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Studio A, clockwise from bottom
left: MS Smith, Paula Salvatore,
Don Was and Alex the Kid.*



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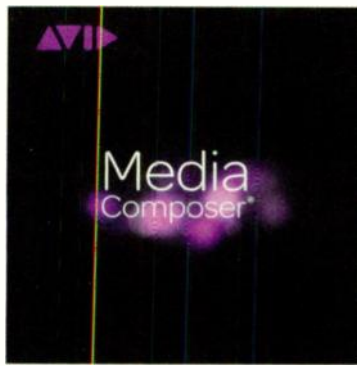
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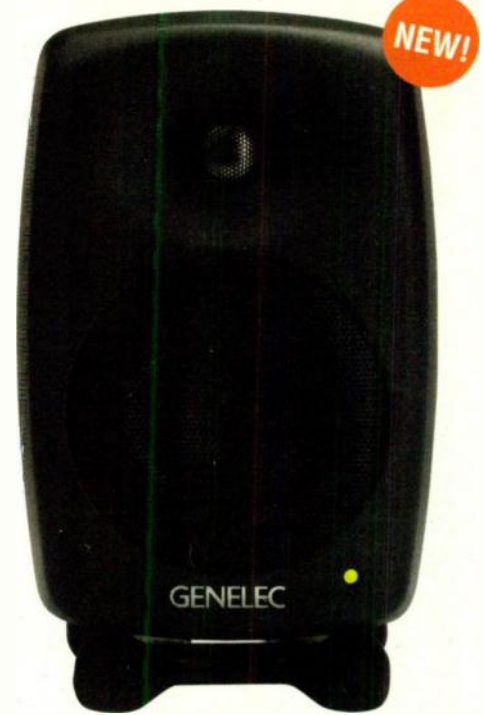
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World Radio History

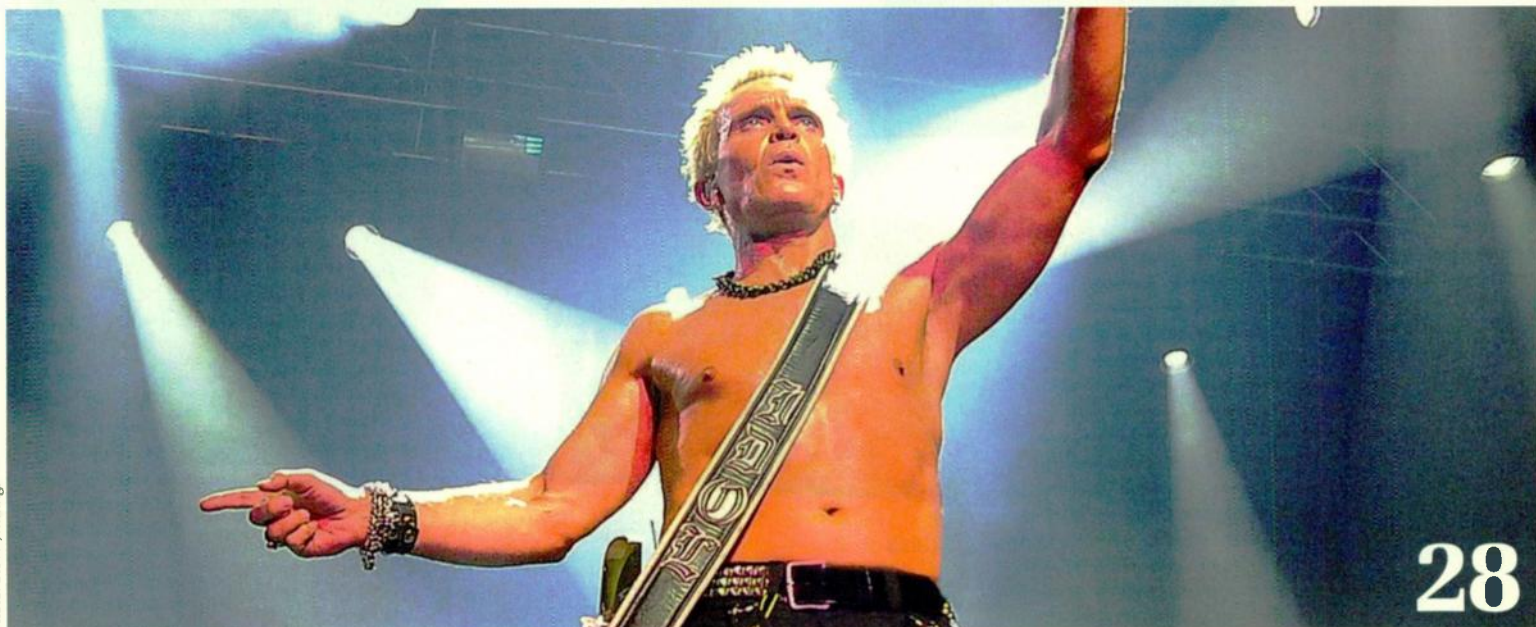


Photo: Steve Jennings

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On the Cover: Clockwise from front left: Al Schmitt, Paula Salvatore, Don Was and Alex da Kid set up for a true audio lunch in Capitol Studio A. **Photo:** Paul Moore

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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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From the Editor

WHERE LEGACY BECOMES FUTURE

When we last featured Capitol Studios on the *Mix* cover, in November 2012, we invited a whole gang of L.A.'s finest engineers and producers, friends of the Capitol family, to stop by and fill out our gatefold spread. Inside we told the story of the new Neve 88R in Studio A, and the tweaks to the acoustics in the control room. There were hints at a new direction coming to the famous Capitol Tower in Hollywood, and there were a few more EMI folks milling about, along with a bit of construction on some of the middle floors. Still, there was no hint of the rapid and full-body makeover the company, the building and the studios would undergo over the ensuing two years. Perhaps we were a bit too early.

That same month the cover came out, two months after the final sale of EMI to Universal Music Group, Steve Barnett was named Chairman/CEO of Capitol Music Group. Things started to happen, and happen fast. The upgrades that began under EMI ramped up. The entire Tower, an iconic studio/office space, was completely remade. Money was earmarked to upgrade the rest of the studios, along with the wiring, power, hallways, carpets, walls, bathrooms, lounges, scheduling systems—everything a client might see and not see.

New people were hired, staff moved in from New York, and new partnerships were formed—with the likes of producers RedOne and T Bone Burnett. John Mayer has been in for months working on his next record. Last month producer Alex da Kid (on UMG label Interscope) took over most of the second floor. The Tower very quickly became the worldwide headquarters of Capitol Music Group, under the UMG banner.

For regular visitors, the physical transformation was profound. What once looked dated, now looks modern, with glass offices, natural light and a consistency throughout the building. The Platinum

and Gold Records came down off the walls and artwork went up, a physical reminder that the future had arrived. The company culture was changing, in a most positive way. Morale throughout the building picked up.

On the artist side, meanwhile, the company signed Sam Smith, then Bastille, then Beck and others. On Grammy night 2015, Capitol Music Group cleaned up. Everything was fresh and new.

And yet, this is Capitol Studios, and Capitol Records, with one of the most storied legacies in all of music. The home of Sinatra, Nat King Cole, the Beach Boys, and so many others over the past 70 years. It's no mean feat to balance that rich legacy—and its associated catalog—with the instant demands of the present, with all the streaming and downloads and 5-minute attention spans. How do you convince people that you're cutting edge when they want to talk about Sinatra's Telefunken U47?

"If you go back to 1957-58, Capitol was definitely on the cutting-edge," says Art Kelm, Capitol Studios VP/General Manager/Chief Engineer. "It just so happened that they were using Neumann tube microphones and custom consoles. Then the cutting edge meant that you built your own stuff. So we're building off that past, continuing the legacy."

"The way you honor the legacy is to continue moving it forward," adds producer Don Was, president of Blue Note. "They are inextricably linked together."

So there you have it. All 13 floors of the Capitol Tower are buzzing. The past has become future. And all of it will be out in hi-res audio soon. Vinyl, too. Bet on it.

Tom Kenny, Editor



Welcome to NAB 2015

The 2015 NAB Show will be held inside the Las Vegas Convention Center, with conferences taking place April 11-16, and exhibits from April 13-16. Attendees who represent Broadcast, Digital Media, Film, Entertainment, Telecom, Post-Production, Education, Houses of Worship, Advertising, Military/Government, Retail, Security,

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From left: Steve Venezia, Bob Bronow, Jeff Wexler, former CAS President Richard Lightstone, Walter Murch, former CAS President Melissa Hoffman, Secretary David Bondelevitch, Vice President Phil Palmer, outgoing CAS President David Fluhr, Sherry Klein, Tomlinson Holman, Karol Urban, John Coffey, Ed Greene, former CAS President Edward Moskowitz, Peter Devlin, Glen Trew and Treasurer Peter Damski.

completing Ulano's term. The new CAS Board of Directors is comprised of re-recording mixers Deb Adair, Bob Bronow, Gary Rizzo, Tomlinson Holman, Sherry Klein, Walter Murch, Karol Urban, and Steve Venezia, and production mixers John Coffey, Peter Devlin, Ed Greene, Lee Orloff, Lisa Pinero, Glen Trew and Jeff Wexler. Visit the CAS at cinemaudiosociety.org.

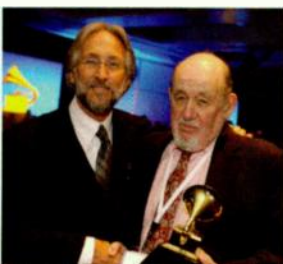
Cinema Audio Society Announces New Board

The new CAS Board was installed at the 51st Annual CAS Awards.

The CAS Officers are newly elected Board President Mark Ulano, CAS; newly elected Treasurer Peter R. Damski, CAS; and returning Secretary David J. Bondelevitch, CAS.

The Board of Directors held a special election in order to fill the Vice-President slot vacated by Mark Ulano. Phil Palmer, CAS, is

Photo: R. Dammund



Orrin Keepnews (right) with Neil Portnow, President/CEO of The Recording Academy, on February 7, 2004, during the 46th Annual Grammy Awards Nominee Reception and Special Awards Ceremony at the California Science Center in Los Angeles.

Producer Orrin Keepnews Passes Away at Age 91

Concord Music Group mourns the loss of legendary jazz producer and record executive Orrin Keepnews, who passed away on March 1, 2015. Keepnews died one day short of his 92nd birthday.

Keepnews was a creative force behind Bill Evans' *Waltz for Debby* and *Sunday at the Village Vanguard*; Thelonious Monk's *Brilliant Corners*, *Monk's Music* and *Thelonious Monk and John Coltrane*; Chet Baker's *Chet Baker in New York*; Sonny Rollins' *Freedom Suite*; Wes Montgomery's *Boss Guitar*; and Clark Terry's *In Orbit*.

A co-founder and producer at Riverside Records in 1953, Keepnews went on to found the labels Milestone (1966) and Landmark Records (1985). He was the Director of Jazz A&R at Fantasy Records in 1972. Beginning in 2007, Keepnews was the producer and annotator of Concord Music Group's acclaimed reissues series, the *Keepnews Collection*.

Keepnews' five Grammy Awards include the prestigious Trustees Award for Lifetime Achievement bestowed by the Recording Academy in 2004. He also received the distinguished NEA Jazz Masters Lifetime Achievement Award in the field of jazz from the National Endowment for the Arts in 2011.



'The Art of Recording a Big Band'

The Art of Recording a Big Band is 120-minute documentary film about studio legend Al Schmitt. It was filmed at Capitol Studios in Hollywood, Calif., over two days during a recording session led by Schmitt featuring

Chris Walden's 18-piece jazz big band. The documentary includes interviews with Schmitt's longtime partner Steve Genewick as well as Walden, Dave Pensado, Ryan Hewitt, Kenny Wild, Paula Salvatore, and Andrew Scheps. Recording industry professional Shevy Shovlin makes his directorial debut with this film. Find more information at theartofrecordingbigband.com.

Toto Bassist Mike Porcaro Passes Away at 59

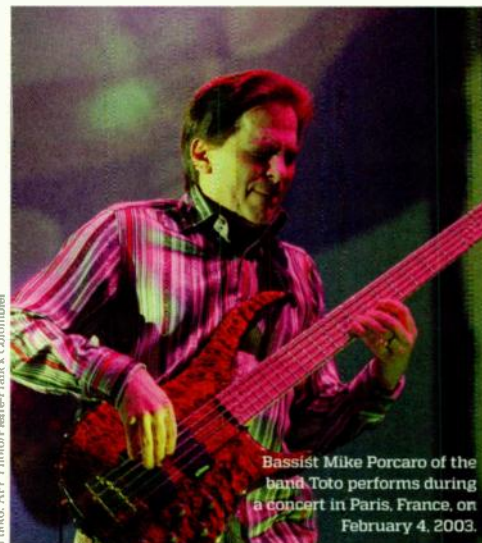


Photo: AFP Photo/Pierre-Franck Colombier

Bassist Mike Porcaro of the band Toto performs during a concert in Paris, France, on February 4, 2003.

On March 15, longtime Toto bassist Mike Porcaro passed away. Porcaro's passing was initially reported to the media by the band's publicist, Keith Hagen, and on March 15, keyboardist Steve Porcaro wrote on his Facebook page: "Our brother Mike passed away peacefully in his sleep at 12:04 AM last night at home surrounded by his family. Rest in peace, my brother." In 2007, Porcaro was diagnosed with amyotrophic lateral sclerosis (ALS), more widely known as Lou Gehrig's disease.

Porcaro was one of three sons of veteran Los Angeles session drummer/percussionist Joe Porcaro. In 1982, Mike Porcaro joined his brothers Jeff and Steve (also top-tier L.A. studio musicians) in their band, Toto, when original bassist David Hungate departed, shortly after the release of *Toto IV*. Porcaro remained in the band, recording and touring with Toto for 25 years, until he was forced to retire when he was diagnosed with ALS. Drummer Jeff Porcaro passed away in 1992 of a heart attack.

