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> *STRANGE*
LITTLE BIRDS
SESSIONS



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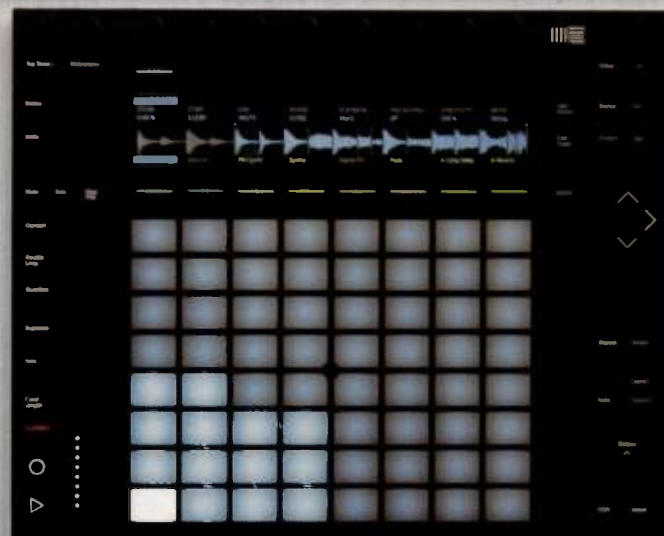
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Paul Burch



JEAN-MICHEL JARRE
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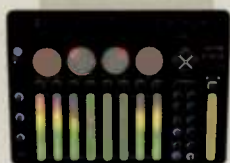
New releases from Beth Orton, Delorean, Kvelertak, and more!



GARBAGE

Strange Little Birds, according to Garbage frontwoman Shirley Manson, is a re-investigation of themes explored on the band's smash self-titled 1995 debut: "We wanted to hear dark, cinematic sounds. We yearned for the sound that we're not hearing much these days." We go inside the tracking sessions.

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insight

A Common Thread

AT FIRST glance, the artists we profile this month could not be more different.

There's Garbage, with their electrifying, guitar-driven alt-rock, led by the fierce, defiant vocals of frontwoman Shirley Manson. Then there's French composer Jean-Michel Jarre, with his conceptual, cerebral, ambient electronica.

But of course, they have a lot in common. You could say that musically, there's an emphasis on dark, cinematic sounds, on synthesizers and

textures as song elements. There's also blurring of the lines between artist and instrument, songwriting and recording.

But it's the big picture that matters more here: These artists make a point to acknowledge the influence of their musical heroes, yet remain true to their own identity.

Decades into their careers, they're still curious, with a burning desire to experiment. As Shirley Manson says, "We yearned for a sound we're not

hearing much these days."

And they're each a little anti-establishment in their own way: Nobody is telling these folks how to make records.

By now this might be sounding a little effusive, but the point is, these are the traits of successful artists. And they're reminders of the traits we hope to inspire in our readers.

We'd like to know where you find new inspiration. Tell us at ElectronicMusician@musicplayer.com.



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sjones@musicplayer.com

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>> Paul Burch's *Meridian Rising*

THE LATEST release from Nashville-based roots artist/recording Paul Burch is *Meridian Rising*: a clever and beautifully crafted concept album that imagines the life of country legend Jimmie Rodgers (1897-1933). "Years ago, I heard a recording that Jimmie made with the blues guitarist Clifford Gibson," Burch recalls. "It was a version of 'Let Me Be Your Sidetrack' that was unreleased in Jimmie's time. I just loved it, and the more I thought about it, the more I thought about Jimmie's life as a musician and how it would be a lot of fun to write from his point of view."

It's an exercise musicians use often, on some level: write or play a new song in the style they imagine their heroes might. In Burch's case, he was inspired to create an album of period-correct original songs, which he then recorded with some of his favorite musicians, in his personal studio, Pan American Sound. Recording to an MCI 1-inch 8-track analog tape machine, the artist committed to an era-specific sound to tell his stories—not via antique audio gear, but by recording live, using the room and all acoustic, carefully chosen instruments.

"I didn't give much thought to stressing a 'vintage' sound," Burch explains. "I did give thought to limiting the choice of instrumentation to the time period, but that actually opened up my imagination to brass and woodwinds. But for the basic tracking, virtually everything was cut with drums, upright bass, and acoustic guitar. If the piano player could make it—Jen Gunderman, who also plays with Sheryl Crow—she was there, too."

"There's one song called 'Cadillacin',' which sounds like it has fuzz guitar, but it's actually an acoustic guitar through a Placid Audio Copperphone mic," Burch says. "That mic [is designed to] give everything a telephone-like sound, but if you play a guitar through it, it sounds like a fuzz guitar, and that's an example of something where I had to ask, 'How do I get some funky sounds without breaking the No Electric rule?'"

"When we would go for a cut, I would sing really softly in the room but not on the mic—kind of whispering-singing, just so they could hear my phrasing," Burch continues. "Jen likes to make charts, but mostly everybody else was going by head arrangements. The idea was, the band would record live and I would listen back to it and sing along to the playback and make sure I could get my phrasing the way I wanted it."

Burch's vocals were mainly captured via a Neumann U87. "But the la-



From left, in Pan American Sound: Fats Kaplin (fiddle), co-producer Dennis Crouch (upright bass), artist/producer Paul Burch (vocals/acoustic guitar), Justin Amaral (drums).

bel, Plowboy Records is owned by the grandson of Eddie Arnold, and we did have Eddie Arnold's RCA 44 around the studio. We used that some for voice; we also used that in front of the drums to pick up the sound of the kit," Burch says.

"In general, I tended to use a combination of small mics on everything. I have a 57 with the old Mercenary Audio transformer mod, an SM7—mostly conventional mics."

Burch recorded the tracks while simultaneously leading the band except for "To Paris," which was recorded by David Leonard. "David was so helpful; when I explained to him how we like to record, he said [we should] get really close together to have as little delay in the room as possible. I might have wanted to record everything in a really wide open space, because Jimmie's voice always seems very wide open, but he said, 'You want different soundscapes because, if everything's wide open, things are going to compete with each other.'"

Leonard—whose engineering and production credits include Prince, Heart, Toto, Dwight Yoakam, and k.d. lang, to name a few—kindly built waist-high baffles for Burch and his band. "The stylistic approach was everybody in the room playing live with close mics or spot mics on them, but basically the AEA and RCA ribbons in the room picking up the entirety," Leonard says. "That way, the bleed between the mics would be good bleed."



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ANALOG QUADRAPHONIC AUDIO MIXER, PANNER, AND VCA

BY GINO ROBAIR

While quad panning is very exciting, it requires a module-intensive setup. For this reason, I've always been attracted to the integrated 4-channel spatialization capabilities of the Buchla System Interface Model 227e. However, that module is expensive and has other, unrelated features (mic preamp, EQ, etc.).

KOMA Elektronik has come to the rescue with the Poltergeist (\$849), a 4-channel analog mixer that offers both stereo and quad panning capabilities in a single, 28HP Eurorack module. Each of the four channels has its own audio input with gain control, click-free solo and mute buttons, CV inputs for panning, and VCA (with an attenuverter and attenuator, respectively), and a master knob to set the panning range between the speakers. A pair of Aux inputs, without input gain controls, is also onboard.

All of the audio inputs are controlled by the Master Gain knob and associated CV input, which ducks the output level as the incoming voltage increases. The Poltergeist's CV inputs accept 0-8V signals.

It has four 3.5mm master-output jacks: In stereo mode, the two jacks on the left are assigned to the left channel, while the others go to the right; in quad mode, the four outputs can be assigned to individual speakers.

The length of time a signal remains in its panned position is set using the global Slope control. Turn it fully counter-clockwise to get a peaked shape, so the sound ducks as it moves between speakers. Turn the knob clockwise and the signals stay longer in each position, creating a smoother transition between speakers. You also have voltage control over the slope's shape.

The global Origin control is used to tilt the pan-

ning of the channels away from their individual paths. Origin has a master CV input with an attenuator, and each channel has a bipolar attenuverter to set the amount of positive or inverse tilt. This allowed me to alternate the panning of two input signals in different directions using a joy-

stick patched to the Origin's CV input and setting the individual channels' Origin knobs at opposing levels.

Each channel also has a Field knob, which introduces a phase-inverted version of an audio input to the main mix outs (post VCA). When panning with Field turned up, the target speaker is silent due to phase cancellation, and the input sound is heard from the other speakers: The manual refers to this as the Field Ghosting Effect.

The Poltergeist's full panning range is traversed as a control voltage goes from 0 to +8V. It starts at the lower left output at 0, reaches the lower right output by 6V, then jumps back to the lower left at 8V. This allows you to pan in circles using an upward ramping sawtooth and the Pan's attenuverter to set the direction. (If you hear a click when the sawtooth goes back to zero, adjust the Slope control to smooth it out.) Careful adjustment of the pan's attenuverter will help smooth out the circular rhythm, to avoid hearing the lower left output twice (at the beginning and at the end of the cycle).

But that's a minor issue once you discover the joy of moving four discrete sounds around the room using the Poltergeist. Moreover, the interface is easy to grok, making it suitable for live performance: Ever in the heat of a gig, it's easy to remember what everything does. And although the Poltergeist isn't cheap, you definitely get what you pay for. ■

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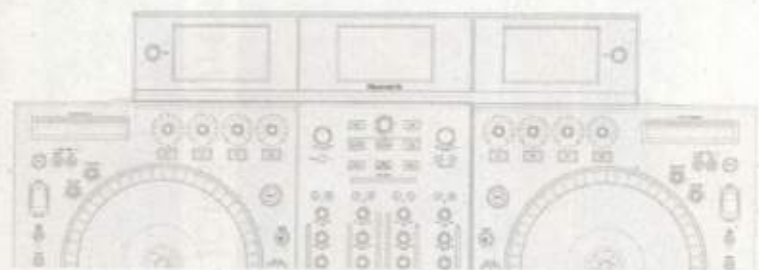
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DJ Controllers

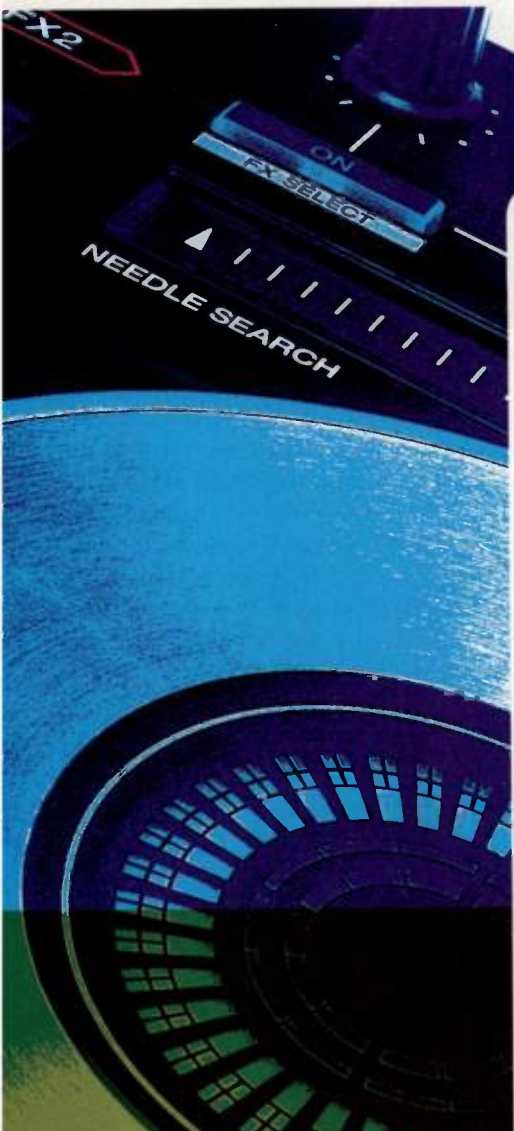
Big and Small

As the definition of DJing expands both toward the simpler and more complex, so do the sizes and purposes of DJ controllers. We offer a guide to the largest and littlest ends of the spectrum.

BY MARKKUS ROVITO

We love DJing, and so do untold millions of electronic music fans worldwide. More than ever, as the popularity of dance music and DJing expands, so does the definition of DJing, both for the better and worse. DJing can mean hitting Play on an iTunes playlist or some software with an auto-mix function. But it can also mean artfully and improvisationally mixing multistemmed files on four or more decks, or creating audio pastiches of hundreds or thousands of loops and fragments resulting in a unique experience that will never be repeated.





Most of the time, DJing still lands in the middle ground of those extremes, like it has for decades. Partly for that reason, the basic performance elements of DJ equipment tend to evolve slowly or not at all. Inventive DJs can still be endlessly creative with different configurations of those elements. So for this roundup, it seemed to us that the most interesting developments in DJ controllers involved the advancing technology and packaging strategies of the relatively standard DJ tools.

On the one hand, you have massive, all-encompassing DJ controllers that provide one-to-one hardware-to-software controls—and the more innovative, the merrier. Many of these units have adopted the growing trend of offloading the software display from the laptop to ever larger and/or more detailed color screens built into the controllers themselves. This helps the DJ avoid the dreaded “Serato stare”—that glazed-over focus on the laptop rather than looking at the audience.

The other trend that is creeping into these mega-controllers disconnects them from the laptop entirely, where the controller itself houses sophisticated internal software and the DJ pulls music off of flash USB drives, the way that club DJs on high-end media players have been doing for quite some time.

On the other hand, there is a thriving market for smaller DJ controllers that cater to ultra-portable setups and/or a piecemeal approach to creating a DJ rig, where you can mix and match modular units and add-on controllers, and where quite a few of the units have mobile device compatibility at the forefront.

In this article, we focus on both sizes, while noting that there is a wide variety of small-format, general-use MIDI controllers out there. Any one of them—particularly the many drum-pad and button-grid controllers—could be configured to be indispensable with your DJ software. However, because of space constraints, we’re focusing on units built for DJ-specific use.

The Big Boss Units

PIONEER DDJ-RZ AND DDJ-SZ

PIONEERDJ.COM | \$1,999 STREET, EACH

Pioneer’s two flagship controller behemoths closely resemble each other, with the biggest differences being that the DDJ-RZ is optimized for Pioneer’s own Rekordbox DJ software, while the DDJ-SZ is optimized for Serato DJ. Both units include full licenses for their respective software.

With DJ controllers, bigger does not necessarily mean better, but these two monsters make a compelling argument for that. They measure 34.3-by-16.5-by-3.9-inches and differ slightly in weight, but tip the scales at about 23 lbs. That means it would be challenging but not impossible to take these with you to gigs. Rather, these controllers can act as excellent at-home stand-ins for the high-end industry standard club gear that Pioneer also makes; the CDJ-2000NXS media player and three models of 4-channel DJM mixers, which would cost in the area of \$5,000 (depending on the mixer) if you tried to replicate it at home.

These DDJs do an expert job at mimicking the 4-channel layout, controls and feel of Pioneer’s pro club setups while also mirroring the controls of the DJ software they’re optimized for. They have the same 8.1-inch aluminum jog wheels found on CDJ units, and the same high-end Magvel crossfader with adjustable curves as found in the DJM-900SRT mixer. So these have a great, professional feel whether you’re a scratch DJ or not. The jog wheels also illuminate different colors for decks 1/2 and decks 3/4, making it easier to recall which deck in the software is active on the hardware decks.



