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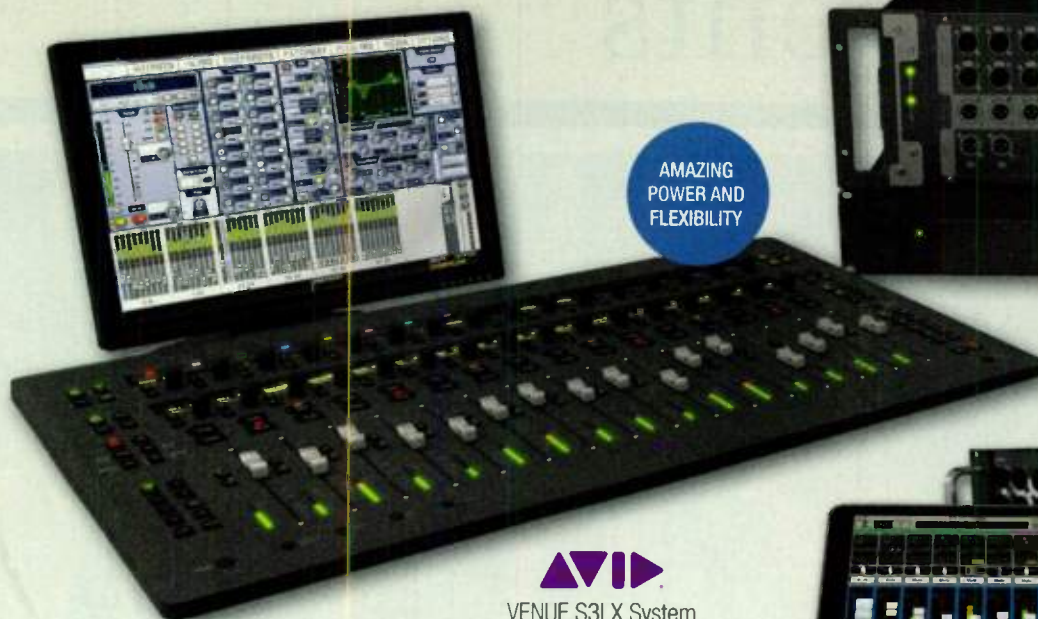
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On the Cover: The core Sweetwater Studios team in Studio A. From left: Nick D'Virgilio, Mark Hornsby, Don Carr, founder/CEO Chuck Surack, and Phil Naish. **Photo:** Erick Anderson.

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From the Editor

IT'S ALL ABOUT THE EXPERIENCE

You can't talk about recording studios without talking about their "vibe." From the late 1950s and early 1960s, when visionaries like Bill Putnam, Tommy Dowd, Rudy Van Gelder and Cosimo Matassa broke away from the broadcast lab-coat model and began producing records, Vibe became one of the great differentiators for artists looking to book a studio and make great music. That sense of Vibe, of providing a "recording experience," made Power Station the Power Station, or makes Record Plant the Record Plant. It's what makes Blackbird what it is, or the Village or Capitol or Larrabee or Criteria or Abbey Road what they are.

Of course the equipment package is important, too, and the talent of the engineer/producer is most important of all. But anyone with money can build a studio, and engineers/producers today work all over the place. So when an artist is looking to record their music on their dime, they want to be comfortable, and they want to live inside the experience. The Vibe. When Rose Mann has the perfect margarita delivered before the dinner break, along with your favorite magazine, and you're sitting in the Record Plant lounge after a full day of tracking, that's Vibe. When John McBride pulls out a rare Telefunken mic, serial #002, for a new singer-songwriter, that's Vibe. When a Louisville engineer working out of a one-room, self-built, strip-mall facility shifts the carpet on the wall and puts the amp in the bathroom and moves the mic just a hair on the plastic-pail percussion—because it fits the track—that's Vibe. That's an Experience. Every single recording situation is an Experience.

But I didn't expect to be talking about Vibe and Experience when I drove up I-69, then west on U.S. 30, to the Sweetwater complex in Fort Wayne, Ind. I had been there before, when they opened the new 180,000 square-foot retail/sales/office space back in 2008, complete with three world-class Russ Berger-designed studios and a 250-seat Performance Theater. It is impressive by any measure, the first Platinum LEED-certified building in the state, with state-of-the-art warehouse distribution tracking and packaging systems and unparalleled customer resource management databases. There was

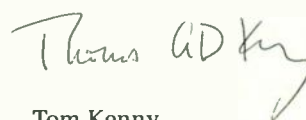
a retail store-style entrance, a Candyland for musicians. There's the annual Gearfest, bringing in 8,000 musicians each June. But Vibe? Maybe I just wasn't looking. This time, however, on a visit in early December, I got it.

First, there is expansion and construction going on everywhere, including two new buildings on the 110 acres and a new, larger space for the Sales Engineers, the heart of the entire organization. There is the common area, complete with putting greens, a music Academy, rehearsal rooms, a salon, a fitness center, restaurants and coffee bars, a stage for club-style performances. There's a big tubular slide right next to the main open-air stairwell to the second floor for a touch of fun and whimsy. On the day I was there, 14 nuns, on a tour, took the plunge.

There's excitement in the studios, too, centered around the creation of a whole new model for production, one that involves in-house musicians and package deals and a diverse, flexible, artist-centered approach. And that creative Vibe is seeping its way out into the larger Sweetwater culture. The story is inside the issue.

But what's most impressive is the Vibe simply in and around the workplace. There's something going on, and these people are happy to be here. It shows. There's a collective attitude to Do Things Right, Go the Extra Mile, Have the Perfect Conversation, Treat the Customer With Respect, and Be Honest and True. These types of fundamental principles, whether adopted in a personal or professional life, create their own kind of Vibe, too.

Sweetwater the Retailer has experienced enormous success over the past 35 years, and studios have been at the center of the operation since Day One. Sweetwater Studios is now coming into its own, still in its infancy but looking to create a new kind of Vibe. A Destination Experience. There's much more to come. Stay tuned.



Tom Kenny



ENGAGING ARTISTS EVERYWHERE

Jeremiah Slovarp – Owner of Jereco Studios in Bozeman, Montana and Emmy® award-winning Producer/Engineer knows a thing or two about the art of mixing. Working with television giants such as HBO, PBS, Disney and BBC, his impressive resume ranges from commercials to documentaries and so much more. With a recent studio upgrade to Yamaha's NUAGE Advanced Production System, Jeremiah's workflow has taken a turn for the better. We caught up to him to hear his thoughts on the new hardware.

"I feel like I can get back to mixing, pushing faders, turning knobs, and just working on a creative console. Previously, after an eight or ten hour day, my hands would be in pain from all the manual movements I had to make being dependent on mouse editing and clicking. With the advent of all the cool and amazing new digital DAW based mixing tools and equipment, I think the industry, in general, has regressed from the art of mixing and working with consoles and large format hardware. But with NUAGE, I appreciate the deliberate move Yamaha has made to enable engineers to get back to mixing and editing as an art form."

— Jeremiah Slovarp

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NAMM TEC Lifetime Achievement Awards

The 30th Annual NAMM Technical Excellence & Creativity Awards, to be held Saturday, January 24, 2015, in Anaheim, California. Comedian Sinbad, also a guitar player, will host the evening's festivities. The NAMM TEC Awards honor individuals and companies across 30 categories for outstanding achievement in professional audio technology and production.

The TEC Awards Hall of Fame was created in 1988 to recognize those individuals whose careers have best exemplified the spirit of creative and technical excellence in professional recording and sound.



Les Paul Award: Slash

Slash is a man of many talents. He has amassed album sales of over 100 million copies, garnered a Grammy Award and seven Grammy nominations and was inducted into the Rock and Roll Hall of Fame. Time magazine named Slash Number 2, behind Jimi Hendrix, on its "The Ten Best Electric Guitar Players of All-Time" list. Slash helped create signature sounds like the guitar riff on Number One hits for Guns N' Roses "Sweet Child o' Mine" and "Welcome To The Jungle." He also

wrote a self-titled biography that climbed to Number 8 on the New York Times Bestsellers List and co-produced and released *Nothing Left to Fear*, the first motion picture from his film/TV production company. Slash recently released *World on Fire*, his third straight solo album to debut in the Top 10, with more than 12 Top 10 debuts around the world.



Hall of Fame: Ed Cherney

Ed Cherney is a Grammy-winning producer/engineer whose credits include Eric Clapton, Bob Dylan, Bonnie Raitt, Keb' Mo', Lyle Lovett, Bette Midler, Sting and the Rolling Stones, among many others. Highly respected by his peers, he's amassed six Grammy Award nominations and two wins, in addition to seven TEC Award nominations and five wins and three Emmy nominations. Cherney believes in the power of community and always finds time to give back. A founding member

of the Music Producers Guild of America, the precursor to The Recording Academy Producers & Engineers Wing, Cherney currently serves on the board of The Recording Academy's Los Angeles Chapter. He is also a board member at McNally Smith College and a founding member of the Music Engineer's Technology Alliance. Cherney recently completed mixing tracks for Sarah Brightman, music for *Lee Daniels' The Butler* with Lennie Kravitz and Gladys Knight, a Latin jazz album for Alejandro Fernandez, a new Matthew Morrison (*Glee*) project and is currently working on a new release for Queen Latifah.



Hall of Fame: Nathan East

A founding member of the chart-topping contemporary jazz group Fourplay, renowned bass player Nathan East was 16 years old when he got his first break and found himself on the road with Barry White. The next time the phone rang, Quincy Jones was on the line. The calls kept coming and for the last 40 years, East has been churning out hit songs with artists as legendary as Eric Clapton, George Harrison, Michael Jackson, Phil Collins, Whitney Houston, Beyoncé, Barbra Streisand and Stevie Wonder. His genre-crossing groove has earned him both the recognition—a Congressional Record for his contributions to the worldwide music community, for one—and the boundary-busting respect of his peers, illustrated by his current appearances on two hit records as diverse as Andrea Bocelli's *Passione* and Daft Punk's *Random Access Memories*. More than 2,000 recordings make East one of the most recorded bass players in the history of music.

Winter NAMM, January 22-25



The NAMM Show, held in the Anaheim Convention Center, is one of the world's largest global music industry trade events annually attracting 96,000 members of the music industry to Anaheim. One component of NAMM's Educational Sessions, the H.O.T. (Hands-On Training) Zone provides live educational sessions and innovative ideas for professionals in the pro audio, recording, live sound, DJ, entertainment technologies, music business, and stage and lighting industries. It takes place on Level 2 of the Anaheim Convention Center.

Some of this year's H.O.T. Zone events include a January 22 keynote address from Dave Pensado and Herb Trawick of *Pensado's Place*; "Recording for a Great Mix" and "Mixing Tips from the Pros", moderated by Candace Stewart and with panelists Ross Hogarth, JJ Blair, Michael Beinhorn and Tim Pierce, presented by SAE and Ex'pression College; "Music and Audio for the Smaller Screen", also on January 22, with presenters from the Manhattan Producers Alliance; "Improving Your Sound in Small Venues", "Wireless Mics: What You Need to Know" and "Carmen Rizzo's Production Environment", all on January 23; a keynote address from John Meyer of Meyer Sound, "Audio Mastering: Essential Practices", "High-Resolution Audio Recording", "Birth of a Record: Don Was and Ed Cherney with Special Guest" and the TECnology Hall of Fame ceremony hosted by audio historian George Petersen on January 24.

For more information, visit www.namm.org/thenammshow/2015.



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P&E Wing Renews Partnership With Iron Mountain

The Recording Academy Producers & Engineers Wing has renewed its partnership with Iron Mountain Incorporated Entertainment Services. As an official P&E Wing partner, Iron Mountain provides title sponsorship of regional Recording Academy Chapter professional development events. It also serves as a sustaining member of the P&E Wing Manufacturer's Council, a diverse array of audio-related companies that function as a creative think-tank to address industry issues, including technical best practices, new technology development, preservation of recording assets and creative rights.

"We are very pleased that Iron Mountain will continue to work closely with The Producers & Engineers Wing this year," states P&E Wing Managing Director Maureen Droney. "Iron Mountain is renowned as a purveyor of best practices related to film and sound archiving, preservation, restoration and transfer, and this ties in perfectly with the music preservation initiatives and intellectual property issues that are fundamental to the P&E Wing. Our partnership has been fruitful, and we look forward to continuing to work with them on professional development events that educate about preserving the past and protecting the future."

"Iron Mountain has been a partner to the music recording industry for many years, protecting and preserving some of the most important recordings in America's musical history," says Jeff Anthony, SVP, Iron Mountain



Photo: Greg Campbell

Pictured, from left: Jeff Anthony, SVP of Iron Mountain Entertainment Services; Maureen Droney, Producers & Engineers Wing Managing Director; and Barry Cardinael, Project Manager Iron Mountain Film & Sound Archives.

Entertainment Services. "This partnership with The Recording Academy Producers & Engineers Wing will allow us to continue that relationship with the industry while also giving us a platform to advise on, and advocate for, best practices in asset preservation and creative rights management. We look forward to playing an active and important role in helping to shape the future of recorded music."

For more information, visit www.grammy.org/recording-academy/producers-and-engineers and www.ironmountain.com. ■

PIONEER GS-WAVE AT SOUND NIGHTCLUB

By Lily Moayeri



Pioneer GS-Wave speakers installed in Sound.

Whether you are an audioophile or a clubber, a regular or a first-timer, when verging on Sound Nightclub's dancefloor, the presence of four brand-new Pioneer GS-WAVE stack speakers dominating that space will not go unnoticed. The club, situated in the heart of Hollywood, is the only one in the United States with

these speakers installed, and the difference in audio quality is noticeable.

Each speaker is one large cabinet comprised of five components: WAV-SUB hyperbolic subwoofer with two 18-inch LF drivers, enhanced by WAV-HORN, an extended horn to increase the bass level 5dB at 50 Hz (not installed at Sound due to space constrictions); WAV-LOW mid-bass cabinet with 15-inch drivers for low- and midrange-frequency responses; WAV-LENS with two coaxial compression drivers and an acoustic lens for midrange and high-frequency response; and WAV-TWPOD super tweeter pod for frequencies above 5 kHz.

The speakers are based on a classic JBL design from the 1970s, most evident in the WAV-LENS jutting out from the top of the cabinet, an update on the JBL slant-plate acoustic lenses. Behind these lenses is a two-way mid-high frequency device, a waveguide supporting mid frequencies in the 1 kHz to 6

kHz range and high frequencies in the 6 kHz to 16 kHz range. This works as a traditional horn, with some scattering of distortion. The mid-high sections are design adaptations of Richard Long speakers, refined by Gary Stewart, and further developed by Pioneer using modern components.

"Most nightclub designs put the sub-bass cabinets on the floor and hang a full-range element," explains George Stavro of Sonic Lab Audio, who installed the speakers at Sound. "This generally won't reproduce very low frequencies, so it acts more like a mid-high cabinet. You have an acoustic image that is split, where you're hearing subs coming from one area and mid-highs coming from another area. Your ears have to put together two different sources. Everything is coming from a single position with the GS-Wave. The only thing you hear from a different position is the ultra-high frequency output from the WAV-TWPOD tweeter raised in the middle. That's done purposely to create some space."

The system is tuned for nightclub purposes, acting strongly in the lows and mid-lows so central in the program source of electronic and club music, but with the depth and clarity needed for the mid and high frequencies. The idea is to give the audience a physical as well as aural sense of the sound.

Related to this is the avoidance of listening fatigue. Says Pioneer's Maury Dent, "The WAV-LENS' acoustic design addresses the issue of listening fatigue by evenly distributing the high frequency sound through two 2-inch compression drivers. The lens has the ability to be angled at 110 degrees vertically and 45 degrees horizontally."

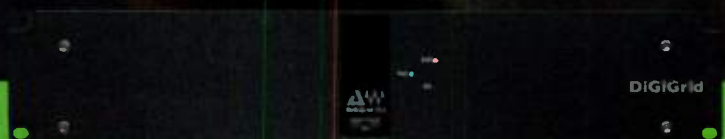
Sound's audio engineer, Naor Bonomo, draws an analogy between the new speakers and a beautifully presented meal. "It's like getting food that looks good. You're getting 50-percent first by just looking at it, then it tastes even better," he says. "The crowd reacts to the size of the speaker and to the looks of it—it looks like a Transformer, and that makes them notice the sound. They start to listen, which is different than just hearing. People are definitely noticing the difference." ■

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On the Cover

By Tom Kenny

SWEETWATER STUDIOS

A New Production Model With Fort Wayne Roots

The full Sweetwater Studios team, in the Studio A tracking room, from left: Nathan Heironimus, Banner Kidd, Nick D'Virgilio, Nicholas Morrow, Jimmy Blankenship, Phil Naish, Jacob Culberson, Christopher Guerin, Mark Hornsby, Chuck Surack, Don Carr, Julie Doust, Justin Zellers, Dan Ankney, Nick Ehinger.

Photo: Erick Anderson



It would be difficult to overstate or overdramatize the success story embodied in the rise of Sweetwater over the past 35 years. By any measure—financial, educational, professional, ethical, philanthropic or creative—the company and its people have a story to tell. And most of them at some point will involve the company’s enigmatic, confident, committed, optimistic and quietly driven founder/CEO Chuck Surack.

There’s a reason for that. The simple and important values that drive Surack in his personal life drive his professional life, and they permeate the culture in and around the 330,000-square-foot Sweetwater complex off of U.S. 30 West, just outside of Fort Wayne, Ind. In conversations across all departments, words like “credibility,” “integrity,” “honesty,” and

“relationships” constantly come up. Surack peppers his talk with phrases like, “Don’t just do it, do it the right way,” “We’re only as good as our weakest employee,” and “I don’t care if we lose money on the deal, do the right thing for the customer.” He humbly offers that he knows these sound like clichés, and then he rattles off the Boy Scout set of laws, from his childhood, and explains how they are not such a bad guideline for a good life, or for a growing business. Every single employee, and they now number nearly 800, meets with Surack one on one on their first day, as soon as they finish their paperwork and get their badge.

It really does seem a little too good to be true on the surface, a combination of “Jimmy Stewart hometown rags-to-riches” meets “artist who



Studio C, with Pro Tools HDX mix environment.

Photo: Erick Anderson

almost daily, gigging professionally and at fundraisers up to 45 nights a year. And he still considers himself a studio rat.

SWEETWATER STUDIOS

To Surack, studio and retail fit hand in glove, and their relationship is core to the whole operation, from the 4-track rig in the back of the VW, through the small Bass Road control room, and on to the three-room, world-class, in-house facility designed by Russ Berger in conjunction with the building architect for the move in 2008.

"I've been involved with music and recording my entire life," Surack says, "and I have always dreamed of owning a big professional studio. We originally had talks with Russ Berger back in the early 1990s to build these fabulous rooms on Bass Road, but we couldn't make it make economic sense. When we started on the new building in 2006, I thought, 'Well, now we can do it.' We were very fortunate

followed his dream and never compromised and found success and happiness in the end." Surack did start the business in his hometown, from the back of a Volkswagen bus, then mobile home, then converted two-car garage, then warehouse-type facilities, followed by a jump to the big-time in Platinum LEED-certified facilities with state-of-the-art everything. He really does answer every phone call and email, and he has read every customer service comment card since the company's founding, as he insists all senior management do. All that is true. Simple and true.

Behind the legend, however, is some very real business, sales and industry acumen. From the very first sale of Kurzweil K250 sounds and the evolution to dealer-distributor, then retailer, Sweetwater has enjoyed top-line and bottom-line growth year after year. For more than two decades now, the company has grown a minimum of 20 percent year over year, even through the recent downturn. In 2008, Surack famously called all 224 employees into the Performance Theater in the brand-new facilities and told them, rather arrogantly, he admits, "I choose not to participate in the coming recession." Budgets were trimmed, but everybody pitched in and nobody got laid off. Sweetwater has never had a layoff.

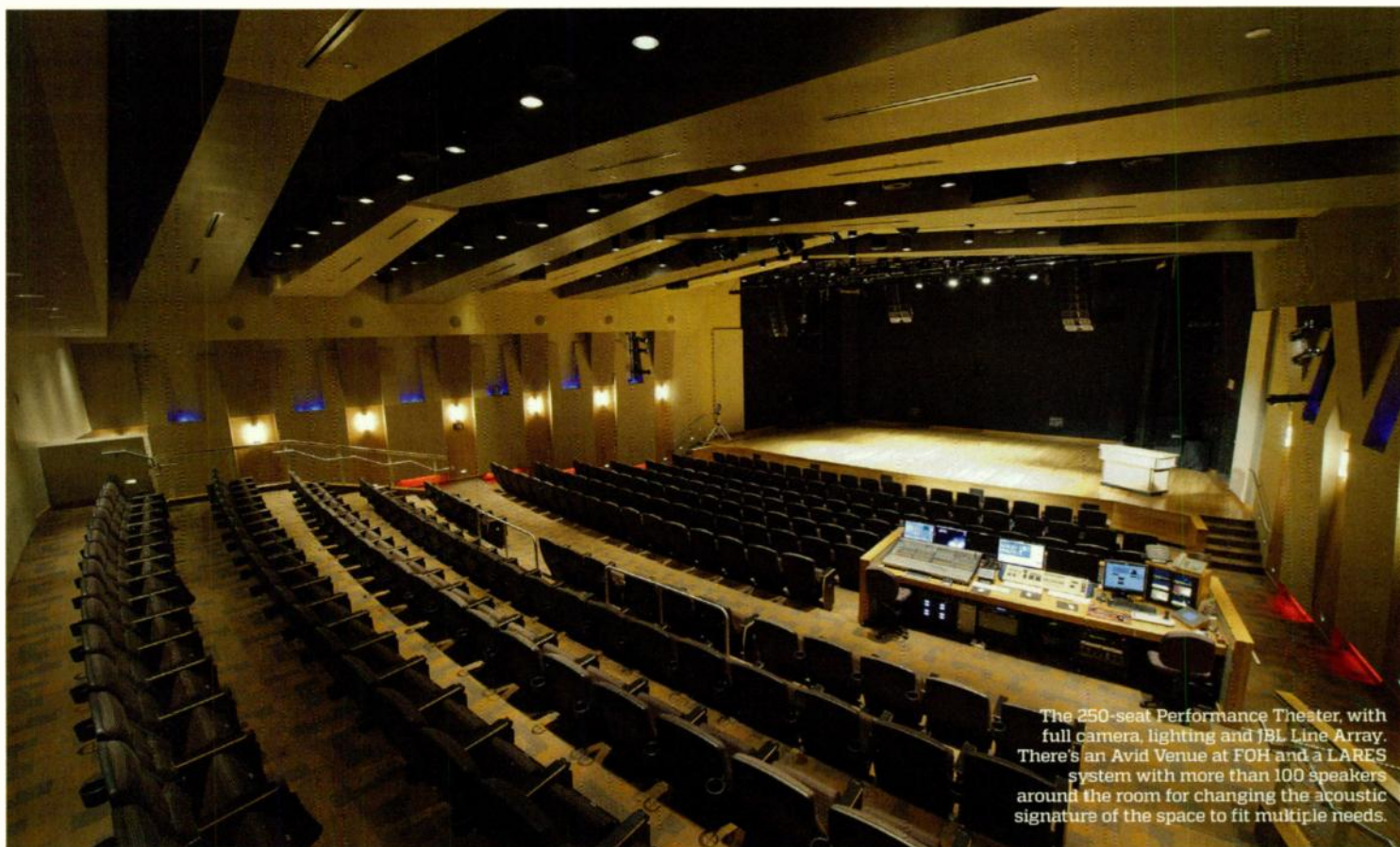
Six years later, the company has nearly 800 employees, hailing from 48 states, and is putting the finishing touches on two new buildings to house the growth. Income grew 33 percent this year, with revenue from all units approaching \$400 million. He has the largest music and recording online retail operation in the country, and trails only Guitar Center and is closing in on Sam Ash for total sales.

