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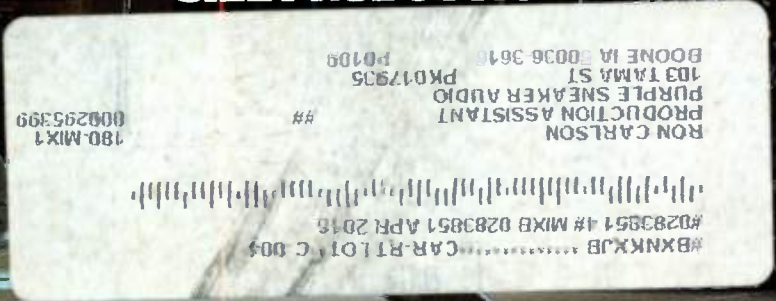
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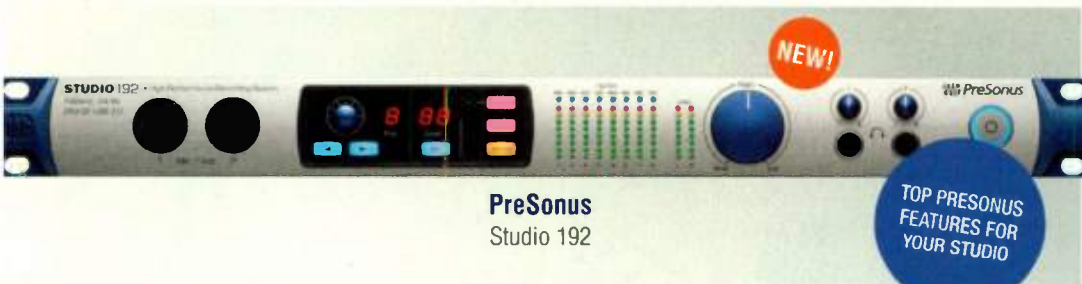
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World Radio History



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FEATURES

34 The Boxmasters
Times Two
BY ROBYN FLANS



38 Handheld Vocal
Microphones
BY STROTHER BULLINS

44 Compact Line Arrays
for Installation
BY THE MIX EDITORS

MUSIC

13 Calexico's 'Edge
of the Sun'
BY MARKKUS ROVITO



16 News & Notes

18 Classic Track:
'Epic,' Faith No More
BY MARKKUS ROVITO

22 Paul George Installs
Home Studio
BY BARBARA SCHULTZ

MIX REGIONAL: BAY AREA

48 News

49 Sessions & Studio News

50 Women's Audio Mission
BY LORI KENNEDY

LIVE

25 Tour Profile:
Bette Midler
BY MATT GALLAGHER



28 News & Notes

30 All Access:
U2
BY STEVE JENNINGS

32 New Orleans Jazz Fest
BY WILLOW HALEY

DEPARTMENTS

8 from the editor

8 current

67 marketplace

69 classifieds

TECH

52 Robair Report:
Reflections From the Bay
BY GINO ROBAIR

54 New Products

60 Review: Two
DIs: Radial
Engineering
Firefly Tube
Direct Box,
A-Designs
KGB Instrument
Preamplifiers



62 Review: Tascam DR-44WL
Handheld Recorder

65 Review: Gibson Les Paul 8
Reference Monitor

72 Tech Talk:
Where Will We Be?
BY KEVIN BECKA

On the Cover: U2 performing live for the
innocence + experience Tour at the SAP
Center in San Jose, Calif. Photo: Steve Jennings

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Not Your Average Daily Grind


Based in Los Angeles, re-recording mix engineer and sound designer, Michelle Garuik is also co-founder and owner of Grind Music & Sound, Inc. Having expertise in mixing and sound design for adventure sport television and documentary film, Michelle's clients include industry giants such as Fox Sports, ESPN, NBC Universal, HBO and much more.

With clients spanning the entertainment industry, Michelle's everyday workload is anything but ordinary. To assist with her artistry, she relies on Yamaha's NUAGE Advanced Production System. We asked Michelle what she loved about NUAGE. In her words...

"With user assignable keys, and multiple ways to complete tasks, NUAGE lets me customize the way I want to work, which speeds up my workflow. Editing with the master unit is blazingly fast, leaving me more time for creativity with sound design and mixing. Our NUAGE system allows me to instantly access features that used to take many mouse clicks to get to, and the scrolling touch strip and track organization buttons allow me to quickly find tracks in large sessions. The tactile controls of NUAGE connect me to my mix and bring back fond memories from the onset of my career when my love for working with sound was born."

— Michelle Garuik

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From the Editor

THIS ONE'S FOR MY BUDDY DWIGHT

You don't know Dwight. There's really no reason you should. He's not a recording engineer or live sound professional. He doesn't make audio products. He's never edited sound for film or video, and as far as I know, he's never written a song. He does, however, know a little bit about acoustics, and he's enamored of speakers, regularly playing back vintage vinyl jazz through four-way 1970s Pioneer monitors in his backyard, converted-garage man-cave. He's my 71-year-old retired neighbor, husband of Stella, father to Paul, Nicole and Vanessa. When I returned from AES last October, he stopped over to let me know, lightheartedly as is his manner, that he had lung cancer. Stage 4. It had made it to his liver and there were spots near his brain and on his spine. And he was gonna fight it. We went inside to play euchre, the two of us being from the Midwest and all.

A couple years ago Dwight and I started playing games at the end of the day, a few times a week. He taught me dominoes, or "bones" as he calls it, and we often play cribbage and euchre. We eat snacks, sometimes Stella brings us dinner, we have a beer, and we tell stories. We turn each other on to music. As I've learned more about his life and the details of the era he grew up in, and learned how his mind works and the types of jobs he's done, it struck me that Dwight could have easily been a chief engineer and lived a life in the recording industry.

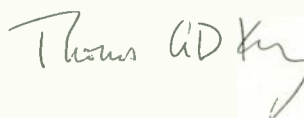
He's the type of guy who built his own computers in the early 1970s and still won't buy a laptop because he can't upgrade the hardware himself. (Though he does enjoy his kindle and his online gaming.) He built a TV from a Heath kit in his teens, and he could take apart an engine before he hit puberty. He will repair the refrigerator or dryer himself, just by figuring it out. These past two years he's been installing solar panels on his roof, even through the chemo. The weekend before his radiation started he installed an oven hood and vent in the kitchen, a long overdue project he had promised Stella. Even now he's figuring out how to hang strategically placed, aesthetically pleasing curtains and materials to improve the sound in his backyard room. He just knows how things work.

Dwight was born and raised in Toledo, coming of age when Detroit and Cleveland and dozens of other cities were exploding with fresh sounds. He soaked it all up. Then he joined the Navy. He was stationed in Guantanamo Bay in 1963, right after the Bay of Pigs, and would take leave to Jamaica and the islands. He was on an aircraft carrier in the Suez Canal in 1964, then off the shores of Vietnam in 1965. He has seen a bit of the world, and he has more than a few stories to tell. Great stories.

He learned printing in the service, and he worked in large-scale printing, on the machine side, when he made his way to the Bay Area in the late 1960s. He's also worked for AT&T helping to build international communication centers and been plant manager at a candy factory. He has a knack for implementing large industrial machine systems and keeping them working. He just as easily could have landed in San Francisco and hooked up with Wally Heider or Fred Catero or David Rubinson and started a career in the studio.

Dwight loves music, and he appreciates quality recording. He treasures his vinyl, his Billie Holiday, Ahmad Jamal, Stevie Wonder, Gloria Gaynor, Miles Davis, John Coltrane and on and on. We listen to a Berkeley jazz station, and I found out he loves harmonica, turning me on to the magic of Lee Oskar. I've turned him on to Lyle Lovett, Wilco, the Avett Brothers and many others. It's fun.

I don't write this to share a sadness. Cancer sucks, there's no other way to say it. We all have someone like Dwight in our lives, someone who exhibits remarkable spirit no matter how bad the circumstances. Someone who both understands what it is we do and someone we always seem to learn from. This one's for my buddy Dwight. And for your buddy Dwight, too.



Tom Kenny, Editor

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The entrance to Sweetwater's Music Store

June 12 and 13 at its corporate headquarters, enjoyed record-breaking attendance, with more than 10,100 participants, up 27 percent over 2014, and with sales up by more than 35 percent over last year. Housed in 19 tents, more than 400 manufacturers of musical instruments, music technology, and audio equipment were on hand to provide GearFest attendees a look at the latest gear. In addition, hourly prizes were given away to attendees, totaling more than \$80,000 worth of music instruments and equipment.

Launched in 2002, Sweetwater's free, annual GearFest is a customer-focused music and pro audio festival, featuring exhibits, workshops, clinics, seminars, live demos, special performances, a musician's flea market, and more. This year's GearFest included more than 200 workshops and seminars on guitar, recording, and live sound, music creation with computers, acoustics, songwriting, and how to use electronic instruments.

"This year's GearFest was one of the most exciting and humbling experiences of my career," says Surack. "I personally greeted thousands of our customers at the front door as they arrived and was astounded by the enthusiasm everyone seemed to have for Sweetwater, GearFest, and, in particular, for their interactions with our incredible employees."

GearFest hosted musicians performing and conducting workshops continuously on five different stages, including guitarists Jeff "Skunk" Baxter, Mike Stern, Mark Holcomb, and Javier Reyes; Deep Purple vocalist and bassist Glenn Hughes; drummer Shawn Pelton; bassist Nathan East; and keyboardist Steve Weingart.

Sweetwater's Mitch Gallagher hosted a panel discussion, the Synthesis Pioneers Panel, with Roger Linn, Tom Oberheim and Dave Smith. Technical Grammy award-winner Linn invented the LM-1 Drum Computer (the first sample-based drum machine) in 1979. He later designed the Akai MPC60, which combined a sampling drum machine with a real-time MIDI sequencer. Smith founded Sequential Circuits, and his Prophet-5 was the world's first fully programmable polyphonic synth, as well as the first musical instrument with an embedded microprocessor. Oberheim co-designed the Synthesizer Expansion Module (SEM), a device that allowed musicians to simultaneously combine live playing and sequenced playback, a concept that pre-dated the introduction of MIDI.

More than 30 videos, including interviews, product demos, and the Synthesis Pioneers Panel, were recorded and will be posted at Sweetwater's YouTube channel.



Pictured at GearFest, the Synthesis Pioneers Panel, from left: Roger Linn, Dave Smith, Tom Oberheim, and Sweetwater's Mitch Gallagher

Sweetwater Music Store, GearFest 2015

Online retailer Sweetwater announces the completion of a redesign and expansion of its Music Store, which opened on June 1 in Fort Wayne, Indiana. Sweetwater says that it envisioned and created the Music Store in 12 months, working with Fort Wayne architects, MSKTD, retail design firm Chute Gerdeman of Columbus, Ohio, and Russ Berger Design Group acousticians.

"Our new store features structural, design, and aesthetic elements that make this perhaps the music store of the future," says Sweetwater founder and president Chuck Surack. "The Music Store adds the 'jewel in the crown' to the Sweetwater campus."

The Sweetwater campus is situated on more than 100 acres and now occupies more than 320,000 square feet. It includes the Music Store, Academy of Music, a 250-seat Performance Theatre, three recording studios, a service department, the Wavelengths spa and salon, health club, the Downbeat Diner, the new Crescendo coffee bar and a second stage with a lounge area, a gaming area, conference rooms, and other amenities that are available to the public, as well as Sweetwater's employees.

Now four times its original size and one of the largest in the Midwest, the Sweetwater Music Store is backed by a large on-site inventory of musical instruments and audio gear. The Music Store's live sound room contains numerous demo capabilities for comparing P.A. and lighting systems. The recording room offers an interactive microphone display and a collection of state-of-the-art recording gear.

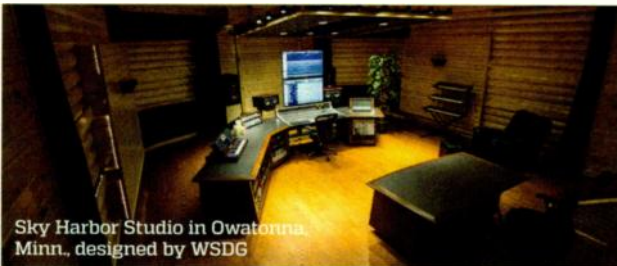
"We've worked very hard to elevate the customer experience," says store manager Thad Tegtmeier. "We have more product out than ever before, more space than ever before, and unique features you won't find in any other music store."

Sweetwater also reports that GearFest 2015, which was held on

Error Log

In *Mix* magazine's "Class of 2015" cover feature in the June 2015 issue, the design credit for Owl City in Owatonna, Minn., was inadvertently omitted. The studio, which has been renamed Sky Harbor Studio, was designed by Walter Storyk Design Group.

In *Mix*'s June 2015 issue New Products section, on p. 58, the Antelope Audio MP8d was incorrectly called an audio interface. The MP8d is an 8-channel Class-A microphone preamplifier.



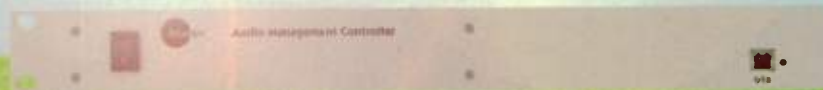
Sky Harbor Studio in Owatonna, Minn., designed by WSDG

Photo: Brian Bradley

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CALEXICO

By Markkus Rovito 13

NEWS & NOTES

By The Mix Editors 16

CLASSIC TRACKS:

FAITH NO MORE

By Markkus Rovito 18

PAUL GEORGE

By Barbara Schultz 22



John Convertino (left) and Joey Burns

CALEXICO

'Edge of the Sun' By Markkus Rovito

When people know your band particularly for mixing musical styles from myriad decades and cultures, and you're about to start your ninth studio album in 18 years, you may need new sources of inspiration. That's why Calexico—the stalwart indie band that fuses various Latin styles with Americana, spaghetti western, country, jazz and post-rock into a sound that's been lovingly dubbed “desert noir”—took a sojourn to Mexico and called on a ton of guest collaborators for its latest record, *Edge of the Sun*.

After some initial demos in Calexico's home base of Tucson, Ariz., founding members Joey Burns (producer, vocals, multiple stringed and

keyed instruments) and John Convertino (co-producer, drums and percussion) took Sergio Mendoza's (co-producer, vocals, multi-instrumentalist) suggestion to take up in Mexico City for 10 days of writing and recording.

“We were just trying to catch a vibe,” Burns says of the Mexico retreat. “We went for the purpose of demos, but some of those demos sounded so good and felt so great that we kept them.”

While in Mexico City, the guys used what Burns described as a laidback overdub-type home studio with a nice digital recording system. There was one isolated room where they recorded drums and a mixing control room where Burns and Mendoza recorded acoustic instruments. The

accessible studio with a chill vibe allowed the band to record at will and capture the moment.

For example, Burns had been dwelling on some lyrics that songwriter Pieta Brown sent him. After catching a stomach bug in Mexico City and going out of commission for a little while, “I woke up from this feverish dream and went straight into the studio and started playing,” Burns said. “Then John of course picks up his brushes and starts playing along. He knows when it's a good moment. I like that he understands the way these songs come about and how to record, how to play live.”

The band returned to Craig Schumacher's WaveLab studios in Tucson, where they did the majority of the recording, as much as possible to



Photo: Aaron Schreck

L to R: Ryan Alfred, John Convertino, Joey Burns, and Sergio Mendoza in WaveLab studios.

16-track, 2-inch tape at 15 ips before transferring to digital. Schumacher mixed *Edge of the Sun* on WaveLab's Soundcraft console.

In the true Calexico spirit of bringing people together, the live band has seven members in five locations on two continents. However, in the studio it's mainly Burns and Convertino. On this album, they did more live tracking than usual as a foursome, bringing in bassist Ryan Alfred and Mendoza on keyboards. Capturing the best possible drums is goal one during the live tracking. "A big part of the great drum sounds is because John is a great drummer and knows how to tune and work with his drums," Burns said, "whether the vintage Ludwigs or Gretsches he's used, or more recently his C&C drums."

Finished Calexico drums may only have a kick mic and a room mic applied. "The most important thing for me is good room mics, a good room sound," Burns says. That, and the right feel, which Burns establishes by, "not talking too much, trying to surprise John as often as possible," he says. "We don't want to over-rehearse or overthink things."

That's why some things, such as the drums from the single "Falling from the Sky," carried over from the Mexico sessions. "When we came back to Tucson, the spirit was not there on the versions we worked on," Burns says. "So we just used the original demo, even though there were only a couple of mics on the kit."

Somehow, by luck or by design, Calexico also got the right feel out of the vocal tracks that were sent to them from contributors such as Ben Bridwell from Band of Horses ("Falling from the Sky"), rising Mexican star Carla Morrison ("Moon Never Rises") and Sam Beam of Iron and Wine ("Bullets & Rocks"). Burns says Beam's background vocal he sent in was a little gritty, but too beautiful not to use. "It's not on the beat; it's somewhere just in front of or just behind the

beat," Burns says. "That wound up being really a nice surprise. It became kind of the focus, and then we could see when the trumpet solo should take off and be louder in the mix."

Trumpet solos and parts pepper *Edge of the Sun* throughout, combining often with accordion, banjo and vintage keys to give songs a classic dusty vibe that feels refreshingly anachronistic. "We are lucky at WaveLab to record a lot of horns," says engineer Chris Schultz. "Using ribbon microphones really helps control the sound coming from most brass and woodwinds. For this record we just got a pair of the AEA N22 [ribbon mics], so almost all the trumpets were recorded with them. Jacob [Valenzuela] and Martin [Wenk] played together with the microphones about four feet in front of each of them. I believe I used the LaChapell 992 as the mic pre."

Schultz says the keyboards were recorded about half through a Fender Bassman 10 amp (such as the Nord Electro) and half through a DI (such as the Korg Microkorg). He also has different strategies for acoustic and electric guitars. Acoustics he records with a Royer R-122 ribbon mic going into a Daking mic pre/EQ and then an Alan Smart C1 compressor. "I never use much compression on the way in," he says. "Just enough to make things a little bigger." For electrics, depending on the tone, he records the amp with either a True Systems PT2-500, Shure SM-57, Sennheiser e609 or AEA N22.

For his vocals, Burns trusts his engineers, and Schultz uses the Pearl DT-40 into a D.W. Fearn VT-2 vacuum tube preamp with just a little compression from the Alan Smart C1 on the way in.

"For me what's important is the aspect of community," Burns says. "Whether it's recording with other musicians at WaveLab or recording in our rehearsal studio with Ryan Alfred, I like getting together with people. Getting some coffee, getting some dialog and some music going." ■

JILLIAN SPEER'S 'DAGGERS & SUEDE'



The urban-meets-singer/songwriter sound of Jillian Speer's wonderful new EP gives the singer's soulful songs just the right edge, and it all starts with her guitar.

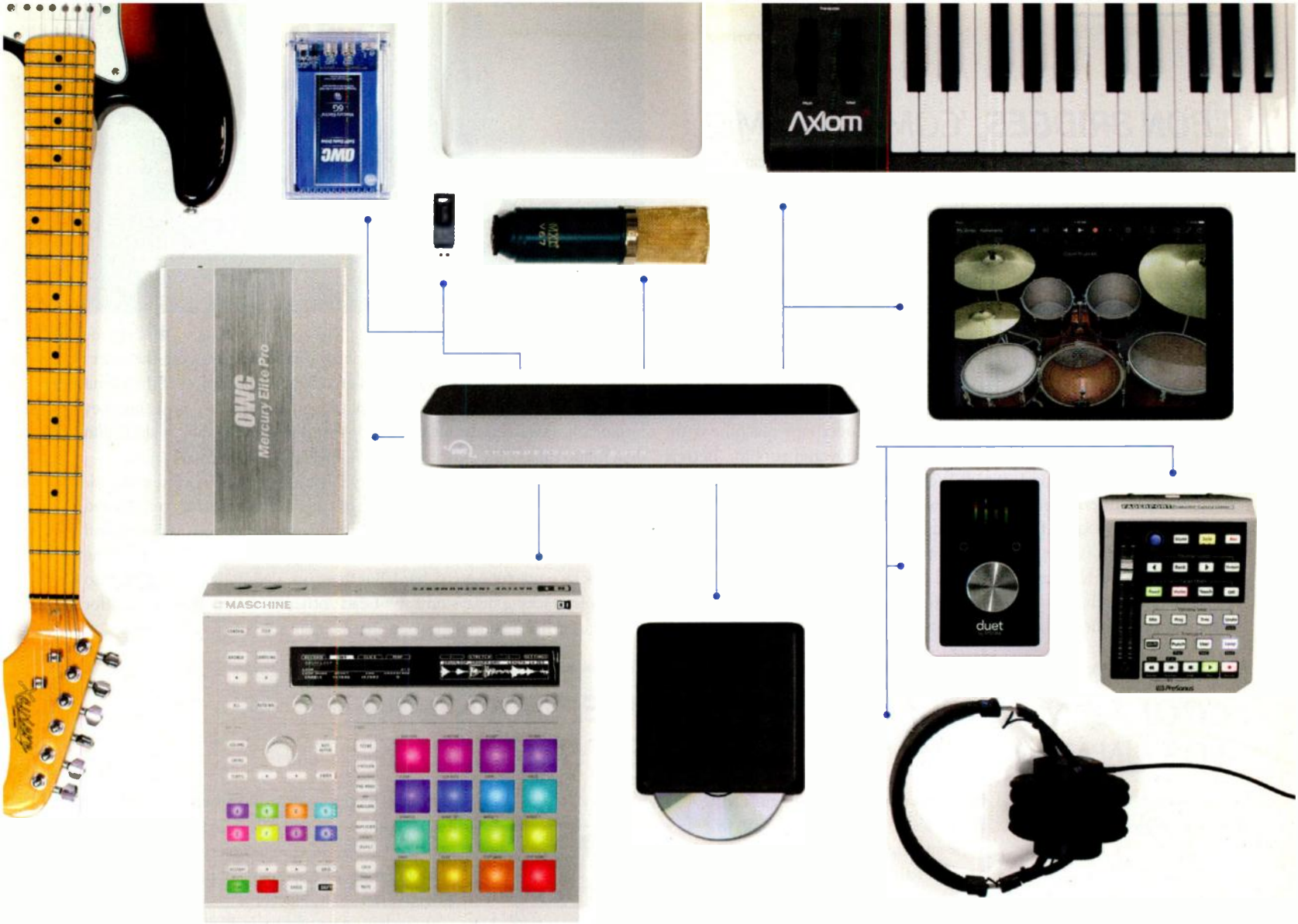
"That's really the foundation," says producer/engineer Keith "Qmillion" Lewis (Robert Glasper, Seun Kuti). "We would always start by recording that, and then build everything around it. That way, no matter what we do with the production, her core comes through."