Pioneer DDJ-RZ



Pioneer DDJ-SZ



Numark NS7III

These units also pile on high-end goodies rarely found on DJ controllers. The mixer section houses two hardware effects units: the Oscillator section has Noise, Cymbal, Siren, and Horn; whereas the Sound Color effects are Echo, Jet, Pitch, and Filter. With two USB ports and two separate 24-bit soundcards, two DJs can plug in their computers and use the controllers at the same time, meaning they could tag-team DJ or just transition into the next set without stopping the music—a huge plus for installing the unit in a bar or club for permanent use. There are 10 audio inputs and outputs including CD/line and phono ins that support DVS timecode functionality, as well as two mic inputs, two headphone outs, and three stereo out pairs, including XLR master output.

As the DDJ-RZ is the newer model, it has some extra oomph that the DDJ-SZ does not, such as a Sequencer section on each deck that lets you record, play and loop pad routines on-the-fly, and the DDJ-RZ's Oscillator section also works as a sample effect to trigger and manipulate Rekordbox DJ sample banks.

NUMARK NS7III

NUMARK.COM | \$1,499 STREET

For vinyl purists who love the incomparable feel of spinning with vinyl but still want the convenience and slick performance features of a controller, Numark has continued to build out its series of gargantuan and uncompromising turntable-style flagship controllers with the NS7III.

The biggest difference from its predecessor, the NS7II, is the addition of the high-resolution 3-screen bar positioned at an upward angle from the front panel for comfortable viewing. For each side of the four-deck, four-channel controller, the 4.3-inch screens show different views of the included Serato DJ software decks, and shows the full track library or scrolling colored waveforms in the center screen. That lets you put your connected laptop out of sight and out of mind.

And like its predecessors, the NS7III's full direct-drive motorized platters feature 7-inch real control-vinyl pieces on top. Manipulating tracks feels entirely similar to using a professional DJ turntable, complete with motor torque adjustment, Start and Stop Time adjustment, and reverse play. The platters also send super high-res MIDI



Pioneer XDJ-RX

with 3,600 ticks per revolution. All the internal turntable mechanics, metal casing, and display unit add a lot of weight, but Numark still managed to make the 31.6 lb. NS7III about 4 lb. lighter than the NS7II. As expected, it's still a large footprint at 29.8-by-24.7-by-4.2 inches.

The NS7III's 29 capacitive touch-sensitive knobs add new performance dimensions for the per-channel filter, gain, EQ and effects, and the 16 Akai Pro MPC pads offer improved backlighting for handling their five performance modes. There are also five dedicated Hot Cue buttons on each deck, so you can jump to different cue points while reserving the pads for sample triggering, looping, slicing, and so forth.

The mixer section can be used standalone (without a computer) and includes four stereo inputs for CD players, turntables, MP3 players, etc., along with two mic inputs, two headphone outs, and separate Booth (RCA) and Master (RCA or XLR) outputs.

PIONEER XDJ-RX

PIONEERDJ.COM | \$1,499 STREET

While the above Pioneer DDJ-RZ and DDJ-SZ mimic a professional Pioneer club DJ booth setup, and the above Numark NS7III lets you set the laptop aside and use its displays, the Pioneer XDJ-RX attempts to do both, except that it runs on its own internal software and requires no laptop at all.

There have been plenty of other all-in-one DJ systems that ran off their own internal system without a laptop, but we've never seen a really great one until now. The Pioneer DJ XDJ-RX 2-channel mixer and 2-deck unit adds an angled panel with a 7-inch, full-color LCD and dedicated button controls for displaying the internal Pioneer Rekordbox software. The display is large enough to show info from both decks at once, including waveforms, BPM, beat grids, and Hot Cue info. It also shows the full music library coming from either connected USB sticks and drives or WiFi-connected computers, smartphones, and tablets.

The XDJ-RX's audio circuitry and quality are borrowed from Pioneer's higher-end club gear, as are the layout and operation. It approximates the more expensive CDJ-2000Nexus and XDJ-1000 music players and DJM Series mixers that dominate clubs and festivals worldwide, so you can get



Denon DJ MCX8000

used to playing on that kind of system using the XDJ-RX at home or on others' gigs and be ready to step up to those systems when the time comes.

The XDJ-RX also uses the same Rekordbox file prep software that the pro Pioneer gear uses and has four illuminated pads per deck for triggering cue points, loop, and Loop Slice mode. Slip Mode keep the track playing silently in the background so you can improvise on the pads, or scratch and reverse the jog wheels, and then pick up the song at exactly the right place.

DENON DJ MCX8000

DENONDJ.COM | \$1,299 STREET

The newest entry into the do-it-all monster DJ controller market has one of the most comprehensive features sets at the lowest street price. It seems that Denon paid attention to what was out there, picked and chose the best of the best features, and wrapped it all up into the 4-deck/4-channel MCX8000. The company also managed to fit it into a relatively slim package weighing 18.4 lbs. and measuring 28.7-by-17-by-2.8 inches.

The main thing that sets the MCX8000 apart is that it can run on 4-deck Serato DJ software (included) from a laptop but supplemented with the two built-in high-def color displays, and it can also run standalone without a computer using Denon's Engine 1.5 software. In the latter case, you use the Engine (Mac/Win) software to prepare your music files with cue points, loops, playlist/crates, etc., put the tracks on USB sticks for the MCX8000's two top-panel USB inputs, and then mix them with the controller's internal Engine software—the best of both worlds, indeed.

It can also run Engine and Serato DJ simultaneously, so you can transition between DJs uninterrupted all from the MCX8000.

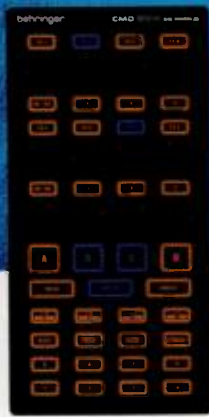
The rest of the unit is jam-packed with features. Eight multicolor pads per deck control eight performance modes, and each deck has an effects section, dedicated Beat Grid and Loop sections, track select/load controls, display controls, and a Needle Drop touch-strip. The 4-channel mixer/audio interface has one LP/HP filter per channel, two mic inputs with echo control, XLR booth, and master outputs with separate booth EQ, two headphone inputs, and four stereo inputs.



**Behringer
CMD DV-1**



**Behringer
CMD MM-1**



**Behringer
CMP PL-1**



Reloop Neon

BEHRINGER CMD DV-1, CMD MM-1, AND CMD PL-1

MUSIC.GROUP.COM |

\$79, \$99, AND \$99 STREET

This trio of Behringer MIDI modules can supplement any DJ setup that already has an audio interface included, since none of them pass audio. If you start with the CMD MM-1, you'll have a DJ-mixer style controller with an external power adapter that supplies juice to its generous 4-port powered USB hub for connecting whatever other peripherals you add. The CMD MM-1's controls can be assigned to anything but

are laid out as if they would control four MIDI channel strips with faders, four knobs each, and buttons for headphone cueing and effects-deck assignment.

The CMD PL-1 is the modular deck controller, with a 4-inch touch-sensitive jog wheel, transport buttons, pitch fader, and eight knobs and buttons well-suited for effects control, deck switching, and cue points. The CMD DV-1 is designed with specific focus on commanding multiple effects from up to four effects units, switching deck focus between four decks, triggering up to eight cue points and looping and transport controls.

All three of these controllers come with Deckadance LE software, which can be used stand-alone or as a VST plug-in.

RELOOP NEON

RELOOP.COM | \$149 STREET

Anyone rocking Serato DJ who doesn't have a lot of control over the internal SP-6 sampler, or the looping and effect controls should check out the Reloop Neon. DVS users on control vinyl/CDs or controllerists without enough pads to go around on their main controller are particularly apt to

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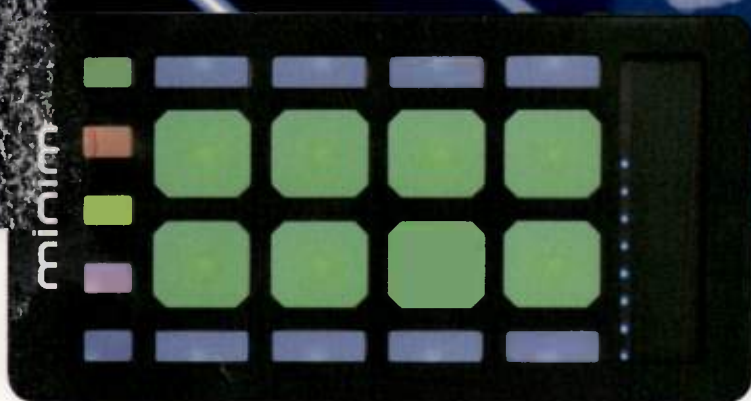
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Livid Instruments Minim

need a supplemental pad bank such as this. It does not come with the software, but it is plug-and-play Serato DJ certified, and you connect two Neons together to go into one computer USB port.

The Neon gives you up to 4-deck control over Pad FX, Slicer, Looped Slicer, cue points, Flip, Hot Loops, Loop, and Manual Loop, as well as the SP-6 sampler. The color-coded pads are velocity sensitive with Aftertouch. A dedicated Modular Stand is sold separately.

LIVID INSTRUMENTS MINIM

LIVIDINSTRUMENTS.COM |
\$129 STREET



Pioneer DJ DDJ-SPI

PIONEER DJ DDJ-SPI

PIONEERDJ.COM | \$299 STREET

Like the Reloop Neon, the Pioneer DJ DDJ-SPI serves to supplement the control needs of Serato DJ users, but it goes several steps further for the added price. It has 16 backlit performance pads, rather than eight, for all of Serato DJ's performance modes and sample triggering, but it also provides 4-deck control with deck switches. Moreover, it has two full effects sections and track browsing controls.

The DDJ-SPI doesn't come with Serato DJ software, but it does come with a download license for

The brilliant, miniature Minim works well as a MIDI controller for any Mac software or iOS app, and it works wirelessly over Bluetooth powered by an internal, rechargeable Li-ion battery. But it fits into this DJ controller roundup well because it's so portable (1 lb. and less than 7 inches wide), it doesn't require a precious USB port, and because nearly every major DJ software app has several good uses for sets of eight pads that DJ controllers don't always address. It also has other MIDI-assignable controls—13 buttons, two side switches, and a touch slider. The 3D motion control lets you change parameters just by moving the smartphone-sized Minim.

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PH50 phono stage

for moving magnet



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Eric Boulanger

'The Bakery' - Mastering Engineer
Imagine Dragons, Neil Young, Colbie Caillat, One Republic

"I installed the Hafler PH50 to the pickup of my Neumann VMS70 cutting lathe. This phono preamp is such an accurate window on the world for me and it can drive a long line with low noise effortlessly."

PH60 phono stage

for moving coil



- Phono stage for moving coil cartridge
- Ultra low noise transformerless design with 70dB gain
- Switchable high-pass filter to eliminate rumble
- Internal jumpers to match cartridge impedance
- Plug and play easy to set up and use



Chuck Ainlay

Grammy winning Engineer - Producer
Mark Knopfler, Taylor Swift, Band Perry, Eric Clapton

"My Hafler PH60 phono preamp kicks ass! I've never heard my turntable sound that good. Actually, I didn't think it was possible."



Allen and
Heath
XOne K1

Numark Dashboard



the Serato Video plug-in (\$149 value), and it has special controls for using Serato Video:

That should make it extra appealing to the growing number of DJs incorporating video into their sets.

ALLEN & HEATH XONE K1

ALLEN-HEATH.COM | \$249 STREET

For the software agnostic and customize-happy crowd, the Xone:K1 should appeal. Its ample assignable controls comprise four faders, six endless rotary encoders, 12 analog pots, and 30 three-color

switches. The layout would lend itself well to just about any DJ software, particularly Ableton Live and the Remix Deck within Traktor Pro 2. (However, Native Instruments doesn't yet allow third-party hardware to control its Stems Decks.)

The XONE:K1 connects via USB but also includes two X:Link Ethernet ports for daisy chaining MIDI and power with other X:Link-enabled controllers and mixers.

NUMARK DASHBOARD

NUMARK.COM | \$299 STREET

Remember that cool three-screen display on the Nu-

mark NS7III, I mentioned earlier? Well, Numark did a pretty smart thing in making that display bar available as a separate add-on for any Serato DJ controller, including all-in-one controllers or mixers used for DVS setups. The Dashboard has three height adjustment options and tilt control. It connects to a computer over USB but also has a convenient two-input USB hub in case you run out of ports when adding this accessory.

Many DJs find that by stashing the laptop somewhere out of the way and positioning screens like these in front of their decks, mixers, and controllers, it's not only more ergonomic, but it looks better and more natural to the audience. ■

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How Shirley Manson, Butch Vig, and crew created the cinematic, shape-shifting sounds of *Strange Little Birds*, their latest antidote to corporate rock.

BY KEN MICALLEF

What is the sound of Garbage? From the quartet's 1995 debut to its follow-up, *Version 2.0*, from the drama of *Bleed Like Me* and *Beautiful Garbage*, to their latest, *Strange Little Birds* (Stunvolume), the sound of Garbage is unmistakable: heavy saturation, noise-as-effect, measured compression, the guitars of Steve Marker and Duke Erikson mauling your brain like a mad jackal; Butch Vig's natural drums delivered with synthetic attack; synthesizers that sound like guitars that sound like electro-

shock therapy. And at the heart of it all, the lip-curling, defiant, tender, sexy, and accusatory vocals of Shirley Manson. So when the band got round to recording the successor to 2012's *Not Your Kind of People*, what did they have in mind? For Shirley Manson, only original Garbage would do.

"With this record we wanted to reinvestigate all the themes we were obsessed by on the first record," Manson says. "So we used a load of guitars. We wanted to hear dark, cinematic sounds. We yearned for the sound that we're not hearing much these days. That was the driver behind this record and why there is a connection to our debut record. Your first successful record sets the trajectory for your career. Then you want to

learn and be curious and explore different avenues. As a band we've really tried to do that. Sometimes successfully, other times to our detriment, but we've never stayed still."

Recorded at Butch Vig's Grunge Is Dead studio and engineer Billy Bush's Red Razor Sounds, and mastered by Emily Lazar at The Lodge, *Strange Little Birds* revels in shape-shifting guitars and morphing samples, in a production aesthetic unique to the band. It's the sound of digital filth and oily analog, of menacing software synths and pounding virtual drums. It's the sound of four brains pulsing at a frequency out of sync with the corporate model of record making, 2016.

"Generally we're all suffering for the homogenization of songs and production that

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are essentially written and produced by the same people and sung by variety of young talent," Manson says. "But we are aching to hear perspectives from people who are not entertainers, but artists who are looking at the world and reflecting that in their music. There's a dearth of that in mainstream culture. It exists, but those records lurk in the shadows. They're made by people not fortunate enough to talk to *Electronic Musician* or get their songs played on the radio. I'm longing to hear more variety and eclectic voices and tastes and perspectives."

