules to pair with the included 225h MIDI to CV interface and 202h Utilities modules.

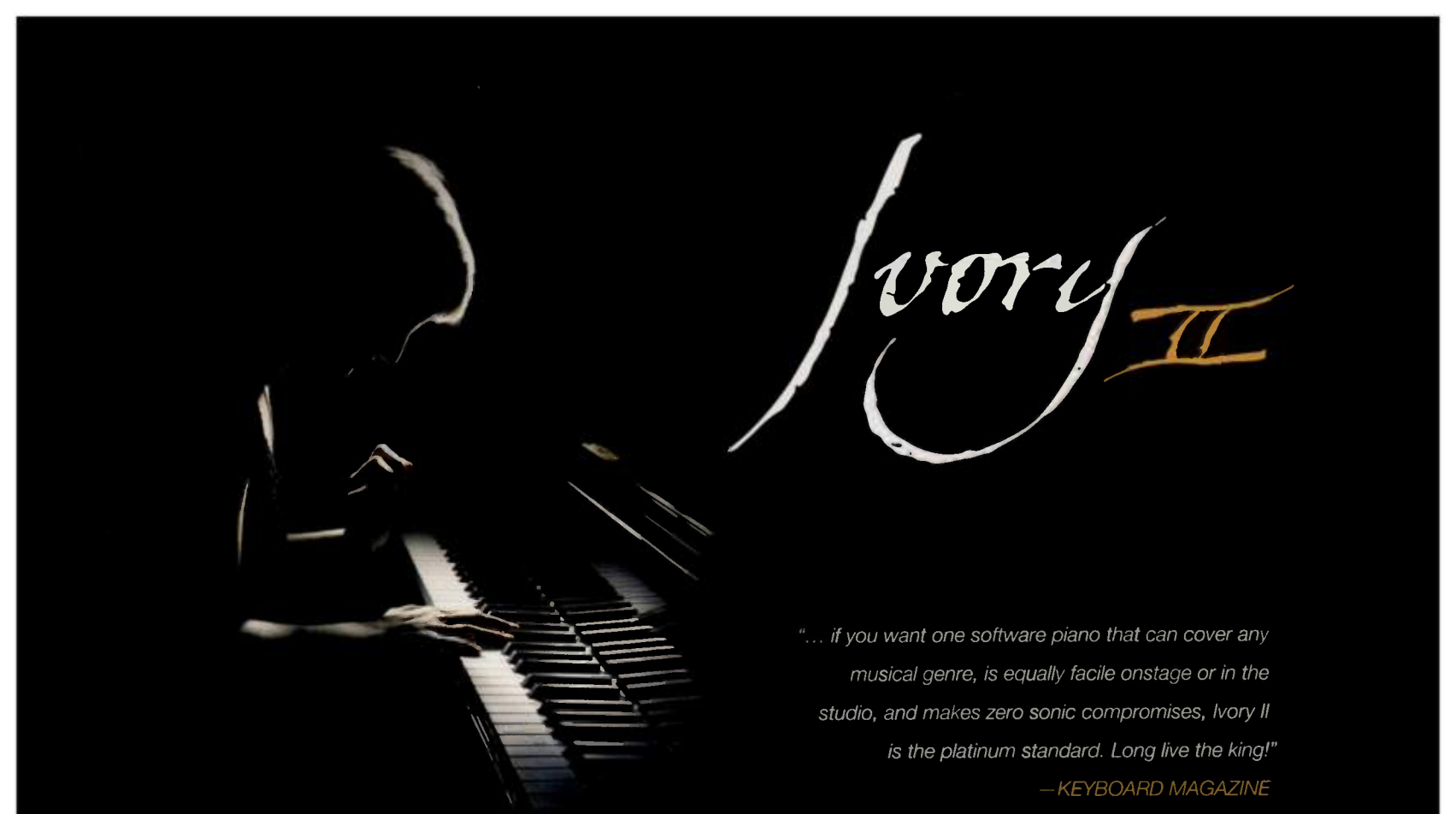
BLACET RESEARCH
BLACET.COM

Although FracRack—3U panels with 3.5mm or banana jacks and a ±15V power supply—is not the dominant modular format, it has a loyal user base that is particularly populated with DIYers. The module choices are far fewer than in Eurorack, but there are plenty of interesting ones out there by companies such as Metalbox, Wiard, Synthesis Technology/MOTM, PAiA, Bug Brand and, of course, Blacet Research.

The only representative of the Frac format in this roundup, designer John Blacet has offered an extensive line of modules in both kit and factory-built form for decades. Overall, they're well designed and affordable, and sound great—I'm particularly fond of his VCO and Mini Wave (modules developed in collaboration with Wiard›s Grant Richter) as well as the Filthy Filtre; but you really can't go wrong with any Blacet module.

I was particularly happy to see the company introduce a new pre-configured system, the Puma 15 ($1,450). The setup holds 8 modules for a complete synth voice—a VCO, the Filthy Filtre VCF, a 4-stage (ADSR) envelope generator, the Super VCA, the Micro LFO, the SBM 3200 Splitter/Mixer/Voltage Source, and a voltage controllable digital FX/Reverb module (see Figure 2). The included MIDIverter 2910 MIDI-to-CV module lets you control your Puma 15 from any MIDI controller or DAW, including the use of CC messages to access its internal arpeggiator, LFO, and clock divider, among other features.

To house the modules, Blacet includes the new RAK-2 case (available in box or rackmountable versions, each with a built-in bus board and power supply). There is enough room in the rack for an additional 3 to 6 modules, depending on how wide they are. (I›d suggest adding a second VCO and LFO module with your initial order to create richer, more complex sounds.) Custom configurations are also available by special order.



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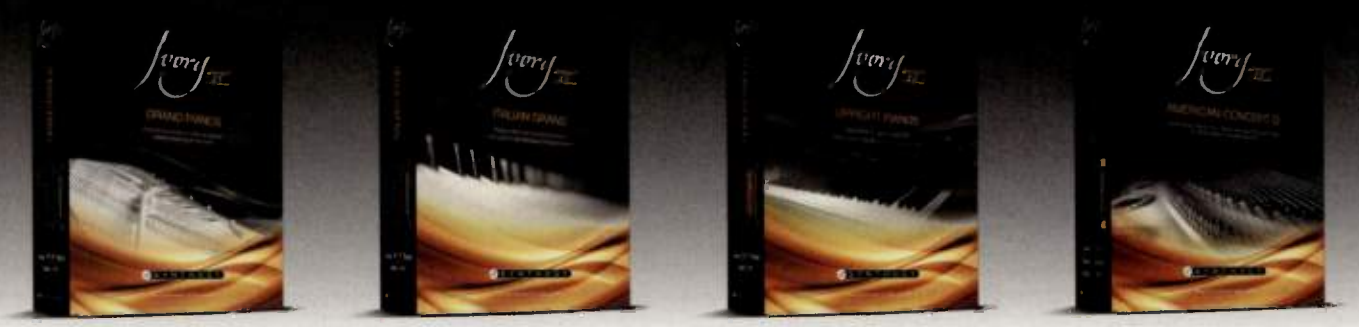

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Fig. 3. The Doepfer A-100BSS1 Basic Starter System 1 veers away from the standard subtractive-synth voice by providing a complement of modules that encourages experimentation.

Fig. 4. The Make Noise Shared System packs a wealth of high-level functionality into a flight-friendly case.

DOEPFER
DOEPFER.DE

Doepfer has offered preconfigured A-100 Eurorack systems for years, making it easy to get a musically useful system without having to navigate the enormous variety of modules in its catalog. For example, if you want a basic synth voice to play with a MIDI controller, there is the single-frame A-100BSM Mini-System ($1,649), which includes two VCOs, a VCF, an EG, a VCA, a mixer, a MIDI-to-CV/Gate/Sync interface, and several utility modules. It's housed in a 3U rack with power supply and comes with patch cables to get you started.

The A-100BS1 Basic System 1 ($2,549) and A-100BS2 Basic System 2 ($2,599) encompass 6U (either in a rack or a portable case) and provide a more complex subtractive-synth voice when played in a traditional manner (as well as a sophisticated sound-design tool when used more unconventionally). The biggest difference between these configurations is that the Basic Systems 2 includes a MIDI interface module, as well as a variable-waveform LFO. Expansion systems and other configurations are suggested on the company's website.

This year, Doepfer announced the A-100BSS1 Basic Starter System 1, with an atypical collection of modules that was determined by user feedback, particularly those who wanted to get away from the common synth-voice architecture. In addition to the aforementioned MIDI interface, VCO, and ADSR, the Basic Starter System 1 includes a dual VCA that works with audio or control voltages, a noise source, a dual sample-and-hold module, the VC Slew Limiter (inspired by the classic Serge VCS), the 2-pole multimode Oberheim-inspired SEM filter, the new VCDLFO (voltage-controlled delay low frequency oscillator with a VCA, VCLFO, and VC delay that can be used together or independently), a polarizing mixer, a clock/trigger divider, and a multiple. The modules can be mounted in the A-100LC3 Low Cost 3U case (an unfinished wooden box that includes the bus board, power supply, and external transformer) for €1,240 or an A-100G6 or P6 for €1,470.

Of course, by utilizing the MIDI interface you can control the system from your DAW or a keyboard, allowing you to play it like a traditional synth, though this particular module selection lends itself to more unusual uses. Designer Dieter Doepfer hints that there are plans for "other such weird systems," to come.

MAKE NOISE
MAKENOISEMUSIC.COM

Make Noise has helped set the Eurorack world on fire by adding innovative DSP-based modules such as the Echophon, René, Phonogene, and ErbeVerb to their list of West Coast-inspired products. It has also been champions of performance-based systems, which the René Cartesian sequencer and Pressure Points capacitive pads are a testament to.

The company offers seven configurations, each of which is aimed at a specific usage or aesthetic, while leaving space in the case for future expansion. Make Noise systems are housed in tabletop-friendly wooden cases that lay flat, making them ergonomically suitable for real-time sound manipulation. The case has a detachable lid and uses an external AC power adapter. Make Noise designed these instruments with travel (and carry-on baggage restrictions, in particular) in mind. Cables are included with each system.

The Shared System ($3,695; black-and-gold version with ErbeVerb $4,500; $3,530 without CV bus) is their most sophisticated setup; it was originally designed as the base system for a series of 7" recordings by artists such as Richard Devine, Alessandro Cortini, and Surachai (on Make Noise Records). Performability is enhanced here by the inclusion of René and Pressure Points modules, as well as the Phonogene and Echophon DSP processers for granularization, echo, pitch shifting, and so forth. The setup is rounded out with the DPO dual analog VCO, the Optomix dual lowpass gate, the Wogglebug and Maths voltage generators, and the modDemix VCA/ring modulator.

Between the top and bottom rows is the CV bus, which includes a 1/4" mono input with gain control; an AC-coupled 1/4" stereo output (fed by two 3.5mm inputs) with limiter and master volume control that is designed for headphone use or feeding a P.A. when performing; and four mult channels. Because Make Noise modules are feature rich, the Shared System will keep you busy for a long time exploring its capabilities.

The 6U System 1 ($2,540) and System 2 ($2,530) contain many of the same modules—the DPO, an Optomix, an Echophon, two Function CV generator/processors, and a mult—but differ in their control elements. The System 1 combines two Pressure Points modules with Brains for 3-channel analog sequencer and touch-pad expressive capabilities, while the System 2 substitutes a René for the Pressure Points/Brains combo and lends itself to very complex improvisational sequencing work.

The three remaining systems come in 3U cases: the System 0 ($1,330) a single synth voice featuring a DPO, Maths and Optomix; the System Concrète ($1,920) intended for processing external sounds using the Phonogene, Echophon, Math, Wogglebug, and MMG multi-modefilter; and the Touch System ($1,285), which puts two Pressure Points, Brains, and René into a performance-skiff that can be used to drive any CV-controllable synthesizer.

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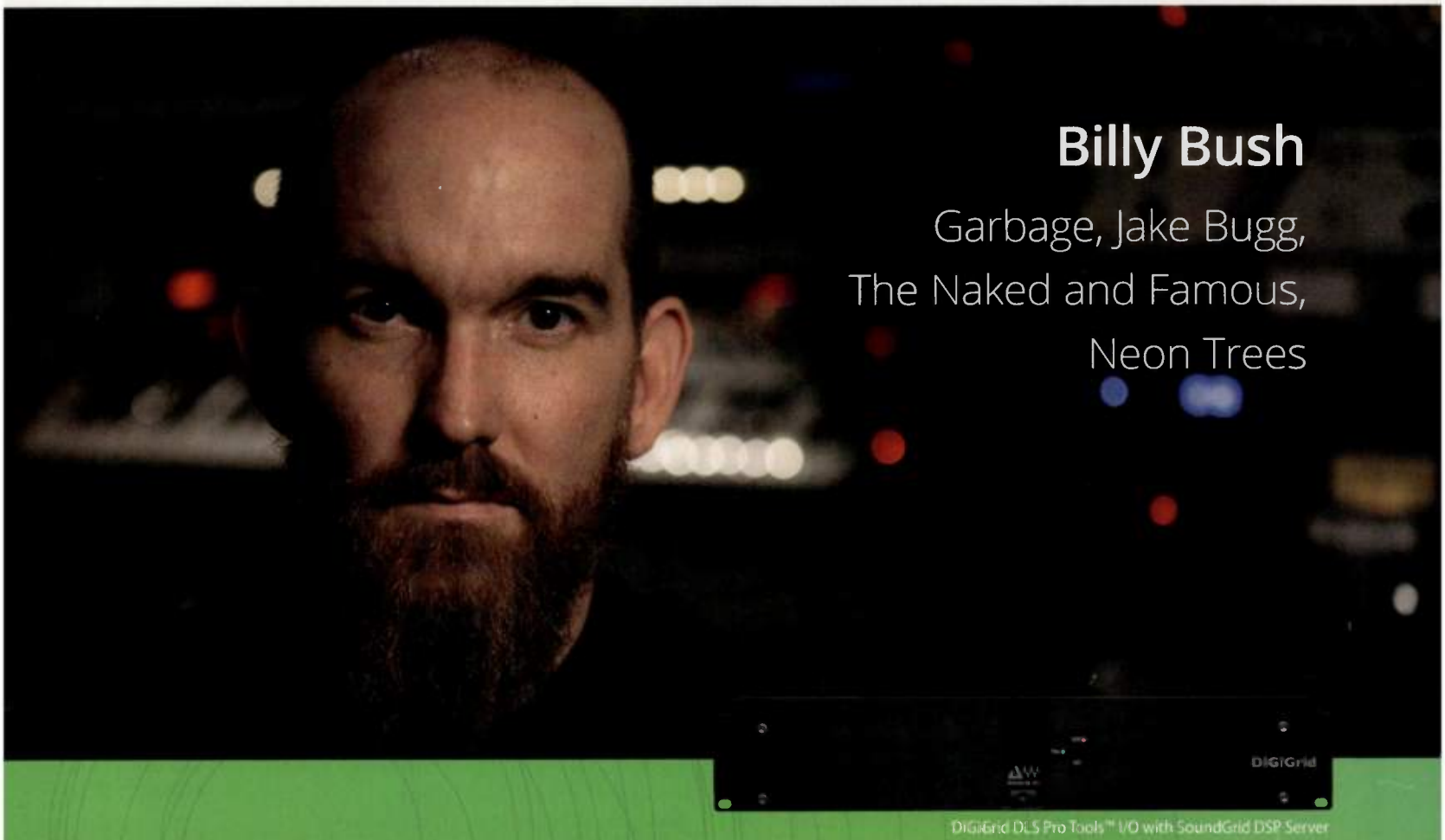

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Fig. 5. The Moog Music System 35 holds 22 modules and is shown here with the Sequencer Complement B (on top) and the Duophonic Keyboard controller.

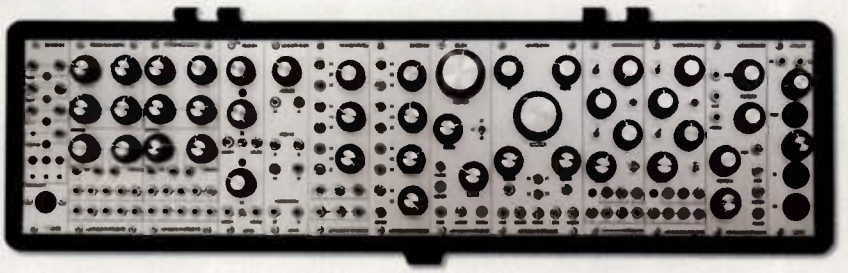

Fig. 6. The Pittsburgh Modular Foundation 3.1 is a surprisingly powerful and feature-dense MIDI-controllable system in a portable 3U case.

MOOG MUSIC
MOOGMUSIC.COM

Re-creating the original modules in Keith Emerson's famous instrument was no trivial task for Moog Music (nor is the $150,000 price tag for prospective buyers). While many of us expected the company to utilize its three years of R&D with a more affordable instrument, few expected them to reissue three classic configurations along with a keyboard and sequencer. But that's exactly what they did at the 2015 NAMM show by unveiling the System 55 ($35,000), the System 35 ($22,000), and the System 15 ($10,000), accompanied by the Sequencer Complement B ($8,500) and Duophonie 61 Note Keyboard ($799).

While those prices will stagger the minds of people used to spending far less for single-function modules, consider that buying an original Moog modular and getting it refurbished will significantly exceed these prices. For the musician, sound designer, or film composer who will settle for nothing less than the Moog modular sound and who will actually use it in their work, nothing can beat having a minty fresh instrument built by hand, and one that won't require constant maintenance. However, these are limited editions—55, 35, and 150 units respectively (as per their System number!)—so they're likely to become as hard to find as the originals.