Next steps were tracking Qmillion's bass parts, drums (that pop, big-time) by Chris Dave (Adele, D'Angelo), and electric guitars by Tim Stewart (Lady Gaga, Jesse J). The musicians tracked in the former Ocean Way Studio A (now United), and then the sessions began moving between Westlake Studios and Qmillion's personal studio, to capture Speer's vocals and other overdubs, and nail down mixes. "We cut her vocals through a [Neumann] U 67 and an Avalon 737 [mic preamp], to keep it consistent between Westlake and what I have at my house. I don't EQ much at all going to Pro Tools," Qmillion says.

During final mixing at home, Qmillion layered on some plug-in processing, as well as the vocal effects that help make this release more aggressive than your typical singer/songwriter record. "I like the LA-2A and some of the other UAD stuff: the Pultecs, the [Neve] 1084, the [EMT] 140 and 250 for reverb. And then with the effects, I used some Roland Space Echo, or sometimes I would go out to my analog gear and then back into those digital effects," he says.

"Jillian's voice has a very rich and deep sound to it that she likes to sing most of her stuff in, but when she gets up high and starts to belt, it's super powerful. As a producer, it was my goal to help her not to be afraid of that big voice, as well as make sure that the songs that she writes in her lower register still come across like a big lead."

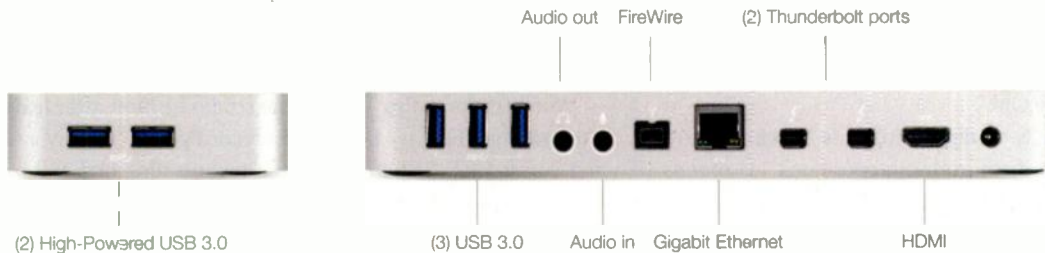
—Barbara Schultz



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World Radio History

LEON BRIDGES, 'COMING HOME'

"The clothes make the man," the saying goes. In the case of 25-year-old Forth Worth, Texas native Leon Bridges, clothes kicked off his career. The dapper Bridges caught the eye of fellow Texan, White Denim's guitarist Austin Jenkins, a similarly debonair dresser. It was Bridges' velvety tones, however, that really caught Jenkins' and White Denim drummer Joshua Block's attention as they were readying their Niles City Sound studio to kick off their production company. Housed in a 14,000-square foot former golf equipment warehouse, everything collected here is from 1948 to 1962. This is where Bridges' Sam Cooke-channeled, natural throwback doo-wop soul is captured.

"We picked our favorite putting green, built a tent city around that, and put the equipment around the green," says Block of creating a temporary, makeshift studio. "We used an 8-track Studer tape machine with an old Neumann U 67 microphone which was edgy and cool for 'Better Man,' 'Coming Home,' and 'River.' We broke everything down and set back on up a different putting green with an 8-track 1-inch Ampex and used a Neumann U 47 for a more classic male vocalist sound for 'Lisa Sawyer.' The idea is that we could capture different depths of [Bridges'] vocals. U 67s have a snappier bleed and sound upfront, but you don't hear the throat as much. The U47s have a chesty bleed with more mid making for a warmer room. [Bridges] sounds great in front of a U 47."



In addition to the change in gear for "Lisa Sawyer," Bridges' stirring ode to his mother, the instruments are isolated differently. Bringing the pieces closer together, the angles are adjusted on the amps for control of the sound bleed, and baffling is added. For this Block and Jenkins used anything they found in the warehouse including HVAC insulation boxes. A 1948 Collin dual mono tube desk, similar to Sam Phillips' RCA, is used for tracking.

"During the first session we had everybody singing into the same mic positioned around or behind [Bridges] in accordance with their vocal strength and capacities," says Jenkins. "Finding the right dynamic between [Bridges] and the backing vocalists was a challenge. The only processing we did was hitting a 2-track tape machine pretty hard. But there was definitely no dumping into Pro Tools, stacking delays on top of each other to make his vocals last for minutes. He did that on his own."—Lily Moayeri

COOL SPIN PENGUIN PRISON, 'LOST IN NEW YORK'



In the four years since Penguin Prison's self-titled debut, New York-sprung dance-pop has become all the more established by the likes of MGMT and Holy Ghost! With his follow-up, *Lost In New York* (Downtown Records), it's clear Penguin Prison's Chris Glover has spent the time working on

his '80s-influenced pop chops.

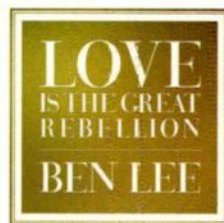
Lost In New York starts with jumpy synths reminiscent of Hot Chip on "Try To Lose" and keeps the mood up on the hip-shaking "Show Me The Way." While Penguin Prison is a one-man project with Glover both songwriting and producing, *Lost In New York* is heavy on the collaborations. Most notable of these is the duo Oliver on the Hall and Oates-inspired "Calling Out" and Amanda Warner and Pete Wade of MNDR fame on the floor-friendly "Never Gets Old."

No matter who Glover is working with, it is his chart-ready, confident vocals that push these frothy compositions. He sounds melancholy on the bubbly rhythms of "Don't Tell Me How It Ends" and only slightly less sad on the pulsing "Laughing At The Floor."

Lost In New York is of the moment, but could have just as easily have been released 30 years ago at the height of fun, '80s synth-pop. Now or then, it maintains that carefree sentiment.—Lily Moayeri

For a complete listing of credits, visit mixonline.com.

BEN LEE, LOVE IS THE GREAT REBELLION



Ben Lee has released 11 solo albums, in addition to his band work with Noise Addict. The newest, *Love Is the Great Rebellion*, is his sixth with renowned producer/engineer Brad Wood (Lisa Loeb, Veruca Salt, Placebo).

Love has an intriguing feel, where heavy lyrics (one song is called "Everybody Dies," for example) are seemingly sung by the most cheerful choir of singers, and played with joyous gusto.

The album was made in Wood's backyard studio with the producer and artist playing many instrumental parts themselves.

"On drums, if it wasn't programming it was either me playing or Ben, and I played all of the bass," Wood says, "But we did hire some guitar players and background singers. And with Ben, there's always a rogues' gallery of musicians and other awesome people who will come in, hoot and holler on a song, stomp their feet, play a shaker, and off they go. Michael Wells played piano on a couple of songs. A mom at our daughter's school played bagpipes for us for a day. But by and large, we played everything ourselves."

Wood tracks to Pro Tools in the studio he built after leaving Chicago for L.A. a decade ago. He says Lee likes to record guitar (usually a Gibson J-45 acoustic) and vocals first. "Whether it was a techno tune or a full band thing later, Ben wanted to have voice and guitar locked in together—that nucleus," Wood says.

Wood usually put up either a vintage AKG 451 or a Peluso 2247LE mic on guitar and an sE Electronics Z3300A vocal mic. "The 2247 has a bright, topky thing that works really well on finger-picked guitar," he says. "The sE mic is one of my secret weapons. I use it on 90 percent of the vocals I record. It has a bit of a [Neumann] U 47 FET sound. It stands up in a track, so it works well for Ben on this album."—Barbara Schultz

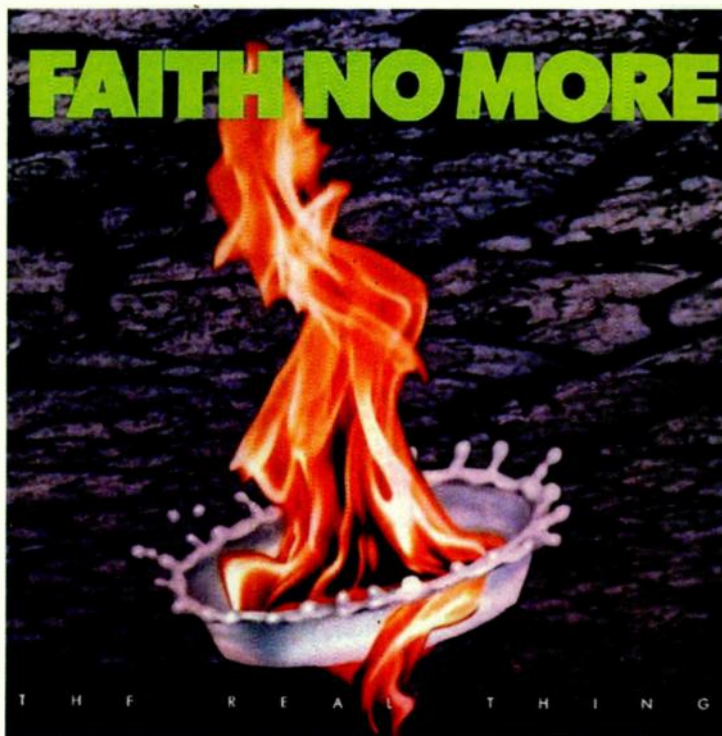
Butch Vig



BAREFOOT

Classic Tracks

By Markkus Rovito



"EPIC"

Faith No More

In early 1989, Matt Wallace almost quit being an engineer/producer. Nearly in tears, he called his mom to ask how to get into real estate. Wallace's "failure" was producing, engineering and mixing Faith No More's third album, *The Real Thing*, which went on to hit Number 11 in the U.S. and sell more than 4 million copies worldwide.

"I mastered that record with John Golden at K Disc Mastering [in Hollywood]," Wallace said. "It just sounded so bad on my home stereo and my car stereo. It was so high-endy and there was so much compression. I just thought I sucked and I didn't know what the hell I was doing. Then lo and behold, on radio and MTV it killed. It was a perfect confluence of sounds and sketchy recording where it really jumped out of the speakers. It was just one of those happy accidents."

Perhaps Wallace, who had about six years of producing records under his belt at the time, was just being his own worst critic, as many of us are apt to be. Either way, it would be about a year later when the serendipity of *The Real Thing* took full effect, as the album's second single, "Epic," blew kids' minds just as completely as the piano blew up at the end of its iconic video.

Anyone of MTV-watching age in 1990 remembers the "Epic" video, which aired incessantly for a stretch. Although Faith No More was a

somewhat established band with a minor alternative hit in "We Care a Lot," the fresh combination of metal, funk and hip-hop in "Epic" seemingly came from out of nowhere, mixing different sounds of the day that should have been unmixable and making it sound natural. From the long-haired rapping white boy to the grandiose guitar solo to the dramatic piano outro while a fish out of water struggled for life in the video, "Epic" was powerfully weird and weirdly powerful. The single went Gold and hit Number 9 in the U.S., the band's biggest hit.

Even though Wallace couldn't predict the album and single's eventual success when he was having his existential moment, he could have graded himself on a curve based on what he had to work with for the album. *The Real Thing* came from somewhat humble beginnings, but not as humble as Wallace and Faith No More's true beginning.

"I started with those guys in 1982 in my parents' garage," Wallace said. "This tiny little suburban garage studio I put together." During Wallace's senior year at UC Berkeley, he was attending classes two days a week and making 8-track records in the garage four days a week. The first 7-inch as Faith No Man, including bassist Billy Gould and drummer Mike Bordin, was one of about 40 records Wallace produced at his folks' house or at his studio after he moved it to neighboring Oakland.

With personnel changes, the band became Faith No More, adding Roddy Bottom on keyboards, Jim Martin on guitar and vocalist Chuck Mosley. Wallace produced their first album *We Care a Lot* (1985) over two three-day weekends—including mixing—at the 24-track Prairie Sun studios in Sonoma County, California, and then *Introduce Yourself* (1987) was recorded at Studio D in Sausalito and at Ground Control in Korea Town in Los Angeles.

For *The Real Thing*, the band and Wallace spent some time rehearsing the songs without lyrics or a singer in L.A. before heading back to the Bay Area to record at Studio D Recording in Sausalito. New singer Mike Patton had about two weeks to write lyrics before the sessions started.

Not only was Patton short on time, but Wallace and the band were short on gear. They had Bordin's Yamaha drum kit and Wallace's Slingerland Radio King snare drum, Gould's Gibson Grabber bass going through a Peavey guitar head, Martin's Gibson Flying V guitar and half-stack Marshall amp, Bottom's E-mu Emax keyboard and the studio's piano. "We had no options," Wallace said. "That was it."

Wallace recorded to a 24-track Studer A800 tape machine, through what he called "a really fantastic board," a Trident A-Range console. They started off tracking the songs with a full band, mostly just to get the drums down. Wallace would then do razor blade edits before beginning overdubs, and he figures they overdubbed just about everything except the drums. Wallace miked the drums with a Shure SM57 on the snare, an AKG C 451 or 452 under the snare, an AKG D12 on the kick, Sennheiser MD 421s on the toms, Shure SM81s as overheads, an AKG C24 about six feet away from the drums and a pair of omnidirectionals—maybe AKG 414s—as distant room mics.



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"I have to say 90 to 95 percent of that drum sound is Mike Bordin's contact with the drums," Wallace said. "He plays in a unique way; it's really a wrist thing. His toms are very flat, and he always had bigger toms than you're 'supposed' to have."

Wallace put a bit of compression on the snare, kick and the close room mics, and then a lot of compression on the distant room mics. "That's where you get that amazing drum ambience and room ambience," he said. "I had those separated out so in the mix I could blend them as needed. To me, the Faith No More sound is really the distance between Mike's snare drum and the compressed room sound and the distance between the distorted, solid-state bass amp and the hallway, and then how much compression is on them."

The speakers for the bass were in a hallway with a 421 mic tight to the

cabinet, a condenser mic in the hallway and also a channel from a Countryman direct box. "Bill really attacks the bass," Wallace said. "His pick, his overdriving Peavey solid-state guitar amp and the room ambience—it's an aggressive sound, almost like you took a Marshall guitar amp and pitched it down an octave."

For the album, Wallace and Martin spent at least a day trying around 26 mics in different positions and placements to get as many guitar tones that they liked out of Martin's single guitar and amp. They recorded him in the only large iso room they used and blocked off the gear with yellow police tape once they had the setups they liked. Some of the mikings included a 414 tight to the speaker cone, a Shure SM57 off the speaker's edge, a 421 on the back and flipped out of phase for a low thud, and some mics placed at distances. Their favorite tones were used for multiple tracks on the album.

Even though Martin always wanted more metal to the sound, every day he and Wallace would play the theme from Ennio Morricone's *The Good, the Bad, and the Ugly*, salute each other and start working on guitar. "There's nothing comparative sonically," Wallace said, "but we wanted that feeling of grandeur, size and panorama when we did Faith No More."

"Epic" specifically took two or three days in the studio to finish, including initial tracking, edits and overdubs. They already had a great demo to work off of that Gould made beforehand, which even included the piano outro. In the final recording, the piano outro is Bottom playing the miked-up studio piano for the melodic top end, and Gould playing plinky chords on the direct-recorded 8-bit sampling Emax keyboard.

Gould's impeccable composition and Martin's blistering guitar notwithstanding, one has to wonder if "Epic" would have been such a hit without Patton's esoteric lyrics, commanding presence and distinctive voice. Wallace recalled that between takes, the vocally elastic Patton would switch from the nasally, whiny voice from the chorus of "Epic" to a deep and rich R&B-style crooning. Wallace wanted him to try that voice on the recording, but Patton refused.

"Honestly, Patton was right, because that kind of adolescent, bratty thing he did was absolutely right for that song," Wallace said. "If we had gone my way, I don't think it would have connected like the version we did. Patton was right in sticking to that irritating, kind of 'f*ck you' vibe on his vocal. I think young people connected with it because he was singing the way young people thought of the world, like, 'no one understands us.'"

Patton's aggressively delivered verses influenced the choice of vocal mic: a Neumann U 47 FET condenser, rather than a tube mic, because of the sonic pressure he was putting into it. "I recorded Patton's vocal through a dbx 166, which is not a great compressor," Wallace said. "It was a stereo/dual compressor, so I'd run his vocal through one end of it as a com-

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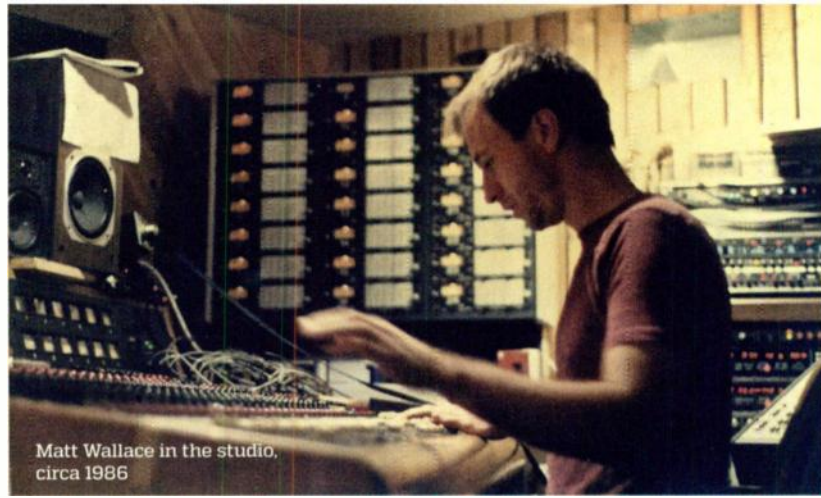
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pressor, back into the other side of it as a limiter, and then to tape. So we hyper-compressed him to tape and then during the mixing phase, I used that same 166 again on his vocals. So his vocal was compressed twice to tape, twice during mixing, and then it went through the bus compressor. Not really hi-fi, but that record had a sound that was very aggressive yet still melodic, and we really went for something.”

They went for something, but “what... is... it?” That question confounded almost everybody who heard “Epic,” a real love-it-or-hate-it type of genre-bending track when it came out. Wallace said their associates at Warner Bros. liked it but thought it would never receive radio play. It had a radio-unfriendly 44-second instrumental interlude in the middle and a bit of a raw mix.

“It was always a challenge to go through the frequencies and try to make it so the bass and the electric guitar didn’t get in each other’s way,” Wallace said. “Then I was trying to keep the keyboard at the upper midrange on up, to keep it away from the guitar. Oftentimes they would all play 100 percent for a good portion of their songs, so I’d always have to do subtractive mixing or subtractive equalization to try to find ways to weed things out.”

However, when the label had Wallace do a radio remix version of “Epic” with more polish and less instrumental, it went nowhere. “The remix has tremendous low end on it and also has more hi-fi reverb,” Wallace said. “Honestly, it’s technically better. It sounds more like, ‘now winning the Grammy for engineering, Matt Wallace.’ But everyone still loves the original version, because it’s scrappier. As much as I wish people had used that remix,



by the time it got out, radio had already jumped onboard the original album version. Honestly, the original version just worked. It didn’t sound too pro.”

Perhaps it was that alternative hits in the era of “Epic” are like viral videos today: everyone wants to make one but has no idea how to do it until it’s done.

Wallace went on to produce Faith No More’s follow-up to *The Real Thing* and the band’s most critically acclaimed album, *Angel Dust*, and he still hasn’t quit producing. Among his many credits are the multiplatinum-selling *Songs About Jane* by Maroon 5, Train’s first album, Andy Grammer’s first album, two albums with O.A.R., and he’s now working with young bands like Los Angeles, R5 and RapScallions. Faith No More just released its first album in 18 years, *Sol Invictus*, on May 18, which was mixed by Wallace and Bill Gould. The fish from the “Epic” video, Morty, is retired and living in Lake Tahoe. ■

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PAUL GEORGE INSTALLS HOME STUDIO

Haverstick Gives NBA Star Privacy, and Plenty of Headroom

By Barbara Schultz



Gavin Haverstick (left) and Paul George

Photo: Doug Fellagay

If you watched the NBA Finals this year you saw an AT&T ad that lauded the impressive rehab of Indiana Pacers star Paul George, following the leg break that he suffered in an offseason scrimmage. So, sports fans already know how hard George worked to return to

the game this past April. However, *Mix* readers might be interested to know that George also used some of his down time to build a personal studio in his Indianapolis home.

George enjoys creating music and hosting musician friends. Until recently, his rig comprised a laptop, interface and a pair of mid-priced speakers. But last summer, he hired designer/acoustician Gavin Haverstick of Haverstick Designs to help create a facility that would up his production values and be worthy of visitors who might be accustomed to high-end studios.

"The space [for the studio] was on the second level of Paul's house," Haverstick says. "It consisted of two rooms separated by a door." The area, previously used as storage, had an A-frame shape. The smaller of the two rooms was approximately 10.5x8.5 feet, while the larger one offered about 20x10.5 feet of space plus a 3.5x5-foot alcove housing stacks of Nike boxes.

The space configuration was well-suited for the control room and vocal booth that George wanted. However, the A-Frame shape meant the designer had to be cautious in balancing height and isolation needs.

"Paul's bedroom and office are located directly below the studio," Haverstick says. "But height was an issue on the sides of the room; it sloped down to 67 inches, but Paul is 80 inches tall. So instead of losing height with a room-within-a-room design, we stripped everything down to the studs and the ceiling joists and the floor joists, and we added resilient clips and isolation directly to the structure of the house."

Haverstick's design included floating the studio floor with a Kinetics RIM system to reduce vibration transference. Other solutions included Kinetics IsoMax Clips to decouple the walls and ceiling, and IsoStore isolating doors.

Haverstick also found creative places to put acoustical treatments. "We worked bass trapping into the ceiling clouds, and in the soffits where the speakers are mounted. We put a bass trap in that alcove that was full of shoeboxes. Had this been a rock studio, I might have turned it into an amp closet, but for Paul's projects that wasn't needed, so I built in a closet—which is always useful—but 42 inches of that space is all insulation and bass trapping with a diaphragmatic face to it, so it increases low-end absorption. That was crucial to the type of music they are doing and the level of speakers we put in there."