Citing influences Roxy Music, Siouxsie and the Banshees, The Cure, Bauhaus, and Television, "all these bands that deeply affected us when we were growing up," Manson says. Garbage wanted to make music that was unimaginable relying solely on computer-based production.

"Anybody can record at home on a computer now," she adds. "But for us there was a lot of fascination with analog synths and the music of our heroes. *Strange Little Birds* is not a machine record; it's the sound of people in the world."

Vig chimes in: "Even if we tried to not sound like Garbage we would sound like Garbage. A lot of it is the sensibilities we share and the way we play. It's more a vibe, how we approach things. There's a sensibility to how I like things to sound when

mixed, how I like drums to sound whether natural or processed. There are older pieces we still use, like the Roger Meyer RM58 Limiter. We used that a lot on the buses, especially on the drums; it has that trashy quality. We like to saturate things using a lot using stompboxes. Sometimes we use plug-ins like iZotope's Trash. I still have the original SansAmp stompbox with the chips you had to move with a pencil. We used that on the very first Garbage record in 1995 and we still use it sometimes."

From the rumbling Reaktor loop of "Sometimes" to the howling Skychord Electronics Glamour Box noise of "Magnetized"; from the Rob Papen Predator-sequencing of "So We Can Stay Alive" to the Arturia Solina-filled "Teaching Little Fingers to Play," Garbage use effects like some bands use guitar picks. "There's a lot of analog synths from Billy Bush's arsenal at Red Razor," Vig says. "A lot of the guitars go through effects. Sometimes they sound like keyboards, but the actual guitar lines are processed. We wanted to feature more stripped-down synths to give this record a cinematic feel. And it's a dark record. We wanted Shirley's voice to sound very exposed. Some songs are bone dry like 'Sometimes' with no reverb on Shirley's vocals. We wanted her to sound vulnerable and confrontational."

"When we recorded the first album we ran

Butch Vig's Grunge Is Dead studio

things through samplers and stompboxes," he adds. "There was a sense of freedom that made it really fun. We embraced that approach for this album too. It felt very much like the same kind of experimental vibe as on our first record."

The bulk of the *Strange Little Birds* was recorded at Grunge Is Dead with overdubs and "improvements" at Red Razor Sounds. Vig used a Crane Song Avocet controller, with Barefoot MicroMain 27 main monitors and Focal CMS 65s as his smaller reference monitors. The songwriting process involved band improvisations or songs written solo, then fleshed out in studio. Synthesizers were pushed through stompboxes, guitars were re-amped. Pedals included EarthQuaker Bit Commander, Hoof Reaper, Pitch Phase, Rainbow Machine, and Eventide Space and Time Factor Delay pedals for textures. "No one in the band is excited about a natural guitar sound," Billy Bush says. "It's really about creating a sound we've never heard before. That's where the fun is for us."

Billy Bush describes his Red Razor Sounds facilities as "a hybrid analog/digital studio." Red Razor Sounds is based on Pro Tools 12 and the latest Mac Pro Desktop Computer, Avid HD I/Os, and an Antelope Audio atomic clock.

“

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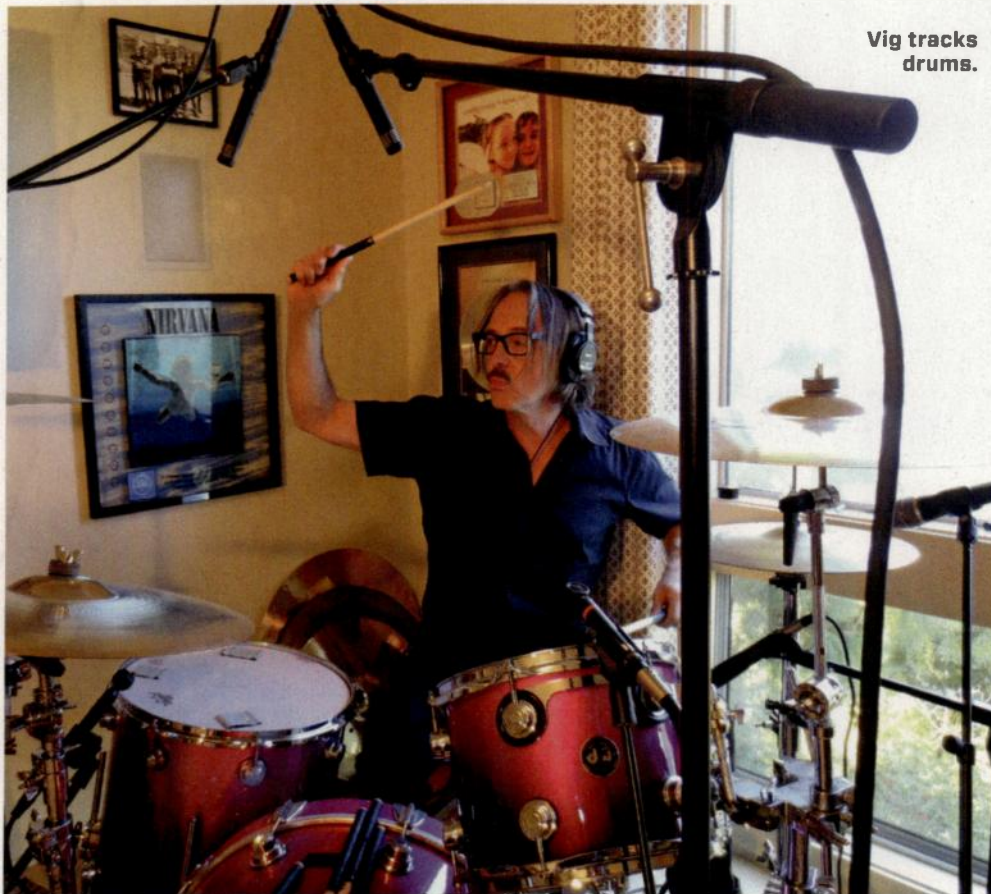
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Vig tracks drums.

I as a preamp into the Summit TLA 100A—still my favorite vocal compressor, which I have had for 25 years. When I get the setting right on the TLA 100A, I can put the fader on the vocal and get it in the mix and it sits in the perfect place. It controls the dynamics well. You hear dynamics, but in the quieter parts the TLA 100A still keeps them in your face. But if it gets too loud, it pushes them back enough where it always sits in a really good spot in the mix.”

Manson is more concerned with performance than sound toys. “I go for complete takes,” she explains. “I much prefer that to piecemeal. There’s a performance element involved when you approach it like that. I did some vocals differently this time in that I wanted to get very close on the microphone so it sounded very intimate. Some songs are more whispered or spoken. When I put vocals down, we all have an idea where the vocal sounds best in the landscape.

“I use the Neumann ‘cause Butch likes it best,” she adds. “But as a singer, you’ve got to feel confident enough that you can bring something to any old f*cking mic! If you’re relying on your mic, face it, you’re f*cked!”

SYNTHS AND GUITARS

Though guitarists Duke Erikson and Steve Marker reside in Wisconsin and Colorado, respectively, they don’t bring guitars to Garbage sessions. Bush has multiple guitars from which to choose. “One guitar I picked up was a Fender Custom Shop La Cabronita,” Bush says. “Duke played that quite a bit. And a weird Japanese baritone guitar called ‘The Fender Jaguar Bottom Master.’ We used older Stratocasters and Jazzmasters and Les Pauls. They went through one of my two pedal boards to a Little Labs PCP Instrument Distro 3.0 guitar splitter feeding an Audio Kitchen Big Chopper amplifier. We also used an old Silvertone amp, a Fender Blues Junior amp too. Duke and Steve like stuff that is strange. They would pick up a guitar to try to come up with something different. And I would mess around with the pedals, looking for an interesting combination. [Line 6 Pods or the Kemper Profiler Guitar Amplifier Modeler were used at Grunge Is Dead.] Then they’d find a part. Or they’d come in with a part and try to make it fit it into the track by experimenting with sounds.”

Bush has Korg and Novation analog synths at Red Razor; soft synths were also employed throughout *Strange Little Birds*. “Steve likes to use Ableton,” Vig recalls. “When programming kick and snare, I like [Native Instruments] Battery. It has a ton of kick and snare samples. I used Rob Papen’s Blade and Predator synths on some songs; they sound very analog. I got into using Predator’s sequencer; you can change the notes, the volume, and the velocity. You can write in your own melody and then heavily process it. That’s on the

“I use an Avid ICON D-Command ES for fader rides and automation,” Bush adds. “I own every plug-in known to man. I also have a wide range of outboard gear, which I use during mixing and tracking. My mixing process involves summing out a Shadow Hills Industries Equinox dual-channel mic preamp. From there into a Manley Massive Passive, then a Shadow Hills Industries Mastering Compressor, then I print back into Pro Tools via a Crane Song head. I have a computer-networked DiGiGrid so I can run a Logic computer and an Ableton Live computer routed into Pro Tools.” Bush’s go-to effects include Spectrasonics’ Omnisphere and Trillian, Vengeance Sound Phalanx and Metrum, and Native Instruments and Universal Audio effects.

“When we got off tour in 2012,” Bush says, “I bought everyone in the band a laptop, a Universal Audio Apollo Interface, and got everyone on Pro Tools 11 and Native Complete 10. So they were all on the same page and had interchangeability for working on Pro Tools sessions. My and Butch’s studio are both decked out with HDX and IO systems, and a bunch of Universal Audio Thunderbolts and Octo cards. The plug-in list is ridiculous.”

Bush has been recording and mixing the band’s albums since *Version 2.0*. From North Texas State to recording a top selling rock act! “The Garbage sound transcends anywhere we record,” he says. “It’s the combination of the four of them and their influences and approaches. Whether it’s been recorded at

Smart or East West or Grunge Is Dead or my studio, it always ends up having that Garbage sound. At the core of it is how they approach making music, which is very unique to anyone I have ever worked with. Everything is constructed in a way that it all fits together, and all the pieces are very specific. None of the sounds really sound like the instruments. The guitars are always very filtered and processed. And they’re layered to fit in specific way. All the parts and all the sounds are formed with that in mind.”

MANSON ON THE MIC

Bush’s vocal recording arsenal includes UA 1176A, Plug-in Alliance Maag EQ, FabFilter Pro-DS, Waves L1, SSL EQ, Bricasti M7, Eventide H8000, Soundtoys EchoBoy and Decapitator, Little Labs PCP Distro, Audio Kitchen spring reverb, and Avid Expander/Gate III.

“At my studio, Shirley sang into a Telefunken 251 and a Neumann M49B,” Bush explains. “A 20/80 ratio of those two microphones for vocals. They went into a Chandler Limited LTD-1 preamp and a Retro Instruments 76 or Retro Instruments Sta-Level to Pro Tools.”

As with the drum set and a portion of the guitars, a good portion of Manson’s vocals were tracked at Grunge Is Dead. “Shirley likes to sit on the couch or stand on the balcony when singing,” Vig explains. “We tracked a third of the vocals at Grunge Is Dead on a Shure SM 57. I used a Chandler Limited LTD-

A man with glasses and a tattooed arm is shown in profile, playing a Roli SeaboardRISE. He is wearing a watch and a ring. The background is a dimly lit studio with various pieces of equipment, including a large speaker and a mixing console.

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start of 'So We Can Feel Alive.' One of my favorite soft synths is the Arturia Solina. I love its sound, its rich emulation. That's the keyboard on 'Empty.'

"For us, there was a lot of fascination with analog synths and the music of our heroes. *Strange Little Birds* is not a machine record; it's the sound of people in the world."

—Shirley Manson

"I also like Reaktor Skrewell," he adds. "It just makes noise. It has a 'randomize all channels but-ton' that is fucking cool! It produces these ambient textures and tonal colors in the background that are all over the record."

Bush's bass-creation rig includes Audio Kitchen Big Trees, FabFilter Pro-Q, Avid Expander/Gate III, UA LA2A and Pultec EQP 1A, and McDSP ML4000. For *Strange Little Birds* he recorded Eric Avery's Fender Jazz and Jaguar basses direct and live. A Little Labs PCP Instrument Distro splitter managed the direct signal into Bush's copious bass pedal board(s), to a Fender Bassman 15 amplifier miked with a Neumann FET 47, an API 512 pre-amp, and API 550A EQ.

DRUMS: POUNDED AND PROGRAMMED

Vig played his Drum Workshop kit with his Yamaha "Gish" snare drum and Zildjian cymbals. Microphones and preamps included Shure SM57/API 550/Chandler Little Devil EQ on the top snare head; Neumann M80/Helios 550 on the bottom snare head; Josephson ES22s/Chandler TG2/Harrison Great River EQs on the toms; Neumann FET 47/Helios 500 on the bass drum; Audio-Technica AT4041s on the cymbals; and Bock Audio 507 as a mono room mic (in the bathroom) through a Roger Meyer SM58 compressor or the Summit TLA 100A compressor. "The Bock 507 makes a big sound," Vig says. "It really picks up the kick drum; a punchy sound. The room has a midrange, trashy vibe, but the Bock picks up the bottom end. Between the cymbal and guitar there is lot of hyper fuzz happening so in the end we turned down the cymbals."

Vig programmed drums as often as he played them, using his vast sample library. But often, as in opener 'Sometimes,' what sounds like a drum loop may be a guitar loop or a synth through a stomp-box. "The record is 50/50 live versus programmed drums," Vig says. "Sometimes I will program Battery using my custom library of sounds along with the live drums. Or I will take the live drums and print that to a mono submix and run that through stomp-boxes and filters and further chop that up and blend that back in with the live drums. So it becomes trashier and has a more interesting sound. It's rare when the drums are clean-sounding or *au naturel*."

EMBRACING "STRANGE"

Two years in the making, conceived after a successful global tour created as a retort to a shiny, happy record industry fixated on corporate song-writing teams and same-sounding production scenarios, *Strange Little Birds* is the perfectly strange new Garbage album, delivered precisely on time.

