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A black and white photograph of Pioneer audio equipment. On the left is a large studio monitor (BULIT8) with a prominent orange woofer. To its right is a smaller monitor (RM-07 or RM-05). In the foreground, a pair of professional headphones (HRM-7) is shown. The Pioneer logo is visible on each piece of equipment.

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BULIT5

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RM-05

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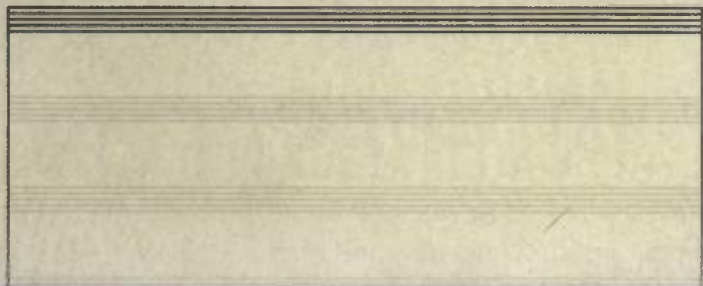


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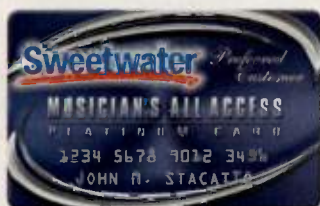


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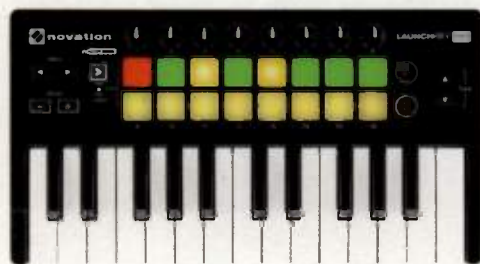


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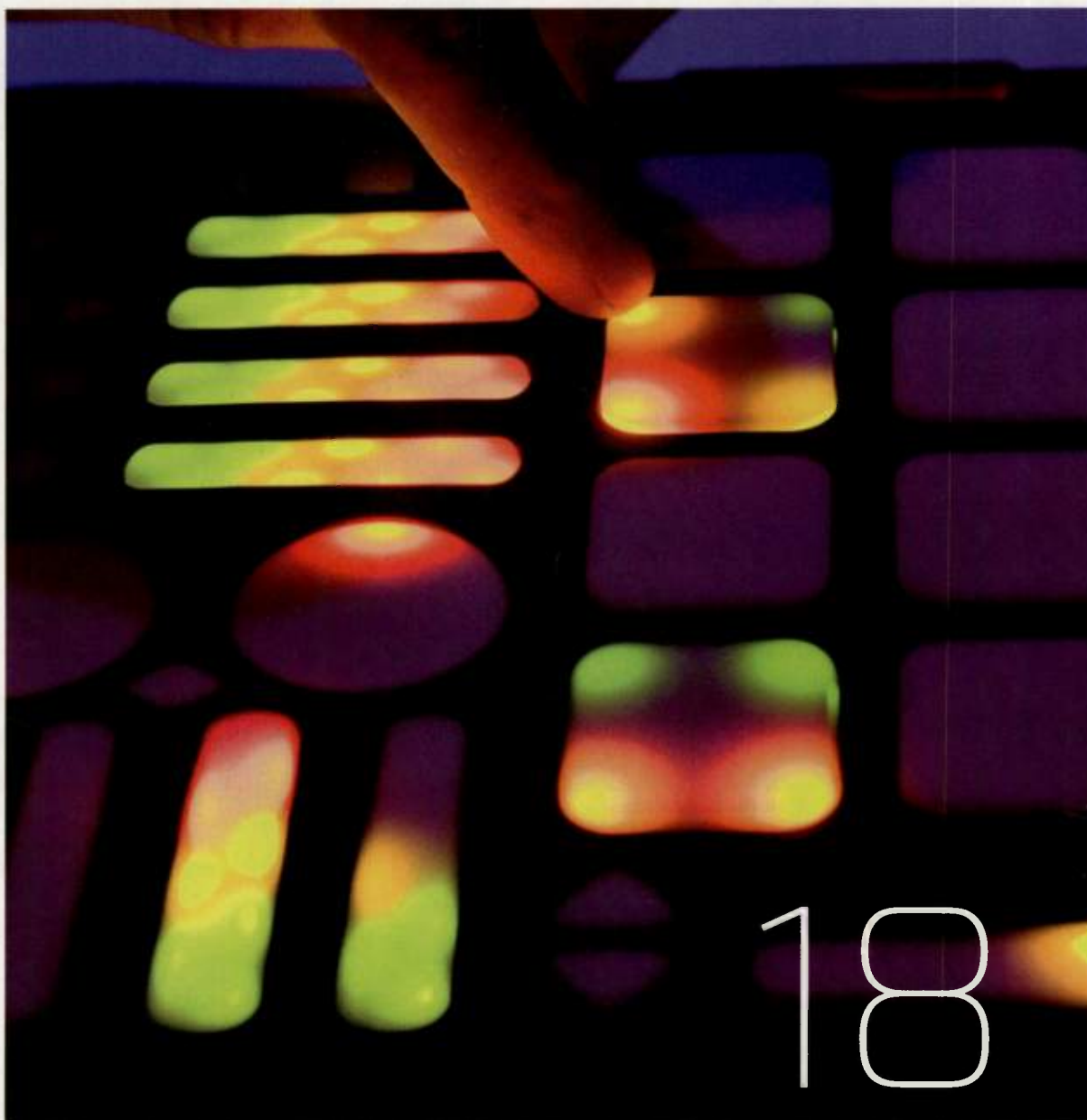
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There was a time, not too long ago, when there was no such thing as a portable keyboard MIDI controller. But with the advent of lightweight laptops and the iPad, dozens of low-cost products are now available. We take a look at some of the best options under \$300.

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SYLVIA MASSY

Inside the producer's weird, wild new book, *Recording Unhinged*

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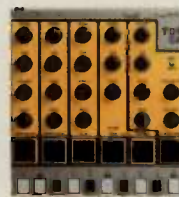
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FRACTAL AUDIO CAB-LAB 3
Guitar amp emulator

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Breaking the Rules

THERE'S A case to be made for tried-and-true recording methods. They're standard techniques because they deliver predictable, quality results. We have a pretty good idea what will happen if we mike a snare with a 57, for example. But recording is a creative process, and sometimes throwing convention out the window can yield unexpectedly awesome results.

Producer/engineer Sylvia Massy, who's recorded the likes of Johnny Cash, Tool, and the Red Hot Chili Peppers, is known for her "unconventional" studio techniques, from hacking thrift-store gear finds to shooting pianos with shotguns (and not the microphone kind). In her new book, *Recording Unhinged*, she offers insight on her own creative techniques for pulling artists—and gear—out of their

comfort zone, as well as tales from other top producers who've broken the rules in the studio. (Read more in our interview beginning on page 42.)

Getting inspired, we asked Sylvia to illustrate our cover this month; in portraying our features on keyboard controllers and classical recording, she's done a fantastic job capturing that analog/digital dance we all know so well.



SARAH JONES

EDITOR

sjones@musicplayer.com

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WEB HIGHLIGHTS
**This month on
emusician.com**

**Fractal Audio Cab-Lab 3
Audio Examples**

Plus...

Sound Pack Review: Glitchmachines Syndrome

Video: Inside MOTU MegaSynth

Software

...and lots
more!



gadget geek



LOM Elektroslych 3 Listen in on EMF secrets

LOM, a label based in Bratislava, Slovakia, was founded in 2011 to promote unknown and forgotten experimental artists; the company recently launched an experimental instrument division with Elektroslych 3, an open-source device for electromagnetic listening that lets users uncover the sonic worlds of the electromagnetic fields all around them. Elektroslych 3 is powered by a 9V battery, and features a single potentiometer control and 1/8" mini jack input and output—just plug your headphones, put on your tinfoil hat, and start exploring.

€90 (about \$97); zvukolom.org

Four decks and video mixing from a single tablet app

ALGORIDDIM JUMPED all over iPad Pro support quickly after the super-powerful 12.9" tablet's release. You don't need an iPad Pro to use the new Djay Pro for iPad (iOS 8 or later, algoriddim.com), but it will help you get the most out of the app's advanced 4-audio deck, 2-video deck mixing. Djay Pro also supports multichannel audio output and full MIDI integration with certain controllers from Pioneer DJ, Numark, Reloop, and Casio, for a professional performance experience.

1. At launch, Djay Pro's decks prompt you to load tracks from either your music or video library, from your previous History, or from Spotify. If you have a Spotify Premium membership and high-speed Internet, you can load and mix up to four tracks from Spotify at three choices of streaming resolution (96, 160, or 320kbps).

2. When mixing with two decks, you have the most control available over the tracks, including eight cue points, several styles of looping, touchpad effects and 3-band EQ plus HP/LP filter. You can view the decks with colored waveforms and turntables or just

waveforms scrolling horizontally or vertically in large or small views.

3. A menu bar button switches the view seamlessly to four decks, where you mix and sync tracks. You lose a control section in this mode, but you gain the Slice mode, which segments each track into four 1-beat slices, which you tap to play back in any rhythm you want.

4. The display menu bar button switches to the video mixing. You can output two 4K video streams simultaneously with four audio tracks, and mix the videos with overlays, effects and the crossfader in tandem with the audio. If you don't have your own videos, Djay Pro provides five dynamic Visualizers.

5. The app saves your session set lists, which you can export as CSV files for reference. You can also record your audio/video sets at up to 720p HD resolution.

Dig into the iTunes App Store and pull Djay Pro for \$29.



CLASSIC EM

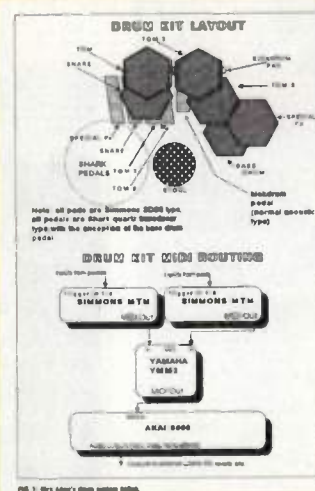
Rick Allen's MIDI Kit, 1988



IN "MIDI Meets Metal: Def Leppard Goes High Tech" (March 1988), Jay Savel profiled Def Leppard's touring technology, which was built around drummer Rick Allen's state-of-the-art MIDI kit that allowed him to play with one arm.

"Rick and I sat down and discussed how we were going to approach using this kit and decided that we would try to

keep it simple," explained longtime FOH engineer Robert Scovill. "By that, I mean we would try to sample a really good-sounding kit, maybe with a few slightly different snare drums, and then use some external triggering in the



house to augment it. This would make life for the monitor engineer easier, and also give it some consistency in the all-too-inconsistent atmosphere of very ambient arenas."



A portable semi-modular synth for stage and studio

JUST AS we were going to press, Pittsburgh Modular (pittsburghmodular.com) announced the Lifeforms System 201 (\$1,599), a semi-modular Eurorack system that combines the new SV-1 analog synth voice with the KB-1 keyboard controller. The synth can be used as a portable performance instrument or serve as a starter system for someone new to modulators.

The SV-1 is a preconfigured dual-oscillator setup that utilizes the technology from the company's popular modules, such as the Blade wave in Oscillator 1. Both oscillators provide square, sine, triangle, and sawtooth waveforms, as well. The synth voice includes a sub oscillator, two mixers, a 4-stage envelope

generator, a resonant state-variable filter (with highpass, lowpass, and bandpass outputs), noise, a sample-and-hold, a VCA, analog and digital LFOs, a MIDI-to-CV converter with Monophonic and Duophonic modes, glide, mults, an arpeggiator and sequencer, stereo line outputs, and a headphone jack. As a semi-modular system, the SV-1 can be played with or without the included patch cables.

The KB-1 provides an octave of pressure-sensitive capacitive touch pads, two trigger pads, and four voltage presets. The patch points include pairs of CV, gate, pressure, and trigger outputs, as well as a clock input.

The Lifeforms System 201 is housed in a Structure 96 Eurorack enclosure, with power provided by the included external supply. The modules and enclosure will also be available separately, as well as in additional system configurations yet to be announced.

CORRECTION



The Trident 80C at Palmquist.

IN OUR February feature profiling MuteMath's *Vitals*, we incorrectly identified the consoles used on Paul Meany's vocal sessions at Palmquist Studios. The console is a Trident 80C.

Win This Book!



SYLVIA MASSY with Chris Johnson

WIN A COPY OF SYLVIA MASSY'S *RECORDING UNHINGED*! Read this month's interview with producer Sylvia Massy and want more? We're giving away copies of her new book, *Recording Unhinged*, to a few lucky winners!

TO ENTER THE CONTEST, visit emusician.com/recordingunhinged.

>> Sonya Kitchell

ARTIST/COMPOSER Sonya Kitchell laid the groundwork for her lovely album *We Come Apart* in the quiet environs of a friend's barn in western Massachusetts. There, she created spare guitar-and-voice or piano-and-voice arrangements that would later be fleshed out with drums or horns, or very little else, as the song seemed to need.

The songs themselves had appeared over the five years since her previous album, *Convict of Conviction*. "These songs were pretty much written when I went to record them, and most of them had been demoed out at least once," Kitchell says. "I had plenty of time to write a lot of songs; it was more about deciding which ones would make the cut."

Kitchell installed herself in the barn with her laptop and the Neumann TLM49 microphone that she has used for her own voice since the microphone was given to her when she was just 18. She also had the use of some borrowed Manley preamps and an Apogee Duet interface, and her friend and multi-instrumentalist collaborator Shahzad Ismaily brought along a Brauner microphone that was employed to record every instrument in the barn. Kitchell recorded and produced herself, with Ismaily's input and co-production of two tracks.

"Shahzad came up and said, 'Why don't we use Reaper [as a recording platform]?' " Kitchell says. "It's an open-source recording program that is updated constantly; it's built by programmers and engineers. Nobody else uses it, and any engineer friend who saw I was using Reaper would start laughing. I had previously used Logic and I do like Logic more, but Reaper did the job and it's free."

The tone of Kitchell's clear, sweet voice and the spare instrumentation that she captured in the barn—including Ismaily's contributions; cellos by Isabel Castellvi and Ismaily's partner, Gyda Valtysdottir; and Findlay Brown on acoustic guitar—was enhanced by the natural, untreated acoustics of the barn studio.

"I loved the sound of the barn as it existed," Kitchell says. "It was rather warm and woody, and there was certainly lots of natural reverb in the room. I made my first two albums in nice, big studios, and I thought that was the only way you could make a 'professional' album, but this blew the top off of that concept for me. I saw you could really make it however you want."

Kitchell's tracks were embellished further in several other studios. "We added tambourine, or more guitar, or drums," Kitchell says. "My friend Skye Steel did some of the string arrangements; I sent him [reference] tracks, and he recorded strings himself in his apartment."

"The Dap-Kings played some horns in Bryce Goggin's studio, which is called Trout," she continues. "Bryce also recorded one track, and he helped me mix the album."



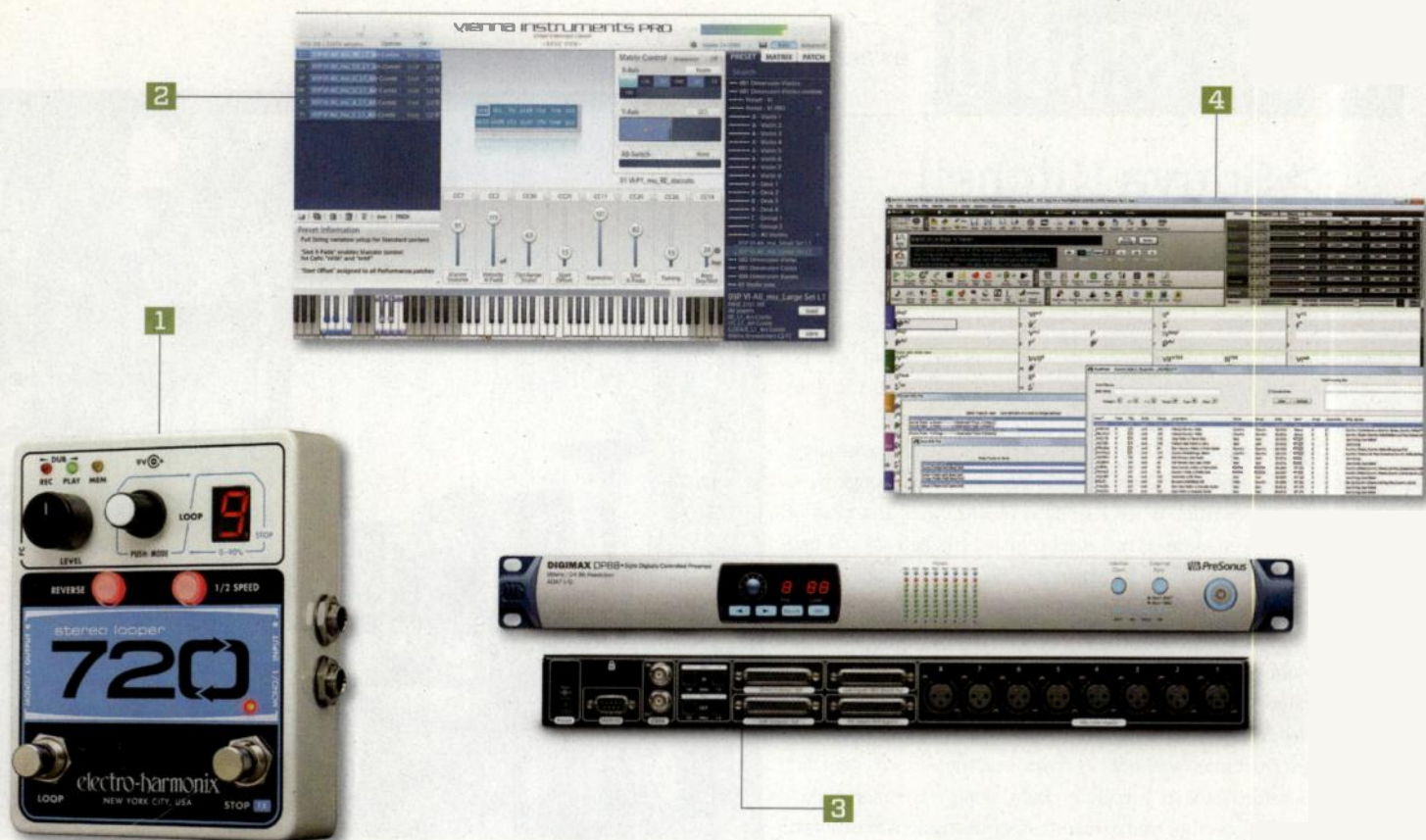
"I printed all mixes to my quarter-inch Ampex AG440b at 15 ips," Goggin says. The tape was RMG900. There was very little summing that took place in the box during the mixing process," he continues. "I have a Neve 8028 [console] in my studio, which is where most of the mixing takes place."

"Sonya's vocal would typically run through a channel on the desk with a 1064. I would use either one of my 2254e's or an API 525 as the main compressor. If additional equalization was needed, I generally would insert one of my Melcore GME20s. I would use a super primetime to provide some interaural time cues, and either my EMT 140 or my heavily modified Echoplate III for reverb. A lot of the distortion I would add came from my Federal AM447, which is quite creamy."

"Bryce was a total integral part of the record," Kitchell says. "The sounds came from different places, but at the end, we re-amped a lot of guitars, we ran everything through his tape machine, and he tied it all together."



Left: Kitchell's tracking setup in the barn. Above: her Neumann TLM49 vocal mic.



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TARGET MARKET Guitarists, live performers

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ANALYSIS A fine complement to VSL's library that rounds out the orchestral string timbres.