Equipment was chosen in consultation with Mike Picotte at Sweetwater, which, like Haverstick's design firm, is based in George's home state. George's upgraded rig includes an SSL AWS916 console, ATC SCM110

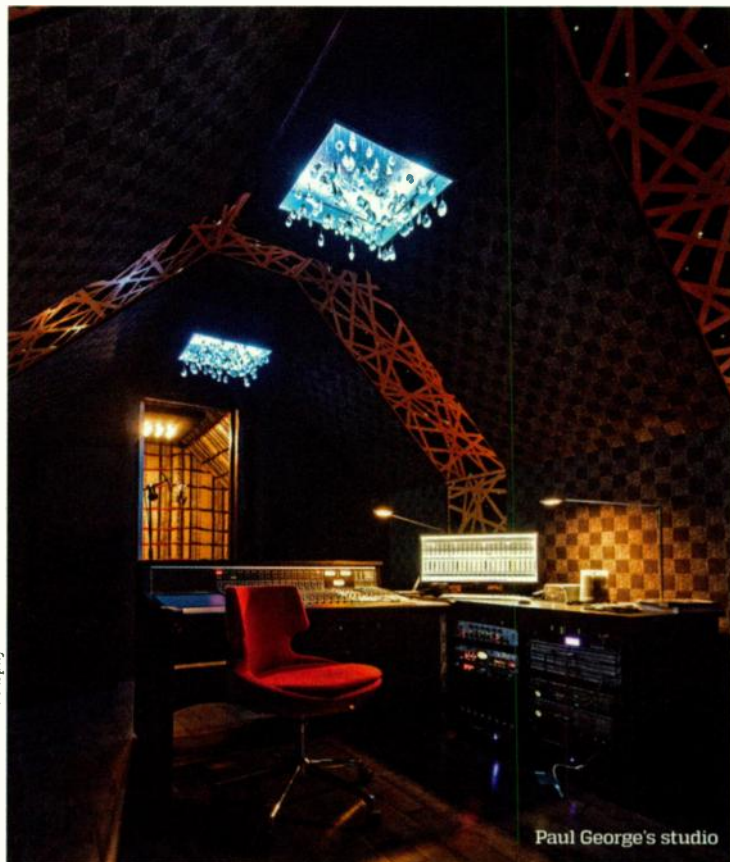


Photo: Rachel Geraci-Murphy

monitors with JBL LSR6312SP subs, Pro Tools HDX with HD I/O 16x16 converters, and Rupert Neve Portico 2 and Avalon Vt-737 preamps.

Consultants were selected carefully to implement all of the studio plans: The acoustical treatment build-out was performed by Simplified Acoustics, which installed a stretch fabric system, fiber optics and RPG diffusion. Dynamic Audio Solutions installed equipment and trained George, as needed, on gear that was new to him. Studio construction, project management and interior designs were handled by TRIPhase Technologies and their project leads Shanna Haecker and Tom Wilburn; TRIPhase had also consulted on George's home security system. Next, along with Haverstick, TRIPhase will begin working on the athlete's home theater.

"Paul wanted to keep things in the 'family,'" Haverstick says. "Building a home studio is a long process, and you want to know who's coming into your home day after day. For me, this was an especially nice project because it's local and I was actually able to see it throughout the process."

"About 80 percent of my work is outside the state of Indiana, but this project happened at a time when I was limiting my travel because my wife and I had our first child in January. Sometimes it's really nice to be close to home." ■

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BETTE MIDLER

By Matt Gallagher **25**

NEWS AND NOTES

By The Mix Editors **28**

ALL ACCESS: U2

By Steve Jennings **30**

JAZZ FEST

By Willow Haley **32**



BETTE MIDLER

Divine Intervention Tour 2015 By Matt Gallagher

Bette Midler, The Divine Miss M, embarked on her first major tour in a decade with a 30-city tour in support of her latest album release, *It's The Girls!*, her tribute to the girl-group pop music of the '60s and beyond. The Divine Intervention Tour 2015 touched down in arenas throughout the U.S. in May and June, capped off with stops at Madison Square Garden and Barclays Center in New York City before heading to the UK for the month of July. More than simply a concert, the 2-hour show can be described as a full-scale musical production, serving up tightly choreographed Broadway- or Las Vegas-style entertainment complete with set and costume changes and skits that complement Midler's 25 songs, drawn from *It's The Girls!* and from her vast recorded catalog stretching back to the 1970s.

Joining Midler onstage are her backing vocalists, The Harlettes—Carol Hatchett, Nicolette Hart, and Kyra DaCosta—and a 12-piece big band

under the musical direction of Morris Pleasure on piano and keyboards. The band is comprised of a stellar cast of top touring and recording musicians: Sonny Emory (drums), Sam Sims (bass), Darrell Smith (keyboards), Taku Hirano (percussion), Jeff Pevar (guitars), Tariqh Akoni (guitars), Adrian Crutchfield (saxes, flute), Mike Eyia (woodwinds), Mike Cottone (trumpet), Chris Bautista (trumpet) and J.P. Floyd (trombone).

The entire effort was launched with four weeks of music rehearsals at GMT Studios in Los Angeles, followed by one week of production rehearsals at the Los Angeles Memorial Sports Arena, followed by one week of rehearsals at Hard Rock Live in Hollywood, Florida, where the tour opened on May 8. Mix caught Midler's performance in late May at the SAP Center in San Jose, Calif.

Mixing audio for Midler and her ensemble at front-of-house is veteran engineer Steve Guest, who has a history of working with Midler and

musicians in her band. "I took over mixing her Experience The Divine tour in 1994," Guest recalls. "I was the backup FOH engineer mixing the last months of her 'The Showgirl Must Go On' run at Caesars Palace in Las Vegas. I've known her core rhythm section—Sonny, Sam and Darrell—since around 1991."

Sound company Solotech, with a U.S. office in Las Vegas, is supporting this tour by providing video and audio equipment including an L-Acoustics arena system comprising 14x K1 main left and right P.A. plus 4x K2, which acts as downfill; 14x K2 for left and right side hang; flown subs, which are 8x K1-SB per side; deck subs, which are 4x SB-28 per side; and 8XT and 12 XT coaxial loudspeakers as front fills. In addition, the Divine Intervention Tour is using two DiGiCo SD7 digital consoles with Stealth Digital Processing, one at front-of-house and one at monitors.

"The monitor console was chosen first," Guest explains. "The SD7 has enough output



Photo: Steve Jennings

Solotech systems engineer Fred Cantin (left) and front-of-house engineer Steve Guest at the DiGiCo SD7 console at FOH.

capability and flexibility to accommodate everyone, including the back-line guys, to be on stereo IEMs plus some stage wedges. For FOH, rather than having a mic splitter and two different stage rack setups just to accommodate a different console choice for me, I went with an SD7 as well. We needed two stage racks—around 100 inputs, which are gain shared between consoles. So inputs are seeing just one load and without a mic splitter in line there are fewer connections and points of failure, it's more reliable, and easier to troubleshoot. I have a Waves [plug-in] package and redundant servers, but I'm only using a few things: the dbx 160 as a bus compressor; the PuigChild compressor, modeled on a Fairchild, also as a bus compressor; and I use the TrueVerb reverb for the horns."

Emory's drums serve as an anchor for the music and for Guest's mix. "Sonny is so solid, consistent, and such a great player you can't help but to build a band mix around him," Guest says. "It's very much a big band, and there are times when it feels like a classic big band—and I like that! [Laughs] It adds to the whole classic feel of it, when the horn section kicks up and comes across like a big band. Mixing those guys is not too far removed from mixing [saxophonist] Dave Sanborn's band [Guest has often worked with Sanborn since 1991]. It's a similar feel. You just want to hear what's going on, and they're such great players and want to bring all that out. So I kind of approach it the same way. And [Midler's] voice is just beautiful, and I sit that on top of [the mix]."

Midler's voice is, to be certain, the main focus of the show and of the FOH mix. "The big picture is Bette," Guest says. Midler's vocal chain begins with a DPA d:Facto capsule mounted on a Shure Axient AXT-200 transmitter, used with Shure AXT-400 receivers that output AES directly into the stage rack. "So it goes digital right from the capsule, right to the console, so there's no conversion involved; it goes right from the capsule to the fader. Normally wireless stuff has its own set of problems, but the Axient stuff on AES right into the system—beautiful."

Guest says that he chose the d:facto as the best match for Midler's voice. "She was using another mic when I came in on the Caesars Palace gig, and I didn't feel I was getting the combination of warmth and clarity I wanted from it," he says. "When I got the nod for this tour I played around with some other choices and ended up with the DPA d:Facto. I didn't seem to need to

wrestle with the lower midrange like I do with a lot of other vocal mics.

"I don't use any special plug-ins on her voice," Guest notes. "The SD7's onboard EQ and dynamic control stuff is great—compressors with side chain access and filtering, dynamic EQ, and de-essers. I use very little in the way of vocal effects so most of [the reverb] you're hearing is definitely room acoustics. But I do have an outboard Bricasti Design M7 I use lightly just for her voice. In an arena there's enough natural reverb flying around that I don't really need to add that much to it."

Headset vocal mics also factor into this production, to accommodate the movement of Midler and The Harlettes throughout both sets in the show. "We started with DPA [4066] headsets for Bette and the Harlettes but switched to the Sennheiser HSP4 headset for Bette," Guest says. Additionally, the horn players are outfitted with Shure Beta 98H/C clip-on instrument mics, to enable them to participate in choreographed numbers. "I didn't want to have two sets of microphones just for the horn section, so I just left them as wireless," Guest says. "I mean, we're already at over 100 inputs!" [Laughs]

Monitor engineer Martin Paré works for Solotech, and was originally hired for the Divine Experience Tour as the monitor assistant. When the tour's original monitor engineer had to leave for personal reasons, Paré was asked to step in. "I have an assistant, Alexandre Bibeau, who is a great help by listening to the band communication and relaying to me [whether they need] any fixes."

As noted, Paré is also mixing on an SD7. "I love everything about this console," he says, "the sonic quality, ease of use and all the I/O that you ever need in one sleek package." His monitor setup includes the Shure PSM1000 Personal Monitor System rackmount dual-channel, networkable transmitter and Shure Axient wireless mic system. Midler relies on six L-Acoustics 12XT coaxial loudspeakers across the front of the stage and three KUDO per side for side-field monitoring.

"Midler is using one in-ear, the JH Audio Ambient FR, in her left ear to hear her voice, piano, drums and The Harlettes," Paré explains. "It's about the same in the wedges, and a full band mix in the side fields. During rehearsal I was using the Waves TrueVerb for effects on her voice, but since she's only using one ear, and depending on how the arenas sound, I've removed the effects from her mix to get it more tight and coherent."

This tour marks Paré's first time working with Midler. "Miss Midler is a real professional," he says. "She's a great artist and an amazing singer. During the show I only listen to her so I don't have much time for the band." ■



Photo: Steve Jennings

Monitor tech Alexandre Bibeau (left) and monitor engineer Martin Paré at the DiGiCo SD7 at monitors.

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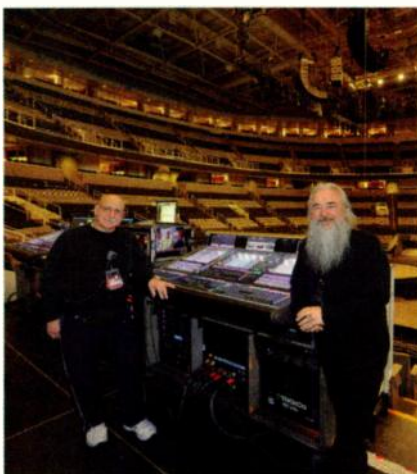
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By Steve Jennings

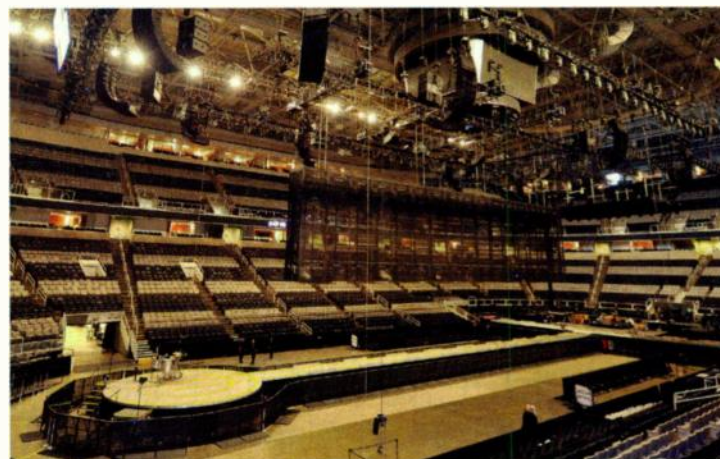
U2 *iNNOCENCE + eXPERIENCE TOUR 2015*



U2 has brought it back inside arenas, playing multiple dates in various cities, again with huge, stellar production values. *Mix* caught the fourth date of the *iNNOCENCE + eXPERIENCE* Tour at the SAP Center in San Jose, Calif., where a ramp extended from the main stage all the way down the center of the arena to a circular B-stage, where the band performed several numbers. There's also a huge LED video wall over the ramp that has a catwalk for the band to perform. Helping to make this all happen is the tour's show designer, Willie Williams, and Production Manager, Jake Berry. We spoke with the band's longtime sound engineers about the tour's audio.



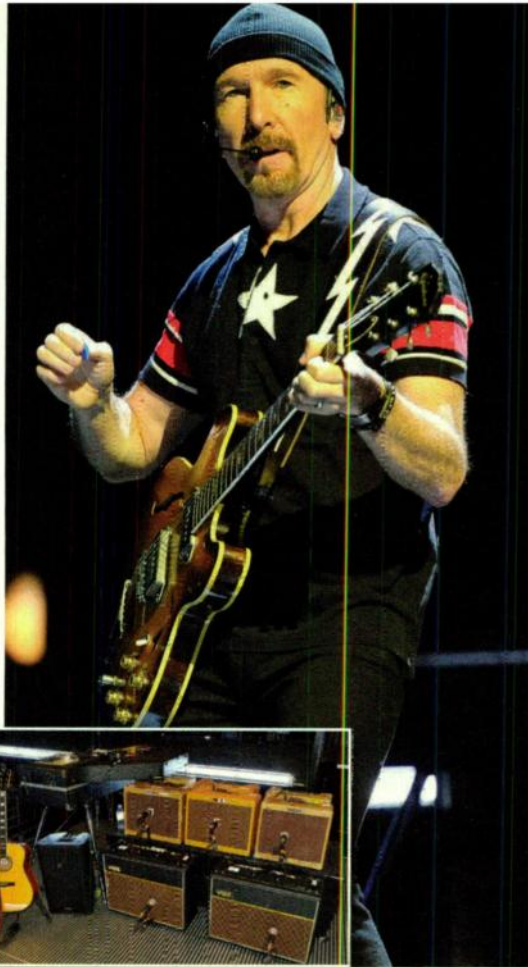
“Jo Ravitch [at left] is the best systems engineer there is,” says U2 FOH engineer Joe O’Herlihy [right]. “We have relied on each other for over 30 years now; that is what working together really means. The FOH mix position has been the subject of many a solid debate on this tour because the P.A. system supplies a totally omnipresent sound in the arena—you can realistically put the FOH mix position anywhere. We’re up in the seats this time



around, and it’s brilliant being with the audience because they are the people you spend your entire career trying to reach with perfect audio.”
“My console is a DiGiCo SD7,” he continues. “It’s extremely creative and reliable, which is why I have used DiGiCo the past 15 years. Across the whole audio team on this tour we are using a total of six SD7 consoles. We’re using all of the available processing power and we are running at 96k. I don’t use any Waves DigiGrid plug-ins. While the onboard dynamic processing on the SD7 is fantastic, I prefer the real deal—lots of vintage processing Manley VOX Box, Avalon 737SP, Summit Audio DCL200s, TC2290 DDL, TC D-TWO, SPX1000, Lexicon 480L, Lexicon PCM 70.”
“The band has been using Clair systems for 30-plus years and for this tour we’re using the new Clair vertical array system called the Cohesion 12,” O’Herlihy explains. “My sound design concept for this tour was based upon our show design brief from the band—that the main stage, the runway stage and the round stage were to be entirely used throughout the show. The P.A. system is typically set up using a stereo image across 12 vertical arrays equidistant from one another, complemented by eight hangs of three Cohesion CP-218 subs using the cardioid method for bass steering into the arena. The P.A. system also incorporates the Cohesion 8, which is distributed as a downfill and center fill system above the front of the main stage, the runway stage and the round stage; we also use the Cohesion 8 as front fill following the same line of the various stages at stage level to maximize the audio quality on the arena floor areas.”

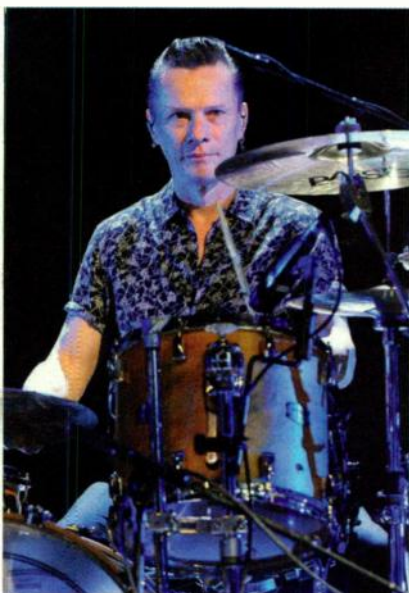
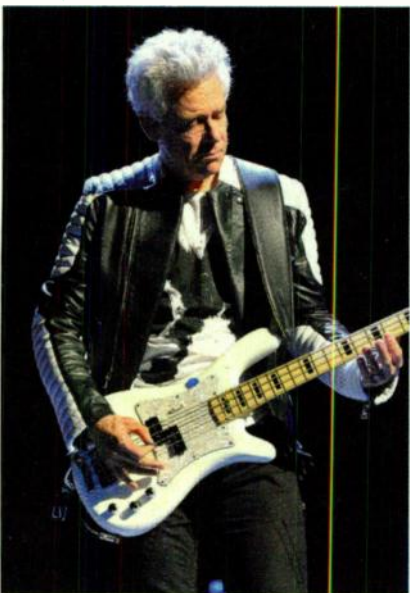
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“As I essentially have one mix to focus on, I submix my inputs through stereo audio groups assigned to the center faders to make it feel closer to how I mix in the studio—drums, bass, guitars, etc.,” says monitor engineer Richard Rainey. “I get to spend a lot of time on details that maybe in a traditional setup you wouldn’t be able to. As a lot of Edge’s playing requires very precise timing, the feel of the mix is very important, as is obviously giving him the best timing info I can to play off, which is probably my main focus during the show. After that it’s just turning up the quiet bits and turning down the loud ones till he looks happy.”

The Edge’s vocal headset is a Shure Beta 54. He has two Vox and one Fender Harvard guitar amps miked with Shure Beta 58As, and two Fender Deluxes miked with Shure SM57s.



“We have a fairly traditional mic setup for Larry [Mullen’s] drums, from Shure 421s on toms, to 57s on top and bottom snare, and Audio-Technica 4050s for overheads,” says monitor engineer CJ Eiriksson. “We keep the mics fairly close and tight on everything, which helps keep the arena bleed out of drums as much as possible.”

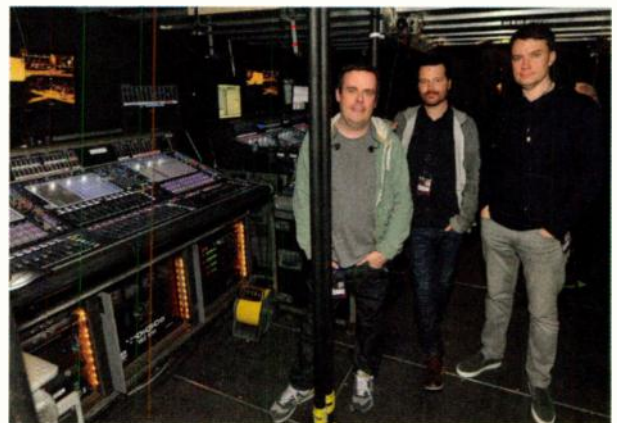
“For this tour Adam [Clayton] has simplified his whole setup,” Eiriksson continues. “We have ditched the bass subs and only have an Ampeg B15 on stage. There are a couple extra DIs and another amp selection running under the stage, but they are only used when needed for different flavors on particular songs.”

“Bono uses a standard Shure Beta 58A,” says his monitor engineer, Alastair McMillan. “Then I have an analog chain that goes directly into an SSL X desk to be summed with the SD7 outputs. It’s very clean in that classic SSL way and has loads of headroom, which was an important feature as his vocal is very dynamic. There’s something about his voice that hits the compressors and effects in a unique way. It’s impossible to replicate during setup! So I just have to start with a basic setting and dial it in once he starts singing.”

For in-ear monitors the band is trying something different—the JH Audio JH-16s for everyone except for The Edge and his engineer Richard Rainey, who opted for the JH Roxanne in-ears.



“The DiGiCo SD7 I’m using is extremely powerful and reliable. It can do anything we throw at it,” says **Bono monitor engineer Alastair McMillan**, pictured at left with **monitor engineer CJ Eiriksson** (Larry Mullen, Adam Clayton) and **monitor engineer Richard Rainey** (the Edge), each of whom also has an SD7. “We’re using all of the available processing power, which is quite impressive for a four piece band! I’m a big fan of the new classic EQ option and especially the multiband compressors. With those two features I have everything I need so I decided not to opt for the Waves grid. We’re all running at 96k. I am hooked up to Pro Tools via two Madi bridges which are able to sample convert in real time. This way we can run our Pro Tools sessions at 48k, making them a much more



NEW ORLEANS JAZZ & HERITAGE FESTIVAL 2015

PHOTOS BY WILLOW HALEY

Inspired by the spirit of Mahalia Jackson and the Eureka Brass Band back in 1970, and originally produced by jazz impresario George Wein, the New Orleans Jazz & Heritage Festival continues to celebrate the culture of Louisiana at the Fair Grounds on Gentilly Blvd. The Festival has always featured a wide variety of internationally acclaimed artists in the realms of jazz, blues, funk, gospel, rock, zydeco, and more.

This year's JazzFest likewise presented an incredible array of artists and bands including The Meters, who appeared at the very first Jazz Fest in 1970. Taking place over two weekends, from Friday, April 24 through Sunday, April 26, and then Thursday, April 30 through Sunday, May 3, Jazz Fest 2015 offered seven days of music presented on 11 stages each day between 11 a.m. and 7 p.m. Here, *Mix* magazine presents the work of photographer Willow Haley.