"This time we focused more on shifting the chi in the room," Manson says. "Nowadays you can tart up anything. Everyone in the band understood the importance of capturing something that felt urgent and vital and really authentic. More than any record we've made, there was a lot of competition in the studio. We wanted to impress one another. We didn't want average—we wanted excitement." ■



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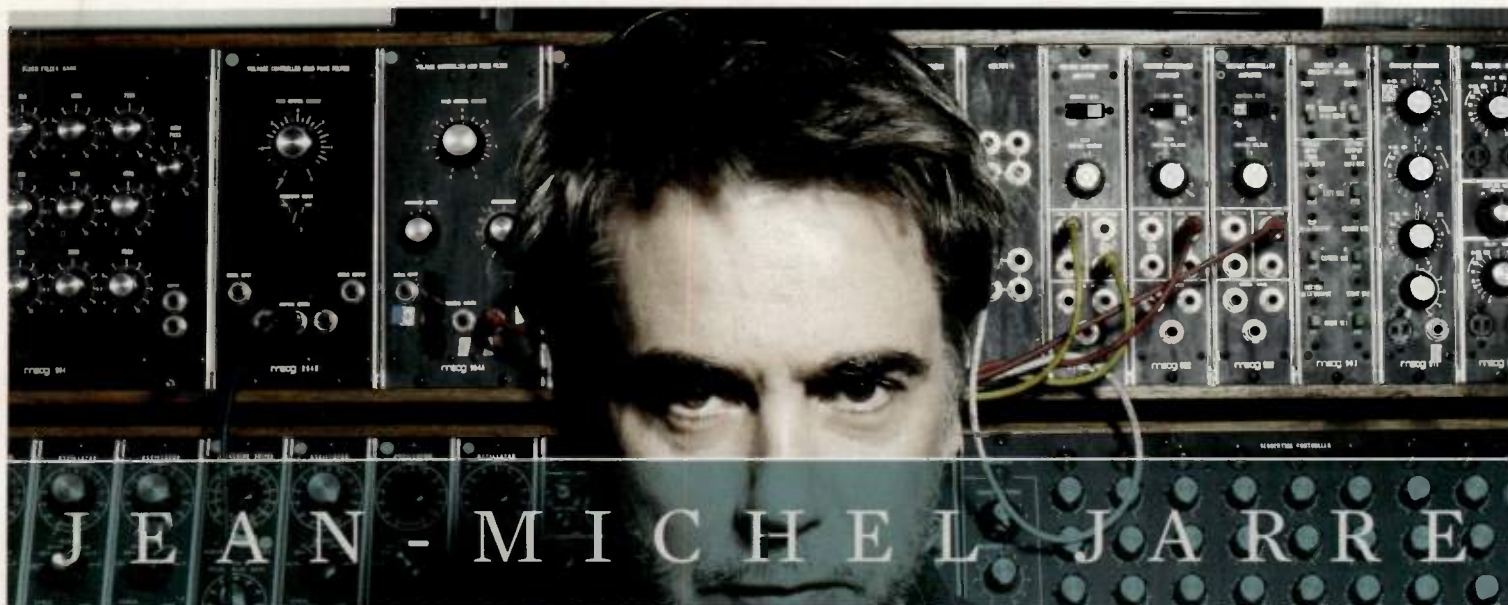
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The French electronica pioneer waxes philosophical about concepts of composition, finding inspiration in both vintage analog synths and state-of-the-art plug-ins, and collaborating with the likes of The Orb and Edward Snowden (!) on his latest project

BY TONY WARE

The shadow of Jean-Michel Jarre's career spans five decades, stretching from the structural exercises of *musique concrète* to accessible synth-pop. Studying in the late-'60s electroacoustic studio of Pierre Schaeffer, the conservatoire-trained musician found oscillators and magnetic tape to be his medium to invent celestial soundscapes, to "be in an aquarium with clouds around my head." His elegiac 1976 album *Oxygène* sold 15 million copies as punk raged and compact synthesizers joined the DIY aesthetic.

Over the course of nearly 50 years, Jarre has amassed quite a menagerie of iconic and idiosyncratic gear, as well as an appreciation for the analog-like "unpredictable character" that digital instruments such as Native Instruments Monark mono synth can produce. He is quick to celebrate the purity, quirks, and abstraction of each component, a concept that extends to his latest releases: *Electronica 1: The Time Machine* and *Electronica 2: The Heart of Noise*.

Compiled over four years, both mobile and in

the studio, these two albums feature 30 organic collaborations including Air, M83, Gesaffelstein, Tangerine Dream, Massive Attack, Rone, Julia Holter, Jeff Mills, the Pet Shop Boys, and The Orb. A sonic sketch in hand, Jarre visited each participant to exchange culture and context and capture far more than a top line before finalizing all the mixes at his console on the outskirts of Paris. The resulting co-productions range from billowing and ethereal to paced EDM.

Speaking from Berlin, Jarre shared his thoughts on everything from electronic music's historical architecture to his embrace of Ableton Live to sequencing *Matrix*-like "bullet time" moments in which Edward Snowden delivers a message on the tenuous relationship between man and technology.

What does the word "electronica" encapsulate for you?

I know that "electronica," especially in the U.S., is

a genre of electronic music linked to the '90s, a word used to mark a difference between pure club music and non-dancefloor music. But the idea for me was not influenced by this. To me, the word is divided in two parts: 'Electronic' and the letter "a." What I am actually trying with this concept is to personify the muse that could be the granddaughter of Electra and what Electra is all about in mythology, which is a link to energy and light and all that.

These concepts are very classical, which ties into your views on electronic music's very nature.

I have always been convinced from when I started in electronic music that it would become one day the most popular way of composing, producing, and distributing music. Its birth was in continental Europe a long time ago with people like Luigi Russolo in Italy with his futuristic manifesto of "The Art of Noises," Theremin in the 1920s in Russia, and people like Karlheinz Stock-



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[illegible]

hausen and Pierre Schaeffer. And it had nothing at the beginning to do with rock, blues, jazz... it's something more linked to classical music, these long instrumental pieces not at all in a pop format.

It's not a genre like hop-hop, punk—it's a different way of thinking of music. Before people such as Schaeffer, Stockhausen, and Pierre Henry, music was based essentially in the Western world on notes and *solfège*. And suddenly you had some people thinking of music in terms of sounds, and thinking we can make music with a microphone and tape recorder by recording noises. Suddenly the difference between noise and music is the hand of the artist.

For the *Electronica* project, you kept the compositional process in hand to the point you traveled to each collaborator's studio. What influence did cycling through these different settings have in the final arrangements?

Music and inspiration for any artist are linked to space and time, and electronic music specifically is even more linked to cities: Berlin, Detroit, Paris, London, Bristol, New York, Chicago, Los Angeles, and so many other cities in the world have their own sound and surrounding culture. So traveling and going physically to meet people in their environment has been a big source of inspiration for me, and it is a big change in the days when "featuring" albums are so trendy. I don't like sending files to people you never meet and talk to just for marketing reasons. Moving from point A to point B allows time to compose demos systematically for each specific artist I was visiting, and many different elements including the sight and specificity of the light, architecture, so on and so forth of their cities did have its influence.

The whole idea was to gather people who have been and are a source of inspiration to me. They have absolutely unique ways, almost protean op art approaches to sounds, and are convinced that melody, not just the beats, is the most important thing in electronic music. And I think each of these artists are all geeks, with the same kind of mad approach like me. I always considered music as an addiction, as something I do because I can't do anything else. I would dream of painting, doing astrophysics, fishing, but I travel most through my music.

Would you ask each collaborator their feelings on the ARP 2600 and the EMS VCS3 to gauge your compatibility?

You've pointed out my two favorite synthesizers of all time. I have lots of other great favorites, but if I had to pick two monophonic instruments I would pick those even before the Moog. I always preferred the sound of the filters on the ARP 2600, where the transients are very sharp. I always found the attack of the Moog more spong-

ey—great, organic, warm, but not as sharp as the 2600. So that created for me something unique in terms of sequencers. Also, even the size, it's ideal on the 2600 in terms of ergonomics. And the VCS3 is the ideal synthesizer for doing uncontrolled effects. After a while you don't know what you're doing and you create sounds in a purely intuitive way, as you have so many tiny pins you are playing with, you discover things like a child with toys and I still have that experience 40 years later. I never had that experience with another instrument.

Sounds are like characters, and the best ones grow, finding autonomy. I create them, and I think I control them and then they grow up being quite independent. It's something which is quite interesting, when the organic and abstract part are slightly beyond my control, and it's always when this happens that I'm quite okay with what I've done.

The whole idea was to gather people who have been and are a source of inspiration to me. They have absolutely unique ways, almost protean op art approaches to sounds, and are convinced that melody and not just the beats is the most important thing in electronic music.

As you were composing demos tailored to each collaborator, how many tracks on the two albums were mapped out conceptually and how many emerged from melodic and rhythmic elements?

It's entirely depending on the collaborator, but what comes to my mind instantly is the track "Switch on Leon" I did with The Orb. It's actually a triple tribute to electronic music, first of all a tribute to The Orb, who are one of the most exciting bands of all time to electronic music because of their use of collage, a Marcel Duchamp surrealist approach to music. So I started from this idea

of collage to integrate the history of electronic music. By coincidence I met the grand-grandson of Léon Theremin in Moscow last year and he gave me as a gift a sample of his grand-grandfather, so I used that for the intro of this track. And the third tribute is one to Robert Moog, because he was heavily inspired by Theremin, so I used some samples of his vocals.

Alex Patterson and Thomas Kehlmann of The Orb are both deeply influenced by dub, filtering it through cultural prisms to create imaginary space. As in dub, reverb and delay have played a large part in your sound.

Delays and reverbs are probably 50 percent of my sound. Take albums such as *Oxygène* and *Équinoxe*: The analog delay coming from two Revox B77 tape recorders is probably making almost 50 percent of the sound of these albums. I've always had a love and hate relationship with delays, because I've never found anything matching my Revox machines, but they can't tour—they are too heavy and difficult. But in *Replika* from Native Instruments I have found something very handy for me to create what I like in electronic music, which is a total fantasy world. In *Oxygène* I was re-creating the idea of the sound of the wind, the ocean or the seagulls. I don't want to sample the rain; I want to re-create it as something more poetic and interesting. At the end of the day, any art form is a kind of fantasy of reality. In Van Gogh, Stanley Kubrick, Tarantino, Fellini, Stravinsky, or John Cage, it's a re-creation of the environment and it's what I like in synthesizers, creating the sound of the ideal orchestra or something like that.

For quite a long time I was quite against the idea of using more like one general delay and one or two reverbs, because after that you are confusing the space you are creating. Recently I have been changing my mind, but only as long as you are using mono sources. If you record delays you have to record them systemically apart, because otherwise you will be stuck in the mixing. In my opinion it is best to record as much as possible your first sound dry and in mono because the stereo of synthesizers are just fake, kinds of choruses. It's fine if that's part of your sound, the way you put your guitar into a flanger pedal, but if you want to create space it's very dangerous because you are going to be stuck in the mixing later on.

On this track, did you adopt any techniques to complement The Orb's style?

The track is a good example of something using lots of different styles of equipment, from samplers and analog synthesizers to digital plug-ins. It's interesting, actually, that probably by an unconscious respect or desire to share the creative process all the vocal samples are coming from my side and

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lots of sequences you'd think are coming from me are coming from The Orb. It's like we wanted to be each other: They wanting to work with me to make electronic sounds, and I wanted to do a collage of samples. So we started with a piece of music with this dialog I found from Boob Moog in an old conversation and little by little the sound Alex Patterson and Thomas Fehlmann did in Berlin gave me the idea to complete and structure the track in a different way involving more Theremin.

So in this track are some vocal recordings done in the 1930s, linked with some digital plug-ins such as Massive and Razor, linked to a Theremin I have in my studio dating to the 1960s, linked to

some analog instruments Alex and Thomas did, and also sequences I did with the ARP 2600. I sampled my own voice processed through Electro-Harmonix pedals and reversed the sound. And I am using also a very old synth that is quite unique: the Coupigny, a French synthesizer that was made in the late '50s, early '60s, and is basically a bank of oscillators with some shape modulators, wave modulators with LFOs, but it has a very wide range. It goes from 1 Hz to 30,000 Hz or more. And I used that to create this kind of organic low frequency and some effects, mixed with VCS3. It's an interesting collage of different techniques coming from various times.

The bass sound at the beginning is also something I really like in this one, and it's actually something I did from a mixture of three sounds: an ARP 2600, a bit of Moog, and some electric guitar being sampled. The trick was to get rid of some transients of some of the tracks to keep it as one sound, and you know how hard that is to get without any phase or shift on the attack, but I think this mixture of analog and digital sound created this almost 3-D and powerful sound.

In contrast to "Switch on Leon," "Exit" featuring Edward Snowden is very linear. What type of construct did you conceive for this track?

The whole "Exit" track inspiration came clearly from this idea I had about the Edward Snowden situation. My mother was a great figure in the French Resistance so I was raised by this idea that when society generates things you can't accept, someone has to stand up. That is not very popular most of the time, but Edward Snowden is for me, whether the American government likes and accepts it, is a modern hero for saying be careful of the abuse of technology.

I wanted to really evoke this idea of a mad quest for more data, more information, and at the same time this crazy hunt for an individual organized by the three biggest U.S. organizations—the CIA, NSA, and FBI—and then have this quite speedy, hard techno feel with lots of sequences involved and sudden breaks, like in a movie when suddenly the action stops, almost like hiccups in the quest, an interruption, something that creates a kind of accident... when the machine is going too fast and for unknown reasons there is an interruption. I remember the first *Matrix* movie, it was based on this idea of stop motion with slow-mo effects and then having a breakdown, and I wanted that kind of stillness where Edward Snowden can deliver his message.

I used my DigiSequencer, which is a homemade sequencer very specific to my work. It is something quite special that was developed a long time ago by Michel Geiss. I had it as an analog piece, and then I have now a digital version on a touchscreen. So I did a lot of sequences with this, using sounds from the ARP 2600, some of the FM8, of Razor from Native Instruments, and also samples that I had from my bank of the Fairlight CMI that I sequenced in that tempo. Also I recorded my breathing to evoke a kind of chase. I also made the pad in the middle with a Memorymoog and delays. That is a track with lots of elements, as I wanted to have every four or eight bars new elements, so I used Kontakt as a main sampler to process lots of elements all along the track.

And it's a perfect example of mixing in recent plug-ins like Replika, one of my favorite delays of the moment, and some plug-ins like [Plogue] chip-

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sounds that are software for creating kind of 8-bit type of sounds, early Atari sounds.

When presented with an emulation of hardware, such as the EMS VCS3 or your DigiSequencer, do you go for digital's ease and portability or do you prefer the physicality of the original hardware?

I love both, because something like the XILS 3 [matrix modular analog synthesizer] plug-in has some parameters you don't have in the original analog, but the analog one you can't compete with because of the warmth. It's always, I think, a mistake to compare the emulation of a synth with the

real one, because by definition they can't sound the same. But it's great for someone without the original to get the feel of the approach, the concept of the synth, even when the result will be different in terms of sound.

You've watched the synthesizer industry progress from analog to digital to analog again. How do you feel about the rise of the new modular?

When I was in Berlin I spent some time in the biggest store of some of the newer modules, mixing the Doepfer with the Buchla modules and ones from smaller companies, and I am very interested

by this because it's something totally different. The approach of the modular Moog, the System 55 I have in the studio, is actually one philosophy created by one man. And the whole thing sounds the same from A to Z. What I like about the Euro-rack is this patchwork of modules you have in one box. So when you go from one to another you are changing not only the parameter, but also the circuits themselves, which gives you a totally different sound. So I am very, very interested and would like to get some of these concepts in my studio one day. I am even considering having this onstage, because the problem with modular synthesizers onstage is you have no presets so you are stuck with one sound. But with these modules it is interesting because you can pre-program a family of sounds, so using them onstage will be worthwhile because you won't use it once for one sound and that's all.