Retail has been very good for Chuck Surack and the team in Fort Wayne. Absolutely. He considers himself blessed and fortunate and that drives him to give back to the community in a substantial way—financially, through public speaking, or serving on boards—both locally and nationally. At heart, though, he's a musician who simply found that he had a real talent in business and leadership. He still plays tenor sax

to have the retail side to support what we wanted to do, so there really was no limit. And I knew that the reputation of the retail side of our company could work very closely with the professionalism and quality that I envisioned for the studio."

They are definitely world-class rooms, and for the first few years they were, perhaps, underutilized. They were in daily use, for sure, following roughly the same mission as the previous space on Bass Road: mostly regional artists and production, jingles, corporate work, ad agency spots, and support for the in-house needs, including training and education—all the while working to boost the local recording community rather than compete with it. But Surack had bigger goals in mind when he built the rooms, and by 2011 found himself talking more regularly with independent producer/engineer Mark Hornsby.

At the time, Hornsby was based out of Nashville, though his work, which had migrated toward independent artists across all genres, took him regularly to New York, L.A., Miami, Chicago, London, even Costa Rica. He knew how records were being made today, and he knew what artists needed when they booked a studio. He also had been a Sweetwater customer for almost 20 years by the time Brad Lunde of Transamerica Audio Group asked him to step in and demo some of his product lines (ATC, Daking, Tube-Tech, et al) for the Sweetwater sales engineers in live-engineered sessions, piped by video feed from Studio A into the Performance Theater. He did a few of those, and found himself hanging out a bit more at the studio, familiarizing himself with the space, meeting upper management, absorbing the culture. He had known Surack for many years. They found themselves having more lunches and talking more regularly about the state of the industry. Hornsby soon became a de facto consultant to the studio team, and soon after that Surack asked if he would come to Fort Wayne full time and help make the studios a destination for artists.



The 250-seat Performance Theater, with full camera, lighting and JBL Line Array. There's an Avid Venue at FOH and a LARES system with more than 100 speakers around the room for changing the acoustic signature of the space to fit multiple needs.

"When I first came onboard, I was the producer and engineer, working on artist relations," Hornsby recalls. "At the time, they had a different mission and had primarily carried over work from the Bass Road facility. These Russ Berger rooms rival anything in New York or Los Angeles, so the opportunity was there to do something bigger. They had talented people in-house, but to become a destination, they needed someone who could combine bringing in perspective from the outside world and integrate it into the Sweetwater culture and experience. I felt comfortable in both worlds and in some sense became that glue to bring them together."

Within months, following some changes internally, Hornsby was also running the studios. His first order of business was to upgrade the equipment packages to reflect a more current and high-end hybrid model of digital/analog production. Surack backed him, and over the next two to two-and-a-half years they embarked on a room-by-room revamp, with full interconnectivity, the intention being to create a diverse yet simple workflow to suit any style of production. "The jewel in the crown," Hornsby says, "was the desk we put into Studio A last May."

The flagship Studio A now houses a one-of-a-kind hybrid console, affectionately dubbed the "Neve 6." The front end incorporates 36 channels of the new Rupert Neve Designs Sheldford modules, which combine the definitive 1073 feature set, complete with mic pre, highpass filter, and 3-band inductor EQ, while adding updated capabilities such as Neve's variable Silk and Texture control and simultaneous pre/post "tape" operation. The control, or center section, of the desk is the Avid S6 control surface in one complete 24-fader/touchscreen package. The back end is

a 32x4 Rupert Neve Designs analog summing master section complete with the Rupert Neve Designs Master Buss Processor. In essence, it's a 36x32x4 Rupert Neve Designs console driven by an Avid S6.

Outboard gear is housed in a massive 15-foot Sterling Modular custom desk and includes more than 80 channels of analog processing from API, SSL, Universal Audio, Focusrite, Shadow Hills, Avid, Millennia, A Designs, Daking, PreSonus, Drawmer, Chandler and Manley, just to name a few. The monitoring system is a 2.1 set of ATC 150s and a set of Focal SM9s, all driven by the Dangerous Music Monitor ST. The Pro Tools rig is a 64 in/out HDX system (all Avid HD I/Os); and the system runs off an Antelope Audio Isochrone Trinity clock.

"We are always striving for diversity and flexibility in the types of artists and productions we bring in," Hornsby explains, "and that is also reflected in the studios. That desk is something all-new. It's one thing to put in a control surface with outboard gear, and it's another to put in a console with a Pro Tools section. That's been done. Here you can work all analog if you want, all-digital, or any combination you can think of. Any visiting engineer can walk in, take a look and in five minutes can be working in whatever their comfort zone is."

Studio B received the most recent makeover with the installation of an SSL AWS48 with SSL X Rack housing eight stereo dynamics modules, along with Pro Tools HDX and 48 channels of Focusrite Rednet I/O. Monitoring is through a JBL 6328 5.1 system, along with ATC SCM250 ASL Pro mk2s.

Studio C offers Pro Tools HDX mixing, with Avid Artist Mix control,

the



Profile

Last album I listened to: *Alt J's This Is All Yours*

Last book I read: *The Match*

Best studio lunch: *Silly Goose in East Nashville*

My drink: *Corralejo Triple Distilled Reposado
shaken and over ice with a splash of lime*

My greatest accomplishment:
A fulfilling family life and career

If I had to pick one piece of Retro gear I'd go with the 176.
*It's killer for a vocal in either record or mix.
Rich tone and transparent control.*



-Jacquire King (*Kings of Leon,
Norah Jones, Of Monsters and Men*)

Dangerous Music analog summing and ATC 25A monitoring driven by a Dangerous Music Monitor ST.

Still, Surack and Hornsby both knew that despite the world-class rooms, the lure of the Sweetwater complex and the access to a seemingly endless supply of gear, anybody with money today can build a high-end studio. It would take something more to make Fort Wayne a real destination. The Sweetwater model is all about exceeding expectations. As Surack is fond of saying, "We want our customers to go away utterly thrilled."

THE PRODUCTION TEAM

All the while the studios were undergoing the equipment upgrades, sessions were taking place, on a larger scale than previously. There were

artists who visited Sweetwater, and Hornsby had started working his contacts to bring in a wide array of projects, from singer-songwriters to prog rock to metal crunch to Contemporary Christian. Session musicians were flown in regularly. He eliminated the notion of an hourly rate and began focusing on package deals that included everything from airfare, hotels, pre-production, tracking, overdubs, mixing, mastering, distribution, packaging and marketing. Any and all of the above. If an artist wanted a Skype and SourceConnect session with strings from Prague, they could do that, too. But something was missing.

From the beginning of their professional relationship, Surack and Hornsby had batted around the concept of a Muscle Shoals, Motown, or Memphis-style of in-house production. "My goal has always been to be involved in the production of great music," Surack says. "How can we make



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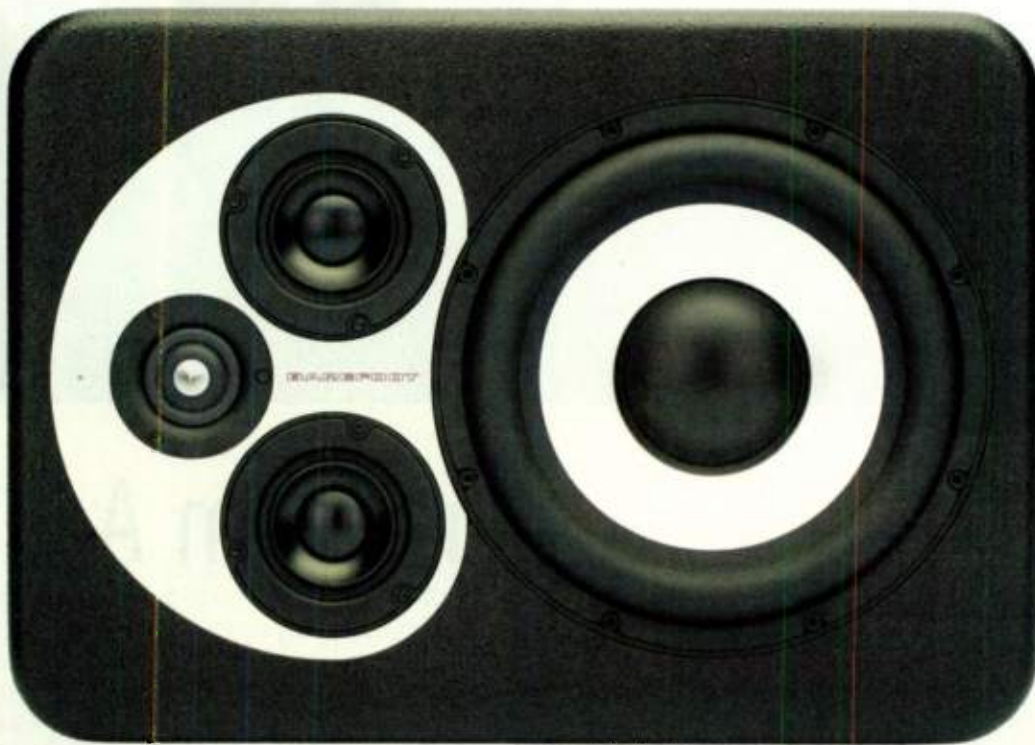
Surack at the Kurzweil K250 keyboard, 1979.

it sound better? What can we bring to the project? One day it just clicked to bring Mark on staff, and then hire world-class musicians to create that sound. There's a term from down South, lagniappe, which means giving a little bit more than what is paid for. Provide more to the customer than what they expect. That's been my motto since I was a boy."

Hornsby has a vast list of contacts from all aspects of the industry. But he definitely knows musicians. And he particularly likes those who have a broad range of styles and a creative flexibility that could enhance any project. He started talking to a few of his favorites.

Continued on p. 62

BAREFOOT



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Hybrid Studios, Santa Ana, California

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Photo: Scott Chebegia

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World Radio History

Music



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BETTYE LAVETTE

Breaking the Rules for 'Worthy'

By Barbara Schultz

I've worked as a producer with a lot of legacy artists—people who have enough history and mean enough to us as listeners, whether that's Solomon Burke or Harry Belafonte or Allen Toussaint or Mavis Staples—and it's important to know how to honor the artist's legacy but not be trapped by it," says Joe Henry, discussing his latest production of Bettye LaVette.

"Bettye is a soul and blues singer. That's her origin. That's her point of departure, but from there forward, we listen to where we are today, articulating the song, and we'll know when it's

coming alive. That's really the point: When does the song begin to feel like a living thing?"

LaVette's new album, *Worthy*, is the second full-length that she's recorded with Henry (but the first she has made in his studio, Garfield House, South Pasadena, Calif.). A comfort level between artist and producer was established when they made *I've Got My Own Hell to Raise* in 2005.

"She doesn't want to sing anything that she can't embody in some way as her own biography. It has to be in alignment with her true story," Henry says. "Another thing I've

learned from pitching songs to her is, if a song has already been interpreted in a way that she might wade into it, she bats it away. She says, 'Don't worry about finding me a soul or a blues tune. I'll take it there myself.'"

Henry consulted with LaVette and her husband, musician/DJ Kevin Kiley, to choose material for *Worthy*, which includes songs written by Dylan, Beatles and Stones, Henry himself, and others—all of which LaVette interprets soulfully, with the help of some of Henry's favorite musicians.

"One of the most significant things I do as



Ryan Freeland mixed Worthy in his personal studio, Stampede Origin (Culver City, Calif.).

a producer is cast the room with people who are going to bring incredible experience and imagination to bear," Henry says. "Typically we would just stand in the middle of the room together, away from microphones, and somebody will start playing through the basic changes of whatever song is on the floor, and she just starts to sing.

"Everybody takes their direction from where she is feeling it—tempo-wise, mood-wise, phrasing—and very quickly, there would be a visceral template that we could all hear. We'd run through it once or twice, and then say, 'Let's do this in front of microphones.' But we're always recording if people are making music."

Sessions were captured by Henry's go-to engineer, Ryan Freeland. He and Henry have developed a system where Freeland's racks of mic pre's, compressors, Pro Tools rig, and converters are carted to Henry's studio space before they begin a project. "Now I even bring my speakers," Freeland says. "I just got these Barefoot MicroMain27s that make you want to take them wherever you go."

During tracking, however, Freeland wears headphones in the main room, along with many of the musicians: guitarist Doyle Bramhall, bass player Chris Bruce, and keyboardist Patrick Warren. Jay Bellerose and his kit were in a drum room, and LaVette sang live with the band in a vocal booth.

"I started her with a Neumann M 49 mic, side by side with an AEA A440 active ribbon, and had her sing into the middle of them so I'd get some of both," Freeland explains. "Sometimes when I do this, I'll blend the two, but in Bettye's case it was all just the ribbon.

That mic is my perfect world of both vintage and modern; it sounds familiar, but it doesn't sound old."

LaVette's vocal chain also includes a Neve 1272 pre, Summit TLA-100 compressor, and Freeland's Apogee converters. "She redid a few vocals," he recalls, "but almost all of it was live. A lot of the vibe on Joe's records is the vibe of the players interacting."

Some of that interaction involved Bramhall and Bruce occasionally switching instruments with each other when that felt right. "It's funny because Doyle's left-handed, but he just flips the guitar or the bass over and plays the right-handed instrument," Freeland says.

Electric guitar was played through a mid-'60s Fender Princeton or a later-'50s Fender Tweed Deluxe. Henry says, "Those small amps record beautifully. They break up nicely at a decent volume."

"I used my standard [Shure/Royer] 57/121 combo on guitar," Freeland says. "Doyle sounded amazing. He will play blues licks that you've heard all your life, but he makes them totally unique."

Freeland placed one pair of Royer 122s on the studio's upright Steinway piano and another pair on the Leslie cabinet for Warren's Hammond C3 with 145 Leslie.

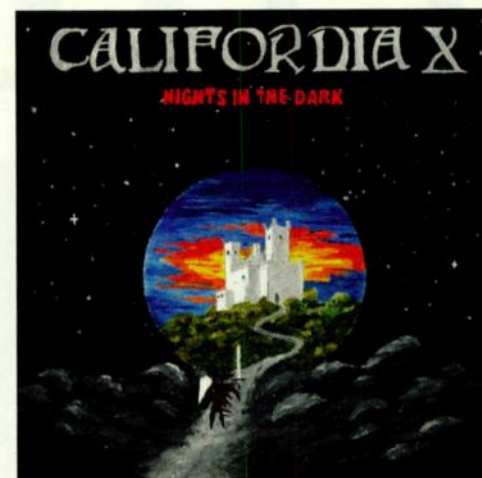
"Patrick had just gotten a very beautiful Hammond organ," Henry says. "But the first thing Bettye announces when she comes into the studio is, 'I don't want anything in waltz time, and I don't want any organ.'"

"She said that the organ reminds her of church, and she didn't want that," Freeland says. "But Patrick kept creeping it in."

"He was very stealth," says Henry. "At one point, he was playing a sample of an organ through his computer rig, and it was a beautiful glue to what were doing in that moment, and she heard that it was coming together beautifully. Eventually, he said to me, 'Can I just go to the real organ?'"

"In the end, she sort of laughed at herself and at us for trying to sneak one past her. We really weren't. It was there for everybody to hear, and Patrick was respectful of what she really meant when she said, 'I don't want to hear any organ.' It meant she didn't want to hear anything cliché. Once she heard that he was not trying to veil her in any kind of cliché treatment—that it was just another color on his palette—that rule went away." ■

CALIFORNIA X'S 'NIGHTS IN THE DARK'



The sophomore album from rockers California X, *Nights in the Dark*, was tracked in Easthampton, Mass., in Sonelab Studios with engineer Justin Pizzoferrato (Dinosaur Jr., Speedy Ortiz). The album is loaded with fuzzed-out guitars, punk rhythms, and generally anthemic songs that range from distorted to hugely distorted.

Pizzoferrato recorded to Pro Tools via two Lynx Aurora converters. "The console was an MCI JH636, though most mic preamps were outboard," Pizzoferrato says. "I have a number of Classic Audio Products of Illinois 500 Series mic preamps, some actual API pre's—vintage and new—and a handful of others for different flavors."

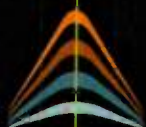
Basics were captured live with all the members in Sonelab's main tracking room; amps were placed in adjacent iso rooms. "Overdubs largely consisted of additional rhythm and lead guitar," he says. "Once that was done, we would record vocals and begin mixing immediately. There were no rough mixes on this record."

Frontman Lemmy Gurtowsky mainly sang into a Shure SM7, patched into a Great River MP-500NV mic pre and then a Neve 2254/a compressor. "There were some songs where a Bock Audio 151 was used instead of the SM7," Pizzoferrato says. "We did this when more detail was needed in the sound and performance. Most vocals were doubled with some reverb added. The SM7 was set up for scratch vocals, but Lemmy sounded great through it, so I had him sing into it for most of the record."

—Barbara Schultz

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LEE ANN WOMACK, 'THE WAY I'M LIVIN''

This lovely country album—recorded almost three years ago with producer Frank Liddell (Womack's husband), producer/musician Glenn Worf and producer/engineer Chuck Ainlay—finally found a label (Sugarhill) and was released this past November. It was worth the wait: Womack's voice has never sounded more clear and sweet, the song choices are excellent, and during the week of our interview with Ainlay for this piece, the record was Grammy-nominated for Best Country Album and Best Engineered Album, Non-Classical.

"That is one of my favorite records of all time that I have been involved with," says Ainlay. "All the right buttons get pushed when I listen to it, and that just starts and ends with her voice. She's got harmonics that just seem to reach inside me."

The album was recorded to Nuendo at 96k/24-bit in the Front Stage studio at Sound Stage in Nashville. Basics were cut live with Womack singing a scratch vocal.

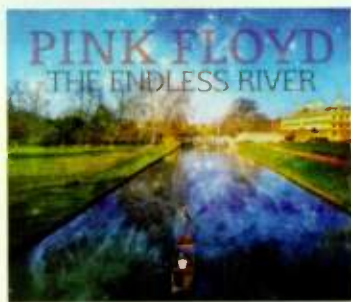
"With a singer like that, that's so important, because the musicians feed off of her," Ainlay says. "The musicians are not just reading chord charts. They're responding to the singer, and as soon as they see Lee Ann



start singing, the whole level of the playing field gets raised; the whole thing would come to life."

Ainlay captured Womack's final vocals to a Neumann U 67 through a Martech MSS10 mic pre and a touch of Tube-Tech CL-1A compression. "After we tracked the vocals, Frank said, 'It feels like there's a bit of a veil on her vocal. I just want to hear everything there is,'" Ainlay recalls. "So I said, 'Well, let me take the windscreen away.' It was just one of those sheer nylon stocking-type windscreens, but we pulled that away, and it was like a little bit of a curtain was lifted. It's a minuscule thing, but it sounded more open and it made her more reachable, like she's right there in front of the speakers."—Barbara Schultz

COOL SPIN PINK FLOYD, 'THE ENDLESS RIVER' (COLUMBIA)



This first CD of "new" Pink Floyd music in 20 years (still without Roger Waters) was largely put together by David Gilmour, co-producer Phil Manzanera and latter-day PF engineer Andy Jackson, mostly as a tribute to the group's underrated late

keyboardist, Richard Wright (d. 2008), who appears on all but two of the 18 tracks. Entirely instrumental except for the final song—Gilmour and wife Polly Samson's "Louder Than Words"—the disc is a pastiche of relatively brief melodies, grooves and ambient textures originally recorded in the early '90s during sessions for *The Division Bell*, and revisited, augmented and polished recently. A lot of this will sound warmly familiar to fans—pieces that sound a bit like the intro to "Shine on You Crazy Diamond," another that recalls the much earlier "Saucerful of Secrets," etc. But it's deftly constructed, majestic and genuinely moving in places, and still just weird enough to work as true Pink Floyd.—Blair Jackson

Producers: David Gilmour, Phil Manzanera, Youth, Andy Jackson; (Bob Ezrin, '93 sessions). Engineered and mixed by Jackson with Damon Iddins; (Phil Taylor, '93). Studios: Astoria, Britannia Row, Medina and Olympic (all UK).

HAPPY FANGS, 'CAPRICORN'



Happy Fangs is an apt name for this energetic punk trio from San Francisco. They've got a major edge, but a joyful sound, too, thanks to catchy rhythms and the bright sound of Rebecca Gone Bad's lead vocal. The project was recorded mainly in Sacramento studio The Dock by engineer/co-producer Lance Jackman, who captured that lead vocal with a Telefunken CU-29 Copperhead through a

Chameleon 7602 pre. But all of their songs begin with drum tracking.

"The drum recording sessions got split into two chunks," Jackman says. "The first time I used a Spectrasonics sidecar that we have just for the drums, and the second time we used a Daking board that's a little dirtier. The Dock has really high ceilings and a big stairwell at one end. I like to set up for room mics [in this case, Blue Baby Bottles] in the studio, and in the stairwell [Peluso P-28s]; those stairwell mics give all of it a lot of room."

A guitarist himself, Jackman spent a long time choosing guitar tones with Happy Fangs guitarist Mr. Cobra. "That's the only real instrumentation pushing the music, so we try to make it as big as possible," says Jackman, who miked up Mr. Cobra's Fender Twin Reverb and Mesa Boogie Dual Rectifier amps with a 57, through either pre's in the Daking board or a Chandler LTD Germanium outboard mic pre.