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5 UVI CAMEO

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uvi.net



6 PEAVEY DARK MATTER

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TARGET MARKET Clubs, houses of worship, DJs

ANALYSIS A new powered-P.A. line that offers high SPLs and rugged enclosures at a low price.

peavey.com



8 SAMPLE MAGIC MAGIC AB VERSION 2

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TARGET MARKET Mixing and mastering engineers, producers

ANALYSIS An easy way to accurately match and compare audio files.

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7 NUNO FONSECA SOUND PARTICLES (MAC)

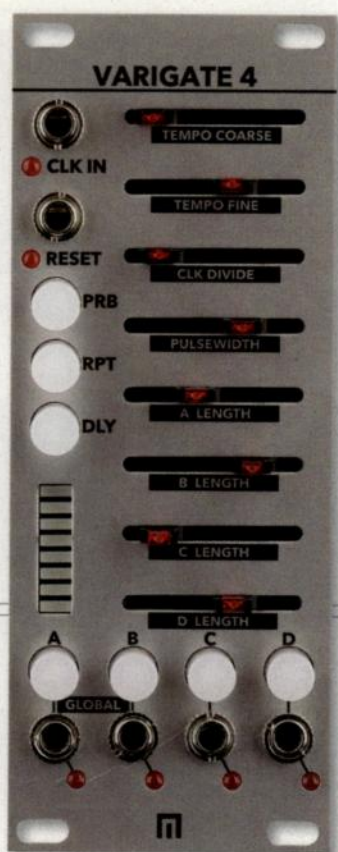
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HIGHLIGHTS Use thousands of audio sources as particles, which you then capture with a virtual microphone • supports a wide variety multichannel formats, including Atmos • numerous virtual mic types and multichannel configurations available • effects include delay, EQ, pitch/speed, granulation • mic and sound source position can be automated • 64-bit audio processing • 3D view in GUI • imports reference video

TARGET MARKET Sound designers, film, and multimedia composers

ANALYSIS A CGI-like application for quickly creating immersive audio environments.

sound-particles.com



The Malekko Varigate 4 is a 4-channel, 8-step gate sequencer that allows you to build complex patterns quickly, alter them on the fly, then save four of your favorite setups.

MALEKKO

Varigate 4

A gate sequencer that provides more than four on the floor

BY GINO ROBAIR

A gate sequencer is one of the most useful utility modules you can have in a modular system. Malekko, however, kicks the concept up a notch with the Varigate 4 (\$229), a flexible 4-channel, 8-step sequencer that is affordable, skiff-friendly and, best of all, easy to use.

The Varigate 4 provides three independent variables for every step in a sequence for each channel—Probability, Repeat, and Delay: Probability sets the likelihood that that step will send a gate signal; Repeat sends 1 to 8 evenly-spaced pulses per step; and Delay adds a time offset to the gate to create swing or further rhythmic variety. The 8-segment bar graph shows the slider level as you're editing, as well as which steps you've altered in each mode for a selected channel—a handy way to keep track of your programming.

Above each output is a button to select the channel you want to program. For example, to set the probabilities for each step of channel A's sequence, push the button above A, then press the PRB button. (The buttons light up when pressed.) Now you can use the sliders to adjust the individual probability amount for each step; the top slider controls step 1, the second slider is for step 2, and so on. To set the Repeat and Delay levels for each step of channel A, press their associated button when A's button is lit. This system allows you to create sophisticated or stuttering rhythms simply by increasing the repeat level and setting a moderate delay time for a given step.

You can spice things up further using the module's randomization function. Press the Probability and Repeat buttons simultaneously

and the sliders now set the max number of repeats for each step, with the number of repeats chosen randomly. Pressing Probability and Delay at the same time lets you similarly randomize the amount of delay for each step on every channel.

Using the Varigate 4's Global editing mode (by pressing A and B simultaneously), you can further increase rhythmic complexity by changing the number of steps in each channel's sequence, as well as assigning each sequence a different clock division (from a factor of 1 to 8).

Global mode is also where you set the tempo of the internal clock (using coarse and fine controls) and adjust the gate length (20- to 80-percent pulse length). The Varigate 4 can be controlled from an external clock source, and a 5V gate patched to the Reset input will cause all four channels to begin at the first step each time the input voltage is high.

The Varigate 4 has four memory slots, and saving and recalling sequence presets couldn't be easier: Press a channel button (A-D) for one second to save the preset to that slot; double-tap the same button to recall the preset. The channel light blinks to show the preset is active.

All told, the features in the Varigate 4 are well implemented and easy to remember, resulting in a performance-oriented module that invites improvisation. You can easily vary the patterns to set up sophisticated polyrhythms, and introduce variation to any degree of subtlety you want using the module's randomization and probability functions. If you're interested in *playing* your rhythmic patches in real-time, the Varigate 4 gives you a fine set of tools with which to do it. ■

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"Band-in-a-Box was the solution to an old frustration: being a musician. Now I am a musician." "I use your program with my saxophone students. They love to play with a real band in the back!" "What a time saver!" "The kids and I love it!" "The ease and quickness in producing quality backing tracks is unparalleled." "RealTracks is by far the easiest way to make high quality background tracks." "Band-in-a-Box is the holy grail for accompaniment software." "This is so much fun." "I'm speechless." "Who says you can't buy happiness?" "This is absolutely a must-have item." "I will be telling my Mac friends to get it." "Band-in-a-Box is a truly awesome product." "Band-in-a-Box is now on a whole other level of sophistication." "A giant leap forward!" "The program sounds so much better with RealTracks...A thousand times. Thank You!" "Keep the RealTracks coming!" "It blows my mind." "RealTracks add a whole new dimension of realism." "I was absolutely blown away at the quality of Band-in-a-Box." "Your Band-In-a-Box program is extraordinary!" "You're product is AWESOME! THANKS!" "A fantastic leap forward." "Un - Believable." "I can't believe how fast I can generate RealTracks and render to audio!" "They've outdone themselves this time, and I'll be singing the praises of Band-in-a-Box every chance I get." "This new musical concept you have created is nothing short of evolutionary. If it were a living creature, it would be a whole new species." "Just when you think Band-in-a-Box is as cool as it can be, you guys take it to a new level." "Brilliant!" "I'm awestruck." "All of the new instruments are just smashing." "I must say, the pedal steel is perhaps the greatest accomplishment in the history of this brilliant program." "This is a great gift to jazz musicians, educators, and singers." "Oh, wow. This changes everything." "It's stunning." "Thanks for a superbly useful piece of software." "Wow, I'm learning tunes fast with help of the Audio Chord Wizard... it finds the exact chords to the song perfectly." "Wow!" "I can load my MP3 in and see the chords play on the screen." "I am blown away! The jazz/swing RealTracks stuff is amazing." "Awesome." "Is this cool or what?" "I'm in seventh heaven!" "You won't regret it (and if you do, there's the 30 day money back guarantee)." "I never thought I'd see the day this was possible." "I know it's been said before, but you guys are incredible." "This is gonna set the world on fire!" "I'm so stoked about how good everything sounds I can hardly stand it." "This is just killer." "Amazing, simply amazing." "RealDrums are really awesome sounding. Good work!" "Many kudos all around." "You never cease to amaze me. You got it." "Wow and Double Wow!" "The RealTracks and RealDrums sound awesome." "Long live PG Music!" "Mind bending." "I am absolutely delighted with Band-in-a-Box... Kudos to you and your team!" "I am frankly amazed at most of the styles." "First time I did a song with Band-in-a-Box, I couldn't believe it!" "I use it in the classroom and also in creating music in my studio. It is a fantastic piece of music software to own. I am greatly impressed." "I use Band-in-a-Box regularly. It has improved my musical talents by far and I enjoy it very much. Thanks to all who have helped make this program so fantastic!!!" "The immediate feedback is a first-class learning environment!" "Band-in-a-Box is my best learning tool." "I use Band-in-a-Box all the time. A truly great product." "Excellent quality is a PG Music standard!" "Band-in-a-Box makes it so easy to quickly build an arrangement for composing." "I've used Band-in-a-Box for a year now, and it just gets better with age." "Band-in-a-Box, well, it's just a great program!" "Great software and accessible to everyone who loves music!" "Your Band-in-a-Box is fabulous! Congratulations." 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I'm sometimes a little frightened when it plays a series of choruses and the randomized piano part with play something hip. I catch myself nodding at the computer saying yea nice man... oh wait!" "I am very impressed with your fantastic improvisational program. It is revolutionary and I am sure it will do wonders for the future of jazz education." "This is a genius program." "Band-in-a-Box is a fantastic program. It has changed my life." "I have been a long time fan. As a performer and music educator, Band-in-a-Box is heaven sent." "This program does more than advertised." "It will revolutionize the way students are taught to improvise jazz solos." "The Band-in-a-Box Audio Chord Wizard is a great tool. There is nothing else like it!" "A class act company with the customer in mind. Great Program. More companies should follow your example. Keep up the good work and thank you!" "A great package! Now I can have a back-up band whenever I practice the guitar." "Who knew what Coltrane would sound like soloing over country music - LOVE IT!!!!" "Band-in-a-Box, well, it's just a great program!" "Wow... So much for ever sleeping again." "Songwriters, this will become your most creative tool." "It is great to have a full band at my beck and call." "Best investment in software I've ever made!!!" "Band-in-a-Box is a real treat to use!" "I was absolutely blown away at the quality of Band-in-a-Box when I purchased it and began working with it... the professional staff at PG Music know their product!" "I will recommend Band-in-a-Box to all those out there who have a computer." "I use Band-in-a-Box regularly. It has improved my musical talents by far and I enjoy it very much. Thanks to all who have helped make this program so fantastic!!!" "The audio chord wizard is my favorite feature of Band-in-a-Box." "The RealTracks are fantastic and provide great inspiration for creativity." "I tried with many audio files and the chord detection is amazingly accurate." "Band-in-a-Box is some of the most fun you can have with a computer."

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Portable Keyboard Controllers

Let's wade through the ever-expanding sea of compact MIDI 'boards

BY MARKKUS ROVITO



Less than 15 years ago, there was really no such thing as a portable keyboard MIDI controller. The product segment was born, and flourished, along with the ability of continually more powerful and lighter laptop computers to support in-the-box music production with little more than some software and a plugged-in USB controller.



Now, with handheld iPads being powerful enough to support sophisticated synths and DAW apps, you can't swing a cat by the tail without knocking a few controller mini keys loose. Mobile music making continues to take off—out of the studios and into the skies, tour buses, and hotel suites. Producers need a great compact MIDI keyboard to fit their mobile production needs. The following 30-plus portable keyboard controllers from a dozen companies represent just the best ones we could find worth mentioning.

While mini-key controllers and alternative key types like buttons and pads continue to proliferate, we also include full-size keyboards with 25 keys or fewer, which was the original portable controller configuration when M-Audio first dropped the Oxygen 25 in 2002. We've also excluded portable mini-key synthesizers. Everything here is a controller only, which keeps the prices relatively affordable; most products here cost well under \$300, and many options are less than \$100. Anything on the

high end of that range has something onboard that makes it worth the extra cheese.

To keep things a little bit simpler in the product descriptions, keep in mind that all the keyboards here are USB bus-powered, as well as Mac/PC-compatible. Any additional compatibility—such as for mobile platforms—will be noted. Also, all prices quoted are common street prices. Now, prepare to get mobilized.





MPK225



Advance 25

Akai Professional

Akai.pro.com

With Akai, we can get the one truly unique—and also the most expensive—option of the whole round-up out of the way. The Advance 25 (\$399) has 25 full-size, semi-weighted keys and comes with the crucial VIP software, which lets you browse the presets of, load, and host all of your VST instrument plug-ins. VIP also maps the plug-ins' parameters to pages of the controller's set of eight encoders, eight switches, and eight backlit pads. A full-color display on the controller shows the key features of the VIP software, such as the browser and assigned control parameters. The Advance 25 also has an onboard arpeggiator, MPC-style Note Repeat, and a DAW control mode with preset DAW templates. All these features set the Advance 25 on the bulky side of portable, at 19.2"x11.5"x3.4" and 6.8 lbs.

The lower-priced MPK225 (\$249) also has 25 full-size, semi-weighted keys and a similar size and control set to the Advance 25. Of course, the MPK225 does not include the Advance's VIP software and color screen, but it does add iOS compatibility. (iPad connector not included.)

Akai presents you with three 25-mini key options. The most basic, the LPK25 (\$69) has an arpeggiator but no extra controls and weighs only 0.9 lbs. The MPK Mini MkII \$99 packs a generous eight backlit MPC-style pads, eight knobs, and Note Repeat/arpeggiator onto its little 1.7lb frame. The APC Key 25 (\$129) targets Ableton Live users specifically with a 5x8 button Live Clip-launch matrix, other dedicated Live controls, and Live Lite software included.

Alesis

Alesis.com

Alesis offers up two 25 full-sized key controllers, both of which have all-illuminated controls and black frames that will cut a lovely silhouette in the dark. The larger VI25 (\$179) has a full set of 16 drum pads to the left. Above the keys, eight illuminated knobs and 24 buttons are arranged in eight channel-strip style columns. It also has transport buttons and full-size pitch-bend/mod wheels, and its keys are semi-weighted with aftertouch.

On the other hand, the more stripped-down V25 (\$89) has synth-action keys, and only eight backlit pads, four encoders, and four assignable buttons. The pitch-bend/mod wheels have also been sized down, and all that helps to give the V25 a shallower depth of just 9.6".



V25



VI25



MiniLab

KeyLab

Arturia

Arturia.com

Both of Arturia's portable keyboard controllers should come boxed in a treasure chest, because they harbor a trove of booty inside. Specifically, the Analog Lab plug-in that comes with Arturia's MIDI keyboards culls more than 6,000 synth presets from the company's lineup of 10 renowned vintage synth emulations in the Arturia V Collection: mini V, modular V, CS-80V, ARP 2600 V, Prophet V, Prophet VS, SEM V, Jupiter-8V, and Wurlitzer V. When loaded into Analog Lab, those sounds all have a curated selection of parameters mapped specifically to the keyboard controls you have available.

On the KeyLab 25 (\$249), that includes two banks of 10 encoders, nine sliders, 10 assignable switches, and of course the 25 full-size, semi-weighted keys with velocity and aftertouch. The Keylab's rugged metal-with-wood-paneling construction adds some weight and depth to the 8.6 lb. unit, but it's still portable at 18.3"x11.7"x2.8". The Keylab also has a 32-character LCD for helping to configure MIDI assignments, and on the back panel, a rare Breath control input.

The MiniLab (\$99) 25 mini-key controller easily pays for itself with the included Analog Lab plug-in. It also has 16 encoders for tweaking the Analog Lab synth presets and two bank memories for its eight backlit pads. The Minilab is iOS compatible with optional connector kit and weighs 2.3 lbs.



L502 5-Channel Mixer

L802 8-Channel Mixer

FRONT AND CENTER

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K-Board



QuNexus

Keith McMillen Instruments

Keithmcmillen.com

Despite having completely different names, Keith McMillen Instruments' QuNexus (\$149) and K-Board (\$79) do feel like two versions of the same product line. Both are tiny, weigh less than a pound, and yet are liquid-resistant and strangely near-indestructible. They both use 25 pad keys with three levels of expression: velocity, pressure, and "Tilt," or location, which is assignable to MIDI. They also both work with both iOS and Android devices. The main difference between the two is that the K-Board works over MIDI only, while the QuNexus works over MIDI, OSC, and CV for analog modules.

Korg

Korg.com

No one else brings the sheer variety of compact keyboard controllers that Korg currently does, and all of them are iOS compatible. Starting from the top down, the Taktile-25 (\$99) is a tremendous value for a 25 full-size, semi-weighted key controller with an interesting and novel control set. For example, the eight backlit pads have a Chord Scale mode, where they trigger fill chords in your set scale. The Kaoss-style x-y touchpad also has Touch Scale mode, where you play melodies with a single touch based on your set scale and key, and there's a secondary ribbon controller, as well. A built-in arpeggiator brings 50 preset patterns, and the Taktile-25 has DAW presets for Ableton Live 9, Apple Logic Pro X, Avid Pro Tools 10 and other DAWs. With all this to touch, the board's surface area has ballooned a little bit to 20.9"x11.4"x2.8", but it weighs only 5.5 lbs.

Two lines of Korg keyboards—the microKEY and microKEY Air—are virtually identical, except that the microKEY Air controllers can function wirelessly over Bluetooth MIDI and can run off of two AA batteries. Both lines are also USB bus powered and both come in 25-, 37-, 49-, and 61-key versions, the largest mini-key configurations in our round-up. Street prices range from \$75 to \$149 for the microKEY, and \$99 to \$189 for the microKEY Air. Their weights range from 1.4 to 3.8 lbs.—all easy enough on your back when hauled around. While their controls are sparse, the 25-key versions use a pitch-bend/mod joystick, and the others have pitch-bend/mod wheels. You also get a bonus bundle with each one that only Korg can provide: the Korg Module LE iOS app, the Legacy Collection M1 plug-in, and several other instrument plug-ins.

The final Korg entry utilizes 25 button-style keys for the ultra-compact nanoKEY 2 (\$49). These come in black or white and have buttons for Octave±, Pitch±, Mod and Sustain. They weigh only a half pound and measure 12.8"x3.3"x0.7".



microKEY 37



nanoKEY 2



Taktile-25

M-Audio

M-audio.com

For those who want to maintain a level of portability without sacrificing many features, the M-Audio Code 25 (\$299) is a pretty wide load at 20.9"x10"x2.8", but it makes it worth the extra carriage. It has a full set of 16 multicolor-backlit drum pads, as well as an x-y axis touchpad, five fader/switch sets, and four encoders. It also features 25 full-size semi-weighted keys and full-size pitch bend and mod wheels. All that, and it weighs about as much as the average laptop: 6.2 lbs.

The OG portable MIDI keyboard from forever and a day ago is now in its fourth iteration. The straightforward Oxygen 25 Mk IV (\$119) has 25 full-size keys, eight velocity-sensitive pads, eight knobs, a single fader, and transport controls. It automaps to several of the most popular DAWs and includes a Sonivox spectral morphing synth plug-in.

Both of M-Audio's mini-key controllers have 32 keys rather than the more common 25 and are iOS-compatible. (iPad connector sold separately.) The most basic, the Keystation Mini 32 (\$79) weighs only a pound and has basic pitch bend, modulation, and sustain buttons. The Axiom AIR Mini 32 (\$99) adds eight encoders, eight trigger pads, transport controls, and automapping to popular DAWs.




Code 25



Keystation Mini 32

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Miselu C.24

Miselu C.24

Miselu.com

The one-of-a-kind Miselu C.24 (\$129-\$199) found plenty of love on Kickstarter to begin its life as a wireless MIDI keyboard for iOS/Mac (currently not available for Windows) that folds into a 10-inch iPad case and includes a protective felt sleeve. The 24 full-size keys provide a semi-weighted feel from anti-polarity magnets, velocity sensitivity, aftertouch, and two optical finger swipes for note sustain octave switching. The C.24's internal battery lasts about 20 hours and is charged via USB. It doubles as an iPad stand, and a hardware expansion bay within the C.24 will accommodate future control modules.



Impact LX25

Nektar

Nektartech.com

For a 25 full-size, semi-weighted key controller, the Impact LX25 (\$99) weighs in fairly lightly at four pounds. Its controls comprise an expected variety: eight pads with four pad banks, eight encoders, six transport buttons, and a master fader. But the most attractive difference in the Impact LX25 doesn't immediately pop out by looking at it. The controller includes very tight DAW integration technology for 10 of the most popular DAWs (not including Ableton Live and Avid Pro Tools), which was passed down from the more deluxe Nektar Panorama controllers. These DAW templates often include both Mixer and Instrument presets, helping make the most of the Impact LX25's controls.