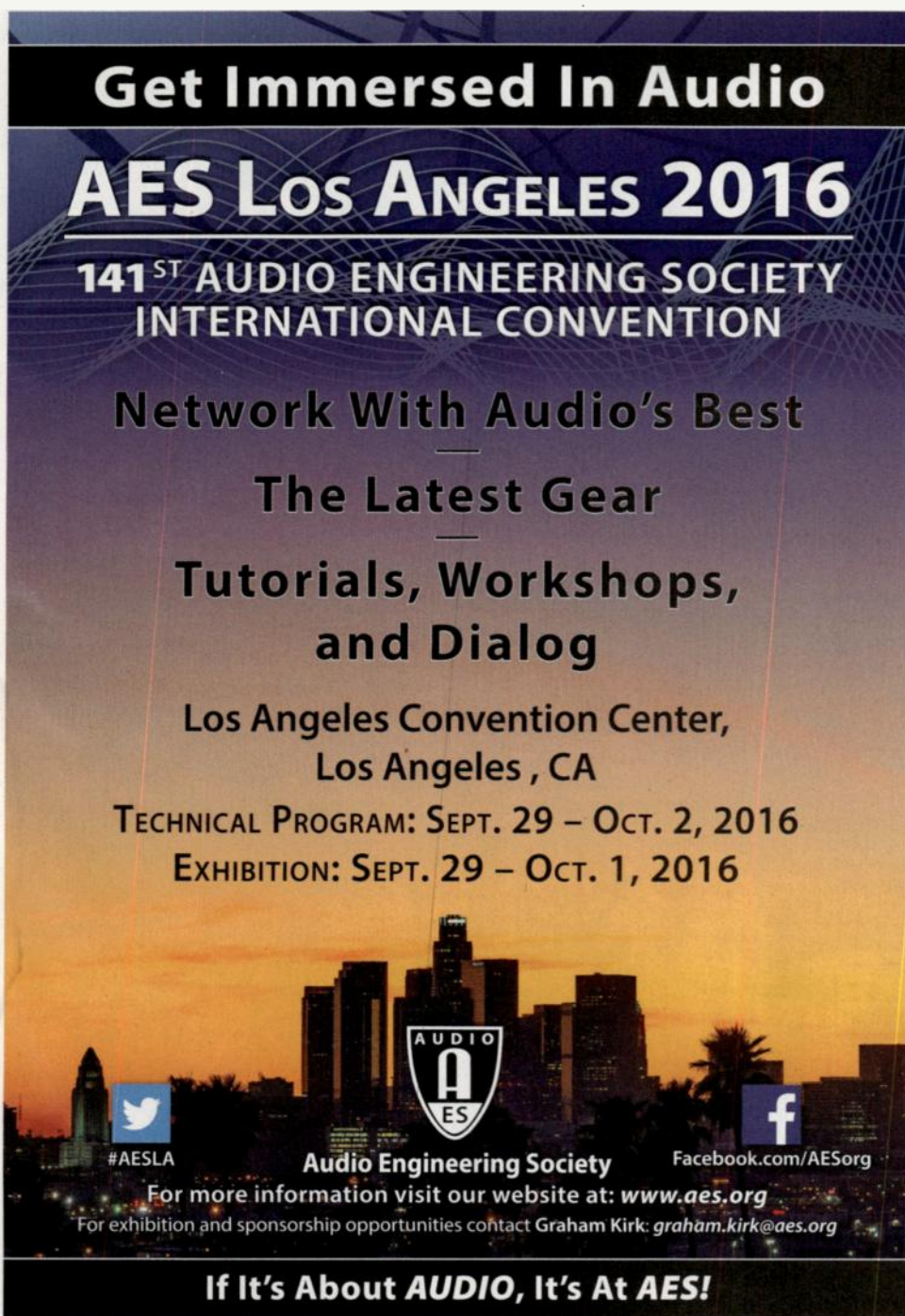
Working with such a wide range of sources and circumstances, how did you assure coherence throughout the *Electronica* albums?

When I would travel I use my MacBook Pro with an Apogee Duet recording 24/48 to Ableton Live, which I like for transparency. When I used Pro Tools I always felt in bouncing mixes there was a slight phase in the high frequencies. Ableton Live let me work on the road with hundreds of tracks without hardware.

At my studio I use something I really like, which is a Focusrite [OctoPre MkII Dynamic] preamp with eight inputs where it's very simple with just the level, one switch for a compressor and a knob for setting the level of compression. It's really magical for synthesizers. Or I go into either an RME or Universal Audio interface. I like them both for different reasons. Then what I try to do is stay in the same Live session until the mastering stage. I tried to save all the conversions and bounces. I did the mix for mastering in my studio with Genelec 1301s and an SSL AWS 948, which I like for its flexibility. You can go from recording analog instruments to having a controller for Ableton Live.

I think it's much better to do the mastering from the sessions, because sometimes, for example, if you feel you have too much low frequency on a stereo mix, you are going to have to adjust and EQ the lows of the entire mix when most of the time the problem is coming from one track. So it's better to go there and EQ the problem and not affect the other tracks in the same frequency. And also, in terms of level, when we say in the digital era levels aren't important... well, they are. The level you send to the mastering is very important to not be too high.

They are basic tricks that lots of sound engineers know by heart, but it's strange to see that when you are working because of time or being tired you forget these basics. ■

A promotional poster for the AES Los Angeles 2016 convention. The background features a city skyline at sunset. The text is centered and reads: "Get Immersed In Audio", "AES Los Angeles 2016", "141ST AUDIO ENGINEERING SOCIETY INTERNATIONAL CONVENTION", "Network With Audio's Best", "The Latest Gear", "Tutorials, Workshops, and Dialog", "Los Angeles Convention Center, Los Angeles, CA", "TECHNICAL PROGRAM: SEPT. 29 – OCT. 2, 2016", "EXHIBITION: SEPT. 29 – OCT. 1, 2016". At the bottom, there are social media icons for Twitter (#AESLA) and Facebook (Facebook.com/AESorg), the AES logo, and the website www.aes.org. A contact person, Graham Kirk, is listed with his email graham.kirk@aes.org. The tagline "If It's About AUDIO, It's At AES!" is at the very bottom.

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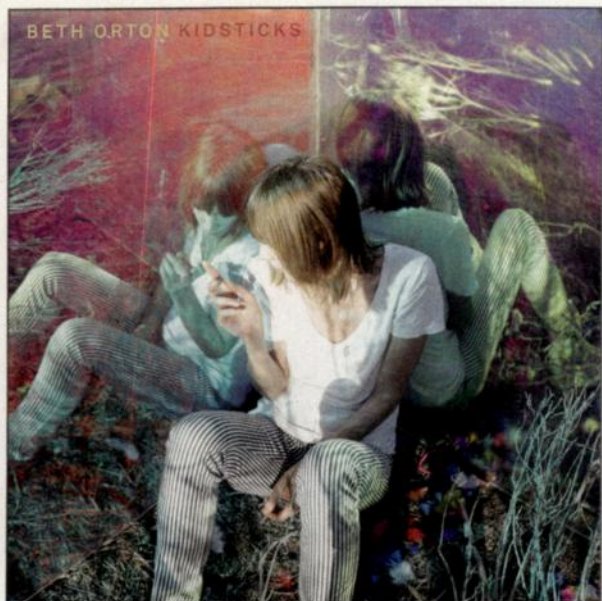
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BETH ORTON *KIDSTICKS*

ANTI

Beth Orton takes an electronic turn on *Kidsticks*. While Orton has become increasingly known for her folk leanings, the singular-sounding hollow-voiced artist is no stranger to the plugged spectrum of music. Orton's history with The Chemical Brothers, William Orbit, Red Snapper, and Kieren Hebden provides multiple reference points on *Kidsticks*. At times the bleeping minimalist soundscapes and tinny beats create a jagged, uncomfortable space, such as on the jittery "Snow" and glitchy "Flesh and Blood." At other points, Orton makes the contentious marriage of conflicting styles work, see the gentle "Falling" and the whispery "Corduroy Legs."

LILY MOAYERI



DAN LISSVIK *MIDNIGHT* SMALLTOWN SUPERSOUND

Recorded with bass guitar, microphone, and flea-market EQ, Dan Lissvik's *Midnight* reflects both his time in successful Balearic revival duo Studio and late-night sessions tracking tunes while his wife and baby slept in the next room. This oddly happy, nocturnal album dances over frothy house beats and jocular samples, harp strings popping like zithers while gerbil-like samples scoot and slither. There's a touch of madness in *Midnight*'s sleepy-eyed instrumentals, the sound of a globe-trotting DJ trapped with his machines.

KEN MICALLEF



KVELERTAK *NATTESFERD* ROADRUNNER

Across two previous albums Norway's Kvelertak proved singularly agile at swinging from black metal to d-beat to hard rock boogie within one song. On the band's definitive third, which translates as "Night Traveller," Kvelertak buckle any remaining subcultural partitions between thrash, prog, NWOBHM, blues rock, hardcore, etc., to achieve a skein of wiry, swaggering mettle. Produced by the band alongside engineer Nick Terry, *Nattesferd* is 50 generous minutes of interlaced ambitions, precision, and thrills.

TONY WARE



ELIZABETH COOK *EXODUS OF VENUS*

AGENT LOVE/THIRTY TIGERS SiriusXM Outlaw Country radio artist and hostess Elizabeth Cook has released her first album in six years, and it's far deeper and bluer than the sunny, clever persona Cook cultivated on *Balls* and *Welder*. Following a tough patch, she's succumbed to a sorrowful mood that's less Dolly, and even less country, than before, with darkly ringing guitar sounds and reverberant vocals. But exposing the raw emotion of *Exodus* just shows a different, equally beautiful side to Cook's artistry.

BARBARA SCHULTZ



JANEL LEPPIN *MELLOW DIAMOND* WEDDERBURN

Singer/cellist Leppin steps out from the duo Janel and Anthony to turn in a set of moody and evocative songs that emphasize her wide-ranging vocal and instrumental talent. The music is at times filmic, with gorgeous, yet often simple melodies weaving in and out of layers of blurry synths, dreamy guitars, and lush effects; *Mellow Diamond* is an outstanding solo release that will appeal to fans of the Cocteau Twins and the early work of Björk.

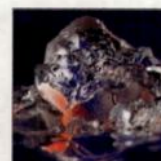
GINO ROBAIR



JULIANNA BARWICK *WILL*

DEAD OCEANS If you've ever longed for a religious experience, look no further than Brooklyn's Julianna Barwick. The vocalist's reverberant monosyllabic ululations and soft-as-cotton instrumental backdrops are like flying through the heavens, disembodied, providing the perfect out-of-body experience for earth-bound music lovers. Featuring contributions from Thomas Arsenault (Mas Ysa), Dutch cellist Maarten Vos and percussionist Jamie Ingalls (Chairlift), *Will*'s looped instruments and echoed vocals reflect Barwick's training in a rural Louisiana church choir. It's the perfect music for haunting belfries and circling church spires.

KEN MICALLEF



DELOREAN *MUZIK* PHLEX

Three years removed from the live instrumentation-led *Apar*, Barcelona-based bliss-out quartet Delorean dial back the clarion indie-pop for a deeper excursion into Balearic beat. Building on the mystic wooziness previewed with 2015's "Crystal/Bena" single, these nine vibe tracks show Delorean's renewed dedication to pitch-bent sampledelia and feathery melody. Delorean, with help from coproducers such as Madrid's Pional, sequence muggy house and synthetic disco into hypnotically chugging, lens flare-strobed vespers.

TONY WARE

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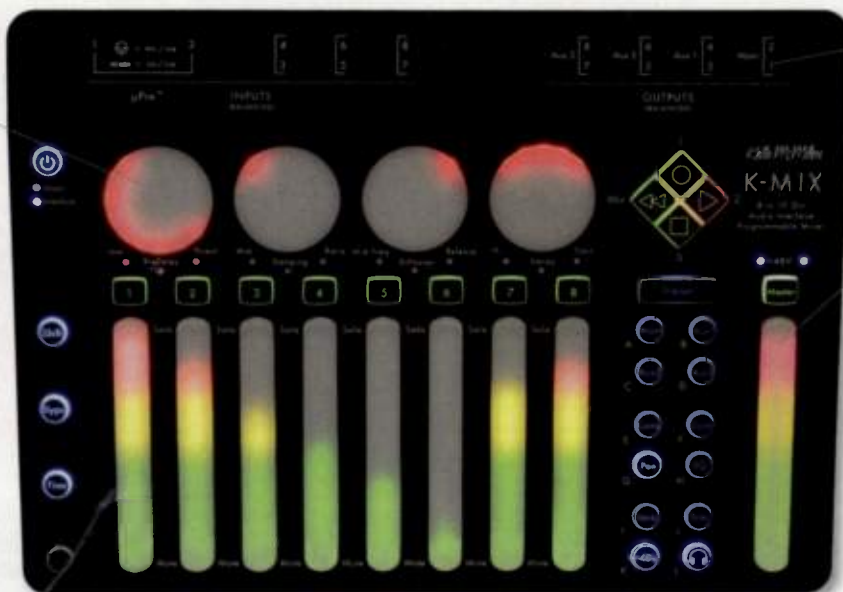
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4 assignable rotary encoders

Fig. 1. The KMI K-Mix packs a tremendously versatile feature set into a small package.

KEITH
MCMILLEN
INSTRUMENTS



8 balanced outputs for surround-sound use

Stereo master fader

K-Mix

COMPACT AUDIO INTERFACE, CONTROL SURFACE, AND MIXER FOR MAC OS

BY MARTY CUTLER

Contributing editor Marty Cutler has not yet decided on a running mate.

STRENGTHS

Enormous versatility. Draws power from a computer, power supply, or powered USB Hub. No moving parts. Tactile controls. Great sounding preamps.

LIMITATIONS

The small buttons can be difficult to read. Windows not supported. iOS not officially supported.

\$579

keithmcmillen.com

Although there are digital interfaces and controllers of practically every size, shape, and application on the market, nothing compares to Keith McMillen Instruments' K-Mix in terms of versatility, features, build quality, and visual appeal. In addition to working as a controller (with an "opto-tactile" control surface, found on many of KMI's other products), the K-Mix is also an 8x10 USB audio interface and programmable mixer with internal effects. And despite its diminutive, desktop-friendly size—3.5 lbs., 9.7" x 6 1/2"—it can be integrated into a pro-level recording system or work as the hub of a P.A. system for live performances, away from the computer (see Figure 1).

The K-Mix supports 24-bit audio with sampling rates up to 96 kHz. It connects to a computer via USB 2 that passes both audio and MIDI data. A mini-USB port is also provided for the included 5V power supply or for connecting the optional KMI MIDI Expander (\$59) so you can address external MIDI hardware. For standalone operation (away from a computer), you'll need to use the power supply with the K-Mix.

I tested the K-Mix in standalone mode as well as with MOTU Digital Performer and Ableton Live using a quad-core 4GHz, iMac 5K Retina using Mac OS X 10.11.4 (OS X 10.6 or later is supported). I also tested the K-Mix with an iPad Pro, although at the time of this writing iOS is not officially supported. (However, the K-Mix works with any generation of iPad and requires either a USB-to-30-pin camera adapter for older iPads or a Lightning-to-USB adapter for recent models.) At present, the K-Mix is not compatible with Windows OS, although it is in development.