On March 16, Neil Portnow, President/CEO of The Recording Academy, stated,

"Throughout his career, [Mike Porcaro's] love for music and performing was always evident, and was showcased frequently due to the group's relentless touring and international popularity. Our music community has lost an influential and charismatic creator, and his legacy will continue to inspire and entertain. Our thoughts go out to his family, friends, and fellow group members, as well as to all who have been entertained by his exceptional talent." ■



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Music



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Photo by Mark Seliger

'COMING FORTH BY DAY'

Cassandra Wilson's Deep, Dark Billie Holiday Tribute

In her sultry, silken voice, jazz singer Cassandra Wilson has performed Billie Holiday songs before. It's no surprise that she has just recorded a tribute to the late, great icon. The unexpected news about Wilson's album *Coming Forth by Day* is that it was produced, engineered and mixed by Nick Launay, known for projects with rock artists such as Yeah Yeah Yeahs and Arcade Fire, and especially for producing goth-rock masterpieces by Nick Cave and the Bad Seeds.

"Cassandra's manager, Ed Gerrard, asked if I'd be interested in working with her, which

seemed unusual, but I love her voice and I was curious to meet her," Launay says. "It turned out that she had heard Grinderman, Nick Cave's other band. She loved the rawness of it.

"She said, 'If I'm going to do a Billie Holiday cover album, I want it to be different from the way Billie Holiday did it,'" he continues. "The idea was to dive deeper into the lyrics and make an album that was not necessarily darker, but that had more of what we were calling a 'David Lynch' sound."

Coming Forth by Day has jazz elements, but it's infused with dark, atmospheric guitar

effects and other strange, roomy qualities. It's an unsettling but beautiful sonic combination that starts with the band Launay assembled.

"I was curious to see if any musicians from Nick Cave's band would be into doing it," he says. "It appealed to me enormously to get that rhythm section, because Bad Seeds drummer, Thomas Wydler, has a wonderful swinging style, and the bass player, Martyn Casey, is influenced by Motown and Stax but also plays with a dub/reggae feel. I wanted it to groove and have a powerful low end."

The Bad Seeds members were on board

Lose the room.





L to R: Jon Cowherd, Robby Marshall, Cassandra Wilson, Thomas Wydler

immediately, and Wilson's piano player, Jon Cowherd, and guitarist, Kevin Breit, joined them. "Jon is an unbelievable player; he understood what we were trying to do, and he has been playing Billie Holiday songs for some time," Launay says. "Kevin is also great with feel and textures; he's quite experimental. A lot of the stranger noises you hear from loops and delay pedals on the album are his.

"But I still had a problem to solve," he adds. "On Billie Holiday's recordings, there's always a strong instrumental melody played by a reed and brass instrument that happens between her vocal lines. Songs usually start with an intro that has that melody, and then it comes back."

Launay sought instrumentation advice from Van Dyke Parks, who also created some of the string arrangements for *Coming Forth by Day*; Parks said that Launay needed a bass clarinet or sax player, and recommended Robby Marshall. And to Launay's astonishment, Marshall and all of the other musicians were able to synchronize schedules. They convened in Seedy Underbelly, a semi-private L.A. studio where Launay often works.

"There was incredible enthusiasm, but we had no plan for the arrangements," Launay recalls. "The idea was they would jam these songs until something great started happening. I would find myself saying to the drummer and bass player, 'Make it sound more like Massive Attack,' because I really like their dark grooves. As soon as they started doing something darker with



Nick Launay



Martyn Casey



Kevin Breit

a more sexual groove, then everything worked on top of it. Thomas would play these tribal tom rhythms and Cassandra would get really into it, and everyone would play off of her vocals. I would say 80 percent of the vocals are from her singing live and the musicians playing off her."

Launay captured the sessions to Pro Tools, as many of the basics consisted of long jams that he would later edit and shape into songs. Most of the musicians were situated in one large living room-style tracking room, but Wydler's drums were in a booth, as was Wilson. Launay also placed the bass amp in a booth, though Casey played in the room.

"The piano was in the middle of the main room, but dampened with lots of blankets, with two AKG C12s inside, so the sound would be contained," Launay says.

A vintage C12 also served as Wilson's vocal mic, which went to a Neve 1081 mic pre/EQ, and then into a Tube-Tech CL-1A compressor.

Breit's guitar amp—often a Carr Mercury, but there were also a Fender Tweed and Vox AC 30 on the sessions—was miked with a Beyer M 88 and an AKG 414. "I also had a distant mic, usually an RCA 44," Launay says. "He also had lots of pedals, loop machines and other equipment.

"We had other guitar players come down also. Kevin plays the most, but Nick Zinner from the Yeah Yeah Yeahs played on 'Strange Fruit' and did some overdubs. We also had Ming Vauz, who is a very left-of-center, experimental guitarist. He added a lot of atmospheric sounds that don't sound like guitars."

Still more guitar parts were added by Wilson's friend and previous producer T Bone Burnett. "Our tastes definitely cross over," Launay says of Burnett. "We share a passion for twangy, low baritone guitars and Ennio Morricone music.

"Robby's bass clarinet and sax were also in the room. He used a [Neumann] M 49 and also an RCA 77. I really like ribbons on horns and woodwinds because it sounds old-fashioned, and I wanted to capture that. That melodic part is such an important part of those original songs, and I wanted the album to sound just a little bit like an old record, like a Billie Holiday record in tone." ■

THE VERY BEST, 'MAKES A KING'



While many producers might toy with the romantic notion of setting up a portable studio in the African bush, few actually do it. To capture the indigenous sounds of the environment, create something that is genuinely representative of its surroundings, use local musicians and traditional instrumentation—the very idea of it throws up logistical and financial roadblocks. For their third album, *Makes A King*, The Very Best's John Hugo and Esau Mwamwaya went ahead and did it anyway.

The two rented a house in M'dala Chikowa, a five-hour drive from Lilongwe, the capital of Malawi, from where Mwamwaya hails. Here, the Sweden-bred Hugo set up a makeshift studio with whatever he could fit in his hand luggage from London, where he resides. This includes his laptop loaded up with Ableton, a Sontronics Saturn microphone, a pair of stereo STC-1S microphones, as well as a set of speakers and an interface with maximum number of ins and outs.

"We recorded a lot of the album outdoors or semi-outdoors," says Hugo. "[Mwamwaya] will sing in the Saturn and I'll use the STC-1S pair further away, outdoors, to capture the ambient sound of where we are. If it's daytime, that means kids, people washing clothes in the lake, birds. If it's night, that means a lot of insects, or thunder, because we did most of the record during rainy season."

A strike of lightning that took off the top of the mosque next to the two's house also destroyed a Saturn mic on the first of the two month-long trips to M'dala Chikowa for the recording of *Makes A King*. "The outdoor sounds are not over-prominent in the final mix," says Hugo. "I thought it might be problematic, but I ended up compressing and taking up the volume, putting expanders on the silent parts to bring out those sounds more. A bad room will always sound like a bad room. If you're outside, you've got no room at all, but you're picking up these other things that are much more natural and nice feeling." —Lily Moayeri

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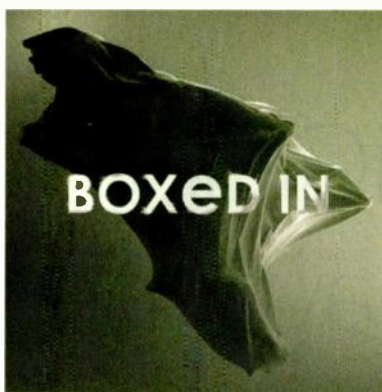
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BOXED IN DEBUT

Oli Bayston works well amongst clutter. For his latest one-man project, *Boxed In*, clutter helped streamline his entire recording process, and his sound. Bayston is one-time member of the defunct Northern England group Keith, and later, assistant to producer Dan Carey (Franz Ferdinand, Bloc Party, Kate Tempest), who produced Keith's second album and the self-titled debut from *Boxed In*. This happened in the very same cluttered—but filled with “absolutely amazing technical crap,” according to Bayston—studio in London.

The initial intent with *Boxed In* was to emulate electronic music using only acoustic instruments. While the impetus behind this idea is intact on the album, after a certain point of only acoustic recording, Bayston, who was involved with the production along with Carey, decided the electronics needed to be fleshed out with some electronics. “We needed to underpin the sound to give it more weight and body,” says Bayston. “We would record acoustic piano to give it that rhythmic feel, then copy as close to the real piano performance using electronic synths, molding the two sounds instead of having two separate parts.”



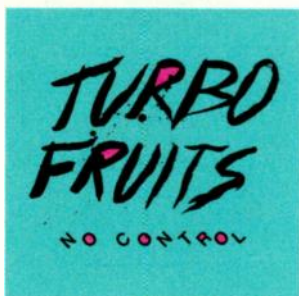
More often than not, Bayston is replaying his piano pieces on a Sequential Circuits Prophet T8 or a Roland SH-2. He also uses a Dewanatron Swarmatron, the same one Trent Reznor used on his Academy Award-winning score for *The Social Network*. Taking cues from house, techno and Krautrock, Bayston bases the *Boxed In* sounds on repetition, going for a hypnotic feel, which is exemplified on the live looped vocals on “Subtle Knife.”

The focus is on minimum instrumentation with maximum effect—see “Run Quicker,” which relies more on the musicians’ performance. Bayston recorded the main body of *Boxed In* with drums, electric bass and acoustic piano at the same time without concerning himself with spills. Carey and their engineer are also in the same space, huddled in the room with the performers—adding to the clutter.

An aspiring clutter generator himself, Bayston’s own classic-leaning studio has his piano alongside analog synths, an SSL X-Desk with SSL modular outboard, many compressors and EQs, tape delays, lots and lots of guitar pedals and a few vintage guitars. “That’s my approach,” says Bayston, “Taking the essence of dance music and putting it in a classic studio.”—Lily Moayeri

COOL SPIN

TURBO FRUITS, ‘NO CONTROL’



Turbo Fruits’ fourth album, *No Control* (Melvin Records/Thirty Tigers), starts in a psychedelic haze with the sweet-smelling ’60s West Coast throwback, “Show Me Something Real.” This is a false start for the Nashville-based foursome, as the rest of *No Control* sounds nothing like that track. Instead,

it sticks close to Turbo Fruits’ patented garage rock.

The Black Keys’ Patrick Carney, who financed the recording as well as produced two tracks, taps into Turbo Fruits’ strengths on “The Way I Want You” and “No Reason To Stay.” The former serves as the first single with a fun, high school band-like simplicity and sincerity. The latter maintains the fun attitude, bouncing along a taut bassline. “Favorite Girl” picks up pace with an irresistible fast chorus and frenetic energy. “Friends” is trite in sentiment, but nevertheless effective. As is “Blow These Clouds,” which returns to the psychedelia of *No Control*’s start. It would’ve been interesting to hear an entire album that followed its opener’s lead. But when the group sticks to simple and straightforward, it hits the mark.—Lily Moayeri

All songs written by Jonas Stein, Robert Kingsley Brock, Jr. David McCowen, Matthew Hearn. All songs produced by Jeremy Ferguson, engineered by Matt Legge and recorded at Battle Tapes Recording in Nashville, except “The Way I Want You” and “No Reason To Stay” produced by Patrick Carney, engineered by Roger Moutenot.

AVID DANCER, ‘1ST BATH’



For Jacob Summers, the solo artist behind the entity *Avid Dancer*, it always comes back to drums. Picking up the drums as a high school elective after a neighbor left his drum sticks at Summers’ house, he went on to win two national championships playing the snare drum in the Cavaliers Drum & Bugle Corps, then joined the Marine Drum & Bugle Corps for four years as a platoon guide. It’s only natural that drums are the starting point for the songs on his debut album, *1st Bath*.

Summers’ drum parts are inspired by drums he hears in other songs. For example, album closer “Up Against A Wall” has MGMT’s drums on “Electric Field” as its inspiration point. But then, Summers gets as far away from the inspiration drums as possible. Finding his own beat, he puts that on a loop to aid in the songwriting process.

“When I first started playing guitar to write songs, I seriously thought I was creating new chords,” he says. “I use the drums to make sections in the songs, to structure the songs so a first-time listener can hear the song and feel comfortable. Now when I get to the drums, I try and make them as simple as possible so they just mimic the other parts.”

Everything heard on *1st Bath* was written either in the very early morning or very late at night, when the rest of humankind was sleeping. Armed with an audio engineering degree from the Art Institute of California in Santa Monica, the Los Angeles-based Summers was able to create fleshed out demos at home. Using Pro Tools and MBox 2 with only two inputs, Summers’ creativity flourished within his limitations.

“You try a lot of weird stuff to get drums to sound good with two inputs,” says Summers. “I tried one overhead and one bottom snare drum. I tried one room mic and one in the kick. I tried two overheads. If you have a really lo-fi drum sound, you do a real clean shaker over the top, put it where the hi-hat would have been, and you can fool people into thinking the drums sound full.”—Lily Moayeri

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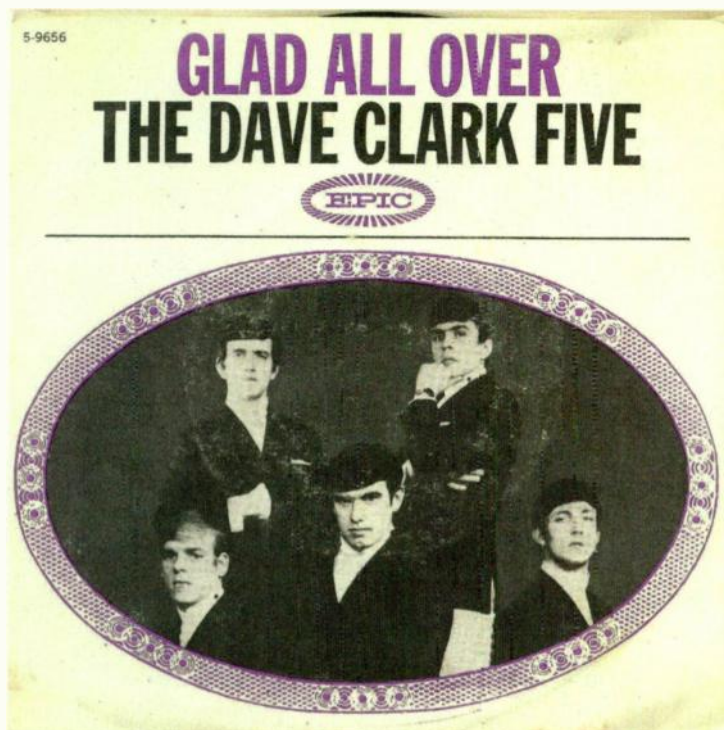
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World Radio History



Classic Tracks

By Matt Hurwitz



"GLAD ALL OVER" The Dave Clark Five

Whenever the term "British Invasion" is bandied about, most of us think of those four cheeky lads from Liverpool. But there were more sounds coming out of the UK in those early days than just the Mersey Sound; there was also the Tottenham Sound, represented by The Dave Clark Five. The group's first U.S. hit, "Glad All Over," knocked The Beatles' "I Want To Hold Your Hand" out of the top spot in England, and the group quickly gained a huge following both there and in the States.