"Some low-end stuff was to a Sennheiser 421 through a Universal Audio 6176," Jackman says. "We spent a lot of time getting tones from the amps; it really didn't take a lot to get a good sound recorded."—Barbara Schultz



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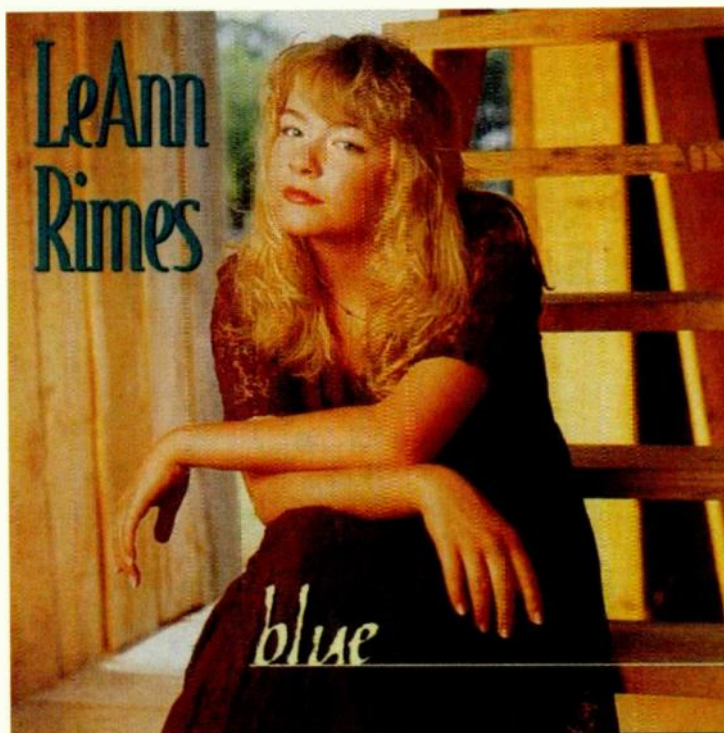
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World Radio History

Classic Tracks

By Ron Skinner



THE MAKING OF LEANN RIMES' "BLUE"

The story of the recording of "Blue" by LeAnn Rimes is one with many twists and turns, and has now become part of country music lore. Sometimes lost in the tale is that the heart of the story runs through the legacy of producer Norman Petty and his studio in Clovis, N.M.

Legendary country music DJ and songwriter Bill Mack had written "Blue" in the early 1960s for Patsy Cline. Unfortunately, Cline's life was cut short in a tragic airplane accident before she had the chance to record the song. There were a few unsuccessful recordings of "Blue" in the years following, but the right voice for the song wasn't found until Mack received a phone call from Marty Rendleman, a longtime friend who had just signed on to manage a then 9-year-old LeAnn Rimes. "I called my buddy Bill Mack," explains Rendleman, "and I said, 'Do you have any more Number One hits lying around,' and he said, 'Well, maybe for you...'"

Rendleman then presented the song to Wilbur Rimes, the father, and LeAnn, though Wilbur didn't think the song was right for his daughter with its adult themes about love. LeAnn felt differently, and when she added the now famous yodel, Wilbur apparently changed his mind. "LeAnn

made a really good country song a hit by putting that little yodel in there," says Rendleman. When LeAnn entered the Norman Petty Studio in 1994, "Blue" was among the songs slated to be recorded for her debut album.

In the mid-to-late 1950s, Petty produced a string of monster rock 'n' roll hits with the likes of Buddy Knox, Jimmy Bowen and, most notably, Buddy Holly from his one-room studio at 1313 West 7th Street in Clovis. He continued his run with a group called The Fireballs and their Number One hit "Sugar Shack" in 1963 and their Top Ten recording of "Bottle of Wine" in 1968. In 1969, Petty moved his operations from that one-room studio to the Mesa Theater on Main Street, having purchased the theater in 1965 with the dream of turning it into the perfect recording studio.

In 1978, Petty took another big step and outfitted the Mesa with some of the most cutting-edge equipment available at the time. A major renovation took place, with the acoustics perfected, and Petty took delivery of an MCI JH-400 console, an MCI JH-24 multitrack and all of the latest effects units. Everything was in place; he just needed a superstar artist.

In the early 1990s, LeAnn Rimes was becoming a bit of a sensation in Texas. In Wilbur Rimes' quest to bring his daughter's voice to the world, he was introduced to a man named Lyle Walker. Walker and Minister Kenneth Broad had been longtime friends and advisors of Norman and Vi Petty and were among the people who helped Vi continue Norman's work after his death in 1984. When Vi passed away in March 1992, Walker and Broad became the co-executors of the Petty estate, which included plans to keep the studio operational.

Walker hired his son Greg to manage the studio, and after a year or so getting up to speed and just beginning to record, the father told him that a young artist was coming in to record some demos. "We were just at the beginning of saying what's here and what do we do with it, and my dad popped this little girl in our lives," Greg Walker recalls.

Greg Walker turned to local guitar hero Johnny Mulhair for help. Mulhair had grown up in Clovis and, much like Greg, was in awe of Norman Petty. "Norman sure inspired me," explains Mulhair. "Here's a guy who's made hit records and was very successful, and I got to thinking that's what I want to do. He's kind of a hero."

Mulhair and his band Apple Glass Cyndrom had been among the very last recording projects that took place at Norman Petty's 7th Street Studio when they recorded the psychedelic hit "Someday." By 1994 Mulhair was a veteran musician also working as a producer and engineer. He was asked to assemble a band and to produce an instrumental demo session for Wilbur Rimes.

Wilbur Rimes liked what he heard and wanted to continue recording more demos, so a session was booked. Mulhair and his band met Wilbur and LeAnn Rimes at the Mesa Theater studio and started recording what they thought were demos. But, as Mulhair explains, it wasn't long before Wilbur decided the demos should be a proper album. "We con-

vened at the studio, and about halfway through the first day Wilbur said, 'This is great, we're gonna go ahead and do this album.' So it wasn't very far into recording the demos that we were making the album."

For cutting the basic tracks, Mulhair had the grand piano on the stage of the theater. The drum kit was set up in the large isolation booth beside the control room with LeAnn in a smaller booth behind the control room. Mulhair would strum an acoustic guitar while working the MCI JH-400 console. The bass was run direct in the control room.

"We were all there in the room together; the only people we couldn't see real well were LeAnn and the piano player, who was way down there on the stage," Mulhair says. Most of the vocal overdubs were recorded in the larger drum booth, but on a few occasions LeAnn was put on the stage. For later sessions, where the original drum tracks were being replaced, the drums were put on the stage with the stage curtain drawn to reduce echo.

An RE-20 was used on kick and an SM57 on snare. Neumann KM 84s were used for overheads and hi-hat, with Sennheiser MD-441s on rack toms and Shure SM7s on the floor tom. The piano was picked up using a pair of Neumann U 87s. During bed tracks, Mulhair would plug his acoustic in direct, but for overdubs the KM 84 was used for guitars and other acoustic instruments. Mulhair's electric guitars were recorded direct through a DigiTech RP-1 effects processor. When it came to capturing LeAnn's voice, a few different microphones were used—having access to the Norman Petty microphone collection allowed for many choices. In the end, a Neumann M 49 was picked but later in the project a U 48 was used, and on one occasion LeAnn sang through a U 47 FET.

The recording equipment was the MCI JH-400 console and the MCI JH-24 multitrack. As time moved on, much of the project was transferred to Alesis ADATs. "That first album we recorded all the basic tracks to that 24-track analog machine, and then we had such a maintenance nightmare that we had several people work on that machine and finally Greg said, 'I'm going to buy some ADAT machines.' So we dumped all that stuff off the analog machine into the ADATs, which had just come out at that time."

In addition to the natural ambience of the Mesa Theater, an EMT Plate, and Lexicon 200 digital reverb, the studio's hand-built echo chamber was the go-to reverb. Norman Petty's secret weapon at his old studio on West 7th was his echo chamber, and his use of echo became legendary and set him apart from the competition in the 1950s. Naturally, when Petty built his new studio, he included a great-sounding echo chamber. "We used that echo chamber in the LeAnn sessions and in the mixing," explains Greg Walker. "Johnny loved it; Wilbur loved it; everybody loved it. And Nashville...tried to emulate it. The art was not using too much."

The initial recordings were assembled and released on LeAnn Rimes' debut album *All That* in 1994. The album was released on the revitalized Nor-Va-Jak Records, a label that Norman Petty originally operated. The



LeAnn Rimes and Johnny Mulhair at Norman Petty Studio, Mesa Theater

album soon became a huge local hit. Mulhair recalls how people reacted when they heard the song. "I would get a call from the truck stop here in Clovis with people saying, 'Hey, where do we find that CD of "Blue" by that little girl.'"

As one would expect, a bidding war began among major labels, and Curb Records from Nashville was victorious. Mulhair was asked to start reworking some of the original recordings, as well as record new material. As demands for a finished product increased, sessions were set up closer to LeAnn's Dallas home at Rosewood Studio in Tyler, Texas. Further sessions took place at Mid-Town Tone & Volume and Omni Sound in Nashville.

Altogether there were three versions of "Blue" that hit the market: the original version on the album *All That*; a reworked version that Mulhair produced in Clovis, released as the single; and a third version recorded in Tyler that was released on the full-length album *Blue*.

The song "Blue" reached Number Three on the *Billboard* Hot 100, and the album hit Number One on the Country Album Chart. In all, five singles were released from the album, and both "Blue" and "The Light in Your Eyes" reached the Top Ten.

For Johnny Mulhair, the success of "Blue" was potentially life-changing. He was nominated as producer of the year at the Country Music Awards in 1997. Many opportunities started coming his way, and a move to Nashville was on the table. In the end, much like Petty some 40 years earlier, he decided to stay in Clovis with his friends and family. Greg Walker decided to move on from the Norman Petty Studio, returning to the real estate business, and the doors of the Mesa Theater were closed. Mulhair resumed work in his own studio and quickly found himself a producer and musician in demand. "That sure was a big old shot in the arm and brought a lot of people into my studio," he says. Today, Mulhair is still as busy as ever working from his self-named studio in Clovis. His latest project is an album by country singer Will Banister.

In many ways, the success of "Blue" was a fitting end to the Norman Petty Studio. Norman had built a recording studio fit for a queen in hopes of finding an artist worthy of recording. The only problem was that the artist wouldn't arrive until almost a decade after his passing. ■

DIRTY LOOPS

The Bare Bones of Song Construction

By Robyn Flans



Loopified, the title of Dirty Loops' debut album, might seem like just a clever play on words from a label marketing department, but it means much more to the band. To them, it's the past tense of the verb "to loopify," which the three musicians coined to explain the musical process they employ to make the music that has exploded out of their home in Sweden and popped up around the world.

Lead singer/keyboardist and predominant producer of their debut Jonah Nilsson, 27, says the actual process occurred accidentally and naturally when three friends—Nilsson, drummer Aron Møller, and bassist Henrik Linder—from music school started "playing around" with covers.

"I just took a tune and reharmonized the chords and did some fun things with the melody at the first rehearsal," Nilsson says. "Then we just became more and more nerdy about it."

When Lady Gaga's "Just Dance" went nuts on YouTube, they realized they had something. So did David Foster, who decided to sign them to Verve Records after Andreas Carlsson, who runs the Academy of Music and Business School in Sweden, discovered the band on YouTube in

2011 and brought them to his attention.

"People thought I was out of my mind for signing a jazz band," Carlsson says. "These were three guys from school who didn't know how to write a song. Then you hear them and they are so unbelievably great that Chicago, Quincy Jones, Toto and Stevie Wonder are in awe—it has the technical dance element and everything that is new and of their generation and is so musically great."

The unique sound comes from the "playing around," as Nilsson put it.

Describing the process, Nilsson says: "First of all, we strip the whole song down so the only

thing you have left is melody. You just listen to the melody, don't think about the chords, don't think about the present arrangement, only think about the melody. Don't sit with your instrument, don't sit in front of anything. Just sit with yourself and try to create a vision in your head of what could happen.

"After that, you just talk about it," he continues. "Maybe we could have a bass line that goes here,' or, 'Take that part and put it first,' those kinds of things. If you find a tempo that you would like to do it in, more rhythmic-wise, then you start to figure out a little bit of chords and see if you can get something going. That's the biggest process. Creating the whole vision of the song, how everything is built up, structure and everything, that's done first. Then when we have everything, how it's going to sound, then we record the drums."

Then Nilsson sits at the keyboard, his main one being a Korg X50. For most songs he typically uses three or four presets and creates a few of his own; his main piano sound is "Ballad Layer." He completes the chord structure and arrangement, then records the keyboards and synthesizer parts, as well as a rough vocal.

"Last, but not least, we record bass," Nilsson says. "I don't know why that's the process, but it's become an important part of our glue. We leave a lot of space for that, like in 'Lady,' for example. Then all three of us together, with Henrik, will come up with rhythms and notes, so everything is very precisely arranged when we record it so we have 100-percent control."

They recorded most of *Loopified* in Stockholm's X-Level Studios (except for a few vocals and a horn section in L.A., headed by Jerry Hey). Foster and Carlsson executive produced and Carlsson served as lyricist and mentor.

Nilsson says his favorite vocal mic was a Brauner Valvet. "It's not making the voice sound any different," he says. "It doesn't put any color to the voice, it makes it sound natural. I recorded all the vocals by myself. I took my computer keyboard into the vocal booth and pressed record from in there. I recorded all the synthesizers and chose all my sounds, all the extra sampled per-





cussion things I chose myself. Henrik recorded all the bass himself."

Drums were recorded through a Neve VR Legend 48 into Pro Tools at Soundtrade Studios in Solna, outside of Stockholm, by Ronny Lathi, who Carlsson calls the "da Vinci of drum miking in Sweden."

"I used different kinds of microphones in different occasions, but for the kick drum I think I used a Shure Beta 52 and a Manley Ref Cardioid Mic—lying on the floor just outside the kick drum," Lathi explains. "For the snare drum I used a Shure SM57 and an Electro-Voice PL10, which were taped together—the 57 was distorted through an old Spectra Sonic comp-limiter. On the hi-hat it was a Schoeps. For the toms, I used Senn-

heiser 421s with sub mics under each of them. For overheads I used a couple of Swedish mics called Ehrlund EHR-M, with the triangular capsule placed maybe 24-28 inches over the crash and ride cymbals.

"I also used Coles 4038 ribbon mics, placed one under the drum chair and one overhead maybe 40 to 50 inches facing the snare drum and toms. I'm not sure if they used them in the mix, though. Finally, for room mics I used two Neumann U 87s about 9 to 13 feet from the kit and approximately 9 feet from each other."

Nilsson is pleased how the album turned out, but it did take three years to complete because there was some trial and error. Some of their original compositions weren't up to par, so Foster sent them back to the drawing board with excellent advice: He told Nilsson to go back and do what they do to all their covers—loopify their originals.

"Everyone had wanted to do things a certain way and we had compromised ourselves in a way we should not have done," Nilsson confesses. "Then David heard it and he said, 'What are you doing? You should do exactly what you are good at. This sounds like an ordinary pop song. Go back and re-do this.' We loopified the songs and then he loved it."

Hence the name of the album and realizing the challenge of staying true to themselves as a young band, while fitting in.

"It had started to get big and we began to listen to people who had a lot to say, who had a big name in the business" Nilsson admits. "We were three nerds from Sweden and we just jumped into this big world and we were scared out of our minds. But now we know we just have to do what we do." ■

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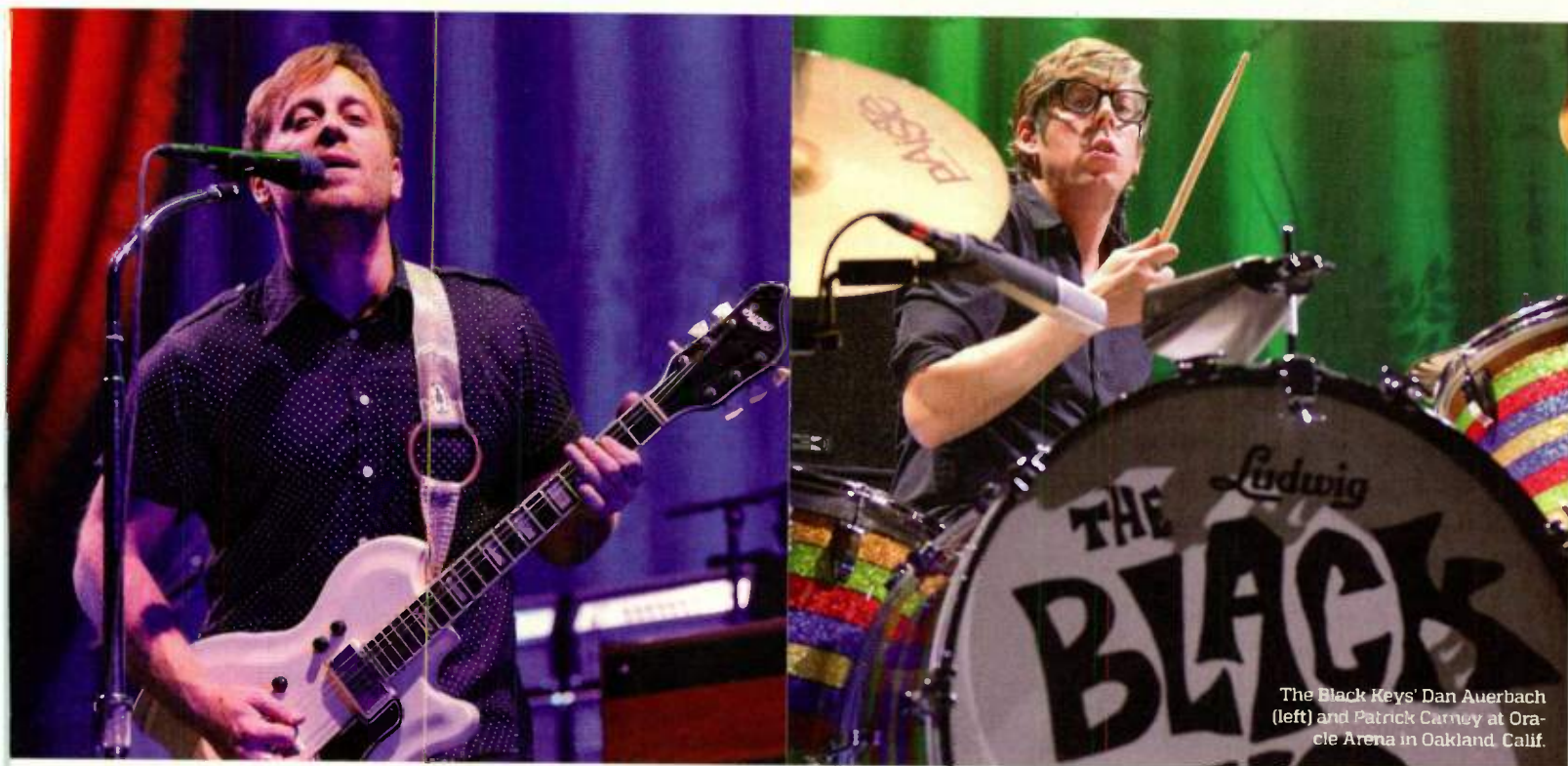
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The Black Keys' Dan Auerbach (left) and Patrick Carney at Oracle Arena in Oakland, Calif.

THE BLACK KEYS

Raw Rock 'n' Roll on 'Turn Blue' Tour By Barbara Schultz

When Jason Tarulli started mixing front-of-house for the Black Keys, band mates Dan Auerbach and Patrick Carney were still playing clubs in and near their hometown of Akron, Ohio. "I've been with them about seven years on the road, and before that, I worked in clubs and small venues across northeast Ohio," Tarulli says. "I believe that the first show I worked with them might have been their third or fourth show that they ever played; it was in a small club in downtown Akron, called The Lime Spider, and it's still crazy to think back on it and to look where we are now."

At press time, the Keys were about to take a

short break between legs of a U.S. arena tour. They've been mainly on the road since their latest album, *Turn Blue*, released this past May, playing wall-to-wall rock 'n' roll from throughout their catalog, but highlighting songs from *Turn Blue*, as well as from the 2011 smash *El Camino*. Auerbach and Carney are joined onstage by bassist Richard Swift (The Shins) and keyboardist John Wood. *Mix* caught the Black Keys' show at Oracle Arena in Oakland, Calif.

As frontmen go, Auerbach is kind of a quiet guy; he's not big on stage patter beyond occasionally inviting the audience to "help us out with this one if you know it" before playing a hit like "Gold on the Ceiling." Likewise, the Keys'

visuals are most striking for their spare-ness. A few songs in, a fabric backdrop with a picture of red velvet curtains falls from behind the band, baring rigging, white lights, and a few small screens. Artifice is gone; music does the talking.

Eighth Day Sound has been supplying full audio production, including the d&b J-Series P.A., Tarulli's Midas PRO6 console, and outboard gear such as an Empirical Labs Distressor and Eventide H3000 Harmonizer for vocals, TC Electronic D-Two delay for slapback on vocals, SPL Transient Designer for drums, a pair of dbx 160 compressors for snare drum and bass guitar, an Alan Smart bus compressor and a Thermionic Culture Culture for drums, an Overstayer Sat-



Front-of-house engineer Jason Tarulli (at left) at the Midas PRO6 console, with Systems Tech Richie Gibson.

Photo: Steve Jennings



Monitor engineer Robert Elliot also mixes on a Midas PRO6.

Photo: Steve Jennings

urator to add some dirt to the main vocals, as well as a few boutique items:

"I have a couple of custom-made Pultec EQP-1 program EQs that I use on the left and right out of the desk," Tarulli says. "These were made by James Wielding out of a small Ohio company called Fantastic Apparatus. He was able to source new old stock Triad and UTC transformers, and the appropriate inductors to build these boxes that are essentially old-school passive EQs with a bit of tube make-up gain. They add an interesting bit of color that tends to smooth out the digital-ness of the desk."

The band has an endorsement deal with Sennheiser, which allowed the crew to check out and choose several microphones. All vocals are to Sennheiser 945s. On Carney's drum kit, there are a 901 and 902 on kick, and 904s on toms. Snare is miked with Sennheiser 441 on top and a Shure Beta 57 underneath. The hi-hat mic is a Neumann KM187. There is also a pair of KM184s for overheads, and a Sennheiser 441 on the cowbell.