Aaron Neville in the Blues Tent on May 2

Allen Toussaint on the Gentilly Stage on April 26

Anders Osborne on the Acura Stage on May 3



Big Chief Bo Dollis, Jr. & The Wild Magnolias on May 3

Buddy Guy in the Blues Tent on May 3

Elton John on the Acura Stage on May 2



Galactic featuring Macy Gray on the Acura Stage on May 1

Jerry Lee Lewis on the Acura Stage on May 2

Lenny Kravitz on the Acura Stage on May 3



No Doubt on the Acura Stage on May 1

The Meters, featuring Art Neville, Leo Nocentelli, George Porter, Jr., and Joseph "Zigaboo" Modeliste on the Acura Stage on May 3

Tony Bennett and Lady Gaga on the Gentilly Stage on April 26

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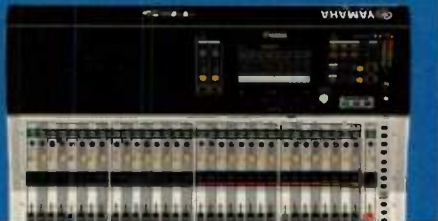


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THE BOXMASTERS TIMES TWO

BY ROBYN FLANS

SOME PEOPLE MIGHT CALL IT SCHIZOPHRENIC, SOME MIGHT CALL IT BI-POLAR. HECK, BILLY BOB THORNTON HAS EVEN CALLED THE NEW BOXMASTERS PROJECT 'SOMEWHERE DOWN THE ROAD' THOSE THINGS. BUT THE DOUBLE ALBUM—ONE DISC LEANING TOWARD '60S POP AND THE OTHER A SONGWRITERLY, MORE COUNTRY COLLECTION—TRULY REPRESENTS THE MUSICIAN-ACTOR'S CREATIVE BENT. HE'S NOT AN ARTIST YOU DEFINE, WHETHER IT BE ON FILM OR ON RECORD. HE'S JUST BILLY BOB THORNTON.

Mark Collie's new label out of Nashville, 101 Ranch Records, gave the band carte blanche to offer up a double disc—a rarity, for sure, these days—and so the group mined some material from as early as 2009, back when the Boxmasters recorded in Thornton's former Beverly Hills home studio. For the new stuff, and there's a never-ending supply of it, they went to Henson Studios in Los Angeles because Thornton is comfortable there.

"I had been recording at A&M (Henson's former name) since about '98

on different scores from movies and projects," Thornton says. "That's where we mixed the first Boxmasters record, so I go way back with the people there, and it's like a second home."

The band started the record last August by choosing the previously unreleased recordings. They focused on tracks that worked well with the new material, knowing that on some they would have to re-record parts to make them fit sonically.

"We replayed a few drum tracks and re-sang a few songs and got Brad [Davis] to redo his guitar," says J.D. Andrew, project engineer and guitarist. "I added some guitar where maybe some of the other songs weren't in the same vein." Likewise, "Kathy Won't Share"—their one humorous song—had originally been recorded for a full-on '60s record, Thornton says. When they decided to include it on this album, they replaced the Farfisa organ with a Hammond B3.

Tracking for the double-disc, however, was mostly done in the same manner. Thornton supplied all lead vocals and most high backgrounds. Andrew sang low harmonies and oohs and aahs.

"All songs start out as an acoustic guitar and vocal scratch," Andrew explains. "I play acoustic guitar and Billy sings it so we have the structure and tempo just for placement. Then we do pretty much everything separately. Billy plays drums and tambourine to that scratch track. We then start layering. I'll put on a better acoustic guitar part and I'll usually double with the 12-string acoustic on most songs, or even two

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Brad Davis, Billy Bob Thornton,
Teddy Andreadis, J.D. Andrew



Photo Courtesy of The Boxmasters

6-string acoustics and two 12-strings. On these songs, it felt like I wanted to get that kind of Jeff Lynne Traveling Wilburys acoustic guitar sound, really bright, no bottom end, lots of guys strumming. Then I will play bass to that and any electric rhythm guitars we feel are necessary. That usually involved one electric rhythm and some sort of 12-string electric part."

Thornton then sings his lead vocal and harmonies and Andrew adds his harmonies. Sometimes songs are sent to Commerce, Texas, where Brad Davis will put his guitar parts on in his bdm studio (Brad Davis Mu-

sic Studio) and then send it back to Andrew to complete.

Davis replicated Thornton's former home studio—aka Slash's studio, as he owned the home prior to Thornton—at his place in Texas, having grown accustomed to its gear from his years as the original Boxmasters engineer. Following the move from L.A., he's worked on projects at bdm for Mumford & Sons, Pearl Jam and Levon Helm, as well as his own recently released solo record, *Brad Davis, a Bluegrass Tribute to George Jones*, on Bluegrass Valley Records, distributed on Sony Red.

Davis updated his studio recently to include Pro Tools, taking some advice from producer Daniel Lanois, whom he met at Thornton's house, by keeping it simple and going straight from his Midas console into the computer.

Davis also recorded some guitar at Henson Studios, typically miked by Andrew with a Neumann U 67 and a Royer 121. For acoustic guitars and piano Andrew uses an AKG C12, and on bass he puts up an Evil Twin D1 and a FET 47 on the Ampeg B15 cabinet.

On Thornton's drums, in the kick he uses either a Shure KSM313 ribbon or a Sennheiser 421 into an 1176 or a dbx 160. Outside the kick he uses a FET 47 into an 1176 or dbx 160. On top of the snare he uses a Heil PR 30 into 1176 and on the snare bottom a Neumann KM 84 or Sennheiser 441.

Andrew says Thornton has his cymbals very low and almost on top of the toms, making it difficult to "cram a mic in," so he uses Sennheiser 409s on the toms because they're flat. Overheads are U 67s. On the hi-hats and

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

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

ride cymbals he uses KM 84s and room mics are M 49s, Royer 122 ribbon or 67s into a Neve 33609 or Chandler TG1 compressor.

"On vocals it's always U 47, 1073, LA-2A, straight to tape," Andrew says.

Tracks were recorded in Henson Studios B and D direct to Pro Tools, with some pre-mixing done at Andrew's kitchen and the rest at Henson Studio D. Andrew's kitchen—which he calls Ye Resto! Kitchen Mobile—is where he does most of his comping and initial mixing. Then he moved over to Henson. The two records, he says, have their own sonic qualities. The two-disc set was released in April.

"When I mix, I tend to use a combination of UAD plug-ins and the Maag EQ plug-in. Throw on a little slap delay and that's pretty much it," he says. "But the moody record is a little more sparse, so I could put more space on things. I could use more reverb. I started using the Exponential Audio Reverb R2, and I found a setting called Guitar Wash that's real neat; I used it a lot on that record. On the rock 'n' roll record, I had to be a little more aggressive with the guitars and drums, somewhat smashed up in your face."

Thornton, who was a musician before he was an actor, says there were few challenges to making the record, and he has enough songs to jump



into another one. The lack of a home studio, however, has had its pros and cons.

"Having a studio at home, you can tend to do too much," Thornton says. "It becomes too much of a safe haven and you can start to take it for granted a little bit. When you go to a studio outside your home, it feels like you are going to work."

But mostly, the move from his Beverly Hills home was for his 10-year-old daughter, Bella, who he says is into paleontology and entomology.

"She wanted a place where she could be in nature, so we moved up into Mandeville (Canyon), and she loves it there," he says. "It doesn't have a studio and it isn't as big, but it

feels more like a home. The other house felt more like a venue."

Yet, having to go to a studio interrupts his favorite role—that of being a dad.

"When we'd do a run of five or six days in a row in the studio, it got tough because I read stories to her every night. It's tough to be away, although that's not as tough as touring. As I get older and she grows up more, it's harder and harder to want to work," he admits. "I told [my wife] Connie this just recently: If I could do exactly what I wanted to, it would be to win the lottery and just record music, not even go on tour, and do one movie a year and be a dad." ■

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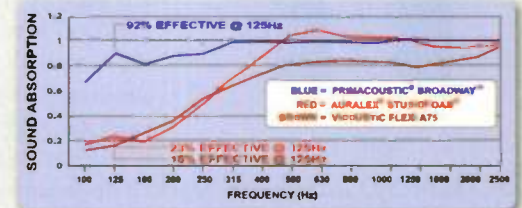
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"Not only does my room sound amazing, it's also really beautiful!!!"

~ John Rzeznik

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by STROTHER BULLINS

Though images of large diaphragm condenser (LDC) microphones often represent the glamour of capturing vocals in the studio, handheld vocal microphones often remind us of the work involved in translating a live vocal. Handheld mics can be a lot of things—they are usually dynamic models, though increasing numbers of condensers are available today, too—some with switchable polar patterns and rather advanced features. And soon they're also most always abused and often smelly from spit and sweat. Even a diva's highest-end handheld with, for example, custom rhinestones is, at the end of the day, a workhorse; it will stay pretty for only so long.

Between my collaborative work as Reviews Editor for NewBay Media and lots of live gigging over the years, I've had the opportunity to use and review a wide range of handheld dynamics and condensers, sharing and receiving insight through a range of peers and performers. If anything, I've found that a wired handheld vocal mic is most appealing to discriminating audio engineers when it provides at least a little something else that our standard—quite often Shure's ubiquitous SM58 dynamic—does not. Rarely are these glamorous features, mind you, just very useful ones in the “one shot” world of live sound.

Each of the microphones listed below are worthwhile choices, though price range and performance characteristics do vary significantly between them. As such, this top eight list of notable handheld vocal microphones is in alphabetical order, while prices vary from \$99 to \$999 street.



AUDIX OM7 Hypercardioid Dynamic Microphone (\$229 street)

Fans of American-made Audix microphones have long attested to the brand's value and roadworthiness; personally, I've depended on a pair of i5 dynamic instrument mics for years, which are all-around workhorses that I'm happy to use on most any gig. Among its product line, Audix's OM7 is most often referenced as the company's notably flexible, great sounding live vocal dynamic. It provides good off-axis rejection thanks to its tight polar pattern, handles up

to 144dB SPL, and its rather sculpted frequency response—with significant bumps at 50 to 200 Hz and hills ranging from flat to +7 dB from 1

to 5 kHz—essentially acts as well-selected EQ at the source. The OM7 is designed with an unconventionally low output level, which is 8 to 10 dB lower than typical dynamic microphones. While the mic doesn't have a built-in pad, this design feature acts as a natural attenuation allowing you to feed it higher SPL sources. Of course the low output level calls for an excellent preamp at the console or rack to be sure you're not adding noise from your gain stage.



BLUE ENCORE 200 Cardioid Active Dynamic Microphone (\$150 street)

In commissioning reviews among pro-level contributors whom I regularly work with, I've had the opportunity to pick the brains of two engineers about the Blue enCORE 200: Rob Tavaglione, who is based primarily in the studio, and Will James Leach, who works in shed/theater-level live sound. Both engineers raved about this microphone.

Hitting the local Guitar Center in a pinch while on his way to a location recording date, Tavaglione conducted a quick six-model higher-end vocal handheld shootout in the store's demo room. He left with the enCORE 200. “It features a proprietary Active Dynamic Circuit requiring 48-volt phantom power,” explains Tavaglione. “The circuit drives the mic output, assuring consistency no matter the cable length, according to Blue.”

For Tavaglione's live vocal needs, “the enCORE 200's mids had a desirable, rich forwardness that was still closer to flat than colorful,” but with a slightly rolled-off, notably clean bottom end “resulting in EQ balanced that seemed right on point.” Later, back in the studio, Tavaglione employed it on a Johnny Cash-type vocalist for scratch vocals. The vocalist fell in love and ultimately bought an enCORE 200, as well. “He said, ‘This is the way I want my vocals to sound in the monitors live,’” recalls Tavaglione. “I received tones and performances on par with my ‘real studio mics,’ and the vocalist might just keep that scratch!”



DPA MICROPHONES D:FACTO II Handheld Vocal Microphone (\$979 street)

DPA's d:facto line was a notable announcement for the company, as it was DPA's foray into the product category of handheld vocal microphones. In reviewing the d:facto II supercardioid condenser, Will James was quite impressed,

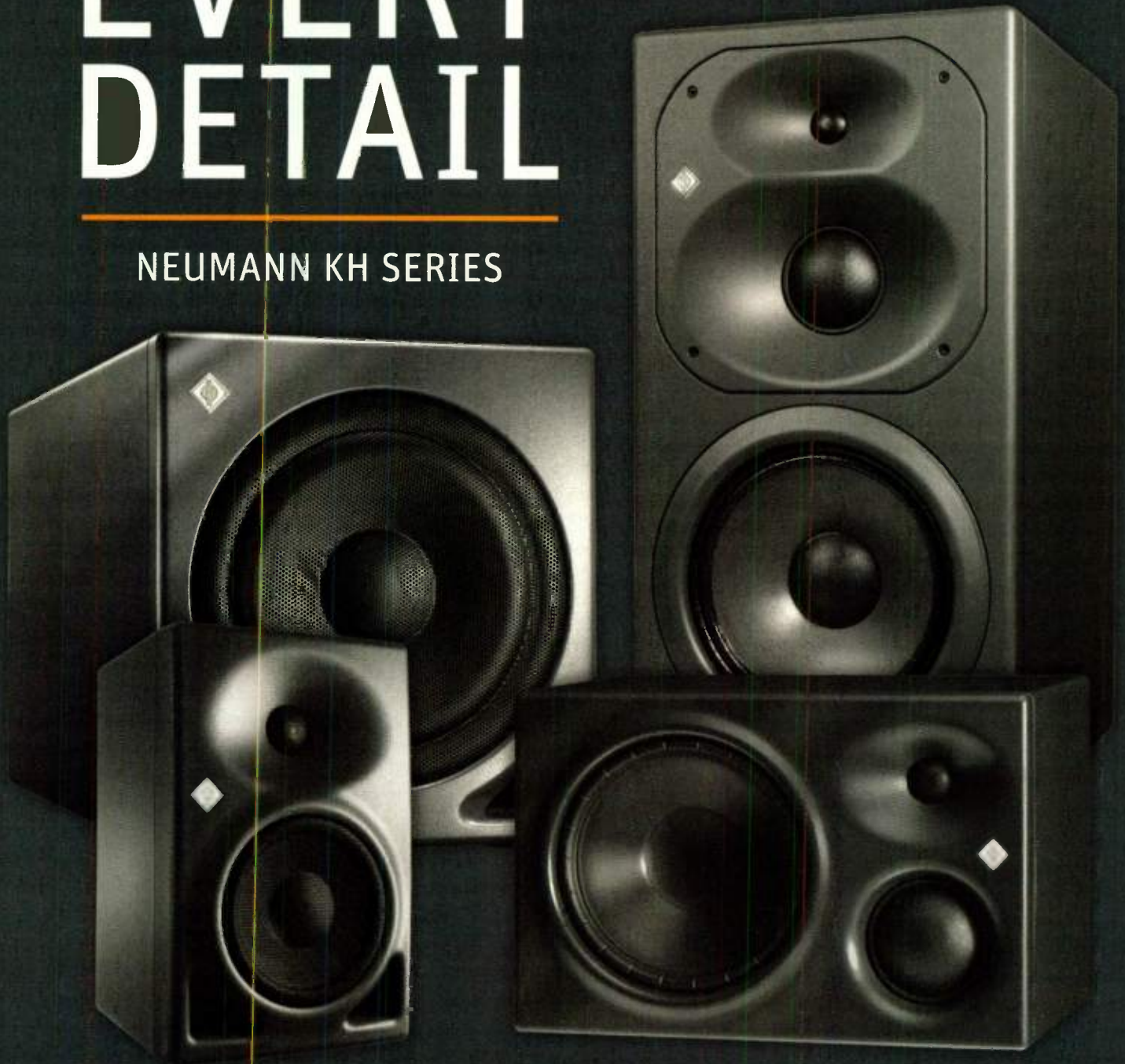


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first noting its virtually non-existent handling noise, superb durability and build quality. Switching the d:facto II into lead vocal position for a one-off gig with Chubby Checker, James found it to be “notably smooth with a very nice, open character, able to attain very high output levels while leaving my system’s graphic EQ comparably flat.” James soon found other notable artists who were quite willing to audition the d:facto II, too.

The d:facto II features a matte black aluminum finish, triple pop filter screen and a rather broad, flat 20 to 20k Hz frequency response. It also boasts extreme SPL handling ability, maxing out at 160 dB. One great extra is d:facto II’s compatibility with popular existing wireless systems. The mic can be used with more than 20 systems from Sony, Lectrosonics, Line 6, Shure, Wisycom and Sennheiser. Accessories include a mic clip, foam windscreen for reducing plosives, and microphone grids in gold, black, and nickel finishes.



EARTHWORKS SR40V

Vocal Condenser Microphone (\$999 street)

Another premium microphone manufacturer delving into handheld condensers is Earthworks with its SR40V. A hypercardioid model, the SR40V served engineer/producer and composer Rich Tozzoli very well as his primary vocal microphone for one of his annual recording retreats in St. John, USVI; each year, he travels south with good musician friends and only a smattering of gear, returning with collaborative recorded efforts that the rest of us may ultimately hear on programs including the History Channel’s *Pawn Stars*, A&E’s *Duck Dynasty*, etc.—regular composing gigs for Tozzoli.

In 2014, Tozzoli reported that the SR40V is “an exceptional microphone for stage use,” and that since it’s a “fact that it’s also right at home in the studio, the SR40V is well worth that price. This is one of those mics you have to hear for yourself; once you do, the appeal of the SR40V becomes self-explanatory.”

Notable features of the SR40V include a

stainless steel chassis; a reported frequency range of 30 to 40k Hz with low handling noise; a self-noise rating of 22dB SPL (A-weighted); and a 145dB maximum SPL. Available accessories include the MC4 microphone clip and the SR40V-C traveling case with a custom foam insert.



ELECTRO-VOICE PL80A

Supercardioid Dynamic Vocal Microphone (\$99 street)

It’s not a very widely known dynamic handheld, but Electro-Voice’s PL80a is my favorite affordable vocal mic I’ve ever used. With a comparably limited reported frequency response (80 to 16k Hz), it captures everything I need in a live vocal and even works well on other instruments onstage and in the studio, too; I’ve had incredible luck with it on

snare drum and guitar amp.

Perhaps its appeal is due to a variety of notable design elements, including its well-sculpted EQ curves, which create a silky and rich midrange, and even the way it looks on a stand and feels in the hand. I’ve used vocal microphones many times more expensive than the PL80a, only to wish I had it in my gig bag. Thus I rarely leave home to gig without it anymore. At \$99, it’s my favorite vocal mic bargain. Available accessories include the SAPL-1 mic stand adapter, and the WSPL-1 foam windscreen. There is also an option to order the mic in the classic PL beige finish named the PL80c.

NEUMANN KMS 105

Supercardioid Condenser Microphone (\$700 street)

The KMS 104—a cardioid condenser handheld specially built for pro-grade vocal use—is one of the first “premium handheld” condensers I can remember receiving for review. Upon sharing with our intrigued live sound contributors (who finally had “their Neumann”) it immediately became a personally impressive performer, as the buzz was spreading elsewhere around the industry, too. Engineers who



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used it immediately compared it to worthwhile condenser choices for vocals in the studio, which of course for some meant a learning curve, or a new approach to their normal treatment of live lead vocals.

However, if there was an early criticism of the KMS 104, it seemed to be amongst users on louder stages and was associated with a need for more off-axis rejection.

The KMS 105 was the answer to that need: a supercardioid version, available in either nickel or matte black finish. Additionally, the KMS 105 features a fixed built-in HPF at 120 Hz and handles up to 150dB SPL. The series comes with numerous accessories including battery power supplies, shock- and stand mounts, table stands, power supply, cables, floor stands and adapter cables.



SENNHEISER E 965 Dual-Pattern Handheld Condenser Microphone (\$699 street)

Much like its Neumann sibling, the e 965 resides at the top of live handheld marketplace, and brings some uniquely alluring features to the category, like a large 1-inch diaphragm and switchable cardioid and supercardioid polar patterns. The idea of switchable patterns in live handheld microphones optimized for vocals means users can adapt the mic to its surroundings. In situations where leakage from other instruments is not a factor, the use of the cardioid pattern would mean a wider "sweet spot" when the mic is off axis. In applications where noisy neighbors are in play, the mic's supercardioid pattern allows the engineer to isolate the microphone better allowing for a cleaner feed from the source. Other features include a low self-noise rating of 21dB SPL (A-weighted) and—like the entire Evolution line—markedly rugged and road-worthy build quality. A low-cut switch reduces ambient noise, rumble and

wind noise. Other extras include a switchable -10dB pad, a built-in shock-mount for rejecting handling noise, protection against moisture, a frequency response of 40 to 20k Hz, and a 10-year warranty.



SHURE KSM9HS Dual-Pattern Handheld Condenser Microphone (\$699 street)

Also at \$699 street—the same price as the previously mentioned cardioid/supercardioid Sennheiser e 965—Shure's KSM9HS offers selectable hypercardioid (more directional than the supercardioid setting) and subcardioid (a rounder polar pattern, less directional than the KSM9 cardioid setting) patterns, and a 150dB-plus maximum SPL handling ability. Maximum off-axis rejections are at 110 and 180 degrees, hypercardioid and subcardioid settings, respectively.

In my own review, I found the KSM9HS's subcardioid flatter in frequency response across a wider portion of the band, with lower frequency extension; its hypercardioid is pretty flat out to 20 kHz. The subcardioid never drops below zero at around 2 kHz—a slight shelf in effect. Overall the mic delivers a crisp, immediate sound, one perfect for allowing vocals to pop forward in an attractive sheen, which I found especially desirable and useful in crowded live mixes, for example. The KSM9HS features consistency across a broad range of frequencies, meaning more gain before feedback, which results in a reduction of the proximity effect. Other components include a dual gold layered, low-mass Mylar diaphragm, and Class-A transformer preamp circuitry. The KSM9HS is available as wireless handheld transmitter SKUs.

Rich Tozzoli brought my same KSM9HS review unit to St. John as his 2015 recording retreat's main vocal microphone. If I recall correctly, I'm pretty sure he told me that I'd never see it again. ■

Strother Bullins is Reviews Editor for NewBay Media's AV/Pro Audio Group, an active musician, self-recordingist and club-level live sound wrangler. Contact him at stbullins@nbmedia.com.

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COMPACT LINE ARRAYS FOR INSTALLATION

BY THE MIX EDITORS

It's not uncommon to see the same sound reinforcement gear found on major tours used in large churches and other fixed installations where great sound is paramount. But the high-end goods, especially loudspeakers, are not only too big to hang in some venues, but they also bring more power than you'd need to cover a small space. Manufacturers have answered the call for higher-end speaker solutions for use in clubs, small houses of worship, hotels, corporate event centers by scaling down larger rigs to more manageable sizes and prices. This month's feature is an A to Z roundup of compact line arrays with woofers that measure 9 inches or less that are currently shipping. Please visit the companies' websites for more information and additional product options.