The largest, the System 55, puts 36 modules into two hand-finished solid walnut cabs. Among the collection you'll find the 960 Sequential Controller, the 914 Fixed Filter Bank, the 904A LPF and 904B HPF, the 903A Random Signal Generator, five 911 EGs and five 902 VCAs. The oscillator configuration includes a 921, six 921Bs, and two 921A Oscillator Drivers. The frequency range of the classic 921 oscillator spans 0.01Hz to 40kHz, while the 901B goes down to 1Hz—from LFO range to an octave above what humans can hear. These VCOs offer serious modulation capabilities.

The 22-module System 35 includes five VCOs (one 921, four 921B), two 921A VCO drivers, three VCAs and EGs, the 923 Random Noise/Filter (HPF and LPF) module, as well as the 907 Fixed Filter Bank and 903 Noise Generator (Figure 5). The System 15 is Moog's portable configuration, based around three VCOs (a 921 and two 921Bs), a 921A, two VCAs and EGs, the Fixed Filter Bank, Random Noise/Filter, and the 904A lowpass VCF.

Built into a cabinet that is sized to match the System 55 and 35, the Sequencer Complement B includes a pair of 960 Sequential Controllers and 962 Sequential Switches, as well as a 961 Interface and 994 Dual Mulitples panel.

PITTSBURGH MODULAR
PITTSBURGHMODULAR.COM

This year, Pittsburgh modular introduced four new packaged configurations that provide classic synth features in a small amount of space and at a reasonable price, often with room for expansion. All of these systems include the new MIDI 3 MIDI-to-CV module, which provides monophonic, duophonic, and argeggiator modes (with a variety of response types for each), tap tempo clock, a gate clock divider, and a MIDI clock divider, among its many features.

The company's flagship system, the Foundation 3.1 ($1,999), packs 13 modules into a highly portable 3U case (see Figure 6). In addition to MIDI 3, it holds a pair of oscillators (featuring the Blade waveform), a dual LFO, a multimode filter, a lowpass gate, a pair of EG modules, a dual VCA, a mixer, a mixer/attenuated mult module, the Toolbox processor (a personal favorite of mine), and Outs (with a 1/4" stereo headphone jack and separate 1/4" line outs). The stained wooden case has a removable lid and comes with bus boards and power supply. A pack of 18 patch cables are included.

Move up to the Foundation 3.1+ ($2,249), and you get the exact same system but in a 6U case, with the lower rack entirely empty and ready for you to populate with additional modules. It also comes with 18 cables, but you'll need many more by the time that case is full.

The new System 10.1 ($649) pairs the MIDI 3 module with the Synthesizer Box, a semi-modular synth voice that has normalled connections under the panel that you can override using the patch panel. The Synthesizer Box provides multiple waveform outputs (plus a sub-oscillator), a resonant lowpass filter, a vactrol-based lopass (sic) gate, 4-stage EG, VCA, LFO, glide and a mixer with a surprising amount of audio and CV I/O. The system also includes the Mix Mult and Out modules, power supply, and 6 patch cables. The System 10.1 is a surprisingly versatile and affordable system that is less than a foot wide, so it's perfect for the desk or gigging.

The System 10.1+ ($709) includes the above items but extends the case another 8" to provide room for additional modules. Again, you'll need way more than 6 cables, so budget accordingly.

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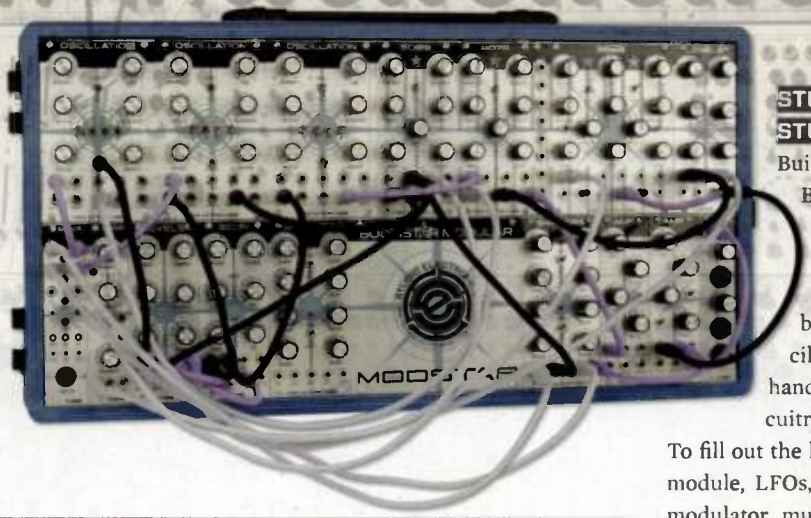

Fig. 7. Three different filters—reminiscent of classic ARP, Moog, and Yamaha sounds—help give the Studio Electronics Modstar Sensei system a wide range of useful colors, whether played from a keyboard controller or a DAW.

STUDIO ELECTRONICS
STUDIOELECTRONICS.COM

Building on its outstanding line of Boomstar table-top analog synthesizers, Studio Electronics has ventured into the world of Eurorack, offering stand-alone modules based around its popular filter, oscillator, and VCA designs that feature hand-matched transistors, discrete circuitry, and through-hole construction. To fill out the line with other essentials—a MIDI module, LFOs, envelope generators, mixer, ring modulator, mults, and stereo outputs—the company partnered with Pittsburgh Modular. The result is the Boomstar Modular Modstar series, which gives you the chance to create a highly personalized synth that has the full, rich sound of the Boomstar line but with greater programmability due to the wider availability of patch points.

Studio Electronics is launching the series with two configurations that are housed in attractive blue wooden cases and powered by an external supply (provided). The Seito ($2,699) is a 3U system consisting of two Oscillation oscillators; the 4075 ARP 2600-style lowpass filter; the LFO 2 dual low-frequency oscillator; the Amp VCA; the Shapers dual-ADSR envelope generator; the Levels 6-channel mixer; Sci-Fi, which combines a ring modulator, noise source, sample-and-hold, and lag circuit; the MIDI3 interface offering an arpeggiator and pairs of CV and gate outputs; a passive 2x4 mult; and Outs, which provides a stereo 1/4" headphone jack and individual 1/4" outputs for each channel.

The Modstar Sensei system ($4,649) packs substantially more power into its 6U case by providing three filter modules—the 4075 (as above); the 5089 Moog-style, 4-pole lowpass ladder-filter; and the SE88, an 8-way, bi-directional, dual-input version of the Yamaha CS-80-style resonant multimode filter (see Figure 7). With three Oscillation modules, a MIDI-synchronizable LFO (culled from the Boomstar series), one each of the Shapers and Levels modules, two Amp modules, Outs, and two mults, the Sensei can be patched into a seriously fat synth voice, or divided up into two or three sounds, each with a radically different timbre.

Studio Electronics left some open rack space in the Sensei box so you can quickly satisfy that need for more sound shaping tools. But right off the shelf, both instruments deliver exceptional sound quality whether driven from a MIDI keyboard, a DAW, or an analog sequencer. And if you already have a desktop Boomstar synth (a semi-modular instrument with CV and gate inputs), either of these setups would make a suitable companion.

range from $1,674.50 to $10,686.50, with module choices similar to the Studio and Box systems. The Rack systems are, as you would expect, designed to fit into 19" 5U frames, holding 8 module units per level. You provide the housing, which saves you money over the other systems that include cases and cabinets.

Fig. 8. The Box-66 from Synthesizers.com has walnut sides and sports six VCOs, two VCAs, four EGs, and two Moog-style sequencers, among its many modules. As with the company's other systems, you can alter the module complement in the Box-66 when you order.

SYNTHESIZERS.COM

SYNTHESIZERS.COM

Roger Arrick's Synthesizers.com has been steadily keeping the 5U flame alive for nearly two decades by selling a full range of modules, keyboards, controllers, and accessories direct to musicians. The company also offers a dizzying array of systems that divides into five categories—Studio, Rack, Portable, Box, and Entry. Nonetheless, buyers are encouraged to modify any of the configurations to suit their needs, or to come up with their own personalized setup.

I am particularly impressed by the Entry system ($1,705 including shipping, cabinet, power supply, and cables), which is based around an affordable purchase plan where, for $155 a month, you accumulate one piece at a time over an 11-month period. Furthermore, the PSU will power 66 module spaces, so it's ready to expand when you are.

There are nine configurations under the Box11 category, ranging from the desktop-sized Box-11 ($1,640) starter system with a VCO, VCA, VCF, EG, and MIDI module to the Box-66 ($9,212), a 6-oscillator system with two Moog-style sequencers, MIDI interface, two VCAs, four EGs, a ring mod, a mixer, and lots more (see Figure 8).

The Studio systems are housed in solid walnut cabinets and come in five configurations, from the modest 3-VCO single-cabinet System 22 ($2,984.50) to the 5-level System 110 ($14,826.50), which packs ten VCOs, two sequencers, two mixers, two reverbs, ring mod, and plenty of everything else—it's big!

Similarly, there are numerous Portable systems, which are built into vinyl-covered cabinets with handles and road-worthy hardware. Prices

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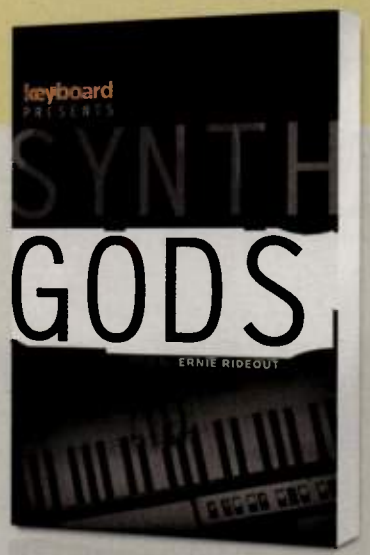

edited by Ernie Rideout

This book spotlights artists who did much more than just play synthesizers: they changed the course of music history and inspired generations. Featuring in-depth profiles of Jan Hammer, Wendy Carlos, Rick Wakeman, Brian Eno and others, this book delves into how these new, untested boxes of circuitry captured the imagination of so many legendary artists.

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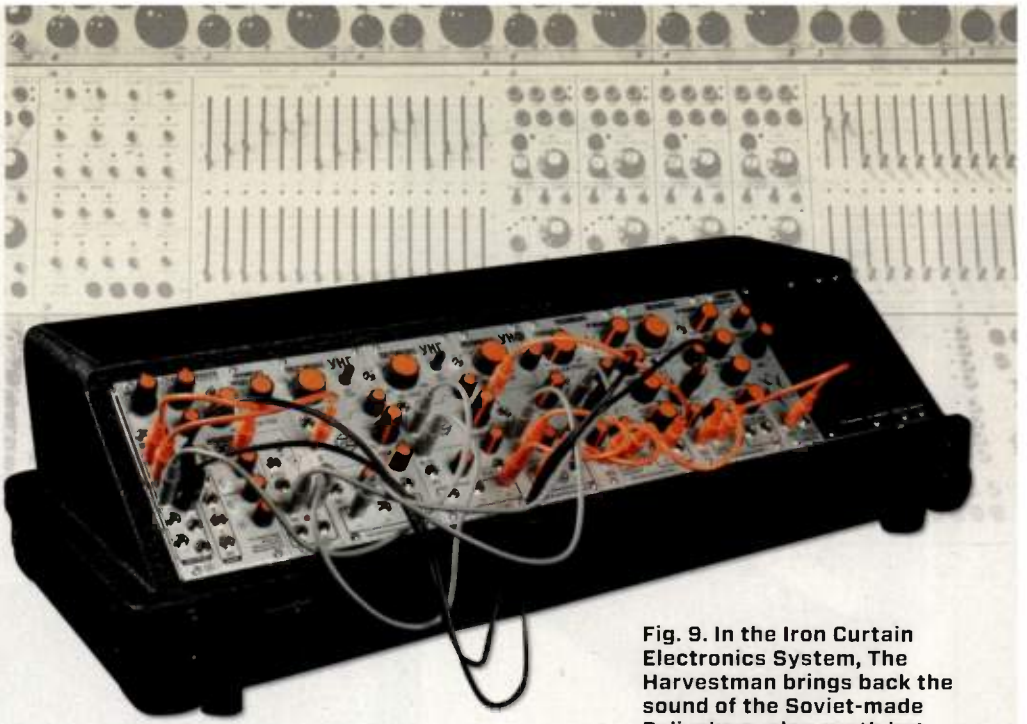

Fig. 9. In the Iron Curtain Electronics System, The Harvestman brings back the sound of the Soviet-made Polivoks analog synth but with greater functionality and modulation capabilities.

THE HARVESTMAN
THEHARVESTMAN.ORG

A particularly unique addition to the scene is the Iron Curtain Electronics System from The Harvestman ($2,000 plus shipping direct). Over the last few years, the Harvestman's Scott Jaeger has re-introduced Eurorack modules based on the individual elements of the Polivoks, the first Soviet-era voltage-controlled monosynth, in cooperation with its original designer, Vladimir Kuzmin. The Polivoks is well regarded for its characteristically brazen timbres when pushed hard and The Harvestman's modules emphasize that quality by using NOS (new old-stock) Soviet-era parts in order to maintain the unique performance specs of the filter, oscillator, modulator, VCA, and EG. By endowing these reissues with additional modulation capabilities and attenuverters, Jaeger helps the Iron Curtain extend beyond what the original keyboard could hope to reach in terms of timbre (see Figure 9).

The Iron Curtain includes the Polivoks R-1982 resonant 2-pole filter, which offers simultaneous lowpass and bandpass outputs, two inputs with a mixer, CV inputs for modulation, and the ability to get some fairly pungent timbres—this VCF has personality.

The system also includes a pair of Polivoks R-1983 VCG saw-core oscillators, with linear and exponential FM inputs, an octave switch, and separate PWM, triangle, and sawtooth outputs. The VCG is also very colorful, and the system benefits greatly by including two.

For control, two VCA/EG modules are included, replicating the setup in the original Polivoks keyboard. Here, the 4-stage (ADSR) EG includes a delay parameter for the attack and release portions, while the VCA includes CV inputs with attenuverters. The EG is normalled to the VCA for convenience.

For modulation, the HMR1987 provides an LFO, a noise source, and sample-and-hold, each available independently as well as normalled together. Also included is The Harvestman's Lider Suboctave Divider module, based on a popular effects processor from the USSR. It provides controls for wet/dry mix and Stability, that latter of which bypasses the input filter for the fundamental frequency detector and results in unpredictable behavior when feed complex signals.

The remaining two modules that round out the system are not part of the Polivoks legacy: The Model 1123 King Slender is a slew limiter with advanced mixing and portamento functionality, including a 3-input mixer (with mute switches for two of the inputs), and independent controls for the rise and fall parameters; and a mult module with a discrete attenuator input.

The Iron Curtain system is housed in an angled Monorocket (monorocket.blogspot.com) case with a lid, making it ergonomically practical for performance; the flat top provides a surface for another module rack or your external processors and stomp boxes. The system is powered by a Make Noise Mini-PWR system with flying ribbon cables, and the case provides empty slots for enhancing the system with additional modules. Wall-wart power supply, patch cables, and quick-start sheets for each module are included. ■

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The Decemberists

How the band's seventh album, *What a Terrible World, What a Beautiful World*, revealed itself throughout the course of production.

by Ken Micallef

An album of fantastical mini-epics framed in an elegant production esthetic, The Decemberists' seventh album, *What a Terrible World, What a Beautiful World*, would be easy to love if it wasn't so damn hard to peg down. Lead singer and primary songwriter Colin Meloy sings like an inspired spokesman/everyman who's found the perfect soapbox, while Tucker Martine's beautiful production frames the band's songs in sonic ecstasies that range from the baroque strings and psy-rock scrawl of opener "The Singer Addresses His Audience," to the R.E.M.-does-"Penny Lane" grandiosity of "Cavalry Captain," and the surrealist Phil Ochs folk tableau of "Lake Song," to the spectral beauty of "Till The Water Is All Long Gone."

Four years on since *The King Is Dead*, The Decemberists took their time polishing *What a Terrible World, What a Beautiful World* to a high sheen, crafting high-res portraits in immaculately detailed settings. And like many smart songwriters have done before, in their pursuit of artistic greatness, Colin Meloy looked grandfatherly songwriting legend Leonard Cohen for inspiration.

"We had all these songs," Meloy says from his home just south of Portland, Ore. "Over the course of four years we recorded a handful of songs and let the songs dictate the direction, but we needed a through-line. Every record should have a through-line; it's like a set of short stories made up of disparate parts that create some connective tissue. At the time I was listening to a lot of Leonard Cohen, particularly *Death of a Ladies' Man* (1977, produced by Phil Spector). I've always loved that album for its production and songwriting. It felt like some of our songs lent themselves to that kind of production."

An album that Cohen detests, one where Spector didn't bother to inform Cohen that he was using his scratch vocals; it's the oddball among the grand old man's oeuvre of riches. And that's exactly why Meloy loves it. "It was a strange time for both Phil and Leonard," Meloy muses. "Leonard hates it. He never plays the songs live. And Spector is difficult to work with. I hear tell that he used his rough vocal takes. Cohen thought he was singing scratch tracks, but that's what Spector used. It's hilarious. It's not just the production I like but the songs and how they work with the production. The songs are kind of lurid and adolescent. It's where the lowbrow and the highbrow meet."

An album where "the lowbrow and the highbrow meet" is one way to describe *What a Terrible World, What a Beautiful World*, with its grandly nostalgic songs swirling amid iconic production that encompasses '50s guitar rock ("Easy Come, Easy Go"), '70s-era British folk rock ("Mistral"), Nashville Skyline loveliness ("12-17-12"), and Neil Young-distortion-meets-Paul Buckmaster splendor ("The Singer Addresses His Audience").