"Both of the guys came to me a long time ago and expressed how important it is to keep drums up-front," Tarulli says. "A lot of my work goes into keeping the dynamics under control and making sure the drums are up-front—as powerful as we can make them without overpowering the rest of the band."

"I parallel-bus the toms and snare into one side of the Alan Smart compressor, and those go into one side of the Thermionic Culture Vulture to dirty the drums up a bit," Tarulli continues. "This seems to thicken the drums up quite a bit, and with the dbx on the snare at, maybe four-to-one

compression, if I turn all of this up, the snare sounds like a shotgun."

Guitars are mainly taken from Palmer DIs. "The signal is taken from the output of the amplifiers. Dan runs four guitar amps, on full all the time," Tarulli says. "There's a Marshall JTM45 with a tape-delay slapback, a vintage Fender Quad Reverb with the reverb cranked, and a pair of vintage Danelectros. All four are patched into a large rack of effects—vintage pedals and switchers. The amps are facing into one another, and the back amps have a lot of awful phasing going on. There are mics on the amps, but

there tends to be a lot of weird cancellation that's not pleasing, so I lean about 90 percent on those Palmers."

Monitor mixer Rob Elliott (Gomez, The Cure) is likewise pretty hands-off with Auerbach's guitars. Also mixing from a Midas PRO6, to all d&b M2 wedges onstage, he adds zero guitar sound to the frontman's monitors. "In Dan's front wedges, he just likes his vocal," Elliott says. "Then he has a sidefill with kick, snare, bass and keyboards mainly. But he can hear his guitar behind him [through the amps] because it's pretty loud! Dan's pretty easygoing; as long as he can hear his voice and the keyboards in the mon-



itors, he's set.

"Patrick likes a more full mix in his monitors. Heavy drums: the kick, snare, toms are quite loud in there, obviously, and Dan's guitar is up there, too, along with the bass. And the monitor [mixes] are all dry—straight in, straight out," he says. "They're a loud rock 'n' roll band. What you hear is what you get." ■

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SMOKE JAZZ

NYC Club Swings Into the Record Business

By Eric Rudolph



Smoke co-owner and engineer/
producer Paul Stache.

The conventional wisdom says that a new jazz record label is a doomed venture, but conventional wisdom can be proven wrong. A jazz label can be started today, and it can be done successfully. Of course, it helps if it's run by a team that has spent the past 15 years crafting one of the best little jazz clubs in the country, New York City's Smoke.

Smoke Sessions Records grew out of the 50-seat club on the Upper West Side that's been a nurturing home for young lions and elder statesmen alike. So it was no big surprise when

this club started a label. After all, the joint jumps nightly and live recording is relatively inexpensive these days. Why not push the button and cut some sides?

True to form, Smoke Sessions Records is swinging hard, with an ambitious roster of carefully engineered and lushly packaged 2013-2014 CD releases from world-class talent, including saxophonists Vincent Herring and Javon Jackson; pianists Eric Reed, Cyrus Chestnut, Harold Mabern, Orrin Evans and David Hazeltine; and drummers Jimmy Cobb and Louis Hayes,

among others. (Smoke Sessions also makes vinyl LPs and offers high-res downloads.)

Reviews of the first 10 releases have been glowing and, with many garnering playlist time on WBGO-FM, New York's 24/7 jazz radio station, and elsewhere jazz is spun. The sides released so far have been mostly cut live at gigs, emphasizing in-the-moment spontaneity and studio-quality sound. "We're after live magic without sound quality suffering—to sound as close as we can to studio recordings without restricting creativity," says Paul Stache, co-owner

of the club and label with Frank Christopher. (Stache is also the label's recording engineer and record producer.)

While they could have simply split off feeds from stage mics and let it rip, a more artisanal, old-school live recording approach rules. Depending on the complexity of the band, they often baffle the tiny stage like a studio and always use high-end mics with careful (some might say obsessive) attention to placement. They track flat from the club's Allen & Heath iLive control surface and MixRack to a Mac, running Pro Tools HD at 48 kHz, with 16 or 24 tracks.

The first Smoke Sessions date was legendary pianist Harold Mabern and his working trio; it was not really fully planned as a record date.

"We, of course, did a sound check and thought hard about mic selection and placement," Stache recalls. "But compared to our later approach it was fairly loose; we set up mics and hit it, using hardly any baffles."

Thanks to the club's selection of quality mics, live recording normally uses splits from the house array. "Sometimes we double up on mics. Not so much for house sound, but for monitors—the high-end mics can get feedback using them for the house/monitor feeds," Stache notes. "Also, horn players love to play right on the mic, so we'll put up an SM 58 for the room and monitors, and then 10 inches further away a ribbon mic for recording."

A favorite for recording saxophone is the Royer 121V ribbon. "That's a dark mic, so if the player has a dark sound, I may use a U 47; no need to make a sound darker. For trumpet and trombone I love the RCA 44, that's a great ribbon mic." Other favored horn mics are the RCA 77, especially for flugelhorn, and the Coles 4038.

Piano sound is hard to capture right, Stache adds, and they've tried a lot of different line-ups. A winning combination lately has been Schoeps MK 4s and matched Neumann U 87s. Placement varies according to player, but usually they're set up wide, about 10 inches from the piano, one MK 4 and one U 87 (left channel) at end of bass strings and the other MK 4 and U 87 (right channel) near the hammers, for some jazzy growl. Stache uses the mic preamps in the Allen & Heath MixRack whenever possible.

There is of course no sound booth at the tiny club, so he engineers the dates sitting 30 feet from the stage, wedged between the bar and the front door, using headphones. "I've been running sound at Smoke for a long time, so I have



good idea of what the signal needs to sound like in the cans," he says.

So while live tracking goes smoothly, post-production can be slow, even though with live records the temptation exists "to make it a quick turnaround and put it out. We want to stay away from that approach." Stache says he's spent as much as six eight-hour days to mix a release right. "If it sounds good, people will want it," he adds.

The biggest issue with a live date cut from a postage-stamp-size stage is bleed. "There just is no such thing as a clean, isolated signal," Stache notes. "It is one big mono feed almost. I spend a lot of time getting the panning right, to give each musician his own space, so when I close my eyes I get a true room perspective. I spend a lot of time asking myself things like, 'Does Gerald Cannon sound like that?' I will send a side-men audio files and ask, 'How do you like your cymbal sound?' which of course is something you'd usually only do with the band leader."

It's jazz, with its tradition of warm, rich analog sound, so in post Stache uses as much analog outboard gear as possible. "We use nothing out of Pro Tools, maybe a reverb once in a while. We mix to half-inch tape on a Studer deck, with Manley Massive Passive EQ and a Teletronix LA-2A compressor, which works wonderfully with bass and horns."

While live releases will continue, a 2015 release schedule of about 10 CDs consists of mostly studio dates, for a variety of reasons, including availability of the club. This coming year's releases will be mostly sessions cut in the main room at Sear Sound, New York's analog stalwart, on their Neve Custom 8038. "I've al-

ways been a fan of Sear Sound, with their vintage gear and mics; it is unmatched," Stache says. "Cutting there is a whole other angle from a sound point of view. A big Neve console adds a lot of meat, depth and warmth to the lows and mids that you cannot get on a live record. At Smoke we're tracking to 48 kHz, at Sear we're at 96 kHz, a much higher resolution. We may even go straight to half-inch tape."

As for the perilous nature of today's record business, Stache says it simply requires more ingenuity in making the business end work. "It's a big world, with great potential worldwide; sometimes we ship CDs to a smaller European country and it is 5 or 10 copies of each title, but with every country in Europe, and elsewhere, it adds up. There's money to be made that way, and we're making it work."

Japan, a hot market for both physical CDs and jazz, is an important but not an oversize factor in the success of the label, Stache notes.

However, they almost made a crucial error; initial plans were for high-res downloads and vinyl LPs only, with no CDs. But they were convinced to make lush, eight-panel foldout CD packages, featuring original art by jazz photographer Jimmy Katz and liner notes by label GMO Damon Smith. Like the great jazz labels of the past, Smoke Sessions releases have a distinctive look.

"Smoke Sessions was going to be a one-off, one record for each artist, but people wanted to make more records with us," Stache concludes. "For certain things an artist wants to do, the energy and vibe are captured better live, but other things work much better in a studio. Both are important." ■

MUSEUM-QUALITY BOWIE

Memorabilia, Retrospective, and 9.1 Audio

By Gary Eskow



With a long career trailing behind him and the future an open road, it may seem premature to consider David Bowie as a fitting subject for a retrospective exhibition. But Bowie's been a public performer for 50 years and has generated a broad following as a singer/songwriter, actor and cultural icon; it's appropriate that his work be taken seriously.

"David Bowie Is," originally developed for the Victoria and Albert Museum in London, is currently on display at Chicago's Museum of Contemporary Art and was scheduled through the end of the year. This exhibit is a must-see for Bowie fans. Reluctant admirers may also be fascinated by the extensive displays of costumes, videos and memorabilia that have been organized into a multiroom experience that walks the observer through Bowie's career. The audio component of "David Bowie Is," supplied by the Sennheiser Group, is outstanding.

"Space Oddity" was Bowie's first major hit, and while some may have found the lyric—which tells the story of an astronaut who steps out of his ship into the black—a bit odd, Bowie's quirky voice and dynamic personality illuminate the cut and

the handful of other singles that kept him a player in the singles market for decades. Topping this list are "Changes" (1972) "Fame" (1975) and "Let's Dance" (1983). In Chicago, they can be heard in 9.1.

At a press conference held at the CMA shortly before the exhibition opened, Gregor Zielinsky, Diplom Tonmeister and International Recording Applications Manager at Sennheiser gave a demonstration of the company's yet-to-be-named 9.1 playback system, a multimonitor package with companion headphone system that visitors are given as they enter the exhibit.

During his presentation, Zielinsky stated that after experimenting with a variety of speaker array combinations, Sennheiser felt that a 9.1 system offered an ideal dispersion of audio. Listening to the tracks that Zielinsky himself remixed to suit the system made for a convincing argument. Separation, and the detail it provides, is to be expected when you move from mono to stereo to any surround speaker configuration, but the subtle enhancements were the most noticeable as Zielinsky played a wide variety of material, including an orchestral performance of "Pictures at an Exhi-

bition," a Count Basie Band track, and remixes from an early Bowie session. The original stereo release of a Diane Krall track, for example, sounded quite good. When Zielinsky switched to the 9.1 mix, however, the listener could hear Krall's throat in the process of articulating consonants in the quiet passages, a detail that was not present in the stereo recording.

If Sennheiser has plans to market this technology, the company wasn't letting the press in on its thinking. The system is used in the last room that visitors enter in "David Bowie Is." The "3D immersive experience," as Sennheiser describes it, is applied to remixes of live tracks from Bowie concerts, which accompany videos of the actual performances, and a "mash up" of Bowie tracks created by Tony Visconti, Bowie's longtime producer. Floor-to-ceiling video coupled with the 9.1 audio delivers a powerful package. The tracks sounded so good that I could almost forget that the audio was bouncing back and forth between parallel walls.

The headphone system that Sennheiser provided to the museum tracks an attendee's path through the exhibit and matches audio to the station where he or she happens to be at any time. A part of Sennheiser's guidePORT system, it has been used in other exhibits prior to "David Bowie Is." Think of it as GPS for your ears. The transfer from one piece of audio to another is executed with gentle fades.

Geoffrey Marsh, Director of the Department of Theatre and Performance at the Victoria and Albert Museum, told members of the press that during the preparatory phase, members of his team had unrestricted access to Bowie's complete archival collection. Apparently Bowie has had an eye to preserving his legacy for quite some time. His collection of wardrobe pieces, lyric and music lead sheets, and memorabilia, all overseen by a full-time archivist, clocks in at about 70,000 pieces. Culling through this material has led to a fascinating retrospective on the career of an artist who had a significant impact on the direction of popular culture in the last quarter of the 20th century. ■

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BELLA ELECTRIC STRINGS

By Lily Moayeri



Nina DiGregorio and Michael Johnson of Bella Entertainment Group at Dog & Pony Show in Las Vegas with the Steinberg UR824.

The image of a classic string quartet carries with it gentility, uniformity and an overall conservative air. Enter Bella Electric Strings, clad in burlesque-ready stage clothes, blasting that image to pieces with their razor sharp bows. Based in Las Vegas, the all-female, formally trained strings collective, lead by violinist Nina DiGregorio, specialize in electric string arrangements of traditional rock songs. DiGregorio has been playing piano since the age of 6 and violin from the age of 9. She picked up the bass guitar as an adult. Getting introduced to classic rock from her father strumming Beatles songs on his guitar, she would pick out the melodies on her violin. This progressed into picking out the guitar solos for her favorites from Led Zeppelin, Chicago, Jeff Beck, and the like on violin. It was in high school that she started writing full quartet arrangements of those same tunes.

Bella Electric Strings have lent their talents to the likes of Beyoncé and Shakira, but it is when they take center stage that these ladies truly shred. Much like their unusual approach towards their instruments, Bella Electric Strings' live performances make unconventional use of what

is customarily studio-recording equipment. Enhancing the visual impact of Bella Electric Strings is their Yamaha Silent instruments: three EV-205 five-string violins (the low C allowing for viola range playing) and an SVC-210SK cello.

"The majority of the music we perform requires control of the volume and soundscape of the instrument in great detail," says DiGregorio. "We find with the Silent instruments we are able to control not only our separate mixes and the sounds going to the house, but also how each instrument responds to effects pedals. They also eliminate the issue of feedback from hollow acoustic instruments."

The Yamaha Silent instruments are played in conjunction Vox ToneLab SE processors and Sennheiser ew 300 IEM G3 in-ear monitors. "[The Vox ToneLab SE] really rounds out the high frequencies of the electric violin," says DiGregorio of the processor, which she discovered after trying many different effects without success. "When used with violins, many overdrives tend to sound like bees buzzing. The tube effects leave the distortion warm and round. I've created sequences of my favorite effects and we've saved them into multiple boards so that each song and

each Bella player will blend as well with an electric quartet as they would with an acoustic."

Integral to Bella Electric Strings' writing, recording and performing process is Steinberg Cubase 7.5, which they run on a MacBook Pro. The arrangements are written with Cubase alongside music composition and notation software Sibelius. The two are synced via a ReWire connection, allowing the score and DAW to sync measure for measure.

When performing live, Cubase is run alongside Steinberg Advanced Integration MR8i6CSX and the iC Pro remote control app on an iPad. Here, Cubase is used to control click tracks and supplemental parts, as well as stems from backing tracks for a more detailed mix.

"The MR8i6 has become a bit of a Swiss army knife," says Bella Electric Strings' producer, Michael Johnson. "It was originally purchased as an audio interface, but because of the flexible routing and easy integration with Cubase we've been able to incorporate it as mixer to route audio stems to faders on the front-of-house console. The iC Pro has made it possible for us to remotely adjust levels within Cubase to balance live instruments with supplemental audio stems."

The MR8i6's flexibility lends itself even further to the live performance with audio being routed to separate outputs. Similar sounds are grouped together and then bused out to channels on the console, allowing for full flexibility over the front of house mix. When the Bella women are not backed by their drummer, guitarist and bassist, the MR8i6 is put into play either for a traditional live mix or the iC Pro is used for a virtual mix. This setup allows for easy adjusting on the fly. "We are able to mix the stems as if it were a live band, giving our tracked show a more legitimate sound," says DiGregorio.

With this much ready to go, you don't have to travel to Vegas to experience Bella Electric Strings. Bella Entertainment Group has expanded to more than 30 musicians in Los Angeles and Chicago. And there are plans to further this reach to San Francisco, Miami and Orlando. ■

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great at ingesting our sound design ideas into the Avid from a very early stage, so we were getting feedback from Ridley and Billy right from the beginning of sound post.

No mechanical, no modern. What filled the backgrounds? And how did you keep them moving?

Memphis at that time would have been a great metropolis, so we wanted to convey that level of sophistication and scale. During our Coptic crowd sessions we had recorded drill sessions that we used to describe the military presence and order in that environment. We could also use the rich range of wetland birds of the Nile to evoke a very lush element. There was plenty of fire for us to work with, and we had recorded some great, smooth-sounding 5.0 flam-beaux tracks that we used as beds in the palaces. We made the Hebrew ghetto sequences much more stripped back and anxious. Gone is the melody of the birds; the background crowds are now more volatile and agitated.

THE EXODUS IN ATMOS

By Tom Kenny

It's a Ridley Scott epic, a biblical story with swords and battles and locusts and seas parting. And it's an open palette for sound, from a sound-oriented director. It also was the first Dolby Atmos film to be mixed in London's Twickenham Stage 1 on the Neve DFC, by the mix team of Paul Massey, Mark Taylor and Oliver Tarney, who also supervised. Here, Tarney recounts some highlights.

You must have known it would be big. What else did you know going in?

One of the main points we discussed was how to tackle the various languages in the film. Hebrew wasn't going to be a problem for us to record, but to use contemporary North African dialect for the ancient Egyptians would have been too inaccurate. We ended up agreeing on the closest feasible permutation of ancient Egyptian, which is Coptic. Our Crowd Supervisor, Becki Ponting, liaised with one of the very few Coptic scholars to translate hundreds of lines and prepare "listen and repeat" audio guides for our crowd sessions. We did the same with the ancient Hittite language for the battle scene. Most of these large crowd sessions were recorded outside at Shepperton Studios, with Glen Gathard utilizing a 5.0 mic array. The "listen and repeat" nature of how we had to build up the huge crowd layer by layer was time-consuming, but we're really happy with the way it turned out.

What are the challenges of working on a project that has no real references?

There were elements we could record, such as chariots and swords or frogs and flies, but there were many elements that were open to interpretation. The Passover, Burning Bush and the Red Sea sequences, for instance, were things we had no references for. The Editor, Billy Rich, was

The Battles? Two big armies, starting wide then crashing into each other...

There's this huge, frenetic collision, driven by the clash of steel, the wild adrenalin of the horse breaths and vocals, the perpetual threat of arrows whooshing by, and the Coptic and Hittite soldiers screaming. Then a sudden shift from the carnage occurs as we pull focus on our two leads and the event that triggers the next part of their story. We're only with them, the music, breaths and stylized design all heightening this perspective.

Environments? This is primarily open-air and stone buildings.

There were opportunities for us to strip everything back and go with just a lonely wind in a scene, and then register an energy shift to the grandeur of the palaces, or the oppression of the hellish quarries. Our director was keen on the use of cicadas as a constant electricity throughout the film. They're a useful tool to subtly bring either an underlying sense of calm or anxiety to a scene. The stone-roomed palaces gave Paul Massey a chance to add long, rich reverbs to the dialogues, and that helped describe the opulence in those locations.

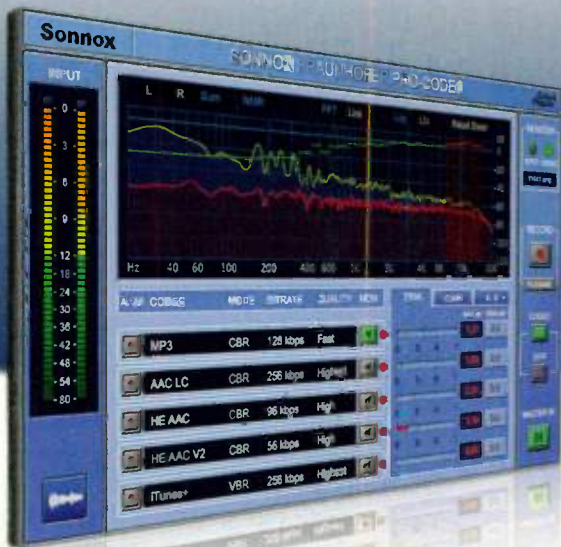
Was the sound designed with Atmos in mind?

Mark Taylor was on both the editorial and mix crew, and had his cutting room set up for 9.1 with the Dolby panner plug-in, so it was great to be able to play ideas early on in the schedule and start discussing how best to prepare for a native Atmos mix. We also had the Atmos panner plug-in installed on our Pro Tools systems for conforming the Atmos objects metadata as each new turnover came in.

For the plague events, such as the locusts, we had to make sure there was enough variation built into the material we designed to cover the extended soundstage. Mike Fentum, James Harrison and I all took turns at designing each major sound event in the film, starting each time from scratch, so that we had a deeper resource to draw from. The Atmos format allowed us to build up more layers, whilst still retaining definition. We ended up with a rich and defined mix, and the Atmos format was definitely a big part of that. ■

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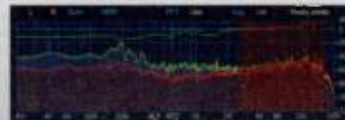
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CONSOLES AND CONTROLLERS FOR LIVE SOUND

MIX SURVEYS DIGITAL BOARDS WITH 24-PLUS CHANNELS

BY THE MIX EDITORS

Space and weight are always an issue in live sound, and manufacturers have answered the call in the latest range of mixers and controllers. This month's roundup features mid- to large-frame digital desks released since AES 2012, and includes a sidebar featuring the latest rackmount I/O and DSP boxes controllable from an iPad, laptop or touchscreen.



ALLEN & HEATH QU-32

The Qu-32 is the flagship digital mixer in Allen & Heath's Qu Series, with 32 mic/line inputs (TRS plus XLR), three stereo inputs (TRS), 24 mix outputs (XLR), two Stereo Matrix outputs, four Stereo Groups, four DCA Groups, four FX Engines, four FX Sends>Returns, 33 motorized faders, a 7-inch touchscreen, one motorized fader per channel, Allen & Heath's AnalogiQ recallable preamps, and the onboard Qu-Drive 18-channel USB recorder. Qu-32 is a self-contained mixer with all the I/O on the back, and plus, the dSNAKE port adds the option to connect to a family of remote AudioRacks over a Cat-5 digital snake, so the I/O can be positioned onstage.

AVID S3L-X

The Avid S3L-X is a scalable, Ethernet AVB-networked modular live sound mixing system. It



allows you to streamline FOH, monitor, and broadcast workflows by sharing the same I/O across multiple S3L-X systems, with full automatic gain compensation. Once you're out of the venue, you can set up a mobile recording/mixing studio using just the VENUE S3 surface and Pro Tools Software on a computer. The X gives you double the ram of the S3L, a higher output, lower noise headphone amp and is ready to record directly to Pro Tools or other DAWs.