THE INS AND OUTS

The K-Mix's analog I/O is remarkably generous for such a compact device. Of the eight balanced inputs, channels 1 and 2 have combo jacks that accommodate XLR mic-level signals, 1/4" TRS line-level input, and high-impedance instrument input from 1/4" TS cables (see Figure 2). Inputs 1 and 2 also include KMI's new μ Pre mic preamps, which offer two levels of phantom power: +48V and +12V. KMI spent a great deal of time on its custom

mic preamps, and it shows. And in terms of the instrument inputs, I heard much clearer high-end articulation on my electric guitars, evenly balanced with their lower-end frequencies. Inputs 3 through 8 accept 1/4" TRS plugs only, but they can handle line- or phono-level input to accommodate turntables.

The K-Mix provides eight analog outputs on balanced 1/4" TRS jacks, with outputs 1 and 2 serving as the main monitor outs. The stereo headphone jack on the front of the unit can also be pressed into service as a low-frequency speaker output when the K-Mix is used in a surround sound configuration. Quad, 5.1, 7.1, and octophonic speaker configurations are supported, with Ambisonics panning algorithms used to create the multichannel soundstage.

Surround mixes are configured using the K-Mix Editor software (see Figure 3). Click the Bass Management button in the software to set the headphone output's adjustable crossover for low

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Rock-solid Class A mic pre with custom input & output transformers

COLEMAN AUDIO PH1

From mobile device to monitors via Coleman's new 500 Series module



Fig. 2. K-Mix offers a generous amount of analog I/O, and the outputs can easily be configured for surround applications. Inputs 1 and 2 accept mic-, line-, and instrument-level input.

frequencies. Each of the four buses will display a marker, which serves as a visual aid detailing ideal positions for each of the eight possible speakers. The rotary encoders on the K-Mix reflect surround moves; as you move the signal along the periphery of the circle, a red dot on the controller will follow. As you move the signal toward the center, the dot switches to an illuminated ring around the encoder's circumference, reflecting the signal's distribution among the other buses.

When mixing, I was impressed by the clarity and apparent extended headroom of the audio, even at higher volumes than I am accustomed to using when monitoring. Dense mixes with a variety of virtual instruments maintained the distinct sonic characteristics of each element without the typical "pad soup" that can occur.

THE ROTARY CLUB

With the exception of the power button, everything on the K Mix provides layers of functionality. The four rotary knobs, ostensibly for controlling pan position in a mix, can serve a remarkable number of additional functions, depending on the mode of operation. For instance, if you are editing reverb settings, the rotary encoders control (from left to right) pre-delay, damping, diffusion, and decay, indicated by a bright blue LED circumnavigating the lower portion of each rotary. When in MIDI Mode, you can use the encoders to adjust plug-in parameters.

When used in conjunction with the Shift button, the diamond-button pad to the right of the encoders shunts K-Mix between normal mixer and MIDI controller chores: The left diamond

button accesses mixer functions, and the remaining buttons choose between three banks of MIDI assignments. The diamond pad is printed with common transport icons because the buttons can easily be set up as transport controls for any DAW; in MOTU Digital Performer 9.3, it merely required making the change in the program's control surface assignments.

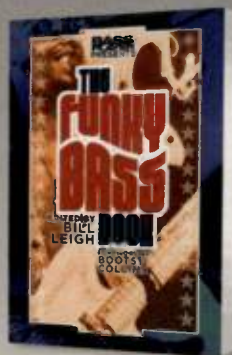
Above the nine faders is a set of channel-select buttons that can be used to check solo, mute, or bypass status; apply phantom power; choose which channels to monitor through the headphones; edit pre- or post-fader sends; and bypass effects, among other things. And, as you would expect, the faders can also perform multiple functions—track volume, input trim, effects-send level, and the transmittal of MIDI Continuous Controller messages.

GREAT READS FOR BASS PLAYERS!

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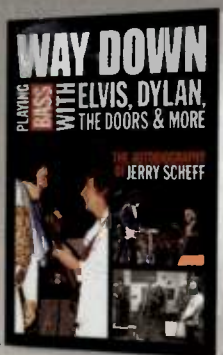
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scope scrolls by default—at user-selectable slow, medium, or fast speed—but can alternatively be synched to your project to display one- or two-bar segments at a time. Click anywhere inside the scope to freeze the display for lingering inspection; a second click unfreezes it.

Envolution's filters affect both the detection and processing of envelopes, letting you vary the strength of processing for transient and sustain envelopes at different frequencies; the filters don't split the audio into separate frequency bands, which would cause subtle phase issues. For each envelope—transient and sustain—you can select a different type of filter: tilt, highpass, lowpass, bandpass, or notch. Each filter offers three parameter controls to fine-tune their shape, and the central display plots the resulting wet-dry balance (along the y-axis) vs. frequency (x-axis). For example, frequencies in your audio input that are way below the corner frequency for a highpass filter would be 100 percent dry (completely unprocessed).

As you raise Envolution's Warmth control, harmonic saturation is added at the plug-in's output (to a degree not dependent on signal level). When raised sufficiently, the Warmth control also prevents signal peaks up to +6 dBFS from clipping. This lets you boost transients quite a bit without forcing you to lower the plug-in's output gain to avoid clipping, thereby preserving sustain levels.

A Mix control adjusts the wet-dry balance, providing both parallel processing and a de facto master control for all the Transient and Sustain controls. Activating Envolution's Diff button lets you hear only the difference signal (that is, what signal is added to or taken away from the original signal, excluding Warmth processing); it's useful to hear the difference signal while fine-tuning the Transient Sensitivity control to prevent unwanted transients from being processed. Rounding out the

GUI are separate envelope bypasses, output-level fader and meter, informative Help balloons, flexible A and B banks (copy from and paste to any instance of the plug-in!), 16 levels of Undo and Redo, and proprietary preset-management facilities (affording portability between DAWs).

Envolution shapes drum sounds like no other envelope shaper can. The real magic began when I raised the Transient Hold and Release controls roughly halfway to max and jacked up the Warmth control. This greatly enhanced the sizzle of the snares.

PUSHING THE ENVELOPE

Envolution shapes drum sounds like no other envelope shaper can. As expected, boosting the Transients control and using a fast attack enhanced stick strikes on snare drum. The real magic began when I raised the Transient Hold and Release controls roughly halfway to max and jacked up the Warmth control. This greatly enhanced the sizzle of the snares. In fact, I often found myself setting the Transient Hold time between the 11 o'clock and noon positions when boosting the attack of other trap drums, as doing so thickened the attack in a way not achievable by applying EQ; it made the drummer sound like he was using bigger sticks! Using the lowest possible Sensitivity setting kept enhancement of hi-hat bleed on the track to a minimum (although I wished this control was even more discriminating).

Turning my attention to the

snare drum's sustain, I boosted the Sustain and Sustain Hold controls to increase the audibility of the shell's decay following batter-head strikes. Processing the sustain envelope with a 294Hz notch filter tamed the unwanted sound of the shell ringing at a fundamental pitch of D natural. The combined result of all my tweaks sounded perhaps a little over the top, so I reduced the Mix control to 92 percent to add back some dry signal. The snare drum sounded incredible.

I also got awesome results using Envolution on a floor tom playing half notes. Boosting transients—using similar time constants as I did previously for snare drum—and shaping Envolution's transient filter for a peak at 200 Hz made the stick hits sound not just louder but beefier. To make the drum's shell thunder, I goosed the Sustain control and fashioned a lowpass filter with a 156Hz corner frequency for the sustain envelope. Cranking the Sustain Release control to the max did two things: It prevented the thunderous sustain from being cut short on each subsequent stick hit, and it added low-bass boost to overlapping transients by applying the sustain envelope's processing to them. Raising Envolution's Sustain Hold control a little bit separated in time the processed sustain envelope ever so slightly from transient stick hits, reducing masking and making the thundering shell resonance sound more distinct. The end result sounded absolutely phenomenal and transformative.

Envolution also sounded outstanding on female lead vocals. The unprocessed vocal sounded very slightly thin and lacked immediacy. I fashioned a narrow peaking filter for the transient envelope, centered at 1.74 kHz—low enough so as not to augment sibilance. Raising the Transients control around 4.5 dB and lowering all time constants for the transient envelope to their fastest values, the singer sounded like she stepped several inches closer to the mic. Cool! Next, I fashioned a narrow bandpass filter for the sustain envelope, centered at 204 Hz, to reinforce the singer's chest register. Adding around 7 dB of Sustain and setting the Sustain Hold, Attack, and Release controls to around 10 o'clock made her sound more powerful without causing any boominess or veiling her consonants. Raising the Warmth control halfway added a little extra size and luster to the track. The end result was a spectrally balanced, stronger, and more articulate and compelling money track.

I observed only two minor bugs. More important, Envolution lacks an external sidechain input, a feature the competing SPL Transient Designer Plus can use to make other tracks trigger its wide-band processing. Even so, Envolution shapes envelopes like no other product can. Uniquely powerful, flexible, and reasonably priced, Oxford Envolution is a terrific-sounding plug-in every mix engineer should own. ■



Fig. 2. Separate, adjustable filters for the transient and sustain envelopes affect both their detection and the frequencies that are processed for each. A broad notch filter for the sustain envelope is shown here.

Mic sensitivity switch

Concentric Level
and Blend controlsExternal
Effects Insert

Four effects modes

Power the VO-1 Vocoder using the included 9V battery or a Boss PSA-series AC adapter (sold separately).

BOSS

VO-1 Vocoder

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VOCAL EFFECTS
FOR GUITARISTS
AND BASSISTS

BY GINO ROBAIR

STRENGTHS

Mic input with sensitivity-level switch. Effects insert for dry signal. Talkbox effect offers distortion.

LIMITATIONS

Pricy compared to other Boss pedals this size.

\$249 street
bossus.com

Although Boss offers a wide variety of vocal-effects processors, it hasn't made a portable vocoder designed for the pedalboard—until now. Housed in the familiar single-pedal form factor, the VO-1 provides four effects that are optimized for use with electric guitar and bass—two vocoders, a talkbox, and a synthetic choir.

Because your voice will be the control source, the VO-1 includes an XLR input designed for dynamic mics. (Phantom power for condenser mics is not provided.) The onboard sensitivity switch provides high and low settings to increase compatibility with nearly any dynamic mic you'll run across. I plugged in a Shure SM58 with the VO-1's sensitivity set to Low and had plenty of gain for the mic to do its job. Overall, the mic input provides a surprising amount of dynamic control over the effects.

The vocoder modes are called Vintage and Advanced, the former providing a warm, late-'60s vibe with a low number of frequency bands, and the latter yielding more complexity and greater phonetic clarity. The VO-1's talkbox emulation is very musical and works well on guitar and bass (and it doesn't require you to stick a tube in your mouth like the original does).

The VO-1's controls include output level and a Blend knob for setting the wet/dry mix. The Tone control can be used to brighten or darken the processed sound, while the Color knob alters the vocoder's spectral content to change the "gender" of the effect.

In Talkbox mode, the Color knob adds distortion as you turn it clockwise. With the right setting, you can coax a bit of feedback from your guitar depending on the note you play, the pedal's output

level, and the intensity of your voice. Moreover, by changing the pitch of your voice—such as singing in falsetto—you can further modify the spectral response in all three modes.

Intended to provide a vocal-ensemble effect, Choir mode doesn't need the mic input as a

trigger. To get a sense of its tone, imagine having several cocked-wahs on simultaneously, each with a different highlighted frequency. The resulting formant-like filter produces a synthy-sounding "ah," which the Color knob changes from a low male-like timbre to a higher, more nasal sonority. To achieve the most convincing choral-like sound, however, I used volume swells with a touch of reverb or delay.

The VO-1 also includes send and return jacks for routing the direct sound of your instrument through other effects. Depending on the Blend knob's setting in the vocoder and talkbox modes, you'll hear your unprocessed instrument on its own (with or without insert effects) until you talk into the mic; then the VO-1's processing appears. The trick in a high-volume performance situation is to get a strong direct signal with the Blend knob, but not making it so loud that it bleeds into the mic and triggers the vocoder/talkbox effect.

The VO-1's main competitors are the Electro-Harmonix vocal processors, which cost a bit less and offer additional features (pitch correction, reverb, phantom power). On the other hand, the VO-1 has insert I/O, as well as a simple interface and smaller footprint than EHX's larger models.

But most importantly, the VO-1 sounds great and is a blast to use. And once you start using it, it's hard to stop. You've been warned! ■

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Anthology X Bundle

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BUNDLE FOR
NEARLY ANY
DAW

BY BARRY CLEVELAND

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

STRENGTHS

Extraordinary variety of classic and contemporary signal processors in a reasonably priced bundle.

WEAKNESSES

Some plug-ins lack DAW tempo sync capabilities.

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Clockworks Legacy and H3000 effects

The expanded Anthology X bundle offers legacy processors in AAX, VST, and AU formats.

The monikers “H910,” “H949,” and “H3000” can still inspire awe within the pro audio community. These hallowed Eventide effects processors imparted their singular sonics to countless recordings, and many units are still in use today.

About 12 years ago, Eventide began introducing software emulations of its legacy products, as well as new software processors, culminating in 2006’s Anthology II bundle of 15 plug-ins. Available for Pro Tools TDM only, the bundle was so valued that some users delayed transitioning away from the TDM format because they didn’t want to give them up.

The Anthology X bundle not only includes updated versions of those original plug-ins—now available in AAX, VST, and AU formats for both OS X and Windows—it includes two new plug-ins, the Dual H910 and Dual H949. These “dual” plug-ins were inspired by the many engineers who used to run a pair of hardware H910 or H949 Harmonizers in tandem, with the mono units panned hard right and left and the dry sound in the center. Tom Lord-Alge sometimes used H910s in this way on Steve Winwood’s vocals, and Eddie Van Halen used the technique on his guitar in the mid-1980s.

Both of the new plug-ins come chockablock with fantastic-sounding presets that fully exploit the classic dual-unit setup, and more. For example, the maximum delay times in the hardware units were quite short, whereas the delay times in the plug-ins are considerably longer, allowing you to create effects that weren’t previously possible.

However, while the two dual plug-ins allow MIDI keyboard control of the pitch ratio via Note On and Pitch Bend information in much the same way

that the optional hardwired keyboards did with the original units (middle C = unison, E above middle C = a major third, etc.), there is no provision for synchronizing delay time or modulation rate to the host DAW tempo.

Also included in the Anthology X bundle are non-dual versions of the H910 and H949 Harmonizers, two extraordinary plug-ins derived from the H3000 Harmonizer (H3000 Band Delays and H3000 Factory), the unique Omnipressor, the glorious UltraReverb, two versatile multivoice pitch shifters (Octavox and Quadravox), two rare UREI equalizers (EQ45 Parametric Equalizer and EQ65 Filter Set), two exceptional channel strips (Ultra-Channel and E-Channel), Precision Time Align, and stunning emulations of the analog Instant Phaser and Instant Flanger.