"Some producers might be too intimidated to tell a singer, 'You didn't do that right.' But Tucker will tell me if it's pitchy or I flubbed the tempo. He's brutally honest." —Colin Meloy

"That high- and lowbrow thing was something I've always aspired to," Meloy says. "You can gloss an album with strings and vocal arrangements which we've done in the past, arranging the shit out of our records where there's a million things happening at once. It sets a tone; it's a statement of intent."

Meloy wrote the bulk of *What a Terrible World, What a Beautiful World* in his Portland home studio using a small setup of Logic, Apogee interface, various software and microphones. "My demos do sound like the final arrangements," Meloy admits, "but some changed drastically as the band improves on my ideas."

Recorded, as with the four previous Decemberists' albums, at Grammy-nominated Tucker Martine's Flora Recording & Playback in Portland, it would've been impossible to create *What a Terrible World, What a Beautiful World* without the guiding hand of Martine, who is as much musical collaborator as producer and engineer.

A child of Nashville, Martine's father wrote hit songs for Elvis Presley, Reba McIntire, The Pointer Sisters, and Ray Stevens, among many others. Tucker grew up by his dad's side visiting the many small demo studios that dotted Music City's rich recording landscape. Flora Recording & Playback mirrors that homey history, built from salvaged fir floors and reclaimed barn siding with lots of natural light. The control room boasts an automated API Legacy console (formerly at AVAST) and an incredible collection of outboard gear, including a Studer 820 24-track 2"machine for laying live tracks; ProAc, ATC, B&W, and Westlake monitors; and seemingly every mic pre/compressor/reverb/delay/EQ and microphone known to man. In his 20 years of recording music, Martine has worked with R.E.M., My Morning Jacket, Modest Mouse, Sufjan Stevens, Neko Case, Death Cab for Cutie, and many others.

"Tucker is a ball breaker!" Meloy confides. "He does well at creating sound textures without overdoing it. But he works me hard on the vocals. And he's known for his arrangements, but this time we pushed him over the top. We helped him explore more grandiose production, and he helped us define the more intimate moments.

"Tucker never lets me slide," Meloy continues. "As a singer you're under the microscope trying to get a vocal take. And you want to bust it out and have it be amazing and be done with it. Some producers might be too intimidated to tell a singer, 'you didn't do that right.' But Tucker will tell me if it's pitchy or I flubbed the tempo. He is brutally honest. I do appreciate that about him, although I do frequently curse his name. We've come to fisticuffs.

"Normally I will do scratch vocals, then when I do the final one I will blaze through it a bunch of times and Tucker will comp it together," he continues. "If it sounds relaxed it's a testament to his great comping abilities. Tucker is second to none.

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"I love the way the control and tracking rooms sound now... and so does everyone that records here!" *~ Butch Walker*

When I was still getting used to his persnickety-ness I would get frustrated and tighten up. But now I know he will take me to task on everything so I'm prepared for that. The vocals he gets out of me are so much better than anyone I have worked with."

Meloy used his own Neumann U87 and U47 microphones for demo vocals, using an SM 57 on his 1966 Martin D28, which he also played on the *What a Terrible World . . .* sessions, along with Martine's new Gibson J45.

"We did all the basic tracks to tape," Martine says, "and aside from the sonics that tape imparts to the drums, for example, it encourages a mind-set of 'if it's not quite working let's figure it out at the source and not make it work in the computer.' We'd always get a drum basic track where everyone played well then we would fix some things if needed. On a couple songs we kept the live vocals, but we mostly overdubbed vocals. We didn't spend forever getting basic tracks. You want to get the excitement of an early take but you want the band to sound like they know the song too."

Martine's epic assortment of effects and instruments (including 1939 Ludwig Grand Apollo Vibes, dozens of vintage and contemporary microphones, 1960s-era Rogers Holiday drum kit and various Ludwig, Leedy, and Gretsch snare drums, and tons of keyboards and pedals) all wired into various console buses allows him to mix and match at will, throwing up whatever suited his fancy as the songs were being tracked; keeping some decisions of the moment and making other choices later.

"I am always experimenting with the treatments," Martine explains, "starting immediately with the basic tracking. I might want to try slapback on the vocal for a song. So during playback or even while the takes are happening I might pull up a delay that will work. If it works I will usually make a note and pull that up every time we are on that song. I tend to use more analog outboard because my studio is set up that way. Everything is coming back on its own channel on the console, and I have a lot of my go-to reverbs and delays on aux sends ready to go so I can try them as we go and make a note of what is working. The EMT 140 Plate is always a quick go-to if I want to hear reverb on the voice right away, if even as just a placeholder to start with, and often it forms the track around the way things are sounding on playback. I might go to a Memory Man first, using it as a pre-delay, sending that to the reverb so that the plate is coming back a fraction of a second later which allows the transients of the vocals to come through better. I include Memory Man Delay on the voice, which often makes it to the finish line. When I use a plug in effect it's because I have to automate something to come on for a moment or an unusual effect."

Did Martine follow a similar in-the-moment process for compressing and limiting? "I have a handful of compressors set up on the bus returns of the console so while I am tracking or printing a rough mix I can—by sending the drum mics to bus one and two—hear what it sounds like to have parallel drum compression with the Chandler TG1, or on bus three the Neve 33609, that kind of stuff. It allows me to experiment quickly. Then when we mix I've discovered things that are already working."

Martine has worked so closely with The Decemberists that his role has long ago expanded beyond producer/engineer to become a collaborator. "At times the most valuable thing I can contribute is to be invisible and facilitate what's going on in the room," Martine explains. "When things get stuck I have to get the train back on track. Often it's just waiting then and going to another song. They're not a band to over-think things. If things are not feeling good fast, it's a good idea to move on to something else and come back to it after digesting a few ideas.

Martine used his U87 on Meloy's vocals, which, after years of musical theater training, can be as loud as a firetruck. "That mic and mics of that variety pair well with Colin's voice," Martine explains. "He has this real brashness to his voice; he sings really loud. A lot of mics will accentuate the brash part of his voice, which doesn't need any help. The

performance, amazing results!

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~ **Daniel Adair** Drummer - Nickelback.

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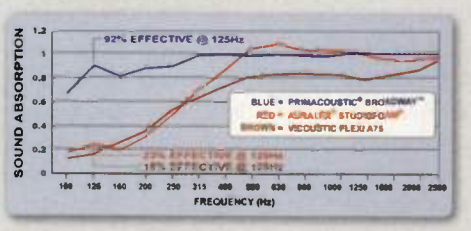

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Tucker Martine in Flora Recording & Playback

47 really rounds that out nicely and has a huge low end. Even when Colin is singing loud and off-mic there is still a lot of body to his voice through the 47. The vocal went into a Neve 1066 mic pre into an 1176 compressor 'cause Colin is a really dynamic singer and even if he didn't sing loud in a dry run-through, usually he will at some point in the take. I love the way 1176s handle loud singing. It will rein it in dynamically but add excitement when doing so."

Martine's 2014 Gibson J-45 True Vintage and Meloy's D28 provide the acoustic bedrock of much of *What a Terrible World, What a Beautiful World*, adding a friendly roundness to the band's sometimes showy songs.

"Sometimes Colin will play acoustic guitar really hard and most condenser mics will sound too harsh on it, similar to his voice," Martine says. "So I used the Royer ribbons a lot, the RCA44 a bunch, and on the quieter songs, a U87 modified by Klaus Heyne, and in stereo on a couple songs using an old AKG 451. I love that on acoustic guitars."

For guitarist Chris Funk, Martine miked his Carr Mercury, 1965 Fender Super Reverb blackface, and 1965 Fender Deluxe Reverb blackface amps using a combo of Royer 121 and Shure SM 57, both on-amp in-phase.

"The Royer captures the body and really smooth midrange and the 57 is there if you need the extra cutting midrange," Martine remarks. "I'd monitor the Royer first then if the track got more aggressive and I needed the guitars to cut, I would push up the 57. Colin used my Carr Mercury amp on a number of songs. It's not an old amp, but it honors that old amp sound. And you can get great distortion at low levels from it if you want. You can crank it loud and clean. It's a versatile studio amp."

Decemberists keyboard player Jenny Conlee played Martine's Crown 4-pedal, upright piano, which includes an additional pedal that operates additional mechanisms called "Orchestral Attachment" and "Practice Clavier," features that produce tones like the harpsichord, mandolin, and zither. Conlee also played Martine's Baldwin Spinet piano and the band added digital Mellotron on "Lakesong" and "Til The Water's All Long Gone." Martine miked the pianos with a Neumann SM2 stereo mic "which has these nickel capsules that can't be replaced," he says. "The SM2 is pretty bright, but pleasing."

Martine also has an old Farfisa, which Conlee played in "Philomena" via a Fender Blues Junior amp, "which makes the most glorious distortion ever." Bassist Nate Query used Martine's Éclair Evil Twin DI, his Aguilar bass amp or Martine's B15.

When recording drums, Martine prefers a less-is-more approach, but he does practice some oddities particular to his studio and his highly developed ear.

"I find that the fewer mics I use on the drums, the easier it is to get things feeling punchy and present, he says. "It allows you to move quicker, and I love the idea of finding a spot that captures the whole picture. Thinking of the drums as all part of one sound. I like to get the Coles 4038 mono overhead to where it's sounding like if that's all I had I would have a good drum sound to work with. I have gone through periods of mono and stereo overheads and I just like the mono overheads. If you're not getting enough of the ride cymbal then raise the cymbal or change the cymbal. I am not too particular about pre's for the drum mic except for the ribbon mics. I am fortunate to have enough good mic pre's (Neve, Telefunken, Tab Funkenwerk among them) that I don't mind mixing and matching."

But when push comes to shove, "I also close-mike to keep the bases covered," Martine adds. "On the bass drum, my default was an AKG D12 for a nice, round sound with a lot of punch and not too much bleed. Then often a Lawson FET 47 a foot in front of the bass drum, more for low end bloom, a little subbier sounding. I'd often lowpass that around 3 or 4 k to try to reduce the cymbals in that microphone. My main bass drum mic and snare drum mics go into an EL Labs Distressor, and the snare mic was always an SM57 unless he played quietly, then I used a KM84. The 57 will always work—it's part of the tricky dance we do.

"You don't want to keep the drummer playing while you futz around getting a drum sound," Martine advises. "For the toms I have recently discovered the Josephson E22S; I just love them on toms. They're small condensers, which don't always work on toms, but if you position the angle right you can really minimize the bleed from the other drums and cymbals. They have plenty of attack and low end and are more open-sounding than the dynamic mics I used for toms. I also add a bottom mic, a Beyer M 88 on the floor tom, it hits you in the chest so much more. I used to make fun of people who did that! I don't want the floor tom to get overlooked. I sum the top and bottom mics to one track, usually. The Coles overhead picks up so much of the high tom it sounds really full and loud. For room mics, the AEA R88 stereo ribbon mic in the room, and the AEA mic pre for that. And I add a lot of high end to it, a beautifully dark-sounding mic into a compressor, often the UREI 1178. The AEA moves around, but there's a sweet spot 12 feet away from the drums, halfway to the far wall. I will add another room mic further back if I want a bigger sound."

Martine is the perfect foil for the Decemberists' brand of exceedingly populist and popular pop. He knows his job is part psychologist, part technician, equal parts bad cop and good cop. "You want to keep things moving and morale high," Martine says. "I'm a sounding board as well. At the same time they know I want the band to sound like *the band*. My job really changes from song to song. Typically with The Decemberists there is a theme and some kind of artistic limitations put into place. But on this record we purposely said, 'Let's just record over time and record more material than we need and let the album reveal itself to us.'" ■

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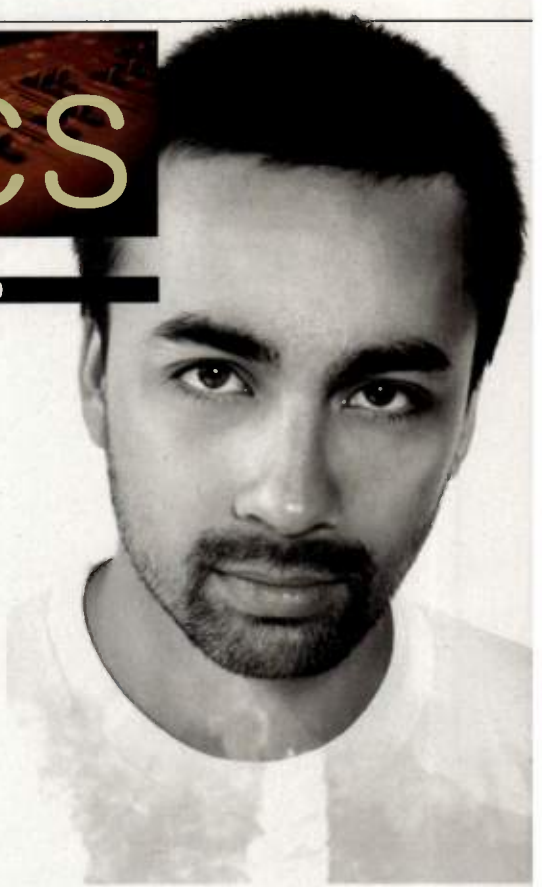
Dirtyphonics



BY MARKKUS ROVITO

On their new EP, French bass pioneers stop their perpetual motion machine long enough to drop hints of a filthy future.

FRENCH BASS MUSIC PRODUCERS DIRTYPHONICS ARE ALWAYS ON THE MOVE. From their early beginnings in heavy rock bands, core members Charly and Pitchin moved into DJing about 15 years ago, and stepped up to producing the related styles of dubstep, drumstep, trap, and drum 'n' bass around 2006. Their constant touring, which has seen them alternate between two-, three-, and four-person DJ/live performance setups, will send them blanketing four continents this year.

With no time to slow down, Dirtyphonics produce most of their music on the road, and with the new *Write Your Future* EP out on Dim Mak, the group arrives full circle to its rock roots, incorporating metal-influenced guitar into its lead single, before oscillating back through dubstep and trap styles, all the while grounded in their signature sonic filth. Now the recently Americanized Frenchmen have relocated from Paris to Los Angeles, where a new environment and new studio have them psyched up to continue their ongoing adventures in dirt.

***Write Your Future* includes elements of "heavy guitar music."**

The first single off the *Write Your Future* EP, "Power Now," has almost a speed metal feel, with a lot of heavy guitars. Is that a direction you plan on pursuing more?

Charly: We started making music when we were kids, and when we were teenagers, we played in metal and hardcore bands. So this heavy guitar music is something we've always had within us, and on our debut album *Irreverance* in 2013, we did "Walk in the Fire," the first time we incorporated a bunch of guitars and metal elements.

Pitchin: With "Power Now," we went full-on metal-crossover-bass music.

Charly: It's something we always really wanted to do—bring this guitar-rock element to our music. With the awesome feedback we got for "Walk in the Fire," we thought, "hey, let's do more of this."

Pitchin: So we incorporate that double-time drum part, which we'd never really heard before in bass music, but we never really know what we'll do in the future; it's just what we feel like. And Matt Rose, who did the vocal on "Power Now," definitely adds something more, because "Walk in the Fire"...

Charly: ...was pretty much instrumental. We'll probably do some more guitar rock/metal/whatever you want to call it—fusion. Some of the electronic music today tends to be a little bit stale, and it's very cool for us to explore elements from our background and our culture that you wouldn't usually find in today's electronic music. It's a way for us to build from our past and expose the kids who got introduced to electronic music through what they call EDM now or the later stages of dubstep to this rock element and show them you can go further than the usual structure or instruments they normally hear.

Do you always try to make music wherever you are when traveling?

Charly: Pretty much. We always have a very portable studio setup, which is basically a computer, a little MIDI controller, a portable [Access] Virus TI Snow and a ¾-size guitar...

Pitchin: ...this bad boy right here! [Pulls out the guitar.] That works really well.

Charly: It can fit into bags. So anywhere we are, we can put down some synth, some guitar parts, whatever.

Pitchin: Recently we've been working way more on the road, because at first we had to. But it works pretty well, recently even better than in the studio. Being on the road and producing music

maybe with fewer elements, fewer synthesizers and being on a schedule...

Charly: ...you get straight to the point.

Pitchin: Yeah, you have a timeframe to do something, and you have to make it happen in a certain amount of time.

Charly: We've been touring forever, very intensively, so we've always written parts on the road, like put some parts down and eventually work those back in the studio. But within the past year, we've had deadlines to meet before we could go back to the studio. So we had to figure out how to write faster.

Who gives you your deadlines?

Pitchin: Us, the label or remixes. The remixes are maybe the hardest...

Charly: ...because you're not on your own schedule. Labels always try to give you a deadline, but eventually it's all about the music, and we'd rather not put out anything shitty just because we had to. That's also why we haven't done much new original material in a little while between our first LP and this EP.

Pitchin: But now you really have some tools you can use to master and finish a track anywhere, with these bad boys right here. [Pulls out a pair of the high-end Audeze LCD-series headphones.]

Charly: Yeah, that into the [StudioFeed] SubPac [tactile bass backpack]—that's really all we need.

So you feel that with the SubPac you can understand how the bass frequencies will translate to a club environment?

Charly: Totally. There's two different things: You can feel the bass, and the second thing that's very important but people don't really talk about is that you don't have to make your headphones or monitors as loud as you would to feel the bass, and you don't get tired as fast as you would if you didn't have it. So you can work longer and more precisely than if you didn't have it.

Pitchin: We started to use the SubPac at the beginning of last year, and it is really convenient. The SubPac and Audezes really changed the game.

You mentioned mastering briefly. What other mastering tools do you use; are they all software?