BEHRINGER X32

Behringer's X32 is a 40-input channel, 25-bus console for studio and live sound applications. It features 32 fully programmable mic preamps,



designed by MIDAS, as well as 16 configurable mix buses and digital I/O. Its 25 fully automated motorized 100mm faders allow for instant overview, scene management and DAW control. X32 has 16 XLR outputs plus six additional line in/outputs, two phones connectors and a talk-

back section with integrated or external mic. It provides individual and dynamic LCD Scribble Strips on all channels and buses. Dual AES50 ports allow for direct connection of optional S16 remote stage boxes for a total of 96 remote inputs, or direct to other X32s for mains/monitor/broadcast applications. A 32x32-channel USB 2 audio interface with DAW remote control allows for interfacing with any compatible DAW, while the console's Ethernet port allows external control either from a PC or an iPad using the company's free software.



DIGICO SD9

The SD9 is a lightweight, small-footprint console with a completely integrated system powered by Stealth Digital Processing and floating point Super FPGA technology, designed for touring or fixed installations. The SD9's I/O section includes eight mic inputs, eight line outputs, four mono AES/EBU, one MADI port, and two dedicated D-Rack Ports. The SD9 features 24 touch-sensitive motorized faders and quick access function buttons. The console's work surface has a 15-inch, high-resolution TFT LCD touch screen with backlit display, along with dedicated multi-function control knobs and electronic labeling. The SD9 features 48 Flexi Channels (configurable as either

mono or stereo) at 48/96 kHz, the equivalent of 96 channels of full DSP processing. Standard channel processing, whether inputs or outputs, includes Channel Delay, Single and Multi-Channel Presets, dual insert points, highpass and lowpass filters at 24dB/octave, 4-band parametric EQ with band curve selection, Dual insert points, DiGi-Co's DYN 1 (Compressor, De-Esser or assignable Multi-Channel Compressor) and DYN 2 (Gate, Compressor or Ducker).



FAIRLIGHT EVO.LIVE

The EVO.Live is targeted specifically at broadcast and fixed installations. Comprising a modular console, a separate processor rack with Local I/O, and Remote I/O, the console comes in a variety of chassis styles and sizes (up to 60 faders), and can be easily customized to create an optimized mixing environment for live production applications. All traditional broadcast functions are catered for, including up to 16 mix-minus buses; advanced comms and talkback facilities; up to 24 sub and 24 aux buses (up to 5.1); and advanced metering. In terms of raw processing, the system delivers up to 104 input channels and 112 mix elements, all fully featured with EQ, filters and dynamics. Based on Fairlight's leading edge audio processing and control surface hardware, EVO.Live can switch between live and post-production modes at the touch of a button. Post mode brings into play a fully integrated audio and video editor, plug-in support and a variety of interchange file formats.

MIDAS PRO X

Designed and engineered in England, the PRO

Virtual Consoles

Although simple looking, rackmount boxes with DSP and I/O for live sound offer a wide range of features including WiFi for remote control, integration with popular tablets and pads, expansion slots for adding features and more.



BEHRINGER XR18 X-AIR

The XR18 is an 18-input/12-bus portable mixer housed in a sturdy stage box design for use with iPad and Android tablets. It includes 16 MIDAS-designed mic preamps, integrated WiFi module for wireless control, and an 18x18-channel bi-directional USB audio interface. Based on the Dan Dugan automix system, the XR18's gain sharing technology can manage fully automated mixes with up to 16 live microphones. XR18 includes the X32 effects rack featuring four stereo FX slots. It includes a 100-band Real Time Analyzer (RTA) for all channel and bus EQs; Ultranet connectivity for Behringer's P-16 Personal Monitoring System; rack ears and protection bumpers; six aux and main L/R buses with inserts, full dynamics processing and 6-band parametric or 31-band graphic EQ; six XLR aux outputs and two XLR main outputs plus phones connector.



COMPUTER INTEGRATED AUDIO DIGITAL CONSOLE

CIA Digital Virtual Consoles are housed in a 6U rolling rack weighing less than 90 pounds that have up to 24 motorized faders powered by RML Labs' Software Audio Console. A total of 25 separate consoles in one virtual environment use a legacy console strip GUI metaphor. Each of the 24 monitor mix consoles can be remotely controlled via a remote computer through a TCP/IP connection. The digital split is internal and provides an exact zero noise copy of the up to 72 inputs to all 25 consoles. All 25 consoles have 72 inputs and 24 stereo outputs with built-in attenuator, phase reverse, swap L/R, mono, mastering 5-band paragraphic EQs with Hi and Lo cut filters, keying gates and compressors with a bandpass filter, six stereo aux sends with pan, pre and post FX patches, full 8-point surround X/Y panners, plus a separate center and sub send, 24 stereo out assigns, mute, solo and long throw faders with -60dB high resolution meters on each input channel.



LINE 6 STAGESCAPE M20D

The StageScape M20D features a touchscreen visual mixing environment, DSP power for audio processing on every channel including multiband feedback suppression, multichannel recording

and remote control capabilities. In Perform Mode, a graphic display of the stage setup uses icons to represent each performer or input. Color-coded encoders provide immediate access to level control. A single touch on a performer's icon gives access to all parameters relating to that channel. The audio signal chain can be controlled via an X-Y tweak pad. Deep Edit mode provides access to every effect parameter via a plug-in style interface. Auto-sensing mic and line inputs and outputs can detect when a connection is made and automatically configure the channel gain, EQ, effects and routing. Fader View is available on the StageScape M20d display as well as the StageScape Remote iPad app. Equipped with the L6 LINK digital networking protocol, StageScape M20d allows musicians to configure and control P.A. systems of any scale.



MACKIE DL32R

The 3U rackmount Mackie DL32R is a 32-channel digital mixer with Onyx mic pre's that is controlled

wirelessly from an iPad running Mackie's Master Fader control app. It gives you 36 input channels with 4-band parametric EQ plus HPF, gate and compression; 32 stereo-linkable input channels; four stereo-linkable return channels; and 28 output buses with 4-band parametric EQ plus HPF/LPF, 31-band GEQ, compressor/limiter and alignment delay. The DL32R includes 14 fully assignable XLR outputs and stereo AES digital output. It also features direct-to-disk multitrack (24x24) recording and playback, and functions as a USB 2 audio interface for a Mac or PC. The DL32R supports up to 10 separate iOS devices at once.



PRESONUS STUDIO LIVE RM

Based on the StudioLive AI-series engine and controlled with UC Surface

software for Mac, Windows and iOS (supporting iPad and Windows 8 touchscreens), the StudioLive RM16AI and RM32AI 32x16x3 rack-mount Active Integration digital mixers are scalable, compact, and 100 percent recallable. The 3U rack-mount RM16AI provides 16 locking XLR inputs with recallable XMAX Class-A preamps, eight XLR line outs, and three main outs (left, right, and mono/center); 32 internal channels and 25 buses; a 52x34 FireWire 800 recording interface; 96 kHz operation; and extensive signal processing. The 4U rack-mount RM32AI offers 32 inputs with recallable XMAX preamps and 16 line outputs but otherwise has the same features as the 16-input version. Both mixers offer individual 48-volt phantom power on all inputs; a +48V Meters button displays phantom-power assignment on the input meter grid.



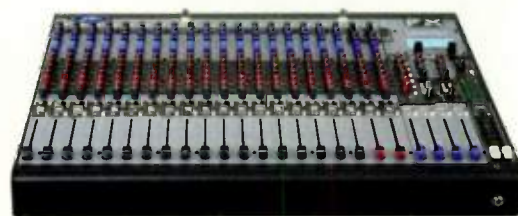
X Control Centre features the company's Neutron Audio System Engine, 29 MIDAS PRO motorized 100mm faders, two 15-inch full color TFT display screens that are said to be viewable in daylight, 168 simultaneous input

channels and 99 time-aligned and phase-coherent buses with no trade-offs in channel or bus counts. Ten VCA and eight POPulation groups, combined with the advanced navigation offered by the new output-centric center section, allows the simultaneous display of 24 mono or stereo mix buses. Neutron is the result of a three-year research and development

program. Its latest generation DSPs and high-performance FPGA, coupled with tightly-coupled MIMD (Multiple Instruction, Multiple Data) architecture, delivers more than 100 gigaflops of real-time audio processing performance. MIDAS states that the Neutron has the potential to provide more than 800 audio paths. AES50 connectivity allows for up to 288 network inputs and 294 network outputs for the PRO X system.

PEAVEY FX2 24

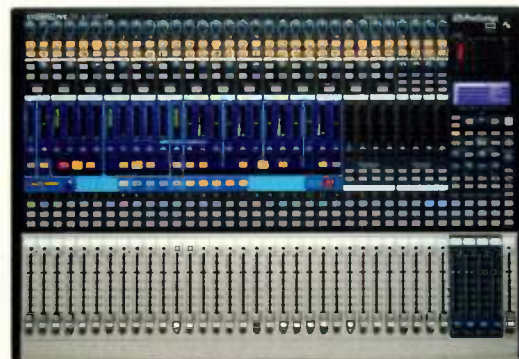
The FX2 Series feature 3-band EQ with sweepable mid-frequency and variable low cut filters, two stereo channels with dual mic/line inputs, six Aux sends, four subgroups, and 24 100mm faders. FX2 mixers also offer Peavey's exclusive Silencer mic preamps, which allow very high gain with low noise and distortion for crystal-clear signal reproduction. The four pre-fader auxes per channel provide four monitor mixes, while the two post-fader auxes are ideal for adding built-in or outboard effects. These mixers also include dual DSP engines that



allow multiple simultaneous effects assignable to any channel via aux 5/6. Onboard effects include reverb, reverb enhanced, delay, compression, expander, de-esser, chorus, flanger, tube emulator, vocal enhancer and gate. Chain two processors together on each of the two available effects windows. The digital output processing section includes Feedback Ferret, dual 5-band Parametric EQ or dual 28-band Graphic EQs, digital delay lines, and dynamics/limiters.

PRESONUS 32.4.2AI LIVE MIXER

The StudioLive 32.4.2AI 32-channel digital mixer features the company's Active Integration technology, including a dual-core computing engine, and allows for wireless control without an exter-



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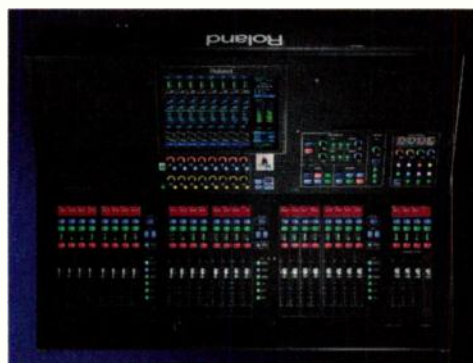
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nal computer. It offers 32 Class-A XMAX mic preamps with individually switched phantom power (plus an XMAX preamp for the Talk-back input with always-on phantom), 32 line inputs, 14 aux mixes, four subgroups with variable output delay, Fat Channel dynamics processing and parametric EQ, and a 48x34 FireWire S800 audio interface. The 32.4.2AI allows users to create two complete sets of EQ and dynamics settings for a channel and then make quick A/B comparisons with the Alt EQ/Dyn button. This model also has six mute groups with All On/All Off switches and six user-assignable Quick Scene Recall buttons that let you load specified, saved mixer scenes. The StudioLive 32.4.2AI also has four internal effects buses: two with reverb and two with delay effects, an Ethernet port and a USB 2 port.

ROLAND M5000

The M-500 is Roland's first product based on O.H.R.C.A., which stands for "Open", "High Resolution", and "Configurable Architec-




ture". The M-5000 offers freely definable audio paths, supporting multiple audio formats protocols, plus 96kHz sound quality throughout the system. The Roland M-5000's internal mix architecture is not fixed and can be freely defined for mixing channels, AUXs, Matrices, subgroup buses, Mix-Minus buses within a range of up to 128 audio paths allowing user to create a console structure to suit the needs of the application. The M-5000 has two built-in REAC ports, plus two expansion card slots


for Dante, MAD1, Waves SoundGrid, or more REAC ports, as well as future formats. The back panel includes 16x16 analog I/O, 4x4 AES/EBU, a 16x16 USB audio interface, connection for control via an iPad connected or wireless, and control ports including footswitches, GP I/O, RS-232C and MIDI.

SOUNDCRAFT VI4


The Soundcraft Vi4 model inherits the functionality and facilities of the Soundcraft Vi6—including the Vistonics II touchscreen user interface, Soundcraft FaderGlow fader func-







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tion display and Vi6's audio quality—but in a smaller, more compact footprint. In just under 5 feet, the Soundcraft Vi4 offers access to 96 inputs on 24 faders, with a total of 35 output buses available for use as masters, groups, auxes or matrices. Pairs of mono inputs can be linked to create stereo channels. Its 24 insert send/return pairs can be configured (using available I/O) and assigned to any of the 96 inputs or 35 output channels. All 96 input channels can have direct outputs in addition to their internal bus routing, assuming sufficient I/O is available (for example, an optical MADI card). Buses comprise 32 Group/Aux/Matrix, plus main L/C/R Mix and L/R Solo buses (maximum of 16 matrix outputs can be configured).

SSL LIVE L500

Solid State Logic's Live L500 console, which is priced depending upon the configuration, launched in 2013 as the company's first console for live sound production. Live brings SSL's approach to audio quality and console ergonomics to sound for the stage. SSL Live is suited to



touring or installation, front-of-house or monitors in venues and arenas, houses of worship and concert halls. Based on SSL's Tempest processing platform, Live offers 976 inputs and outputs, and 192 full processing audio "paths" at 96 kHz. "Paths" are flexibly configured with power allocated to Channels, Auxes, Stem Groups and Masters configured to suit the needs of each show. All processing is built into the console surface. It has a collection of I/O connectivity built into the frame. A full range of Stagebox I/O connects to the console via MADI.

YAMAHA PRO AUDIO M7CL

M7CL Series digital mixing consoles (the M7CL48-ES, M7CL-48 and M7CL-32) are designed for medium-size live sound applications. Where the original M7CL-48 has 48 analog inputs, the M7CL-48ES has a total



of three EtherSound ports: two for connection to as many as three Yamaha SB168-ES EtherSound stageboxes in either daisy chain or ring configuration. The third port allows permanent connection to a computer while the stage boxes are connected in ring mode. To set up a basic daisy-chain system, connect the M7CL-48ES to the SB168-ES stage boxes via appropriate cables and turn on the power. The ESMonitor software is not required; everything is configured automatically. The M7CL-48ES retains eight Omni inputs and eight Omni outputs that can be used for direct analog connection. The M7CL-48 offers 48 mono microphone/line inputs, four stereo inputs, three mini-YGDAIcard slots (a total of 56 or 40 mixing channels), 16 mix buses, L/C/R bus, eight matrix channels, and eight DCAs assignable to 16 Omni outputs. ■



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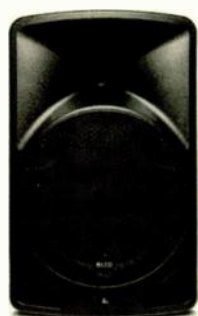
RETRO DOUBLEWIDE

Single-channel tube compression amplifier

PORTABLE LOUDSPEAKERS

by THE MIX EDITORS

Whether you need a speaker on a pole at a picnic, a floor wedge providing monitors for a band, or a pair of mains with a mixer for a band rehearsal, portable powered monitors have it covered. This grouping represents anything released after AES 2012 and ranges from moderately powered and priced units to larger, scalable systems that integrate with other live sound gear.



ALTO PROFESSIONAL TX SERIES

Alto Professional designed the TX Series loudspeakers to the same performance standards as the company's award-winning Truesonic Series—with quality components and accurate, transparent sound—but at more affordable prices. The TX Series comprises the TX15 600-Watt 15-Inch 2-Way Active Loudspeaker; TX12 600-Watt 12-Inch 2-Way Active Loudspeaker; TX10 280-Watt 10-Inch 2-Way Active Loudspeaker; and TX8 280-Watt 8-Inch 2-Way Active Loudspeaker.

All TX Series speakers are bi-amplified by a Class-D power amp and have precision electronic crossovers, as well as integrated analog limiter and overload protection circuitry. Built to travel, the road-ready TX Series is both lightweight and portable. Trapezoid cabinet contouring makes it possible to position the speakers in upright or wedge-monitor placements. A 36mm pole-mount socket and handle designed for comfort are built in. Use the Link output to chain multiple cabinets together to create a custom setup.



BEHRINGER B207MP3

Behringer's EUROLIVE B207MP3 150-watt active loudspeaker is designed for vocal and keyboard monitoring, multimedia, press conferences, and other applications where space is at a premium. Based on the company's B205D,

the B207MP3 has built-in high-performance MP3 player for playing audio files from a USB stick, 3-band EQ, and built-in 4-channel mixer that accepts XLR, TRS and RCA inputs. Phantom power is provided for condenser microphones and one input allows connecting a Hi-Z instrument without the need for an external DI. There is also a dedicated stereo input for keyboards, MP3, CD or other sources. The B207MP3 is compact and light enough to be mounted on a mic stand, while the 6.5-inch full-range driver provides heavy-duty sonic performance. A Class-D amplifier and internal switch-mode power supply provides 150 watts, and additional active loudspeakers can be linked via a convenient Thru socket, making the B207MP3 ideal for use as a main system in more intimate venues. The B207MP3 is housed in an impact resistant enclosure with an integrated top-carrying handle.



CERWIN-VEGA P1000X

A more compact version of the original Cerwin-Vega P1500X Loudspeaker, the P1000X is suited for a variety of sound reinforcement applications, from concerts to public speaking. Featuring many of the same controls as its predecessor, the P1000X Powered Loudspeaker is a two-way, bi-amped, full-range bass-reflex speaker that employs a 10-inch woofer and high-frequency compression driver. Powered by a custom 1,500W

Class-D amp, the P1000X has a proprietary hemi-conical horn that provides enhanced sound clarity over an even and wide coverage area. A built-in mixer with multiple channels and I/O connections allows for simple and fast setup, while enhanced EQ, Vega Bass boost and highpass filter controls promise exact tuning and exceptional performance.



ELECTRO-VOICE ETX

The ETX Powered Loudspeaker family offers technologies from EV concert/touring systems. Three two-way models (10-inch, 12-inch and 15-inch, all with a precision HF titanium compression driver), a three-way model

(15-inch with a 6.5-inch MF driver and a precision HF titanium compression driver) and two subs (15-inch and 18-inch drivers) are available. EV-engineered high-efficiency transducers and high-powered Class-D amplifiers, Signal Synchronized Transducers (SST) waveguide design and smart FIR-Drive DSP all work together to provide Electro-Voice's signature sound quality and precise coverage at the highest SPLs. EV's FIR-Drive uses the latest Finite Impulse Response (FIR) filter technology to optimize transducer linearity. They incorporate advanced limiter algorithms for independent peak and thermal transducer protection; full-function DSP control via a single-knob interface; LCD screen for easy system set-up and monitoring; location/application EQ presets; limiter status; input level controls/meters; and master volume control.



GEMINI DRS LOUDSPEAKERS

Gemini's DRS Series loudspeakers, available in active (DRS-10P, DRS-12P, and DRS-15P) and Bluetooth models (DRS-12BLU and DRS-15BLU), all incorporate Class-D amplifiers. The DRS-15P has a 1,200W Class-D amplifier and is comprised of a 15-inch woofer and 2-inch voice coil needed to push low frequencies nearing 45Hz around the room. The

2-way DRS-12P has an 800W Class-D amplifier and is comprised of a 12-inch woofer and 2-inch voice coil said to push low frequencies nearing 52Hz. The DRS-10P has a 640W Class-D amplifier, with a 10-inch woof-

er and 2-inch voice coil needed to push low frequencies nearing 60Hz. On each of the three speakers' back panels are XLR, Line, and RCA inputs with separate gain and EQ controls as well as a Mix Output. On each model, the tweeter is a pure titanium compression driver with a wide dispersion horn for crisp and detailed highs at significant distances or angles from the speaker. The lightweight amplifier and ABS nylon fiber cabinet make the DRS series of speakers easy to carry to and from an event and sufficiently rugged enough for consistent use.



way, bi-amped speaker system that delivers power, sound quality and dependability. StageSource L2t adds an on-board mixer that provides effects, acoustic guitar modeling and feedback suppression, and is offered as a self-contained live sound solution. StageSource L2m and L2t are designed for seamless integration with other Line 6 live sound products, so customers can use them to extend the capabilities of a StageSource L3m- or L3t-based system, pair them with the 1,200W L3s subwoofer, and more. Both L2-series speakers feature six DSP-based Smart Speaker modes, which enable musicians to optimize the loudspeakers' output for a variety of performance scenarios. Onboard accelerometers and pole-mount sensors automatically detect the speakers' orientation and set their Smart Speaker modes accordingly.



MACKIE SRMV2 SERIES

The SRMv2 Series Portable Active Loudspeakers (SRM450v2 and SRM350v2) feature new powerful Class-D Fast Recovery amplifiers, with an efficient, heat-minimizing switching power supply. Plus, with all-new transducers, including a lightweight woofer and heat-treated titanium compression driver, the SRMv2s deliver more punch and clarity than the original SRM

loudspeakers. Weighing 40 pounds, the SRM450v2 is 2-way bi-amplified, optimized Active loudspeaker system with a high-output precision titanium compression driver; 12-inch lightweight long-throw low frequency transducer with 3-inch voice coil; Servo Feedback controlled woofer; 300W Class-D, Fast Recovery LF amp/100W HF amp; wide, smooth dispersion via multi-cell horn aperture and HF waveguide; built-in phase-accurate 24dB Linkwitz-Riley electronic crossover; Mackie Active Electronic time alignment, phase correction and EQ; mic/line input and pass-thru connector. Both models can be flown, pole mounted or used as wedges.



MARTIN AUDIO DD12

The powered, two-way DD12 combines on-board networking, DSP and Class-D amplification with state-of-the-art transducers and Differential Dispersion horn technology. The DD12 is designed to meet stand-alone and distributed sound reinforcement requirements. Ideal as the main P.A. in small-to-medium size rooms, it can also be used as an infill loudspeaker in large-scale systems. The DD12 features a high-specification 12-inch (300mm) LF drive unit and a class-leading 1-inch (25mm) exit compression driver on a user-rotatable, Differential Dispersion horn. Differential Dispersion technology provides more throw to the rear to distribute sound evenly front-to-back, while having wider close-up horizontal coverage for the front rows. The compact, multi-angle enclosure can be used in either vertical or horizontal orientation, with rotation of the HF horn easily accomplished by removing the steel grille, which is a spring-fit into the enclosure sides and pre-curved to resist damage on the road.