ALCONS AUDIO

The LR7 is a passive 2-way line-source loudspeaker system featuring Neodymium drivers. The system

is designed for use as a vertical array, either in stacked or flown configuration, for both portable and permanent installations and is available in 90- and 120-degree configurations. The LR7 features the RBN401 pro-ribbon driver on a "Morpher" lens, offering up to 94-percent frontal radiation and 90-degree dispersion that benefits from the ribbon's all-natural cylindrical (Isophasic) wavefront. The system's transient response and high peak power handling (800 watts/200mS) promises superb intelligibility and throw, while promising maximum "gain-before-feedback" up to directly under the array. The Morpher is mounted in the ALrad waveguide, which uses the stiffness and heat transfer capabilities of aluminum.



CLAIR BROTHERS

Clair Brothers' i208 is a three-way active line array element offering a frequency response of 60Hz-20kHz,

129 dB SPL, and peak operation at 132dB SPL. Drivers include: 8-inch LF, 8-inch LMF, ¼-inch exit HF, as well as a voice coil diameter of 3 inches. Nominal impedance is listed as LF, 8 ohms; LMF, 8 ohms; and HF, 16 ohms. Power handling is rated at LF: 400W program, 800W peak; MF: 400W program, 800W peak; HF 220W program, 440W peak. The i208 offers a nominal dispersion of 120x10 degrees (HxV; standard) and 90x10 degrees (HxV; optional). Other features include input connections are on two EP-8 connectors (one male, one female), integral i208 bimodal rigging, which is compatible with Clair Brothers' iS118 Arrayable Subwoofer.



D.A.S. AUDIO

The D.A.S. Audio Event 208A is a three-way powered line array with dou-

ble 8-inch woofers. The loudspeaker units have been teamed up with a single M-75 compression driver and a purpose-designed injected aluminum high frequency waveguide. The enclosure is powered by a 3-channel Class-D amplifier, which provides 360 watts peak per channel. The amp's rear panel includes quality Neutrik XLR and powerCON connectors, status LEDs to facilitate setup and D.A.S.'s Easy-DSP interface which simplifies preset selection for the number of units and throw depth. All units have professional grade Baltic Birch plywood construction and are finished using the tough D.A.S. ISO-flex paint for durability. Steel rigging hardware is included on the line arrays systems and allows for safe and precise flying.



DB TECHNOLOGIES

The DVA MINI two-way active line array system (comprising the DVA M2M plus DVA M2S) offers a Master + Slave design for sim-

plified system wiring and less total weight. For example, the M2M weighs 16.8 pounds and the M2S weighs 15.7 pounds. The module uses neodymium magnets and features two 1-inch drivers and two 6.5-inch neodymium woofers with custom dual phase-plug, improving the mid-range efficiency and making horizontal coverage more homogeneous and consistent. An integrated USB B-type port on the M2M amplifier allows the user to monitor the status of every element in the system, including reports on total hours, temperature and performance. The system is optimized for installation and rigging via the quick-locking system.



EAW

KF720 delivers the three-way design, power and fidelity of the KF Series line array sys-

tems in an ultra-compact enclosure weighing less than 44 pounds. The unit's output capability in a small, lightweight package allows KF720 to fill a range of application requirements from small theaters and houses of worship to live concerts and corporate events. KF720 features an internal, passive MF/HF crossover filter network to deliver bi-amplified powering of the three-way system. Dual 6-inch LF cone transducers in a sealed enclosure deliver horizontal pattern control via tuned spacing. Dual 6-inch MF cone transducers are mounted in a large horn that fills virtually the entire face of the enclosure, maximizing horizontal pattern control as well as driver efficiency. Six 1-inch dome tweeter HF transducers share the same horn with the MF transducers.



FULCRUM ACOUSTIC

At InfoComm 2015, Fulcrum Acoustic of Rochester, N.Y., and Whitinsville, Mass.,

launched the FL283 line array module. The FL283 uses dual 8-inch horn-loaded woofers and three 1.5-inch compression drivers in a compact enclosure. The enclosure is shaped to accommodate up to 20 degrees of play between adjacent boxes, allowing for more sharply curved arrays than comparable line arrays. The FL283 also incorporates Fulcrum's Passive Cardioid Technology to overcome one of the major challenges of most line arrays, excessive rear LF radiation. Unlike active cardioid loudspeakers, Fulcrum's passive cardioid technology does not require an additional amplifier channel or additional enclosure volume. It achieves impressive low frequency directional control without the loss of efficiency that characterizes active cardioid devices.



GRUND AUDIO DESIGN

The Grund Audio Design GALA system is

fully ground stackable, while still maintaining the performance parameters of the line array concept. For absolute safety when the system is flown, fully tested and certified ATM flying hardware is used, and the company states that an entire 24-box stereo hanging system can be flown by only one person. Grund Audio uses two 1-inch Neodymium drivers coupled to a dual, asymmetrical fiberglass horn. The GA-1621 line array module is made of 13-ply Baltic birch, provides a nominal impedance of 8 ohms and 100-degree horizontal dispersion, and offers a frequency response of 67 to 18k Hz with a maximum output of 128dB SPL. It has two 8-inch cone low-frequency drivers, and two 1-inch compression drivers to handle high frequencies. Power handling includes 500W RMS and 1,000W program.



JBL

The JBL VT4886 sub-compact, passive, three-

way line array element has an integrated midrange/high waveguide for vertical wavefront control and 110-degree horizontal dis-

persion. The VT4886 houses two 6.5-inch low-frequency transducers, four 2.5-inch midrange components and two 1-inch high frequency compression drivers. Advanced component design and density provide an extremely high power-to-weight ratio with more SPL output than other systems in its class. A proprietary waveguide seamlessly integrates MF and HF section output in JBL's patented R.B.I. (Radiation Boundary Integrator) technology, providing precise wavefront control and optimum inter-enclosure coupling. JBL Thermomaster technology improves heat transfer while reducing midsection power compression. LF transducers feature patented Differential Drive technology and are matched to a low-frequency diffraction absorber with a tuned resonant-chamber that reduces cavity resonance and cabinet edge diffraction effects.



L-ACOUSTICS

L-Acoustics' KARA full range modular active 2-way WST cabinet has an operating frequency bandwidth from 55 Hz to 20 kHz. KARA features a 2-way, bi-amplified design and

is equipped with two 8-inch neodymium LF speakers in a bass-reflex tuned enclosure. The HF section features a 3-inch neodymium diaphragm driver coupled to a DOSC waveguide. The K-shaped coplanar transducer configuration generates a symmetric horizontal coverage of 110 degrees without secondary lobes over the entire frequency range. The combination of coplanar symmetry and DOSC waveguide allows the system to fulfill the five WST criteria. Any KARA line source can be curved up to a maximum of 10 degrees for each element without breaking the inter-element acoustic coupling. Each enclosure is made of first grade Baltic birch plywood to ensure maximum acoustical and mechanical integrity. The 4-point rigging system allows suspending up to 24 KARA in a single array. The system is driven by the dedicated LA8 amplified controller, which ensures active system linearization, intelligent transducer protection, and optimization for three operating modes.

MARTIN AUDIO

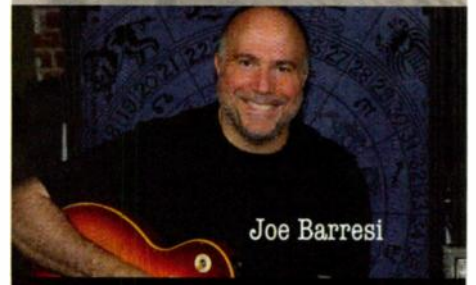
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The MSX mini-sub power plant complements the main system and houses the amplification, networking and DSP necessary to power and control itself and four MLA Mini enclosures. Each MLA Mini enclosure houses two 6.5-inch/2-inch voice coil LF drivers and a vertical column of three 1.4-inch aluminum dome HF drivers on a 100-degree horizontal dispersion horn. The 15-inch reflex loaded MSX can be integrated into flown arrays or ground-stacked separately. MSX also contains nine channels of Class-D amplification to provide cellular drive, while the on-board DSP interacts with proprietary DISPLAY2.1 intelligent software for accurate array optimization. The system can be flown, ground-stacked or pole mounted.



MEYER SOUND

Meyer Sound's new LEOPARD and 900-LFC line array system, available in summer 2015, join the company's flagship LEO Family as its smallest and most versatile member, offering power-to-size ratio with ultra-low distortion. The new system promises greater phase coherence; seamless, uniform coverage; and 10 times less distortion with newly designed and highly efficient Class-D amplifiers that eliminate distortion while consuming less power and generating less heat. With an operating frequency range of 55 to 18k Hz and reported phase response of 92 to 18k Hz, ± 30 degrees, LEOPARD, which weighs 75 pounds, has two 9-inch long-excursion LF cone drivers and one 3-inch compression driver coupled to a constant-directivity horn through a patented REM manifold. It includes a complete system solution with MAPP XT for acoustic prediction, Compass RMS for real-time system performance monitoring, the Galileo Callisto loudspeaker management system, and the new MDM-5000 distribution module for routing AC power, audio and RMS signals.



RCF

RCF's TTL33-A II is a compact, wide dispersion, 3-way active line array module with 750W RMS, 750W switch-

ing amplifiers with a soft limiter and RMS protection, 32-bit/96 kHz DSP processing, and onboard RDNet. It provides horizontal coverage of 100 degrees, a vertical coverage angle of 15 degrees, high output and dynamics, extreme accuracy, high frequency extension and compact size for outdoor sound reinforcement, live performances and events as well as fixed installations in theaters, concert halls or auditoriums. The frequency response is rated at 60 to 20k Hz, with a maximum SPL of 135 dB. The TTL33-A II has six high power neodymium transducers: two 8-inch woofers, one 8-inch midrange driver and three 1-inch voice-coil compression drivers.



TOA

The HX-7 expands the HX Series with a larger, more powerful configuration. Designed to meet the needs of medium-sized venues, it adds true line array performance to its range of configurations. Its improved high-frequency driver compliment improves output, power handling, and provides enhanced intelligibility within the vocal range. Multiple HX-7s may be stacked together vertically for increased power handling and coverage. Like its smaller sibling, the classic HX-5, the HX-7 offers four cell-configurations, each incorporating two 5-inch low-frequency drivers and one center-mounted, waveguide-loaded, 1-inch-exit compression driver. The HX-7 has flexible vertical angle adjustment between 0 and 45 degrees (60 degrees with second HX-7 unit and optional adapter). Power handling is 750W continuous program @ 8 Ohms. Sensitivity is rated at 100 dB (1W @ 1m). Optional hardware for stand, wall, ceiling and flown installations is available.



TURBOSOUND

The two-way full range TCS62 is a compact passive 6.5-inch 700W arrayable loudspeaker system that is ideally suited for a wide range of speech and music sound reinforcement applications. Designed to work in conjunction with Turbosound loudspeaker management systems, the TCS62 provides optimal infill, front and downfill solutions, and its compact size makes it a choice for under balcony and monitoring

applications. The TCS62 arrayable loudspeaker features a carbon fiber loaded 6.5-inch low frequency driver with a low mass voice coil for improved transient response and an aluminium dome 1-inch neodymium motor compression driver mounted on a 100-degree horizontal by 60-degree vertical converging elliptical waveguide. When the waveguide is rotated 90 degrees from the standard position, a 60x100-degree HxV dispersion is achieved. All drivers are matched with an internal passive crossover network in a reflex-loaded enclosure.



VUE AUDIOTECHNIK

The al-8 is the second member of VUE's al-Class, with the al-4 Subcompact Line Array System. The al-8 features beryllium compression drivers, Kevlar/Neodymium transducers, onboard networking, and full compatibility with VUE-Point beam steering technology. The al-8 system components include flying, transport and handling accessories, the al-8 acoustic element, and the rack-mount V6 Systems Engine, which provides system amplification, DSP and networking capabilities via the SystemVUE control software. The al-8 acoustic element houses a pair of proprietary 8-inch LF transducers with large 3-inch voice coils for improved thermal performance. The LF transducers flank four 4-inch Kevlar/Neodymium mid-range units equipped with VUE's unique lateral acoustic shades. High frequencies are delivered by a pair of neodymium compression drivers with Truextent beryllium diaphragms for extended high frequency response beyond 25kHz. All transducers are housed in a birch plywood enclosure protected by a 12-step Dura-Coat LX finish.



WORXAUDIO

The V5 is a two-way, high efficiency, line array loudspeaker designed as an ultra compact high performance system. It incorporates a medium format 1-inch exit compression driver coupled to a stabilized proprietary FlatWave Former (wave shaping device) that delivers clear but penetrating high frequencies over a predictable and controlled

coverage area. Dual 5-inch neodymium magnet cone transducers coupled to the Acoustic Integrating Module minimizes comb filtering throughout the entire operating range. The V5 is housed in a sturdy multi-ply plywood enclosure, with a multi-layered catalyzed polyurea finish. A perforated, powder coated steel grille with a high transmission ratio promises excellent protective properties. The custom designed flyware enables the user to easily array the system to the precise desired coverage area. The V5 is available in dark black or white exterior.



YAMAHA

Yamaha displayed the new NEXO ID Series at InfoComm 2015. Using a variety of mounting options,

the ID24 compact cabinet can fit into almost any environment offering high SPL output with variable directivities enabling it to "beam" sound into difficult spaces. The new series is comprised of the ID24 full-range compact speaker that uses twin 4-inch drivers in a V formation, in combination with an HF compression driver offering two preset directivity options. The ID24i is designed specifically for installation. The ID24 has a user-adjustable horn that can be rotated easily without the need for tools by a switch on the rear panel to give 60- or 120-degree HF coverage using the standard fitted horn.



YORKVILLE SOUND

The Modular PSA1 system can be configured for optimum coverage in most installations. Its cabinet design uses Yorkville's Paraline

high-frequency lens technology pioneered in the company's flagship VTC Elevation Series line array cabinets. Two BMS 1.75-inch compression drivers mounted to the patented Paraline lens delivers a focused 15-degree vertical dispersion and 110-degree horizontal coverage. Celestion 6-inch woofers provide a tight and ultra responsive low frequency program. The Yorkville PSA1 cabinet mounts quickly and securely on a typical speaker stand. Innovative dual position stand mount offers two potential cabinet angles for expanded setup options. Up to two PSA1 cabinets can be stacked safely and securely on a single traditional stand. Yorkville Paraline Series PSA1 cabinets can be flown in any installation with the addition of optional flying hardware (PSA1RIGKIT) and a proprietary bumper (PSA1FRAME). ■

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STUDIO TRILOGY HOSTS STEVE HOROWITZ AND THE GUERRILLA COMPOSERS ENSEMBLE



Photo: David Coggins

Pictured recording are (L-R) Noah Killeen, Trilogy assistant engineer; Edward Hong, drums and percussion; Bridget Pasker, cello; Zach Miley, recording engineer; Steve Horowitz, composer/producer; Jonathan Szin, clarinet; Britton Day, piano; Abigail Shiman, violin; Christy Kim, flute; Nick Benavides, conductor and director.

Steve Horowitz and the Guerrilla Composers Ensemble recently assembled at Trilogy in San Francisco to record "The Ribbon of Extremes," a new work by Horowitz inspired by the 1932 painting of the same name by the Surrealist painter Yves Tanguy. The recording features a massive drum section and complex interaction of piano, cello, violin, clarinet and flute. Horowitz is a creator of odd but accessible sounds and a diverse and prolific musician, perhaps best known for his original score to the award-winning film *Super Size Me* and 16 imaginative albums.

Other notable Trilogy projects include Joan Jeanrenaud, former Kronos Quartet cellist, who was at Trilogy producing a new album of classical and contemporary compositions performed by soon-to-be-married cellists Meta Weiss and David Requiro. Jeanrenaud gave cello lessons to Weiss from ages 13 to 15, and she is now completing her doctorate degree from Juilliard. Trilogy's Justin Lieberman engineered the project...Prominent Bay Area producer/composer/percussionist PC Muñoz was at Trilogy for live band sessions with pop/R&B vocalist and recording artist Chase Martin for his upcoming full-length album. Muñoz and Martin worked with Michael Urbano, drums; Mike Blankenship, piano; Marc Weibel, guitar; Marc Levine, bass; and Trilogy recording engineer Willie Samuels.

In other Trilogy news, studio manager Cindy McSherry has announced Track Attic, the studio's new music licensing and production division headed by Adrianna Murillo. Every track is precleared for licensing in any size project. Track Attic provides clients with custom music produced in a wide variety of genres for virtually any type of film, TV or commercial project.

Studio Circle Recordings Gets an Upgrade, Goes Solar



(L to R): Kyle Mogiley (studio assistant), Ed Sheeran, Jermaine Hamilton (engineer), and Ken Hiltz (studio investor, partner, president of the Hiltz Foundation)

Studio Circle Recordings in San Mateo, Calif. recently remodeled its facility. "We connected live room Studio A and Studio B by knocking down a shared wall and adding two sliding-glass doors," says Jermaine Hamilton, studio manager/engineer. According to Hamilton, all rooms and control

rooms are now wired together. Studio Circle also upgraded the its acoustical treatment with GIK broadband acoustical panels and ATS QRD diffusers. Additionally, the studio has contracted with A-1 Solar to install 19 solar panels over the summer. "We will be the first 'green studio' in the Bay Area to have solar power," Hamilton says.

Studio Circle has also recently played host to a variety of artists, including English singer/songwriter/musician Ed Sheeran, who stopped by last December to re-record vocals for the remix of "Bloodstream" with Rudemental (produced by Rick Rubin). Engineer Hamilton cut his vocals with a U 87 and Vintech 573 pre-amp going into Pro Tools HD...Grammy-winner Carl Glanville stopped in to mix U2's song "A Song for Someone," a live version that was recorded at San Jose's SAP Center for NBC's *Red Nose Day* special. Hamilton assisted on the project.

Different Fur Unveils Studio B



Photo: Molly DeCoudreaux

San Francisco-based Different Fur Studios opened Studio B, designed by Blank Design Group. Studio B was a new build out, upstairs on the second floor of the Mission district studio. The room was previously the office of Polyvinyl Records and Mr. Roboto Presents. Studio B will have a focus on mixing and production.

According to studio owner Patrick Brown, aside from the vocal booth/iso, the room has a Pro Tools/Ableton rig with 32 I/O, Waves Mercury, UAD-2 DSP Accelerator Octo with all plug-ins, Native Instruments Complete Suite, and four racks of outboard compressors/EQs/effects/preamps, including Bricasti M7 reverb and TC Electronic 2290 delay.

In other studio news, the following projects have taken place: The Pacific Boys Choir came by with arranger Minna Choi to record parts for How To Dress Well's contribution to David Byrne's *Contemporary Color* project...Converse Rubber Tracks was back in May for its eighth pop-up in Studio A, with engineer Sean Paulson...Third Eye Blind was back for two days, finishing up its new album, with Paulson engineering...Curious Quail tracked and mixed a new song with engineer Paulson...CocoRosie worked for two days with engineer Paulson, employing the studio's Studer A827 2-inch machine...Beat Connection wrapped up mixing its new record with engineer/studio owner Patrick Brown...Thao & The Get Down Stay Down wrapped up a new record with engineer Beau Sorenson and guest Merrill Garbus of tUnE-yArDs. Grace Coleman assisted on the project.

SESSIONS: BAY AREA



25TH STREET RECORDING, OAKLAND, CALIF.

Oxbow was with producer/engineer Joe Chiccarelli finishing up mixing their newest record. All basic tracks were recorded at 25th Street as well...Joe Satriani used 25th Street to record guitars and finish editing on his upcoming release *Shockwave Supernova*. Satriani made extensive use of 25th Street's live room for his guitar sounds. John Cuniberti produced and engineered the project...Mike Blankenship (keyboardist for Sheila E., Michael Franti, Lauren Hill) finished his upcoming album, with Scott Bergstrom engineering...Val Garay has been finishing a new release with Carmel Greenberg, with Garay producing and engineering and Brandon Stroup assisting...The Blondies are finishing their third release, which was recorded, mixed and mastered at 25th Street. Bergstrom produced and engineered the project.



Tracking at Studio D Recording with the Flamin' Groovies. left to right: Victor Penalosa, Cyril Jordan, Joel Jaffe, George Alexander, Chris Wilson.

STUDIO D RECORDING, SAUSALITO, CALIF.

Roy Rogers worked on *Into the Wild Blue*, with Joel Jaffe engineering and associate producing, and Jason Victorine assisting. Rogers also produced the project...Kim Nalley worked on *Nasty Blues and the Racial Truth*, with Jaffe engineering and Victorine assisting. Nalley and Jaffe also produced...Flamin' Groovies worked on new material, with Jaffe engineering, Victorine assisting and Cyril Jordan and Jaffe producing...Jameson Hodder (son of Steely Dan Drummer Jimmy Hodder) worked on *Soundwaves*, with Jaffe executive producing, mixing and mastering and Victorine assisting...Great Spirit worked on *Searching for a Legend*, with Jaffe producing and engineering, and Victorine engineering and assisting...The 110 worked on *The Good Talk* EP, with Jaffe producing and engineering, and Victorine assisting...Studio D also had Colin McDowell and Aaron Hipple from McDSP do impulse responses of the studio's room for the McDSP's Revolver Impulse Response Reverb.



An orchestra setup at Skywalker Sound

SKYWALKER SOUND, SAN RAFAEL, CALIF.

The following projects took place at Skywalker Sound: Mixing for The Colorado Symphony's recording of Beethoven's Ninth, produced by Wolfgang Fraissinet and Leslie Ann Jones, mixed by Jones, and edited by Mark Willsher...Recording a videogame score for composer Mark Griskey, recorded by Jones...Recording the Mountain View High School Band and Choir, recorded by Dann Thompson...Mixing a piano recording by Karen Garrett, produced and mixed by Jones...Editing and mixing "For A Look Or A Touch" for the San Francisco Gay Men's Chorus, produced and recorded by Jones, edited by Robert Gatley...A recording project by composer CF Kip Winger with the San Francisco Ballet Orchestra, recorded by Jones...A recording project by the West Point Glee Club, recorded by Brandie Lane, assisted by Thompson and Sean Martin...Recording a double harpsichord by Grammy-nominated Jory Vinikour, produced and engineered by David Bowles, assisted by Thompson...Mixing Video Games Live, Level 4, produced by Tommy Tallarico, mixed by Jones...Mixing BT's new album *Electronic Opus*, produced by BT and Tommy Tallarico, mixed by Jones...Recording a new album with Joe Satriani, produced and engineered by John Cuniberti, assisted by Thompson and Judy Kirschner.



Bells Atlas at Robot Envy

ROBOT ENVY, BERKELEY, CALIF.