Charly: Yeah, we always use software; that's how we've learned. If you're a mastering engineer,

Essential items: Audeze LCD-series headphones and StudioFeed SubPac.

Dirtyphonics' productions make use of software from iZotope and Waves.

you need a bunch of tools, and whatever works is great. But to be honest, we've always been a little surprised by producers at studios who have so much outboard gear, but they don't use it! I guess it looks nice in your studio, but at the end of the day, they do everything from the computer.

Pitchin: iZotope is always there, and Waves.

Charly: Eventually if you want a master that will work well across the board, you want to go to a mastering studio. But if you're talking about writing a song that will work in a club or on your computer or headphones, you can definitely do it from home.

Your first album was about half vocal tracks, but the new EP is all vocal tracks. Was that another conscious decision?

Charly: It was definitely something we wanted to do, because in the past we haven't used many vocals, overall.

Pitchin: Except for on remixes, and that gave us a taste for working with vocals. We had a lot of instrumentals at the beginning. For example, "Free Fall" with 12th Planet—we were not sure it would have vocals in the beginning. It just happened. We just met that girl [Julie Hardy of Clementine]; she was awesome; and she did this awesome job. Then we found ourselves with four tracks and four vocals, and it was actually surprising, even for us.

Charly: Vocals are sort of a new tool for us, so it's cool to work with that human element, and at the same time it's also a great way to reach out to people who would not necessarily feel your music as much if they didn't have the vocals. The vocal thing is...

Pitchin: ...it's a natural link to people.

Charly: Yeah. It's something everyone can relate to. It's also what gave the EP its name—*Write Your Future*. There's a play on words with writing lyrics and all that, but also having something a lot more human within this electronic environment.

Pitchin: It was interesting too having the opportunity to work with a rock singer like Matt Rose who also did a drum 'n' bass song; Julie Hardy, who's a poppy kind of thing; and Trinidad Jame$, who did a total rap/trap thing. In one EP, I cannot say we had it all, but we covered three or four different genres with three vocalists.

What's your writing process with the vocalists?

Charly: We like to keep it open. We don't like to set too many boundaries, because we think the whole point of a collab is to let everyone bring their own vibe. We're control freaks when it comes to the music, but when it comes to vocals, we say, "do your thing," and eventually we'll rework it. But we keep them free to do whatever they want, because then it is something we did not think of, and we love to be surprised.

Pitchin: With Matt Rose on "Since You've Been Gone," we actually built the track around the *a cappella* he sent. For "Power Now," he sent us just the hook, and we worked with him more and more to make it a full piece.

Charly: Whatever works best for the song, we'll go that route.

With the singers' varying vocal qualities, is it a challenge to mix them right?

Charly: It really depends. Sometimes the vocals work with just some EQ and compression, and sometimes you really have to work hard to make it fit.

Pitchin: On this EP it was really easy, because they did it right; it was like a perfect fit on every song. On the track "No Stopping Us" [on *Irreverence*], we had to work a lot because Pavan from Foreign Beggars is a rapper, definitely not a singer. He knows that, but he found the hook of the track. And we had to work a lot to make it happen, to really auto-correct a lot and use vocoders, chorus, time effects, and all that. But nobody came up to me and said, "oh, he's not a singer!" It was totally fine.

Charly: Sometimes with a song, you like the music you wrote and feel great about the vocals, but you also want to make some room, so the vocals and the instrumental don't clash. You'll rework the groove of the music to make holes in it, so the vocal can pop out or vice versa: chop some of the lyrics, so the end of the instrumental phrase comes out of the mix. It's like dancing with someone. You've got your moves; she's got her moves, but when you dance together you have to make everything work together. Sometimes it's flawless, and sometimes it's a little funny.

How do you like to perform as DJs? There are infinite possibilities these days.

Charly: DJ-wise, we haven't really embraced the computer revolution. We feel really uncomfortable having...

Pitchin: ...a screen onstage.

Charly: Yeah, so we like to keep it, what?

Pitchin: Old school, you could say. We still like to beat-match our records, find the right keys, and boost some stuff on the fly, or sometimes we just play routines we like because they're great combos.

Charly: We like to mix. We would hate to show up onstage with a computer you plug into a mixer, press play, and everything happens smoothly while you just put in an effect here and there. We'd be bored. If that works for some people, awesome—we're not dissing anything. But with what we do, there's an insane challenge to make it happen smoothly.

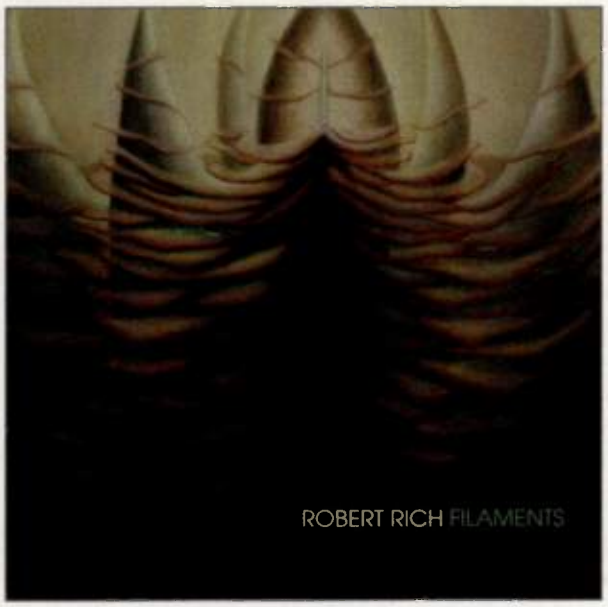
Pitchin: Yeah, there's always some random thing: You can just f*ck up, or a CDJ doesn't work. And you just make up something on the fly. Then when you go offstage you're like, "Whoa! That was a hard one!"

Charly: Coming back to our metal base, when you're onstage with guitars and stuff, you're not always sure you'll play your part right. As weird as it sounds, we've always wanted to keep that risky element to our live performances, where yes, something can go wrong. So when it doesn't, we're happy about it. It pumps us up.

Pitchin: Even if something f*cks up, you still make it happen. You do something creative you never expected; the idea is to do something new and have fun.

Charly: There are so many ways to play with so much different equipment. Some DJs love to only look at the decks for two hours straight. Some like to just jump up and down and not really touch the decks. For us, it's important to have a great balance between focusing on the machines, working the music and sweating a bit, and also having this strong interaction with the crowd. Eye contact, shooting a water gun off the stage, or touching them and sharing something, because everyone has access to music for free all the time. It's losing its sentimental value. But when you go to a live show, you get something you'll never get on the Internet: this energy, this contact, this vibe. And it'll never be the same thing between one show and the next.

Read the extended interview at Emusician.com for more about the importance of deadlines, live visuals, and the difference between performing with four people and two people. ■



ROBERT RICH
FILAMENTS
SOUNDSCAPE

Three years in the making, *Filaments* is electronic music pioneer Robert Rich at his finest—textural and soothing, yet emotionally evocative and a delight to your auditory cortex. For inspiration, he draws on his scientific curiosity about the nature of the physical universe and what mankind's interstellar forays might soon reveal. Using modular, off-the-rack, and virtual synthesizers, along with ethereal, EBow-driven lap steel guitars and other instruments, he has crafted an engaging album that surrenders subtle details on every listening.
GEARY YELTON

STEVE EARLE
TERRAPLANE
NEW WEST

On his gutty, gorgeous new release, singer/songwriter Steve Earle and his Dukes tough it out, Chicago blues-style (though the album was recorded at House of Blues Studios, Nashville). Earle's always smart, powerful lyrics—sometimes precise, sometimes more stream of consciousness—are couched in raucous but intricate arrangements featuring brilliant interplay between acoustic and electric instruments, and dirty and clean sounds. Earle's singing has rarely sounded so bare—the pain in these songs is just ugly enough to get your blood up.
BARBARA SCHULTZ

LONELADY
HINTERLAND
WARP

Is 2015 the new 1982? Julie Ann Campbell, aka Lonelady, holds her plug-ins aloft in the pre-rave air formerly occupied by Laura Branigan and Laurie Anderson, with enough minimalist punk menace to keep it flowing. Following 2010's *Nerve Up*, Lonelady's swinging beats and errant industrial effects are allied to some seriously catchy song-craft in *Hinterland*. Looped cello and chicken-scratch guitar drive the funky title track; "(I Can See) Landscapes" recalls U2's "I Will Follow"; "Mortar Remembers You" is sparse, spectral, and über-melodic.
KEN MICALLEF

THE GO! TEAM
THE SCENE BETWEEN
MEMPHIS INDUSTRIES

On his first album in four years, Go! Team founder Ian Parton has taken the project back to its sample-delic roots, singlehandedly producing the most effervescent and compressed collage since his debut. Performing all live instruments and sourcing new singers, Parton combines ambient mics and creatively thinned, crunched, and oxidized treatments with perky melodies to hone his trademark Northern-soul noise-rock pep rally. He successfully fuses simultaneously loose and coherent arrangements into one fuzz-glazed, blissful corkscrew.
TONY WARE

JOHN O'GALLAGHER
THE HONEYCOMB
FSNT

Like jazz-addled rats scurrying over hot oil, John O'Gallagher and his trio trade insults, zingers, and zippy one-liners in music that draws you in and then dumps you out, fully sated. A nimble alto player buffeted by agile bassist Johannes Weidenmueller and angular drummer Mark Ferber, O'Gallagher's *Honeycomb* is all New York rush hour traffic, daredevil spills, and fast out-of-town escapes. The sizzling "Petulant Snoot" and swinging "Eve Day" add weight to a juggernaut of melodic/rhythmic spills'n'chills.
KEN MICALLEF

BJÖRK
VULNICURA
ONE LITTLE INDIAN

A "complete heartbreak album" released two months early following an Internet leak, *Vulnicura* is no rushed affair. It is an achingly paced chamber music shadowbox made from searing, groaning shifts in pitch and sequence cast through jagged, cauterized wounds ... devastation in stark relief. The fibrillating micro-edits and mossy strings, programmed and mixed with assistance from Arca and the Haxan Cloak, harken back to *Homogenic* and *Vespertine* and gravitate around vocal tangents delivering tectonic confessions.
TONY WARE

KITTY, DAISY & LEWIS
THE THIRD
SUNDAY BEST

As Schoolhouse Rock once told us, "Three is a magic number." Kitty, Daisy & Lewis are three siblings, and this is their third album. They take turns leading and harmonizing on 12 charming tracks, arranged in various styles (reggae, Latin, rock 'n' roll, jump blues, soul). The main commonalities are big bands and a retro feel. *The Third* is a highly enjoyable collection for anyone who loves old records. An added bonus: The great Mick Jones appears on track three.
BARBARA SCHULTZ

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STEINBERG

Cubase Pro 8.05

A DEEP, VIRTUAL PLAYGROUND FOR THE CREATIVE MUSICIAN

When I consider all of the amazing qualities found in the major digital audio workstations, I often think of Cubase as one of the more friendly programs for creative types. While most DAWs introduce analog-modeling synths to their onboard plug-ins, Cubase offers synths derived from additive and spectral synthesis engines (Spector); impulse responses and comb filters (Mystic); a subtractive granular synth (Padshop); a multitrack loop player with time slicing and groove control (Loop Mash 2); as well as several analog modeling instruments. Even the Halion Sonic SE2 sampler has unusual features, such as support for polyphonic pitch bend and Control Change messages.

BY MARTY CUTLER

Former *Electronic Musician* editor Marty Cutler regularly writes reviews and articles, while working on a book of digital guitar applications and honing his progressive bluegrass chops.

STRENGTHS

Efficient, customizable Workspaces. Chord Pads. Acoustic Agent SE. New plug-ins and mixer features.

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Steinberg.net

Nonetheless, Steinberg has apparently been watching other DAWs mature and has moved toward a more streamlined workflow. With the release of Cubase 7, Steinberg updated its user interface, mostly in terms of displaying contextual information.

But in addition to a major engine rebuild with Cubase 8, major GUI changes are introduced alongside several new plug-ins, which is a welcome upgrade to its drum-machine programming capabilities, and several new mixing features.

Cubase is no stranger to name changes and multiple versions: I received the flagship package, now called Cubase Pro 8. Unless you are upgrading from an earlier version, Cubase Pro 8 is only available in a box.

The installation and authorization process is simple. I reviewed Cubase Pro 8 using a dual-processor, quad-core Mac running OS X 10.9.5 with 14 GB RAM.

NEW FACES

Among the first differences I noticed between version 7.5 and 8 is that the new Track/Rack Instrument and Media Bay are now dockable in the Project window. Rather than load instruments from the Project menu, multitimbral instruments from the VST Instruments menu, and loops and samples from the Media Bay menu, you can simply load the files you need from a single area (see Figure 1). Rack instruments differ from Track instruments with their ability to create a folder that groups automation and controller data with the MIDI track. Steinberg did a terrific job with both instrument categories, adding assignable control-knob panels rather than a simple list of instruments, as in earlier versions. Better still, the knobs immediately—and without

Fig. 1. Cubase consolidates MIDI instrument selection with the Media Bay, where you can choose samples and loops. Note the control knobs that are already assigned to the instruments loaded into the track.

further tweaking—fell under the control of my Novation SL61 MKII keyboard.

I was initially disoriented by the absence of the Inspector when I wanted to add MIDI channels for a multitimbral setup using Native Instrument's Kontakt. Similarly, I missed the Info Line, which outlines your selection range on the Project window. That was quickly resolved as I grew to understand Cubase's Workspace, perhaps the most significant feature redesign. The missing features were simply hidden from view.

In the case of the Info Line, it stays hidden until there is track data to select, unlike previous versions. Most popular workstations offers something similar in the form of Window or Screen sets, but Cubase offers the most modular and flexible implementation I've seen, with the ability to resize and rearrange and re-scale windows (see Figure 2).

Naturally, you can create your own workspaces, save them for future recall, and shuttle from one workspace to the next with a simple key command. I created a workspace with a scaled-back version of the Key Editor sitting next to the mixer. This saves me from reaching to the main menu. And as the Key Editor generally launches full screen, having it handy when I need to edit a small bit of MIDI data in a track is a real timesaver. Likewise, if you like to work with standard notation, just load the Score Editor, trim it to a custom size (the score fonts resize to fit the new window), click on Add Workspace, name it, and save it—easy.

Fig. 2. The new Workspace layout lets you save and group your most commonly used windows for later recall. Here, the mixer section is added and the score window is resized to fit, for easy access.

Fig. 3. The Cubase Chord Pad feature can record MIDI tracks using chords and voicings of your choosing. You can assign MIDI messages to change inversions for any chord. Note the voicings that appear on each pad.

RE-CHORDING STUDIO

With version 7, Cubase introduced Chord Tracks, and with it, a terrific harmonic playground, especially for non-keyboard players. The main premise is that you can create MIDI data for chords—from simple ones to extremely dense and complex forms—using a menu-driven window. The new version adds Chord Pads, which brings a more musical, real-time focus to the process. Launching Chord Pads from the Project menu opens a horizontal strip with drum machine-like pads and a virtual keyboard across the top (see Figure 3). By default, the pads are set up with relatively simple chords, but as usual, we're just getting started.

Let your mouse hover over any of the pads, and you'll notice that the pads with chord symbols have sets of triangular buttons; two on the bottom and right-hand side of the pad, and a single button on the left. On the right, click up or down to change voicings of the indicated chord, while the bottom pair move through chord tensions. As you click through them, they trigger the instrument on the selected track. Not all pads are set up, so if you are chord-hungry, click on the single arrow on the left side of one of the blank pads to open the Chord Editor, and then choose a chord and any tensions you might want.

You now have two ways to arm a track and record: Simply click on the pads, or play your MIDI keyboard—the chords are assigned to the keys at the lower end of the keyboard. Better yet, you can, for example, use a MIDI Control Change (CC) or note messages to move a chord through its inversions in real time, which brings us to the panel on the left. Clicking on the lower-case letter "e" opens the Settings panel. Choose between guitar and keyboard voicings, then refine the performance even further by determining whether the guitar voicings are triads or four-note chords.

You can set up the pads to follow a grid layout or reflect the keys on a MIDI keyboard—which I preferred—because each pad illustrates the voicing being played, even when modulating through inversions. Finally, a Remote Control tab lets you pick CCs that can move through chord inversions either from a menu or using MIDI Learn. Cubase has a large number of chord sets stored as pad presets for you to work with; of course, you can customize, create, or store your own, too. There is plenty more to explore in the chord tracks feature, and most of it arrived with version 8.

NO-BUMMER DRUMMER

Groove Agent's Acoustic Agent feature leapfrogs over Apple Logic X's Drummer by offering a wider variety of great-sounding kits and well-played patterns, a sophisticated mixer with individuated control over each kit piece, and lots more (see Figure 4). From the Edit window, click on a kit piece in the kit image, and you can set up mic balances, which are different for each piece. The Snare offers room, overheads, and master bleed knobs, in addition to tuning, attack, hold, and decay. The hi-hat has a control filter that lets you modulate the degree of open hat or foot; on the other side of the editor, you can set the maximum amount the hat will open. Here, you also have control over room and overhead balance, and levels for balancing the amount of tip, shank, and foot. The hi-hat tracks I created were lively and

Fig. 4. Acoustic Agent is a subset of Groove Agent 4 and offers a great number of controls for a realistic, live-sounding performance and for tone-shaping drum sounds.

realistic, enhanced by round-robin samples that went a long way toward boosting realism.

Loading a kit with patterns adds pattern triggers to the drum pads, and you can mix and match kits with patterns. Cubase didn't miss a beat when it came to adding real-time control over patterns: You get an X/Y axis to adjust complexity and intensity via Velocity. You can also quantize or adjust swing for individual patterns, set how often cymbals are used, and choose patterns using a knob. Additionally, you can drag patterns to a MIDI track, play them in by clicking on the MIDI pads, or trigger them from the lower range of your controller.