HK AUDIO USA LUCAS NANO 600

HK Audio USA has launched the Lucas Nano crossover P.A., which builds upon the compact size, form factor and sound quality of the company's Lucas Nano 300 portable P.A. Lucas Nano 600 relies on a pair of small, lightweight, yet powerful (up to 123 dB) satellite speakers for the high and midrange frequencies. The satellites are powered by a dedicated subwoofer with a mixer and built-in frequency shaping controls. This allows the

system to be carried with one hand. The Lucas Nano 600 may be used either as a space-saving mono or stereo system by adding the desired speaker pole set. Both configurations promise detailed sound with wide dispersion. In addition, two Lucas Nano 600s can be paired to create a more powerful P.A., and mixers or each sub duplex to double mixer inputs. The Lucas Nano 600 introduces MultiCell Transformer technology, which is designed to help maximize sound pressure gain, improve directivity and minimize high-frequency distortion. Using a sophisticated simulation technology, the Lucas Nano 600 has a lightweight subwoofer housing with the bass response of a heavy wood enclosure.



JBL PROFESSIONAL EON 206P

Harman's JBL Professional recently introduced the EON 206P Portable P.A. system, an all-in-one powered system. The JBL EON 206P has a pair of 6.5-inch passive loudspeakers, each featuring a 6.5-inch

woofer and a 1-inch neodymium black nylon dome tweeter, powered by a 160-watt power amp section (80-watts per channel). The EON 206P features a maximum SPL output of 113 dB, with a nominal coverage pattern of 100x80 degrees. The EON 206P also features an integrated 6-channel mixer with two balanced mic/line channels with XLR/ 1/4-inch combo jacks (CH1 and CH2); two stereo inputs (CH3 and CH4 is RCA and quarter-inch; CH5 and CH6 is a 1/8-inch mini jack). The mixer also features Stereo Monitor Out (quarter-inch left and right out) with volume control (for an external sub or stage monitors), master volume control, reverb on Channels 1 and 2, bass/treble control, and universal power (100-240V; 50 / 60 Hz). Designed for easy portability, the entire EON 206P system weighs 25 pounds, features a durable road-tough enclosure, convenient internal cable storage, and comes in a suitcase format for easy transport and storage. It also features a 36 mm pole socket for easy mounting.

LINE 6 STAGESOURCE L2M, L2T LOUDSPEAKERS

Line 6 StageSource L2m and L2t loudspeakers, introduced in early 2013, offer high-quality sound, DSP power, modular architecture and proprietary L6 LINK digital networking. StageSource L2m is an 800-watt, two-

MIPRO MA-505

This 145-watt P.A. speaker system uses a Class-D amplifier pushing an 8-inch woofer paired with a 1-inch titanium horn. Onboard wireless with switchable Voice Over Priority balances microphone levels

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with onboard playback and Bluetooth audio streaming. It runs on AC, DC external batteries, or the internal battery. The MA-505 is outfitted with two channels of wireless microphone connectivity, with the ability to add up to two more wireless channels via optional MRM-70 modules. Alternatively, users can install a MT-91 wireless transmitter option to link multiple MIPRO speakers together for a fully wireless P.A. system. MIPRO built a digital recorder into the MA-505, and allows for playback of audio from SD card media or USB thumb drives. Plus, the MA-505 comes with a CDM-2A CD player capable of playing MP3 and WMA files as well as standard CD/CDR/CDRW formats.



PRESONUS STUDIO LIVE AI-SERIES

PreSonus' line of active loudspeakers includes the full-range StudioLive 312AI, 315AI, and 328AI and the StudioLive 18sAI subwoofer. Active Integration combines wireless and wired networking and communications with powerful DSP. Each full-range, powered, 3-way loudspeaker relies on a custom-designed, CoActual 8-inch coaxial speaker with a 1.75-inch titanium compression driver to reproduce the mid and high frequencies. Triamplified, Class-D power amplifiers in each model deliver a combined 2,000 watts of power. The StudioLive 312AI comes equipped with a 12-inch ferrite speaker to handle low-frequency reproduction, while the 315AI employs a 15-inch woofer, and the StudioLive 328AI features dual 8-inch ferrite speakers, enabling it to deliver high-powered performance in a no-

ticeably streamlined and compact enclosure. Each full-range system has a combo XLR/TRS line input and an XLR microphone input with an XMAX Class-A mic preamplifier and 12V phantom power, as well as an XLR audio throughput. The full-range speaker systems are pole-mountable and have ergonomic side handles, interlocking stacking, and M10 fly points. All enclosures are made of lightweight plywood construction.



RCF TT+

RCF states that its TT+ two-way systems—the TT1-A, TT2-A and TT5-A—are the result of advanced acoustic design, state-of-the-art transducers, digital power amplifiers and innovative processing algorithms. Each model in its TT+ Series has two independent Class-D digital amplifiers that are housed in a separate chamber and mechanically insulated from the cabinet vibration. Specially developed algorithms running at 96 kHz are said to enhance the linearity of the system from very low-level signals to maximum amplifier output. For the TT+ series new RCF transducers were specifically developed and new horn designs for uniform pattern coverage and perfect loading to the lowest frequencies. The compression drivers feature high performance 3-inch and 4-inch diaphragms; RCF has finalized an oxygen free process of molding pure titanium ultra thin films in high quality finely controlled shaped diaphragms. The strong neodymium magnetic structure of the mid-bass transducers promise dynamism and precision, and the Dual-forced venting offers efficient voice coil ventilation, minimizing the power compression.



SAMSON EXPEDITION XP115A, XP112A

With 500 watts of output power, the 2-way active XP115A weighs 33 pounds and comprises a 15-inch extended range low frequency woofer and 1-inch high frequency driver. The back panel of the XP115A is outfitted an XLR/ 1/4-inch combo input for microphones and line level de-



vices, as well as a contour equalization switch. The XP115A's speaker enclosure is constructed of solid polypropylene. The cabinet design also provides a tilt-back monitor positioning option and speaker stand mount for flexible setup. The XP115A further offers both top and side carry handles. Samson's Expedition XP112A 2-way active P.A. speaker, weighing 30 pounds, offers 500 watts of output power. It has a 12-inch extended range low frequency woofer and 1-inch high frequency driver. The back panel of the XP112A also has an XLR/ 1/4-inch combo input for microphones and line level devices, as well as contour equalization. Both models provide an XLR Link output connector for daisy chaining additional speakers to expand a P.A. setup.



SUNBURST GEAR MM SERIES

Designed and assembled in the U.S., the MM Series speakers from Sunburst Gear (MM1P, M1R3, M1BR3, MM3P, M3R8 and M3BR8) offer an amplifier and a mixer

in a compact, portable design, and feature a bi-amplified design in which a 4- to 5.25-inch speaker is paired with a 1-inch tweeter to provide maximum sound clarity. MM Series speakers are equipped with Class-D amplifiers with 80-percent or better efficiency and come with a Class-V power adaptor that is EnergyStar compliant. Speaker cabinets are wrapped with carbon fiber Tolex for durability and constructed with MDF for high fidelity sound. These cabinets also have a metal grille that protects the speakers from physical damage. A pole-receptacle is built into the bottom panel of most models, which allows for mounting speakers on any 35mm pole or tripod stand for extended coverage in larger rooms. With up to 8 channels, MM speakers have inputs for instrument and microphone combinations as well as an aux input for an MP3 player. Each channel has independent volume controls with a 3-band EQ on primary channels or on Speaker out and the right channel output makes it easy to connect another speaker.

TURBOSOUND MILAN SERIES

Turbosound's Milan Series includes the models M10, M12 and M15, and two subwoofers, the M15B and M18B. The Milan M15 is a portable 15-inch two-way powered loudspeaker featuring two independent input channels, mic and line inputs,

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2-band EQ, intelligent limiting, and a Mix Out function for connection to additional Milan loudspeakers for easy system expansion. The Class-D amplifier is a true 2-channel unit with an integrated electronic crossover, allowing the HF and LF drivers to be powered separately without one being able to influence the sound of the other. Total output power is 1,100 watts peak, and said to provide plenty of headroom to maintain good dynamic range so that transient signals are delivered effortlessly. The lightweight

switch-mode power supply coupled with Klark Teknik digital signal processing provides dynamic equalization and sophisticated limiting functions to ensure optimum performance and long term reliability. The two discrete input channels are each equipped with balanced, combination jack/XLR connectors and a level control, catering for a range of music sources from low impedance microphones, acoustic guitars and keyboards to MP3 players and mixing consoles, selectable via a mic/line slide switch.



YAMAHA DBR SERIES

Yamaha's DBR Series represents the most portable powered loudspeakers offered by the manufacturer. The DBR10, DBR12, and DBR15 all feature state-of-the-art DSP technology, Yamaha's FIR-X tuning, and D-CONTOUR dynamic multi-band processing. The onboard, 2-channel mixer is designed for ease of use, and the DBR's Class-D amplifier delivers up 1,000 watts of power. The Yamaha DBR15 15-inch active speaker is said to withstand

132dB SPL while still delivering an accurate and controlled performance. Using the latest DSP, Yamaha applied its FIR-X tuning to optimize the sound and protection algorithms of the DBR15. A switchable highpass filter also makes it easy to add a subwoofer to a P.A. rig. Proprietary FIR-X tuning delivers excellent sound quality with high resolution and a smooth frequency response. D-Contour optimizes the DBR15 for main speaker or floor monitor use. Its onboard mixer lets users select either a direct output or a mixed output. It offers comprehensive inputs for mixer, musical instrument or media players.



YORKVILLE PARASOURCE SERIES

Yorkville's ParaSource Series cabinets (PS10P, PS12P and PS15P) featuring large conical horns are designed for superior performance in point source configurations. Manufactured in Canada, all ParaSource Series cabinets are built using the same rugged high impact ABS cabinet construction as used in the company's Paralane Series. They include Class-D amplifiers, resonant mode switching power supplies, DSP control, integrated multi-band limiting, and switchable bass

boost. Cast aluminum chassis with integrated angled heat sinking ensure that ParaSource Series cabinets will operate on any angle, in virtually any environment without need for fan cooling. The speakers also have a metal grille design and large, flared ports to minimize chuffing and vent noise. ParaSource Series Cabinets have improved handle design and standmount adaptors making them the ideal lightweight solution for mobile P.A. and DJ applications. Improved cabinet geometry ensures ParaSource cabinets will operate ideally as front-of-house or monitor applications. Paintable ABS Cabinet design and integrated flypoints allow ParaSource Loudspeakers to easily be incorporated into any installation. ■

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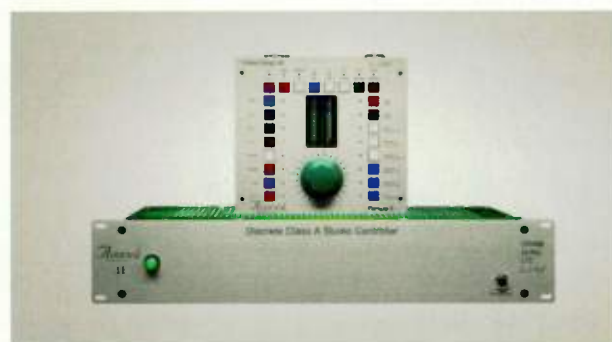
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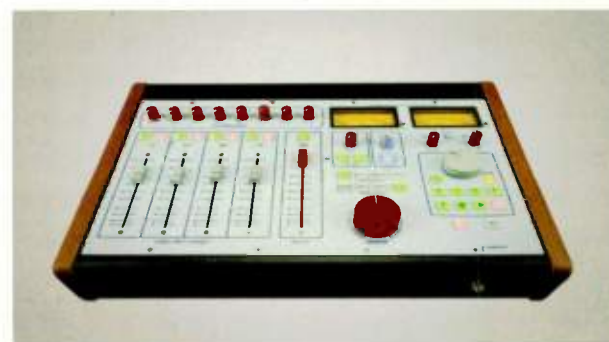
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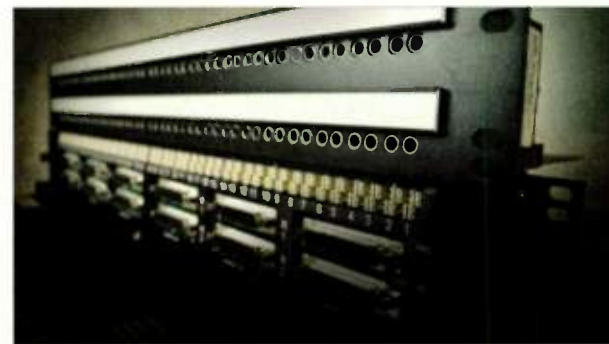
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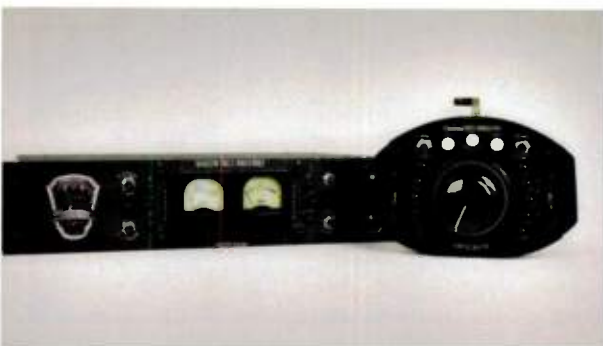
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SWING HOUSE STUDIOS RELOCATES

To mark its 20th year in business, Swing House Studios will be relocating from West Hollywood to a 21,000-square-foot facility in the Atwater neighborhood. The new location will be situated between Downtown L.A., Silver Lake, Glendale and Burbank off the 2 and 5 freeways. The grand reopening of the studio is scheduled for late January 2015.

The new Swing House Studios will feature two production stages (2,000 and 1,250 square feet with 19-foot ceilings, private bathrooms, dressing rooms and production offices); two rehearsal rooms (one is 600 square feet with a wood dance floor and the other is 400 square feet); full backline, audio and staging rental department; loading dock and bus bay; 30-plus car parking lot; recording studio with Neve/API consoles, digital and analog recorders, private lounge and bathroom; and seven private writer studios for “producers in residence.”

Phil Jaurigui, president of Swing House, says the new facility will also fea-



Swing House president Phil Jaurigui and “producer in residence” Justin Warfield

ture Cleerline fiber optics in single- and multi-mode configurations throughout the facility, including its two stages, main tracking/control room and seven writer rooms. “This will allow seamless recording from control room to stages, as well as writer rooms to the main tracking room,” Jaurigui says. “Live video and audio streaming can be conducted at the highest speeds with multicamera connections in each stage.”

On the bigger sound stage, Swing House also offers true “full-production” tour rehearsal. The studio can also offer live streaming concerts with multicamera editing on the property.



Some of NRG's choice gear.

NRG Recording Studios Upgrades, Adds Tons of Vintage Gear

NRG recently upgraded its studios to Pro Tools HDX and acquired a whole host of vintage guitar amps and combos, as well as analog delay units. “The idea is that with recording budgets being what they are, artists won’t have to rent gear when they book time at NRG Recording,” says Studio Manager Casey Lewis. “All of our floating gear, instruments and amps are included in the day rate.”

Some of NRG’s highlights include ‘60s Selmer True Voice Bass Master 50, ‘60s Selmer Zodiac, ‘70s Music Man HD 130, 1962 Fender Band Master, 1939 Gibson EH-185, 1962 Vox AC30, 1967 Dan-Electro DS-100, 1956 Watkins Dominator, 1968 Ludwig five-piece drum kit, Binson Echorec 2 Echo Machine, Dynachord Echocord Super Tape Echo,

and Watkins Copicat Tape Echo.

Meanwhile, NRG recently hosted the following artists: Musician Rob Zombie (drums and bass for new record) in Studio A with producer/engineer Chris “Zeuss” Harris, post-funk band The Main Squeeze (full tracking) in Studio A with producer Randy Jackson and engineer Keith Gretlein, metal band Fear Factory (drum tracking) in Studio B with producer Rhys Fulber and engineer Mike Plotnikoff, jazz bassist/cellist/singer Esperanza Spalding (full tracking for new project) in studios A and B with engineer Kyle Hoffmann (Spalding produced), and ska revival band The English Beat in Studio B with producer Dave Wakeling and engineer Hoffmann.



The Main Squeeze with Randy Jackson in Studio A at NRG.

SESSIONS: LOS ANGELES



BOULEVARD RECORDING

Boulevard Recording will welcome a 1971 40-Channel API console to its studio in late January. In session news, owner Clay Blair engineered all of the following recent projects at Boulevard: Hard-rock band The Cult was with producer Bob Rock (Rock also engineered)...Pow-

er-pop/new-wave band The Romantics were with producer Adrian Bradford (Bradford also engineered)...James King, singer-songwriter/guitarist from rock band My Morning Jacket, was with producer Kevin Ratterman (Ratterman also engineered)...Songwriter/guitarist Richard Thompson tracked a record live to tape (Thompson also produced)...Celtic punk band The Pogues were in the studio with producer Steve Lillywhite remixing the 1989 release *Peace and Love* (for a box set released this year) on a Trident 80C...Ben Ottewell, singer-songwriter/one of the lead singers for indie-rock band Gomez, tracked and mixed *Rattlebag* with producer Will Golden and assistant engineer Tyler Shields...Thirty Seconds to Mars mixed "Conquistador," with Lillywhite producing.



NightBird Recording Studios owner Jed Leiber and Ann Wilson at NightBird.



Julian Lennon at NightBird

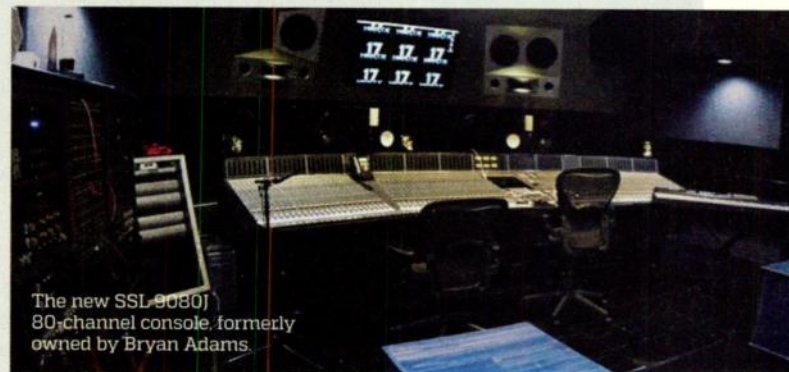
her album *Only Human*...Singer-songwriters Evie Sands and Billy Vera recorded *Queen of Hearts/Jack of Diamonds*, with Chip Taylor producing...Reggae artist Damian Marley and rapper Lupe Fiasco recorded a song for Fiasco's album *Tetsuo & Youth*...Singer-songwriter Michael Bolton recorded a couple of songs for an upcoming project...Rock band Nickelback recorded "What Are You Waiting For" and "Million Miles an Hour" from the album *No Fixed Address*...Singer-songwriter Cyndi Lauper recorded a couple of songs for a forthcoming project...Other artists who have stopped by the studio include z Chainez, Glyn Johns, Katt Williams, Brian May, Gavin DeGraw, Nas and Rita Ora.

NIGHTBIRD RECORDING STUDIOS

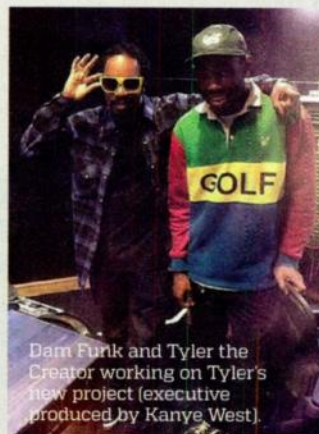
Pop-rock/pop-punk band 5 Seconds of Summer recorded "Long Way Home" (acoustic) and "Good Girls," off their EP *Good Girls*, with producer John Feldmann...Country-music group The Band Perry recorded a version of Glen Campbell's "Gentle on My Mind" as a single and part of the soundtrack for the documentary *Glen Campbell: I'll Be Me*. The recording was streamed

live to producer Dan Huff at Blackbird Studios in Nashville...Musician Julian Lennon recorded "All Together Now," a charity Christmas single from The Peace Collective...Rock band Heart recorded "Band on the Run" and "Letting Go" for *The Art of McCartney*, an album of Paul McCartney songs sung by various artists. The sessions were produced by Ralph Sall...Artist Cheryl Cole recorded "Crazy Stupid Love," "Waiting for Lightning," "Coming Up for Air," and "Goodbye Means Hello" off

17 Hertz Studio Adds Legacy SSL



Jason Gluz, president and CEO of 17 Hertz Studio, says he originally planned on buying a 56-channel SSL E/G—which had belonged to Prince—that was completely refurbished by the Desk Doctor. But then he heard that Canadian singer-songwriter Bryan Adams was looking to sell his SSL J Series board.



Dam Funk and Tyler the Creator working on Tyler's new project (executive produced by Kanye West).

"The owner of the [E/G] console kept changing his price due to the unforeseen circumstances of removing the console from the studio—construction, etc.," Gluz says. "My console broker, Primal Gear, mentioned that Bryan Adams was looking to get rid of his console in Montreal, and he negotiated a great deal for me. I made the decision to go from a 56-channel G to an 80-channel J. When the console arrived, man, was that one of the great-

est challenges of my life to get that thing up and running again. However, what it has done to the room aesthetically is amazing, and it has come in handy on my most recent rock projects. I feel like I went from console to spaceship control!" [Laughs.]

Additionally, 17 Hertz has seen a diverse roster of artists, producers and engineers come through its studio doors recently, including T.I., Tyler The Creator, Akon, Willow Smith, Chance The Rapper, Wyclef Jean, Boyz II Men to Bone Thugs-N-Harmony, Goodie Mob, CeeLo Green, Gareth Emery, Detail, 1500 or Nothin, League of Starz, Andrew Dawson, Marshal Bryant, JamSul, Sage the Gemini, Mally Mall, French Montana, Rita Ora, Luke James, Oscar Salinas, Rob Kinelski, Romeo, Kim Richards, Rocky Kramer, David Franklin, and Steve Olmon.

Gluz says the diversity creates opportunities for collaboration and cross-genre material. "I feel very hopeful for the future of music, and that the music on mainstream radio will slowly change and begin to have more substance and quality—both lyrically and sonically," he says.

SESSIONS: LOS ANGELES



Left to right: Assistant engineer Benjamin Rice, Bruce Springsteen, and assistant engineer Daniel Zaidenstadt



Skyzoo (foreground) and Brook Beats

UNITED RECORDING (FORMERLY OCEAN WAY)

A documentary, *Nathan East: For The Record*, has been filmed, with many key scenes shot at United Recording in both studios A and B. East, a legendary bassist, also recorded his debut solo album at United...Rockers Dave Matthews Band

RECORD PLANT

EDM DJ/producer Avicii was with Jon Bon Jovi in Studio SSL3, with Henrique Andrade engineering (Avicii also produced)...Pop singer-songwriter Katy Perry was in studios SSL1 and SSL3 with producer Dr. Luke and engineer Clint Gibbs...Songwriter/pianist/producer Alicia Keys was in studio SSL3 with engineer Ann Minciele (Keys also produced)...Bruce Springsteen was in Studio SSL2 with engineer Ron Angiello (Springsteen also produced).