Drummer Clark had formed the band in 1957, and its signature lineup had fallen into place by 1960, when lead singer and keyboardist Mike Smith joined the group.

By 1962-63, the group had established a stronghold at The Tottenham Royal, a former North London dance hall. Like many bands at the time, the group's repertoire comprised pop hits of the day, though the DC5 added something more. "We used to play the American military bases in the UK, and during intermission, they'd put these records on the jukebox, and ask us, 'Can you play them when you come next week?'"

Clark recalls. "And we'd say, 'Well, if you let me have a copy of them, we'll learn them.'" They were in demand.

When the band started at the Tottenham, they played for 700 to 800 people, but their popularity quickly rose. "We ended up playing to over 6,000 people a night, three or four nights a week. And you'd play three-and-a-half hours," Clark recalls. "It was a great way to pay your dues."

The group soon gained the attention of record companies, as well, among them Decca, which asked the band to come for a recording test at their Hampstead studio—the same place The Beatles had auditioned more than a year prior and were turned down.

The DC5 were assigned a young producer, who insisted they not record any of their own material. "We had been writing our own, and recording demos for other artists, like Gerry and the Pacemakers," Clark says. "I thought, 'This is crazy.' So I said, 'No.' I told the guys, 'Look, we're packing in 6,000 people a night. We'll make our own record.'"

Clark had the band record The Contours' "Do You Love Me," which the group had been doing live to great reception and which was released on Columbia in the UK in October 1963. But another band—Brian Poole and The Tremeloes—had their own take on the song and it went to Number 1, leaving Clark's version essentially unnoticed. "I said to the guys, 'From now on, we're not gonna do anybody else's songs. We're gonna write our own song.' And that's why 'Glad All Over' came up."

Key to the experience of a Dave Clark Five show at the Tottenham was a bit of audience participation, typically involving a Clark drum break, getting the audience stomping their feet in time to his playing. "I'd actually pay somebody 5 Pounds to go switch all the lights on and off in the ballroom, in time with the stomps," he says. "That's what gave Mike and I the idea for 'Glad All Over,'" whose chorus features a can't-help-yourself "bomp-bomp" "Glad all over!" chorus.

Clark rounded up the band once again for a session at Lansdowne Studios, where the group had already been doing demo recordings. Built in 1958 by producer Dennis Preston and engineers Joe Meek and Adrian Kerridge, the studio was housed in Lansdowne House, a former artist apartment complex constructed in 1904 in the Holland Park section of London.

The studio, in September 1963, when "Glad All Over" was recorded, featured a 12-input/2-output BRED console ordered by Meek from EMI's Hayes electronics plant, which also built other recording equipment, most famously for the company's Abbey Road studio. There was a single Ampex 300 Series 4-track recording machine, supplemented by two EMI TR91 stereo and one TR91 mono ¼-inch machines, the latter used for mono mixdowns and tape delay effects.

The band worked with producer/engineer Kerridge, who had joined the studio in 1959 following his service in the military, and helped Meek build the facility (including custom modifications to the Hayes-built

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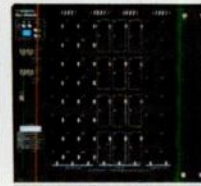
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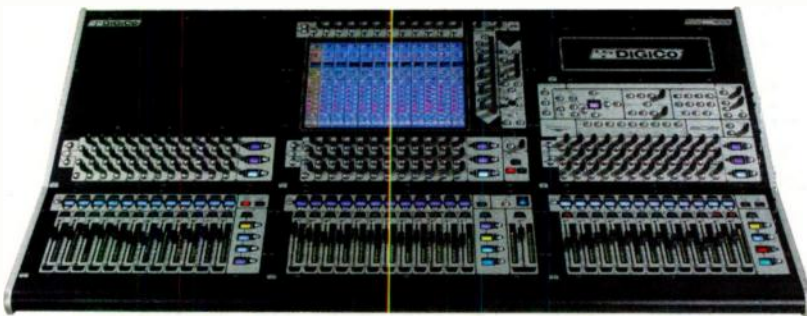
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Dual MADI console interface - CAT5E



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recording console). Kerridge also co-produced the sessions with Clark, the production credit reading a sly “Adrian Clark,” a combination of the two producers’ names.

“I thought he was brilliant,” Clark says of Kerridge, who recorded most of the band’s early core hit catalog. “He was a master and was into the live sound, so he was great to work with.” Kerridge was keen to apply the studio techniques he had learned from Meek to get Clark what he was after. “Dave was shrewd,” the engineer states. “He knew what he wanted.”

And what Clark wanted was that live Tottenham Sound, which is indeed the sound heard on “Glad All Over” and all of the group’s records from the era, particularly the singles. “We were basically a live band,” Clark says. “So I believed we should try to get a live sound.”

The recording process would begin with Clark and Smith demoing a song. “Mike and I would do a recording together on a little Tandberg tape recorder, just so that I knew that the routine would work when we went in the studio,” Clark explains. “I’m not somebody who goes into the studio and writes a song and spends all that time in there doing it. I always look at time in the studio as something special. When you have a routine ahead of time, then, when you’re there, you get a buzz. Because you know what you’re doing.”

Clark and Kerridge would spend ample time getting solid drum, guitar, bass and sax sounds—drums, particularly the signature “stomp-stomp,” being key. “I’d take the front skin off the kick drum and place the mic inside on a blanket,” Clark explains. The stomp, says Kerridge, was achieved by powerful hits by Clark on floor toms and his kick.

Because the recordings were independently produced by Clark—a somewhat unique arrangement in the early ’60s—he and Kerridge could push levels to a higher degree than, say, George Martin and Norman Smith would be permitted at Abbey Road, due to EMI’s more strict studio guidelines. “We took it to the limit,” Clark says. “And if we hadn’t been independent, we wouldn’t have been able to do that. But I just felt you needed to re-create that excitement that you got when you were playing live.”

A live performance also meant keeping the musicians excited about the recording. “We’d never go more than three takes on a song,” Clark says. “I always believed that if you went through any more than that, it becomes automatic. If we went through three takes and didn’t get it, we would just stop and go down to the pub for a beer, and then come back and try it again.”

Kerridge would make full use of the Ampex tape machine’s four tracks. “I’d record the rhythm track, typically, onto tracks 1, 2 and 3, and then I’d always leave a track open for Mike’s vocal,” he recalls.

For “Glad All Over,” drums, Rick Huxley’s bass and Lenny Davidson’s rhythm guitar were on one track, Smith’s Vox organ and Denis Payton’s saxophone on another, and the third contains live vocals—Smith’s, plus the band in backing. A second Smith vocal, recorded onto the fourth



Photo courtesy Dave Clark

The Dave Clark Five pose for a “working” studio shot at Lansdowne, fall of 1963 (L-R): Rick Huxley, Mike Smith, Dave Clark, Denis Payton, Lenny Davidson.

track, offers a stronger lead performance, as well as harmony to his first pass, as needed.

“I actually rarely double-tracked Mike,” Kerridge states. “I always preferred to get a live lead vocal performance from him because the band reacts to it while they’re playing. It makes a whole performance.”

Recorded typically with a Neumann U 47, Smith’s vocal technique was not only beautifully rock ‘n’ roll raucous when required, but he exhibited expert breath control, to the point of making a pop screen unnecessary. “He was an amazing vocalist,

I think one of the most underrated,” Clark notes. “Mike not only had great range, but he had fabulous control. Adrian would put a candle in front of the mic, and if he blew it out, he was doing it wrong. He could sing and never make a ‘pop.’” Notes Kerridge, “I think the success we had with the Dave Clark Five was because of that great up-front sound, and Mike Smith’s vocal was a big part of that.”

Unlike bigger studios, such as Abbey Road, Lansdowne at the time had only one 4-track tape machine. So any overdubs were performed during the mix while Kerridge mixed in mono to a ¼-inch tape. “We’d add a sax, Denis playing a tambourine, whatever was needed,” Clark explains. In the case of “Glad All Over,” a live guitar overdub by Lenny Davidson, playing quick, muted plucks, was added during the mix.

A generous amount of tape echo was added (courtesy of either an EMI TR91 or a later Ampex 351), most clearly on the second of Smith’s vocals, as well as reverb. Lansdowne had two reverb chambers: a true reverb chamber, designed and built by Meek and Kerridge, used most typically, and another, which took advantage of the old brick building’s tall stairwell, with mics at each end. “We usually used the reverb chamber, but we would occasionally use the stairwell version, for special effect,” Kerridge explains.

“It had a great sound,” Clark notes, “but if a resident came down the stairs while you were using it, you had to start all over.” Adds Kerridge, “It would upset the residents when we’d use it. They used to get angry.”

Like most recordings of that time, the mono mix was . . . the only mix. “I didn’t even attempt a stereo mix until several years later, when stereo had really come into play more and fans demanded it, but I never released it.” Clark explains. An unauthorized stereo mix does exist (of course, missing the live overdubs made during the mono mix). But “Glad All Over’s” mono mix just screams of rock ‘n’ roll—an MP3 sounding much like the song would have sounded played loud as a 45 rpm single on a teenager’s record player in 1963, complete with its own genuine, inherent distortion (it was released in February 1964 in the U.S.).

“The stereo mix doesn’t sound the same, mostly because of the spatial separation,” explains Kerridge, currently working on a book detailing his recording experiences. “It was specifically recorded for mono; there was no stereo thought in mind. It was specifically recorded as a mono single.”

Clark agrees. “The early mono mixes are far superior, particularly for groups of our era. I spoke to Phil Spector about this in the ’60s. Mono just had its own dynamic. It was forceful and powerful—and loud!” ■



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Cassandra Wilson's *Coming Forth by Day* tour visited Zellerbach Hall on the University of California, Berkeley, campus in March 2015.

CASSANDRA WILSON

Re-imagined Billie Holiday Tracks Come to Life By Barbara Schultz

In this month's Music section (p. 12), we profile the production of Cassandra Wilson's new collection of Billie Holiday songs, *Coming Forth by Day*. Album producer/engineer Nick Launay and Wilson re-interpreted some familiar tunes, and one specially written original, bringing together members of Wilson's touring band with musicians from Nick Cave and the Bad Seeds' rhythm section (drummer Thomas Wydler and bass player Martyn Casey); the album offers a new experimental way of hearing Holiday.

As soon as the album was recorded, Launay sent raw mixes to Wilson's touring band and to front-of-house engineer Donjuan Holder, to

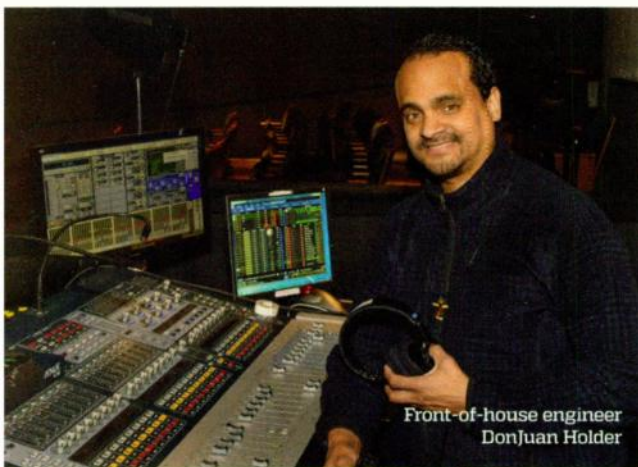
give everyone a sense of the direction the new music would take on the road.

"This album is different from a lot of her others," says Holder, who has been mixing Wilson's live shows for more than 10 years. "There are more reverb and effects on her voice. A lot of people who come to see Cassandra are used to a more warm, raw sound, with just a little bit of reverb. I could tell I would be playing more with effects to get sounds that are similar to what's on the album."

Rehearsals followed, and the band began touring with a setlist focused on the new material, creating early buzz in anticipation of the album's April 7 release. The sound of the songs

in concert is similar to the *Coming Forth by Day* album, but with adventurous musicians like Wilson and her live band—guitarist Kevin Breit, drummer John Davis, bassist Lonnie Plaxico, pianist Jon Cowherd, brass/woodwinds player Robby Marshall (a new addition who joined Wilson for the album), and violinist Charlie Burnham—the stage is a place for even more experimentation.

"There are so many beautiful loops and amazing guitar parts on the songs [in concert]," Holder says. "Kevin will play something, set it to loop, and play on top of it, and then Charlie will play something on top of that. On some songs there are 14 layers of guitar parts, and the



Front-of-house engineer
DonJuan Holder

Photo: Steve Jennings

large-diaphragm piano mics and Helpinstill pickups, Shure SM98s for reeds and horns, and a handful of drum mics: Shure SM91 and 98, and D112.

Otherwise, Holder relies on venue-provided equipment. He does a lot of pre-show prep, using a combination of a spectrum analyzer and his own ears to EQ the loudspeaker system. It helps that Holder not only has years of experience mixing Wilson's shows, but also is a trained singer himself—he sang opera for several years early in his career.

“I know certain notes that she is going to hit, so I will sing those same notes out in the space and see how the room reacts, and then go into the EQ or into a filter and correct things,” he says. “I’ll never sound like Cassandra, obviously, but I do know the notes that she is definitely going to hit, and I will know what to tweak to make sure things sound natural, warm and full.”

Holder is also responsible for preparing monitor settings. In the absence of any monitor engineer on the tour, he may mix the group's monitors himself in smaller clubs, or will entrust the job to a house engineer on theater dates.

“Don is so good at what he does,” Walton says. “He’s amazing at being flexible and working his magic to make whatever the venue has in-house every night. I’m an engineer as well as a tour manager, and I know how lucky we are to have him on this tour.” ■



Zellerbach Hall's loudspeaker array comprises a Meyer Sound M2D rig with 2x M2D subwoofer (flown one per side).

Photo: Steve Jennings

combination of what Kevin and Charlie make together is amazing to me.”