Click the Mixer button, and you'll find four buttons. The first one, duly named Agent, handles additional processing for each kit piece. Each piece's channel has a mini-level meter, four aux sends, and requisite pan, level, solo, and mute. Just below the channel strip is a set of four appropriate effects—EQ, tape saturation, compressor, and envelope shaper, which helped me get some great thwack out of the snare. The controls on these aren't necessarily deluxe, but given all you can do to build great drum sounds without resorting to anything outside of Groove Agent, they are mightily impressive.

THE FLIGHT OF THE AUX

You can polish up your kit pieces using a boatload of effects using the Aux mixer section. Effects here offer considerably more detailed editing than the Main Edit window. These run from more conventional reverb, delays, limiters, and gates to somewhat more esoteric treatment with ring modulators, step flangers, and frequency shifters.

The somewhat twisted Morph Filter gives you a choice of high- and lowpass filters that you can shuttle between while adjusting cutoff and balance between filters by way of an X/Y axis. Each effect has a menu of useful-to-wacky presets to work from. A drop-down menu lets you select each aux's output—from the entire kit mix, to the Master output, or any of Groove Agent's 15 individual outputs. You get two additional mixers with the same four effects slots for processing the entire kit and the Master Outs, respectively.

A BRIEF PLUG

Cubase Pro 8 introduces five new audio plug-ins—an envelope shaper, an expander, a Multi-Band Compressor, and the two stars of the show, a bass-amp modeler and Quadrafuzz V2, the latter based on a design by Craig Anderton. The four bands in Quadrafuzz are governed by positioning the four poles, which you grab with the mouse to manipulate. Each band can have one of five distortion types—Tape, Tube, Distortion, Amp, and Decimator—as well as a programmable delay with ducking. Accordingly, different ranges of an instrument can be processed or left alone. The width control independently adjusts the bandwidth for each range.

I ran some relatively clean acoustic bass tracks through Quadrafuzz V2 and, with some judicious editing, endowed the instrument with a warm, crunchy low-end, relatively clean highs, and a bit of delay in the upper reaches of the instrument. You get eight scenes; use presets as a starting point, then copy and paste settings to different scenes for variety. Some of the drum-oriented presets applied to the Acoustic Agent kits messed up the sounds spectacularly, turning hi-hats into wet splashes of sound, while the synchronized delays added dancing polyrhythms.

The VST Bass amp plug-in, patterned after the Cubase Amp Rack, is an exercise in simplicity: You have your choice of preamp effects from a list of stomp boxes; an amp head; a cabinet; post effects; one of eight mic models, ranging from a Shure SM-57 to a Neumann U87 model; and the ability to adjust the relative levels between the mic and line signal. You can edit the configuration and switch between mono and stereo amp rigs, with your signal path duplicated in stereo. Finally, the Master tab presents an equalizer, a tuner, and a master on/off switch.

Throughout the signal chain, the amp settings remain at the bottom of the window, which is handy as you adapt the sound to accommodate your effects settings. I ran a rather pallid acoustic bass preset through the VST Bass Amp plug-in, and it sprang to life after adding an Octaver fed into a chorus. Effects at the Pre and Post end of the signal chain are identical, and unlike the amps and mics, are generic-looking stomp boxes.

TO DO THAT, YOU GOTTA KNOW HOW

Other refinements and features abound in Cubase Pro 8, from utilitarian to downright entertaining. The new VCA faders are a mixing godsend: Channels linked to the VCA fader move proportionally to each other; even when all of the channels are zeroed, they regain their proportional levels when you bring up the VCA. The render-in-place feature lets you quickly bounce sections of audio and MIDI tracks to a new audio track, and you can bounce the tracks dry or through any part of the signal chain, including the Master out settings. Some of the features introduced in Version 7, but not previously covered here include the ability to deploy Chord Tracks to create harmonized audio tracks. The results can sound like anything from a simple bluegrass harmonization to Arnold Schoenberg on an acid trip.

Steinberg has done a great job of integrating an incredibly complex blend of composing, sequencing, and recording tools into one package. Cubase Pro 8 is a complex program, and for all of its strides toward user-friendliness, getting comfortable with the Cubase way of doing things (beyond basic sequencing and recording) takes some work. I know my way around the program, but I'm a long way from having mastered it. That said, the rewards are tremendous, and I plan on using Cubase Pro 8 as a creative partner for some time to come. ■

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Fig. 1. Unchirp offers corrective and creative applications for audio.

ZYNAPTIQ

Unchirp

REMOVE LOSSY ARTIFACTS, PUMP UP TRANSIENTS, AND LOTS MORE

BY MIKE LEVINE

Mike Levine is a musician, producer, and music journalist based in the New York City area.

STRENGTHS

Eliminates artifacts. Restores transients. Bias feature.

LIMITATIONS

Complex. Manual and Website lack tutorial material. CPU-intensive.

$399
zynaptiq.com

The German software maker Zynaptiq, creator of plug-ins such as the highly acclaimed Pitchmap and the reverb-remover Unveil, has a well-deserved reputation for innovation. Its latest offering, Unchirp, continues this tradition (see Figure 1) by providing a powerful and complex plug-in whose primary purpose is to restore audio that's been degraded by FFT (Fast Fourier Transform)-based processes such as lossy codec encoding or spectral denoising. But its prodigious abilities also come in handy in both the mixing and mastering environments.

NOT-SO-JOYFUL NOISE

Unchirp's main screen is divided into three sections. The largest is a graph-like display that functions both as a real-time analyzer and for controlling the Bias feature, which I'll explain a bit later. Below it are five large 3-D circular parameter knobs (graphically the same as the ones found in Pitchmap), each with accompanying sliders. Across the bottom of the screen, five buttons and two sliders comprise the Global Parameters.

To understand Unchirp, start by looking at the five sections of the middle portion of the screen, each highlighted by one of the five large color-coded knobs. With the exception of the Gain section, each section controls one of the processes available in Unchirp.

On the far left are the controls for the Musical Noise reduction section. Musical noise is a type of artifact that's often generated when encoding audio with a lossy codec, especially at low kbps rates. It's also generated when using a spectral denoiser with the settings too high; it can give audio a swooshy, underwater-like sound.

The term musical noise is often used more broadly to cover all such artifacts, but Zynaptiq defines it in Unchirp as artifacts that are completely extraneous from, and not correlated to, anything in the recorded sound. Correlated artifacts are defined by Zynaptiq as "chirping," which can be reduced by the Dechirping section.

Both the Dechirping Amount and Musical Noise Reduction knobs are next to sliders (labeled Window) that adjust the maximum length of the artifacts to be removed. The shorter the maximum length, the less the desired signal is affected by the processing. You can use I/O Diff, located in the Global Parameters section, to hear only the part of the audio being processed: This can help you set a window length that is long enough for the processing to be effective, but short enough not to adversely affect your recorded material.

Fig. 2. A psychoacoustic preset that emphasizes Bark frequencies. This setting can add punch to a weak-sounding snare drum.

A PENCHANT FOR TRANSIENTS

In addition to creating the above-mentioned artifacts, lossy codecs and spectral denoisers can also smear transients. Unchirp has a section dedicated to restoring transients that includes

the large Threshold knob and the Orig and Synth sliders. The process allows you to create synthetic transients to replace smeared ones, or boost or cut the original transient's level, among other possibilities. This section is also very useful for creative processing of drum and percussion parts.

The Solo switch allows you to hear just the transients in the signal (including the original and any synthetic ones you might have), which can be useful when setting it.

The Treble Boost process lets you replace high-frequency information lost during encoding and de-noising. The Mix section has a Wet/Dry control, which is where you adjust how much of Unchirp's processed signal gets routed to the plug-in's output.

REACHING THE BREAKPOINT

Three of the four processes—Musical Noise, Dechirping, and the Transients—can be further fine-tuned with the Bias feature, which gives you frequency-dependent adjustment of the processes and parameters, adjusted through creating breakpoint curves in the graph.

Each controllable parameter has a check box under the graphical editor, matching the color coding for that process; when you click on the name beside the checkbox, a line appears in the middle of the graph. Clicking anywhere on any frequency in the line adds a breakpoint (you can add multiple ones), and by moving the breakpoints, you can create a curve.

Five different curve types are provided. If the curve is above the center line, you're adding to the process in the frequency range defined by the curve; if it's below the line, you're subtracting from it. In essence, the Bias feature, used in conjunction with the corresponding process control, lets you apply processing only in a particular frequency range.

If this sounds confusing, frankly, it is. And it's not easy to get your head around the concept. The manual is fine for explaining what the knobs do, but considering how complex Unchirp is, it could really use some online tutorial material. As of this writing, the video on Zynaptiq's site only shows what the plug-in can do, not how to use it.

THINK GLOBAL, PROCESS LOCAL

In addition to the previously mentioned I/O Diff button, other Global Parameters include a Side button that switches the processing to only the sides of an M/S configuration; a Limiter button that activates a brickwall limiter set to 0 dB to prevent overs; and a Bypass button. The Sync function, controlled by a slider, is designed to add clarity by synchronizing the processing to the transients in the target audio. The Warmth slider reduces the buzz and metallic ringing that can be made audible by the Unchirp process.

The final Global parameter is HD Mode, which adds additional quality to the processing but increases the already hefty CPU load of Unchirp—one of the main drawbacks of this plug-in.

UNCHIRP IN ACTION

Unchirp has a wide variety of applications, and it includes a large set of presets that are organized into categories including General Purpose and Sound Design, Mixed Music, Mixing Tools, Post, and Psycho-Acoustic Processing—perfect for getting you started. I tried Unchirp on a variety of sources and for a number of different applications.

For restoring the sound of a file compressed with a lossy codec, I encoded a song as an MP3 at a paltry 80 kbps, and the resulting audio was rife with artifacts. Using one of the Mixed Music presets, I was able to significantly improve the sound.

Unchirp is also touted as being able to reduce artifacts in audio files that were over-processed by a spectral denoiser. I tried it out with both spoken-word and music files that had denoising artifacts. When I used settings from the appropriate presets and tried out my own settings, the plug-in seemed to have very little effect. There was no dramatic improvement as there was with the MP3 file. According to Zynaptiq, there are two limiting factors. First, the longer the FFT, the longer the artifacts; at some point, they become greater than the window of time available in Unchirp's real-time processing. Secondly, some denoisers have their own musical noise suppression logic, which attempts to mask the noise in a way that makes it difficult for Zynaptiq to reduce.

GETTING CREATIVE

I was intrigued by the possible uses of Unchirp for mixing, and found that its Transient section worked great for making drums and percussion more punchy. It also added sparkle and life to an acoustic guitar track, using, believe it or not, the Unchirp and Musical Noise processes, along with the Treble Boost. In fact, it was great for making a variety of tracks sound better. The problem is that it's so CPU-intensive that I couldn't use it on too many tracks simultaneously in a mix. The workaround is to process tracks and bounce them in place, or bounce and re-import them, depending on your DAW.

I could also see Unchirp being a useful tool for mastering. Its preset section features psychoacoustic settings that emphasize the 25 "Bark" frequencies (see Figure 2), at which the human ear is most sensitive. Energy in those bands, particularly transient energy, makes audio sound louder and crisper. I tried some of the presets on recorded music and found that in many cases, it made them sound brighter and more punchy.

THE FINAL CHIRP

Although Unchirp is CPU intensive and complex, there's a lot to like about it. Its collection of presets definitely helps demonstrate settings for particular applications, or at least gets you in the ballpark; I would urge Zynaptiq to post more tutorial information and videos on its site. I also hope they can address in an update the artifacts created by current-generation spectral denoisers.

That said, Unchirp is a very powerful plug-in, and there is nothing quite like it on the market. Its ability to salvage bad-sounding, lossy encoded music is impressive, as is its ability to adjust transients and add punch and definition to both individual and mixed tracks.

If your production work includes lossy encoded music that needs improvement, Unchirp will be a no-brainer for you—especially if you're a techie or someone who is not afraid to roll up your sleeves and take on a challenge. This plug-in gives you processing capabilities unavailable elsewhere. ■

Quick Tip: Resuscitating a Wimpy-Sounding Snare Drum

A great Unchirp function is its ability to add punch to a weak-sounding snare drum. Here's one way to make it more snappy; this setting will work best on snare recordings that are round-sounding, and don't have enough transient energy.

1. Set Unchirp to its default setting, then turn the Musical Noise and Unchirp sliders all the way down.
2. Set the Transients threshold a little bit lower than the center position, which will allow more synthetic transients to be created.
3. Set the synth slider a little below halfway.
4. Set the Orig slider a little over the center position to slightly boost original transients.
5. Compare the sound by using the Bypass button.
6. Try moving the Sync slider left and right. Moving to the right will make it sound tighter. Pushing the Orig slider up will boost the original transients.

Fig. 1. The DL32R is a rackmount mixer controlled by the Master Fader iPad app.

MACKIE

DL32R

DIGITAL RACKMOUNT MIXER WITH IPAD CONTROL

BY STEVE LA CERRA

Steve La Cerra mixes front-of-house for Blue Öyster Cult and teaches audio at Mercy College, Dobbs Ferry Campus.

STRENGTHS

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LIMITATIONS

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Mackie's DL32R digital mixer is at once exciting and scary. Exciting, because of the huge feature set, quality of sound, and routing and control capabilities it brings to a very reasonable price point. Scary, because the only way to control it is by using an iPad. There are no surface controls, no MIDI-speak, not even an application to run it via computer. It's iPad or nuthin.'

The front panel of the DL32R looks more like a patch panel than a mixer, sporting 24 XLR and eight Combo inputs (all with Mackie Onyx+ mic preamps), 14 XLR outs, two TRS monitor outs, a headphone jack, and two status LEDs (See Figure 1). Rear-panel features include two USB ports, an Ethernet port/card slot, and vents for the cooling fans. The 3RU chassis has handles for easy transport (beware that these protrude enough to inhibit some rack cases from closing properly) and a contoured top that provides a place to secure a router —which you'll supply along with the iPad. Factor those into the budget.

Thirty-two mono inputs are sourced from the analog inputs, either of the USB ports or an optional Dante network expansion card. Each mono input features an A/B Source switch, gain and digital trim controls, 48-volt phantom power, polarity reverse (Ø), highpass filter (HPF), 4-band parametric EQ, compressor, and gate. The default input routing scheme connects the analog inputs to channels 1 through 32, and USB 1 through 4 to stereo returns 1 and 2. Routings can be changed easily using the Input tab on the I/O patch, and are saved with snapshots.

Twenty-eight output buses include 14 sends, six subgroups, and six matrix feeds, all of which may be linked in stereo pairs. (The Main L/R bus rounds out the count). Each output bus provides HPF and LPF, 4-band parametric and 31-band graphic EQs, compressor/limiter, and alignment delay. By default, outputs 13 and 14 carry the L/R mix, but any bus can be assigned to any physical output. Three internal stereo effect processors have dedicated sends and returns, so you won't sacrifice channels when using effects. Other major control features include six VCAs, six mute groups, and six subgroups.

SOFTWARE CONTROL

Mackie's Master Fader app (free from the App Store) controls the DL32R (see Figure 2). Once a router is connected, opening the Tools View and selecting the DL32R initiates communication. Master Fader features three main Views: Overview, Mixer View, and Channel View. Overview displays fader position, metering, solo, and mute status for every input and output. Tapping on a fader in Overview opens that fader's Channel View, where you access EQ, dynamics, effects sends, and input/routing pages; swiping side-to-side scrolls through the channels.

Mixer View is where you'll see faders, mute, solo, pan, metering, and thumbnail displays for channel EQ, dynamics, and input. Tapping any thumbnail opens that page in the Channel View. Regardless of where you scroll in Mixer View, the L/R Master is always shown at the left side of the iPad screen. I found that if I was not paying attention, it was possible to accidentally mute the L/R master while actually aiming for the last channel. Yikes.

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Fig.2. A close-up of the free Mackie Master Fader app

Fig.3. The DL32R rear panel has a second USB port for connecting to a hard drive.

IN ACTION

I used the DL32R on local gigs, mostly with a pair of Electro-Voice ETX-35P powered loudspeakers. The DL32R has all the processing you could want, so there's no need for an outboard rack. Outputs 13 and 14 on the front of the DL32R are also labeled L and R (respectively) so I figured that connecting them to the inputs of the ETX-35Ps would produce sound, and it did. Getting microphones routed through the mixer was easy, but here's the kicker: If there were no musicians around, I could easily do my own line check by taking the iPad with me to (for example) the drums and playing them while adjusting the gain, and roughing in gate and comp settings. Ditto for ringing wedges and getting a rough monitor mix right at the musician's position. You could also pre-record a band, load them onto a hard drive, and play them back for a virtual sound check.

Channel EQ and dynamics are eminently useful, with Vintage and Modern models. I generally preferred the Vintage EQ for drums: A snare drum sorely in need of a new head was revived with a bit of boost at 2.5 kHz and 260 Hz, while adding 5 dB at 46 Hz and 7 dB at 3.81 kHz added heft and impact to a kick drum. A female vocalist using a wireless mic needed some "air," so a 4 to 5dB boost at 3.14 kHz brightened up her voice, while the Modern setting on the compressor tamed a bit of an edge between 1 and 2 kHz.

Compression can be set anywhere from barely audible to super-squashed and everything in-between. A male crooner-type vocal benefitted from the Vintage emulation (a nod in the direction of an 1176) with 4:1 ratio, slow attack, and medium release. I never heard any zipper noise or pops when making adjustments, even when using the Draw function on the graphic EQ. The 'graph helped solve monitor feedback and was useful for tuning the P.A. for a particular room (though some audio pros will miss an onboard signal generator). And although I didn't need it, it's nice to know that the Main, Aux, and Matrix buses have a delay that can be used to time-align remote speakers to the mains.