YORK RECORDING

Artist Ryan Dilmore was producing himself in the studio with York owner/producer/engineer Tim Moore engineering...Soulful singer-songwriter Eric Kufs worked on *The Long EP*, with Moore producing and engineering...Brook Beats and rapper Skyzoo were in the studio, with Beats producing and Moore engineering...Indies/pop/rock band Easy Bear was in the studio, with Scott Ord producing and engineering.



Pictured in United Recording's renowned Studio B are (L-R) Ricky Lawson, drums; Jeff Babko, keyboards; Michael Thompson, guitar; Chris Gero, producer; Nathan East, bass; producer; Wesley Sideman, assistant engineer; Brian Lennox, engineer; and Tim Carmon, keyboards

and O'Donnell also produced)...Country-classical band Punch Brothers was in Studio B with producer T Bone Burnett and engineer Mike Piersante and assistant engineer Rouble Kapoor...Blues-rock/folk-rock band The New Basement Tapes were in Studio A mixing a few songs for *Lost on the River*, with Burnett producing and Piersante engineering (assisted by Kapoor).



The New Basement Tapes at Capitol

Studio A with engineer Keith Lewis and assistant engineer Gorski (Glasper also produced)...Singer-songwriter/producer Mary J. Blige was in Studio A doing a live performance, with producer Charles Gant and engineer Paakkari, and Jeff

CAPITOL STUDIOS

Blues-rock/folk-rock band The New Basement Tapes recorded *Lost on the River* in studios A and B, with T Bone Burnett producing and Mike Piersante engineering, and Charlie Pakkari, Chandler Harrod, Jake Gorski, and Steve Genewick assisting...Jazz pianist/producer Robert Glasper was in Studio A with engineer Keith Lewis and assistant engineer Gorski (Glasper also produced)...Singer-songwriter/producer Mary J. Blige was in Studio A doing a live performance, with producer Charles Gant and engineer Paakkari, and Jeff

Primacoustic... better design, better



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~ **Tommy Lee**
Founding member - Mötley Crüe.



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~ **David Rideau**
Engineer/producer - Janet Jackson, Sting, TLC, George Duke and Jennifer Lopez.



"The Primacoustic is up and kicking butt at my new studio in Santa Monica. I love the way the control and tracking rooms sound now... and so does everyone that records here!"

~ **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

Fitzpatrick assisting...The following artists did a live performance in Studio A for Capitol Music Group's "One Mic, One Take" series: Pop-rock duo Madden Bros, with Possum Hill producing and Gorski engineering; indie-rock band Glass Animals, with Hill producing and Paakkari engineering; and rock band Bastille, with Hill producing and Harrod engineering.



Grammy-nominated artist Sam Smith sings "Have Yourself a Merry Little Christmas" in EastWest's historic Studio 1.

EASTWEST STUDIOS

Singer-songwriter Sam Smith was in the historic Studio 1 working in his Christmas video...Producer/engineer Eddie Kramer was in studios 2 and 3 simultaneously working on music for German agency nhb...Producer/engineer Al Schmitt was in working on producer Emilio Estefan's Baha Mar project in studios 1 and 3... Pop and EDM producers Diplo and Skrillex have been working in Studio 5 with South Korean singer-songwriter CL.

STUDIO CITY SOUND

Chuck Negron, singer-songwriter/former vocalist in Three Dog Night, recorded and produced a solo album in studios A and C, with Tom Weir engineering and mixing. Negron recorded with daughters Charlie and Annabelle and former Three Dog Night drummer Floyd Sneed...Jazz singer/six-time Grammy nominee Tierney Sutton, along with guitarist Serge Merlaud and bassist Kevin Axt, were in the studio A for a live-to-radio broadcast and interview on NPR's "On Point," with Weir and Andrew Schwartz engineering...Blues/soul singer-songwriter Janiva Magness worked on her 10th album, *Original*, in Studio A with Dave Darling producing and Steve Valenzuela and Weir engineering...The Tramps—an emerging Rat Pack-



Chuck Negron and Floyd Sneed at Studio City Sound.

style boy band developed by Mark Vogel—were in studios A, B, and C working on their new single, "For The Very First Time," which was co-written by former *Full House* star John Stamos. Vogel and Stamos produced the song, and Schwartz engineered and mixed it...Alt-folk artist Sophia Pfister worked on her debut EP in studios A and C with musicians Greg Leisz, Steve Madaio and Mark Fontana. Pfister produced the project, with Weir engineering...Singer-songwriter/guitarist worked on an upcoming album in studios A, B and C, with engineers Weir and Schwartz.

In 2011, Studio City Sound expanded its services to include multicamera HD video and audio packages. Past events have been captured/broadcast live in-studio and from many remote locations around the Los Angeles area, including the 76th Anniversary Kristallnacht Commemoration Concert at The Wallis Annenberg Center for the Performing Arts. The Studio City Sound staff recorded a 40-piece symphony orchestra led by a collection of internationally renowned figures in Jewish music. Weir and Schwartz engineered the event, with Weir also mixing.



SERENITY WEST

Thrash-metal band Anthrax was working on upcoming material with producer Jay Ruston, engineer James Ingram and assistant engineer Micheal Peterson (Ruston also engineered)...Singer-songwriter Demi Lovato was with producer Sacha Skarbek, engineer Flo and assistant engineer Peterson...Singer Rihanna was with producer DJ Mustard, engineer James Royo and assistant engineer Peterson...Serenity West staff has also been working on material for TV shows such as *Ray Donovan* and *Garfunkel and Oates*.

performance, amazing results!



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~ Daniel Adair Drummer - Nickelback.

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

~ John Rzeznik

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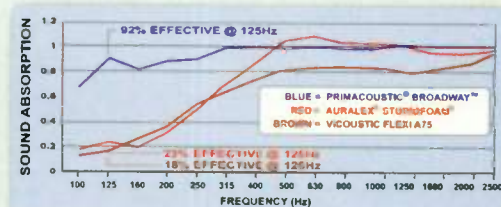
"We've got a mixture of bass traps, diffusion and clouds and the result was phenomenal. It ended up costing less than 25% of the custom solution and it turned out very cool."

~ Keb' Mo' - Grammy winner, roots-legend.

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"Not only does my room sound amazing, it's also really beautiful!!!" ~ John Rzeznik - Goo Goo Dolls.



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World Radio History

Continued from p. 18

Photo: Erick Anderson



Studio A, pictured on the cover with "Neve 6" console/control, Pro Tools HDX, more than 80 additional channels of high-end analog front end, and ATC and Focal monitoring.

"We started looking for a way to bring in musicians, but to have them also contribute to the overall Sweetwater experience," Hornsby explains. "We came up with a model that helped contribute to marketing, through product videos and tutorials to help the customers, while also working in the studios with artists. It's been a good combination, and luckily Don [Carr] and Nick [D'Virgilio] became available at the same time around July, followed by Phil Naish in August. We had all worked together before, and they saw what was going on here. It was a subtle pitch, but they knew we were building something more than a studio. We were building a production team, and we were bringing in these guys as musicians to help create

a sound. It's not just the gear, the studios have an extremely talented production team."

D'Virgilio is a drummer who was based out of L.A. and had been touring with Cirque du Soleil for the past five years, his gig coming to an end. He had worked with the likes of Genesis, Peter Gabriel and Tears for Fears in his career, along with his own band, Spock's Beard. He is today the in-house drummer, and he doubles up on product tutorials and video. You can see him, and his colleague Don Carr, all over the fantastic Sweetwater website.

Guitarist Carr hails from Nashville, and besides 30 years of session work and performing with the likes of Lorrie Morgan, Mark Chesnutt, Larry Stewart, Tommy Tutone and James Brown, he has for the past 23 years been lead guitarist for the Oak Ridge Boys, leading to gigs at the Mormon Tabernacle and the White House, among many others.

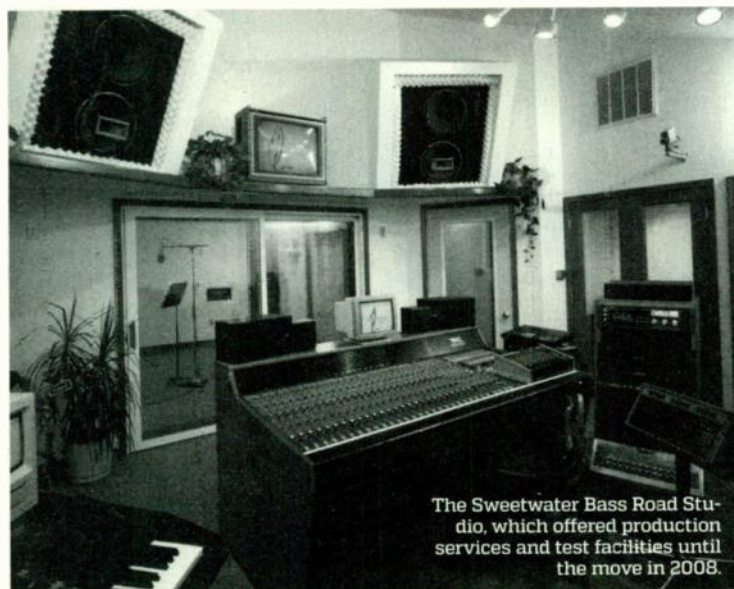
Producer Phil Naish is full time in the studio. He also hails from Nashville and is best known for his work on Steven Curtis Chapman's first seven albums, resulting in three Grammy Awards. His discography also includes work with Elton John, Kenny Rogers, Boz Scaggs, Kenny Chesney and countless others. Today he and Hornsby work hand in hand. He also loves the Yamaha MIDI grand in Studio A.

All have moved to Fort Wayne, admitting that while it is different than Nashville or L.A., it has its appeal at this point in their lives. They like the restaurants, the quality of life, and the opportunity to grow something new. Something that has no defined boundaries.

"The opportunity and the range of what we do here is huge," Naish says. "We can make up our own projects, from progressive rock to Christian. We always have a bunch of ideas in the works, and those are totally open ended, where we can call in different artists. On the other side of the coin, people can come in off the street and you get to play on their records. There's always something new. And unlike Nashville, we're not constantly on the clock trying to get a first take."

Fort Wayne is not likely to be confused with Memphis or Motown or Muscle Shoals anytime soon. The folks at Sweetwater acknowledge this while pointing out that it's the concept they are emulating. Fort Wayne is a town that's "just starting to get its swagger," Surack says, and with 800 Sweetwater employees, all of them musicians, it's a town with a heck-uva lot of live music. That impact is starting to be felt in the clubs, the schools and the arts organizations throughout the area, and it's encouraged by the spirit of giving back to the community that runs through the Sweetwater culture, starting with Surack.

"People come to work at Sweetwater to be around other creative, talented people," Surack says. "We're close to a number of big cities, the quality of life is fantastic, and there is so much live music that you don't have to pay to play when you're here. Fort Wayne is my home, and I've been very blessed. I feel like I haven't had to really work a day in my life!" ■



The Sweetwater Bass Road Studio, which offered production services and test facilities until the move in 2008.

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RobairReport

FUNDAMENTALS



By Gino Robair

As often as possible, we need to remind the people we mentor that the fundamentals of audio apply to both studio and stage.

And in many instances, the tools and techniques we use on either gig are not as different as they might think.

I bring this up because I often encounter students who are eager to get into the audio side of the music biz, but don't realize the breadth of opportunities that would be available to them if they were to have a solid foundation in audio technology. In other words, it's not the products you own that will ensure you have a long career, but the skills you acquire (as well as the ability to learn quickly and hustle up work). Of course, you need specialized training and plenty of hands-on experience to get the most out of a large-format studio console or a digital FOH rig. But a solid grasp of audio fundamentals is what you need to work your way into any aspect of this business.

One of the students in my Intro to Pro Tools class this semester is a live sound engineer who works regularly at a local club. He decided to take my course because he makes multitrack recordings of the shows, despite the fact that his recording setup—PreSonus Capture software fed by a StudioLive mixer/interface—is altogether different than the Avid-based gear we use at Diablo Valley College. But he sees that the skills needed to record quality audio are the same no matter what you plug into.

As it turns out, a large portion of the information we covered in class was directly applicable to his live sound gig: sound dispersion concepts, transducer info, mic placement, gain staging, signal flow, file resolution and mixing concepts, just to name a few. Although he already has a lot of experience, with hundreds of hours at FOH under his belt, he was very happy to fill in the gaps of his education in order to find ways to increase efficiency on the job.

What I got in return from this student was a reminder that the band, the club and the audience are the customers, not the other way around. And while we would sometimes like to believe that the customer-is-always-right concept doesn't necessarily apply here, they have to be kept happy, even it means having the patience of Job to do so.

In fact, our conversations would often focus on how little performing artists know about what's involved in doing live sound. They think that

setting up and doing a show at a venue should be a plug-and-play experience, like everything else in their lives.

Then again, why shouldn't it be?

They should not be distracted from doing their job because the venue didn't hold up its side of the bargain. Some of my best playing experiences (particularly in bands where we didn't have our own sound person) were in situations where everything stage-related was taken care of—power distribution was sorted out ahead of time, plenty of outlets provided, DIs were available when needed, and there were no grounding issues or noise surprises. And that's before we even started soundcheck.

Unfortunately, the venue size and its name recognition does not always guarantee performer satisfaction. The level of attention that puts a performing artist at ease requires a sense of pride and ownership on the

part of the tech crew, regardless if they're venue staff, union members or freelancers. Just like the musicians onstage, the person running sound has to want to get it right—and to make it right, without excuses, even if they're just filling in for the evening.

It's a given that very few stages (or whatever you call that corner in the back of the bar) are designed with music in mind. For example, it's likely that the power outlets are on the same circuit as the refrigerators, microwave, air conditioner, and who knows what else, resulting in AC lines that are noisy and messy when powering audio gear. If you are lucky, it won't play havoc with the amps and computers, while in the worst-case scenario it can be downright dangerous.

In these situations, pre-emptive troubleshooting, especially in an unfamiliar venue, is the key to customer satisfaction. That might mean getting out the multimeter and checking the outlets that will be accessed by the band. Or firing up the flashlight to look behind the desk for potential issues. It doesn't take an electrical engineering degree to predict where things can go wrong.

But it does take a deep understanding of the basics, which can then be applied to every issue that comes up—foundational information that, ultimately, will translate to any gig you get and keep those doors of opportunity open. Because keeping the customer happy requires a lot more than an encyclopedic knowledge of the key commands used in a digital audio workstation. ■

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Tech // reviews

RASCAL TWO-R MICROPHONE PREAMP

Boutique Gain Box with DI



The Rascal Two-R uses a three-stage gain design, providing many ways to dial in tone from clean to overdrive.

Rascal Audio is a “quality at all cost” company that, until now, has had just two products: the Analogue Tonebuss summing box and the Two-V dual 500 Series mic preamp. The Two-R reviewed here is a rackmount unit version of the Two-V, adding an integrated power supply and DI inputs. All Rascal Audio products are designed, built and assembled in the U.S. by lead rascal and product designer Joel Cameron, who handpicks components based on their impact on circuit performance. It’s not just about bench specs but how the parts sound in use.

The input and output transformers were developed in collaboration with Ed Anderson and Dave Peterson from Altran, which manufactures both transformers for Rascal. Cameron’s goal was to “find a transformer combination that produced a dynamic, responsive, natural organic character with a little bit of butter/richness to the sound that would always give a vintage vibe, yet treat delicate signals with a respect that the typical Neve clunkiness didn’t have.” The Hi-Z input feeds the mic input transformer, putting any instrument through the entire circuit. But the metal inside is just part of the story. Other features include a HZ/LZ switch, highpass filter, polarity flip and an LED-lit phantom-power switch.

The Two-R takes its lineage from Neve circuit designs that use three gain stages along the circuit path. Cameron simplified the design using only two gain blocks for lower settings, using a six-position gain switch starting at 40 dB, then increasing in 6dB steps up to 70 dB. The Two-R also features two other, completely variable input gain stages to take you between the steps, and an output trim knob, which is where the personality of the unit comes in.

RASCAL PERFORMANCE

I first used the Two-R to record a kick drum using a reissue of the Neumann U 47 FET on the outside of the front head. This combo

was paired with an AKG D12 VR with the EQ set to full boost and cut (position 3), then sent through the second channel of the Rascal. I started both units with the Two-V set to the 1-volt settings that I discovered during our bench tests (more on that below). The sound was solid and full-bodied, with the attack nicely represented by the chain. The low end was also well represented, with plenty of chest tone in the 50Hz range.

On another session, I used the Two-R to gain up two Royer R-121 microphones over a drum kit. The Two-V gave me plenty of gain without any discernible noise at the highest settings needed to represent the Royers on the Pro Tools meters. These mics, like all ribbons, cry for clean gain, and it’s sometimes tough to find a preamp that has both clean gain for quieter passages and personality to properly represent hot transients. In both cases the Two-R brings the goods.

Next, we used the Two-R to record Nashville’s mother/daughter vocalists Two Steel Girls in Blackbird’s Studio B. We used two vintage vocal mics—a Neumann U 47 and Telefunken 251, both powered by the Two-R. The chain on the insert of both channels was first an LA-2A providing moderate compression at 4 to 6 dB at the peaks, then a GML 8200 adding just a bit of top at a 10dB shelf with the gain at +1.5dB. Once again, I started the gain setting at the 1-volt output and used the final output trim to send gain downstream to the LA-2A at the proper level to push the gain reduction meter according to plan. Both women sounded fantastic through the chains, with great definition and natural presence across the vocal range. The vocals sat nicely on top of the track and hit the reverb perfectly.

TRY THIS

Because any analog device can sound different from another, even a stereo unit, first patch your audio into the left channel, record several short passes at different gain settings, then try the same sequence using the right channel. It may sound the same, or you may find that you enjoy one side more than the other, especially at higher gain settings when things may start sounding different. Dig in and enjoy the disparity.

To find the full personality potential of the Two-R, I recorded a guitar through a Fender Deluxe amplifier using a Sennheiser 421 and a Neumann U 87, both powered by the Rascal. I purposely pushed the input to the max setting and brought back the output trim to adjust levels to Pro Tools. The center knob was used for fine-tuning at this point, which I could use to add or subtract personality by fussing with the three controls. The tri-fecta of gain made for an interesting way to dial in various levels of roundness and edge to the tone, which I further brought out by adding substantial gain at 2.5 kHz using a Maag Audio EQ2.

ON THE BENCH

We first heard and bench tested an early production model of the Two-R using our Stanford Research SR-1 audio analyzer. On this first unit, the crosstalk was inconsequential. Then we compared THD+N between channels at the six steps provided by the first knob. We found a sizable difference between the channels, enough so that I alerted the company and they sent another unit. The second unit was more in line with expectations, only showing a difference between channels when we approached clipping. With the new unit, channel 2's noise was higher than channel 1's at all stepped settings, but there was a 10 to 12dB difference between the distortion produced by channels 1 and 2 between 20 Hz and 200 Hz at 70dB of gain (see Figure 1, and the rest of the bench tests at mixonline.com).

The noise disparity is due to the second channel's proximity to the 48-volt switching power supply inside the box. When brought to their attention, Rascal Audio promised a redesign of the chassis for all future production to provide a shield around the psu. There were also some instances of connectors being board mounted on one channel and wired/soldered on another, which could account for some difference.

Another plus of putting the two units through the SR-1 is that it gave me a benchmark where the unit was outputting 1 volt—just under the 1.22 volts produced at +4dBu. On the first unit, we achieved this by setting the output trim all the way clockwise, the variable input gain

PRODUCT SUMMARY

COMPANY: Rascal Audio
PRODUCT: Two-R
WEBSITE: rascalaudio.net
PRICE: \$1,985
PROS: Clean machine, or not. Plenty of personality.
CONS: Some slight differences between channels in THD+N at higher gain levels.

knob at 12 o'clock, and the stepped input gain knob at "52." On the second unit, there was more gain, and we achieved the 1-volt output with the left and right knobs set the same, but the center gain knob at 9 o'clock—a 25 percent difference in the knob setting.

CHEEKY RASCAL

The Rascal Audio Two-R is a personality product. You can buy cleaner preamps, but there's room for everyone in the recording game. The Two-R

is more Chandler than Millennia, and more old-Neve than Grace Design. I was able to dial in gain giving clean, beefy transformer love to drums and silky, overdriven grunge to hard-played guitar. It sounded great with the gain/drive set in between on female vocals paired with classic Neumann U 47 and Telefunken 251 tube mics.

Even though we went deep into the diagnostics and found some differences between the channels and gain on two different units, I wouldn't put that into the minus column. It just gives you more to work with. Like old (or new) guitars, and great tube amps or compressors, they're never the same. Life would be boring otherwise. So if you're tastes lean to the dull and monotonous, don't buy the Rascal Two-R. This rascal has character to be treasured. ■

Kevin Becka is Mix's technical editor.



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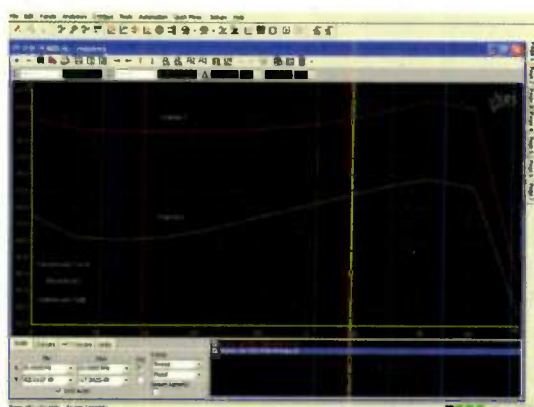


TITAN
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"Nothing else compares, I will never give up my Prism Sound interfaces."
 The owner "Super Dope" Chris Quire



TITAN
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monitor is bundled (at no extra charge) with an IsoAcoustics ISO-L8R155 speaker stand, which provides adjustable tilt and acoustic decoupling.

The mkIII's frequency response is stated to be 49 Hz to 24 kHz, ± 3 dB, and the drivers' DSP-based crossover is positioned at 2.1 kHz using a 12dB/octave slope. Maximum peak SPL at 1 meter is cited to be 116 dB. The warranty period is two years when purchased inside the EU but, oddly, only one year when purchased outside. The operating manual is somewhat lacking in technical details, such as corner and center frequencies for the built-in shelving and notch filters, which I obtained through inquiry.