Lyrics Forn did vocal tracking for *Real People*, with engineers Sammy Fielding and Bijan Sharifi. Go-to vocal chain was Peluso P12 mic connected to a Vintech 273 pre going into an FMR RNC compressor...Bells Atlas did tracking and mastering for the track "Future Bones," with Sharifi engineering. Used a Peluso P12 into a Vintech 273 on vocals, re-amped the synths through the twin reverb amp with a Cascade Fathead, and used groove tubes GT40 tube mics on the vibraphone...Madison Mandrake worked on their EP, with engineer Fielding tracking, mixing and mastering. All performers for this dark, acoustic folk act were in one room, but with amps in the iso booth. Acoustic guitar and mandolin through Fender Hot Rod amps, with a Cascade Fathead on guitar and Sennheiser E609 on the mandolin amp...El Gato Dice "DOS" worked on a new full-length, with Fielding tracking, mixing, and mastering. All the of bass tracks were re-amped through an Orange Terror Bass head into custom cabinet loaded with Eminence 15-inch and Cerwin Vega 10-inch drivers...Blood of Kvasir worked on *Serpents*, with Fielding tracking, mixing and mastering. For the percussion setup, they used two bass drums screwed together into one massive drum, miked with a Shure Beta 52 close, CAD M179 overhead, and an ever-evolving selection of room mics...Fielding mastered Night Profound's *Invocation of Light*, *Evocation of Night*, using Izotope Ozone EQ, Waves SSL G-Bus compressor, and Massey L2007 limiter.

Engineer Mike Cogan Joins Megasonic Sound



L-R: Alegra Thompson, Suzy Thompson, Jody Stecher, Paul Knight, Mike Cogan, Eric Thompson

Megasonic Sound in Oakland, Calif., has announced the addition of Michael Cogan as engineer. According to Jeremy Goody, Megasonic Sound owner/engineer, Cogan brings "a wealth of knowledge—and some amazing vintage microphones—from his extensive time running the Bay Records facility in Berkeley."

Cogan has been busy on recent sessions at Megasonic, including recording the Thompson Family Band—Eric and Suzy Thompson and their daughter Alegra, with Paul Knight on bass and produced by Jody Stecher. Cogan also recorded an album for the Fog City Stompers, a seven-piece traditional jazz band. "It's really great to see Mike back in action!" Goody says.

Meanwhile, Goody recently recorded two projects for producer/guitarist Henry Kaiser. The first was *Megasonic Chapel*, an album of an improvised quintet organized by Kaiser, consisting of Tania Chen (piano), Danielle DeGruttola (cello), Kaiser (guitar) Soo-Yeon Lyuh (haegum [korean fiddle]), and William Winant (percussion). The second was *A Tribute to Mark E. Miller*, which arose from the recent passing of the drummer. It features contributions from John Zorn, Bill Laswell, Michael Beinhorn and Fred Frith, among a host of other musicians who played with Miller. Tracks recorded at Megasonic by Miller just before his passing were used as the basis for new compositions recorded in studios around the globe and assembled and mixed back in Oakland.

The studio also recently hosted prog-rock band Hedersleben for its third album—a double concept LP entitled *The Fall of Chronopolis*, engineered by Goody. Weeks before that session, most of the band were at the studio recording with Nik Turner from the legendary band Hawkwind for his latest release.

Megasonic just finished basics on the final track for San Francisco flautist/composer Dr. John Calloway. Mixing begins in July.

Continued on p. 53

WOMEN'S AUDIO MISSION MOVES INTO BIGGER, BETTER STUDIO

BY LORI KENNEDY



WAM Founder/Executive Director Terri Winston at the new studio on Natoma Street.

Photo: Marsha Vidovin

After spending several years at an 850-square-foot space on Bryant Street in San Francisco's Mission district, Women's Audio Mission has moved into new—and much, much improved—digs in the city's Central Market/SOMA district on Natoma Street. That might sound simple, but the process was anything but. "The biggest challenge obviously was purchasing the property," says Terri Winston, founder and executive director of WAM. "We had 30 days to raise more than \$350,000 to secure this property in pretty much the worst real estate market. It was pretty unprecedented."

While WAM has moved out of the Mission, its mission remains the same: to aid the advancement of women in music production and the recording arts. What started as a club 12 years ago at City College of San Francisco—where Winston was a tenured professor and director of the Sound Recording Arts Program—has turned into a successful nonprofit and the only professional studio in the world built and entirely run by women. Some of WAM's credits include multiple projects from Kronos Quartet, work on a Grammy-winning album by Angélique Kidjo, an interview with Salman Rushdie for NPR, work on the soundtrack to the Academy Award-nomi-

nated film *Dirty Wars*, and an NPR top 50 album by Vietnamese composer Van-Anh Vo.

But it's not easy getting a loan as a nonprofit. They aren't eligible for small-business loans, and by definition they don't have collateral or large pools of money in reserves. Getting the loan for the space was, according to Winston, "The most complicated real estate transaction of the century. Our financial history is good. We are small, but we are very fiscally responsible; we've never had a deficit. And our reporting is really good. So all of that helped."

But even before they could get a loan, WAM needed to find a space—a search that began two years ago. "We knew our lease was up, and we hated that space we were in. For two years I was looking for another site, and I couldn't find anything. We were just going to lease something.

"We would go and look at large spaces where we could do a build out, and a tech company would just walk in and write a check right there on the spot, for twice the amount we offered. We couldn't compete with that."

Finally, in July 2014 Winston got a call from the Northern California Community Loan Fund with news that a property just came on the market—the former recording studio SF Soundworks. Winston immediately checked out the property, and she loved it. "The space was going to be turned into offices, so I thought, 'We have to get this, we have to figure this out.'"

So how does a small nonprofit secure a million-dollar property in the heart of San Francisco? With a little help from friends, of course.

Winston worked with a special team led by Northern California Community Loan Fund (a nonprofit lender), as well as support from the San Francisco Arts Commission, Community Arts Stabilization Trust, The William and Flora Hewlett Foundation, The Walter & Elise Haas Fund, and The Ray and Dagmar Dolby Family Fund and Dolby Labs (both of which have become advisors to WAM) to secure the new space. At 2,300 square feet, the new studio is nearly triple the space they had on Bryant Street.

And because they are a nonprofit, they had to do an extreme environmental report before they could get the loan. "I was sweating bullets waiting for the report to come back," Winston says. "Luckily, there's nothing on this whole entire block that's bad. No buried gas tanks or anything."

According to Winston, move in and wiring took about four months to complete. "About 2,500 feet [850 pounds] of donated Belden cable was laid, with 5,600 crimp/solder points. Our biggest issue was detangling and removing an enormous amount of Cat-5 cable that was left behind and was clogging all the audio troughs. We wanted to isolate our data cabling from our mic lines. The infrastructure left behind hadn't done that."

While there is still some work to be done, WAM is set up and ready to go in its new home. There's the main Studio A, which has a new 48-channel, ASP8024 console from Audient; a drum/amp room; a B room; iso booth, Foley pits; and a mic closet and office space. Winston says they plan on combining two current rooms to make one big live/tracking space. Industry supporters have generously outfitted the new studio with the latest gear, including the Audient ASP console, a Pro Tools HDX system with 32 channels of I/O from Avid, a pair of HD-1 High Definition monitors from Meyer Sound, a Bottle mic from Blue Microphones, a pair of C414 mics from AKG, a 531 optical de-esser from XQP, a DT 25 Tube Modeling Amp and J VX-69 Modeling Guitar from Line 6, and Ableton Live licenses with a new Ableton Push controller. WAM also has Barefoot MicroMain 27s, Millennia HV-3R, Great River MP-2NV, A Designs and BAE mic pre's and microphones from AEA, Mojave, Shure, Earthworks and Shure

WAM currently teaches approximately 300 adults and 650 middle-school students a year, with programs running anywhere from 6 to 18 weeks. Having this new space has been transformative for the nonprofit. "We were able to increase staff by 54 percent, and will be able to serve an additional 300 women and girls every year for a total of 1,200 women and girls every year, which makes a much deeper impact," Winston says. "It also allows us to fully book studio sessions without impacting our training programs. This will make us much more self-sustaining." In addition to being a teaching facility, WAM also books sessions just like any other studio.

Classes for adults include Introduction to Audio Production & Recording, Live Sound Reinforcement, and Anatomy of a Mix; classes for kids include the Girls on the Mic program, which is an afterschool and summer program that introduces technology to girls ages 8 to 18 through music production and recording. The adult classes take place at the studio, while interns travel to local schools to conduct the classes for middle school students.

For Girls on the Mic, program coordinator Kelley Coyne starts students out with podcasts, so they can get used to hearing their own voices. "Some kids don't like being the lead singer, though," Coyne says. "Some kids love being at the board engineering, and that's what they want to do." Winston adds, "They think, 'I can be part of this cool creative thing doing something else. I don't have to be the lead singer.'"

"Before I got into sound, I was a teacher," Coyne says. "It's exciting for me because I was not aware of the sound engineering career path as a teenager. I loved music, but my best classes were in technology and math. Sound engineering was an obvious fit for me, which I found out later, but I'm really happy I have that experience to share with girls and show them that, with a career in sound engineering, you can have the best of both worlds."

Teachers have also been very supportive of the program. "They recognize the valuable skills being taught behind our seemingly light activities," Coyne says. "For one hour a week, we're teaching science and technology to girls, and they're having fun and are engaged because it's taught through performing their favorite songs and making noise with their friends.

"In one of my last classes, I had a student say, 'Miss Kelley, I should



Students from the Girls on the Mic program.

really be an audio engineer because it's really easy," Coyne laughs. "I was like, 'Yeah, you should!'"

Coyne says she brings the equipment for the different projects every week to the schools. She has a mobile rig with items such as laptops with Pro Tools, 4-track recorders, and small synthesizers.

"I got a card from a class recently, and some of the students had written things like, 'Thanks for giving me confidence in my music skills.' It was great," Coyne says.

Along with Winston and Coyne, WAM employs Development Director Lopa Pal, Development and Communications Associate Noelle Duncan, and staff engineers Laura Dean and Jenny Thornburg, as well as six interns.

To raise money, Winston says she writes at least 2,000 plus pages of grants a year and spends a lot of her time making connections to get donations for WAM. "There are some pieces [of gear] in here that are mine, but everything other single thing here is a donation," Winston says. "More than \$200,000 worth of gear has been donated by manufacturers."

WAM is currently in the middle of a \$2 million campaign to help raise funds to completely pay off the studio space. "We are about a third of the way toward our goal," Winston says. ■

RobairReport

REFLECTIONS FROM THE BAY



By Gino Robair

It is represented to us that the universal suffrage, as now existing throughout the Union, is abused; that fraud and corruption prevent a fair and proper expression of the public voice...in consequence of which, We do hereby abolish Congress, and it is therefore abolished.”

Though it reads like a Facebook or Tumblr post, the above quote was part of a decree published in 1859 by Norton I: After declaring himself Emperor of the United States (eventually adding Protector of Mexico to his title), former South African immigrant Joshua Norton spent the next two decades doing what he thought was necessary “to remedy the evil complained of” in the lawless days following the California Gold Rush. The Emperor would go on to make numerous other proclamations, including one that a bridge should be built between Oakland and San Francisco, well before it was thought to be feasible. (Check out Herbert Ashbury’s *The Barbary Coast: An Informal History of the San Francisco Underworld* [2002; Basic Books] to get a taste of the colorful times and characters that helped shape the Bay Area since the Gold Rush.)

Norton serves as a prime example of the out-of-the-box thinker who, since the mid-19th century, has been attracted to the Bay Area. Historically, the region has served as a rich environment for people looking to reinvent themselves.

Even in the present day, the City By The Bay attracts people who are interested in artistic expression that is highly personal; it’s a place you go when you want to work against the grain. Francis Ford Coppola and George Lucas—American Zoetrope and Skywalker Ranch—come immediately to mind.

Since the early part of the 20th century, it has been a place of hybridization in the arts, where divergent practices mingle and influence each other. You hear it in the way Asian and Pacific Rim cultures, among other non-Eurocentric musical styles, influenced the mid- to late-century composers and performers who spent a considerable amount of time here—Henry Cowell, Harry Partch, John Cage, Lou Harrison, Terry Riley.

Away from the intense scrutiny of the industry in L.A. and without the media pressure of New York, the Bay Area’s music scene provides room to experiment in ways that are impossible in an environment where failure is not an option. So while it can claim to be the home of world-renowned acts ranging from the Grateful Dead and Journey to Metallica and Green Day, the open-mindedness of the region supports cross-pollination between artistic disciplines. Boundaries that might normally

divide artistic and musical endeavors get stretched, and in some cases vanish completely—and not because it looks good in a grant application or is au courant. Where else could an artist such as the late Ornette Coleman perform at a world-renowned jazz festival while highlighting the extreme body piercing practice of performance artist Fakir Musafar?

Of course, with UC Berkeley and Stanford University in the vicinity, technology has played a major role in the sound arts for decades. But the results have spread wider than the ivory tower of academia, just as John Chowning’s innovative FM synthesis techniques didn’t stop at the borders of the Stanford campus.

Take, for example, a group of young composers in the early ‘60s who pooled their resources to create the San Francisco Tape Music Center. Looking to expand the studio’s capabilities, they recruited the services of a young man named Donald Buchla to design a voltage controllable instrument. Although the results would eventually be called a “synthesizer” like other electronic instruments of the day, the designer himself refers to them as a composer’s tool kit: Rather than simply imitating the sounds of acoustic instruments, his systems allowed artists to realize their ideas; the instruments serve as an interface between the composer’s imagination and the world, much in the same way that Max/MSP, PD, and other pro-

gramming environments do today. But rather than remaining on the fringe, Buchla’s pioneering yet unconventional work infiltrated popular culture in numerous ways—such as the so-called “Buchla Box” that was part of the sound system in the bus *Further* driven by Ken Kesey and the Merry Pranksters.

It was the tradition of collaboration, as well as its culture of naturally occurring experimental inquiry, that led to my decision to relocate to the region from London in 1986. You see it even today, onstage and in the studios, reaching through the City and Silicon Valley from the North Bay to Santa Cruz in the south, and eastwards through the East Bay to Davis and Sacramento. While traditional approaches and cutting-edge technologies continue to cross paths, often with a Gold Rush payoff in mind, there’s a larger understanding here that art is of equal (if not greater) importance than mere commerce.

And like an echo of the Emperor’s seemingly crackpot idea to connect San Francisco and the East Bay with a bridge, the culture of the Bay Area’s music scene continues to connect creative people across a wide range of disciplines in heretofore inconceivable ways. ■

Historically, the region has served as a rich environment for people looking to reinvent themselves.



Joan Baez and Jesse Nichols

FANTASY STUDIOS, BERKELEY, CALIF.

Joan Baez recorded vocals for Atlanta band A Fragile Tomorrow in Studio A with engineer Jesse Nichols and producer Julie Wolf. They used VM1 Lite, LA-2A, and Vintech X73i...Mikal Cronin was in Studio D with engineer Nichols mixing *MCIII*. Cronin self-produced.

They used natural echo chambers, real EMT plates, Echoplex and Space Echo Tape Delays, and Leslie cabinet for effects...Neil Young recorded vocals and acoustic guitar for upcoming Jakob Dylan project in Studio A with engineer Dave Way and producer Andy Slater. They used a U 47 for vocals, and a Royer 121, Neumann U 67, and Neve preamps on guitar...Young also was in Studio D editing his own upcoming project, with John Hanlon engineering and Hanlon and Young producing...Polyphia was in Studio A doing an audio and video shoot with engineer Alberto Hernandez. They used Neumann M 49s, Fet 47, U 87s, KM84, 452-10, B&K 4011s, Royers, 421s, SM57, AKG D112, M201s, Avalon U5, RCA44, C12, Grace preamps, API 3124, Neve preamps, Focusrites, Pultec, SPX 90, PCM42, API Large Rack, GMLs, and an 1176...The Dear Hunter recorded full orchestra overdubs over band tracks for upcoming albums in Studio A with engineer Nichols and producer Casey Crescenzo. They used Neumann U 47, Neumann M 49, KM 54, ELAM251, Brauner VM1, and B&K 4011 mics; and GMLs, Grace 801, and Neve preamps...Toro Y Moi worked on the ISDN connection to NPR's World Café in Studio D with engineer Hernandez. They used U 47 on vocals, M 49 on drum overheads, FET 47 and AKG D112 on kick, beyerdynamic M201 and Royer 121 on guitars, Avalon U5 on bass, and Neve preamps, 1176 LN, Pultec EQP, GML compressor, AT1 550 EQ, LA-3A, real plate reverbs and natural echo chambers...W. Kamau Bell worked multiple sessions in various studios on voiceover narration for CNN show *The United Shades of America*, with engineers Adam Muñoz and Nichols.



SKYLINE STUDIOS, OAKLAND, CALIF.

Public Enemy tracked vocals for *Man Plans, God Laughs*, with Bryan Matheson engineering...Public Enemy also worked on material for a new offshoot of the band, called PE 2.0. The project is entitled

insPirEd. Matheson also engineered...Engineer/producer Jeff Saltzman worked on Blondie's latest release, *Ghosts of Download*...Saltzman is also producing various bands for the Oakland Indie Mayhem label...Skyline recently added a new room, 400-square-foot Control Room C, featuring a fully loaded API 1608 console, Pro Tools HDX, and outboard gear including BAE, SSL, Chandler, Empirical Labs, Purple, Shadow Hills, Barefoot monitors and an array of analog synths. The room will be used primarily for mixing...The studio also worked on post-production VO work for the TV shows *Scorpion*: on CBS and *Vice* on HBO.



Martin Terefe, Nathan Winter and Pat Monahan

HYDE STREET STUDIOS, SAN FRANCISCO

Train recorded vocals, piano, strings, and guitar for *Save Me San Francisco* in Studio A. Martin Terefe produced the project, and Dyre Gormsen and Nathan Winter engineered. Train started the album at Terefe's studio in London, recording most of the drums and bass. Pat Monahan used a Telefunken ELA M 251 for his vocals.

He started singing in the live room, but had gotten used to being in the same room as Martin and ended up singing the entire record in the control room. Jerry Becker, a longtime friend, played piano for the record using the studio's white Yamaha baby grand. The layered the strings to make it sound like a large orchestra. After every take,

they would switch seats to make sure there was no phasing with their previous takes... Train also did background vocals and small overdubs in Studio A for *California 37*, with Butch Walker producing and Jake Sinclair and Winter engineering...Sun Kil Moon recorded *Berji* in Studio A, with Mark Kozelek producing and Winter engineering. Kozelek used an AT 4060 into a UA 6176 preamp, and Steve Shelley from Sonic Youth played drums and percussion...The Rhapsody Radar Sessions took place in studios A and D, with Olivia Parriot producing and Winter engineering. Produced for streaming service Rhapsody, this is a series of live recording sessions with video, featuring artists such as Daughter, Kendra Morris, Samsaya, Tacocat and K. Flay. All instrumentation is run through Neve 1081 channels during tracking and mixing... Producer/engineer Eddie Kramer, assistant engineer Chandler Harrod, and second engineer Winter worked in Studio A mixing six Jimi Hendrix shows that had taken place at Winterland in October 1968. Everything was recorded to 1-inch/8-track tape by Wally Heider, who previously owned the studio facility where Hyde Street Studios is located. There were three tape machines running in the room at all times—tracks coming from the 1-inch Studer 820, mixing to 1/2 inch, with a real tape delay. The 8 tracks were split, three mics on the drums, one guitar, one bass, two vocals, and an audience mic...Bob Mould worked on *Silver Age* in Studio A, with engineers Beau Sorenson and Winter (Mould self-produced). A lot of the basics were tracked live, and Mould would stack his guitars in layers, often panning two takes left and right and another up the middle to give get a big guitar sound...Dead Horses worked on *Space and Time*, tracking in Studio A and mixing in Studio D with producer Stephen Barncard and engineer Jack Kertzman. AKG C12 and Sony C500 mics were utilized on guitars, and bleed was embraced by tracking both guitars in the main live room simultaneously. The 10-day lockout moved into Studio D for overdubs and preliminary mixing, where the studio's echo chamber was used on some vocals... Vocals (mostly Philip Bailey's) for a portion of Earth, Wind & Fire's *Now, Then, and Forever* were recorded in Studio D with producer/engineer Kenny Moran and engineer Kertzman. Vocals were tracked with a Telefunken ELA M 251 tube condenser through a Neve 1272 preamp.



Oscar Autie (left) and Yalil Guerra

EL CERRITO STUDIO, EL CERRITO, CALIF.

Extraño Corazón worked on "Adiós Te Digo," with Oscar Autie producing and engineering. Vocals and guitar were recorded in Havana, and keyboard and drums were recorded at El Cerrito Studio. Autie used Waves plug-ins SSL E Channel for general EQ, and Scheps 73 EQ for the drum set and background vocals. He also used Reel ADT to make the background vocals sound fuller and richer. To attain the crispy sound for the lead vocal, Autie used compressor hardware 1176 from UAD and the Manley Massive Passive EQ. For effects, Autie used the Lexicon 224 Digital rev from UAD, the Manny Marroquin Distortion from Waves, and the H-3000 delay from Eventide...Lucid Rays worked on *More In Common*, with Autie producing and engineering. He used the Apollo Quad interface to record with real-time plug-ins, using a minimal amount of compression and a combination of preamps to attain a warm sound. Autie used the four preamps from Apollo for the three toms and the hi-hat, and the preamp UA 4-710d for the kick, snare and room mics. The bass was recorded using the UA channel strip LA 610. For the guitar, Autie used the API 3124 mic preamps with a combination of Sennheiser MD421 and Shure SM57...Autie mixed Yalil Guerra's *Soy Una Mujer* (Guerra recorded, produced, and mastered the project at RYCY Productions). Cristian Robles did the vocal mix...Autie mastered Ensemble Solistas de la Habana and Iván Valiente's *Yalil Guerra: Works for String Orchestra* (produced and mixed by Guerra). The project was recorded live in Havana, Cuba.

Tech // new products



BLACKLION MICRO CLOCK MK3

Portable Word Clock up to DXD

The back-packable Micro Clock MK3 from BlackLion Audio (\$999) features ultra-low jitter, harmonically enhanced word clock signal generation,

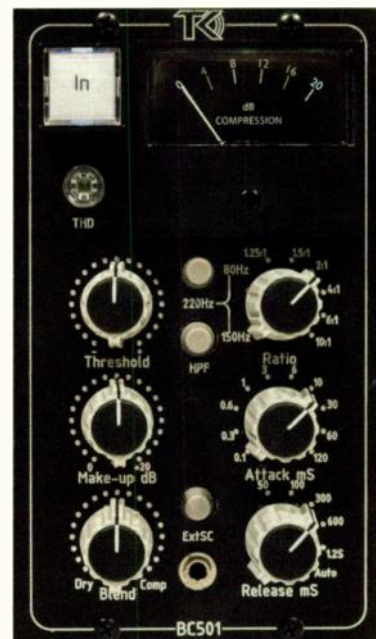
dimmbable frequency display, and eight selectable sample rates from 44.1 kHz to 384 kHz. Other features include six BNC outputs with dedicated output drivers for maximum isolation, an RCA S/PDIF output and optical S/PDIF AES output. The single-rackspace unit can be rackmounted with removable rack ears and is powered by a 2.1mm barrel connector with 5.5mm outer diameter.