Eventide now offers the subscription-only Eventide Ensemble collection of all 20 of its plug-ins, including the new T-verb, for \$29 per month or \$299 per year. In every case, these plug-ins make outstanding additions to any studio, and many of them will be of interest to sound designers and other sonic adventurers. Recommended. ■



Detail of the H949 Dual Harmonizer.

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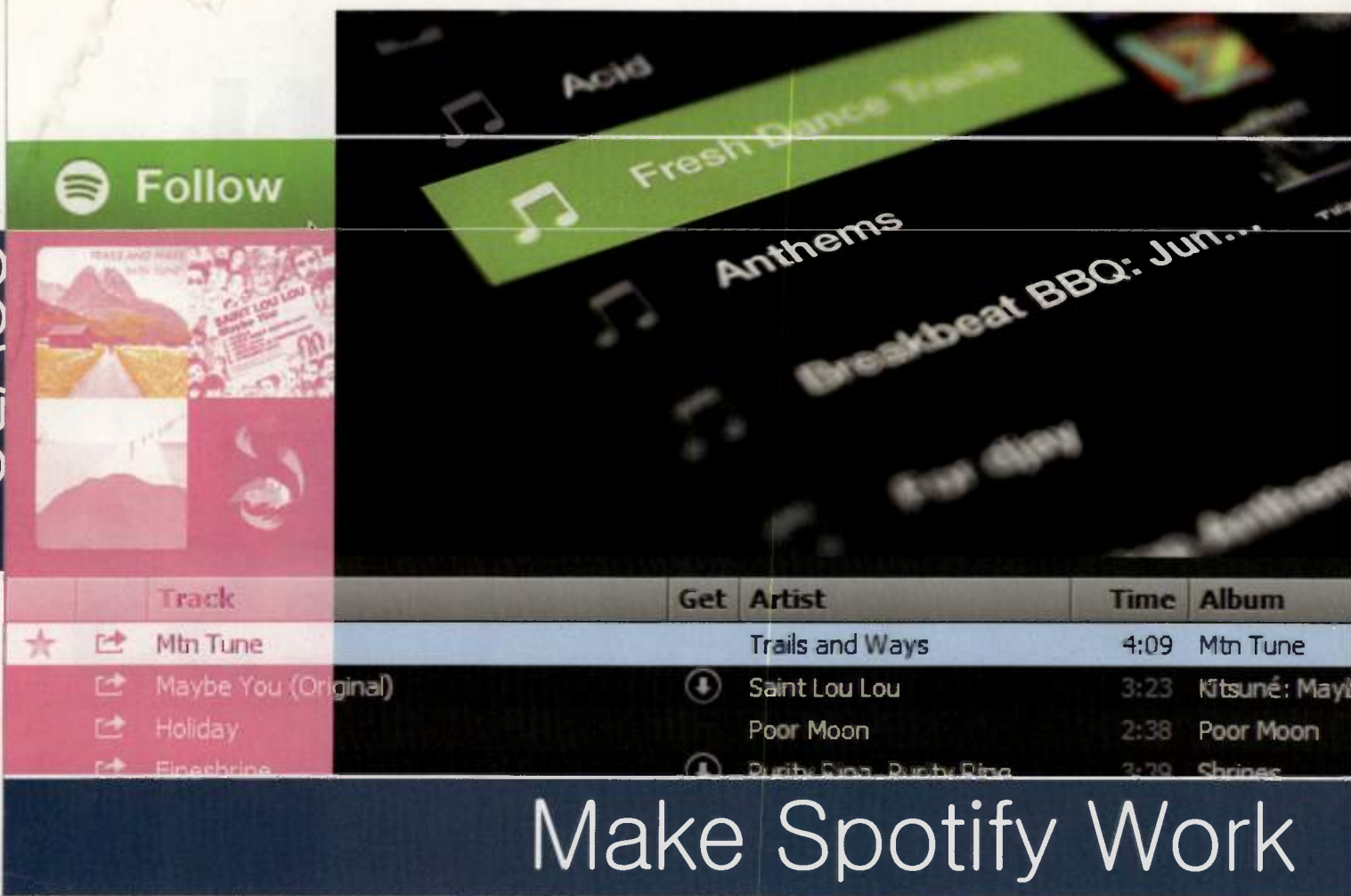
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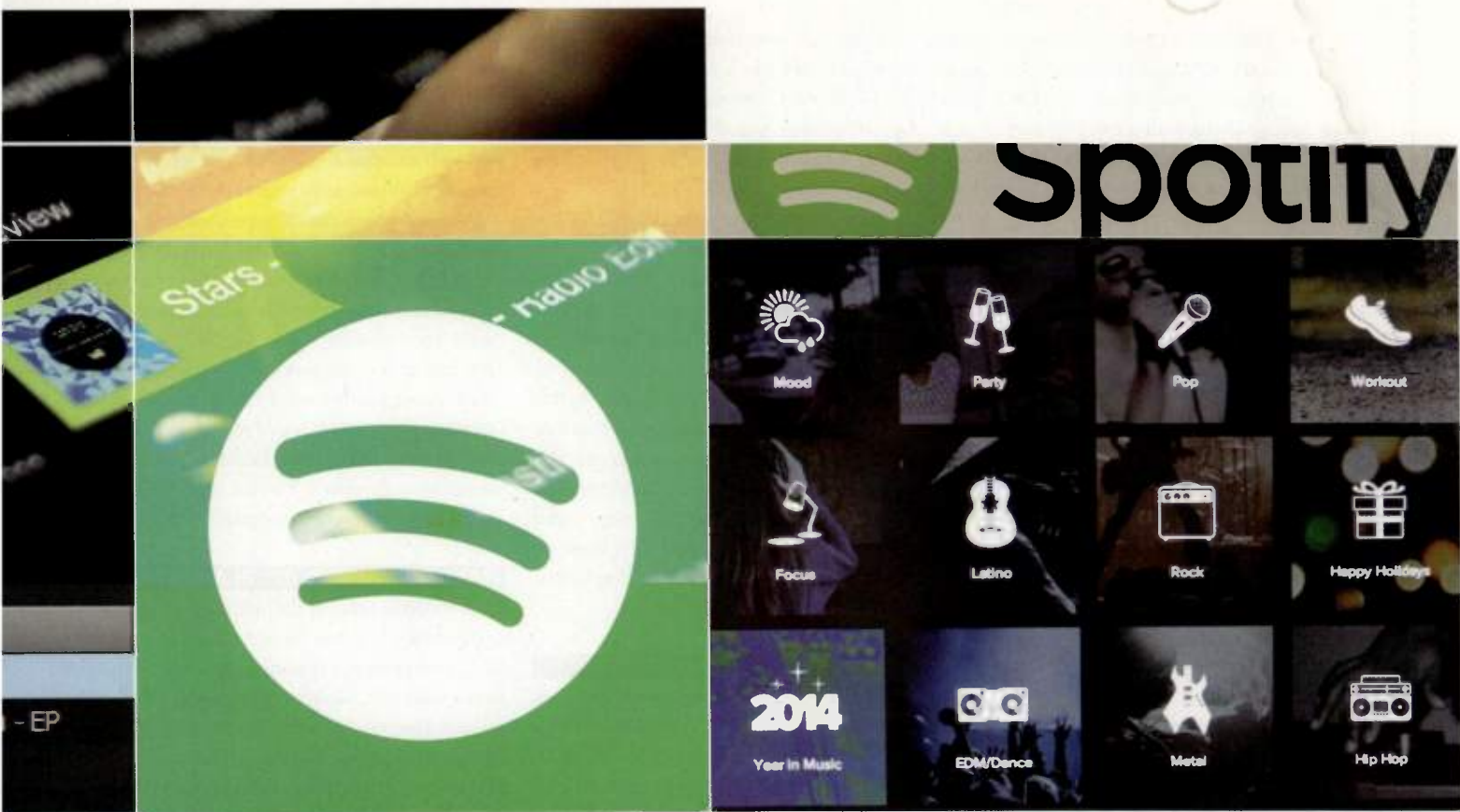
Maximize streaming service features to grow your fanbase and generate revenue

**BY RANDY CHERTKOW
AND JASON FEEHAN**

Randy Chertkow and Jason Feehan are founders of the open and free musician resource IndieGuide.com.

Spotify is the current king of the music streaming universe, boasting 75 million users, 30 million of whom are paying subscribers. (By comparison, the next largest competitor is Apple Music with 11 million paid subscribers.)

The service is not without controversy: With so much music being played, and so much money at stake—more than \$3 billion was paid out to labels and independent musicians through 2015—Spotify has found itself at the center of the streaming royalties war. It takes many, many streams on Spotify (or any streaming service) to match the income from a fan purchasing music on iTunes or Amazon. Because of Spotify's low royalty rates and the potential for streaming to cannibalize



For You

physical sales (the company is also accused of having lack of transparency regarding label agreements), some high-profile artists, like Adele and Taylor Swift, have removed their music. But unless you have the kind of fans who will crawl over glass to get your music and you can survive without streaming, Spotify's 75-million-listener audience, and the resources it offers musicians, provide a huge opportunity to get discovered, grow your fanbase, and generate some royalties where there weren't any before.

If you're new to using Spotify as a promotional tool, consider the following strategies to make the most of the service. Many of these techniques serve as best practices for internet streaming services, so work them into your master music plan.

STREAMING, SPOTIFY, AND SOCIAL TOOLS

We all know that the internet has changed the way fans discover and consume music, and artists need new strategies to take advantage of these new models. Spotify was one of the first streaming services on the scene, offering an enormous catalog and a simple, streamlined interface. But much of Spotify's success is due to the fact that it's a social network that happens to be a jukebox. Because of its robust social tools,

it has changed nearly everything about how people listen to—and promote—music online. Platforms like iTunes and Amazon have been great channels for distributing digital copies of your music globally, but in the end they serve as storefronts, with no way for artists to engage with fans, and they don't offer much communication back to the artist beyond a revenue report line item. Spotify's features empower artists to interact and build fan relationships in the same place where 75 million people listen to music.

In the past, musicians relied on a "sugar rush" of attention for new releases. While this model saw spiked initial press, album sales, and perhaps radio play (with the accompanying royalties), interest would usually quickly fade, along with the revenue. Streaming works differently: Because fans "follow" the artists they like on Spotify, they are notified when there's a new release. Releasing music more often to create steady, consistent engagement with your audience will keep your music "alive" and generate royalties longer as people discover and play it over a greater period of time.

Because playlists are so popular, more than two-thirds of all songs played on Spotify are presented as singles vs. albums. If one of your tracks is added to

a popular playlist, it can remain there indefinitely vs. disappearing from radio airwaves. The track stays in the long tail forever, generating a bit of income each time it's played. And, as your fanbase and streaming subscribers increase, the income will follow.

KEEP STREAMING IN MIND

The world of social media has an unending hunger for new activity, and your music release strategy should address that demand. If Twitter is about tweets and Snapchat is about photos and videos, Spotify is about releasing new music and sharing tracks and playlists. It takes a listener one click to follow an artist on Spotify. And once they do so, they'll get notified every time the artist releases something new.

Considering singles comprise nearly 70 percent of all listens on Spotify, and followers are always looking for new material, some musicians are choosing to release their albums as three or four EPs over the course of the year. They might also put together one-to-two-song releases, a couple of remixes, and finally, at the end of the cycle, the complete album. Breaking up album releases in this way can create a dozen events over the year. Each release keeps the artist in the top of

fans' minds and provides new material to promote within Spotify, on social media, and with the press.

To break up your releases, group tracks into EPs and singles and then sit down with a calendar and pick target release dates a couple months apart. Don't forget that your alternate song versions—live recordings, alternative takes, acoustic versions, and anything else you can dream up—can be added to the mix and will help keep you releasing a steady stream of new material for your fans to enjoy. Think beyond the music, and create additional events based around videos, art, or new merch for sale. Planning out the year with all the events you have in mind will help you manage news and give you reasons to update fans.

Once you complete your release schedule, synchronize each music release with all of the digital platforms you use (YouTube, iTunes, etc.). Make sure your release is available to buy at the same time it's available to stream since purchases generate more revenue, and your streams are excellent advertising for your fans who do buy music.

In the end, the goal isn't to substantially change how you *make* your music but instead to change on how you *release* it to the public. Spotify, like any social network, rewards consistent engagement.

BUILD OUT YOUR PROFILE

To get the most out of the service, and to take control of your artist page, you will need to create a personal account on Spotify. Make sure that your profile art matches your public persona. Also, considering that social networks are a visual experience, keep your eyes open for customizations on the platform as they give a number of places where you can upload art, especially if you become a verified user (as we explain below).

Once you create your profile, follow artists have influenced your music, or who play in a style similar to yours. Visitors can view whom you're following and your fans will be curious which artists inspire you. You'll also want to friend people who have influence, such as those who manage popular playlists in your genre. Watch their activity to get a feel for what they're doing, and share your tracks with people who friend you so they can listen and add them to their playlists. Once your music is available on Spotify, inform your fans through your mailing list, social networks, and website. Ask them to follow you; when you reach 250 followers, you can "claim" your music and unlock additional social features through Spotify's Artist Verification Program.

To help you grow your followers, Spotify provides tools such as the Spotify Follow Button (developer.spotify.com/technologies/

widgets/spotify-follow-button) and other widgets to get the word out. Be sure to ask fans to follow your artist page whenever you reach out, such as each time you release a new track or EP. (Make sure that you have them follow your artist page and not your personal profile.)

Once you hit 250 followers, Spotify will let you claim your artist page and merge it with your personal profile. To do so, you'll need to follow Spotify's verification steps (spotifyartists.com/verification). This isn't an instantaneous process—it can take Spotify up to four weeks to review and approve.

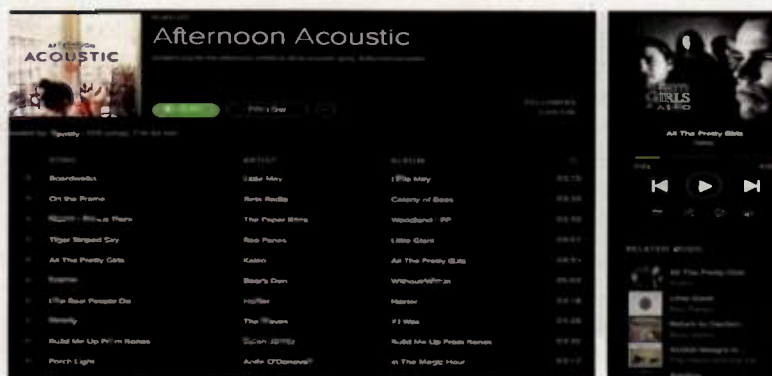
When you're verified, you can begin sharing your playlists and listening habits with the fans who have followed your artist page. You can also brand your playlists with images and descriptions, and automatically inform your followers about new releases. Spotify shares best practices on how to use your account on its artist blog (spotifyartists.com/blog).

AN ARTIST PAGE MUST BE ACCURATE

Your artist page is the first thing Spotify listeners see, so you'll want it accurate and up-to-date. Much of the text, photos, bios, and credits you'll see on Spotify are pulled from Rovi (rovi.com), and the lyrics are pulled from Musixmatch (musixmatch.com). Updating these two services with your information will benefit your presence on Spotify as well as other services. For information on how to do this, see the *Electronic Musician* feature "Credits Where Credit Is Due" at emusician.com/credits.