Novation

Us.novationmusic.com

Novation's portable keyboard controllers all take Ableton Live integration into account. The 25 full-size semi-weighted key Impulse 25 (\$199) has eight multicolor backlit pads that can act as Live Clip launchers and also can roll beats and trigger arpeggios. There are also eight knobs, transport controls, a single fader, and Automap 4 software under the hood that maps the Impulse 25 controls to all major DAWs and many popular plug-ins. The design of the Impulse 25 is not the most streamlined, making it among the most bulky of the portables profiled here at 20.7"x13"x3.9" and 7.7 lbs.

The lighter-weight Launchkey 25 (\$149) was designed for integrated control over Ableton Live 9 (it includes Live Lite 9) but also integrates with other major DAWs and works with iOS. Besides 25 full-size keys, it has eight encoders, a master fader, and 16 RGB LED pads for creating beats, launching clips, and controlling many other features of Ableton Live's instruments, effects, and mixer.

The Launchkey Mini (\$79) packs as many of the Launchkey 25's features into a smaller package, with 25 mini keys, 16 tricolor pads with Ableton Live integration for triggering samples, clips, drums, and more. It also has eight encoders and the same InControl DAW mapping.



Launchkey 25



Launchkey Mini

>> Time-Saving Cheat Sheet

Best for Ableton Live: Akai APC Key 25, Novation Launchkeys and Reeloc Keypad

Best for CV control: Keith McMillen QuNexus

Best for Finger Drummers: Alesis VI25, M-Audio Code 25

Best for Ivory Ticklers: Korg microKEY 61 or microKEY Air 61

Love for Android OS: Keith McMillen QuNexus/K-Board, Opho Keys

Something Completely Different: Miselu C.24, Opho Keys

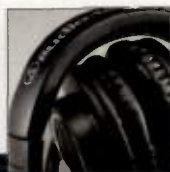
Wireless Connectivity: Korg microKEY Air, Miselu C.24



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Opho Keys

Playkeys.io

Another unique compact keyboard controller came into being thanks to Kickstarter supporters. This one has 24 velocity-sensitive button keys, and proximity sensors read your gestures to transpose octaves and modulate parameters like pitch, sustain, or other mapped MIDI controls. The Opho Keys (\$99) also works with iOS and Android apps compatible with CoreMIDI. You can also magnetically connect other Keys units together in order to build a larger keyboard, and each Keys has a battery life of up to eight hours.



Opho Keys



Keyfadr



Keypad

Reloop

Reloop.com

Add Reloop's Keyfadr (\$99) and Keypad (\$199) to the list of portable keyboard controllers with Ableton Live control baked in. However, these guys do it a little differently. The Keyfadr has eight "channel strip" control sections, with fader buttons and encoders in each one. There's also an internal arpeggiator, transport controls, and additional DAW integration with Bitwig Studio, Propellerhead Reason, and FL Studio integration.

The Keypad in most ways echoes the Keyfadr. It also has 25 mini keys, and the same controls, except that it sandwiches in 16 full-size, velocity-sensitive drum pads in the middle of the front panel. These pads can work as an Ableton Live clip launcher or as note trigger pads, program change buttons, etc. These two rows of pads make the Keypad an odd-shaped keyboard at 11.2" wide, 12.6" deep, and 1.1" high, but it also has a unique feature set among all of these options.

Samson

Samsontech.com

All four of the following portable keyboard controllers from Samson are plug-and-play ready for iOS if you supply your own Apple camera kit connector. Graphite 25 (\$129) finds a sweet spot between portability and programmability. Its generous LCD screen lets you make MIDI assignments without the need for editor software for the many controls: four pads with two pad banks, transport controls, eight encoders, four switches, and master fader. With all that and 25 full-size, semi-weighted keys, the Graphite 25 still keeps its size under control at 18.1"x9.6"x2.4".

Samson's two small-keyed options both use touch strip pitch bend and modulation controls to save space. The 25-key Graphite M25 (\$79) also adds four mini pads and eight knobs, while the Graphite M32 (\$69) has 32 keys, but few other controls.

We decided to include the Samson Graphite MD13 (\$59) on this list, because its 13 velocity- and pressure-sensitive pads are arranged in a chromatic keyboard style meant for importing notes and it has Oct+ buttons. It also has six programmable encoders and a master fader, all situated on a 1lb. controller measuring 17.5"x4.5"x1.1"—one of the most portable of the these portables. ■



Graphite M32



Graphite 25



Graphite MD13



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58th Annual Grammy Awards



The nominees talk production

BY SARAH JONES, KEN MICALLEF, BARBARA SCHULTZ, AND TONY WARE

It's Grammy season! Right about the time this issue lands in your hands, you'll be watching artists, engineers and producers proudly clutching their trophies on the 2016 Grammy Awards telecast. Back when the nominees were gearing up for the 58th annual ceremony, we sat down with the creative teams behind the year's biggest albums, to get the scoop on how these projects came together.

RECORD OF THE YEAR;
BEST POP DUO/GROUP
PERFORMANCE, BEST POP VOCAL
ALBUM: **Mark Ronson**

Nobody would argue that Mark Ronson's blockbuster hit "Uptown Funk," featuring Bruno Mars, was the song of 2015—maybe even the decade. And Ronson's *Uptown Special* album delivers track after track of feel-good, show-stopper R&B funk, performed by a cast of musical characters ranging from Stevie Wonder to Mystikal to Tame Impala's Kevin Parker, all united by Ronson and co-producer Jeff Bhasker's grooves.

"For the most part, I always start with the drums," says Ronson. "That was my first instrument, even before I knew how to mike a kit...That's a lot of the glue. And also, Jeff Bhasker and I wrote all of these songs, unlike most productions now when 20 writers are on each song."

And though the record, produced by Ronson and Jeff Bhasker, was recorded and mixed at a dozen different studios in the US and the UK, including Daptone, Electric Lady, and Ronson's Zelig studios in London, Ronson says that his time in Memphis' legendary rooms resonated the most. "I didn't set out to make a funk record, but once we got to Memphis, the groove was inescapable," says Ronson. "We stopped one night and recorded some demos at Sun; they have a great engineer...The next day we went to Roy-

Cooke, and Nicolas Fournier at Eldorado Recording Studios; and assisted by Mario Borgatta and mastered by Bob Ludwig at Gateway Mastering.

The record, recorded to both tape and Pro Tools, features a wealth of ancient analog drum machines as well as the band's first live performances in the studio as a complete group. "Most of the album was tracked with the band playing together live, which hasn't happened in years," says Costey. "And sometimes reacting to my drum programming. We recorded all the jams onto a stereo two-track running all the time. They never do that. Ben [Gibbard] is a song guy who doesn't care about jamming. But it's good for everyone to stretch out."

Going against the grain of Costey's fondness for ancient machinery, guitarist Gibbard prefers tracking in the box. "I have never been happier than when we were able to record vocals into a computer rather than to tape," he says. "Chris is an analog purist; he likes cutting up tape and we did record basics to tape for *Kintsugi*. Tape has a certain quality that is unmatched in a computer because of the physical nature of the medium. But there is very little difference that the average musical listener can actually hear between a record recorded to tape and one recorded well to a computer."

Still, tape and analog processing fill *Kintsugi*. From Walla's spliced, diced, and thrown-around tape loops to Costey's vintage consoles and in-

BEST DANCE RECORDING: **"Never Catch Me," Flying Lotus featuring Kendrick Lamar**

Steven Ellison, better known to fans of jazz-leaning beathead odysseys as Flying Lotus, FlyLo, or just Lotus, says *You're Dead!*, his fifth full-length album, is his most collaborative effort to date. "I opened up so much more of my space to other people with this record," Ellison explains. "Even though there's never a full band playing, even though all the instruments are recorded individually, I wanted it to sound like there were all these people in the fold together. And to get that, I had to learn how to communicate my ideas differently to each person in order to get the best performances...I went at it like a classic producer, more in terms of being a Quincy Jones type with lots of personnel and an overall vision, not a beatmaker."

In addition to collaborating with Kendrick Lamar on the Grammy-nominated track "Never Catch Me," Ellison hosted numerous musicians in his SoCal home studio, including strings arranger Miguel Atwood-Ferguson, saxophonist Kamasi Washington, and drummers Justin Brown, Deantoni Parks, Gene Coyne, and Ronald Bruner, who contributed invaluable source material alongside featured artists Herbie Hancock, Snoop Dogg, (Ellison's MC alter ego) Captain Murphy, Angel DeRadoorian, and Niki Randa.



al. As soon as I walked into the room—you can see that over time Willie Mitchell kept adding fiberglass insulation until the hand claps were just dead. It's just a magical room, and not only because it has the original gear. On the intro track to the album, actually where Stevie Wonder is playing harmonica, we used the same electric bongo machine used on Ann Peebles' 'I Can't Stand the Rain.' We had to have that on the record!" Ronson notes that recordings made in Memphis were some of the more high-fidelity recordings he has made. "There's no one-mic-on-the-drums scenario. It was more about getting the shit to sound pristine. Or my version of pristine."

BEST ROCK ALBUM: ***Kintsugi*, Death Cab for Cutie**

The final Death Cab for Cutie album to include original member, producer, and instrumentalist Chris Walla, *Kintsugi* was produced and mixed by Rich Costey; recorded by Costey, engineers Martin

sistence on recording drums to tape, *Kintsugi* is a compromise, in many ways, for Death Cab for Cutie. "There are definitely processed, long-sounding guitar things on the record," Costey explains. "A lot of that is Chris's natural tendency. He likes tape loops. Chris will put down ambient guitar parts across an eight-track deck, then we will bring it up and set up Chris up with eight faders. He will turn up faders as the song goes by to generate a guitar part out of that ambience."

"We thought of each song as man and machine," Gibbard adds. "We wanted varying percentages of man and machine on every song. There might be an LM-1 Linn Drum or a sequence happening, but we wanted it to sound like a band. I was impressed with Rich in that he brought drum machines into the band setting without having the machine overwhelm the band...But in the more successful moments on this album the man and machine are playing as one. Rich was very much at the helm of that."

Tracking sessions were straightforward; the aim was to catch the raw energy of the various performances. "Sometimes I would record drummers for an entire day on this mutt kit in my house, just recreating ideas from records or that I'd hummed into my iPhone voice memos," says Ellison. "I bought this Neumann mic that cost a fortune, but we didn't even use it because it sounded too sterile. I wanted warmth, rawness, to dive into the unexpected headfirst. Once I had all that, I could dial in the EQ, draw in all the automation, really manipulate things."

"I hate the way a lot of records, especially jazz records, sound now, so fucking clean, so I wanted to do my thing with one or two mics in a space and that's it," Ellison concludes. "And it wasn't a good acoustic space, just a regular room in my house. I tried to keep things dirty, give it that texture. There are room reflections and they are a true reflection of what we did. I had a big rug and that's it; we were just working in my living room."

BEST ALTERNATIVE MUSIC
ALBUM: *Star Wars, Wilco*

It's an inside-joke between Wilco and everyone else: The general public had been eagerly anticipating the new *Star Wars* film for years, lapping up any small crumb of a hint at the look and content of the blockbuster sequel. Meanwhile, Wilco released a surprise album with no publicity and no forewarning, and they called it... *Star Wars*. And because frontman Jeff Tweedy and his bandmates are constantly working in their creative home, The Loft studio in Chicago, there was no reason for anyone to suspect that the band were secretly recording an unannounced ninth album. Almost no one but their engineer, Tom Schick, saw it coming.

"When Jeff isn't on tour, he is in the studio writing, recording, and creating," Schick says. "*Star Wars* was part of a large batch of songs that Jeff was working on. They were all in various stages of completion but came together pretty fast once it was clear which songs would make up *Star Wars*."



Just a couple of details about the recording process in The Loft: Schick captured Tweedy's vocals with a Shure SM58 to a Neve BCM10 mic preamp with UA 1176 compression. "Jeff did most of his vocals on the couch in the control room with no headphones," the engineer says. "The main guitar amp was a vintage Fender Champ, recorded with an AEA N-22 prototype ribbon mic to a Neve BCM10 and Manley ELOP compressor.

Effectwise, a lot of detailed work goes into creating the complex, rich sounds of a Wilco album. Schick offers a glimpse: "We used a Moogerfooger analog delay for the vocal slap on most of the tracks," he says. "We also used a Binson Echorec 2 for more extensive delays."

PRODUCER OF THE YEAR, NON-CLASSICAL: **Jeff Bhasker**

In the past year, Jeff Bhasker produced hit records across a range of genres, from country to pop rock to R&B. Projects singled out for Grammy regi-

tion include "Last Damn Night" and "Ain't Gonna Drown" by Elle King, Mikky Ekko's "Burning Doves," Cam's "Burning House" and "Runaway Train," Nate Ruess' *Grand Romantic*, "Never Let You Down" by Woodkid Featuring Lykke Li, and Mark Ronson's smash *Uptown Special*, which was co-written and co-produced by Bhasker.

To create *Uptown Special*, Bhasker and co-producer Mark Ronson embarked on a "Mississippi Mission," as Bhasker called it, traveling through the American south on the hunt for the perfect singer. But their perspective shifted once they discovered the special recording spaces of Memphis. "The biggest impact came when we found Royal Studios and Boo Mitchell," Bhasker says. "That became our headquarters once we had the bulk of the writing done. The studio has such a magic in it, and Boo and his whole family make you feel so at home. The spirit Boo brought to the table the second we met him made it such a joy to work there."

Bhasker continued to channel the Memphis spirit with rockabilly newcomer Elle King, recording King's "Last Damn Night" at Sun Studios, where he had also tracked parts of *Uptown Special*. "The second I walked in there, I knew I had to record her there," he says, adding that capturing King's raw, gritty vocals was straightforward: "Just turn the mic on! She's such a force."



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Bhasker, who's cemented his reputation as a hit-maker, says he knew he was on to something special with Mark Ronson and Bruno Mars' "Uptown Funk," even though nobody could predict that it would dominate the airwaves the way it did. "I knew it was going to be a big record but...come on!" he laughs. "Besides all the charts and everything, I really love how it brought together and appealed to so many different demographics. That, to me is what music is supposed to do: bring people together."

ALBUM OF THE YEAR, BEST ROCK PERFORMANCE, BEST ROCK SONG, BEST ALTERNATIVE MUSIC ALBUM, BEST ENGINEERED ALBUM NON-CLASSICAL, PRODUCER OF THE YEAR NON-CLASSICAL (BLAKE MILLS): **Alabama Shakes**

Alabama Shakes are nominated this year for their intensely dynamic album *Sound & Color*, and for the stellar production work that helped realize their original songs. We asked legendary mastering engineer Bob Ludwig for his insight about the engineering side, from the recording studio to his Gateway Mastering studio:

"I gave Shawn Everett an award at an Audio Engineering Society convention when he

was a student at the Banff Centre in Canada and said 'I'm sure I'll be hearing from you in the future,' and that has been very true! Shawn worked with maestro producer Tony Berg and honed his professional skills with him. Shawn worked on Ozomatli, The Like, and two Lucius records with me, and I loved all of those albums, and he has produced the new Lucius album which I adore.

"Shawn's mixes for the artists were very hot, hotter than I would have normally mastered the record, but it all sounded excellent. My mastering was a lot about being as loud as his good-sounding listening mixes, but hopefully sound even a touch better.

"I love dynamics, and if something feels like it needs to be relaxed for a while, then so be it, then when something bombastic comes on it can really let go! That was the secret of Led Zeppelin; one had to have soft tracks so the loud tracks seemed even louder. The Alabama Shakes performances are phenomenal; there is nothing like them.

"The fact that it was nominated for a Best



Engineered Non-classical Grammy shows that it sounded great to the judges' ears and hopefully it will to the voters as well!"

BEST REMIXED RECORDING, NON-CLASSICAL: **"Say My Name (RAC Remix)," André Allen Anjos, remixer (Odesza feat. Zyra)**

RAC, originally known as the Remix Artist Collective, is the indie-electronic project of André Allen Anjos. Conceived to re-interpret rock, electronica, and dance music remixes. RAC's vision is to maintain a style of remixing that strays from the "club mix" archetype, focusing less on danceability and more creating new incarnations of songs that stem from the original structure, but expand on the arrangement.

Anjos says his collaboration with Odesza started out as a trade in which he would remix their hit "Say My Name" and they would remix his



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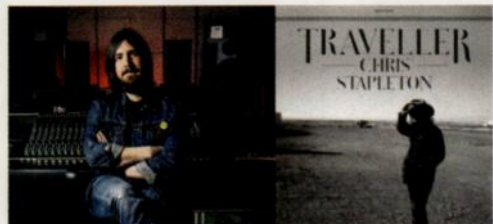
track “We Belong.” “I had heard about them but it wasn’t until my manager Julie showed me a few of their songs that I was sold on it,” he explains.

Anjos honed right in on guest singer Zyra’s breezy vocal hook: “I loaded up the stems and immediately the vocal jumped out at me,” he says. “Not only was it an incredible voice, but it was a really catchy melody. The files had a lot of effects, which they are known for. However, I wanted to strip it back a bit and just work with a completely dry vocal. Once they gave that to me, the entire song opened up. I mostly tried to stay out of the way. It’s a very barebones guitar and drums track. When I start remixes, I very rarely have a grand vision. I try to always go where the song takes me and trust my instincts.”

It’s no secret that the Grammy Awards were a little late to the party, as far as electronic music is concerned. Anjos says the nomination caught him completely by surprise: “I hadn’t really thought about it as a career goal or anything; it seemed so unattainable. It’s especially great because it’s exactly in the category that I’ve devoted the past eight years of my life working in. To be recognized for that is really rewarding—especially because I wasn’t doing things the normal dance music way. It has this way of legitimizing what I do. Whether I win or not, this is already a win for me.”

PRODUCER OF THE YEAR NON-CLASSICAL, ALBUM OF THE YEAR, BEST COUNTRY SOLO PERFORMANCE, BEST COUNTRY ALBUM, BEST AMERICANA ALBUM: **Dave Cobb**

With his work nominated in several categories, producer/engineer/multi-instrumentalist Dave Cobb wears as many hats as his projects require. For Chris Stapleton’s smash country-rock debut, *Traveler*, Cobb produced and played some guitar, working closely with Stapleton and band, and the artist’s wife, Morgane Hayes-Stapleton, who provided backing vocals and creative input.



“When we started, the label was allowing us to do a couple songs,” Cobb says. “We went over to RCA Studio A to do that, and we wound up getting most of the record done. We were all tracking live with the band in a rehearsal room, and every take was just magic. We’d start the session just goofing off, order some food, talk for a while, order more food, drink a little bit, and we wouldn’t really start

until 8 or 9 o’clock every night. But when we did, we’d get two or three masters in a row.”

Cobb says that the sessions felt effortless at that point, but of course a lot of work and thought goes into creating that vibe: “When I got the call to work with Chris, I didn’t want to take any chances, so I called in the big guns,” Cobb says. “Vance [Powell, engineer] is a legend in my book. One of the reasons we were able to relax so much was we knew Vance was in the control room. I didn’t even have to walk into the control room to know it would sound good.

“Chris and Morgan wanted their record to be honest and simple and feel like when you would see the band—a little bit of an out-there version of that: simple, honest, minimal, and fun. There are hardly any overdubs on the record. We brought in Robby Turner, who used to play pedal steel with Waylon Jennings and The Highwaymen, and Mickey Raphael from Willie Nelson’s band to play harmonica, and Michael Webb played some Hammond and piano on a couple of tracks. But as a whole, it’s super minimal. And live. Every guitar solo is a live take. Every vocal was live with the band.”

BEST BLUES ALBUM: **Worthy, Bettye LaVette**

Bettye LaVette’s soulful, smoky, voice is obviously the central focus of her albums, but there’s also no underestimating the contribution of the supporting musicians chosen by Joe Henry, who produced two albums with LaVette, including the Grammy-nominated record *Worthy*.