Three effects processors produce a variety of reverbs and delays. (There are no flange, chorus, or pitch-shift effects.) These processors are configured as two reverbs and one delay. I'd like to have the option to switch one of them *between* reverb and delay, so I could have a vocal delay, a special effects delay, and one reverb. The Small Room reverb was my favorite, adding just the right amount of space for a snare drum without getting sloppy, while the Hall reverb modified with a two-second decay time complemented lead and backing vocals very well. The delay sounds great on vocal and guitar, and is easy to operate—I created a library of ten different presets in a matter of minutes. The delay effect features a tap function, with separate taps for the left and right delays. Very nice.

COMMUNITY MIXING

The true mettle of the DL32R and Master Fader is shown when they're used for "community mixing." I found it a challenge to manage a house mix plus several monitor mixes simultaneously from one iPad, but add another iPad or two for monitor mixing, and things get interesting. For example, I created custom Views that let musicians see a drum subgroup (instead of multiple drum channels) plus channels they needed most to mix their own monitor from their iPads.

Furthermore, Mackie has implemented an important routing feature that I don't see often enough: Each Aux Send has options for Pre DSP, Pre Fader, Post Fader, Use LR Mute, and (in the case of Auxes linked for stereo) Use LR Pan. The first three are fairly obvious, but the last two are a home run. Deselecting Use LR Mute means that when a channel is muted in the L/R mix, it is *not* muted to the Aux Sends, giving every channel independent muting for each send. This is critical for a couple of reasons: First, when mixing front of house, I mute and unmute background vocal mics all night because I don't want stage wash spilling into open microphones; this would be a distraction in ear mixes. Second, channels can be turned on or off in any monitor mix without moving faders or interfering with other monitor mixes.

Like many of the current generation of digital mixers, the DL32R can function as a 32x32 USB audio interface. The rear panel has a second USB (type A) port for direct connection of a hard drive, and 24x24 recording. (According to Mackie, this will be expanded to 32x32 soon.) Recorded files can be pre- or post-DSP, but beware that multitrack recordings are stored as a single multichannel .WAV file that may need to be split before you bring it into your DAW. Pro Tools 10 and 11 imported the multichannel .WAV and split it into the component files, but Reason 8 and Digital Performer 7 and 8 did not. A utility called Wave Agent from Sound Devices (free at sounddevices.com) handled this task perfectly.

Mackie's DL32R is a strong entry into the digital mixer market. It may not be right for mixing a major tour with 50 inputs, but for applications such as small tours and club mixing—particularly where musicians may use additional iPads to mix their own monitors—or in a house of worship, where situating a mixing desk in the middle of the congregation is out of the question—it's heaven-sent. Operation is stable, sound quality is excellent, and the feature set is fantastic. An excellent product. ■

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Fig. 1. The Pebbles are fine sounding 5" monitors on their own, but when each is combined with a Bam Bam, the result is an impressive and revealing monitoring setup.

UNITY AUDIO

Pebble and Bam Bam

MODULAR MONITOR SYSTEM OFFERING EXCELLENT REPRODUCTION

BY MIKE LEVINE

Mike Levine is a composer, producer and multi-instrumentalist who apparently watched too many Flintstones cartoons as a child.

STRENGTHS

Non-fatiguing. Even frequency response. Well-built. All connecting cables included. Components can be purchased together or separately

LIMITATIONS

Rear-panel power indicator lights are impossible to see in many configurations. Pricey.

Pebble $1,899
Bam Bam $1,600

The good folks at Unity Audio seem to have rocks on the brain—when it comes to naming their studio monitors, that is. In addition to previously released products including The Rock, The Boulder MKII, and The Avalanche, they've now launched Pebble and Bam Bam. The Pebble is a two-way active near-field monitor with a 5" woofer and a soft-dome tweeter. The Bam Bam is an "active bass extension system," featuring a 7" woofer and a sealed cabinet that measures the same dimensions as the Pebble.

When you mate a set of Pebbles with a pair of Bam Bams, you end up with a full-range system that gives you what Unity Audio refers to as "brutally honest monitoring." Purchasing a pair of Pebbles with matching Bam Bams is not cheap, but when you mix on them, they are superbly revealing.

PEBBLE FOR TREBLE

On their own, the Pebbles are a fine-sounding pair of 5" monitors. They're housed in dark gray, sealed MDF cabinets, with controls and power indicator lights on the back. One of my only quibbles with Pebble is that it would be more convenient to have the power light on the front instead, so you can easily see whether the speaker is on or off.

Each Pebble has an XLR input, level control knob, and proprietary 5-pin DIN connector (included) for adding Bam Bams. Inside each cabinet are a 2x180W power amp and custom crossover. These solid-feeling cabinets are designed with an internal Aperiodic Vent, which the company says provides extended bass response, and is the same design Unity Audio uses on its Avalanche subwoofer. Of course, you'll get a lot more extension from the Pebble by connecting a Bam Bam.

BAM BAM FOR BASS

The Bam Bam is not technically a subwoofer, but it functions in a similar role as a standalone woofer that when paired with the Pebble, makes a three-way monitor system. Although Bam Bam is sold separately, it's not a standalone product; it can only be used in conjunction with The Pebble. (Both are sold only in pairs.) Hooking up a Bam Bam to a Pebble is remarkably easy: Plug the XLR output from your source audio into Bam Bam's XLR input, and connect Bam Bam's XLR output into the input on the Pebble. Unity audio includes a short XLR jumper cable with each Bam Bam for that purpose.

The Bam Bam has no internal power supply; it taps the power for its 180W class-D amplifier from the Pebble using the included DIN cable; the metal cable connectors screw securely into the jacks on each component.

The Bam Bam has its own power indicator light and volume control; next to those, you'll find trim controls for Pebble and Bam Bam. Adjustable with a small flathead screwdriver, these controls can be used for balancing the relative levels of the connected components; they are protected by plastic pop-off covers.

The Pebble and the Bam Bam can be configured either side by side or stacked with Pebble on top. Because the surface area of my monitor stands is 12" x 12", it was only feasible to use the vertical configuration. Unity Audio thoughtfully includes three foam pads for each Bam Bam to provide some isolation between Pebble and Bam Bam when they're in the top-and-bottom setup.

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SOUND QUALITY ETCHED IN STONE

I tested the Pebble and Bam Bam system in my studio for a couple of months, using Primacoustic Recoil Stablizers to decouple the Bam Bams from my monitor stands. I tested the system in a variety of situations, including on a folk/rock album-mixing project. I frequently alternated between The Pebble and Bam Bam and my two-way 5" Genelec 1029As.

Sonically, the first thing I noticed was how much of the source material's frequency range I was hearing on playback; I got the impression of a very even response throughout the frequency spectrum. The sound was not harsh or hard, but smooth, and a bit rounder on top than what I heard from my Genelecs or my KRK Rokit 10-3 (10") monitors. The Pebble and Bam Bam system seemed a lot less fatiguing than other monitors I've used, and I was able to mix on it for long periods of time.

I heard plenty of bass from Pebble and Bam Bam, though the bass was not as deep as my KRKs, which have 10" drivers, the Unity Audio system provided a noticeably smoother and fuller midrange and less harshness on the top end. Comparing the Unity Audio system to the KRKs was kind of like pitting a $60 Cabernet against a $15 one, or a BMW against a Hyundai. The Pebble and Bam Bam system is in another league, both in terms of sound quality and price.

Fig. 2. The back of Pebble (left) and Bam Bam, where all the jacks and switches reside.

I disconnected the Bam Bams from the Pebbles, and compared the latter to my Genelecs, which I love. The Pebble once again provided a smoother sound, with a more seamless transition between lows, mids, and highs.

YABBA DABBA DO!

The Pebble and Bam Bam combination is a well-designed, solidly built, superb sounding, and very revealing monitor system. It's expensive for a home studio user, but you're getting what you pay for. If you want a clear, unhyped, and non-fatiguing monitoring experience, and you can swing the financial end, I highly recommend this system. Alternatively, those who would rather not spend all of that money at once could buy a set of Pebbles and later add the Bam Bams. Either way you go, you'll be the envy of all the musicians in Bedrock. ■

RESIDENT AUDIO

T4

Four-channel Thunderbolt audio/MIDI interface

BY MARKKUS ROVITO

WHILE WE never seem to have enough USB ports, many people still have little use for their Thunderbolt ports. However, a growing number of drives, docks, and interfaces are beginning to change that. Newcomers Resident Audio make a good first impression with the T4 ($499 street), a 4-channel audio and MIDI interface that connects over, and draws power from, a Thunderbolt port.

Four front-panel combo inputs accept XLR, balanced ¼" TRS, and unbalanced ¼" TS cables for switchable instrument/line levels, and they have optional phantom power, as well as input level knobs with LED rings that glow green, yellow, or red to indicate that level. Around back, a dedicated ¼" stereo headphone out joins four ¼" TRS line-level outputs (one of which can be a secondary headphone out) and MIDI I/O.

The T4 works in two modes: When only outputs 1 and 2 are used, Stereo Mix mode kicks on: All inputs route to outputs 1 and 2, mixed in stereo; and the big Monitor knob on the front controls monitor and headphone levels. With output 4 connected, Multichannel mode turns on, inputs are automatically routed to the headphones, and the four individual outs output whatever you assign them in your DAW. You also control the individual levels of the outputs from the T4 Digital Panel software.

With Thunderbolt's massive bandwidth, there's no discernable latency with the T4 (even in 24-bit/96kHz mode), and the audio quality of the inputs sounds completely transparent, while the output is full-bodied and crystal-clear. The output sounded nearly identical in quality to the more expensive Universal Audio Apollo Twin Thunderbolt interface, although the Apollo did have much louder overall output levels. The T4 includes a Thunderbolt cable, although it's only a scant 18 inches. Overall, it's a sturdy, portable, great-sounding interface that would benefit from an extra Thunderbolt through port, so that you could use it with a Thunderbolt drive or display. ■

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WWW.DIGITALAUDIO.COM

DIGITAL AUDIO

Sandman's delay buffer looping sets it apart; turn on Sleep to freeze and loop the buffer and then tweak your way into glitchy, dirty, noisy goodness.

UNFILTERED AUDIO

Sandman

PUTTING DELAY HEADS TO BED

BY MARKKUS ROVITO

STRENGTHS

Straightforward operation. Goes from solid basic delays to transformational sound mangling in seconds. Versatile LFO section. You buy it; you own it—no activation required.

LIMITATIONS

Sparse open-source documentation. No AAX or RTAS formats.

$19.99 MSRP
unfilteredaudio.com

Dedicated delay plug-ins can offer a comprehensive spread of delay basics with easy operation (Native Instruments Replika), or insanely deep multitap or spectral delay possibilities (e.g., Waves SuperTap or Artificial Audio Obelisk). Sandman, from boutique shop Unfiltered Audio, meets you halfway, with straightforward operation you can learn in a few minutes for delay essentials, as well as plenty of potential for extreme sonic warping, rhythmic glitch destruction, and warm, evolving textures.

It also throws in support for Steam Cloud (the popular videogame distribution platform that's expanding into creative software), which lets you back up your presets and sync them on different computers—all at an impulse-buy price.

Sandman works off a delay buffer, the length of which you set in seconds or tempo-synched note values (see photo above). The buffer is capped at five seconds, but by turning down the Sample Rate knob, which pitch-warps and bit crushes the delayed signal, you can effectively extend the delay buffer all the way to a maximum of 500 seconds (or you can lock the delay time so sample rate doesn't change it).

It's simple to dial in a note value (from 1/64 triplet to whole note) and feedback amount to achieve basic delays quickly and then save them as user presets. A lowpass filter on the feedback can also color the delayed signal with a murky sheen or roll off piercing high end. But the fun picks up when you hit the Sleep button: This freezes the delay buffer in its current state (and turns off feedback and filter amounts) and lets you adjust the start and end points of the delay loop. From there, you can tweak the deeper settings for hours, staying up way too late conjuring up really trippy soundscapes by adjusting the delay time, sample rate, start and end points, and a whole other can of worms—the LFOs.

WAVES OF NOISE

Clicking an arrow unfolds the LFO section of Sandman. Two syncable LFOs with six possible waveshapes can modulate five destinations: delay time, Sleep start and end points, the sample rate, and feedback amount. Sliders for those five modulation destinations represent their current values in the center position, and you can adjust them to apply positive or negative modulation amounts.

The powerful LFO section helps rocket Sandman into potent sound design territory. Whatever audio you feed into Sandman, you can use it to create infinite all-new sounds and loops from something as mundane as a hi-hat pattern. Crank the mix knob all the way to wet, turn on Sleep, and go crazy recording your results.

DREAM UP SOMETHING NEW

Beyond delay, Sandman can create flange, bit crushing, and tone-bending effects, and its 23 presets show off all of those varieties. It can dirty up or "monsterfy" regular old synth or instrument tones like a Rhodes or string section that sound decent but could use some spice. You could turn a drum loop into something that sounds like a DJ scratching, or turn slowly played monophonic instruments into a busy, pleasant jumble of cascading notes. The possibilities are truly endless and potentially bizarre, beautiful, or both. ■

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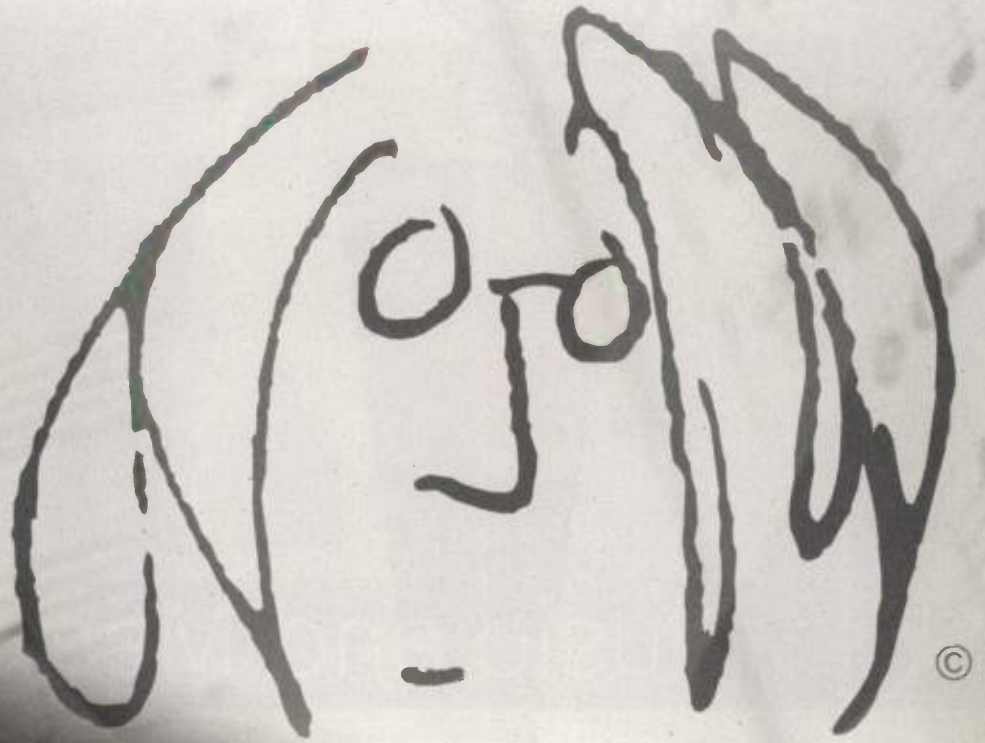

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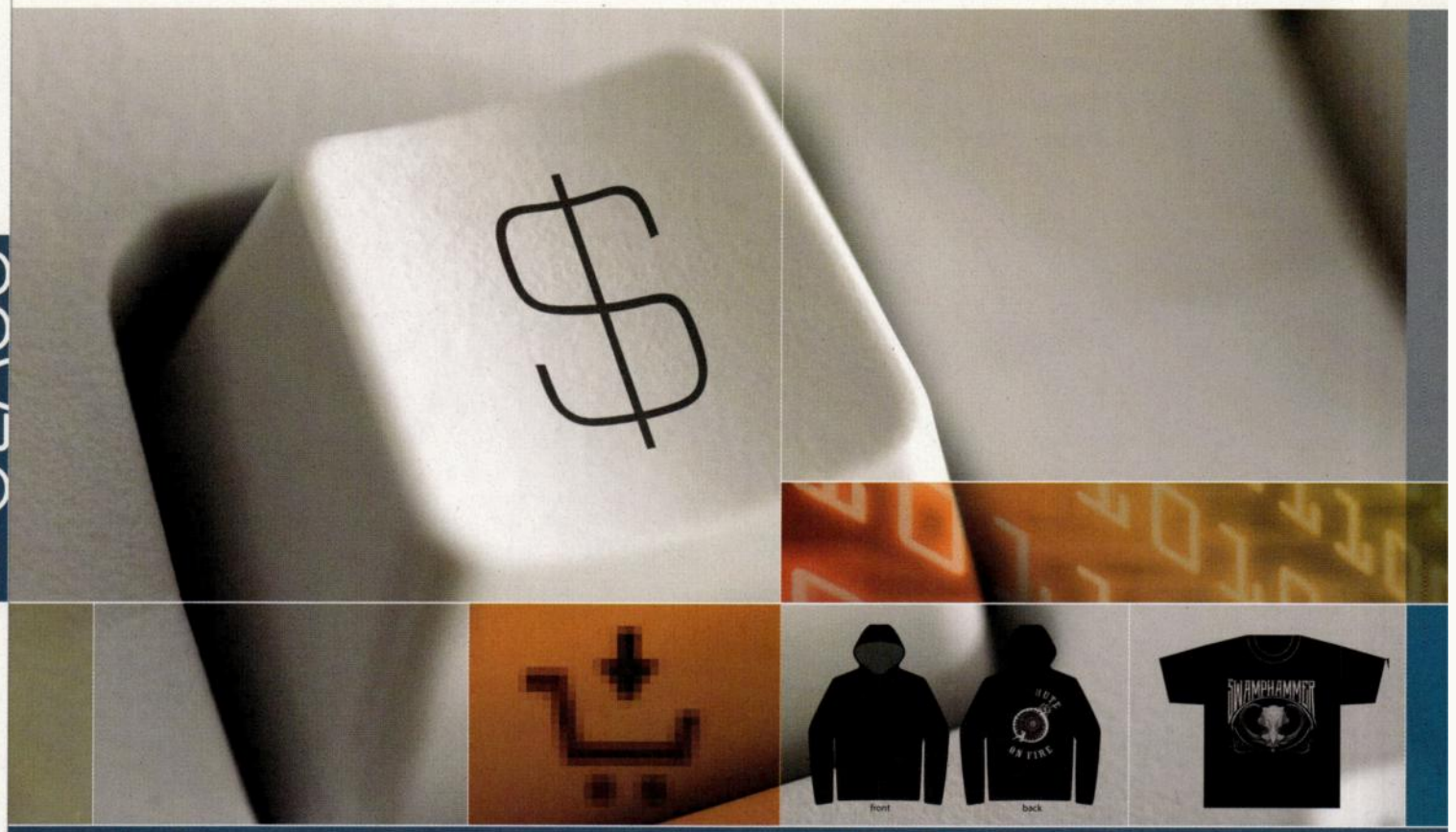