The optional Dynaudio External Volume control provides continuously variable level adjustments for both monitors at once from a remote position. The remote provides a molded, 4-pole mini plug at each of two ends of a very thin Y cable; you insert each plug into a "remote" jack on the back panel of an mkIII monitor. The Y cable's length and split point are such that the first monitor's connection must be no more than six feet from your remote (mix) position—which is reasonable—and the two monitors must be no more than about 2.5 feet apart from one another, which is severely limiting. The Y cable—hardwired to the remote—and the molded mini plugs are not easily substituted. I much preferred using my mixing console to control the monitors' level so I could place them farther apart.

BM9S II SUBWOOFER

The BM9S II was specifically designed to complement the BM Compact mkIII or BM5 mkIII (another monitor in the same product line). The sub measures 11.4x11.4x11.8 inches (WxHxD) and weighs 19.4 pounds. It features a single woofer with a magnesium silicate polymer cone protected by a detachable fabric grille that covers the entire front face of the unit. Dynaudio cites the woofer to be 10 inches in diameter, but I measured it to be only 7.5 inches. The sub is driven by a 200W amplifier.

The BM9S II's rear panel features six XLR connectors serving I/O for the left and right channels and "LFE Slave." Your full-bandwidth control-room monitor outputs should be connected to the left and right channel inputs. Route the left and right channel outputs to the Compact mkIIIs. The LFE Slave I/O connectors are used for adding one or more additional BM9S IIs when using an external bass management system: Route your LFE channel to the slave-input connector, and patch the slave-output connector to the next sub in line. When you set a provided switch to slave mode on each of the additional subs, their phase and volume controls will be bypassed and associated adjustments controlled by the master sub.

Set the provided phase switch to 0 or 180 degrees to align the sub's phase with that of the mkIII satellite monitors. A built-in highpass fil-

PRODUCT SUMMARY

COMPANY: Dynaudio Professional

PRODUCT: BM Compact mkIII and BM9S II

WEBSITE: dynaudioprofessional.com

PRICES: BM Compact mkIII: \$999.99 each; BM9S II: \$1499; External Volume control: \$99 (all MSRP)

PROS: Very good imaging and transient response. Exceptionally wide soundstage. Generous feature set. MkIIIs are bundled with IsoAcoustics decouplers.

CONS: Fatiguing high end. Understated midrange. Pillowy bass reproduction. No gain pot on Compact mkIII. Remote cable is unreasonably short. Short warranty period for buyers outside the EU.

ter serves the satellite feeds; it can be set to 60Hz or 80Hz corner frequency (or bypassed) to marry the mkIIIs' frequency response to the subwoofer's. An LPF filters the BM9S II's frequency response (and that of connected slave subs). You can adjust the LPF's cutoff to be anywhere between 50 Hz and 150 Hz in continuously variable fashion, using a rotary knob. Another rotary knob controls gain for the sub; unfortunately, I found it (and to a lesser degree, the HPF knob) offered physical resistance throughout some of its adjustment range. A two-prong AC-power receptacle and power switch finish off the BM9S II's rear panel. The included, detachable AC cord is a generous eight feet long.

The BM9S II's unfiltered frequency response is cited to be 29 Hz to 250 Hz, ± 3 dB. The operating manual needs to be updated; included diagrams don't accurately reflect the BM9S II's current control layout.

CRITICAL LISTENING TESTS

The ISO-L8R155 speaker stands' adjustable tilt was a definite plus, allowing me to precisely point the mkIIIs' tweeters at my ears. Listening to my own mastered mixes with the mkIIIs' filters nulled and without the subwoofer installed, imaging was very good and the soundstage exceptionally wide. The monitor's transient response also sounded very good, but stick hits on trap drums sounded a little thin. The mkIIIs produced a lot of high-frequency detail—too much, in fact, in comparison to reproduction of the midrange band. Even with the HF switch set to -1 dB to soften the highs, the sound was a bit thin, edgy and fatiguing. The bottom end also sounded pillowy (not tight).

Adding the BM9S II subwoofer reinforced the bass band nicely. I obtained the most seamless bottom end by passing full-bandwidth signals to the mkIIIs and setting the sub's LPF control and gain knob near the 12 o'clock mark. But as much as the subwoofer helped the spectral balance, I still felt I was hearing a wide trough in the middle of the midrange band.

THE VERDICT

Considering how expensive the BM Compact mkIII and BM9S II are, I expected excellent spectral balance, flawless quality control, accurate documentation and a generous warranty. Unfortunately, the system as a whole came up short in all regards. While the BM9S II performed well and offers all the features you could hope for in a subwoofer, there are much better-sounding monitors than the Compact mkIII for less than half the price. ■

Mix contributing editor Michael Cooper is a recording, mix, mastering and post-production engineer and the owner of Michael Cooper Recording in Sisters, Oregon.

Imaging was very good and the soundstage exceptionally wide. The monitor's transient response also sounded very good.



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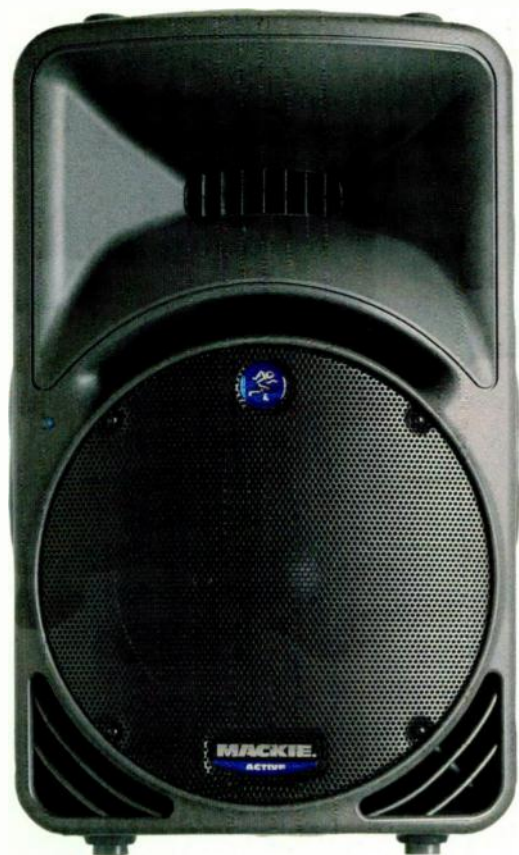
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MACKIE SRM450 POWERED SPEAKER

500 Watts RMS, 2-Channel Mixer With DSP



Each SRM450 offers a built-in 2-channel mixer with a Thru port for connecting other speakers.

Mackie has been making a wide range of live sound products for decades, ranging from small portable solutions to larger event and main stage setups. The new SRM450 powered speakers, touted as portable yet built for abuse, offer high wattage in a professional sounding and self-contained unit for the everyday light and heavy P.A. system duties.

The SRM450s weigh 37 pounds each, measure 26x16x15 inches (HxWxD) and are constructed of polypropylene. The outside is black and textured with a metal speaker grille that has a weather-resistant coating. Each box offers three M10x1.5x20mm fly points, and the rear right side of the box is angled at 45 degrees for use on its side as a floor monitor. Pole stand ports on the bot-

tom are provided for speaker stand mounting, along with a tightening screw to help lock the speaker tightly to the pole. There are also feet on the bottom of the cabinet that align with receptacles on the top of the cabinets for stacking and keeping them from sliding around when moving them with a dolly.

For easy transport, the SRM450s use two rounded and recessed side handles with ample hand room. They are mounted vertically, so when lifting them up your hands are at the correct angle. There is also a recessed metal flat handle on top, allowing you to quickly and easily pick up the SRM450 then switch to the two outside recessed handles and lift them up and place them on pole-style speaker stand or into a truck.

POWER, DSP, CONNECTIONS

The SRM450 uses a 400-watt RMS (800 peak) Class-D amplifier feeding a 12-inch custom low-frequency driver and 100W RMS (200 peak) Class-A/B amplifier feeding a 1.4-inch titanium dome compression driver. The amplifier and power sections have thermal protection, and the audio inputs include peak and RMS limiting using Mackie's Smart Protect DSP. While on the subject of protection, the SRM450 includes a 4-band automatic Feedback Destroyer that worked well on higher feedback squeals, but during my testing it never grabbed any of the lower feedback issues such as a microphone hum around the 200Hz range. Most users will find the feedback destroyer usable and a nice bonus.

The SRM450 comes with a selector to access the four preset EQ curves that help voice the speaker for various locations and styles of music. Mode 1, called PA, is the setting I ended up using all the time. The PA setting is a flat response versus the other three settings, which add a DSP-based EQ curve to the signal path. Mode 2, called DJ, adds a boost to the lows and highs, while Mode 3, called Mon, is the setting when using the SRM450 as a floor monitor. Mode 4 is called Solo and is suggested for acoustic/vocal applications. The different settings do change the sound, but I never felt they sounded as good as the Mode 1 standard setting. Even when trying each setting in its suggested application, I found the EQ curves added a phasey, sometimes a boxy, tonality with a loss of clarity.

TRY THIS

If you're looking for better bass response, place your integrated speaker (woofer and tweeter) on the ground instead of on a speaker stand pole. While the pole will get them up above the crowd and throw better to the back of the room, coupling with the floor will add more boost for your bottom end. It's a trade-off, but depending on your application, placing them on the floor may be a better solution.

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676

Tube Microphone Preamp
Channel Strip



The 676 represents all of the best of dbx's more than 40 years of dynamics processing. The 676 offers a pristine high-gain Class-A tube preamp section that runs on 250 volts, so your signal can be as crystal clean or dirty as you need it to be. The 676 also incorporates the compressor/limiter design from the highly-sought after 162SL, as well as a 3-band parametric EQ with sweepable mids. The 676 provides the user with the perfect channel strip for recording and live applications alike with its military-grade build and vintage-inspired controls, VU metering and state-of-the-art optional digital output card.

For more information about the 676, please visit dbxpro.com.

676 Key Features

- Class-A Vacuum Tube Preamp with High Voltage Gain
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- Compressor designed from 162SL
- 3-Band Parametric EQ
- 1/4" and XLR Inputs and Outputs
- Front Panel Instrument Input
- Side Chain Insert
- Optional Digital Output Card

dbx
by HARMAN

The mixer on the back panel allows the SRM450 to be a truly self-contained P.A. system. Mackie has really put some brainpower into the design and functionality. The inputs are on combo XLR/TRS ¼-inch jacks, which can accept anything from an instrument, dynamic mic or +4dBu line level. There is no phantom power available on the unit, so dynamic moving coil microphones will be your only choice. There is a Thru output on each speaker for feeding another SRM or other destination, and each channel offers 50dB of gain. Channel 2 on the mixer also provides stereo RCA input jacks for connecting an unbalanced play-back device.

PRODUCT SUMMARY

COMPANY: Mackie

PRODUCT: SRM450

WEBSITE: srm.mackie.ccm

PRICE: \$629 (each)

PROS: Good-sounding, feature-rich, built-in mixer, daisy-chain multiple units, Feedback Destroyer, very portable.

CONS: Feedback Destroyer missed low notes ringing out, no phantom power for XLR inputs

The low end is represented well enough, so the SRM450s can handle most applications, especially when only vocals are run through them. However,

THE SOUND

I used a pair of SRM450s both in a live band setting and for pre-recorded music. I found that whether I was feeding the speakers from an outboard mixer or using the built in mixer, the sound was smooth, full-range, clear and produced a good stereo image; it seemed a little noisy when idling. The ambient hiss contains computer noise mixed with the hiss you would expect. If used in a setting with crowd noise or other ambient hash from fans, guitar amps, etc., the speaker hiss will be masked.

shows with a full band would need a subwoofer for added impact. Mackie pairs the SRM1850 subwoofer for cases like this, designed as a match for the SRM450.

At a rehearsal, I set up a pair of SRM450s on speaker stands facing the band. The singer's mic was plugged into Channel 1 of Speaker 1. I then took a 30-foot mic cable from the Thru output of Speaker 1, a second SRM450. I adjusted the volume on each and away we went. The sound was loud and clear out of both SRM450s.

For another setup, the singer's mic was plugged into Channel 1 of Speaker 1 and the guitar player's vocal microphone was plugged into Channel 1 of Speaker 2. I set the Thru switch to CH1 on both speakers, so only Channel 1 would pass through to the other speaker. I used two 30-foot XLR cables from Speaker 1's Thru into Speaker 2's Channel 2 input and then from Speaker 2's Thru to Speaker 1's Channel 2 input. Now the guitar player who is closer to Speaker 2 can then adjust how loud he is in Speaker 2 by turning up his mic in Channel 1, and the singer's feed in Speaker 2 by adjusting the Channel 2 volume. The singer can also adjust separately his or her own singing volume using Channel 1's gain control and the guitarist's vocal volume with Channel 2.

It sounds more convoluted than it really is, but now both performers have their own mix with no outboard equipment needed. Conversely, if both the singer and guitarist vocal mics were plugged into a single SRM450 and then the signal was mixed and sent to a second SRM450, the two speakers would share a single mix. But through various routing schemes, separate mixes at each of the two speakers are possible.

ARE THEY GOOD?

The SRM450 is a fantastic speaker for smaller P.A. applications. They are light, loud and sound very good. It's a feature-rich product that should be at the top of the list for anyone who uses a portable P.A. system. I'm really impressed. ■

Tim Dolbear is an Audio Engineer and Producer at Eclectica Studios in Austin, Texas.



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Photo by Peter Ellenby

"Last year Tiny Telephone partnered with Minna Choi and her Magik*Magik Orchestra, a modular group of symphonic players that can be ordered up as needed, from a single bass clarinet, to a 60-piece ensemble.

The enormous amount of string and orchestral work we started doing revealed startling flaws in our vintage mic collection: between problems of self-noise, variations within pairs, and issues of fidelity, we just couldn't rely on 60 year-old microphones to get us through a live chamber ensemble.

Then I discovered Josephson Engineering. I was blown away. It was like summer love. After a decade of collecting tube mics, I quickly auctioned them off and bought everything Josephson Engineering made."

- John Vanderslice
 (Owner, Tiny Telephone - recording studio)



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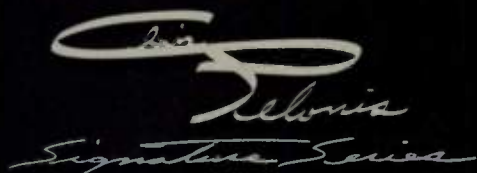
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MODEL 42 MKII patent pending

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World Radio History

Don't Forget to Stretch



By Kevin Becka

At the start of every new year, I like to take an assessment of my studio life, looking at both the gear I have at my disposal and the skills I bring to a session. Every year I'm looking to push my boundaries. Sometimes it's a new technique I've picked up that makes me research and then purchase a certain piece of technology. Other times it's a piece of technology that comes out and inspires me to adopt a new technique or way of working. The two go hand in hand.

With that in mind, I've recently found some great affordable tools, both old and new, that have pushed me to try new things while extending my skills in the process.

The Fabfilter Pro Q2 plug-in (\$199) makes using M-S techniques both easy and understandable. You can use the plug as a stereo EQ, but when you set it to stereo M-S, the labels change from L/R to M/S so you can quickly get your head around what you're doing, and hearing. It has a built-in matrix decoder and a pan knob giving you the tools you need to mix recorded M-S feeds to stereo, and you can also separately EQ M and S through the interface. For example, pushing the S button (side), and filtering everything below 100 Hz makes everything at the bottom end of your mix, or M-S stereo pair of mics, mono. We can't readily discern stereo image at this frequency anyway, so this acts to tighten up the bottom end. You can then build in a boost at the higher end to enhance the image where we're most sensitive to stereo info. This plug-in, and the techniques, also work with a traditional, non-MS stereo pair of mics. The plug-in's interface is elegantly done, and while you can get into trouble in overusing it, it's worth exploring your understanding of M-S and how it works to a higher level.

One of my favorite plugs is the bx-digital V2 EQ. It not only does traditional and M-S EQ'ing as mentioned above, it adds Bass and Presence shift and a wicked simple, full-range de-esser. It's a two-knob design with one control selecting the frequency between 20 Hz and 20 kHz and the other setting the amount of cut. It takes the concept of de-essing to the next usable level. I've used it to take woofy tones out of a bass or guitar amp, presence peaks out of vocals both in and out of the "S" range, and tamed mid-range instruments so they sit better in a mix. When you click and hold the frequency knob on any band, it isolates the frequency while you're

adjusting until you let go. It's brilliant and under \$100.

My favorite mind-blowing 500 Series processor under \$800 is Empirical Labs' Doc Derr. I call it my miracle maker. Not only does it have a great-sounding 3-band EQ with 21 preset frequency choices, but it's a tape simulator, very usable one-knob compressor with parallel control, two-stage highpass filter, and an instrument/line amp—all in a singlewide unit. The only thing I've wished for when using this on difficult and/or great-sounding tracks is more of them.

I recently found a great book from Hal Leonard that can advance your practical skills and understanding of what goes on under the lid of preamps, processors and more. *Electronics—Concepts, Labs, and Projects* by Alden Hackmann has all the definitions and explanations you'd expect from a tech book, but adds cool DIY projects, and loads of Web content related to the book.

I mentioned last month that I was waiting for my Ultimate

Ears, Capitol Studios-tuned IEMs. They have changed how I work. They are dead flat and unhyped in any way, so I like to add some love at the bottom end, but the detail and intimacy with the music they give me is unprecedented. My sources are either mixes up to 96 kHz, or CDs burned through the Apple

Lossless encoder and heard back through the Wolfson DAC on my Galaxy S5.

What I first noticed is new panning detail on music I was very familiar with and have heard back on great systems. On one track in particular I noticed the vocal was slightly panned to the right so the engineer could make room for some ambient "people having fun" sounds that fit in with the theme of the lyric. I then jumped to other tracks and started zoning in on panning, and was surprised over and over with sounds I knew were there, but never heard them so isolated and in such a perspective within the track. It gave me a better appreciation of what the mixer was doing and made me think I need to extend my end-of-mix listening experiences beyond the large/small/mono/headphones/boombox/car options I usually go through. These won't replace headphones, but they are another great stretch for my process.

At this month's NAMM, I'll be looking for new gear and techniques in our great and growing world of audio. To find your new stretch, be sure to tune in to the pages of *Mix* or check out our new Website. We're at mixonline.com. ■

***I was surprised with
sounds I knew were there,
but never heard them
so isolated.***

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Averged Sevenfold
Barbra Streisand
Barenaked Ladies
The Beach Boys
Beastie Boys
Beck
Bela Fleck
Bette Midler
Billy Idol
Billy Joel
Billy Ray Cyrus
Billy Sheehan
Björk
The Black Crowes
The Black Eyed Peas
The Black Keys
Blake Shelton
Bob Dylan
Bon Jovi
Bonnie Raitt
Bootsy Collins
Boston Pops
Brad Paisley
Bruce Hornsby
Bruce Springsteen
Bruno Mars
Bryan Adams
Buddy Guy
Butch Walker
Cannibal Corpse
Casting Crowns
CeCe Winans
Celine Dion
Cheap Trick
Chicago
Chick Corea
Chayanne
Chris Cornell

The Chieftains
Chuck Rainey
Cyndi Lauper
Cirque Du Soleil
Clint Black
Coldplay
Colin James
The Corrs
Creed
Crosby, Stills & Nash
Crowded House
Damien Rice
Dandy Warhols
Daniel Lanois
Dave Matthews
Deadmau5
The Decembrists
Def Leppard
Derek Trucks
Destiny's Child
Devin Townsend
Diana Krall
Dimmu Borgir
Disney
Dixie Chicks
Dolly Parton
Doobie Brothers
Doves
Dream Theater
Duran Duran
Dwight Yoakam
The Eagles
Econoline Crush
Elton John
Eminem
Emmylou Harris
Enrique Iglesias
Eric Clapton
Eric Johnson
Erykah Badu
Evanescence
Extreme
Faith Hill
The Flecktones
Fleetwood Mac
Flogging Molly
Florida Georgia Line
Foo Fighters
Foreigner
Frank Filippetti
Franz Ferdinand
Garbage

Gavin DeGraw
Genesis
Gino Vannelli
Glen Ballard
Godsmack
Gomez
Goo Goo Dolls
Good Charlotte
Gov't Mule
Grand Ole Opry
Green Day
Gregg Allman
Guns N' Roses
Gwen Stefani
Hall & Oates
Herbie Hancock
Hoobastank
House of Blues
Hunter Hayes
INXS
Imagine Dragons
Iron Maiden
James Taylor
Jamie Cullum
Jamiroquai
Janet Jackson
Jars of Clay
Jason Mraz
Jeff Beck
Jennifer Lopez
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Joe Chiccarelli
Joe Jackson
Joe Nichols
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Joe Walsh
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John Patitucci
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Journey
Juanes
Justin Timberlake
Kaiser Chiefs
Kanye West
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Katy Perry
k.d. Lang
Keb' Mo'
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Kellie Pickler
Kenny Chesney
Kenny Loggins
The Killers
Kings of Leon
Kitaro
Korn
KT Tunstall
Lady Antebellum
Lady Gaga
Lamb of God
LeAnn Rimes
Lenny Kravitz
Leo Kottke
Leonard Cohen
Linkin Park
Lucinda Williams
Lyle Lovett
Macy Gray
Manowar

Marcus Miller
Mariah Carey
Marillion
Mark Egan
Mark Knopfler
Mark Tremonti
Maroon 5
Marty Stuart
Matchbox 20
Meatloaf
Megadeth
Melissa Etheridge
Rod Stewart
Metallica
Michael Bublé
Motley Crüe
Motörhead
Mumford & Sons
Muse
Nathan East
The National
Neil Young
Nelly Furtado
Nickelback
Nine Inch Nails
Oak Ridge Boys
One Direction
OneRepublic
Pat Metheny
Paul McCartney
Paul Simon
Peter Gabriel
Pink Floyd
Placebo
The Police
Porcupine Tree
Prince
The Prodigy
Queensrÿche
Radiohead

Randy Bachman
Randy Brecker
Randy Travis
Rascal Flatts
R.H. Chili Peppers
Rick Wakeman
Rickie Lee Jones
Ricky Skaggs
Rihanna
Ringo Starr
Robert Plant
Robert Randolph
Rod Stewart
Roger Waters
Rolling Stones
Rush
Ryan Adams
Sam Roberts
Sammy Hagar
Santana
Sarah McLachlan
Seal
Sevendust
Shakira
Shania Twain
Sheryl Crow
Shinedown
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Skunk Anansie
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