“One of the most significant things I do as a producer is put the right people in the room who I believe know how to listen, who are going to bring incredible experience and imagination to bear,” Henry says. “It’s not just about what instrument they play. I’m putting people in the room based on their experience, and that way I know they know how to create an atmosphere and stay in one.”

Henry encourages live band recording, and engineer Ryan Freeland was on hand to capture the ses-



sions. “I did my standard [Shure] 57 [and Royer] 121 combo on the guitar amp,” Freeland says. “I remember, on one of the really bluesy songs, Doyle [Bramhall II] kept trying to do something that wasn’t a traditional blues vibe, and Bettye was like, ‘Honey, just play the blues.’ So he played some traditional blues riffs, but they sounded totally unique. That is a sign of his musicianship to me, to be able to play

licks you’ve heard all your life but they didn’t sound imitative. They sounded perfectly fit to the song.

“The piano was Joe’s upright Steinway,” Freeland continues. “It’s got a beautiful vibe, especially the way Patrick [Warren] plays it. The organ was Patrick’s. I use a pair of [Royer] 122s on the Leslie part. But the funny thing was, he went to the extra effort to get this organ over there, and one of the first things Bettye said when she walked in and he started playing was, ‘When I hear the organ, I think of church, and I don’t want any organ on this record.’

“But he kept creeping it in as the days progressed. And in the end, there is a lot of beautiful organ stuff on the record, and that became the joke: ‘Turn up that instrument, whatever that is that isn’t an organ because I don’t like organ.’ She couldn’t believe Patrick made her love the organ. His playing was that beautiful.”

BEST JAZZ INSTRUMENTAL ALBUM: **Covered, Recorded Live at Capitol Studios, The Robert Glasper Trio**

Musician Robert Glasper set aside his Robert Glasper Experiment projects and returned to his jazz-trio roots to record *Covered: Recorded Live at Capitol Studios*, an eclectic album of some of his favorite songs. With Robert Glasper Trio members Damion Reid (drums) and Vicente Archer (bass), Glasper performed live with an audience, nightclub-style, in Capitol Studio A; Glasper’s longtime engineer, Keith “Qmillion” Lewis captured the performances.

“We had to sort out what we were going to do with the audience,” Qmillion says. “At the last minute, we decided to throw the drums in the booth and keep everybody else out in the room. The audience were not really hearing the drums except for what was bleeding through the isolation booth, but when you consider the number of people who are going to hear in the room vs. the people who are going to hear the record, it’s a big ratio.

Qmillion miked up the studio’s Yamaha grand with his go-to scheme: “I used my three [AKG]



414s,” the engineer says. “The two that are in the front, the stereo pair that go for the low and the high, are placed in the middle of the piano toward the front, above where the keys strike everything. They’re positioned by ear to get a good spread. The third one goes in the back for the low end.

“Rob’s playing style is very unique,” Qmillion continues. “I’ve used this same mic setup on other piano

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players who are like: 'Give me that Robert Glasper sound.' I can use the same mics, same setup, but it does not sound the same. No one plays like Rob plays. His touch is very light at times, because he uses a lot of dynamics; he doesn't bang on the piano. The 414s really capture the nuances of his playing. If you listen to it, my idea is to have you feel like you're inside the piano—kind of surrounded by Rob's piano."

BEST JAZZ VOCAL ALBUM:
For One to Love, Cecile McLorin Salvant

This versatile and gifted artist recorded her sophomore album in Avatar Studio A with producer Albert Pryor and engineer Todd Whitlock.

Salvant's technical team experimented with several microphones from Avatar's extensive mic locker on Salvant's vocal, and ultimately settled on a Lauten Atlantis prototype. "It was hand-tuned by Brian Loudenslager with input from Fab Dupont, who loaned us that microphone," Pryor says. "Together with a DW Fearn VT1 tube preamp and the Neve [8088] console, we achieved something akin to the sound of a vintage [Neumann] M49 large-diaphragm that could withstand the SPLs."

At the mix stage, Whitlock and Pryor added a vintage Neve 5465 to Salvant's vocal sound. "That began its audio life as the in house recording console at Carnegie Hall and now lives at Damon Whittemore's ValveTone mix room. We also had an Anthony Demaria Labs ADL1000 tube compressor in the insert for amplification mostly and minimal compressing. For reverb we recorded a real EMT plate that Todd used for the monitor mix while tracking at Avatar. In the mix, he blended that with a bit of the same Bricasti M7 program that he used on the rest of the ensemble to 'subliminally' put them all in the same sonic space—nothing too strong or obtrusive. The reverb was for color and texture, like invisible brush strokes on the final painting that is the song.

"Cécile has near perfect intonation and an endless supply of improvisational ideas," Pryor continues. "She is thoroughly versed in music theory and has well-honed microphone techniques to get every nuance out of every syllable and consonant. Cécile's artistry comes from every corner of vocal music history and vocabulary: Jazz, Blues, Opera, Baroque Classical repertoire, and Broadway. Breaths and lip smacks stay in—no alterations. We attenuated popped Ps and an occasional S that hit the capsule

funny, but in general we left that vocal as unaltered as it was delivered, at her request. She wants the

honesty of her performances to resonate—no punches, no edits, and absolutely no pitch alterations." ■

RICK RUBIN

Forging his own path, for the love of music



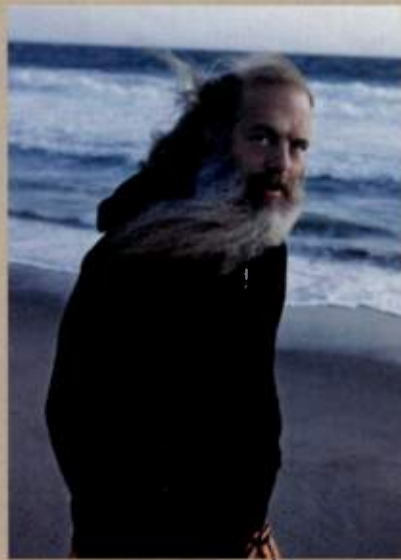
BY SYLVIA MASSY

Each year, the Recording Academy Producers & Engineers Wing recognizes a producer, artist, or engineer for his or her "commitment to creative and sonic excellence and ongoing support for the art and craft of recorded music." This year, eight-time Grammy winner Rick Rubin earns this distinction, joining a list of honorees that includes T Bone Burnett, Tom Dowd, Ahmet and Nesuhi Ertegun, Jimmy Iovine, Quincy Jones, Arif Mardin, Nile Rodgers, Al Schmitt, Jerry Wexler, and Neil Young. We asked producer Sylvia Massy, who worked with Rubin on landmark records by Johnny Cash, Geto Boys, Danzig, Smashing Pumpkins, Tom Petty, Slayer, and System of a Down, to share a few thoughts about Rubin's contributions to music.

Some producers find a winning formula and stick with it, always going back to what worked in the past. And who can blame them? Especially when everyone is happy. Then there are those wild dogs who fall ass-backwards into success, often getting lost in the pitfalls of sex, drugs, and hedonistic distraction. The tragic geniuses. We all know at least one.

And then there's Rick, who has taken his own path. He approaches music production from the perspective of the enthusiastic fan, never forgetting that the ultimate goal is to create something that listeners will want to hear. Or at least something that *he* would want to hear. Even if it is nothing like what he's done before. Even if it excludes what the corporate music world has calculated as a low-risk "sure-thing." He produces for his own satisfaction, and maybe that is what we all should be doing—because it has certainly worked out well for him.

Rick has conjured up projects that no "normal" music exec would know what to do with. The punky New York white kids with turntables. The troublesome political country girl trio. The quirky Armenian metal WTF-is-it? The long-in-the-tooth American icon in black. And it has worked, over and over again. He is a chef whose musical concoctions have permanently changed the menu for all of us. For instance, who would have thought to mix hip-hop with rock? As groundbreaking as mixing peanut butter and chocolate. At one time astounding; now, it is standard fare.



He's the Zen master who assembles the personalities, sets the wheels into motion, and quietly keeps the machine on track without getting in the way. It takes a special person to accomplish this. One who has earned some kind of inner peace and sees a larger perspective. A thousand-miles-high perspective. He is an ambassador who comes from a place of always striving to do what is best for everyone involved. And that's how you change musical history. I'm lucky to have known and worked with him!



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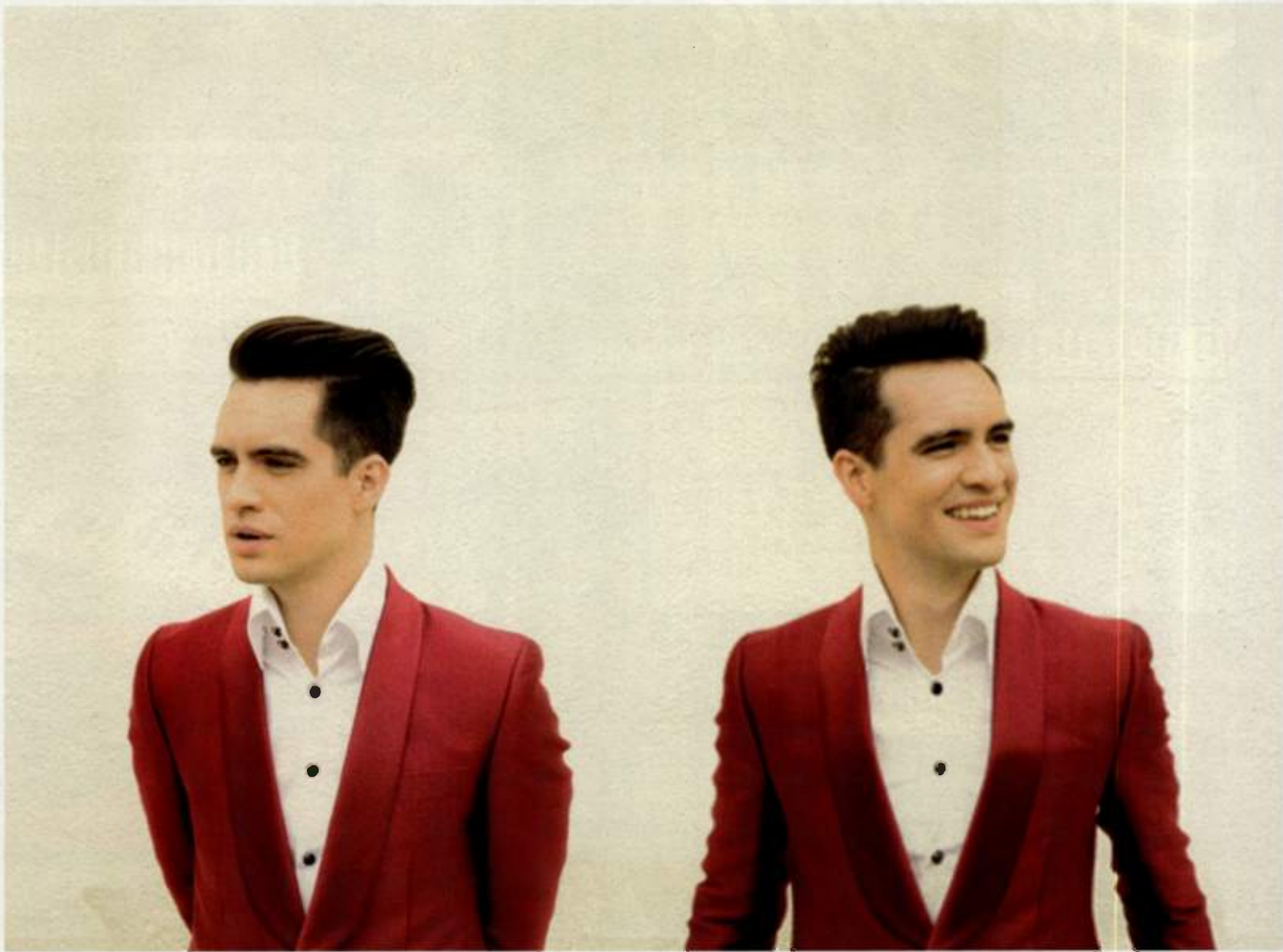
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Panic! At The Disco

> *Death of a Bachelor*, birth of a star

BY KEN MICALLEF



Panic! At The Disco's fifth album, *Death of a Bachelor*, is a hyper-extreme sonic circus that will either make you a believer or make you scream—but resistance is futile. Essentially the one-man-band of songwriter-vocalist-instrumentalist Brendon Urie, Panic! At The Disco's *Death of a Bachelor* is a riotous production playground where Frank Sinatra meets Freddie Mercury, where samples of Chicago's "Questions 67 and 68" and The B-52's "Rock Lobster" smack up against Urie's dynamic drumming, synthesizer layer-cake, and soaring vocal profundity. *Death of a Bachelor* (DCD2/Fueled By Ramen) packs more excitement into its eleven songs than many bands express in their entire careers.

"I wanted each song to feel like a special event," Urie says. "I wrote songs on piano or guitar, moved them into Logic Pro 10, then I used a lot of UAD and Fabfilter plug-ins, even a lot of demo plug-ins. I treated background vocals with all kinds of little fun tricks. I used the Universal Audio Apollo 8 [Thunderbolt 2 interface] for vocals, and the UnderToneAudio [UTA MPDI-4 Mic-Pre/DI] unit, which is awesome; it has extra gain and filters and controls everything really well. I love using the UAD stuff, they have a lot of tape machine and compressor emulations that are really fun to use."

Extremes, extremes, extremes! Every song on *Death of a Bachelor* seems treated for maximum impact, the album leaving no tech trick unplayed. And in a world where hard pop candy doesn't always register on radio formats, *Death of a Bachelor* has already racked up considerable chart success.



Producer Jake Sinclair with engineer Suzy Shinn

"I had a concept to take Brendon in a future Sinatra route," explains producer Jake Sinclair (Taylor Swift, Fallout Boy). "We put that element in every song. We layered Arturia synth lines with a big band horn section [recorded at Avatar in New York City]. That added depth so the songs take on a different life. And it really helps that Brendon is the best on every instrument of anyone I've recorded. As a singer you can use his last take and it sounds perfect."

Upending the sonic blitzkrieg of such *Death of a Bachelor* songs as "Emperor's New Clothes," "Victorious," and "Hallelujah," Sinclair, engineer Suzy

Shinn, and Brendon Urie *didn't* treat every instrument and grid every beat. Theirs was a minimalist production model. With Urie's Urielectric Studios built to mirror Jake Sinclair's studio at the Infrasonic Studio/Vintage King complex in Los Angeles' Echo Park neighborhood, *Death of a Bachelor* showcases Urie's extraordinary energy, mind-blowing musicianship, and inventive songwriting.

"I used a lot less plug-ins than you might think," Sinclair says. "I'm EQing and compressing on the way in and only using UAD plug-ins and Soundtoys. A lot of the impact comes from the writing and arranging.

If you design the songs to have quiet moments before loud moments the dynamics will be more extreme. And we were creative in the production, layering our own samples with live instrumentation. It's a huge juxtaposition of different types of sounds. It sounds like there is a lot going on, but I try to keep the arrangements simple so that certain things pop out."

Sinclair and Urie made their own recording rules: lead vocals first, drums last, everything else in between. Urie is an inspired vocalist, recalling Sinatra and even Scott Walker (look him up, kids) on the title track and the theatrical closer "Impossible Year"; Freddie Mercury in the transitions of "Victorious"; and when stacking vocals, an alien choir from an epic space odyssey. (White Seas/M83's Morgan Kibby and engineer Suzy Shinn also stacked BG vocals.)

"A song usually begins with me and an acoustic guitar," Urie notes. "I run through the song with a click track and a room mic so I can work on the arrangement if need be. I lay down acoustic guitar or piano and a vocal, then go into Logic just having fun with moments in the song. If a lyric is special I might suck out the drums or add a two-bar break at that moment. It's a playground."

Jake Sinclair engineered two prior Panic! At The Disco albums: *Too Weird To Live, Too Rare To Die* and *Vices & Virtues*. Sinclair and Urie's working relationship was more personal than business, and it shows in dynamic songs and seamless, larger-than-life production.

"We didn't begin production until we had the songs nailed down," Sinclair says. "Brendon would also make demos then stay up all night tweaking. The soft synths and weird samples are all Brendon. I dropped songs into Pro Tools and rearranged things. Then Brendon tracked drums, bass, and guitar at my studio. We tracked vocals at both studios."

Sinclair's Infrasonic Sound rig includes MacBook Pro SSD 15" 768GB, Apogee Symphony I/O Audio Interface, Sonnet Thunderbolt Chassis w/ UAD Octo card, Pro Tools HD Native, two G-Tech G-Drive PRO external hard drives (4TB), two G-Tech G-Drive Mobile external hard drives (1TB), and Barefoot MicroMain27 and Auratone 5C monitors.

"We used lots of UAD plug-ins," Shinn says, "and Soundtoys Decapitator and Little MicroShift for doubling vocals. We bused everything out to an overall mix bus then to the PSP Vintage Warmer. The PSP gives more warmth to the compression, a light but warm sound that glues all the tracks together. We used [Spectrasonics] Omnisphere for soft synths, and [Native Instruments] Kontakt too. But it's minimal. Brendon did up to 20 tracks of vocal layering. He plays live drums in every song and some samples are triggered by the drums un-



The total rock star

"Brendon can sing higher than any girl!" laughs engineer Suzy Shinn. "He can turn on the energy and the charisma at any second. And he's so modest. But he's a total rock star."

Brendon Urie is undoubtedly a rock star, a triple-threat performer, a monster talent. But how does he do it? How does one man sing like a tortured baritone angel, play all the instruments, and write great songs?

"It's key to have a second opinion," Urie replies, deferring compliments. "I usually get a few minutes of a song recorded, then get a second point of view so I can hear the song differently. After a while, you're hearing the song the same way over and over. You need to step back. When recording everything yourself, if you get tired of an idea don't spend more than ten minutes stressing about it. If I'm working on a keyboard line, if I get stressed for more than ten minutes—and I set a timer—I will move on. Don't let yourself get too bummed if an idea isn't working. Don't lose that initial excitement of the song."



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derneath the kick and snare. There's a little Roland TR-808 hi-hat to give it that digital aspect. And live shaker and tambourine. Brendon plays everything!"

TRACKING VOCALS

After song structures were nailed, the Urie-Sinclair-Shinn team tracked vocals. Urie typically requires two passes to warm up—the third time is the charm. In an album chock-full of extreme, explosive, and powerfully emotional vocals, that Urie braves those waters *first* is something special.

"We build everything around the vocal rather than the vocal being built around the track," Sinclair says. "That gives us a starting place produc-

tion-wise that is different than if you cut vocals at the end. You could say we use the scratch track, but with Brendon the scratch track is the final vocal. I don't want to miss anything the first time he sings it. I might as well have him singing into a good chain."

Urie's vocal chain: Wunder Audio CM7 FET into a BAE 1073 mic preamp, to a Purple Audio MC77 compressor and a Universal Teletronix Audio LA-2A Leveling Amplifier.

"I'm trying to mirror what Sinatra did at Capitol with the mic just hanging there in front of him," Urie explains. "I wanted to hear every little pop. I put the ratio at 4 to 1. I compressed it so you hear every breath, every pop, every tongue movement,

every syllable. Then I tried to match the vibe on the piano. The Wunder CM7 FET holds a lot of good frequency for me. My voice either gets really shrill or a little too bassy. The CM7 picks up the mids where my voice carries different frequencies. It holds that crispness and tone, and it's easier to filter than some microphones. We also put the Wunder CM7 mic on upright piano. For the money and what I need, the Wunder is amazing. I try to not EQ. I just use a filter to take out any pinch in the frequency."