This being what tour manager Sam Walton calls a “boutique tour,” Holder carries a specialized package of equipment from his personal collection. He owns Wilson's Sennheiser EW300 in-ear monitors, for example. She's the only one in the band on ears, and her supplemental wedges as well as the rest of the band's monitors are venue-provided. (Mix caught an early show in March, as part of the Cal Performances series at Zellerbach Hall on the UC Berkeley campus.)

“The Sennheisers are really natural in tone,” Holder says. “I like that they don't boost too much low end; Cassandra has a deep voice, and when she hits low notes, she doesn't want rumbling in her ear. I purchased this unit and carry it with me everywhere.”

“Sometimes she will take her ears out, or she'll use just one,” he continues. “She likes to walk around onstage, or she sometimes will leave the stage when a musician is taking a solo because she wants that musician to be highlighted, but she wants to hear everything, wherever she is.”

Holder, whose past and current clients have included a number of other iconic singers (Whitney Houston, Luther Vandross, Patti Austin, more), also owns critical pieces in Wilson's vocal chain: a Neumann KMS 105 microphone and an Avalon tube mic preamplifier. “The best mic for her to use onstage is a recording mic, because that gives complete, full range,” he says. “It never makes her sound too dark or too thin. Coupled with the Avalon pre, it brings out the warmth and beauty of her voice. I also use that same mic for Vanessa Williams.”

Holder also carries several of his own instrument mics and gear: a pair of AKG C 414

PRECISION EVENT MANAGEMENT

Transparency Equals Efficiency

Cassandra Wilson's FOH engineer, DonJuan Holder, says that management of the Coming Forth by Day tour has been “extremely efficient,” and that may be the greatest compliment he could pay to tour manager Sam Walton.

“If we are operating efficiently, that's because everything is transparent inside our company and to our clients,” says Walton, who co-owns Precision Event Management with business partner Scott Bozack. “That's one of the major pillars of our business model.”

To illustrate his point, Walton explains that just a few days before he was to go on the road with Wilson last summer, he broke his leg and had to hand his responsibilities to another TM.

“We have a central database, an information management system and internal processes, as well as daily phone meetings between all the TMs who work for us, including Scott and myself,” Walton says. “Things happen, and we never want our client to suffer or sacrifice because something on our end changes. When I broke my leg, I'm proud to say that other than the band getting accustomed to a new TM's personality, they didn't notice any touring logistics hiccups. We were able to handle it with no stress or difficulty for the artist.”

Walton was able to rejoin the tour this past February, while Bozack has been serving as FOH and TM for They Might Be Giants (profiled in the January 2015 issue).

“Scott and I have been friends for 20-plus years. We met in college and have been thick as thieves ever since,” Walton says. “We both came to management from being front-of-house engineers. Over the years, we had a number of clients who kept saying to each of us, ‘Could you handle this? You're so organized.’ Finally, we said let's just put a company together.”

“Obviously, Cassandra Wilson is what we would refer to in the industry as a blue-chip client,” Walton continues. “We couldn't ask for a better client, not only because of our business relationship, but also from the standpoint of being an absolute pleasure to work with. Her tour is put together with so much care, and yields really big rewards in terms of creating beautiful work and succeeding financially. The reality is, you can have as much success with a boutique tour as you can off a 200-stop arena tour, if it's managed correctly. We've been able to achieve a beautiful balance of quality and quantity, and it's such a pleasure to be a part of this show.”

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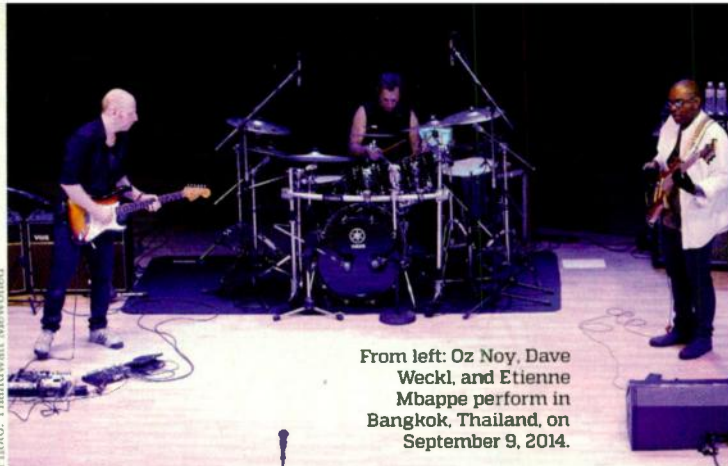
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OZ NOY TRIO: LIVE IN ASIA

Guitarist Oz Noy's latest release, *Asian Twistz: Live in Asia* (Abstract Logix), captures blistering, tight performances from his rock/jazz/blues/funk trio's tour of Asia in the summer of 2014. Bassist Etienne Mbatpe joined Noy and drummer Dave Weckl for the first time on this tour. *Asian Twistz* is Noy's first live album since his debut release, *Oz Live* (2003), and notably, the project was entirely unplanned.

"I did all the touring I could in the States in May and June [2014]," Noy says. "At the end of August we went to Asia. I think we had 10 dates in about two and a half weeks in Japan, Hong Kong, China, Taiwan and Thailand." Noy says that after he returned home to New York City, the record label expressed interest in releasing a live album and asked him if he had recorded any dates on the Asian tour. "I said, 'I don't know. Let me call Dave,'" Noy recalls. "On some nights he recorded the sets to Pro Tools—16 tracks out of his [onstage] mixer—on his MacBook Air, which he does frequently just for reference."

For much of his career, Weckl has incorporated mixers, processors and monitoring systems into his live rig so he can preside over his drum sound in any performance setting. "The main use of the mixer is for my onstage sound and monitoring, and my FOH drum sound," Weckl explains. Since 1998, he has used Yamaha digital mixers onstage and currently depends on Yamaha's 01V96i. "The mic preamps rival [those in] Yamaha's bigger live mixers, with this newest 'i' version supporting 16 channels of in/out audio through its USB 2 port. I have the whole band split into my mixer so I can easily monitor them, which I do [using] Shure's in-ear system, via the mixer's stereo output. I also have a speaker rig. I use the QSC KSub and two KW122 12-inch speakers, where generally only the drums are coming through to match the other instruments coming through the amps and



From left: Oz Noy, Dave Weckl, and Etienne Mbatpe perform in Bangkok, Thailand, on September 9, 2014.

Photo: Thanawat Meeworn

speakers onstage, fed by two separate outputs on the [01V96i's] 4-channel XLR MY [Mini-YGDAI] card; the other two channels go to FOH."

Weckl recorded three shows during Noy's tour: two nights in the same club in Shanghai, and one show in a theater in Bangkok. "I just wanted to document the band," Weckl says. "Using a USB cable, I patch directly out of the mixer via its USB 2 output, set to pre-fader so my adjustments did not affect the recording. This went straight into my 11-inch MacBook Air's USB port, right to the solid-state internal drive. The kick was double-miked, and all drums individually miked, [as were] both guitar amps. Bass was only DI, and I used what [the venues] had for room mics, for a little ambience." Weckl mixed the album in his Los Angeles studio.

"I knew that the drum sound would be fine," Noy says. "Bass sound is usually not a problem. Room sound is a matter of luck, but guitar sounds are always a problem, because I [have to] play rental amps and you never know what kind of a tone you're going to get. I'm at the mercy of the amps I'm given. [Weckl] was able to make it sound good. It was pretty incredible. [Laughs.] He's got extraordinary ears, man. I couldn't believe it when he actually fixed my guitars with EQ. It's a really good document of how that band sounded." —Matt Gallagher

WIDESPREAD PANIC

After 29 years of touring, Widespread Panic of Athens, Ga., is as energized and busy as ever, embarking on a tour of theaters, auditoriums and festivals across the U.S. from March through May. For this tour, the band's audio crew—monitor engineer Brad Blettenberg, production manager Mike Smith, tour manager Steve Lopez, monitor tech Drew Marvar of Eighth Day Sound and FOH system tech Chris Berry of Eighth Day Sound—recently welcomed front-of-house engineer Brett Orrison.

Eighth Day Sound is providing equipment for the spring tour, including a d&b audiotechnik P.A. system comprising eight j8s and four j12s per side for main hang; three V8s for out fills; six Q10s for front fills; 12 B2 subs; D80 amps; M2 monitors; and Q7 monitors. Orrison is mixing on a DiGiCo SD5 at FOH, and Blettenberg is on a SD10 for monitors.

"Once they hired me full time I took the opportunity to make the mix my own," Orrison says. "We are running 96k! The SD5's routing capabil-



Photo: Andy Tennille

Widespread Panic Audio Crew Chief Chris Berry (left) and FOH engineer Brett Orrison

ities simplified our 84 channels of multitracking [for] live stream and recording. The sound of the SD5 is incredible. I have been a Waves Live user for years so we added Waves SoundGrid and DiGiGrid servers. We built a new rack consisting of a Smart [Research] C2 compressor for a parallel drum bus, a UBK Fatso [compressor] for Schools' bass, a Neve 33609 stereo comp/limiter for Mr. Herring's guitar, an 1176 for JB's vocal, a Rupert Neve master bus processor and a Crane Song HEDD for the stereo bus.

We switched out some microphones, also. We replaced the [AKG] 414s on overheads with Coles 4038s. We put two Royer R-121 ribbons on the guitar FX's amp. Dros found that the Telefunken M81 was a great mic for JB, and I couldn't agree more. I took Jojo [Hermann] in keys world back to ye olde SM58.

"If you take your hands off the board you're going to miss something with these guys," he says. "The more the mix moves the better it sounds. Capturing and presenting the vocal melodies and solos with fluid movement is everything with this band. They already have great tone." —Matt Gallagher

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BILLY IDOL STILL ROCKIN' LIVE



Mix caught Billy Idol's sold out show at the Fox Theater in Oakland, Calif., in early March before the band—Idol, vocals (a Shure SM58 capsule) and guitar; Steve Stevens, lead guitar; Stephen McGrath, bass; Erik Eldenius, drums; Billy Morrison, guitars; and Paul Trudeau, keyboards—headed off for dates in Australia, New Zealand, France and Germany. They return for more dates in the U.S. later in the year.



"I've been using the Midas Pro 9 exclusively for about seven years now," says **FOH engineer Joel Lonky**. "The front end is second to none; it has a true sound and a little Midas color. It's a digital XL-4, pure and simple, and unlike other digital consoles, the Midas front end can be saturated like an analog desk. The ability to run Waves and any DAW via AES50 is another great feature. Did I mention how good they sound?"

"I have a RPM Dynamics MS-48 one-rackspace solution for the Waves," Lonky continues. "There is no network bridge needed as the RPM setup goes directly from Thunderbolt via Lynx AES card directly into the console and is controlled from the console via the Pro Series three-way KVM switch. I use few plug-ins, but what I do use is Trans-x on the snares, C6 and Bass rider live on the bass channels, and Puig Child single-channel compressors and SSL strips on all the acoustic guitars."

"I first started mixing on a Digi Venue D-Show supporting Robert Scovill as his FOH tech and system engineer when D-Show was first introduced," says **monitor engineer Greg Looper**. "Sean 'Sully' Sullivan has opened up the 'event section' of the system to me these past few years by using his custom GPI I/O devices, and it's completely changed my workflow. I can pretty much program any command to a single button. There are a few limits but so many possibilities.



"I use three main plug-ins: the Crane Song Phoenix, Waves C6 and CLA 1176. I'll use others but those three are main choices. The only outboard piece of gear I use is the Rat Sound SoundTools mic switcher. It allows me to switch between three different mics on one channel of processing. I use it for Billy's main vocal and spare vocal.

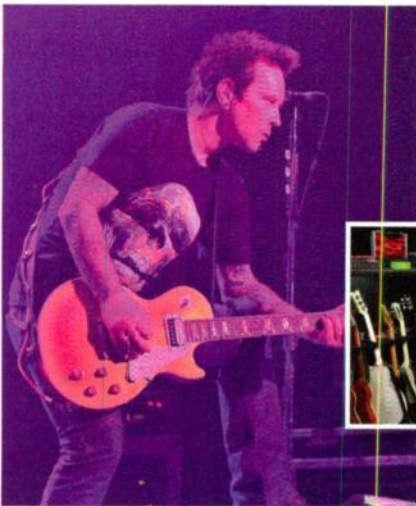
"When I started this gig the only three band members on IEMs were Billy, the drummer and keyboardist. The rest of the band had full wedge mixes. The stage at that point got really loud so the remaining band members moved to IEMs to bring the stage volume down. We left the wedges onstage and thinned out the mixes to just Billy's vocal, which seems to be working out great. I still have the full mixes dialed in, just muted, in case the IEM fails. We have been using Sennheiser IEMs and Sound Image MA 2x12 wedges."



Bassist Stephen McGrath uses Warwick basses, with an Ampeg SVT PRO II Heads and HPC-SVT 8x10 cab. “No mics are used for his rig,” says bass tech Steve “SteveO” Ogan, who also handles Idol’s guitars. “The



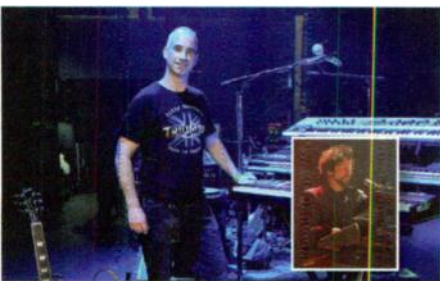
pre-DI signal comes from a Radial box, and the post-(amp sound) comes from a SansAmp VT Bass Driver rackmount unit. Billy Idol uses a Vintage Fender Twin amp and is miked with a Shure SM57.”



Guitarist Billy Morrison uses custom model PT 100 amps and Marshall JMC 200 amps, modded by Dave Friedman and miked by Shure SM 57s. “We usually try to take eight guitars on the road, but it always ends up being more,” says



guitar tech Jim “Jimbo” Barker. “We use Gibson Les Pauls, Godin (semi acoustic Multiac Grand Concert Duet Ambiance), a Gretsch white Falcon and three or four of his own signature Morrison series. My favorite is his EverTune install, which stays in tune no matter what the situation—cold or hot, it’s in tune! We use an AKG wireless system.”