ROYER R-122 MKII ACTIVE RIBBON MIC

Update Brings Roll-off and Pad Functions

Royer's new active R-122 MKII (\$1,995) offers all the performance of the original along with a switchable -15dB pad and a switchable bass-cut filter. The -15dB pad allows for high-SPL recordings with no microphone distortion or preamplifier overload. With the pad engaged, the R-122 MKII has 2 dB lower output than the company's flagship R-121. The bass-cut filter is positioned at 100 Hz (6 dB per octave), which reduces the excess low end created by proximity effect. The R-122 MKII uses a low mass, 2.5-micron, pure aluminum ribbon element in Royer's patented offset-ribbon transducer assembly. The microphone's increased sensitivity is accomplished by using a special Royer-designed toroidal transformer that delivers 13dB higher output with no additional self-noise.



TK AUDIO BC501 BUS COMPRESSOR

500 Series Stereo Gain Control

The doublewide 500 Series BC501 stereo bus compressor from TK Audio (\$995) features all the power of TK's flagship BC1-S plus more functions taken from the BC2-ME mastering compressor, such as additional ratio settings (1.25:1, 6:1), a THD switch for adding more even harmonics to the signal, and three HPF settings (80, 150 and 220 Hz). Standard features include threshold, make-up gain, wet/dry control, ratio, attack, release and a switchable external sidechain. All controls are detented for easy and precise recall.



PRESONUS STUDIO ONE 3

New Features, Control and Sounds

Available in Artist (\$99.95 street) and Professional (\$399.95 street) editions, Studio One 3 adds true innovations in song arranging and experimentation, giving users new ways to control and mix within the application as the first DAW to offer a dual platform (Mac and Windows), multi-touch interface.

Starting with Studio One Remote for iPad, Studio One 3 brings more than 70 new features, including Arranger Track, which makes it easy to build and rearrange songs; unique Scratch Pads for an independent parallel timeline that lets you safely experiment on alternate ideas without jeopardizing arrangements; and an updated browser makes it easier to find the content via tag-based "musical" search. You can now search for loops, samples and presets by typing keywords like "genre" and "instrument" or by filtering content by selecting tags.



BLUE SKY AUDIO MANAGEMENT CONTROLLER

Advanced Monitor Control

Designed to complement Blue Sky's Star System One modular monitoring system (Sat 6D satellite speakers and Sub 12D subwoofer), the AMC (\$2,995) is compatible with all other studio monitors. The AMC adds many new capabilities, including precise, centralized control over levels, balance, mute, selection of house curves, and various other system configuration settings. The new product is an eight-channel DSP-based system, and each channel features 1/3-octave EQ, eight bands of filters and parametric EQ (10 bands of parametric EQ on the bass channel), and variable delay for time alignment. Integrating with Blue Sky's Speaker Room Optimization (SRO) auto-alignment system in conjunction with bundled Windows software, AMC's other key features include eight system presets (EQ curves, etc.), lip sync delay, 7.1 bass management with variable cutoff frequency per channel, and an externally-accessible mute input.



WAVES H-REVERB

FIR Reverb Plug-in

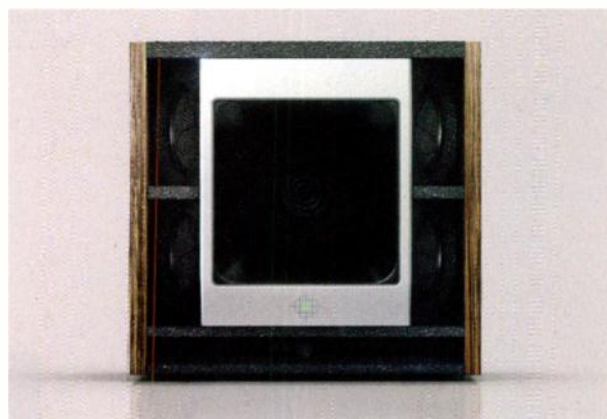
H-Reverb from Waves (\$199) is a pioneering FIR reverb based on innovative Finite Impulse Response reverberation technology. The FIR engine that powers H-Reverb lets the user shape and customize the decay envelope beyond the standard linear forms. H-Reverb incorporates Waves' advanced analog modeling along with a drive control, offering signal behavior found exclusively in high-end hardware reverb devices. H-Reverb includes a library of artist presets from the industry's leading mixing engineers, as well as presets inspired by vintage and modern classics. Other features include full buildup timing and shaping, pre-delay BPM sync, support for full 5.1 channel surround setups, and user-friendly collapsible GUI.



AUDIENT ID14 USB INTERFACE

Console Features Plus Software ScrollControl

Audient's iD14 USB 2 interface (\$299) features two Class-A Audient console mic pre-amplifiers, high-performance Burr Brown AD/DA converters (24-bit/96kHz), JFET instrument input, main speaker output, independent headphone out, and full monitor control. With a touch of a button, iD14's volume encoder becomes a virtual scroll wheel that allows you to adjust DAW hosts, plug-in parameters, iD14's mixer app and even scroll through your iTunes library—just like adjusting a piece of hardware. Wherever your mouse pointer hovers, the iD knob can scroll to control.



SQUARE AUDIO SQ1 MONITORS


Coaxial Midfield Studio Speakers

The Square One monitors from Square Audio (\$10,000 per pair) are 18x17x16 inches (HxWxD), 80 pounds each and constructed with HF compression drivers from Italy's Eighteensound. Also onboard are four 5.25-inch woofers in a bass reflex configuration from ScanSpeak in Denmark. Amplification is via 600 watts (200/400, x@650) of Class-D power from Hypex electronics in the Netherlands. The system promises a frequency response from 36 Hz to 20 kHz, long-term SPL of 110 dB per speaker, and maximally approximated acoustic axis of HF and LF sources with directional radiation down to low frequencies.

FIRENZE

KH8

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Incredibly powerful
sound from an
exceptionally
thin design

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New Sound Reinforcement Products



NEXO ID SERIES LOUDSPEAKER

Compact, Low-Profile Design

NEOX ID Series (\$TBA) is intended for use as problem solvers in toolkits of system designers and installers. The series includes the ID241 for installation, ID24t for touring and AV applications, and ID24c or the "a la carte" version, which allows the customer to custom-configure the speaker to match precise requirements. The loudspeaker cabinet is a compact, low-profile, small-format, yet high-output single speaker for use under balcony, for front fill and side fill applications, and is the perfect accompaniment to NEXO line arrays in acoustically challenging spaces. Using a variety of mounting options, the ID24 compact cabinet can fit into almost any environment, offering high SPL output with variable directivities.



L-ACOUSTICS X SERIES

R&D Brings Three New Enclosures

The new X Series from L-Acoustics features high-excursion neodymium drivers, ellipsoid directivity, laminar vented ports and up to 30 percent weight reduction. Used as a stage monitor, the X Series offers low-latency monitor presets and a seven-percent lower profile. In installation applications the X Series comes with a complete range of flexible rigging accessories and a RAL custom color program. The series includes the X8 (\$TBA) with high SPL and extended bandwidth for operation at FOH position or in control rooms; the X12 (\$TBA) with an ellipsoid directivity of 90x60 degrees; and the X15 (\$QQQ) with exceptional power in beamwidth and acoustic isolation. The X Series comes as an addition to the ultra-compact 5XT fill launched in 2013 and will ship in Q4 of 2015.



DPA TSM4001 TABLETOP SHOCK MOUNT

Quiet Control for d:screet and d:diccate Mics

DPA Microphones has launched a new Tabletop Shock Mount (\$145), the TSM4001, for use with its d:screet and d:diccate Podium Microphones. The shock-mount, which complements the sleek design of DPA's existing products, promises the best shock rejection of any podium mount on the market. With vertical softness that absorbs handling vibrations, horizontal movements are controlled to prevent the podium boom from coming in direct contact with the mount. Optimized for the weight and dimensions of each of the d:screet and d:diccate mics and booms, the mounts fit plate thicknesses of .3- to 1.5 inches (eight to 38 mm). The mounts are easy to affix, requiring approximately 2- to 2.5-inch (55 to 59 mm) opening, and can be custom-ordered with a variety of finishes to match the surrounding furniture or architectural structure.



ELECTRO-VOICE COMPACT EVID SERIES

Small-Format Install Monitors

The EVID Series monitors from Electro-Voice (priced per configuration) are designed to offer an unparalleled performance-to-size ratio in the small-format installed sound category. The series includes five sonically and aesthetically matched models: subwoofer and satellite speakers for surface mounting, subwoofer and satellite speakers for ceilings, and a pendant speaker. Individual models may be mixed with one another for optimal results according to application, and all stand apart from other available products by providing a unique combination of superior EV sound quality, stylish design, smaller size, and simpler installation. Features include simplified mounting and wiring, quick install, acoustically balanced crossover points, support for 100 watts, 70/100 volts, and 8 ohm audio connections with some units available in white or black finishes.



AX-SERIES

"Excellent performance across the entire audio spectrum."
Sound on Sound on A7X

"An outstanding monitoring solution."
Audio Technology Magazine on TEC-Award-Winner A77X



A7X
Two-time SDC
Award Winner



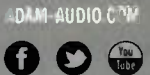
A77X
TEC Award Winner



A3X
Future Music
Value Award



A8X
Audio Test
Reference Class



The only pro audio store you'll ever need.



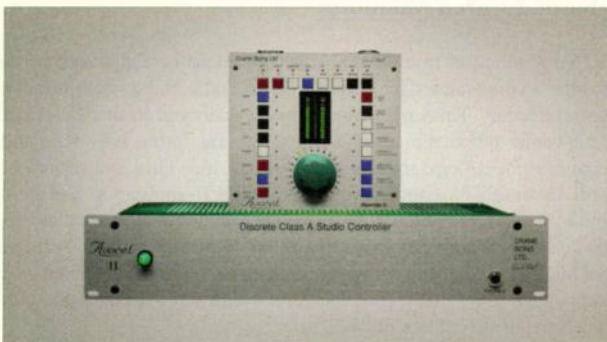
ANTELOPE AUDIO SATORI MONITORING CONTROLLER

The Satori is the perfect tool for preserving pristine audio and making the subtleties of your recordings more noticeable



GRACE DESIGN M905 ANALOG

Based on the success of the m905, the m905 Analog offers reference quality analog monitor control at a more affordable price



CRANE SONG AVOCET II

Stereo monitor controller & D/A converter with exceedingly **low** jitter for ultimate accuracy in sound reproduction



RUPERT NEVE DESIGNS 5060 CENTERPIECE

A console master section for your desktop, from the undisputed master of consoles



SPL CRIMSON

USB audio interface & monitor controller with high-class pres, tons of I/O options, sampling rates up to 192kHz, and more



AUDIO ACCESSORIES SHORTI QUICK-SWITCH TO DB25

2 x 48 audio patch bay terminated to DB25s, pinned out for direct connection to Pro Tools and other pro audio gear



BLACK BOX ANALOG DESIGN PREAMP

Mic pre/DI that utilizes radical all-tube tone-shaping without added EQ circuitry - hear your mics in a whole new way!



GENELEC 8351

The most forward thinking monitor design in a LONG time - compact, powerful & smart, like a freight train of sound headed your way



DANGEROUS COMPRESSOR

Simple, transparent and powerful; the striking new dynamics processor from Dangerous levels the playing field



GEFELL M 1030

German-engineering at its finest, Gefell's M 1030 large-diaphragm condenser delivers the utmost in quality and flexibility



UNIVERSAL AUDIO NEXT-GENERATION APOLLO

All-new Apollos feature next-gen conversion for stunning sound, plus convenient "mix and match" operation of up to 4 units



PMC TWOTWO™

The PMC twoTwo™ series active monitors; new standards for critical reference monitoring



FREE SHIPPING IN THE USA



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Tech // reviews

TWO DIs FOR STAGE AND STUDIO

Stereo/Dual-Mono Operation, EQ, Gain and Load Control

A DI is a simple interface that takes a high-impedance, unbalanced source and makes it compatible with balanced preamps and eventually your DAW. But that's not all Radial Engineering and A-Designs had in mind when they created these new products that enhance the lowly DI with a gang of great features.

RADIAL ENGINEERING FIREFLY TUBE DIRECT BOX

The Firefly is a dual-input direct box that uses a single 12AX7 running Class-A. It comes painted "taxicab" yellow in a rugged, all-steel enclosure measuring 5.75x1.75x8.25 inches (WxHxD) with a carrying handle.

Firefly's utility begins with the protruding frame of the cabinet's cover that protects the front panel's controls and switches from accidental access or damage. Configuration switches and trim pots that are used less-frequently are recessed on the unit's rear, side and front panels.

The Firefly's A and B inputs have separate level controls and allow for two instruments to be plugged in at the same time. You can preset and balance the volume/record level of both a high-output bass guitar with active pickups/electronics on the A input and the low output of an acoustic upright bass with a piezoelectric pickup system on input B. The Select button silently switches between A and B while the Level control sets the unit's final output level.

The front panel also has a 25 to 500Hz variable low-cut filter and the Drag push button switch. Drag is a way to load passive pickups for the same feel and sound as if they were driving the input impedance of a guitar or bass amp. Firefly's nominal input impedance is 4 meg-ohms, but with Drag on the front panel's recessed screwdriver control varies it from 22 to 500k ohms.

Flush-mounted rear panel ¼-inch jacks include A and B instrument inputs; an "always on" buffered Tuner output; the Aux/Thru Output jack for connection to a stage/studio amplifier; and a TRS jack for connecting Radial's JR-2 footswitch for A or B switching and output muting. There is also a TRS jack for a buffered send/return insert path, but no onboard bypass switch. The insert point is after the tube stage but before the Level control.

The rear panel finishes with a balanced microphone level XLR output from an Eclipse ET-MS10 transformer and a five-pin XLR power connector to accept the OEM line lump power supply's ±16-volts and the tube's 48-volt plate supply.

The recessed configuration switches on Firefly require (preferable) an insulated tool to toggle them. There are switches for ground lift, polarity and, on the side of the unit, a switch for separate transformer isolation of the Aux/Thru path or not.

Finally, an important recessed switch changes the ¼-inch Aux/Thru signal chain completely. When Pre is selected, the buffered feed from your instrument is passed on to your stage/studio amp—a direct box thru. When Post is selected, the final sound of the Firefly includes the tube stage HPF, and insert loop effect as the main XLR output is "mirrored" on the Aux/Thru jack—tube preamp mode.

To avoid a ground loop, I plugged both the amp and Firefly into the same AC wall socket. On powering up, the unit mutes for about 45 seconds while the tube stabilizes. I set the Aux/Thru switch to Pre and switched Drag off. The buffered signal of my stock Fender Strat went to my Fender Blues Junior out in the studio and the Firefly's XLR output was recorded using my Sunset Sound SIP mic preamps. The sound was clean, clear and with no hum or noise—exactly as my Strat sounds. I found the buffered output sent to the amp using a 25-foot cord to have the same sparkle and life as when using a short cord straight out of the guitar.

The fun started when I set the Aux/Thru path to Post. The entire sound of Firefly is available for both the amp and the XLR con-



The Radial Engineering Firefly Tube Direct Box

PRODUCT SUMMARY

COMPANY: Radial Engineering
PRODUCT: Firefly Tube Direct Box
WEB: www.radialeng.com
PRICE: \$599 MSRP
PROS: A worthwhile, flexible piece of musical equipment for studio and stage.
CONS: Some of the controls and switches are not easily accessible.

TRY THIS

The Tuner output of Firefly is always on, so use it to drive an effects pedal or a secondary guitar amp without affecting Firefly's operation.

necter at the same time. I found this especially good for direct guitar and bass recordings. It was easy to add some "hair" to overly clean bass sounds; and for guitar, the Firefly offered a new shade of coloration as a tube preamp in front of the guitar amp itself.

In Post mode, all Firefly settings including the Level control affect both the amp's volume and the record level. By cranking up the gain on an input and throttling back the Level control, I could hear the strong saturated sound of the 12AX7 coming into play.

I experimented with the Drag control. Drag does not affect instruments with active electronics, but it does affect the way instruments with passive pickups feel, play and sound. For a direct guitar overdub I started with Drag at the extreme, all the way counter-clockwise at 22k ohms. This produced a very thick, sluggish-responding "dead" and rolled-off sound with no sustain at all! While my guitar player perfected the part for the song, I slowly turned the Drag's screwdriver adjustment clockwise to partially unload the pickups and restored just the right amount of brightness. Even though Drag is a fiddly screwdriver control, I found both it and the HPF to be useful musical controls in the studio.

Firefly is a great utility piece of studio kit for musicians, studios and FOH engineers to have on hand. It is rugged and fully adaptable to any situation in a studio session or onstage. Recommended!

A-DESIGNS KGB INSTRUMENT PREAMPLIFIERS

More than just direct boxes, A-Designs' KGB-II and KGB-1tf are instrument preamplifiers that supply +4dB balanced line-level outputs into 600-ohms, meaning the KGB (Keyboard, Guitar, Bass) will directly drive the line level inputs of DAW interfaces, line processors and console line inputs with no need of a mic preamp.

The KGB-II is a dual-mono (stereo) unit, while the KGB-1tf is a single-channel version with a three-band active tone stack. Tone control is by way of a Baxandall high/low shelving EQ with corner frequencies at 5 kHz and 180 Hz, respectively. Midrange frequencies are handled by a peaking EQ section with a broad Q centered at 1.8 kHz. Each section is capable of up to 12 dB of cut/boost.

Both models use the same circuit topology that includes large CineMag CMOQ-25 output transformers. Both units have 22-meg-ohm input impedances and work with high-impedance sources, such as guitars and bass guitars, as well as with lower-impedance, higher-output electronic keyboards.

To accommodate any instrument, there are front panel High/Low Gain

PRODUCT SUMMARY

COMPANY: A-Designs Audio, Inc

PRODUCT: KGB-II and KGB-1tf Instrument Preamplifiers

WEB: www.adesignsaudio.com

PRICE: \$754 MAP (each)

PROS: A big and warm line-level sound

CONS: A bit big and heavy, KGB-1tf tone controls need detents

TRY THIS

I hooked up the KGB-II so that the left channel's Thru signal went into an overdrive pedal. That pedal's output went to the right channel's input and its Thru out to the guitar amp. Now I had line-level outputs to record both the guitar's original clean signal as well as the overdrive pedal's output signal. You could also connect the guitarist's entire pedal board instead of just the overdrive pedal. In this way, the guitar player maintains his live amp sound, as well.

range switches for selecting either 34 dB or 26 dB of gain. There are Switchcraft ¼-inch Input and Thru jacks, and on the rear panels are XLR output connector(s) and toggle switches for phase flip, ground lift (XLR Pin 1) and power on/off. The KGB preamplifiers are each powered by external wall-wart 20-VAC power modules (supplied). A modified bi-polar voltage-doubler circuit is used for generating the fully regulated ±24-volt rails.

The KGB models each use two discrete op amp modules designed by Carl Johnson. The KGB-II has one for each channel's line driver and the KGB-1tf uses one for the EQ and the other for the line driver. The modules plug into the main circuit board with spare modules costing \$75.

Operation is simple and immediate for either unit. The High/Low Gain toggle switch sets the operating range depending on what source you plug in, and a single aluminum knob sets the final output level.

I first tried the KGB-1tf for recording a Suhr Classic J4 bass guitar. I pushed low frequencies using the low-shelf EQ and took the Suhr to another level with near synth-like subsonics—especially noticeable on slides and percussive "pops." The center position of the three tone controls is flat, but I wish these pots had center detents.

The KGB-1tf got a great sound from a Suhr Guthrie Govan Signature guitar. As with the bass guitar, I found the sound to be clear and clean and I liked not having to use a console channel strip. I directly connected the KGB to the studio's Pro Tools HDX interface input.

I then tested the KGB-II as a stereo preamp to record a Korg Triton keyboard. The Triton's Combi patches put out hot levels, so I set the High/Low gain switch to low. Even with the Level knob on the KGB II fully CCW, I had plenty of level and ended up reducing the Triton's on-board fader. The sound was clean, clear and dynamic—percussion sounds were bright and not compressed.

Staying with the KGB-II, I then did bass guitar overdubs with my guitar player on a stock Fender Jazz bass with passive pickups. I used the High Gain setting with the Level control at about 1 o'clock. I connected the output directly to a dbx 160A limiter/compressor whose output went into the studio's Pro Tools interface. This produced a consistent bass sound with percussive attacks well heard, good sustain and solid low frequencies.

Both the KGB II and the KGB-1tf are solid, core investments for any studio, live sound engineer or musician who wants great sound simply. Especially good for console-less project studios, I can recommend them both. ■



A-Design's KGB-1tf (top) and KGB-II instrument preamps

TASCAM DR-44WL HANDHELD RECORDER

XLR Inputs, WiFi Networking, Remote Control Software

The new DR-44WL is a 4-channel handheld recorder that builds on the foundation of Tascam's DR-40. While the DR-44WL features a number of modifications and improvements, none is as intriguing as the inclusion of WiFi technology for remote control and wireless data transfers. This allows users to place the DR-44WL in an optimal location and then meter and adjust levels using the iOS and Android-compatible DR Control software.

NUTS AND BOLTS

The DR-44WL chassis has aluminum sides with plastic top and bottom panels, as well as plastic ends at the front and back. The front features a pair of newly designed small-diaphragm electret condenser microphones; as on the DR-40, they are protected by sturdy brass rails that would absorb the blow if the unit were to be dropped on its front end. These rails also do a good job of preventing windscreens from rubbing up against the mics.

While the overall sound of the microphones on the DR-40 and DR-44WL are very similar, their designs differ greatly. The DR-40's mics were mounted to the unit on two-position hinged mounts that could flip inward so that the mics could form an X/Y-like pattern, or flipped outward to approximate a 90-degree angle relative to one another, for a wider stereo pickup. Despite the fact that many users liked



The DR-44WL features XLR inputs and operates at up to 96 kHz/24-bit.

that flexibility, the DR-44's mics are locked into a single position, which represents a much truer X/Y pattern, with the capsules stacked, overlapping each other slightly.