And as for the exceptional vocal peaks Urie hits in "LA Devotee," "Hallelujah," and the stunning "Golden Days," where he glides from Carl Wilson sweet to Freddie Mercury/Robert Plant intense, "Jake and Suzy pushed me!" Urie exclaims. "It was trial and error to see if I could reach the note. The only insert I used is the UAD [Fairchild 670] Legacy Compressor plug-in, which is great. My voice has a weird natural compression. It sounds strange when I double vocals sometimes. It sounds like Auto-Tune. But I try to get the best take and not use Auto-Tune, 'cause for my voice it removes the feel. If there is a flubbed note, we'll use [Celemony] Melodyne to pitch one note."

Shinn describes tracking specifics: "For additional production, like vocal transitions and weird pads, I used samples from my own sample base, drum programming in Ableton, and [Spectrasonics] Omnisphere. I also sampled and layered my voice shouting 'hey kid!' to make chords or other ambient effects. I processed the vocals through Waves H-Delay, Soundtoys Echoboy and Decapitator or [Waves/Abbey Road Studios] The King's Microphone plug-in, which models the 1920s and 1930s microphones used for the British Monarchy's radio broadcasts. For the kids' choir in 'Victorious,' I used the '1970s tape trick': Varispeed. I changed the bpm of the instrumental to 10 to 20 percent faster or slower than the original BPM, tracked the vocals at the new tempo, then used Varispeed to put the music and newly tracked vocals back to the original BPM. This creates morphed or child-like vocals!"

"I LOVE PLAYING ALL THE INSTRUMENTS"

Brendon Urie sings his ass off and writes songs that may be considered classics in some future where song-craft is valued over beats. He's a good bassist, guitarist, and keyboardist. But he's a *phenomenal* drummer. Urie's drumming sparks every song on the album, from the driving eighth-note rock of "LA Devotee" and the Gene Krupa tub-thumbing of "Crazy=Genius" to the galvanic swing triplets of "Hallelujah." The song kicks off with a sample of Chicago's "Questions 67 and 68," prefaced by Urie executing, note-for-note, the triplet rolls of Chicago's rhythm machine Danny Seraphine.

"It's so weird," Urie muses. "Sometimes I will chop up a sample and then insert it differently. I did that with the opening tom fills of 'Hallelujah,' then I played the same fills on the drums as well. I

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chopped up the triplet form; that made it more fun to figure out how I was going to play it. I love taking an idea and pushing it into a different sound. I love playing all the instruments.

"I love Chicago, I grew up listening to their LPs from my parents' record collection," Urie adds. "'25 or 6 to 4' was the coolest sounding thing ever. From that moment, I was in love with classic rock. That song is so great, but it's so different. We sampled that, then built the song around the sample. That song was such an inspiration."

As well as playing live drums, Urie used his sample library and Native Instruments Maschine. "With Maschine," he explains, "it's easy to preview a sound to find out what I want. I can either play it in Maschine or play it on a keyboard. I bounce between the two. I was looking for sounds that I loved at the time like the Kendrick Lamar album to Dylan Francis. I was all over different genres looking for sounds."

Shinn describes the microphone complement used to track the vintage Ludwig four-piece drum kit: using the BAE 1073 as universal mic preamp, an AKG D12 was used on kick drum, a Josephson e22S on snare drum, and an AKG D190E/dbx 165A for the snare shell.

"That's an idea from the Tame Impala's *Currents*," Shinn says. "That gives this Beatles-esque compressed sound, due to the dbx 165. Those two together sound great."

Sennheiser MD421s miked both rack and floor toms; AEA R88 for L/R overhead miking into a Chandler TG2 and another AEA R88 as room mic into a Chandler TG1. "Room mics were to the right of the drums nine feet out into the room," Shinn explains.

Brendon played a Guild Starfire hollow-body bass with flatwound strings into an Ampeg B-15 Portaflex amp miked by a Wunder CM7 FET into BAE 1066 preamp into a Purple Audio MC77 compressor. "The Guild bass with flatwounds gives you that Paul McCartney sound, like you're plugged directly into the board at Abbey Road," says Urie. "The Guild bass has a really good thump. We also sampled Roland TR-808s for sub-bass; that along with the live bass gives it a different feel."

Urie played a Duesenberg guitar through three different guitar heads: a 1972 Mesa Boogie Mark I A713, a 50-watt 1979 Marshall JMP, and a Vox AC-30, electrifying a Mesa Boogie Road King 4X12 cabinet. Josephson e22s and Royer 121 off-axis, "side by side where cone meets paper," were summed to one track via a Chandler TG2 preamp.

Urie leaned heavily on soft synths to create the maximal colors of *Death of a Bachelor*, but the production is so seamless they function as glue, grit, and sonic paste.

"I used a lot of plug-ins and a friend brought in an old Oberheim," Urie says. "On 'LA Devotee' I used the Analog Lab for Arturia plug-ins. It has

everything I need: the Prophet V, the Korg CS-80 V, which has great arpeggiators, and the Arturia Jupiter8 V has some good, hard synth sounds. Arturia has so many synths, including the Solina V, which is great, and the Vox Continental V for that Doors sound. I used a lot of the Oberheim SEM 5 too."

Claudius Mittendorfer mixed *Death of a Bachelor*, transmogrifying the final note of closing epic "Impossible Year" into a burned-out fade-to-black.

"I wanted the end to resonate but I didn't know how long it should sustain," Urie says. "Claudius came up with this rambunctious idea of filtering and oscillating the frequency at the end of the track while phasing an echoed delay of the vocal and the piano and the horns, everything compiled into that one chord. He let it delay forever then sucked out the sound with the oscillator. It's automating frequency and filter."

Though Jake Sinclair posits *Death of a Bachelor* as a "Sinatra in the year 2525" concept album, such hyper song-blasts as "Emperor's New Clothes" and "The Good, The Bad, and The Dirty" would have Old Blue Eyes plugging his ears. But as the ultimate song and dance man who popularized the American Songbook, there's little doubt that Sinatra would recognize a kindred spirit in Brendon Urie. The 28-year-old plays everything, sings in any guise or voice that moves him, and with "Death of a Bachelor," "Golden Days," and "Impossible Year," contributes his own standards to an as yet unrecognized American Songbook. ■





Sylvia Massy

The veteran producer teaches us to embrace the weird, wild, wonderful side of recording in her new book, *Recording Unhinged*

BY SARAH JONES

Sylvia Massy is a creative force to be reckoned with. Known for employing unusual (and sometimes outrageous) techniques to draw artists out of their comfort zones and capture their best performances, she's shaped albums by the likes of Tool, Johnny Cash, Prince, the Red Hot Chili Peppers, Tom Petty, System of a Down, Skunk Anansie, COG, Spiderbait, and Sevendust. She's an accomplished painter, illustrator, and video director, and most recently, she's become a book author.

If you're looking to be more adventurous in the studio, you'll find plenty of inspiration in *Recording Unhinged* (Hal Leonard), which explores the "unexpected side of recording," that magic that happens when the recording rules get broken.

In addition to offering her own session tales, tracking tricks, and DIY gear hacks cultivated

over decades, Massy interviewed dozens of artists and producers, including Hans Zimmer, Bruce Swedien, Bob Clearmountain, Dave Pensado, George Massenburg, Pat Metheny, and Linda Perry, to find out what they've gained by pushing past the limits of convention.

When I tracked Massy down to learn more about *Recording Unhinged*, she was camped out in an island fortress near Helsinki, where she was tracking vocals with Swedish theatrical metal band Avatar.

Tell me how *Recording Unhinged* came to be.

I've always wanted to write a book, and I've kind of been known for unconventional techniques. It's things that people just don't talk about in regular recording manuals, the proper

way to mike drums or whatever. You don't have to have an expensive mic to get a lot of great recordings. You don't have to be in a studio to record something properly; walls don't have to be at special angles... I wanted to talk to other people in the industry, and ask them about ways they've broken rules. And I was so surprised about the response I got—Bob Ezrin had Peter Gabriel duct-taped to the wall; Geoff Emerick had stories about recording *Revolver*, using a Leslie on John Lennon's voice—just out-of-the-box thinking and how it changes the way recordings get done, and changes music.

There was a time when record companies ran all the studios; all of the recording was done in record company-owned studios, and then in the late '60s and early '70s, the engineers in

Massy (left) and a few of her *Recording Unhinged* illustrations.



those places started going out on their own and became independent.

It was the time, coincidentally, when there were a lot of drugs being taken, so the combination of these independent engineers and psychedelic drugs created this whole new genre of music, this rock and roll thing, it blossomed, and became extremely creative. We talk about that in the book, too: how forward thinking happens.

You share a lot of creative ideas for coaxing the best performance out of an artist; any tips for inspiring musicians recording at home, often on bare-bones laptop rigs, to step away from their tools and cultivate their own best performance?

One way would be to insist, even in a digital re-

cording, to only use organic instruments that need to be tuned by hand, or to incorporate an instrument from another country that maybe they've never played before, and play it wrong, and put it in there anyway, see what happens.

Another way to get out of your head is to take on a new role. Write a song for another artist. If you're a rock artist, write a reggae song; write a song for Taylor Swift. See what happens. Most likely, what you come up with will still have your imprint on it. It'll still be you, but it will serve to get you to break away from whatever rut you're in.

But yeah, I think one of the most difficult things to overcome right now is, if you're working entirely computer-based, with samplers, you're given a set of tools and these are the sounds that you have to live with, so you do get limited that way.

Musicians recording at home can feel limited by their tools, or their recording space. You prefer recording in the same space that the artist is performing in.

I prefer to record in the same room that the equipment is in, especially if I'm engineering for another artist, because the artist is right next to me, they're not standing behind the glass, we're not separated from each other; the communication is immediate. Often, working out parts, I want to sit right there in front of the recorder, and I want to have a microphone right there, and wear headphones. I don't think that working in the same space is limiting at all; actually, it is a great asset.

You really have to know your headphones, though. You have to have a set of headphones that you trust, and do a lot of reference listening to music that you're



really familiar with, that you can trust what you're hearing. And then outside of that, it's easy.

People tend to have a lot more tools at their disposal than they think. I love your story about recording System of a Down in a cement room in Rick Rubin's home studio, and building a vocal booth out of a camping tent.

It should be an adventure! Recording is such a creative thing; you should be incorporating recording with like cooking, or painting, or dancing. It should all be happening at the same time, it should be a joyful thing.

A lot of times now, if I have an engineer and there's any chance at all I can combine these things, I'll have a canvas set up in the control room; I'll be painting madly while they're recording, and I'll just be throwing comments out at the same time. Or any number of things like that.

If you're working on Pro Tools, you can take that laptop anywhere! Why aren't you recording in a subway? Why don't you hike up to the top of a hill and record on the hill. Climb a tree and bring the laptop with you in a backpack! Has anybody recorded an acoustic album in a tree? Singing in the shower. There should be no limitations, and there should be a story attached to each record that you do.

Is it hard to push artists out of their comfort zone like that?

So far, it's gone really well. There are some things that just don't happen because of financial considerations; like the record I'm doing now, we really wanted to record vocals in an airplane, but we haven't been able to get that one together.

The last project we did, in Bergen, Norway, the engineer on the project used to work as a submariner. We actually got to go into a submarine and recorded several things on the sub.

When you are hired for a project, how do you leave headroom to allow for that sort of

experimentation, within the project's—or label's—budget?

You have to budget for it, budget extra time for these ideas to completely fail. Because most likely, you'll build an adventure to your recording, and it will sound like shit, it just doesn't work, and you'll have spent a day, maybe more, on this grand idea that just doesn't fly. But if you prepare for that mentally and financially, then you're going to be okay anyway.

There are ways to do these things inexpensively. If you've got a laptop, and some good mic pre's, and some decent mics, you can go pretty much anywhere. [For this record] we're going to record a church organ; it's a massive pipe organ, and we're thinking to ourselves, how are we going to get a pipe organ on this record? Well, we could just get a sample, but that's not very fun... how much would it cost to go into a church? Well, surprisingly, not that much.

It'll take a day out of our time, we carry a laptop in, we get some mics. You just get permission to go into the church and find someone who can play the organ, compensate them for their time; it might actually cost less to go have an adventure recording a pipe organ than it would to hire someone to put together a composition with samples.

You really just have to try it, and be ready for it not to work, but usually the magic happens.

There's a visual component to your work. Tell me about your studio illustrations, which we see throughout the book.

My first love was art, and I thought that was going to be my lifelong career, but I found out that art is extremely personal, so it was difficult to do it for someone else. Music, on the other hand, it's much easier for me to help someone realize their musical vision through my tools than it is for me to realize someone's visual idea through my art.

I find it really easy. I can draw these diagrams, like how to build a Cooper Time Cube; it's very

easy for me to draw these diagrams with a funnel, a hose, and duct tape, how to put it together, how the signal flows, I'm having a lot of fun with it.

You tend to work with a lot of boutique and vintage analog gear, and quirky, one-of-a-kind instruments. What kinds of recommendations do you have for people who aspire to capture those kinds of sounds, but are working on digital rigs at home or in a project studio?

It would make sense to try some different things, especially the mic pre's, the front end. The recorder is sorted out, the digital recording is great; it's the front end that's the challenge. So trying different microphones, using old microphones, or building microphones is something to try. Old tape machines that you find in thrift stores—and there are a bunch of them—it makes sense to experiment with them. Take something apart and build a new instrument out of something old; get an old, broken-down piano and try doing something with that. Make it into an entirely new instrument. Just be careful if you're working with electronics that you don't get electrocuted.

I just hope that everyone can rediscover the fun of recording. Because somehow I think some of that fun has gone away. And it is. Writing this book, I also rediscovered the fun of recording by listening to these other people's experiences and thinking, what can I do to top that? It's a fun challenge. You have to challenge yourself to break out of the mold.

Any parting words of advice?

If there is any advice I can give, it is: Don't Be Lazy. Do more than just call up a patch, which is actually someone else's invention. And if you are working with musician clients, don't let them be lazy either! Make them work on those intros and outros. Make sure they deliver a message, musically, rhythmically, or lyrically...and never waste the opportunity of a middle bridge. It is precious time. Make every moment an adventure. ■

Sylvia Massy Selected Discography



Prince *Diamonds and Pearls* engineer
Green Jello *Cereal Killer* producer, engineer, mixer
Tool *Undertow* producer, engineer
Johnny Cash *Unchained* engineer, mixer
System of a Down (debut) engineer
Powerman 5000 *Tonight the Stars Revolt* producer, engineer
Spiderbait *Alright Tonight* producer, engineer, mixer
Avatar *Feathers and Flesh* producer



Massy with her partner, Chris Johnson, at The Village in Los Angeles.

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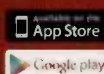
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MOTÖRHEAD *BAD MAGIC*

UDR

In the wake of Lemmy's untimely passing, let us right a grievous wrong and call readers' attention to *Bad Magic*, the 22nd, and what we now know to be the last, Motörhead album (released last summer). With hindsight, listeners can hear a slight fragility in the iconic frontman's always gravelly voice, but he lacked no musical intensity, and the record is replete with those unmistakable Motörhead rapidfire rhythms and buzzsaw riffs. And some pretty damn cool songs as well. Crank it the way Lemmy intended.

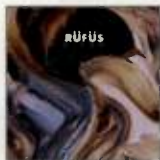
BARBARA SCHULTZ



NEVERMEN *NEVERMAN*

IPECAC/LEX

Metal-clanging beatbox rhythms, three-part R&B harmonies, delicate percussion, and succulent synthesizers make up the rapturous debut from Nevermen. But Nevermen are evermen: Mike Patton (Faith No More/Fantomas), Doseone (Anticon label founder), and Tunde Adebimpe (TV on the Radio). A dizzying, daring, and often complex recording, Nevermen successively captures the energy of these serious muso-heads with absolutely no downside. From "Hate On" and "Tough Towns" to "Non Babylon" Nevermen deliver intricate music that is compelling, tuneful, and hot damn—fun! KEN MICALLEF



RÜFÜS DU SOL *BLOOM*

SWEAT IT OUT!

If you loved the sun-kissed vibes of Rufus du Sol's first album, *Atlas*, then you'll love its follow-up, *Bloom*, as it is exactly the same. The Australian dance-pop trio aims its groove-laden, soft beats toward daytime beach parties rather than dark dancefloors. The happy rhythms are evened out by melancholic vocals, which if they were any other way would make Rufus too sugary. Instead, tracks such as the caressing "Brighter" and lively "Like an Animal" hit a perfect balance.

LILY MOAYERI



ASTROPOL *THE SPIN WE'RE IN*

INGRID

Astropol features the Shout Out Louds' Bebban Stenborg, Björn Yttling of Peter Bjorn and John, plus Swedish indie fixture Smash, and the 10 tracks on their full-length collaboration showcase appropriately trembling, bruised sonics for an album about love's embers. There is an intimate bleariness to the wistful make-out sessions between breathy vocals, drowsy synths, butterfly-kiss drum beats, and washed-out guitars. It's comforting heartbreak pop wrapped in echoes of Suicide's punk-synth doo-wop and shoe-gazer vapor trails. TONY WARE



THE TIES THAT BIND: THE RIVER COLLECTION BRUCE SPRINGSTEEN

COLUMBIA

Some fans would argue that *The River* (1980) marks The Boss's artistic zenith—when his rock 'n' roll everyman songwriting dovetailed with his most thrilling performances with the E Street Band. His latest deluxe reissue commemorates that time, complete with a full album of outtakes, previously unreleased concert film footage, and a new documentary, and even a coffee table book of rare photos. For completists who were there, *The Ties That Bind* captures a perfect musical memory.

BARBARA SCHULTZ



THE BLACK QUEEN *FEVER DAYDREAM*

(SELF-RELEASED)

Produced by Justin Meldal-Johnsen, The Black Queen comprises Greg Puciato (Dillinger Escape Plan), Joshua Eustis (Telefon Tel Aviv), and Steven Alexander. Writing and recording in a bleak downtown L.A. warehouse and deluxe Hollywood Hills digs, respectively, TBQ comes off as equal parts Depeche Mode, Kraftwerk, and Jodi Watley. Programmed beats and sinister synths paint nightmarish mood candy, while the trio's way with a pop hook pushes their music beyond the wormhole of torpor.

KEN MICALLEF



ANIMAL COLLECTIVE *PAINTING WITH*

DOMINO

Animal Collective operates along an alternate timeline where 1960s helical oscillator duo the Silver Apples charted as prolifically as the Beach Boys and Paul Simon, and the new weird America is old hat. On the group's 10th studio album the psyche-pop trio of David "Avey Tare" Portner, Brian "Geologist" Weitz, and Noah "Panda Bear" Lennox giddily interlaces modular synthesizers and handmade percussion instruments into a less hazy, still dizzy three-minute immediacy, bubbling melodically across motorik infrastructure. TONY WARE

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"Overall on her voice it offered a very real, you-are-here sound that had a natural weight along with a nice sparkly high end—sparkly as in exciting and not harsh or bright. [...] I also fell in love with the Z-67 on a number of acoustic guitars, especially on 12-string where it was full and detailed, scooping out a touch of the boxy mids. [...] The Z-67 offers a very classy rich sound—very 3D with the perfect hint of vintage vibe."

Paul Vnuk Jr. — Review in *Recording Magazine*, May 2014

"This is one of the very finest microphones I have ever purchased, period. Classically identifiable sound quality, amazingly well made, astonishingly Quiet and customer service second to none. I will be buying more of these microphones!"

Bernie Becker — Legendary Engineer —
Frank Sinatra, Neil Diamond, Tupac

"First thing I noticed was the significantly lower self-noise of the Z-67 (vs. favorite U-67). On pick-strummed guitar, however, the Z-67's presence bump highlighted the plectrum-on-string detail I was looking for. On JT's voice **this mic was just stunning**. It complimented his true tone with a clarity that I've been searching for. It was head and shoulders above the U-67..."