Keyboard tech Robert Dorion says that “Paul Trudeau plays three keyboards: a Nord Electro 3HP for acoustic and electric piano sounds, and for a B3 and rotary speaker emulation; a Roland Jupiter-80, a synth for those Idol signature sounds that also serves as a master controller to send MIDI program changes to his third keyboard, the Korg KingKorg. The Korg augments the keyboard setup with wonderful pads and lead sounds.”



Drummer Erik Eldenius’ drum kit mics are Telefunken M82 (kick), Telefunken M80 (snare top), Neumann KM184 (snare bottom), Neumann KM184 (hi-hat), Telefunken M81s (toms and floor) and Neumann KM184 (overheads), according to **drum tech Trevor Lewis Matthias.**



Guitarist Steve Stevens, an original member, has three stage cabinets comprising two channels of Friedman amps as the main distortion tones and the Suhr PT 100 for the cleaner sounds. “Dave Friedman built the SS 100 amp for Steve a few years back,” explains guitar tech

Martin McDermott. “We actually still use the prototype for a backup; that shows how strong these amps are—100 watts of EL-34s with two channels, plus a boost and an effects loop with a variable return level. Dave doesn’t build workhorses; he builds Clydesdales. Put a Sennheiser 609 mic in front of the Celestion greenbacks and we’re off to the races!

“This year Steve is releasing his third signature model, a beautiful red sparkle rock machine made by Knaggs Guitars (pictured next to rack/amp gear),” McDermott adds. “When you pick up his guitars, you feel the work both Steve and Joe



Knaggs put into making sure they had a very playable neck on a very strong guitar. We also tour with a few Godin guitars, including the Multiac steel, nylon and the LGXT that Steve uses in ‘Flesh For Fantasy.’ These guitars have a 13-pin synth output that we send to a Roland GR-33.”

'THE GODFATHER' LIVE

By Matt Hurwitz



Freer conducts at Royal Albert Hall for the world premiere.

Seeing Francis Ford Coppola's mafia classic, *The Godfather*, on a big screen is special. But seeing it with Nino Rota's unforgettable score performed live by an orchestra is an offer one should never refuse.

Performing live to picture is not simply a matter of throwing the image up onscreen and hoping the musicians can stay in time and sound like they're part of the movie. "The most common comment we get is, 'I forgot there was a live orchestra there, I was having such a movie experience,'" says mixer David Hoffis, who handles sound engineering duties for CineConcerts, which produced a recent performance of the semi-touring show at L.A.'s Nokia Theatre.

"The problem is, that's sometimes said as a compliment and sometimes not," he continues. "About 80-percent of the audience is really there to see the orchestra, because they're symphony-goers. They want to hear the music of *The Godfather*. And the moviegoers want to hear the dialog. So it's a fine balance we have to strike, to find a middle of the road where everybody's happy."

Dialog, of course, is key to telling a story in film, so the dialog track in a concert hall environment has to be handled with care. CineConcerts was provided separate remixed stereo dialog and stereo effects tracks from Paramount,

taken from the studio's 2008 reissue, *The Godfather: The Coppola Restoration*. Still, there was work to be done to allow those elements to be used effectively with a live orchestra.

"Those tracks were mixed to be heard in a movie theater, which, in a sense, is like a great big recording studio, with proper acoustics and surround sound," Hoffis explains. "That's the exact opposite of the ideal symphony concert hall."

As in any soundtrack mix, the dialog track had received appropriate reverb and other spatial effects to properly place it within the environment of each scene in the film. "But if you add that reverb to the acoustics of a concert hall, your dialog's going to be floating up in the rafters someplace," Hoffis explains. "That's the big challenge for our CineConcert projects, to get the dialog under control—taking something that was meant for an acoustically designed movie theater and putting it in a super-live concert hall."

To bring the tracks back to a more raw form, Hoffis collaborated with friend and dialog editor Robert Langley, using iZotope RX4 Pro to remove just enough reverb from the tracks to make them distinct in the acoustically live environment. He then applied bandwidth compression to spots where unwanted sounds appeared on the production track, in order to reduce their

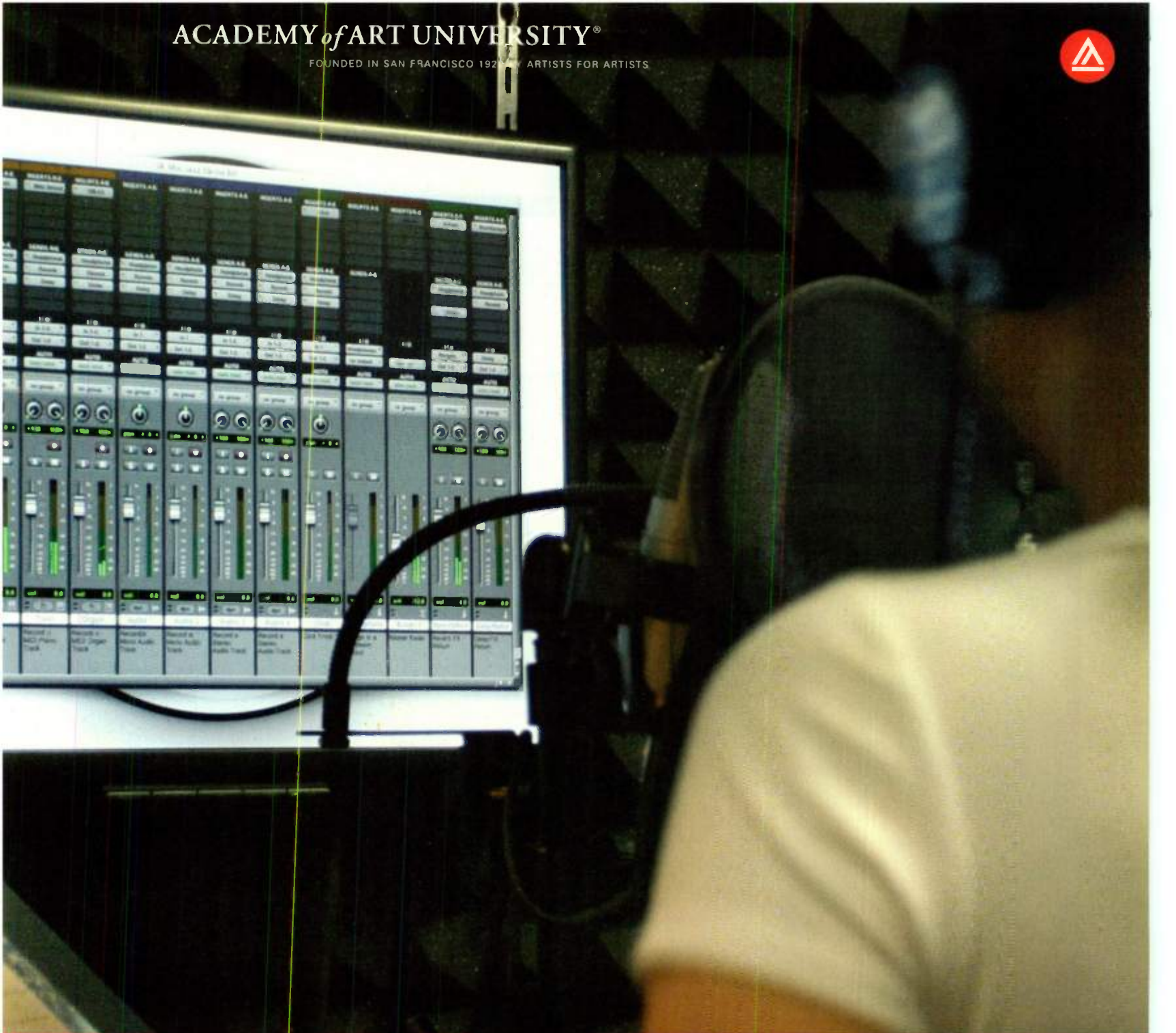
visibility within the dialog. "There are scenes in the dialog tracks when you can hear actors adjusting their clothing or moving props louder than you can hear them talk," Hoffis says. "So I try to go in with bandwidth compression and pull down those specific frequencies a little bit."

For synching, Hoffis and conductor/CineConcerts producer Justin Freer work with video director Ed Kalnins, using Figure 53's Streamers and QLab live show control software, placing streamers and other indicators as directed by Freer for key points in the score—much as one might have used Auricle in the past during a score recording. "Every conductor is different and uses different color markers in different ways," Hoffis explains.

For example, when an orchestra is playing at a wedding party outside Don Corleone's mansion, the camera follows characters inside to continue a conversation that is taking place in his study. "If you're outside, in the perspective of being near the orchestra, Justin will play the orchestra louder. And then he'll use a streamer to tell him he's about to go inside, and he will mute the orchestra to match what would be heard if you were inside the study. So, rather than me mixing that, he controls the dynamics of the orchestra. That way, the audience is hearing the scored music the very same way that they would hear that cue if they were watching the film in a theater."

Vocal soloists, such as a singer at the party, come on the tracks provided by the studio, and are sent (as is all of Hoffis's mix) to a powered monitor situated to Freer's right onstage. "Justin has that cue in his monitor, as reference. He then conducts the orchestra in time with the singer. There's no click track," the engineer explains.

With only a two-and-a-half hour rehearsal period, there's not a lot of time for Hoffis to nail down the mix to the liking of everyone in the audience—both the filmgoers and the symphony-goers. "It's a challenge. It's mixing on the fly," he says. "It's a live performance, so you can never have total control of the orchestra. Occasionally the orchestra will overpower the movie, and occasionally the movie will overpower the orchestra. But hopefully we provide something both segments of our audience can really enjoy. It's quite unique." ■



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On the Cover

By Tom Kenny

CAPITOL REFRESH

The Studios, the Building, the Brand



Photo: Carl and Desirée Aftable

The combined Studios A and B, which holds the orchestra for the Academy Awards live broadcast a half-mile from the Dolby Theatre. Inset: The Neve 88R and PMC QBI-A main monitors in Control Room A.

It all started with a console. The famed Neve VR in Capitol Studio A, installed in 1990, was getting long in the tooth. Channels would need to be fixed more often, some weren't working at all. It had seen, according to one engineer, more sessions than any board in the world. An amazing pedigree. But it was more than 20 years old, and the staff had been lobbying then-parent-company EMI for a few years to upgrade the studios. They started with Studio A, and in December 2011, work began on installation of a new Neve 88R, along with a full-blown acoustic remake of the control room.

At the time, the sale of EMI to Universal Music Group had been announced but not yet approved. After the deal became final in September 2012, and especially after Steve Barnett was brought in as

chairman and CEO of Capitol Music Group two months later, that kernel of revitalization in Studio A spread like a vine from the basement through the 13 floors of the iconic Capitol Tower in Hollywood.

New monitoring, new Pro Tools rigs, new floors, walls and ceilings. New carpeting, new artwork, new offices. New lounges, new wiring, new bathrooms. New Production Suites on the second floor. All-glass offices with natural light throughout. New labels in-house. New outside deals with T Bone Burnett and others. New faces. Everything was redone. It was a complete design change to help kick-start a culture change. And it happened really fast.

"The investment didn't end with the purchase of the company," Barnett says. "This building had to be made great. When I walked in here

[in late 2012] and saw the way it looked, the building and the studios, I was just appalled. I was utterly depressed that weekend. They had suffered from a decade of underfunding and technical problems. It's one of the greatest office buildings in the world, probably the greatest studio in America, with an incredible history. I wanted it to look great. So we went down this road and invested in the studios, the building and the music company. I'm proud of what the team has accomplished, and it was definitely the right thing to do. You walk in here now and say, "Wow."

There are three Capitol entities involved in this story: Capitol Records, founded in 1942, the first big label on the West Coast and a brand forever associated with hi-fidelity and quality artists; Capitol Studios, which the *Mix* audience knows and loves as the home of Frank Sinatra, Nat King Cole, the Beach Boys, Paul McCartney, the Beastie Boys and, lately, John Mayer and Alex da Kid. And there's Capitol Music Group, formed in 2007 when EMI merged Capitol Records and Virgin Records under one umbrella, later expanded greatly to include Blue Note, Motown, Astralwerks, Harvest, Priority, 2101 Records, Atom Factory, Electromagnetic Recordings and others following the sale to UMG.

It's no coincidence that the rejuvenation of Capitol inside the music business, and its subsequent recognition in a broad sweep at the 2015 Grammy Awards, occurred in parallel with the move of the three entities into the Tower, establishing a worldwide headquarters. While Barnett provided the vision in relocating the CMG offices from New York, remaking the Tower and reviving the stature of the label group, Barak Moffitt began implementing the vision on the ground in Hollywood, overseeing both the refresh of the physical facilities and the overall strategic plan.

Moffitt, who came to the Tower from EMI Publishing in Santa Monica, has held many job titles in his decade-plus in the music business, both on the technical and artist side. While he would never be mistaken for a "suit" if seen on the street, today he is Head of Strategic Operations for UMG, and his role within the company is wide-ranging. He is equally conversant in the reconditioned Neumann disc-cutting lathe as he is in new hi-res delivery formats and metadata. He is an evangelist for quality in all its forms, within Capitol Studios, UMG and in the industry at large. He very much would like fans to experience music as he hears it in the studio.

"If we see ourselves, as a label, as the heart of the connection between the music and the fan, that puts the music-making process at the center of it—in the studios," Moffitt says. "We stand on the foundation that our predecessors paved, so practicing the artisan craft that's part of that legendary history is a commitment we make every day. We're the only historic recording studio in the U.S. still owned and operated by a label.

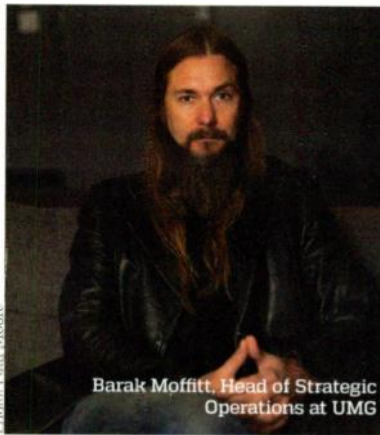


Photo: Paul Moore

Barak Moffitt, Head of Strategic Operations at UMG



Photo: Paul Moore

Paula Salvatore, VP/Studios

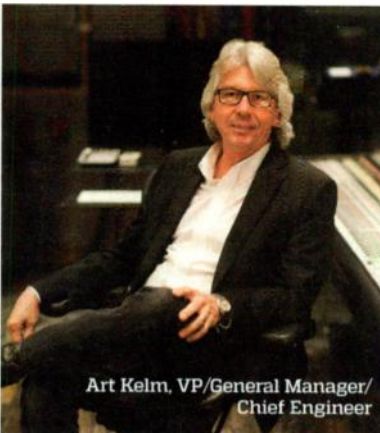


Photo: Paul Moore

Art Kelm, VP/General Manager/Chief Engineer

So we have to balance that legacy with being state of the art. Distribution formats will change, consumption habits will change. But the mission is the same: Capture the artist's vision and make the most of what the current technologies and distribution channels have to offer to translate that vision. Thanks to the direction and investment from leaders like Steve, Boyd and Lucian, we are in a better position than ever to do just that."