While the mics cannot change positions, they do feature one big improvement: Each mic is connected to a somewhat flexible rubber joint that serves as a shock-mount. In a concert setting, this would be effective in minimizing excessive bass from resonating through the unit into the mics. The new mounts don't eliminate handling noise, although the included, screw-on plastic handle does seem to be of some benefit, as it minimizes direct contact with the unit. Readjusting your grip on the handle, however, will still make some noise, so pairing the recorder with a suspension kit is recommended.

CHANNEL CONFIGURATIONS

The DR-44WL can record up to four simultaneous channels of audio. The most obvious configuration would be to record the built-in stereo mics plus the two channels of XLR input. However, alternate modes see the internal mics being recorded to two of the tracks, while

the other two tracks are used to record an alternate version that is reduced in level by about -10 dB. This way, if a portion of the audio is clipped in the normal version, it can be replaced with the unclipped, lower-level version during editing. This would

be useful when recording dialog with a boom and lavalier microphone feeding the XLR input jacks. When using the external input in dual mode, however, only one input can be recorded along with its attenuated counterpart, limiting operation to mono.

It seems that Tascam—makers of the original 4-track, cassette-based Portastudio—feels obligated to continually provide similar tools that allow songwriters to sketch out demos. The MTR mode on the DR-44WL does a fine job of giving songwriters a pocket-sized recording studio. In MTR mode, either four mono or one stereo and two mono tracks, can be recorded in an overdubbed fashion. In this mode, any of the four inputs can be selected to feed any of the four tracks, so one of the built-in mics can serve as the sound source for all four layers, or a single, outboard condenser can be recorded four times without having to switch connections.

TAKING CONTROL

The top panel features a very large, easy to read, backlit LCD display. The meters display level for the four record channels, and for the stereo mix of the four tracks in MTR mode. Other information that is immediately useful is displayed as well, such as filename, a counter, peak level and the like. As is common on Tascam devices, there is a main menu that provides access to primary functionality, and then a number of different pop-up menus that control other common functions.

Most functions are controlled using a data wheel and selection button similar to the first-generation iPod. The wheel is slightly detented so that it won't slip past the desired selection too easily. The DR-40 had noisy spring-loaded buttons for performing these functions, so the DR-44WL's slightly quieter alternative is an improvement.

Similarly, the input level control no longer uses spring-loaded buttons, and has been given a dedicated thumb-wheel similar to that found on the Sony PCM-100. Pressing the "Input Level" button on the side of the DR-44WL engages a pop-up menu with a meter displaying the level for each of the four inputs. Track-arm buttons numbered 1 to 4 sit right below the LCD display and blink with red LEDs when this menu is active. Pressing each of them will appropriate the level control to the corresponding channel. Pressing the "1" button and then pressing "2" will allow simultaneous level adjustment of this stereo pair. Likewise, pressing "3" then "4" will allow simultaneous level setting of those two channels. If either member of the stereo pair is set individually, and the stereo balance is offset, this relative balance will be maintained even when grouping them together again.

WIRELESS CONTROL

Pressing the button labeled Wi-Fi on the left side of the DR-44WL creates a wireless network and displays the network name and the pass-

PRODUCT SUMMARY

COMPANY: Tascam (TEAC)

PRODUCT: DR-44WL

PRICE: \$299 (street)

WEBSITE: www.tascam.com

PROS: Good overall sound. Wi-Fi control. Plenty of features.

CONS: Doesn't record quiet sounds as well as it records louder ones.

TRY THIS

There are a lot of plug-ins for futzing audio to sound like it is playing out of different speakers, but there's nothing like the real thing. Try using MTR mode on the DR-44WL to futz audio through car or TV speakers in a very portable way. Put the mono or stereo audio onto one or two tracks in a new song (either record it in or cheat the file system with clever renaming; it works). Connect the headphone jack to the TV or vehicle's Aux jack and play the original while "overdubbing" the futzed version onto the stereo track.

word to join. After downloading the free DR Control app onto my iPhone, I simply went to the Wi-Fi settings menu on the phone and connected to the network as instructed. The DR-44WL creates its own LAN that directly connects to peripherals. The phone connected with no problems, and upon launching the app, I could now see the meters and other settings on my phone.

With a clear path between my iPhone 5s and the DR-44WL, I could stay connected up to about 25 feet away; beyond that distance, signal would drop out. Fortunately, reconnecting required no action from the unit itself and I could jump back on the network directly from my phone. This was also convenient in instances where I needed to access data during recording. I could disconnect from the DR-44WL, connect to my 4G network to check email, or look something up online, and then get back on the Wi-Fi connection to control the recorder again.

On the whole, wireless control is very slick and well executed. I only have two real complaints. One is with regard to the input level setting. From the iPhone app, input channels one and two can only be set as a pair, and cannot be unlinked for making individual adjustments. Conversely, the levels for three and four

cannot be linked and have to be set individually. This means that making adjustments on the fly when actually using this pair in stereo will always result in wobbly teeter-tottering levels.

The other issue is that audio cannot be monitored in real time from the app. This is not entirely surprising, but recording audio without hearing it is always risky. The closest thing to a solution would be using the DR Control app to browse all of the files on the SD card mounted inside the unit. Supposedly, any file can be auditioned right off of the DR-44WL through the wireless connection. Even after updating to the latest software and firmware I was not able to accomplish this. However, the app also allows any file to be pulled through the wireless connection and then auditioned in the app. The file can then be uploaded directly to SoundCloud from the wireless device. This functionality also presents a workaround, where a test file can be recorded, auditioned through the app and be used to determine whether the mic placement and level settings are correct.

IN USE

I was just getting into the sound design for a film project when the DR-44WL arrived. I needed to record some car tires, heavy footfalls and body falls on gritty desert terrain. Finding a quiet spot in any nearby park requires some hiking to a remote area among the buttes and mountains. I thought the DR-44WL would be a perfect companion because of its small, light build. I packed it up in a backpack with some different mics and wind protection and set out.

The park was unusually busy, so I tried out several trails before I found real isolation. I had to do a fair amount of hiking, so fortunately I didn't have to carry a heavy, bagged recorder. The heaviest things in my recording complement were mic stands. I got the DR-44WL set up on a tripod and a stereo pair of pencil condensers on a stereo bracket and wired into the recorder. From there, I established a wireless connection to the recorder with my iPhone. I loved that I could run and jump around, toss things, and make all of the sounds that I needed all while remotely controlling the levels from the app. The only thing tethering me to the recorder was a long headphone extension cable so that I could monitor my work.

I packed up my rig and moved it to the roadside to record car drive-bys on the rocky terrain. I performed the drive-up and stops that I needed but also grabbed some other cars driving by. The overall rig was small and unassuming enough that there never seemed to be any raised eyebrows from the passing drivers. I also recorded some ambience of bugs and birds with the wind blowing through the waxy foliage. On the way back home I wound up recording vehicle interiors while driving on different surfaces, at different speeds, with different windows open.

I brought the files home to examine and catalog them. A lot of the louder vehicle sounds came out really nicely. There was a surprising amount of bottom end in the vehicle interiors, and a nice stereo image in all of the audio. Drive-bys and approaches from the left or

right read really well. When listening to some of the quieter tracks, like footsteps or nature sounds, there was a fair amount of noise—if you've heard any Tascam portable recorder, you know what I'm talking about. Even the company's higher-end products have a slight hiss when cranking the mic pre's gain to capture lower-level signals.

While today's noise removal technology can do a pretty good job of removing noise from speech, there's always a bit more damage when pulling noise out of sound effects. In this case, the lower-level recordings were pretty much unusable and had to be re-recorded with a quieter recorder. This is not that surprising, as only rarely have I found handheld recorders that can meet these tasks. While the DR-44WL will not replace the Sony handhelds that have gained favor among nature recordists, the unit's high SPL rating, full frequency response, and detailed sound will make it favorable for train, plane, artillery and other high-volume SFX recordings.

The DR-44WL really shined when it came to capturing sound supporting video. A friend was shooting an outdoor wedding with a combination of DSLR and GoPro cameras, none of which have good quality onboard sound. We thought the DR-44WL might fit the bill as an all-around sound recorder. At the event, he set it up on a tripod, with the built-in mics pointed toward the seated guests to capture ambience. A small choir mic hanging from the arch and a shotgun mic pointed toward the couple and the officiant captured the speech of the ceremony.

The foam windshield plus a Rycote windjammer on the built-in mics did well to keep wind noise to a minimum. The ambient sound, including music, clapping, etc., was all captured really well. While both mono mics required a bit of noise repair to remove wind sounds, the end result was a really nice documentation of the day's events. The sonic picture that resulted from the choir mic and the ambient mics impressed me. I would definitely use that same combination when presented with a similar recording scenario.

The DR-44WL is lightweight, small and comes with a nice little padded carrying case. It can easily live in your backpack or laptop bag and always be there when you need it. The built-in mics do a good job of capturing everything from music to speech to sound effects. In a lot of cases, I went through the trouble of connecting external mics only to find that I preferred its built-in mics in the end. For music and for sound effects, if nothing else, it's a great little sketchpad that allows you to grab sound in the moment, documenting ideas that can be revisited in more elaborate setups later on. The Wi-Fi control is really handy and is well worth the meager price difference between the DR-40 and DR-44WL. As far as bang for the buck goes, the DR-44WL is a perfect solution for weddings, indie films or everyday recording. ■

Brandon T. Hickey is a recording engineer based in Phoenix.

the **RETRO** Profile

"I gotta love it to work on it - life is too short to mess with bad music."

Last album listened to: *Hard Luck Guy* by Eddie Hinton
Last movie watched: *The Wizard of Oz*
Last book read: *Koudelka: Gypsies*
Best Studio Lunch: *Bro's Cajun Kitchen*
My greatest accomplishment:
Staying married for 33 years
Most recent accomplishment:
Just played The Kennedy Center with Robert Plant and Alison & Victor Krauss.
The Retro 176 is the ultimate compressor that had been living in my imagination.
It always stays patched in on the vocal chain.

-Buddy Miller (Robert Plant, ABC Nashville, Patty Griffin)



www.retroinstruments.com

GIBSON LES PAUL 8 REFERENCE MONITOR

Two-Way Active Speaker With an Iconic Look



I don't know what was more shocking about this product when I first saw it: the fact that Gibson was producing a studio monitor, or the fact that it looked like a Les Paul. The idea of Gibson diving into the world of pro speakers was a bit of a surprise, but then the company does own KRK, and has been very active of late.

While the monitors are attractive, looks don't generally drive a studio monitor purchase; it's how they actually sound. I was sent a pair of the 8-inch models, the largest in the series.

ON PAPER

The Les Paul Reference Monitors (\$999 each) come in three sizes, each having a 1-inch titanium tweeter covered with a "diamond-like carbon coating." Hardening an already sturdy titanium tweeter with a smooth, even coating of diamond-like material can improve the ability to maintain shape, while incurring a minimal increase in cost and weight.

Each model is named according to the size of its woofer—4, 6 or 8 inches. The 4-inch is housed in a modest 10.16 x 6.54 x 9.49-inch build, in contrast to the very large 18.58 x 12.05 x 13.78-inch enclosure of the 8-inch model. Each version is front-ported, and while the sides have a flat black finish, the front has an arched veneer with flamed maple finish. All three sizes use a bi-amped design with dual Class-D amplifiers. The 6- and 8-inch models both cross over at 2.7 kHz, and claim identical frequency responses of 37 Hz to 47 kHz. The 4-inch model has a 2.4 kHz crossover point and bottoms out at 55 Hz.

All three models have the same complement of controls and connections on their back panels. There is something for everybody in terms of connectivity, with an unbalanced RCA-type connector being accompanied by an XLR/TRS combo jack for balanced signals. A rocker-type power switch sits next to the standard IEC power connector, while a push-button "standby" control can be found next to the audio input. A "volume" control is provided with unspecified numerical values from 1 to 10 silk-screened around it and no detents. Bass and treble controls are detented at seven positions ranging from flat to +/-1 dB, +/-2 dB to +/- 4dB.

IN USE

I received a pair of the large Les Paul 8 monitors for review. I was immediately taken aback by the size. They look bigger in real life than they do in pictures. My mix room is not giant, so it was clear that when these went up, there would not be much room for any other monitors. I finished a mix that I was working on referencing a pair of Focal Twin6 Be before I made the swap, but decided to just switch one at first, to A-B.

I flipped on the Les Paul monitor and turned up the volume control to about halfway. Immediately I heard a good amount of noise from the amplifier. Assuming that, perhaps, there was no need to crank them, I turned the volume control on the amp down until the subtle hiss from both monitors matched in level. Upon playing back, the Focal was dramatically louder than the Gibson monitor. It is worth noting that the Focals are a high-dollar 300W three-way design, while the LP8s are a 247W two-way. That said, in order to get the output levels to match I had to crank the Les Paul volume control to just between "8" and "9" which brought the noise floor to a clearly noticeable level. Granted, I was only a few feet away from the speaker, and perhaps at a greater distance, in a larger room, this would not have been so much of an issue.

My first impression was that the monitor sounded really tight, like it needed to be broken in quite a bit. In general, the top was much more forward than the Focal, and there seemed to be a real lack of any sort of bottom end. This would change with time, and with a little work on the EQ controls. In the first place, cranking the bass control to +4 dB and dialing back the treble to -4 dB seemed to help quite a bit. I thought I should revisit the comparison and just loosen up the Les Paul monitors as a pair, get to know their character. I fed them a lot of music and listened to them change over the next few weeks, finally maturing into something much more impressive.

Eventually, the bottom end dropped and a rich, tight, low-frequency thump emerged. Kick drums and electric bass each had a push that was extremely realistic. Even when pushing quick repetitive transients in EDM or metal mixes, this bottom end stayed very articulate and never muddled up. One thing that helped and hurt the lows was a hole that seemed to be punched out of the lower mids. There seemed to be a bit of an attenuated notch centered around 300 Hz that effectively “cleaned up” the lower midrange. It also robbed vocals of a good amount of their chestiness and thinned out the body of snares. When listening to really crowded rock or electronic music mixes, the overall effect was not as problematic, as the bass stayed tight and there was enough going on in the upper mids that I didn't really miss anything. When I tried mixing a piece with voiceover and music, however, there were issues with the mix translating. On any other speakers, there was an audible low-mid buildup in the mix that I failed to address given the feedback provided by the monitors.

The tweeter seemed to produce an impressive amount of clarity and detail. Snares and cymbals were extremely crisp and clean. There was great separation between vocals, acoustic guitar strings, pianos, and the buzzy harmonics of a distorted electric bass or synths. Everything was really open with a nice airiness on the top of drums. Even after listening for long periods, the top end didn't seem overwhelmingly fatiguing.

It felt like the overall image and frequency response improved when I turned the monitors on their sides, rather than having them vertical. They sounded a little thin when upright, and the perceptible midrange seemed

to fill in when they were on their sides. Granted, there are a lot of factors like room size, relative distance to walls and acoustic treatment that combine with the speaker orientation to produce an overall sound. That said, I always preferred the sound of these monitors with the highs turned to -4 dB, and the lows boosted to +4 dB, placed horizontally with the tweeters to the inside.

The stereo field was great, and the frequency response seemed quite smooth, aside from the slight dip around 300 Hz and a bit of a push from 2 kHz to 4 kHz. Listening to dense '70s funk, there were centered vocals, softly panned drums and guitars, but then horns extended out to edges far beyond the width of the speaker boxes. A similar width was very apparent in modern dance-pop, with synths living outside the edges of the speakers, giving nearly 180 degrees of width to the sound field. The more they broke in, the more I started to enjoy listening to music on these monitors.

Going back and finally A-B'ing the broken-in Les Paul monitors against the Focals, the Les Paul's held up a lot better. There was an extra octave of bottom end coming from the 8-inch woofer that was not being produced by the Focals' 6-inch driver. The lower-midrange still seemed a little flatter on the Focal side of things, but the upper mids and highs turned into an actual contest. The top end from the Les Paul speakers always sounded more forward than the Focals, but in terms of detail and articulation, it was really close.

THE FINAL WORD

It's reasonable to believe that some people might prefer the slightly accented top end of the Les Pauls, and considering that the Focal monitors cost almost twice as much as the Gibsons, it's not too much of a surprise that they are a bit flatter, in general. If you're thinking about getting these 8s, be aware that they are big, and if you plan to keep them upright, you will likely need an angled stand or recoil stabilizer to point the tweeters down at your head. If the frequency response is really as close as they say, I'd like check out the 6's, as their enclosures aren't as towering. Altogether, I very much enjoyed listening to music on these speakers, and while there were some pros and cons, if you're looking for a conversation piece in your room, these will certainly get something going. ■



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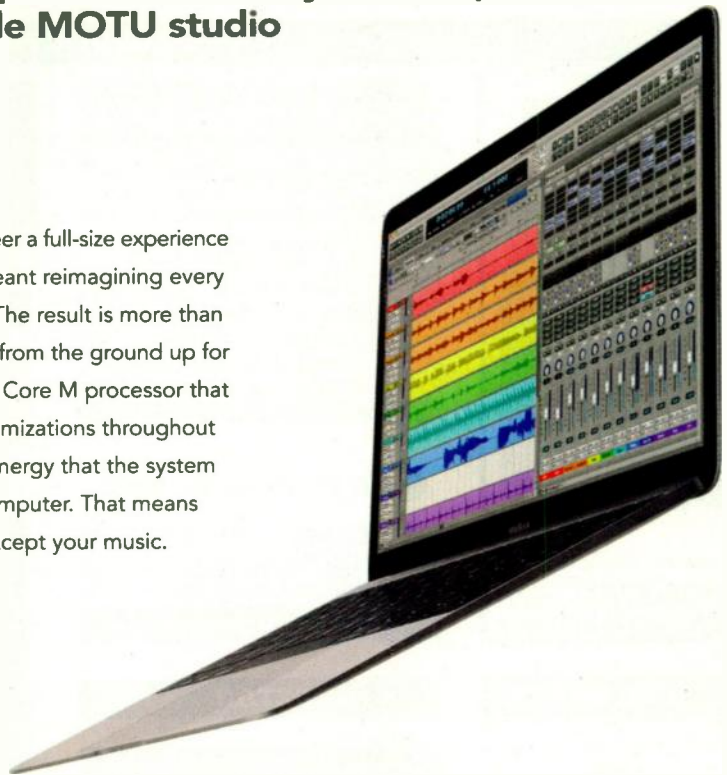
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With the new MacBook, Apple set out to do the impossible: engineer a full-size experience into the lightest and most compact Mac notebook ever. That meant reimagining every element to make it not only lighter and thinner but also better. The result is more than just a new notebook. It's the future of the notebook. Engineered from the ground up for silent, efficient performance, it starts with a fifth-generation Intel Core M processor that runs on just 5 watts of power, made even more efficient by optimizations throughout OS X Yosemite. Together the processor and OS X sip so little energy that the system generates very little heat, so no fan is required to cool the computer. That means when your MacBook is working, you won't hear a thing, except your music.



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Where Will We Be?



By Kevin Becka

When I was a kid, I used to play a day-dreamer's game of "where will I be?"—when I'm 20, 30, in the year 2000, etc. At the time, the space race was on and music, technology, sex and equality were all establishing new orbits, making all things look new. Looking back, I was never even close to the right answer, but it was fun nonetheless.

In some cases, it's easy to predict where audio production is going by looking at the bread crumbs left by others. For example, you can now see a growing list of audio companies looking at browser-based models for delivery. The newest is EastWest's Composer Cloud offering 9,000 virtual instruments, plus new releases, for \$49.99 per month. I've been flogging this model in my column for the last two months, and this is an example of where the model works and will thrive.

But what else? What's not so easy to predict? What's on my wish list for the near future? More bandwidth NOW! I keep hearing that Google fiber is right around the corner, but it's not happening fast enough. Regional battles are going on behind the scenes fueled by cable giants who would rather Google stay off their turf, and it's clogging the pipes. It's obvious that this is the future, so let's get it done. Not only will my Netflix movies stop spinning and/or riding the pixel quality roller coaster, but high definition audio will have a wide open door into the home, and cloud-based production will become speedy and practical. It's a winner for audio quality, music, and production.

While the connection quality in the U.S. is on par with the rest of the world, we're still not in the top 20 in speed, with Singapore, Hong Kong, South Korea, Sweden and others way ahead. And we're not moving up soon. Right now, Provo, Kansas City, and Austin currently have fiber, and there are only plans for five other cities in the works. I'd grade this progress a C minus.

The future of DAWs? Some solutions are simple. I would love a new and better Strip Silence tool in Pro Tools. At the very least, one where you could save settings like a plug-in. It's a time suck when stripping out similar tracks in different songs within a project and having to reset the GUI every time. And speaking of Pro Tools, how about being able to fade in/out a group of selected clips using the fade tool? Not the batch fader where you guess the length in

milliseconds, but viewing the fades en masse while referencing the waveform. Why not add batch fade choices for different lengths of fade in/out on separated clips – it's currently one size fits all.

And now for the hard stuff: how about finally setting a cross-platform documentation standard? I know it's difficult to digitally document the writer, engineer, tech details, musicians, plug-in signal flow and settings in a session, but wait.....I'M JOKING...it's metadata. John Spencer, BMS/Chace, and the P&E wing have been pushing this DAWcumentation "up" button for a dozen years but the elevator to the future has not arrived. It's not bogged down by technology, but by a common decision to get it done on the manufacturing side.

That's my voice, but how about yours? At Summer NAMM at Nashville's Music City Center, there will be six hours of organized prognostication on the show floor at the A3E conference. The Advanced Audio + Applications Exchange (A3E) is core sponsored by Microsoft and will explore the future through the eyes of trend setting musicians, engineers, songwriters, developers, manufacturers, and more. I've been asked to moderate the first panel after the keynote where Avid's Marketing Director of Audio, Tony Cariddi and myself will talk about Avid's vision for the future.

A3E bowed for the first time last year in Boston with the P2 Conference (Production + Performance). Prior to the event, KVR hosted their fifth Developer Challenge aimed at plugin, app, and soundware developers. The contest challenged all comers "to create and release a brand new free audio plug-in, application or sound library / pack / set that will benefit the community at large." The prize was some cash, and the opportunity to present the work at A3E P2. First prize went to Acon Digital for their Multiply chorus effect plugin. Each voice in Multiply uses a phase randomizing filter to avoid nasty comb filter effects. A3E and KVR are just two examples of how we can manage, and have a horse in an always unpredictable race to the future.

Where will we be in 2020? 2025? Come by the A3E Conference if you're at Summer NAMM and find out. Ping me on Facebook with questions for Tony and I'll consider them for my list. We can all make wishes about how we'd like to work, but getting involved in the dialog at events like A3E brings the power to have our voices heard. Speak up! ■

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