Ryan Hewitt — Review in *Tape Op*, Issue #100

"It is a perfect microphone for critical vocals and female voices and compare very favorably to any U-67 I have heard. It also shines on acoustic guitars and anything that needs an open top end without over pronounced upper midrange. **I love the ADK Z-67!**"

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Mötley Crüe, Metallica, Megadeth, Dokken



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SAMPLE LOGIC

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TAKE CROSSFADING TO A WHOLE NEW LEVEL

BY GEARY YELTON

Former senior editor Geary Yelton has been reviewing synthesizers for *Electronic Musician* since its very first issue in 1985.

STRENGTHS
Terrific sound design.
Tons of diverse sample content. Versatile modulation control.

LIMITATIONS
Could be more affordable.

\$599; \$300–\$500 for crossgrades
samplelogic.com



Although CinemorphX runs as a sample library in Kontakt, it bypasses some of its host's features in favor of its own user interface.

Recently I've been glad to see developers offer fresh techniques for composing music. CinemorphX is a sample library for Native Instruments Kontakt 5.5 or Kontakt Player 5 that lets you layer sounds and dynamically manipulate them in innovative ways. Its greatest strength is the multifaceted approach it takes to setting sounds in motion.

CinemorphX borrows its sample content from three previous Sample Logic products—A.I.R. (Ambiences, Impacts, Rhythms), The Elements, and Synergy. However, its custom user interface, effects chaining, and mixing and modulation features make it much more than just a trio of repackaged sample libraries.

Eschewing Kontakt's usual browser for its own, CinemorphX divides presets into five categories: Atmospheres, Instrumentals, Loops, Percussives, and One Note Combos. Each instrument preset contains as many as eight multisamples and lets you control the balance between them using an x-y pad, LFOs, and onboard sequencers called Animators.

An instrument holds up to four Soundcores; each contains one or two multisamples called Soundsources. Instruments are either Single Core or Multi Core. Multi Core instruments display four Soundcores surrounding the main page's x-y pad, which lets you change the mix between them fluidly in real time. You can record and recall any movements you make on the pad, including 20 preset patterns.

Each Soundcore has knobs for volume, panning, velocity response, and to change the balance between its two Soundsources. A click reveals more controls for an ADSR generator, filters, a convolution processor (with 31 impulse responses), and four simultaneous effects to select from a list of 20. Effects can be saved in chains; you can change their order

even while sounds are playing.

Additional motion comes from the Animators, the most sophisticated of which is the Step Animator. It controls arpeggiation patterns as long as 128 steps, with individual duration and panning for each step and the ability to stutter or glide individual steps.

Morph Animators let you automate switching and crossfading between Soundsources, and FX Animators allow you to automate changes to volume, pitch, panning, and filter cutoff.

Every Soundcore's volume, pitch, panning, and filter cutoff control has dedicated LFOs to add even more movement to sounds. Multiply that motion by four Soundcores and you have up to 16 independent LFOs modulating a single note. Apply FX Animators to the mix and things can get crazy quickly!

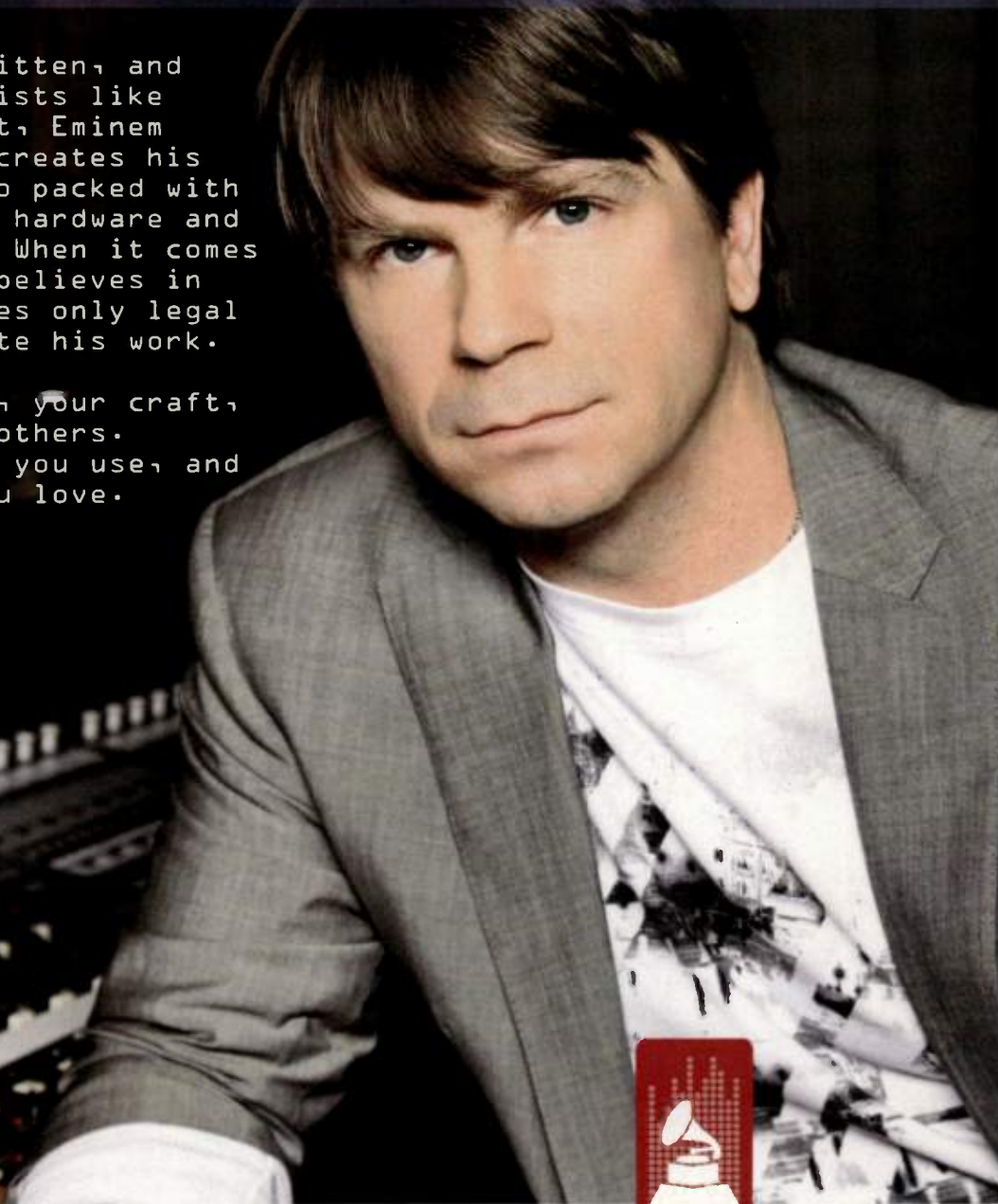
My first impression of CinemorphX was that it allows users to instantly produce shifting, evolving sounds that musically tell a story, simply by sustaining a single note. Press a key and use the x-y pad to summon up rhythms and moods that enhance onscreen action and dramatic scenes. But the more I used CinemorphX, the more its advanced capabilities were revealed. With independent LFOs and Animators routed to so many destinations, it can produce mood-altering sounds that never repeat until you want them to. It can be challenging to keep track of everything when you engage dozens of modulators at once, but it's tremendous fun to build complex timbres and percussion tracks just to see where they'll take you. I love instruments that can sound like nothing else and CinemorphX certainly accomplishes that. It isn't for everyone, but if you like to compose music in new and unique ways, it may be just what you're looking for. ■



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Key 9 Electric Piano Machine

ADD A
DISTINCTIVE,
PERCUSSIVE
ATTACK TO YOUR
GUITAR PLAYING

BY GINO ROBAIR

STRENGTHS

Low latency. Tracks well.

LIMITATIONS

Rhodes and Wurly sounds are not always convincing. Occasional artifacts when playing multiple notes (e.g., major 7th intervals in the Vibes and Mallets patches).

\$293.73 street
ehx.com



Designed to provide convincing emulations of electro-mechanical keyboards, the Key 9 is most satisfying when thought of as an effects processor.

Following the B9 and C9 Organ Machines, the Key 9 Electric Piano Machine is the latest in a series of DSP-based pedals from Electro-Harmonix. Designed to emulate various electro-mechanical instruments, it offers nine sounds: four of the Fender Rhodes (Suitcase, Dyno-My-Piano modified, 88-key, and with Dytronic CS-5 stereo chorus), a Wurlitzer, as well as organ, marimba, vibraphone, and steel drums.

Two knobs, Ctrl 1 and Ctrl 2, set effects parameters, such as tremolo depth and speed on the Wurli and bass and tine on the Dynamo. The Key 9 has a single input and two outputs—Dry (the unprocessed sound, always present through a buffered circuit) and Keys (a mix of processed and unprocessed). The Dry and Keys knobs determine how much of each signal is present at the Keys output.

If you have ever played a keyboard sound using a guitar, you know that not only *what* but *how* you play determines the realism of the end result. For example, you can't bend notes on a real Rhodes or Wurly. Rather, cleanly articulated, idiomatic parts sound the most keyboard-like. Keeping this in mind, you can get fairly convincing organ timbres, especially in a mix, from the B9 and C9, though it's much harder with the Key 9.

Well-articulated notes bring out the initial bell-like transients that make you think "Rhodes" in those patches, though the sustained portion of the note gives the emulation away (as does the low-octave doubling that's apparent as you play lower notes). The Steel Drums and Vibes patches are immediately recognizable as such, with the

Mallets and Organ right behind. And I sensed the telltale compressed bark of the Wurli patch only when using the guitar's mid register and playing without a pick.

I got more realistic results from the Key 9 running a synth through it, where the keyboard's sustain enhanced the Key 9's electric piano emulations. But don't expect the Key

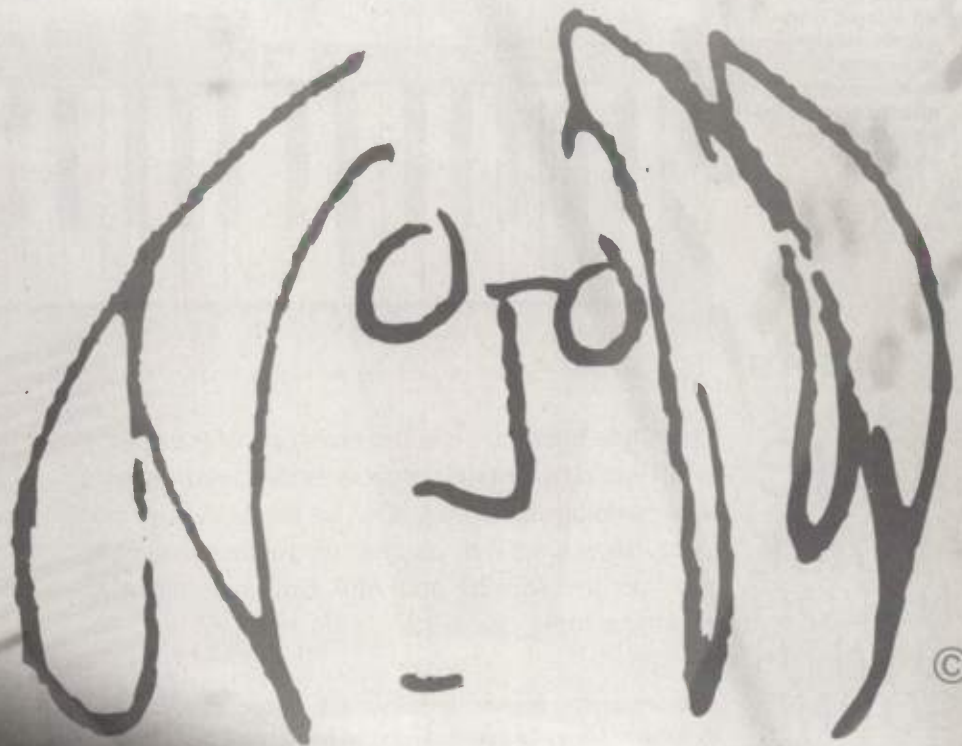
9 to provide the kind of electric-piano sounds you would get from a MIDI-controlled ROMpler.

Nonetheless, the Key 9's tones are distinct, each with a unique percussive transient. And the less I thought about mimicking keyboard parts, the more I enjoyed using the pedal. I got much more out of it by listening to how the Key 9 translated notes and then figuring out how to use the results musically.

For example, the bell-like attack of the Rhodes patches when the "tine" level is cranked up sounds great with the sub-octave sustain when playing melodically in certain registers. The Mallets patch has a solid wood-like thunk (with a lower octave tone) but very little sustain; another distinctive timbre for melodic parts. Tri-Glorious, on the other hand, has a fine organ-like sustain that sounds great when arpeggiating, especially with chorus dialed in.

The Key 9 works well on a variety of instruments—guitars, keyboards, modular synth. Within a dense mix, the Rhodes and Wurly patches definitely hint at their namesake, but are less successful in highly featured contexts, whereas Vibes, Mallets, and Steel Drums steal the show. Overall, the Key 9 provides an easy way to add percussive keyboard-like timbres to your pedalboard. ■

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The minilogue is a desktop-friendly size for an analog polysynth—19.75" wide and 12" deep—and it sports a velocity-sensitive mini-keyboard.



KORG

minilogue

A 4-VOICE
ANALOG
POLYSYNTH
WITH A SOUND
ALL ITS OWN

BY GINO ROBAIR

STRENGTHS

Price. Four voices.
Sequencer. Delay.
Voice Modes, including
Chord and Arpeggiator.
Ring modulation. FM.
Easy to use.

LIMITATIONS

Some switch positions
are counterintuitive.
The mini keys may
bother some players.
No sample-and-hold.
No pedal inputs.

\$499 street
korg.com

Korg has been pushing the envelope in the analog synth world by offering great-sounding instruments at remarkably low prices, such as the Monotron and Volca Series, as well as reissuing classic designs such as the MS-20 and ARP Odyssey (albeit in desktop sizes).

This year the company has gone a step further with the minilogue, a 4-voice keyboard polysynth that streets below \$500. But rather than rely on previous designs, Korg created much of the circuitry in the minilogue from scratch, with both desktop and stage use in mind.

BASIC ARCHITECTURE

Each of the four minilogue voices has two oscillators offering square, triangle, and sawtooth waveforms, as well as a noise source. Through the use of phase switching in the design, you can alter the waveshape of each oscillator with the Shape control and add harmonic content.

To further enhance the waveforms, VCO 1 can frequency-modulate VCO 2 using the Cross Mod Depth knob, and you can switch in ring modulation: The ring mod and FM features are heard through VCO 2's mixer channel. Furthermore, the phase of oscillator 2 can be synchronized to oscillator 1 with the Sync switch, and you can alter the pitch of VCO 2 with the envelope generator using the Pitch EG Int knob—positive excursions when the knob is set clockwise, and an inverted shape when the knob is turned counter-clockwise. The synth provides two 4-stage envelope generators; one for the VCA and the other for modulation purposes.

The minilogue's LFO offers ramp, triangle, and square waves and is surprisingly flexible: It can

modulate the pitch of VCO 2, filter cutoff, or the shape of the two oscillators. In addition to providing rate and depth (intensity) knobs, the minilogue lets you modulate the rate or intensity level of the LFO using the EG—very handy!

According to its designer, the minilogue's resonant filter uses Norton amps that are tuned to complement the oscillators. You can set it to a 2- or 4-pole response and select how much key tracking and velocity influence the frequency cutoff (0, 50%, 100%). Knobs are provided for the cutoff frequency, resonance, and the degree to which the EG alters the cutoff frequency.

The minilogue's rear panel includes a mono audio input (for processing external sounds), a mono output, and a headphone jack. MIDI is available over DIN and USB connectors. The synth also includes a minijack I/O that allows you to synchronize the internal sequencer with external gear.

The minilogue's velocity-sensitive, 37-note keyboard has the desktop-friendly mini keys that have become increasingly common. Nonetheless, the instrument is easy to play, solidly built, and, at just over 6 lbs., lightweight.

SOUND IN MOTION

If Korg had stopped there with the design, it would already have a great-sounding synth. However, the minilogue also includes the previously mentioned sequencer, an arpeggiator, a handful of voice playback modes, and a delay.

The delay has a built-in highpass filter (with frequency cutoff control). The HPF can be placed before or after that delay. The audio quality of the de-

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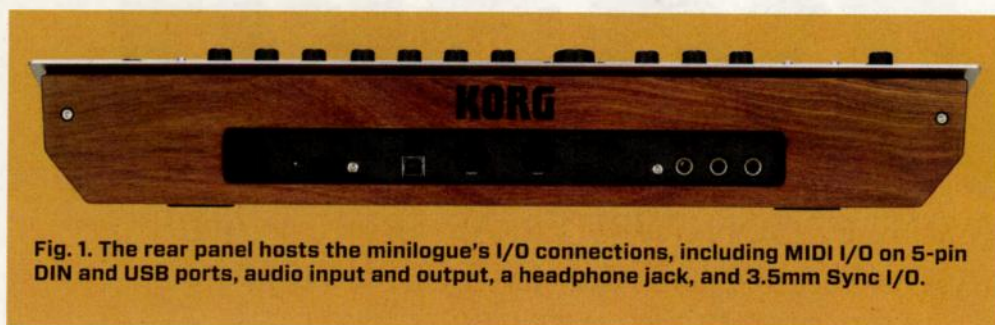


Fig. 1. The rear panel hosts the minilogue's I/O connections, including MIDI I/O on 5-pin DIN and USB ports, audio input and output, a headphone jack, and 3.5mm Sync I/O.

SOUNDS LIKE

Overall, the minilogue has a sound all its own. Korg seems to have had modern dance styles in mind when it designed the synth, because it can sound fairly strident and aggressive when needed; anything you need to cut through a mix. And as I alluded earlier, the factory presets tend to lean toward the noisy and busy side of things, with sequences that conjure up a party atmosphere. Yet it is easy to program sounds that one would normally associate with an analog synth such as chuffy flutes, zappy and noisy percussion, and rich basses.

Between the resonant filter, ring modulation, and cross modulation capabilities, you can get lovely, harmonically rich metallic and bell sounds. Combine that with velocity sensitivity and key tracking, as well as the ADSR-controlled LFO, and you can build some fairly complex timbres that change radically over time.

For me, the most important reasons to use an analog synth are sound quality and hands-on control. When these aspects are well integrated, you have an instrument that allows for a great deal of expressivity.

In the case of the Korg minilogue, you have immediate access to a wide range of sound-shaping parameters, all of which are intuitively placed—perfect for synth noobs as well as advanced users. Features such as the Shape knobs for each oscillator, Motion Sequencing, FM and ring modulation, the Voice Mode buttons, and a modern-sounding resonant filter make this keyboard a strong addition to any studio or performance setup. Best of all, the minilogue is just downright fun to play! ■

lay is reminiscent of Korg's Monotron Delay ribbon synth; a bit noisy, but an old-school vibe that works well and is fun to dial into a patch.

The 16-step sequencer can be programmed in real time or in step mode, and your sequence is stored with the selected patch. You can set the step length and resolution, gate length, swing amount, and use the Motion Sequencer to record four knob and switch movements. Using Knob edit mode, you can set whether the parameter you change jumps immediately to the physical position of the knob, changes once you pass the current setting, or changes relative to the physical position of the knob.

The synth comes with a 100 presets, many of which lean toward modern dance-music styles. Presets authored by Richard Devine and Jimmy Edgar are included. You can easily modify the factory patches, or build your own using the 100 additional memory slots with basic Init patches. Any eight patches can be assigned to the Favorites list for easy recall.

The minilogue's display not only shows you patch names and editing parameters but also acts as an oscilloscope so you can view the wave shape as you play. It even shows the waveform of the audio input—very cool.