It would seem on the surface that a near-60-year legacy at the studios and 70-plus years as a record company would be a huge benefit, and it is, for sure. But it can also hinder a company that is trying to promote a new approach and new energy if the infrastructure and processes are dated.

"It's an exciting challenge to balance legacy and state-of-the-art," says the ever-present and ever-warm Paula Salvatore, a local legend in the L.A. recording scene who has managed the rooms these past 25 years and was recently promoted to VP/Studios. "Over the years, we've done our best to stay at the cutting edge, and that legacy has always been a gift. But now we are fortunate to have the support and leadership of Capitol and UMG to stay fresh and maintain that excellence."

THE STUDIOS

While Salvatore has long been the face of Capitol Studios, Art Kelm is the relatively new man behind the scenes, charged with the technical side of the refresh. Kelm, an international authority on power, design and interconnection, and a chief engineer at various L.A. studios over the years, was brought on in late-December 2011 to consult on the proposed remodel of Studio A. In April 2012 he was hired part-time as Director of Engineering, and today he is a full-time VP/General Manager/Chief Engineer, overseeing a 24/7 technical staff.

"The 88R is slightly bigger than the VR, and it has an in-wall patchbay that was twice the size of the in-console patchbay on the VR," he says. "So we put all new wiring, Canare cable, in the walls, and

we put in power isolation transformers, UPS and all the things I do with power. We then changed the credenza and some of the seating area to make it more client-friendly.

"Since the room was going to be down for a while, it was decided to go into the walls and fix some of the problems that we knew about acoustically," he continues. "We ripped out the back and front walls and added absorption, and we redid the soffits up front, reinforcing the structure so it would be an easy retrofit once we put in the new speaker system. The first date in the room was Al Schmitt mixing Paul McCartney live for iTunes, the *Live Kisses* performance, with Diana Krall. You can't beat that." (Salvatore recalls that date clearly: "I was in the front row praying that everything worked!" she laughs.)



Studio C, Al Schmitt's favorite mix room.

Photo: Carl and Desiree Afable

The new speakers turned out to be a big deal, and would be installed a year later, to replace the Augspersgers that had been there since the 1990s. The staff polled their main clients in both film and rock 'n' roll to find out preferences. After shootouts and proposals and offers, they went with the all-new PMC QB1-A system, working with the company on its development and installation into Studios A and B in January 2014.

"They're wonderful, and they work in that control room. The imaging is great in there now," says longtime client and producer Don Was, who was named president of Blue Note in January 2011 and has developed a particular fondness for Studio B over the past 20 years. (See sidebar.)

"I really like the way A is now, the way it sounds, and I love the console," adds Al Schmitt, a regular denizen of the classic room, with ses-

sions going back to Sinatra and Nat King Cole, on through recent work with McCartney and Bob Dylan, where everything was live in the studio, no headphones. "They changed the desk in the middle and the seating, and everyone just seems to fit better. And then Studio C is great. I love to mix on the VR in there, and it's so much more open now. We just did Bob Dylan's *Shadows In The Night* in there. Man, that was fun. The band was all in the room, with Bob in the middle, and his voice sounded great."

Because the rooms were already some of the finest in the world and booked pretty solidly, the timeline for the facility-wide studio upgrades was very detailed and mapped out as a two-year plan coinciding with the overhaul of the Tower.

In June 2013, diffusion was removed from the back wall of Studio B and a new credenza and wiring were put in. The following month, mastering engineer Robert Vosgien's room was redone (see sidebar) to update it for hi-res formats. In January 2014, the PMC QB1-A's were installed in A and B, followed by the remodel of Control Room C, with a new 5.1 PMC speaker system, new wiring and a reconditioning of the Neve VR72, all done in-house. Finally, last summer, the offices and scheduling software and management systems were overhauled. And there was still more.

"The biggest upgrade of 2014 was the Pro Tools HDX systems running 11," Kelm says. "They're all identical—studios A, B and C, and we have a fourth that is a floater. Each has 72 inputs and 80 outputs, the same plug-

WHERE VINYL MEETS HI-RES

A long and storied label legacy means a deep and rich catalog. Capitol Music Group—and parent UMG—has quite a few labels. Each time a new consumer format comes out, so does the catalog. Recorded works provide an enormous, almost incalculable asset to a label, a gift that keeps on giving. They're also an incalculable cultural asset, and are treated as such at Capitol. Nowhere do the old and new worlds meet more noticeably than in the Mastering department, where vinyl and hi-res delivery formats share nearly equal time and attention.

Mastering engineers Ron McMaster and Robert Vosgien joined Capitol at about the same time in the mid-1980s, right when the label was playing catch-up on CD reissues. Both started in production; both quickly advanced to mastering to help ease the load. From there, their paths diverged. Vosgien left after a couple years to master in the JVC Cutting Room, then at CMS Digital, returning in 1998 to Wally Traugott's former room. McMaster kept mastering the whole time, catalog and new releases.

Today they work next door to each other, with McMaster almost exclusively cutting vinyl to serve the resurgence in consumer demand, while Vosgien focuses almost entirely on hi-res audio, in multiple delivery formats. Both are very busy, as are fellow engineers Evren Goknar, Ian Sefchick

and Kevin Bartley.

"I feel like I've come full-circle," McMaster says. "Back to vinyl once again to finish my career. It was the last thing I was expecting, but the market has been growing in leaps and bounds. If I were to master a project today, there would be a three-month wait from the plant. Now there are fewer plants, sure, but they are all very busy.

"The process hasn't really changed," he adds. "I've been doing the same thing on the same great gear forever. But I've really enjoyed teaching people about it, passing on the knowledge to clients and to the staff. I trained Ian Sefchick how to cut vinyl, and he's been doing great. He pulled Wally's old lathe out of storage and reconditioned it, hooked it up, got it running. You can see that spark in his eye."

When the makeover comes to McMaster's room in a few months, it will mostly involve cleaning up his wiring and upgrading his patchbay. He's updating his analog console, keeping its A and B side, hooked up directly to the lathe.

Vosgien's room was updated last year, and besides



Photo: Carl and Desiree Afable

Mastering engineer Ron McMaster at one of Capitol's two Neumann lathes.



Photo: Carl and Desiree Afable

Mastering engineer Robert Vosgien's room, where he masters primarily for hi-res delivery.



Photo: Paul Moore

Mastering engineer Ian Sefchick in front of Wally Traugott's old Neumann lathe, which he pulled out of storage and reconditioned to cut vinyl.

cleaning up the "two miles of cable" that was in the walls and console, he installed a new Dangerous Music Mastering Suite. "I decided it was the best way to interface my analog EQs and compressors into the system" he explains. "There are very short cables interconnected into the Liaison, a device insert router where I can select any EQ or compressor in any order and A/B all my processing in the time it takes me to push a button. It makes my job so much easier. Then there's a very clean Monitor section, and a Master section for cutting and boosting level.

"If possible I want to use the original analog tape," he says of the catalog reissues. "This Judy Garland project I just worked on was from 1955, on ¼-inch at 15 ips, the old acetate tape, and it was in surpris-

ingly good condition. Then we're capturing through PCM converters at 192k, 24-bit. For a typical HD project, we would do a version at 192k, a version at 96k, a Mastered for iTunes version at 96k, and then for about 75 percent of the titles we also do DSD.

"After I came back, when 5.1 was starting up, I made a decision to remove the lathe and prepare to do 5.1 mastering," he adds. "Who would have thought that LPs would come back strong and 5.1 would be hanging by a thread?"



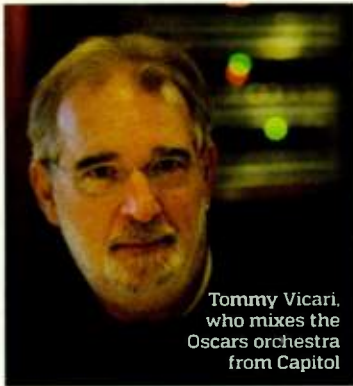
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Tommy Vicari, who mixes the Oscars orchestra from Capitol



Capitol engineer Steve Genewick at the B8R, at Oscar rehearsals.



Photo: Gail Puster

DON WAS AT BLUE NOTE

Producer/artist Don Was was named president of Blue Note ("My first job!" he laughs) in January 2011, before the sale to UMG had been announced, and immediately pumped new energy into the legendary label. He's signed new artists, kickstarted a massive vinyl/hi-res reissue series and celebrated the 75th anniversary with a series of releases, performances and events, including a lavish

launch party with Sonos to introduce that company's new wireless speaker. They bathed the Tower in blue light for a week leading up to the debut. By all accounts it was a good night.

Following the sale to UMG and the remake of the facilities, Was was enthusiastically retained as a "senior" member of Barnett's executive team and an important face of CMG. He sees many parallels between Capitol and Blue Note, both in their legacies and their missions.

"Blue Note started out by signing a couple of stride pianists," he says of the founding 76 years ago. "Then they decide to get into bebop and they sign Thelonious Monk, maybe the most radical guy out there in his playing and voicing chords. Perhaps the most influential jazz composer of all time. Then a couple years later they form the Jazz Messengers with Art Blakey and Horace Silver, which was a radical change in bebop, the birth of hard bop. Jump ahead to Herbie Hancock and Wayne Shorter doing these modal experiments. Cecil Taylor, Eric Dolphy. These guys were changing music. So the way you honor the legacy is to continue moving it forward. I think they are inextricably linked together."

Although Was had made many records at Capitol over the previous 20 years, establishing a fondness for Studio B in particular, having an office inside the Tower has provided him with a new perspective.

"The first time I got in the elevator from my office here and rode down and walked in the studio, that's when it all made sense," he recalls. "'Oh, of course they put studios in with the offices. It's the last of the label-owned studios.' It's amazing. It makes so much sense, and it's a great tool to have for the whole Capitol Group. I have to give a lot of credit to Steve Barnett, who not only has backed us to the hilt on the music side and furthered the Blue Note ethos, but also saw the value of the studio and put a big investment into it. Steve is a true record man, in the most positive sense of that term."

the recording studio—the robust metadata about the who, what, where, when and why of a record. For instance instrumentals and stems are more meaningful than they ever have been. Same for alternate mixes and alternate takes. Consumer and studio technologies are converging arguably for the first time in history, and we have the ability to distribute the very same files and formats that we listen to in the studio every day to the fan, whether it's for a record or live from the rooftop or for a brand partnership."

The job of juggling the needs of such a variety of projects falls largely on Salvatore and Kelm. Inside the studios, however, Capitol engineer Steve Genewick is a man of many hats. Joining the team in 1994 after a stint at Cherokee, Genewick has assisted or engineered on such a wide range of projects that at this point in his career, he says, "I don't think there's a session in the world that would scare me. A hundred-piece orchestra, rock 'n'

ins, same software, same track configurations. Ninety percent of what we do is at 192k, and HDX really is superior. This way you can move from room to room very easily."

At the end of 2014, the two writer rooms on the second floor were updated acoustically and made to resemble a living room-style production. Avid S6 consoles, 16-fader and 5-knob, replaced the Neve Genesys boards, to better service the way singer-songwriter-producers create. In February, red-hot producer Alex da Kid, pictured on this month's cover, booked out nearly the entire second floor, including the two production suites and offices, for a year.

"The whole point was to have a floor where I can start expanding my empire!" da Kid laughs. "I love the vibe, the studio, the history. The other day I went downstairs, and there's Rod Stewart. You feel like you're in the middle of everything, which is good for a creative person. I feel like I want to start creating my own atmosphere. My label is in the Universal family, so that works, and it's close to my house. Plus, I've already blown a couple of speakers and they fixed them or brought me new ones!"

With all those aesthetic, acoustic and equipment changes, it's the new infrastructure—the wiring and interconnectivity, the unseen improvements—that might just prove to have the biggest impact. Every room can be accessed from any room, including the famous Echo chambers. All-new Antelope clocking was installed throughout, and a new Focusrite RedNet system has opened up new opportunities in both recording rooftop performances 13 floors up and in accessing the famed echo chambers 300 feet away, providing a digital carrier alternative to the entrenched analog lines. Two flavors, old and new. The Capitol legacy.

NEW BUSINESS

One of the main goals of the studio refresh was to provide the most flexible means of production to accommodate the incredible range of projects that come through the building. Few recording facilities in the States can do all that Capitol does. Film and TV scoring sessions; string and horn dates; rock, pop and R&B albums; big bands; live radio, TV and Internet broadcasts; rooftop performances; corporate co-branding campaigns; a line of reference ear monitors through Ultimate Ears. For a label group looking to promote artists across all forms of media—creating new revenue streams built on raw, behind-the-scenes content—the studio support has proven invaluable.

"Our goal has to be about meeting the fans where they consume music, whether that is wide in scope or deeper down certain channels," says Moffitt. "In today's world that has a lot to do with what happens in

Continued on p. 67

- A Native Instruments Maschine Studio Groove
- B sE Munro Egg 150 Studio Monitors
- C Behringer X32 40-Channel, Digital Mixer
- D Neumann TLM 102 Large-Diaphragm
- E Moog Minimoog Voyager Monophonic Synthesizer
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Jonathan Mangum, Wayne Brady and Tiffany Coyne on the set of *Let's Make A Deal*.

LET'S MAKE A DEAL!

LIVE EFFECTS AND MUSIC—ANY TIME, FROM ANYWHERE

By Lily Moayeri

L'll take what's behind Curtain Number 2." A classic line originating from the longstanding television game show, *Let's Make A Deal*. It refers to taking a chance and choosing the unknown in the hopes that the risk will pay off in a big way. The audience-driven program has potential participants dressing up in eye-catching costumes garnering for attention to be chosen to play. This makes for a vivid set—and that's not including the prizes and zonks. Today's prizes: cars, tropical vacations, spas, jewelry and electronics. Zonks, which you are hoping is not behind Curtain Number 2, are booby prizes. Those on deck for today: a bubble-wrap living room and a Zonky Zonky Bang Bang vehicle, which looks exactly like its made-up name.