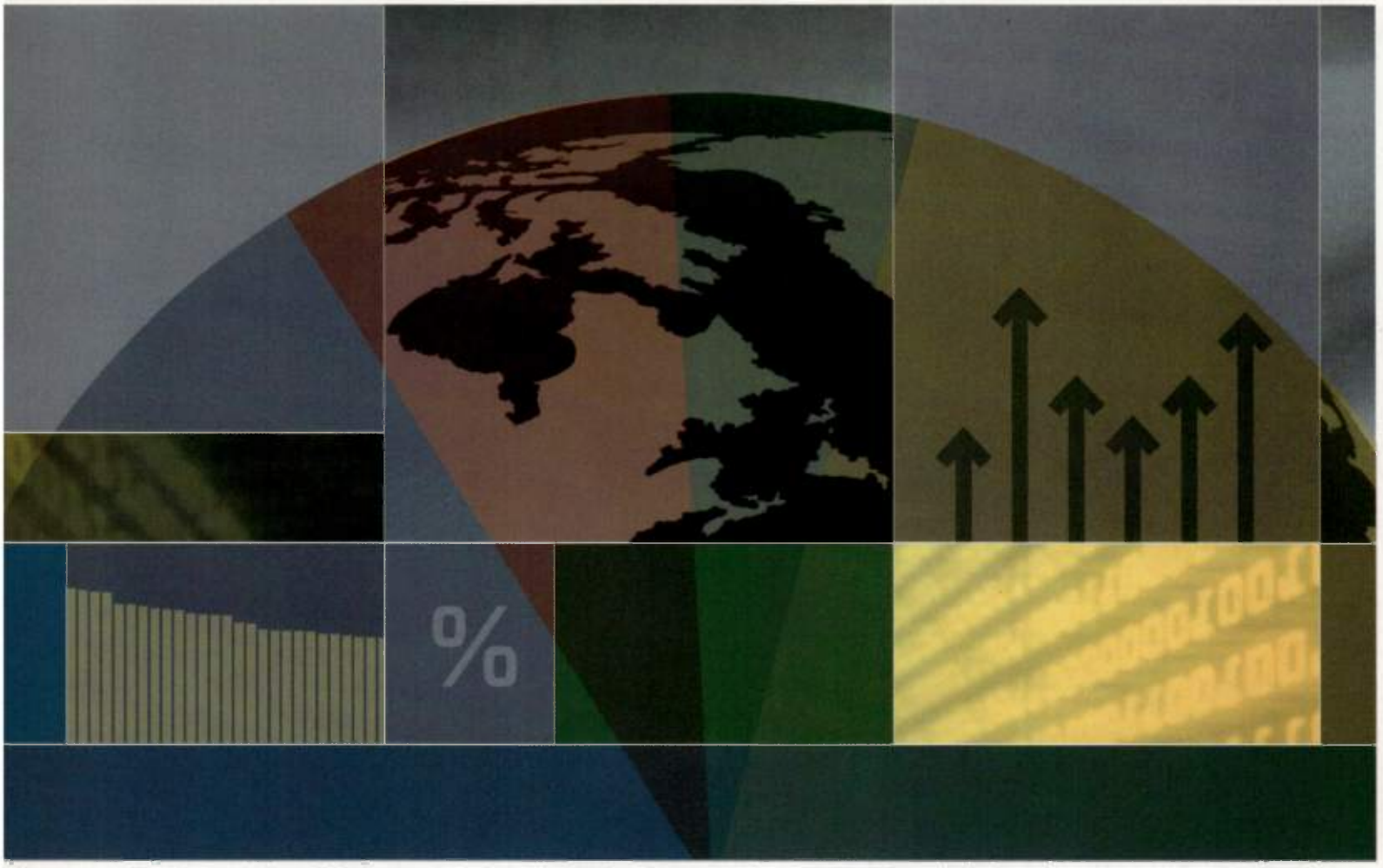
Music and Merch

How to Make Extra Money on Every Sale

BY RANDY CHERTKOW AND JASON FEEHAN

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

When you sell your music on iTunes, Amazon, and other services, you naturally get a percentage of every transaction. The same is true for merchandise that you sell. What many musicians don't realize, or take advantage of, is the fact that they may be entitled to an *extra* percentage of everything they sell—whether it's music, merch, or anything else—if they provide special affiliate links, rather than direct links. You don't want to miss out on this extra source of income.



It works like this: vendors want you to send them customers, and if you do so, they will reward you by giving you a percentage, or cut, of whatever the customers buy. They will identify you as the one who referred the customer, and will know to pay you for that customer's purchase because they have given you a special link to use. Embedded in this link to the music track, album, or merchandise is a tracking code that identifies you as the "referrer."

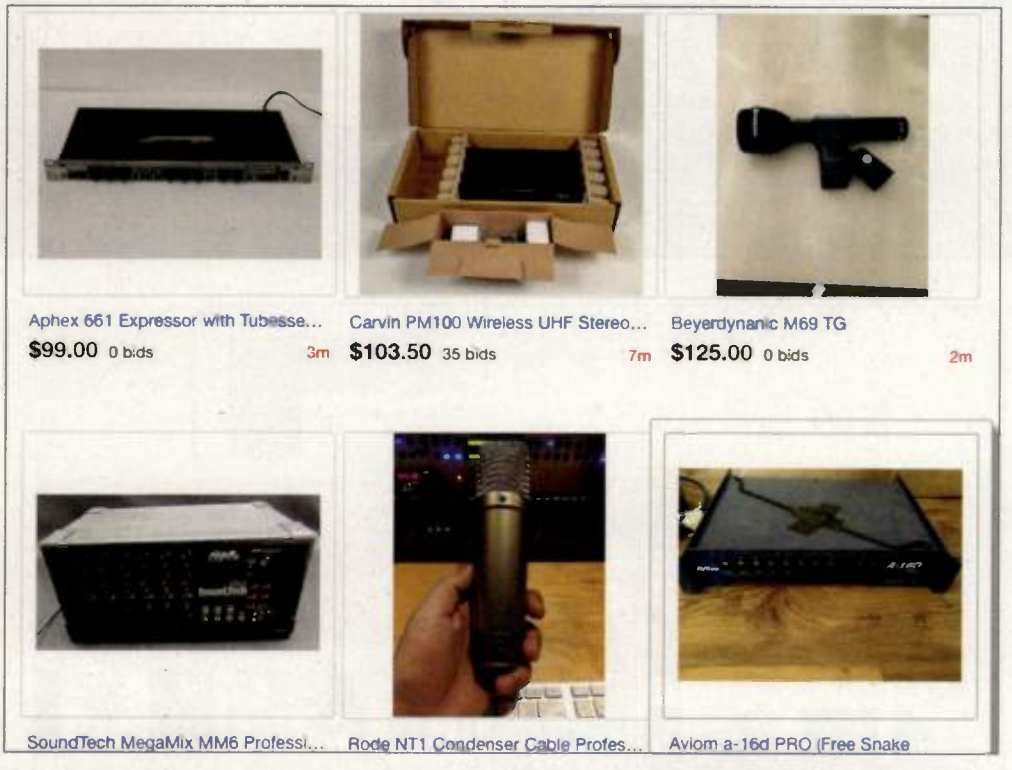
It doesn't matter to the vendor that you are sending your fans to buy your music, or that you are already going to make some money on the back end of the transaction. In fact, vendors are happy to give you another cut because you sent the customers to them instead of to another store. Actually, vendors wouldn't necessarily know that you're the artist who made the music. As far as they're concerned you're just another affiliate. Also, your fans don't pay anything extra for this; you are just getting a cut of the price they would normally pay.

There's another benefit: You actually get a cut of everything else the customer buys from the vendor—not just your music or merchandise. If the person you send to a particular store to purchase your album proceeds to buy a laptop computer or flat-screen television as well, you'll get a cut of those large purchases, too. The revenue from these types of sales can really add up.

It's free to sign up and participate in these programs, so it's worth taking the time to learn about the process, and get onboard.

Take the time to become an affiliate, and you'll make more money every time fans purchase your music on iTunes.

In addition to music sellers, sites like Zazzle give an extra cut to affiliates.



Becoming an affiliate with eBay can pay off if fans link to a piece of high-end equipment that you mention.

HOW TO BECOME AN AFFILIATE AND GET YOUR EXTRA CUT

To become an affiliate with your vendors, follow these steps:

1. Sign up for each online vendor's affiliate program. Although you'll have to fill out a lot of paperwork and online forms, you can sign up for nearly all of the programs below in a single evening. You'll need to have your website or web presence up and running, as most programs will verify the sites where you will be promoting the products before they will approve you as an affiliate. Additionally, you'll need your EIN/Tax ID or Social Security number handy, as you'll be filling out forms to tell them whom to pay and where to send the checks when you generate commissions.

Here are the links to some of the major online stores that are worth affiliating with:

- iTunes: www.apple.com/itunes/affiliates/
- Amazon: affiliate-program.amazon.com/
- Zazzle: www.zazzle.com/sell/affiliates
- Spreadshirt: www.spreadshirt.com/spread shirt-affiliate-program-C3564
- Cafepress: www.cafepress.com/content/cp-partners/

If you're not sure how to use merchandise-on-demand sites like Zazzle, Spreadshirt, and Cafepress, you will find that information at emusician.com in our regular "DIY Advisor" blog. Look for the blog post titled "How to Make Merchandise for Free."

OPTION: SIGN ON WITH AN AFFILIATE AGGREGATOR

Another option beyond signing up with each store is to join an affiliate aggregator service. These services connect you to hundreds of major brand companies that sign up to become advertisers. You first sign up for the aggregator site and then choose which vendors with which you want to affiliate. For musicians, companies like Guitar Center, Sam Ash, and other retail stores are members. However, you're not just limited to companies in the music industry (more on this below).

Here are the links to a couple of the major affiliate aggregator services that you may want to apply to join:

- Commission Junction: www.cj.com/
- Rakuten Affiliate Services: marketing.rakuten.com/affiliate-marketing

Once your application has been accepted by an aggregator, you'll want to look over their terms and conditions carefully so you'll understand how to use their system, and what your obligations are under their rules. If you break the rules, your account can be suspended or revoked. Also, explore the tools and options these aggregators make available for you; they go beyond just affiliate links. They give you creatives (i.e., images or ads) and sometimes special offers you can share with your fans. Also, each company will give you a tracking dashboard where you can see how many clicks you've generated as well as the number of sales.

Finally, don't limit yourself to the companies above. There are many websites, services, and vendors that are independent and have their own affiliate services.

2. Create affiliate links for all of your music and merchandise. Each of the affiliate programs has its own methods and tools for you to generate your affiliate links. Signing up to be an affiliate is not

Becoming an affiliate with Amazon can result in lots of revenue opportunities, whether your followers purchase your music or link to other music you recommend online.

enough; you need to use the affiliate links in place of any link you currently use to your music and merchandise, or you won't get the extra cut.

We recommend carefully generating affiliate links to each of your albums, individual songs, and each piece of merchandise. Get a feel for what an affiliate link looks like compared to a normal one so you can spot any that have the wrong format.

Once you go to all of this trouble to generate new links, do your best to make sure you only have to make them once: create a document that you can use to track all of them. A Google Doc, Evernote, or OneNote document that you can access online at any time is especially useful. You might also want to keep images next to the links in your document, in case you want to post album covers or pictures of your merch on the Web with the affiliate link.

Affiliate links can be lengthy, so we also recommend using a link shortener such as bit.ly, tiny.cc, or ow.ly to make the links easier to handle. Plus, these services often allow you to customize the links to give them friendly names. It will be easier and to print shorter, catchier URLs on promotional handouts, such as flyers or posters, and they'll be easier for customers to use and remember. Last but not least, these services provide a tracking dashboard, so you can see how often each link is clicked. If you use these, be sure to add these shortened links to your tracking document.

> Getting an extra cut is helpful, but you don't want to damage your brand or turn people off to your music. So, you'll want to use this technique in a way that makes sense for your personality, brand, and music.

3. Put the affiliate links everywhere you link to your music and merch. Now that you have created affiliate links for everything that you sell, replace any direct links you may have been using with the new affiliate links. Make a list of every website, web presence, social media, and online profile that you have so you don't miss anything.

Once you have your list, grab that tracking document where you recorded all of your affiliate links and replace the direct links. Remember, this is a revenue-generating activity, so it's worth taking the time to do a thorough job with this. Also, if you've grabbed album and merchandise images along the way, think about enhancing your sites with them.

4. Check the dashboard regularly to make sure your affiliate links are working, and to keep track of your campaigns and revenue. Once you've completed the first three steps above, you should test the new affiliate links you created to make sure they are working properly. Keep a close eye on your dashboards for each of the affiliates you use to keep track of whether people are clicking through and the links are getting picked up. If you notice any discrepancy, you'll want to check that your links are correctly set up.

Once you're satisfied that your links are working, do a weekly check to see how your fan marketing and engagement are working and to track your revenue. When you're satisfied that you have those affiliate links up and operating properly, it's time to start using them proactively.

TURNING ONLINE SOCIAL INTERACTION INTO INCOME

One of the biggest problems with all of the time you spend on social media is that, for the most part, it neither generates direct revenue nor helps you make you more music. You may love interacting with your fans online, and it may be important for marketing and relationship purposes, but there's no payday attached. However, with affiliate linking, once you have the initial setup completed, you can get something more out of engaging with your fanbase.

First of all, remember that you should be plugging your music and merch periodically as you post updates on your social media, blogs, or newsletters. Mentioning albums or merch only when you release them is a lot like mentioning them just once from the stage at the beginning of a show: You never know when someone just walked in the door, and they might not have heard you the first time. Always assume that on all of your platforms there are new people reading your posts, and you'll want to casually mention your latest album as a natural part of your updates. And, of course, when you do this, you'll want to use your affiliate links. Given that space is usually limited on social media, this is another situation where link shorteners come in handy.

Once you've mastered weaving in affiliate links for your music and merchandise in your posts, you may want to consider branching out by mentioning other products. For example, it's fair game to talk about the music that inspired or influenced you. Your fans will be curious and will want to hear it

themselves. There's no reason why you shouldn't provide an affiliate link when you talk about it.

You don't have to stop with music either. If you write about movies that you've watched or bought, products you've used, or services you've found useful, all of these are also fair game. Of course, you'll want any of these mentions to be natural and genuine. No one wants to follow a shill or be advertised to all day. Getting an extra cut is helpful, but you don't want to damage your brand or turn people off to your music. So, you'll want to use this technique in a way that makes sense for your personality, brand, and music.

SHOP

In today's world, fans are interested not only in your music, but also in how you created it. They want to know what studio gear you're using to record your music, what instruments and amps are in your rig, and which audio and video software you employ. All of these are opportunities to make an affiliate link.

For example, you may want to create a page within your website that lists and discusses the gear and software you use. Of course, for each product, you should provide an affiliate link. That page doesn't need to change too often, so it's the kind of thing you could set up in a weekend (and is fun to do besides). Keep in mind that higher-ticket items can net much more revenue—5 percent cut of a new guitar or amp can be significant.

Other ideas you may want to try include writing a blog series about how you make your music or how your studio is set up. This can lead to more interaction with fans and may connect you with other musicians who may share their ideas and feedback.

Even if some of your gear is older and is no longer sold in retail stores, you may be able to get affiliate income for purchases through eBay. Just sign up for the eBay Partner Network (ebaypartnernetwork.com). Then use the eBay tools to do a search on the exact model of the gear you want to link to. Like the other affiliates described in this article, eBay gives you a cut of anything the customer buys.

eBay also provides you with tools that allow you to embed a widget into your website that displays affiliate links to the current auctions related to the gear on your page. You do this by setting up a particular search that matches the gear you listed; this can be helpful for your fans because it displays the items that you're talking about in an accessible format.

At emusician.com, authors Randy Chertkow and Jason Feehan blog monthly, offering business advice that can help independent artists build their music careers. Visit them at emusician.com/advisor.

BUSINESS AND TAX IMPLICATIONS

Keep in mind that when you're setting everything up to become an affiliate, you will need to pay proper attention to at least two important business issues.