VOICE ALLOCATION

One of the most musically interesting aspects of the user interface is the implementation of the eight voice-allocation modes, each of which determines how the voices are utilized in a patch. Although each patch has a specific voice allocation saved with it, you can change it at the touch of a button. Practically speaking, this gives you eight playback options for each patch. That's a nice benefit because a patch will sound slightly different in each mode, leading you to some surprising discoveries.

The voice allocation modes are Poly for polyphonic playing; Duo mode, which stacks pairs of voices to give you 2-note polyphony; Unison, which creates a monosynth by stacking all four voices in unison; Mono, another monosynth sound, but with voices 2 and 3 available as sub oscillators; Chord mode is monophonic, but each key plays the four voices simultaneously as a chord (14 chord choices are available); Delay mode cascades voices 2, 3, and 4 after voice 1 is played; Arp is the polyphonic

arpeggiator with a 4-octave range; and Sidechain mode lowers the volume of a previously played voice once a new voice is played.

Important aspects of each mode can be changed using the Voice Mode Depth knob, so you don't have to go menu diving to, say, choose which chord is played in Chord mode or to change the type of arpeggiation pattern. Unfortunately, you cannot combine voice allocation modes; for example, you cannot use Chord mode with the arpeggiator. You can, of course, use the sequencer with any of the modes.

Another performance-oriented control is the angled pitch bend/modulation control. Situated above the lower notes of the keyboard, it can be assigned to nearly any parameter, such as gate length, and envelope and filter settings.

Conspicuously missing from the synth are sample-and-hold and pedal inputs. And one quirk of the instrument has to do with some of the switches: Key Tracking, Velocity, Ring, and Sync are engaged when the switch is in the up position, away from the parameter name printed on the panel.



Fig. 2. A close-up of the minilogue's Voice Mode buttons, sequencer, and LCD showing an Init waveform that's ready for you to edit into a new patch.

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The unusual sounds and solid build of the Akai Tom Cat set this groovebox apart from the pack.



AKAI

Tom Cat

AN ANALOG DRUM MACHINE WITH A SOUND ALL ITS OWN

BY FRANCIS PRÈVE

Francis Preve is a sound designer and producer/remixer based in Austin, Texas. Follow him at facebook.com/francispreveofficial.

STRENGTHS

Unique sounding analog drum machine. Kick and toms include pitch envelopes. Snare includes highpass filter. Step-sequencer is easy to use.

LIMITATIONS

Hi-hat decay controls both open and closed hats almost equally.

\$199 street
akaipro.com

Released in 2014, the Akai Rhythm Wolf caused quite a stir in the synth community. Some users absolutely hated it, while others immediately gravitated to its aggressive and quirky sound. Akai's newest analog groovebox, the Tom Cat, will undoubtedly create similar controversy, as its sound and features are just as unusual, while covering different percussion territory.

CAT WALK

As with Akai's other analog products, the Tom Cat's construction really inspires confidence—all-metal housing complete with retro wood end-caps. The velocity-sensitive pads are cribbed from the MPC series, with a rubberized finish and internal LED lighting when active. The knobs have a nice, sturdy feel, too, with smooth travel and almost zero circuit-board wobble. The back panel includes Gate/Trigger I/O (on mini-jacks), USB MIDI, two DIN MIDI ports for In and Out/Thru, a headphone output, a mono main output for the drum mix, and a jack for the included AC adapter (see Figure 1).

While the overall design is nearly identical to the Rhythm Wolf, the Tom Cat's drum sounds are quite different—each with its own set of parameters. Let's take a closer look at them.

Kick. The Tom Cat's kick drum is a huge departure from the Rhythm Wolf, with its character derived from a pitch envelope, as opposed to the Rhythm Wolf's more 808-like configuration. Here you get three parameters—tuning, pitch envelope, and decay.

The tuning knob governs the overall pitch, the pitch envelope controls both envelope depth and decay simultaneously, and the decay knob

handles the amp envelope's decay. In use, these parameters offer an extremely wide range of textures, from subby trap 808 booms to doubling as a second disco tom, with velocity also affecting pitch. Compared to the Rhythm Wolf, it is a lot punchier too, which makes it well suited to

certain dance genres.

Snare. The snare's synth is equally distinctive, with an integrated highpass filter that allows it to serve as a top percussion element at its highest settings. This is an unusual design decision, but it definitely gives the Tom Cat more range than other analog drum machines. A decay knob delivers very long release times, allowing the snare to work as a simple noise cymbal in a pinch.

It is worth mentioning here that the velocity has a *huge* impact on the snare's overall character, which isn't obvious when working in step-sequencing mode. If you smack the pad, the snare responds with a satisfying crack. Good stuff.

Clap. The Tom Cat's clap is reminiscent of the 808/909 sound, with a bit more aggression, as it is based on a bandpass-filtered noise burst. You can customize the results using its tune, spread, and decay parameters, with the tune knob adjusting the frequency of the bandpass filter for more sonic range. Like the snare, the clap's decay knob extends the release time greatly.

Unlike Roland claps, the Tom Cat's spread knob allows you to customize a rapid-fire series of claps at the beginning of each sound. Lower amounts

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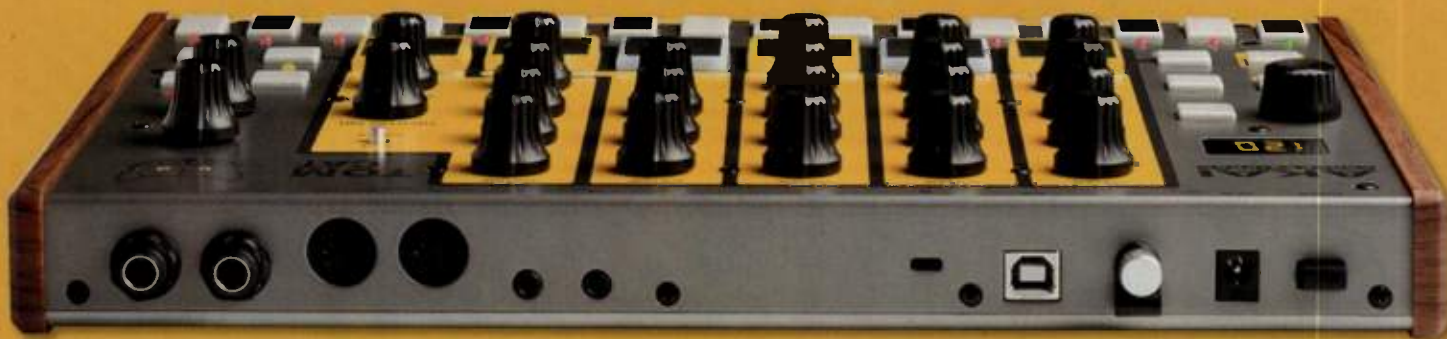


Fig. 1. The Tom Cat can interface with other instruments in a number of useful ways—via USB and standard MIDI I/O or with the 3.5mm Gate/Trigger I/O.

give it more snap, while extreme amounts give it a rattle-like sound. In combination with the filter tuning, this delivers a lot of sonic flexibility and frankly, I really like the overall flavor.

Hi-Hat. The hi-hats are nearly identical to those of the Rhythm Wolf, including its idiosyncrasies. That is, the tuning knob's effect is nearly imperceptible. Sweeping it changes the charac-

ter very slightly, but frankly, you have to listen quite closely to hear anything. To be candid, I would have preferred that Akai implement the same type of highpass filter as that of the snare, which would greatly increase its usefulness.

What's more, the decay knob controls both the open and closed hats almost equally. This is extremely odd for a disco-oriented drum ma-

chine, as one of the hallmarks of the disco sound is an open hat on the off beats. That's simply not possible with the Tom Cat (or the Rhythm Wolf, to be perfectly clear). For patterns with mostly closed hats, you can use the open hat as an accent or variation, but for traditional hi-hat patterns, it's just not gonna happen.

Disco Toms. While the hats may not be ev-

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~ **Butch Walker**

Engineer/Producer - Avril Lavigne, Fall Out Boy, Pink, Sevendust, Hot Hot Heat, Simple Plan, The Donnas.

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

everyone's cup of tea, the Tom Cat's disco toms are where the unit truly shines. With parameters for tuning, pitch envelope amount, pitch envelope decay, attack (which adds a bit more of a click transient), and amplifier decay, you can quickly nail that familiar '70s "pew-pew" tom sound that defined classic songs such as Anita Ward's "Ring My Bell." The pitch envelope can also be inverted for "woop" effects. Best of all, the velocity is tied to the pitch envelope amount, with harder hits raising the tom's pitch in very musical ways.

Because of their wide tuning range, these disco toms can also be used as an alternative to the kick, delivering powerful hip-hop booms with the parameters tweaked properly. All in all, they're quite impressive and fit the name of Akai's instrument perfectly.

MAUL AND SEQUENCE

The mixed drum output also includes the Maul knob, which is essentially a fuzztone distortion similar to the Rhythm Wolf's Howl control, but with a gain compensation circuit that keeps the signal level from becoming overwhelmingly loud. Kudos to Akai for correcting this oversight on the Tom Cat, as it allows the drum machine to cover industrial and hardstyle genres quite

nicely. Granted, at maximum values the effect still adds a fair amount of noise to the output, but so would adding most distortion pedals, so this is a minor issue in the big picture.

The Tom Cat's sequencer is a straightforward affair that can be programmed in traditional step fashion or real-time recording with integrated quantization. Step values include quarter, eighth, sixteenth, thirty-second, triplets, and swing sixteenths, which covers most standard groovebox applications.

There are 16 pattern slots, with A and B versions available, for a total of 32 one-bar patterns. To some, this may seem small, but considering that the Roland AIRA TR-8 and Korg Volcas are similarly equipped, it's certainly not a deal-breaker.

In addition to the sequencing features, the Tom Cat's pads can serve double-duty as mute and solo buttons. In conjunction with the ability to change the sequence length on the fly via the Last Step button, there's a decent amount of performance functionality here.

Recording sequences is a breeze, and after a few days of use I found I preferred recording patterns in real time, thanks to each drum's velocity characteristics. While it would have been nice to have the ability to automate the drums'

parameters too, the Roland AIRA TR-8 doesn't offer this either (though the Korg Volcas do).

PICK OF THE LITTER

Like the Rhythm Wolf the Tom Cat has an unusual, aggressive sound with a great deal of customization range for each percussion instrument. Although the hi-hats have a few obvious design oversights, the rest of the instruments are punchy and present. Taken as a whole, the Tom Cat has a unique flavor that you won't find elsewhere and is especially well-suited to in-your-face genres like hardstyle and hip-hop. In my production work, that's precisely what I look for in an instrument: Individuality. My Mattel Synsonics and Boss DR-110 also fit this bill, with decidedly unusual flavors that have made them quite collectable for vintage connoisseurs.

While I'm not sure that I'd recommend the Tom Cat as the only drum machine for mainstream dance producers, I think it is a terrific product for artists who already have a collection of gear and want to add some exotic flair to their arsenal. The Akai Tom Cat provides sturdy construction, and distinctive analog sounds for a two-hundred-dollar price tag, making it hard to ignore. ■

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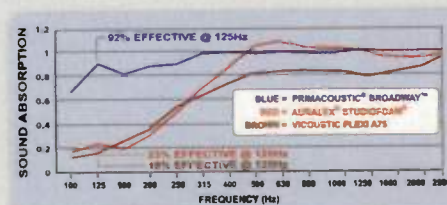
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Fractal Audio Systems Cab-Lab 3 plug-in lets you combine impulse responses of speaker cabinets in order to alter the tone of your guitar recordings, for creative reasons or simply to fit them into a mix.



Cab-Lab 3

SHAPE YOUR GUITAR TONE WITH SPEAKER IMPULSE RESPONSES

BY BARRY CLEVELAND

Barry Cleveland is a San Francisco-based journalist, guitarist, composer, recording artist, and audio engineer. Visit barrycleveland.com.

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When I reviewed an early model of the Fractal Audio Systems Axe-Fx in 2008, I was so impressed with its amplifier emulation and effects processing capabilities that I predicted it would become the gold standard for products of its type, which it did. The Axe-Fx II XL is currently the centerpiece of my personal guitar rig.

Cab-Lab was originally developed exclusively for use with the Axe-Fx, and that's still the case for the standalone version of Cab-Lab 3. But there is also a plug-in version of Cab-Lab 3, compatible with any DAW or other application that hosts 64-bit AU or 32- or 64-bit VST plugs. (An AAX version is in development.) While it, too, can be useful to Axe-Fx owners who are into recording, the plug-in brings Cab-Lab 3 to a wider world. The user inter-

faces for both versions are nearly identical, as is their functionality, though naturally, some functions are only active in one or the other. While this review focuses on the plug-in version, I'll begin with a look at the standalone Cab-Lab 3 app, partially as a way to explain its *raison d'être*.

One of the Axe-Fx's core features is the use of Impulse Response (IR) technology to reproduce the sound of speaker cabinets. To use two or more cabinet IRs, however, it was necessary to have more than one Cab Block in my signal chain (signal chains comprise multiple Blocks linked together), and each Block consumed valuable DSP. So, if you wanted to simulate, say, the sound of several cabs (or the same cab miked in different ways) blended



The Cab-Lab 3 GUI allows you to see the frequency of your selected impulse response, as well as load a reference IR.

together, your signal chain and DSP usage could quickly become unwieldy.

The standalone version of Cab-Lab 3 removes this limitation by enabling you to mix the sounds of up to eight different speaker cab IRs into a single IR, which may then be loaded into a single Cab Block. Additionally, the app lets you monitor IR mixes in real time (using the Axe-Fx as an audio interface) and transfer newly created IRs directly to the hardware unit. The standalone app also includes tools for renaming, converting, and batch processing IRs, as well as providing remote control of the Axe-Fx's IR Capture process (used for recording IRs). Testing these functions using my Axe-Fx II XL yielded excellent results.

Now, on to the plug-in, bearing in mind that its UI and mixing functions are almost identical to those of the standalone app. That UI is arranged in three sections. The Mixer includes eight faders with associated Mute and Solo buttons, and meters that indicate *relative* mix levels in dB. (Mixes are normalized to ensure consistent output levels.) In addition to clicking and dragging the faders, you can adjust levels in 0.1 or 1.0 increments using the Up and Down arrows on your keyboard or a scroll wheel. IRs may be further tweaked by accessing a fly-out panel containing highpass and lowpass filters, phase-inversion, a Delay control providing up to one millisecond of time alignment or offset, and a choice of two Processing modes. Adventurous souls may also change the mixer routing from parallel to serial (though caution is advised).

The Mixer Slot section lets you select and load up to eight files. Supported file types include .syx (used for standard-resolution IRs), .Ir (used for UltraRes IRs, which we'll get to momentarily), and .wav (mono audio recordings of impulse responses)—in any combination.

The Save+Export section, where newly created IRs may be named and saved, includes a Mix Output Plot that represents individual or mixed IR waveform in either frequency or time domains, and a Reference IR Processing option for removing power-amp coloration from IRs. IR choices and mixer settings may also be saved collectively as Sessions.

There are two types of cabinet IRs: Standard and UltraRes, the latter being a sort of proprietary super IR. While no IRs are included with Cab-Lab 3, numerous Cab Packs are available from Fractal and several third-party developers. These include multiple cabinet types, combined with a choice of microphone options, mic-positions, and so forth. Cab Packs range in price from \$24 to \$99.

I experimented with IRs from six Cab Packs, which reproduced the characteristics of Fender, Marshall, Vox, Orange, and other vintage cabinets, as well as cabs by boutique manufacturers such as Dumble and Two Rock. Microphone choices in-

cluded models by Neumann, Shure, Sennheiser, Beyerdynamic, AKG, Royer, and RCA. The speaker choices and microphone-placement options were too abundant to list.

The most obvious use for the plug-in is to expand your speaker cabinet options when using amp-modeling software, though it is equally effective on guitar tracks recorded *sans* cab using a direct out from an amp, a load/DI box, or any hardware amp simulator (such as an Axe-Fx).

For my tests I recorded cab-less tracks into MOTU Digital Performer 8 using my Axe-Fx II XL and various software amp models within the IK Multimedia AmpliTube 3 and Native Instru-

ments Guitar Rig 5 plug-ins. Then, I routed those sounds through Cab-Lab 3 as a channel insert. (Visit emusician.com to hear audio examples.)

The ability to select and blend so many diverse cab IRs, as well as combine the results with myriad amp types was, frankly, a little overwhelming. But I did arrive at some fantastic tones, ranging from classic to bizarre. Sometimes something as simple as changing a microphone type or position was all it took to make a track sit *much* better in a mix.

My only reservation in recommending Cab-Lab 3 is that it's so deep. There's a high likelihood that users with Tonal Exploration Disorder may dive in and never resurface. ■

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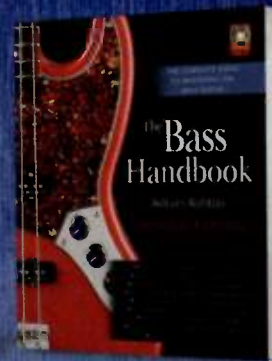
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Classical Recording

The Grammy-winning engineer shares tips for capturing “classical” instruments, and advice for overcoming the challenges of recording in confined spaces

BY STEVE LA CERRA

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

Grammy Award-winning engineer Michael Bishop is responsible for some of the most amazing recordings you’ll ever hear. His extensive discography includes releases from the Atlanta Symphony Orchestra and Chorus, The Cleveland Orchestra, Dallas Symphony Orchestra, Zuill Bailey, Cincinnati Pops and Symphony Orchestras, as well as projects with Arturo Sandoval, Hiromi Uehara, Stanley Clarke, Wild Cherry, and the James Gang(!). This year, he was nominated for a Grammy Award in the Best Engineered, Classical, category for *Monteverdi: Il Ritorno d’Ulisse in Patria*, performed by Martin Pearlman, Jennifer Rivera, Fernando Guimarães, and Boston Baroque. Needless to say, Bishop knows more than a thing or two about recording a wide variety of “classical” acoustic instruments. Michael was kind enough to let me pick his brain for tips on recording string instruments, and advice for what to do when you’re confined to recording in a tight space.



With Michael Bishop

Bishop recently finished recording *Hand Eye*, the new project from eighth blackbird (released by Cedille Records), a contemporary chamber music group (eighthblackbird.org). The dynamics of the group's performance presented challenges similar to those facing anyone recording strings (or other acoustic instruments) in a small space. Ambient noise levels can be one of those challenges.

"We recorded *Hand Eye* at IV Lab Studios in Chicago," Bishop explains. "It's a nice sounding, small-to-medium size live room with a well-equipped control room. In the hallway leading to the studio is a rack containing the power supply and computer for the SSL 4000 in the control room, and there's a single door between that hallway and the studio. The cooling in the rack produces noise that—under normal circumstances, with electric instruments—you won't hear, but with eighth blackbird I'm dealing with piano, percussion, violin, cello, clarinet, and flute. The dynamics of the compositions are extremely wide, ranging from *pppp* (super quiet) to *ffff* (extremely loud), and noise from that rack was a problem. The studio had some large gobos that I used to make a labyrinth at the doorway that people had

to go through to get into the studio. I draped packing blankets over the gobos to help absorb sound, and the right angles helped reduce transmission of noise from the rack. We made sure that when the last person went into the studio, they locked the door behind them to create a good seal."

Given the current state of recording equipment, a studio can be set up just about anywhere, but Bishop stresses that "sometimes noise can be a deal-breaker when choosing a recording location. Outside traffic noise is really difficult to control and would rule out the ability to work in a particular location if the dynamics of the music are too wide," he says. "I have gone into studios that otherwise looked like really nice places to work; they have it together technically but they are sitting right next to a freeway, and you can hear the truck traffic constantly going by. If you're recording an instrument that is all electronic or amplified, it makes no difference—but I am often dealing with acoustic instruments and wide dynamic range, ruling out such places. You really can only get a nice, full tone by putting some air between the instrument and the microphone. When you do that, you start sucking up ambience—and that includes noise."