Starting in 1963, *Let's Make A Deal* is now in its sixth season with current host, the multitalented, immensely likeable Wayne Brady. With this comes a music and sound effects team that while situated nowhere near each other on the show's set, works like a well-oiled machine.

Brian Teed and Cat Gray are the sound generators. Teed, who has an audio engineering degree from Middle Tennessee State University and earned his chops on the road, created his position as music and sound

effects mixer with *Let's Make A Deal* in 2009. Keyboardist Gray, a veteran of live television and former head of Musicians Institute's Keyboard Technology program, has been part of Brady's team for 10 years and joined *Let's Make A Deal* in 2011.

The two are formidable with their joint and individual ability to react on the spot to Brady's and his announcer and foil, Jonathan Mangum's unpredictable chatter and movements—not to mention those of model Tiffany Coyne, whose comedic timing is a good match for her fellow on-camera talent. *Let's Make A Deal* is live to tape, with no second takes. All that happens in editing is cutting to fit the time frame.

There are a number of sections on *Let's Make A Deal* for which Teed creates sound. Prize music that plays while the description of the prize(s) is being read. Zonk music that plays when a zonk is revealed. Game elements that are heard when games are being played. Contestant music that plays when a contestant joins Brady . . . Teed receives each episode's script with the projected order of the show, as well as what is behind each curtain, and the possible contestants—who could change once the show is underway. He also triggers all the sounds and music heard in between,



Brian Teed in front of his setup for *Let's Make A Deal*.

including the bumpers leading to commercials.

Arriving early, Teed goes through the prizes, pulling up sound effects that match the type of object without interfering with the prize-copy vocal. For instance, when a curtain is pulled back to show a new car, Teed triggers "spell music" (think magic wands and stars); if the prize is women's accessories, he will cue some bossanova; if it is a motorcycle, road music; for electronics, a dance/pop piece where the melody is in the bassline. All around 130 bpm, the energy needs to be kept high. Each cue is approximately 30 seconds long and created by Teed.

When it comes to zonks, Teed plays with effects, creating a multitrack

of what his imagination has come up with. There's no telling what Brady might do with the zonk, so he always has additional sounds prepared.

"It's fun to form the palette of music," Teed says. "I have a big sound effects library I choose from. If it's not quite right, then I record it. For the bubble-wrap living room, I got some bubble wrap and twisted it. [Coyne] is going to walk on it so I made footsteps using three different recorded sounds. She might pick up a pillow or do some other action, so I made bubble-wrap sounds for that. And I'll have some zany music underneath. For the Zonky Zonky Bang Bang car, I've multitracked an old airplane, backfiring, and other engine sounds. I use Adobe Audition for that."

This carries through to the sounds Teed creates for the actual games on the show. For "Draw Me A Deal" he has kitschy music playing while the contestant is drawing, ending with a buzzer. For "Strike A Match," where a 12-by 8-foot board is turned around, he uses pneumatic sounds. For games involving small and big boxes there are other pneumatic sounds, mechanical for the former, rolling for the latter.

"I get inspired by the materials used on the games," Teed says. "The big giant stone on *Raiders of the Lost Ark* was a recording of a station wagon rolling down the hill in neutral and then slowed down. I do stuff like that all the time. You can take any sound and manipulate the speed, keep the same pitch, or make it really fast and manipulate the pitch."

Similar to the prizes, when looking at the contestants, Teed pulls up effects that match the costumes. But he may or may not use these. "It's a delicate thing because if you're late with the effect, it completely destroys



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BRIAN TEED'S GEAR LIST

- SpotOn playback software system on Windows 7 on a Dell tower
- ELO 1919L 19-inch touch screen 5-wire resistive touch screen to control SpotOn
- MIDI keyboard connected to the Layla for MIDI trigger information to the SpotOn
- Echo Layla 3G USB audio interface feeding into Yamaha O1V96 via optical ADAT
- Korg Triton ProX
- Genelec 8040As monitors

CAT GRAY'S GEAR LIST

- Nord C1 as a source and a controller
- Yamaha Motif-Rack XS
- Yamaha Motif-Rack ES
- Native Instruments Maschine
- Mikro
- Apple MacBook Pro (2)

it," he says. "You have to be part stand-up comedian, which I'm not at all. That's been the toughest thing for me is to work with professional comedians. If the moment's gone, it's gone."

TRIGGERING EFFECTS

Teed uses Copernic Desktop Search to go through the effects he's built over the years. Classifying the sounds is a huge part of what allows him to do what he does. If he doesn't file them properly, he likely doesn't know what they are, certainly not in the heat of the moment.

This is coupled with the Spot On sound effects system, a touchscreen playback system with eight channels. Each taping day starts with a blank template. Teed assigns a trigger tile on the touch screen for every sound effect or music cue. These have music cues with menus to manipulate the channel assignment, output level, the fade-in time, the fade-out time, pitch and speed. He can delay the play, trim the content and make playlists.

For instance, with a vacuum-cleaner zonk, when there's no predicting how long Coyne will vacuum, Teed plays a vacuum sound effect loop

for as long as needed. He then triggers that effect to fade out with a second sound effect of the vacuum powering down. This creates a single seamless effect. Teed also does this with the bump-outs to commercial, which eliminates the need for editing. Nevertheless, Teed sends the stems to the production mixer so the editors can access them if needed.

"I had the composer of the show's theme music compose different genres of the theme," Teed says. "If a trip to the Bahamas is shown last and we go to commercial from that, I'll use the theme version rather than come out of one cue and go to another, which breaks up the momentum. Every once in a while I'll screw up the timing and it sounds ridiculous."

CUE MUSIC!

The arrival of Cat Gray—whom Teed refers to as a musical genius—after the first two seasons has alleviated Teed's workload, but that requires the two to develop an almost telepathic connection. Prior to Gray's involvement, Teed had to be ready in seconds with any style of music that Brady might

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



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

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



Brian Teed (left) and Cat Gray

Photos by Lindsey Park



uation, to remember which style is in any given position. Because we're super fast, people think it's fake or that it's written and planned out ahead of time, but it's not. It's completely random."

Let's Make A Deal is a notoriously loud show with maximum volume coming from the cacophonous audience. To hear his way through the show, Gray uses three monitoring systems. He has in-ear monitors on one side, another monitor sits on his other side, and he needs the main system to be can gauge his volume against that of Brady's.

To communicate with Teed, Gray—who is on camera—has a pedal he presses that flashes a beacon in Teed's room, which is off the set. This signals to Teed to hold off on cueing any music as Gray will take control from that moment through to bumping out to commercial. Because one of the cameras is always on Gray, he can also communicate with Teed via slight nods and headshakes. And Teed can speak directly to Gray via his in-ear monitors.

jump into. Now, Gray has that unenviable job, which he meets head-on with his wide range of styles and instant recall.

"I have pages of sample playback of drum loops that hopefully cover any occasion that might come up," Gray explains. "Then I've got patches in six keyboards that come through another computer as mixer and controller for sending program chains. It comes down to a memory sit-

"[Gray] can do any style of music at the drop of a hat," Teed says. "It used to be a struggle because I had to play the music and the effects. Now it's even crazier because Cat improvises with [Brady]."

From the audience perspective everything flows as if on autopilot, with their only concern being how many hugs they get from Brady. And that is exactly the result the *Let's Make A Deal* sound and effects team wants. ■

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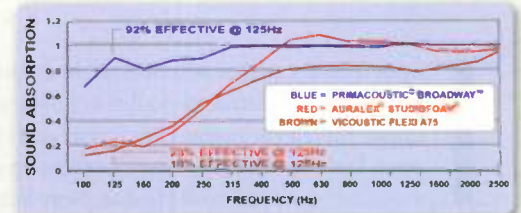
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Photo by Thomas Mikusz

Composer Dave Porter

THE MUSIC OF 'BETTER CALL SAUL'

CREATING TENSION THROUGH PACE AND RHYTHM

By Lily Moayeri

Inside a garage tucked behind a tall hedge just off a main thoroughfare in the San Fernando Valley in Los Angeles, some of the most impactful television music in recent years is created. This is composer Dave Porter's lair, where he came up with the innovative and evocative score for *Breaking Bad*. Now he's doing it again on that show's spin-off/prequel, *Better Call Saul*.

For *Better Call Saul*, Porter is working with the same team as *Breaking Bad*, from creators to writers to music editors to music supervisor, Thomas Golubic. The challenge, musically, is to not fall into *Breaking Bad* habits, but to reinvent themselves while achieving the same effect. Creators Vince Gilligan and Peter Gould described Saul to Porter as "a small hero"—the very opposite of *Breaking Bad*'s lead character, Walter White.

The working process is the same as before. Porter chooses not to read the script. He watches a fully edited episode the day before he meets with the creative team for a spotting session. He watches once for the pure visceral reaction, then again with stops and starts and note-taking.

"The writing is so clever, I'm afraid that if I knew what was going to happen, I might unintentionally lead people with the music," Porter says. "If I watch it cold, then I have a sense of remembering how surprised I was at a twist. I don't want to tip the audience. I want to make it as big a surprise or twist as I can."

At the spotting session—which can last up to five hours—the scenes are broken down one at a time with many discussions about effects, such as footsteps and dog barks. Porter starts the score talk with questions rather than offering his thoughts. This way he can ensure he has the same vision and catches all the nuances. For *Better Call Saul*, getting into a rhythm ended up being a long process for all involved, and one of the more difficult endeavors of Porter's composing career, he says. Where Porter was scoring episodes of *Breaking Bad* at a rate of one a week, the first few episodes of *Saul* took up to three weeks each.

The big difference for Porter from *Breaking Bad* is the lack of synthesizer sounds on *Better Call Saul*. There is a scene in the desert in episode two, "Mijo," where Saul is on his knees—a familiar setting from *Breaking Bad*—that proved to be a pivotal moment for Porter as a composer. "It was the comparison point for me between the two shows," he explains. "Even as I was working on the pilot, I jumped ahead to work on that scene. I knew if I could figure out how to do that scene that was so similar and make it sound different, but achieve the same things musically, then I'd have a key to how to approach the show as a whole. The score for that scene is less big, but I hope it still has the same ability to push tension and raise the stakes."

For *Better Call Saul*, and the titular character in particular, Porter—who works wholly in Pro Tools HD 10—envisions a repurposing of classic rock instruments: bass guitar, Rhodes, Wurlitzer, Mellotron, organs and electric pianos, pieces that have an aged quality to them. This becomes more retro when scoring scenes for Chuck, Saul's older brother. Using baritone guitar, old tremolo sounds, twangy but low and deep, Porter sets the tone for the authoritarian figure. For the desert scene, there is a combination of played and sampled live instruments, among them an overblown flute, hammer dulcimer, harp, bass guitar played up high so it sounds percussive, and organs. The result has a Middle Eastern vibe that uncannily lends itself to the inherently Western motif of *Better Call Saul*, which shares its Albuquerque, N.M., locale with *Breaking Bad*.

"Whether it was synthesized originally or not, on *Breaking Bad*, sounds were a lot more processed. On *Better Call Saul*, there's much less of that," Porter says. Speaking of a specific scene where Saul is feverishly unwinding the paper towels from their roll, Porter says, "There are found sounds



Raymond Cruz as Tuco Salamanca, Bob Odenkirk as Saul Goodman, and Michael Mando as Nacho Varga

“My hands were a little tied because they had cut the picture to a recording they already had,” he says. “I had to map that very carefully tempo-wise. These are live humans, not computers playing perfectly. It took a long time to match that performance so I could build a click track and a template in Pro Tools, so that when we record it, our players could follow and it would be exactly the same. They don’t like it all the time, but when you write to picture, it is so important to be exactly where you need to be.”

Formally trained, Porter’s understanding of tempo starts with a metronome, with which he watches a scene until he finds a tempo that either fits with the picture or with the music he has in mind. Says Porter, “Great picture editors are often very musical people. I find they often cut on a very specific tempo. Once you find that tempo, or series of tempos if it changes in a scene, it gives you a great floor plan to build your piece of music around.”

This ties in with the dialog and writing as well. “Great actors have a cadence that good writing has, too,” Porter says. “You find an inherent pace that can guide you musically that you don’t want to be fighting. You’re trying to work with it. From a purely composer standpoint, your moments to say something musically are the moments in between.”

Porter’s involvement goes far past what you would expect. No detail left unattended, he scored the dramatic telenovela that Tuco’s grandmother is watching. He designed the unique cell phone rings you hear. And keep a sharp ear for when the elevator chimes at the law offices of Hamlin, Hamlin, & McGill. Porter created that sound, too. ■

in the percussion: plastic bottles, ethnic drums, shakers, a wine bottle. On *Breaking Bad*, it might have been run through a guitar amp. Here, it is presented much more as is, much more clean, more spare, smaller. Here, it’s much more organic, earthy. There isn’t the science element that was so present in *Breaking Bad*.”

There is a frenetic courthouse montage of Saul making deals with various lawyers, conferencing with clients, and dealing with the court staff. A piece from Vivaldi is used, but redone for the show so that it was more relatable and more connected to Porter’s score. For this, Porter did a lot of preparatory work for the musicians.