ALIGN YOUR SOCIAL PRESENCE

Once you're a verified artist, update your web and social presences with Spotify widgets (developer.spotify.com/technologies/widgets). Link your artist, song, and album pages, and playlists. You can also embed tracks, albums, and playlists so others outside of Spotify can listen. A bonus is that this generates royalties, in contrast to other services like SoundCloud, which doesn't pay at all, or YouTube, where income comes only indirectly through advertising.



Get onto a hot playlist, gain new fans: the Afternoon Acoustic playlist, for example, has more than 2 million followers.

ADD MORE THAN MUSIC

As a verified artist, you can sell merchandise and promote your live shows on your artist page. Spotify partners with BandPage (bandpage.com) to allow you to post your merchandise, and with SongKick (songkick.com) to allow your artist page to share your tour dates.

Verified artists can message their followers with song links, playlists, and more. Again, new releases are excellent times to use this feature, but other reasons to reach out to your followers include when you create a new playlist to share (by the way, this should be a mix of popular music and your tracks), when you discover another artist you like, or when someone else's playlist adds one of your tracks, to give that playlist some recognition. Don't forget to echo the messages to Facebook, Twitter, and Tumblr so you can connect with your non-Spotify fans as well.

TAKE ADVANTAGE OF PLAYLISTS

Playlists drive most of the interactions on Spotify's social network. When listeners use Spotify's search tool, many content categories come up such as artist name, song title, album, podcasts, and playlists that include a song or key word they're looking for. Fans are trying to create a mood, explore a genre, make background music while studying or working, or DJ a party. So, playlists often have names like "Mellow Morning" (234,907 followers), "Party Mix" (7,059), or "Beer & Wings" (42,001). Listeners discover your music when it appears on popular playlists and Spotify makes it easy for listeners to click on your name and check out the rest of your catalog.

To create a playlist that promotes your music, you'll want to piggyback on popular songs that fit the track's style, mood, or theme, or the content or lyrics of the song(s) you're going to promote. Don't simply create a playlist focused only on your music. Come up with a playlist name that will grab people's attention since most playlists are discovered through search.

If you're a verified artist, Spotify allows you to customize your playlist by branding it with your own cover art, description, and links to your website and social media. (Note that you can only do this on the desktop client.) Once you've finished

your playlist, share and message it to your followers. Refresh and update your playlists on a regular basis to stay top of mind or to add your latest release. Followers will get notifications when changes are made.

To get your music on popular playlists, find the top lists for your genre, style, mood, or theme and follow them. A playlist includes the profile of the person who created it, so you can search them out and follow them. If they follow your artist page or personal profile, then you can message them directly. If not, you may be able to

find them outside of Spotify on social networks or the web since some playlist curators build their own presences much like an MP3 blog.

In fact, you will want to use the same professional tactics you use when contacting MP3 bloggers: Reach out in a genuine way, let them listen to the track, and ask if they will add it to their list. One of the benefits of getting added to a popular playlist is, curators don't tend to remove songs, which drives long-term plays. Also, once you're included in one, you can always go back to that curator if you have another release that matches the playlist.

Finally, don't forget to reach out to your fanbase and ask them to add your songs to their public playlists or introduce you to curators they may know. If they're not doing it already, this can boost your plays and get your music to new fans.

TAP INTO THE STATS

Learning more about the demographics of your listeners helps you build your fanbase, target your marketing, and understand who ultimately is paying you. Spotify collects a wealth of information about its music and users and shares insights with you through its Spotify Statistics service. To get access to this information and tool, visit the Fan Insight request page: artists.spotify.com/faninsights/home. The information you can get includes demographics; location information; audience trends; listener

preferences including how they listen; engagement level of your fans; and playlists your music is appearing on. If you have an account with online music analytics provider Next Big Sound (nextbigsound.com), add your Spotify information by making a direct request to nextbigsound.com/spotify.

As the Spotify paying subscriber base grows to 40 million users and beyond, artists will find that it's worth being on the platform and getting the most out of its artist tools. Naturally, you should pay attention to other services in this space because streaming is still in its early days. Apple Music may be behind Spotify today, but it also has a huge customer base to draw on, so it has the opportunity to grow quickly.

Although you can—and should—engage your fanbase using traditional social media and continue your promotional campaigns through other platforms, Spotify uniquely combines its own music-based social platform with a mechanism to earn income for plays. With its social network tools and follow feature, you can create regular engagement with your fans in the same place they're already listening to their music. And every time you drop a new track, your users get a message the next time they open it to check it out. Don't leave money on the table: Build a robust music business plan that takes advantage of everything Spotify and other streaming services have to offer. ■



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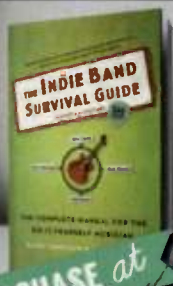
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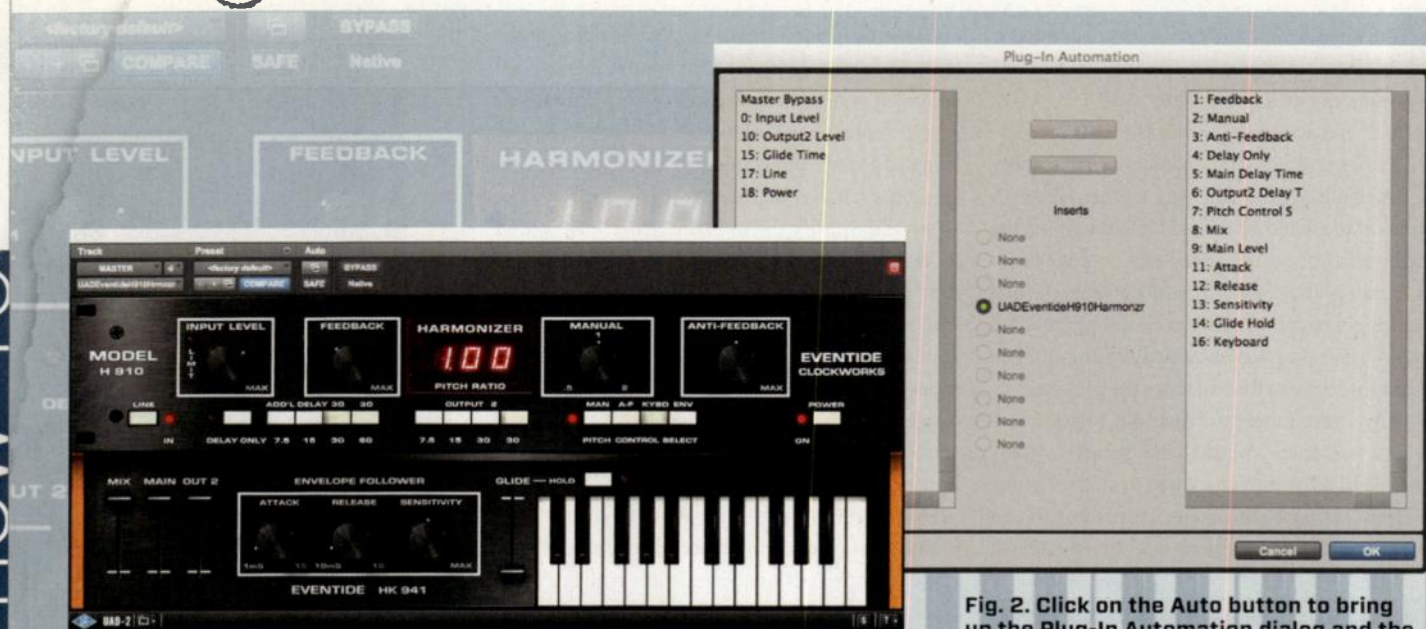


Fig. 1. Set the Manual Pitch control to 1 and select Keyboard in the Pitch Control Select section.

Fig. 2. Click on the Auto button to bring up the Plug-In Automation dialog and the parameters you want to control.

Universal Audio H910 Harmonizer Plug-In Tricks, Part 2

Create “new school” sounds using MIDI and DAW automation

BY BARRY CLEVELAND

In this follow-up to last month’s “Classic Harmonizer Effects, Plug-In Style,” we’ll cover a few “newer school” sounds that were not possible when using the original Eventide H910 hardware unit developed in 1974, long before MIDI and DAW automation. To briefly recap, the Eventide Clock Works Model H910 boasted up to 112.5 ms of delay time with adjustable feedback, \pm one octave of pitch change, and a notoriously unstable clock that resulted in random modulation shifts and other “glitches.” Options included a second output, a Pitch Ratio readout, and a monophonic keyboard. The Universal Audio H910 Harmonizer Plug-In is the equivalent of a fully tricked-out hardware unit with the monophonic keyboard.

MIDI KEYBOARD CONTROL

Although the H910’s virtual keyboard may be controlled via a physical MIDI keyboard, there is no mention of how to actually do it in the manual. (The instructions are, however, contained in a FAQ on the UA website.) Just create a MIDI track and assign your keyboard controller to the input and the H910 to the output, enable record on the MIDI track, and you are up and running. This allows you to both “play” the harmonizer in real time and record the MIDI information.

The simplest use for this is to set the Manual Pitch control to 1 and select Keyboard in the Pitch Control Select section (see Figure 1). Then, mid-

dle C3 on your keyboard is unison, C4 is an octave down, and C5 an octave up, with the other “intervals” in between. Remember that the H910 is considerably better at rendering octaves than other intervals, but that is part of its charm, and depending on how the other controls are set you can get some very wild sounds. Engage the variable Glide control to glissando from one pitch to another at various speeds, and try the Hold control if you tire of holding down the keys between changing notes.

Another very cool technique is to use one of the

continued on pg 63

Keyboard

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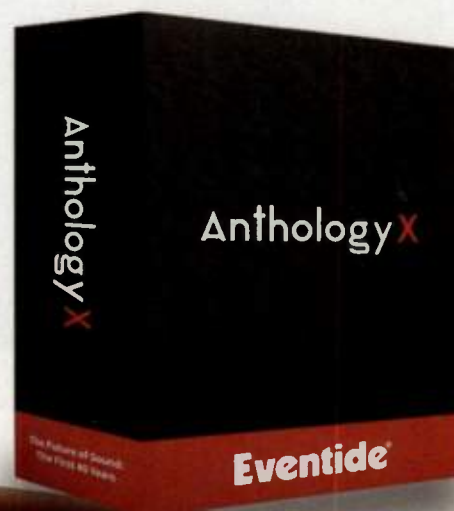
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The legendary H910 effects processor

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above processes on a continuous pad of one or more notes (it doesn't have to be a pad, but the effect is most pronounced with a continuous tone), creating either a static or changing harmony, and record the results onto a separate track. Then, change the "center" interval on the Harmonizer using the Manual control, and play the same key or keys as before, recording the second harmony part to an additional track. You now have "two-voice" harmony, and this can be repeated using different center intervals to create three or more voices. This can be particularly dramatic using the Glide option to glissando between notes.

DAW AUTOMATION

All of the H910's key parameters may be automated within your DAW. Just click on the Auto but-

There is an entire universe of effects lurking within the H910, from oddball to majestic, and time spent exploring will be very well spent!

ton to bring up the Plug-In Automation dialog (see Figure 2) and select all of the parameters you want to control. Then, select one of those parameters for automation however it is done in your DAW (e.g., there's an automation menu for each track in the Edit Window in Pro Tools 11).

Besides automating Bypass, Feedback level, and other obvious options, try automating the three controls in the Envelope Follower section, particularly the Sensitivity control. Or, mute the Line input and set the Feedback to runaway os-

cillation, then pop the Input in and out to add a crazy "tail" to, say, an individual drum hit or word in a vocal part. Or, engage both the delay lines and modulate the Main Output and Output 2 levels in time with your track for a quirky "shifting" effect.

Of course, if you record the MIDI data for your keyboard moves, as well as automating changes to the H910's controls in your DAW, you get the best of both. There is an entire universe of effects lurking within the H910, from oddball to majestic, and time spent exploring will be very well spent! ■

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SAMPLELOGIC

Jeff Anthony

Iron Mountain's entertainment industry guru talks data preservation

BY SARAH JONES

Data backup is a crucial step in all of our daily processes. But archiving information is a long game. In the digital age, how do you ensure that the work you create now will remain protected and preserved for posterity?



Iron Mountain is the largest provider of analog and digital archive services in the world; it's been storing and managing information since 1951 for government agencies and industries ranging from banking to energy; its entertainment division partners with major media companies like Paramount Pictures and Universal Music.

But data management services aren't just for the major players. I sat down with Iron Mountain Vice President Jeff Anthony to learn about resources and best practices for project studios.

Can you tell me a little bit about your role as head of Iron Mountain's entertainment services?

I am responsible for the overall direction of the division, including P&L, product management, and business development/acquisitions.

I think sometimes musicians, producers, and engineers working in project studios think of Iron Mountain as a resource that's exclusively for top-level facilities. What kind of services do you offer to independent music makers?

It is true that we work with all of the major labels to help them protect, preserve, and digitize their priceless one-of-a-kind recordings. But it is also true that we help hundreds of very small producers, engineers, and artists to do the very same thing.

In fact, because we preserve so many assets—more than 28 million worldwide—we can bring industry-wide best practices to virtually every situation, including assisting small independent producers in protecting and preserving their life's work.

Audio engineers are aware of the potential fragility of many physical formats. What are the biggest challenges in future-proofing digital data?

Future-proofing, or archiving digital data, is almost an oxymoron. Digital data is a wonderful format for production, editing, and distribution, but problems with long-term archiving are enormous. Hardware and software obsolescence, media migration over time, check sum validation, and data integrity overall are just some of the issues we face with managing digital data for the long term.

Tape is still the most reliable and sturdy format for the archiving of valuable music recordings. We have tape dating back 50 years or more in our vaults, and while there are

some issues with tape, it has stood the test of time as the best long-term archive format available.

How can musicians and engineers get up to speed on best practices for archiving their work for posterity?

First and foremost, get your music off of hard drives. We see it time and time again where hard drives simply don't spin up after as little as a few years and the data on those drives is essentially lost forever. The LTO (Linear Tape-Open) format has become the de facto standard in so many industries and that is also true for the music industry.

Put your music onto the latest LTO format, which today is LTO6; two copies preferably, and geographically separated, and you can rest assured that your data will be safe for many years to come.

Iron Mountain is supporting The Grammy Foundation's Living History Initiative to help preserve cultural and historical content. Can you tell me about that and other ways you're committed to preserving musical heritage?

We are honored to help the Grammy family in so many ways. From the Museum to the Foundation to the P&E Wing, our partnership with the Grammys is deep and long-term. We are working with the Grammy Foundation to help protect and preserve interviews from some of the most notable personalities in the industry, including B.B. King, Isaac Hayes, Brian Wilson, and dozens of other music pioneers.

We work with countless estates and current artists in helping them to preserve our musical and cultural heritage. Our most important mission at Iron Mountain is to "preserve our past and protect our future": a job we take a lot of pride in. ■

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David Rosenthal

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