Jamming a microphone right up against a violin is definitely not the way to go. When asked how far he'd prefer to place a microphone from a violin or viola, Bishop replies, "It depends upon the size of the room. Placement would be very different on a stage versus a studio. One thing that always drives me crazy when listening to an acoustic instrument is if you hear that it was recorded in a small room but someone added reverb to try and make it sound like it was recorded in a big room or on a stage. That doesn't make sense to me. It's contrary to what I expect to hear. The musician is jammed into this small room, the microphone is really close and it sounds like it's really close. You hear the small room but then you get this long reverb on it. Clearly, the long reverb is completely fake. You're not getting the tone that you would get with an acoustic instrument in a bigger space."

"The room contributes to a string player's tone. The more wood and room sound around the musician, the better the end result. The room can do much of the work for you in getting the tone from that instrument, and it will help the musician greatly. Any violin or cello player was trained to work with the room to help create their sound,

and the sound of that instrument is not what is heard up-close. It is the sum of the direct sound of the instrument plus the reflected sound from the surrounding space. That is what produces the sound of an acoustic instrument.”

Space is clearly on our side when recording classical instruments. Bishop explains that it's ideal to have six to twelve feet between the violin and a spotlight mic. “On a stage or in a larger room you also want to have a few microphones, or a single stereo mic, for ambient pickup ten to 15 feet from the instrument; and maybe a good ten to twelve feet above the floor. In that instance, noise becomes a really big issue because now you are getting a picture of everything, including the background noise. If background noise is too high, you may have to resort to being closer to the instrument than you'd really like, and that would change your selection of microphone.”

Space for Strings Bishop's tips for placing players in the room

“There's usually a magic spot on any stage or in any room where the combination of direct and reflected sound come together. Anybody who is playing a string instrument is hearing the space around them and that affects their dynamics and performance. That's their feedback loop. You want the musician in the spot that is most conducive to their performance, and then place your microphone(s) to capture that. I'll sometimes try to create such a sweet spot by use of reflecting (rather than absorbing) gobos. I let the musician get comfortable and positioned for how they want to perform, and then come to them with my mic placement.

“A highly experienced violinist, for example, knows how their instrument will sound to a listener. They know that what they hear from the violin next to their ear doesn't resemble anything like what the rest of us hear. They know what they are putting out in that room at some distance, and that's what they want for their recorded sound—if they are sensible(!). I have worked with less-experienced instrumentalists who think that the sound of the violin they get right next to their ear is what everyone else should hear. And that usually isn't anyone else's idea of a good sound. That can be a difficult situation, but the sound also needs to be music-appropriate. Celtic violin is typically closer and brighter sounding than a classical-style violin. The violin for eighth blackbird varies between a very close, aggressive sound to a beautiful sound with bloom and tone—so adjustments have to be made depending upon the intention. Having a good conversation with the instrumentalist and how their instrument is going to be used in the recording will make it easier to mix. Get it captured the way they intended in the first place, instead of trying to impose something on it later that might be difficult to impose. I'd rather make musical choices at the recording stage and trust my intuition on the spot, as opposed to making those choices later.”

And what sort of microphones does Bishop prefer? “An omnidirectional or subcardioid condenser would probably be suitable for distant miking because the sound has blended in the room and you're getting the sum total of that sound with the condenser mic,” he explains. “When I have to place the microphone closer I tend to use a ribbon microphone because working close with a ribbon mic won't get as brutal-sounding as a condenser mic can sound. A condenser microphone close-up on a string instrument isn't a very good combination for my taste. I'd rather take a high-quality ribbon mic such as an AEA or a Royer, go in close, and deal with the proximity effect by tailoring the bottom end just a little bit” (*Editor's note: Proximity effect is the increase in bass response resulting when a directional microphone is moved close to a sound source.*)

“Sometimes proximity effect provides a little ‘oomph’ to the body, and the musicians tend to like

that, but ribbon mics are also very conducive to having the top end equalized to bring out a little more air than what might ordinarily be heard. Ribbons typically drop off pretty quickly on the top end (i.e. most ribbon transducers have an inherent high-frequency rolloff), and a ribbon transducer just seems to be more compatible with acoustic instruments than a condenser capsule. There's something about a ribbon that sounds more like what the instrument produces when you're standing right next to it. You can get a perfectly good sound using a condenser mic, but it takes a lot more work.”

For the *Hand Eye* sessions, Bishop used AEA R84 (passive) and AEA A840 (active) ribbon microphones through AEA RPQ mic preamp/EQs. The R84s recorded the violin and cello, while the A840s were used to capture reeds and flute. The inherent figure-eight pickup pattern of the microphones gave him a way to manage unwanted leakage from nearby instruments.” (See sidebar on page 66 for a session photo and list of microphones used on the percussion instruments.)

“At IV Labs I made good use of the studio's wood floor,” Bishop continues. “We had gobos with a wood side and an absorbing side set between the piano and the quartet. I faced the wood side toward the strings to keep their area fairly live. Working in IV Labs was a challenge due to the overall size of the room. We had way too many musicians for that size room and the setup needed to accommodate both piano and substantial percussion instruments. I had to place microphones very close to the instruments. My decision to use ribbons was both for tonal reasons and knowing that I could take advantage of the figure-eight pattern. The instruments were in really close proximity of one another and I needed control over each one. Working with the null of the figure-eight pattern was very important in being able to isolate instruments from each other in tight quarters. A ribbon mic has the null points to the sides 90 degrees off-axis, and pickup from the sides can be 90 dB down relative to on-axis pickup. I tried to orient the pattern so that the instrument I wanted from a particular mic was on-axis, but also so that the null faced the adjacent instrument that I didn't want bleeding into the mic.

Bishop added that some reflections reach the microphone on-axis but they are fairly minimal. “At the same time I had three Sanken CO100K omnidirectional microphones on the piano, again working in pretty closely. You can do that with omnis and not get a clustered sound or proximity effect. (*Most omnidirectional microphones exhibit little, if any, proximity effect* –Ed.) If I jam three cardioid microphones into a piano, it gets really claustrophobic-sounding. I don't like that sound. I like a more open sound. Omni mics—particularly the Sanken CO100K condenser mics—can be placed very close without making it sound like you



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eighth blackbird's Percussion Setup

Vibes: a stereo pair of Royer R121 ribbons

Concert bass drum: Sanken C0100K, AKG D112, and Yamaha SubKick

Cymbals, glockenspiel, snare drums, mounted toms, bells, woodblocks: Shure SM57, Sennheiser MKH800 in omni, cardioid, and figure-eight patterns as needed; DPA 4011 cardioid; Royer SF12 stereo ribbon

Kick drum: AKG D112 and Yamaha SubKick

have your head next to the hammers.

"In regards to preamps, I always choose microphone preamps for their ability to transparently amplify a mic signal. That's why I typically use Millennia Media, UpState Audio, GML, AEA, and Integer Audio preamps, among other top-quality microphone preamps, Bishop explains. "I never look to the mic preamp for 'color.' If I want to change color or tone, I'll change the microphone, its relative position, or use some other electronics and/or plug-in after the preamp. I like to make choices right then and there at the session regarding what I'll record and how it will work in the final mix. The AEA RPQ is an excellent preamp because I have the flexibility of running inputs with phantom or not, and it has high- and low-end contour controls. If I have to work a ribbon in really closely I can use the low contour control to dial down a bit of the proximity effect, or I could add in some air using the high-end contour. In this kind of setup I'll go straight from the preamp to the A/D and not add any compression, though in other contexts I'll add a bit of compression during the recording process.

"For example, when I work with (cellist) Zuill Bailey I'll typically use an AEA R88 stereo ribbon microphone paired with the Integer Audio ribbon microphone preamp, with the mic six to eight feet away from the instrument for the main pickup,"

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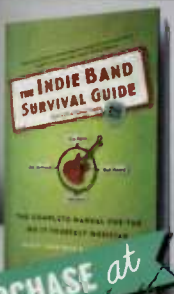
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eighth blackbird in the studio.

says Bishop. "Then I'll add a couple of Sanken CO100K omni mics as outriggers to the R88 to provide the overall air and space that I need. The Sanken omni mics have a rising high-frequency response on-axis that I can use to dial in some top end because high frequencies attenuate across distance. The farther the sound travels, the more the top end attenuates. Ribbon mics droop on the top end to begin with, and I'll want to counteract that a little bit. The Integer Audio and RPQ preamps have such low self-noise that you have the freedom to bring up the top end as needed without

bringing up self-noise. There again a quality tool makes the difference, where the impedance of the preamp loads the ribbon correctly and amplifies what is essentially a very difficult signal to deal with. Try to do that with an ordinary board preamp and you'll get an awful lot of noise."

According to Bishop, anticipating the mix process is a valuable skill to possess during the recording process. "I usually track to DSD for most of my recordings, but I knew that eighth blackbird would be highly manipulated at the mix stage due to the contemporary nature of the compositions

and what the group was talking about regarding the end product. Some of those selections had upwards of 48 tracks in Pro Tools... a lot of percussion and miscellaneous parts called for by the composers. To maintain flexibility in the mix stage, some of those parts had to be done as overdubs so that we'd have extreme control over them and would be able to manipulate them. The composers intended that recording technology would be employed as part of the composition. It may not literally be what is happening on stage, whether it's an orchestra, a string quartet, or whatever—but I put together a picture of what the musicians wish to convey to the listener. I don't usually make 'documentary' recordings."

Bishop admits that dealing with a less-than-ideal room is a balancing act of capturing the right detail, warmth, and tone. "You have to know every aspect of your tools," he advises. "Having a very high-quality ribbon or condenser microphone can help you in what might otherwise be a crummy situation, but you can take a mediocre microphone and make it sound really good by playing up to its strengths and avoiding its weaknesses. Don't just think, 'well I'm going to put this mic here and deal with it in the mix,' because by that point your hands are tied. Find the sweet spots and the tools that work best for your given situation. It makes a difference in the end." ■

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Fig. 1. Indie artists Pomplamoose gained fame through their offbeat covers. Their version of Beyoncé's "Single Ladies" earned more than ten million views.

Be a Smart Music Marketer

10 ways to maximize sales and streams of your latest release

BY RANDY CHERTKOW AND JASON FEEHAN

There's a lot to do when you release your music: Distribute it, promote it, get it heard, and get it sold. Using the right strategies, you can maximize revenue and sales and make the most out of how music buyers use digital sales platforms. Plan your next release around these 10 techniques:

INCLUDE A COVER SONG

Most listeners of streaming services or customers of digital stores search for music that they like. Leverage this behavior by recording a cover of a well-known song. This can boost your sales since people will often listen to cover versions of the songs they are searching for, and if they like the cover, they often check out the rest of the music from that artist. Keep in mind that if you choose to record a cover, you need to clear the rights with the publisher or through services like the Harry Fox Agency.

not use *trademarked* words in your title. This could make movie titles or names of sport franchises (think "Superbowl") off limits.

CREATE STRIKING COVER ART

Browsing a streaming service or digital music store is as much a visual experience as it is about the sound. People will see your record before they get a chance to hear it. If you can make a design that stands out next to the other albums on the store, you'll improve your chances of getting your music streamed or purchased.

USE WELL-KNOWN SONG TITLES

If you don't want to record a cover song, try giving your track a similar title to other well-known songs or common search phrases. Since song titles can't be copyrighted, you can legitimately name your song "Freebird" if you'd like. The only exception to this is you can-

LINK CUSTOMERS TO MUSIC STORES THAT THEY ALREADY TRUST

Lead with links to stores where your customers likely already trust their credit cards—such as iTunes and Amazon—making it more of an impulse purchase. Although you should also use stores that might give you a bigger cut, custom-



Fig. 2. Getting placement on a big Spotify playlist can put your music in the ears of legions of potential fans: Spotify's "Today's Top Hits" playlist, for example, reaches more than six million subscribers.

ers are unlikely to type in their name, address, and credit card information simply to buy a \$0.99 track.

BUILD SMART KEYWORDS IN ALBUM

TRACK DESCRIPTIONS

Make the most of your album/track descriptions by using keywords that customers are familiar with. First of all, always mention the genre of music that you play and your catchphrase if it helps describe the music ("hip-hop rockabilly madness," "modern vintage"). Also, if the platform will let you, list other well-known artists that you sound like so you can piggyback on their notoriety. Lastly, if there are terms, topics, or lyrics in your song that touch on a cause or topic your fanbase relates to, add that to the description. These could trigger a play or purchase.

USE AFFILIATE LINKS

Enroll in affiliate programs at digital music platforms like iTunes and Amazon and use the affiliate links instead of the regular links to your tracks and albums. This will allow you to get an extra cut on the front end of the sale in addition to what you already get on the back end when you send people to these stores. There's another advantage: They'll give you a percentage cut of anything that the visitor ends up buying. This means that you can also make affiliate links to other music, media, or even consumer items if you end up talking about them.

USE QUOTES FROM JOURNALISTIC REVIEWS AND ADD FAN REVIEWS

People want to see what journalistic outlets think of your music. Think Hollywood: Add quotes from positive music reviews in your descriptions, websites, and digital stores. Also, encourage your fans to post reviews. These ratings can be influential, so ask your fans to post reviews to seed this section when you release the album.

DRIVE A "GET HEARD" CAMPAIGN TO CAPTURE LISTENERS

Once your music is available for sale or stream, get it played in places where people are listening. These channels include MP3 blogs, podcasts, college radio, streaming radio, uncountable music websites, and more. A play can drive other platforms to get interested in your music, so when you succeed in one place, reach out to others and tell them about other listeners who played you as social proof to increase your odds of being played.

GET ON STREAMING PLAYLISTS

Streaming platforms are social networks centered on music and playlists. For example, Spo-

tify allows anyone to make playlists and some are incredibly popular. Find the most popular playlists that fit your music and contact the owner about adding your track. If you can get added to these playlists, you'll generate more streams (and payments) and get into the ears of new fans. This work may only result in a small amount of money at first, but builds over time since songs on a playlist tend to stay on it.

PROMOTE YOUR MUSIC VIA VIDEO

Videos allow people to sample your music as well as easily share it with others. In the video description, provide the (affiliate) link where they

can buy the music. On YouTube, include the link as an annotation/hotspot on the video as well. To boost your sales, include pre-roll or post-roll audio that's different from the song you're selling, since it's so easy to download audio from a YouTube video. This gives fans an incentive to buy the track.

Maximizing sales requires a combination of marketing and continual effort. So you'll want to capitalize on any success such as reviews, interviews, or song plays, and use these wins to reach out to build more opportunities. Each success can give you a larger platform to promote your music, all while generating revenue. ■

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An incredible amount of engineering was required to bring the Retina display to the iMac family. Witness a design that's just 5 mm at its edge — yet entirely capable of making everything around you fade into the distance. This ensures that nothing gets between you and your favorite content. Seamless and beautiful, iMac with Retina display is an elegant addition to your MOTU studio, representing a depth of technology at the height of design.



MOTU Stage-B16 Stage box. Interface. Mixer.

Stage-B16's sixteen studio-grade mic inputs are equally well suited for both stage and studio. Place it up to 100 meters from your console or computer using an affordable, standard Ethernet cable. Use the Stage-B16 as a rack-mount mixer and control your entire mix from your iPad. As a stage box, mixer or audio interface, the Stage-B16 delivers superb sound.

Eventide Anthology X The best Eventide effects in one bundle

Seventeen mixing, mastering and multi-effect plug-ins based on 40 years of Eventide studio mainstays like the H910, H949, H3000 Factory, Band Delay, and Omnipressor. Includes future classics like UltraChannel, UltraReverb, Quadravox and Octavox. A true must-have for any size studio.



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Zynaptiq UNMIX::DRUMS

Boost or attenuate drums in mixed music

UNMIX::DRUMS is the world's first audio plugin that lets you attenuate or boost drums in mixed music, in real-time. Using advanced source signal separation technology, boost drums by +18 dB or practically remove them completely, either on a full mix or on a drum bus. Shape and enhance the impact of your drums like never before. UNMIX::DRUMS opens up exciting new options for mastering, music production, sample-based music creation, mash-ups, remixes and DJ sets.

Shure KSM44A

Multi-Pattern Dual Diaphragm Microphone

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Mackie Reach 720W Portable PA System

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Brian Kraft

The Recording Connection's chief academic officer talks about the evolution of apprentice-based education.



BY SARAH JONES

Becoming a successful audio engineer is not easy. Mastery of the skillset is a given; you'll also need extensive hands-on experience, and you'll need to cultivate industry relationships early on. Aspiring engineers can choose from educational paths ranging from focused trade programs to graduate degree programs, each offering unique benefits.

The Recording Connection focuses on the mentorship angle, placing students in one-on-one apprenticeships with working engineers. The school's chief academic officer, Brian Kraft, is a passionate advocate for learning from professionals, in the studio, to get ahead.

How does the Recording Connection's program concept differ from other recording programs?

RC abandoned the overcrowded trade school classroom for the recording studio and the music production room. We take our students and turn them into apprentices who learn in real recording studios from working with "relevant-today" music producers and engineers. We believe that the best way to learn is one-on-one from a legendary music creator or music producer in his

or her production room. We believe in private training at the student's pace, one on one.

How has the recording apprenticeship changed with the evolution of affordable, accessible project studio technology?

As technology makes music creation more accessible, more apprentices look to our model to train them. Bringing in more apprentices means we had to bring in more mentors to train them. We now have thousands of creators, composers, musicians, and producers teaching for us.

You have an interesting video series coming up—tell me about that.

DJ Iz has been on tour and in the studio with Usher for the past 4 years. Iz is a songwriter, a renowned session player, and a touring DJ.

We were having coffee one day and I said, "With all the people we know and all the people you know, we could get the best young talent out there jobs as musicians, engineers, and producers with a few phone calls." These are the types of jobs that never get posted on Craigslist or any site because they are filled in a matter of minutes by insiders like Iz.

So I said, "Why don't we start a weekly show and give insider information about these up-and-coming jobs and give them away online and may the best man or woman win the job!" It's like opening up previously unpublished work opportunities in music and film to the world. He flipped for the idea.

The show is called "Connected" because if you listen in, you will be connected to the best new job opportunities in the music and film businesses. We will also feature some killer artists talking about their craft.

How can graduates of apprenticeship programs market their "skillsets"—that balance of real-world experience and a solid understanding of the fundamentals—to potential employers?

Real-world experience is the number one thing a producer or employer cares about. What have you done, who can I call to verify, and how are you going to make me look good if I hire you? Can you get it done? Graduates of programs with no real-world experience are at a serious disadvantage.

Knowing a DAW or how to make beats is not going to get you hired 99 percent of the time. I don't mean to be harsh, but I'm tired of seeing kids get \$50 to \$100k in debt over this lie.

What are the biggest career challenges facing students today versus, say, ten years ago?

More people, more competition. Period. Look, to make it today, it's not about what you know or even who you know. It's about who knows you. If you were a genius songwriter, producer, or musician 30 years ago, and you were hardworking, you had a better chance of getting discovered and signed or hired. That's not true today. Today there are more of you out there. So you have to be a better business person than your competition. You have to have deep connections and a lot of them. You have to be in the room when an executive says, "We need a beat for the x new record." Or when a manager says, "We need a runner for our studio"; or you need to be in the studio when a famous artist walks in or a well-known producer needs an assistant. If you're not in that room, you will never get hired.

So you fight and win this battle by placing yourself inside the right rooms by making your classroom a recording studio where real-world opportunities happen. ■



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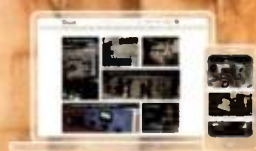
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