First, you need to determine who will receive the checks. They can go directly to you, in which case the revenue will be treated like personal income and tracked via your social security number. Or, the checks could go to a business entity that you set up and track via an EIN/Tax ID number. This is an important decision, because the affiliate vendors will report your income to the to the IRS; you need to be sure that you properly account for it.

Second, you need to keep up with the bookkeeping related to the income and expenses you're your affiliate activities, so you have everything in order to do your taxes each year, and so you can benefit from any write-offs and other deductions. While affiliates are free to use and to join, you may incur expenses connected to the ways you promote your music and merchandise. For example, you may decide to place an online ad to announce your new album. Naturally, you'll use an affiliate link for the ad, and the expense for the ad may be a legitimate write-off. As always, if you have any business or tax questions, we recommend talking to your accountant.

USING AFFILIATE LINKS?

Whether or not you tell your fans that the links you're providing are affiliate-based is up to you. Considering that it doesn't make any of their potential purchases any more expensive, and you're benefiting your fans by making it easy for them to find your music, merchandise, and more, you shouldn't feel obliged to explain that you have a business arrangement that happens to give you an extra cut.

However, telling your fans that you will receive a percentage of purchases made through your links may actually encourage them to do so, as they may get a positive feeling from supporting you and your music. So, you may want to tell your fans that you're using an affiliate link, and that purchasing through that link benefits you. In other words, the reason you may want to inform your fans about the links has less to do with full disclosure, and more to do with their eagerness to support the music they love.

CONCLUSION

Once you get the hang of making and using affiliate links, you'll find ways to let your fans know about your music and other products that you find useful, and weave these ideas into your regular communications seamlessly—all while improving your income. ■

Telling your fans that you will receive a percentage of purchases made through your links may actually encourage them to do so, as they may get a positive feeling from supporting you and your music.

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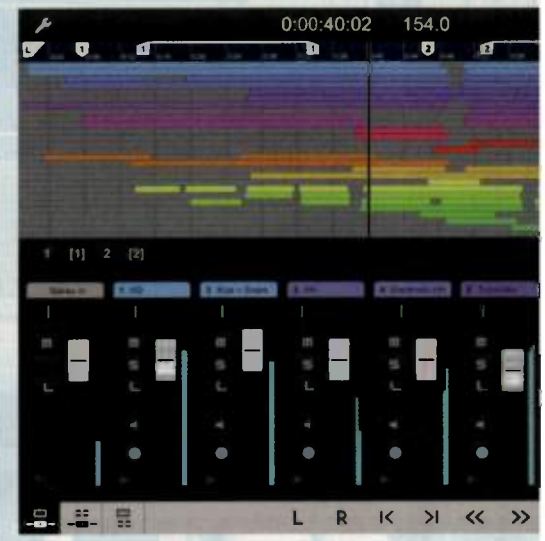
touchAble, which turns the iPad into a wi-fi controller for Ableton Live, is available for Mac and PC computers.



Cubase iC Pro is designed to be a remote extension for Cubase software running on a Mac or PC computer; there's also a free version called Cubase iC available for the iPhone.

iPad DAW Control

Options for setting up your tablet to control your workstation for little to no cost

BY THOMAS RUDOLPH AND VINCENT LEONARD

Many apps offer wireless control over computer-based software DAWs. Prices vary from free software-specific controllers to more expensive apps with larger feature sets and the ability to work with DAWs from different software companies on both Mac and Windows computers. Third-party apps usually require a few more steps to configure. Look for the documentation and tutorials online for the proper procedures to link up your devices and software; carefully read the app's page in iTunes, and make sure your computer software version is supported. It's always helpful to read reviews to learn what other users are experiencing.

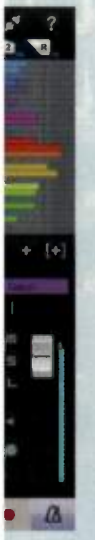
Here are a few examples of apps that control single DAWs; costs range from free to $25, and all apps are available for download at the iTunes store.

TOUCHABLE BY APPBC ($24.99)

touchAble turns the iPad into a wi-fi controller for Ableton Live, available for Mac and PC computers. In addition to installing the app on your iPad, you will need to download and install a driver from the developer's website onto your computer. touchAble uses an icon-driven, modular interface that can show either a single module in full-screen display or a top-and-bottom split with two modules on the screen. Modules include Clips, Mixer, Devices, Keys and Pads, XY Pad, Template Editor, and, for Live 9 users, a Browser. If you need more onscreen controls than are possible on a single iPad, a second iPad can be linked to the same Ableton Live session. This configuration allows you to tweak the mixer faders on one iPad while playing a virtual synth—inside Ableton Live—on the second iPad screen. As long as the second iPad is synced with the iTunes account used to purchase the first copy, you will not need to purchase a second copy of the app.

CUBASE IC PRO BY STEINBERG ($16.99)

Cubase iC Pro is designed to be a remote extension for Cubase software running on a Mac



Logic Remote is a companion app for Logic X on the Mac.

DP Control turns the iPad into a mobile control surface for Digital Performer; the app requires Digital Performer 7.2 or higher.

or PC computer. It requires a free driver to be installed on your computer so that the computer version will recognize the iPad app as a controller. Communication is over a Wi-Fi network. Once connected, any changes you make to a project on your computer will automatically be updated on the iPad. Cubase iC Pro is compatible with Cubase versions 6.5 and later, Cubase Artist versions 6.5 and later, and Cubase LE AI Elements 6 and 7. Some functions only work with Cubase 6.5 and later, so check the app's iTunes page for the latest news on compatibility.

The Project page provides a project overview; transport controls are located at the bottom of the screen. You can use pinch and spread gestures to zoom in and out of your tracks. One of the key features of the Mix Console page is the ability to create up to four independent monitor mixes when recording. The Key Commands page allows you to create custom sets of commands and macros that can be accessed with a single touch of a button on the iPad screen. The app offers split-screen modes so you can combine page views.

Tip: There's a free version of the Cubase iC Pro app called Cubase iC. Available for the iPhone, it allows wireless control of the transport function, monitoring of the playback position, and controlling the Arranger Track in Cubase.

LOGIC REMOTE BY APPLE (FREE)

Logic Remote is a companion app for Logic X on the Mac. If you don't own Logic X but own Apple's GarageBand 10.0 or MainStage 3.0.2 software, Logic Remote works with those software packages as well. The app connects over Wi-Fi to the Mac. Both the iPad and computer must be on the same network. Logic Remote is able to access the help documentation for Logic Pro X, MainStage 3, and GarageBand on the Mac. The Mixer page offers control for Logic's faders, including the ability to move multiple faders at a time. A bar ruler of all tracks appears at the top of the page; swipe the ruler area to navigate to any location in your session. You can operate the basic transport controls from anywhere in your studio with a single touch.

Multitouch gestures can be used for volume, pan, solo, and mute controls. Use care when touching the screen on the Mixer page, as you can easily move a fader level when swiping. The app has pages for playing and editing software instruments. The Key Commands page allows you to use preset buttons for functions in Logic and create your own custom set. Use key commands to run Logic from anywhere in your studio.

DP CONTROL BY MOTU (FREE)

DP Control turns the iPad into a mobile control surface for Digital Performer; the app requires Digital Performer 7.2 or higher. Communication between the iPad and the computer is over a Wi-Fi network, and both the computer and the iPad must be on the same network. This app is perfect for self-recording, allowing you to record your own performances when you can't be at your computer to start and stop recording. The app gives you complete control over Digital Performer's main transport functions, including Play, Rewind, Count Off, and Overdub. The time counter has settings for real time, SMPTE time, samples, and marker names. Marker names can be created and named from DP Control, and you can scroll through them to locate a point in the song to begin recording or playback. For record-enabled tracks, you can create a new take or cycle through existing takes; takes can be renamed or deleted from the app. On the Tracks page, you can view a complete list of tracks, including collapsible nested track folders organized exactly as they are on the computer screen. DP Control provides the ability to solo, mute, record-enable, and play or record automation.

The Mixer page offers control over volume and panning. Since communication goes both ways, any changes you make on the computer are reflected in the app, and vice versa. In Settings, you can manage your computer connections, and if your sequence contains multiple chunks, you can select a specific chunks to play; this is helpful for using DP Control with Digital Performer in a live setting for backing tracks or click tracks. Set up a set of sequences as chunks in a set list, and DP Control can be used to switch between chunks. ■

This article is excerpted from The iPad in the Music Studio *by Thomas Rudolph and Vincent Leonard (Hal Leonard, $19.99). Win a copy of this book! See page 12 for details.*

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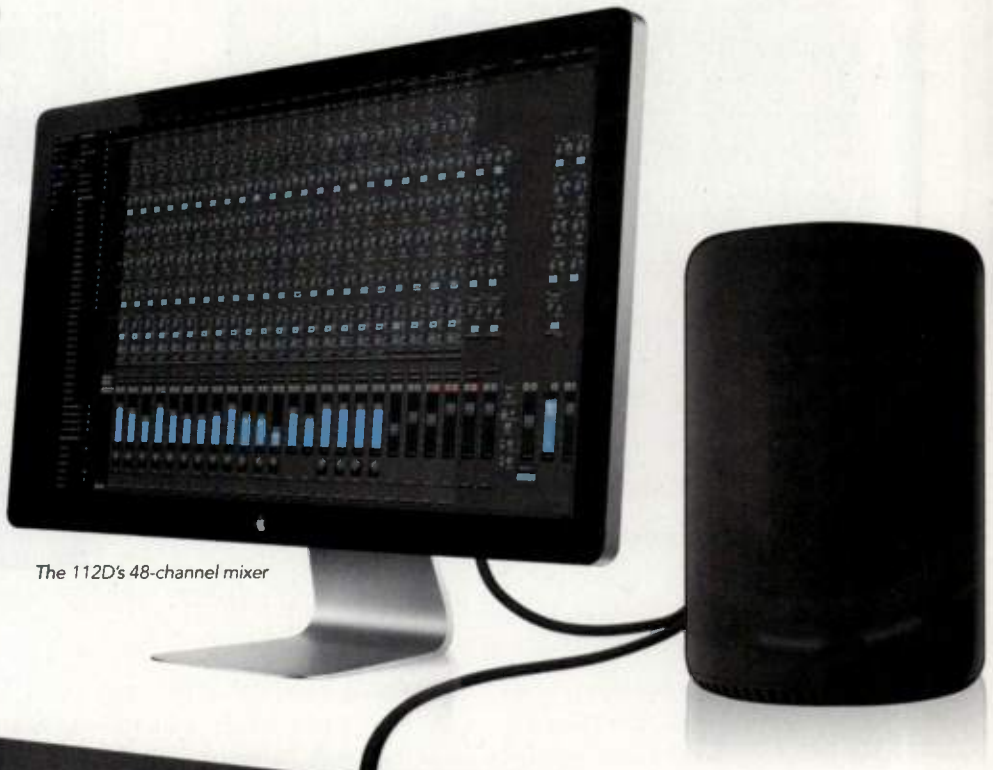

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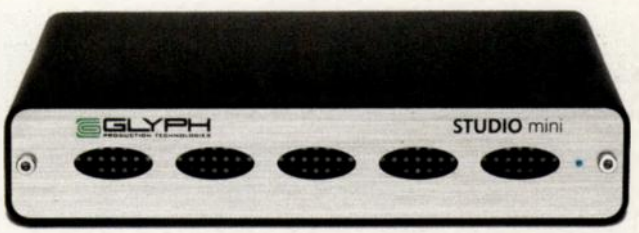

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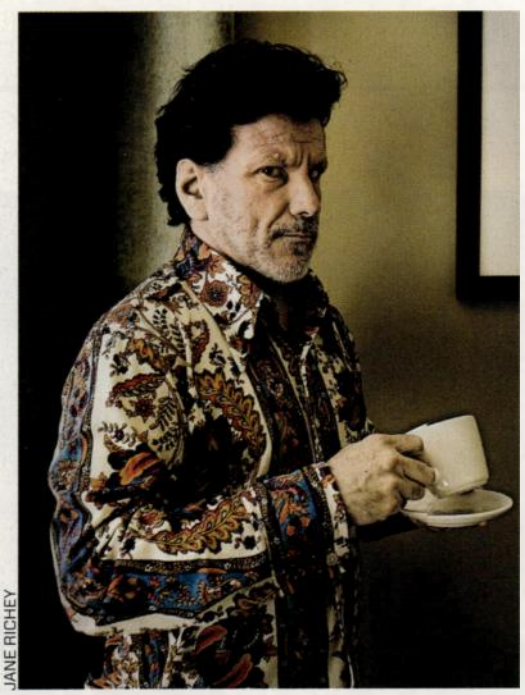
Must, Should, Could

Project prioritization strategies for every occasion

BY GINO ROBAIR

Whether you have a full-time gig or manage several jobs as a freelancer, you probably juggle more than one project at a time with due dates ranging from a few hours out to several weeks away. And when your schedule is packed with various deadlines, keeping them straight in your head can be a constant distraction, not to mention stress-inducing.



JANE RICHEY

Many of us create To Do lists to manage the various tasks, however informal (and seemingly endless) they may be. While simply listing these tasks on paper can reduce stress, projects may still fall through the cracks, only to reappear at some inopportune time when other deadlines are looming. And we haven't even begun to consider where our personal projects fit into the scheme of things.

To manage everything in my own life, I use a simple, tiered system based on three words—*must*, *should*, *could*—which not only helps me prioritize the projects hierarchically, but allows me to finish what is doable each day and achieve the feeling of satisfaction that comes from scratching things off the list. (Although I use the terms *must*, *should*, and *could*, you can use any other words that meaningfully get the same point across.)

The most satisfying result of using this type of list (especially for musicians and artists who freelance) is that it can help us systematically make time for *our own* projects—what a concept, right?—while strategically knocking out the work that pays the bills.

Of course, there are many apps devoted to time and project management, some of which can be very helpful. However, I find that I am more productive in the long term when I fully engage with my To Do list in a physical way, using a notepad and pen or pencil to track my progress. That way, the list sits next to me at all times and doesn't get hidden in the background of my computer screen or go unheeded on my mobile device.

Engagement also includes reorganizing the list at the end of each workday, removing the completed tasks and upgrading (or downgrading) projects in the other categories for the following day as new deadlines approach or change. I find that by giving myself a realistic picture of upcoming events, I have fewer surprises and stress is further minimized.

The cardinal rule, however, has to do with expectations: There will always be something on your To Do list, so don't be discouraged that it is never truly finished. That doesn't mean you shouldn't set and achieve realistic goals, and then reward yourself in some meaningful way (or tackle the next item on the list if you have the energy). Just accept the fact that there will always be something that demands your attention, but that it doesn't always need it immediately.

TCB WITH MSC

The list can be laid out in three columns, with the most important items in each category at the top and those below placed in order of importance (when applicable). It is especially helpful if you divide a larger project into manageable parts that you can incrementally complete: We want that daily sense of completion!

Must: These are the top-priority items that can be realistically accomplished or that must be finished by the end of the day, period. Determining what goes into this column takes self-discipline: If it can't be done today, move it over one column.

Should: This area is reserved for things that are not as urgent but are on the horizon or the next part of a larger project. The items listed here will reappear in subsequent lists. If the day is going well and you've completed all of the tasks in the first column, you can address one or more of these items.

Could: Here is where you keep track of tasks with the furthest deadlines, as well as archive ideas and projects that don't need your immediate or near-term attention but that you don't want to forget.

In fact, one of the reasons I keep this list next to me in pen-and-paper form is that, during the course of a day and in the middle of some other work, projects and ideas come to mind that I don't want to forget. I simply add the new idea to the bottom of the *could* column for evaluation at the end of the day rather than let it interrupt what I'm doing.

To keep track of your progress over time, use a spiral-bound stenographer's note pad for your list and flip the page at then end of each completed day when it comes time to rewrite the tasks. That way, you can easily look back and reflect on what you have accomplished.

Above all, this shouldn't be a rigid exercise in organization. Allow for non-linearity in your schedule. Often, events of the day will alter what can be done and you'll need to reprioritize items on the list; expect this to happen and let these changes roll off of you.

By determining what is realistically doable on a daily basis, as opposed to what should or could be done, you're on your way to managing time with greater efficiency, while claiming some back for yourself in the process. ■

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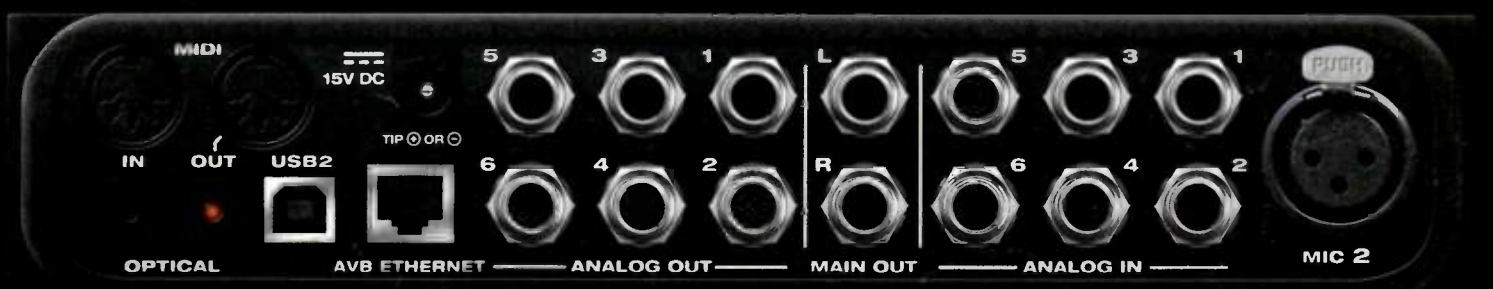

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