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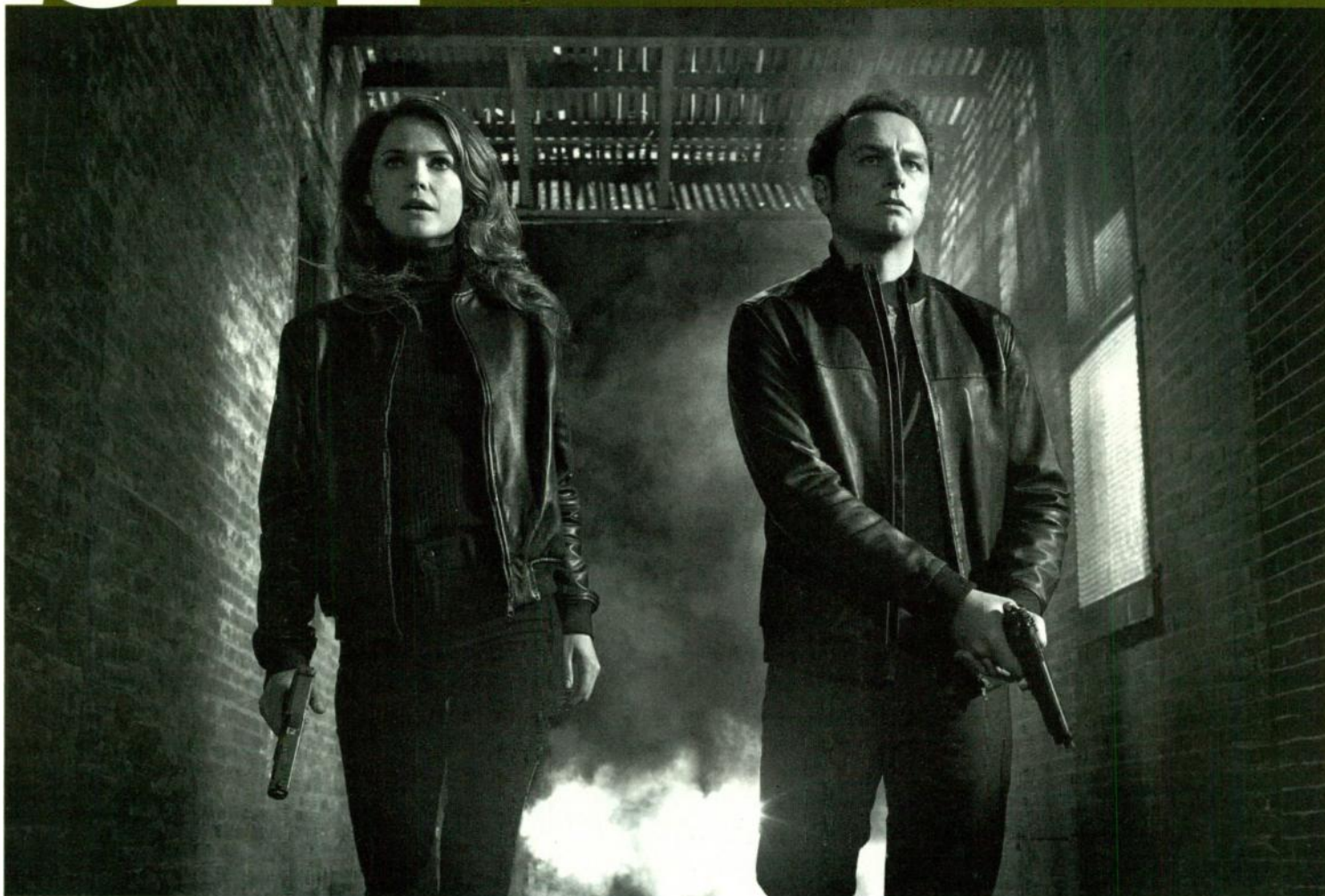


Photo: James Minchin/FX

SOUND DESIGN FOR 'THE AMERICANS'

BRINGING THE 1980s COLD WAR BACK TO LIFE

by Eric Rudolph

The Soviet spies of FX's *The Americans* run a Washington, D.C., travel agency, kill to protect the interests of the Soviet Union, raise two children, flatten all opponents in hand-to-hand combat, and don wild wigs to impersonate C.I.A. agents and a host of others—all in a day's work.

It's great, outlandish entertainment with a serious core, but it creates a lot of disbelief to suspend. That's a tall order, especially on a basic-cable budget.

Lead mixer and co-supervising sound editor Ken Hahn, co-producer David Woods and their team skillfully use sound design to bolster the believability of these spies hiding in plain sight in suburbia. (All three seasons of the show have been mixed at New York City's Sync Sound, owned by Hahn and partner Bill Marino.)

The Americans (called the best show on television by *Rolling Stone*, *The Washington Post* and others) was inspired by the 2010 arrest of Russian spies living as Americans. But these agents were said to be soft, unimpressive and fighting a war that seemed long over.

Not exactly exciting material for a TV series.

The producers upped the dramatic ante—and their production challenges—by setting *The Americans* in the early 1980s, when Ronald Reagan is President, hot and Cold Wars rage, and the daily struggle is life and death for the Directorate S Soviet agents.

While *The Americans* is a period show, "It's so recent it does it not always feel like period; we were alive then and the audience remembers it, as they do not remember World War II or Prohibition," says co-producer



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Photo by Eric Riedel/ajph



At Sync Sound's Studio B during a mixing session for *The Americans*, from left: David Woods, Co-Producer; Neil Cedar, Co-Supervising Sound Editor; Tass Filipos, Music Editor; Ken Hahn, Supervising Sound Editor and Sync Sound co-owner; James Redding, re-recording mixer.

Woods, noting that this makes it somewhat harder to portray the period convincingly.

But *The Americans* is not only a series out of time; it is also out of place.

The show is set in the Washington D.C./Falls Church, Va., area but shot around New York City, and the New York and D.C. areas look nothing alike. (D.C. gets little snow; *The Americans* was shot during two of the snowiest winters in New York's history.)

So *The Americans* needs all the help it can get in making a wild, period adventure story—set amid historical events in a recognizable world—believable.

Sound design needs to do some heavy lifting to keep the audience involved in *The Americans'* fantastic fictional universe. And it does.

Key elements of the world of spies Philip and Elizabeth Jennings (Matthew Rhys and Keri Russell) and the FBI agents hot on their trail are the communications devices of the early 1980s. The plots are often driven by news broadcasts and moved further along by an array of overt and covert communications devices. Episodes are filled with sounds from all sorts of low-fi speakers.

The design team nails these sounds: everything from the scratchy, quivering shortwave radios with which the Jennings get encoded orders from Moscow to audiocassette letters sent secretly to Elizabeth by her mother from the Soviet Union. We also hear (and see) period audio-bugging devices.

These thin little sounds do a lot to help sell the time period and bolster the milieu.

Philip and Elizabeth frequently listen to a robotic voice reading a series of numbers over their shortwave radio (unbreakable coded orders, deciphered with a one-time pad). These distant, fragmented and chillingly disembodied voices sound like they could be coming from deep inside of Moscow Centre.

When we hear Elizabeth's mother's sad voice on a cassette letter, the sound is so fluttery and barely above the noise floor one can easily believe she was hunched over a Soviet-made cassette recorder somewhere deep in the U.S.S.R. The disturbingly evocative sound quality underlines that mother and daughter have been separated for years and know they'll see each other again.

Echoing Woods' comment about the difficulties of re-creating such a recent time period, Hahn (the dialog and music mixer) says, "The viewer should immediately think, 'That's an audio cassette.' It has to sound right to help the storyline. If they think, 'A cassette doesn't sound like that, I remember what they sound like,' then

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they're out of the story, and we never want that to happen.

"Years ago we would've just re-recorded the piece onto a audio cassette," Hahn notes, adding that he uses the Speakerphone Pro Tools plug-in to craft and alter the ragged, tinny sounds emitted by the array of communications devices heard in the show. He has compiled some 80 Speakerphone presets for *The Americans* and is quite happy with the power, ease and versatility of the tool.

Contrasting with these thin sounds, cars made quite different noises then: Big-block engines rumbled and roared. The car sounds are another subtle way in which the Cold War-era is emphasized. Characters drive down shaded suburban streets but with deep, throaty rumbles that underline the ominous tone, while reinforcing the sonic truth of the time period.

Sound effects re-recording mixer James Redding and Hahn enjoy the challenge of working with the bigger, bolder sounds of the cars of the time.

"People's entrenched ideas of what cars sound like are quite different now; cars are simply quieter today," Redding notes. "Even a new car in the early '80s was loud. The tricky part is finding the right old, loud car sound, but then we have to calm it down so a new 1980s car doesn't sound like an old clunker" to today's ears, and distract the audience.

***"The tricky part is finding the right old, loud car sound, but then we have to calm it down so a new 1980s car doesn't sound like an old clunker."
—James Redding***

Period picture cars are a key element of *The Americans*; every exterior is filled with Detroit's big '80s iron. But 35-year-old cars often sound old and bad even when not running, Redding says. "They rent period vehicles that are sometimes not in the best shape, so we often cannot use any production sounds, like door closings, so we're fortunate there are lots of clean effects of '80s cars; it seems like that's when a lot of car sounds started to get recorded."

Sound design doesn't just bring the era's technology to life, however. There's a horrific personal cost to the couple's secret war against America, and sound design helps put the audience inside a marriage riven by physical and psychological strains that would tear mere mortals apart.

One of the most chilling and celebrated scenes between Philip and Elizabeth takes place in their basement (where they do secret work in most episodes

while a clothes-dryer effect loops, as white noise, to mask their skullduggery; "they do a lot of laundry," quips Redding).

Elizabeth broke a tooth while barely escaping from a sudden street fight with the head FBI spy chaser at the start of the third-season opener. A few episodes later the pain is unbearable and the tooth must go. But they know that dentists will report a petite woman with a broken molar.

The tooth extraction therefore falls to Philip; however, he is not a dentist and their basement is not a dentist's office.

The excruciatingly tense, wordless scene is shot with discomfiting intimacy, like a love scene, with extremely-tight close ups of the couple's anxious but assured faces as Philip takes pliers to his wife's mouth, with whisky her only anesthetic.

He needs two slow, agonizing pulls to complete the job.

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The images are as tender and calm as such a scene can be, and both characters are highly trained stoics, so sound design does much of the dirty work of emphasizing how wrenching it really is.

Redding used pitch-shifted sounds of screaming monkeys to ramp up anxiety for the audience. He wanted the altered wild-animal sounds to hint at a dentist's high-pitched whining drill, something that unsettles most people. "I needed tones that drive people nuts. We also had Foley do extra scrapes on pliers, for the feeling of more tearing and scraping on teeth."

Finally, he added tones that suggest the U.S.S.R. national anthem and dragged them through the scene, to underline the team's painful commitment to Mother Russia and to subliminally contrast with the previous scene. (Where Phillip waits anxiously for Elizabeth, fearing she's been arrested and he'll never see her again, as a TV ironically plays the U.S. national anthem during the station's early-morning sign off, another period-specific detail.)

The dental scene initially had score, but the show runners took it out, Redding notes with a bit of pride.

In another pivotal, tense and wordless scene from the middle of season three, the audio bug Philip cajoled Martha (secretary to the head FBI spy-chaser) into placing in her boss's office is found. She scrambles to the ladies' room to frantically deactivate the bug's receiver hidden in her purse, and then sits at her desk, terrified as a bug sweep progresses. She sees her world about to crumble and hard prison time looming.

Redding added a subtle-but-big bass rumble as the bug detector comes close to Martha (Alison Wright) and her purse, with the disassembled receiver inside.

The unsettling sound has no real-world motivation; it represents the unbearable tension of Martha's interior P.O.V., as the clunky bug sweeper comes closer and she thinks, "Oh no, their gonna catch me!" Redding says.

Redding and Hahn also find time to work the surround channels for feature-film-like effect. They did so during two major gunfights involving multiple shooters: A scene when Phillip and Elizabeth try to stop a determined professional killer in a tiny hotel room, and when a key character decides he'd rather die in a hail of police bullets than live in Moscow as a retired Hero of the Revolution.

In both highly charged scenes, Redding and Hahn plotted out where each shooter was in each camera shot and arranged the gun shots so that when a bullet comes from right surround it impacts left front; when the camera angle moves, the next bullet comes from surround and then impacts center, and so forth.

Redding thinks this attention to surround is a step beyond what is typical in episodic basic cable and relishes finding the extra time, "to play with more space than we used to have on TV." He does this knowing that about 75 percent of the audience doesn't have surround or have it set up correctly, "but for those with surround, it is a bit extra" that helps bring the audience deeply into pivotal story points.



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Elizabeth Jennings (Keri Russell) listens to a cassette-tape letter from her mother smuggled from deep inside the Soviet Union. Carefully crafted low-fi sounds such as the taped letters are key audio elements that solidly root *The Americans* in the early-1980s period.

Photo: Michael Parmelee/FX

ProControl consoles, and monitors in 5.1 with M&K speakers.

Hahn and partner Marino are, of course, two of the main people who've made TV sound as rich as it is today. For more than 30 years Sync Sound has pioneered good TV sound, and the firm grew as the art and technology progressed.

However Sync Sound has mainly worked in niche music and documentary programming, Hahn notes, and he's enjoying the fact that *The Americans* is a recap-worthy Golden-Age-of-TV sensation that people are avidly watching and love to talk about.

Hahn's helped blaze a golden path that's now crowded, and he

He always tries to have cars zooming, sirens blaring and plane-bys mixed into the surround channels rather than just general atmosphere. "I watch at home in 5.1, and it makes me feel good that we're using surround for more than just reverb and music."

The team works in Sync's Studio B on Avid Icon D-Control and Avid

appreciates the rewarding new world of TV he's helped create. "What a time to be working in TV; all the best people are there, and you can go between movies and TV and it is not a problem," he says. "It's good for everyone," and the explosion in scripted production, "is especially good for New York." ■



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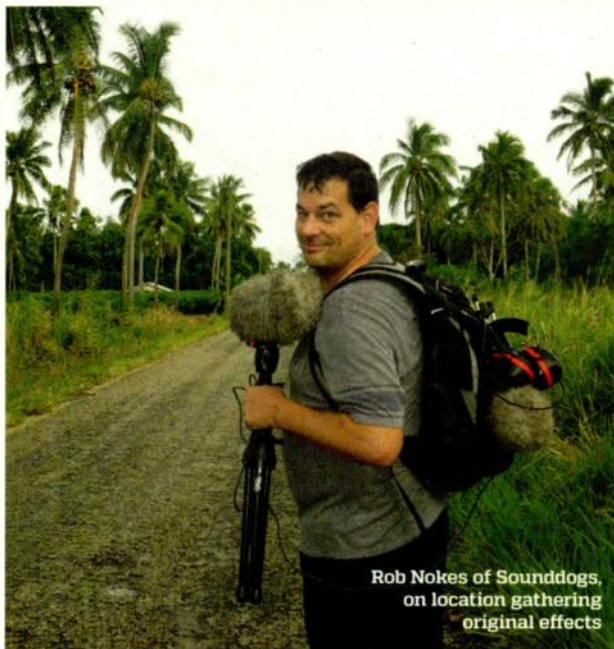
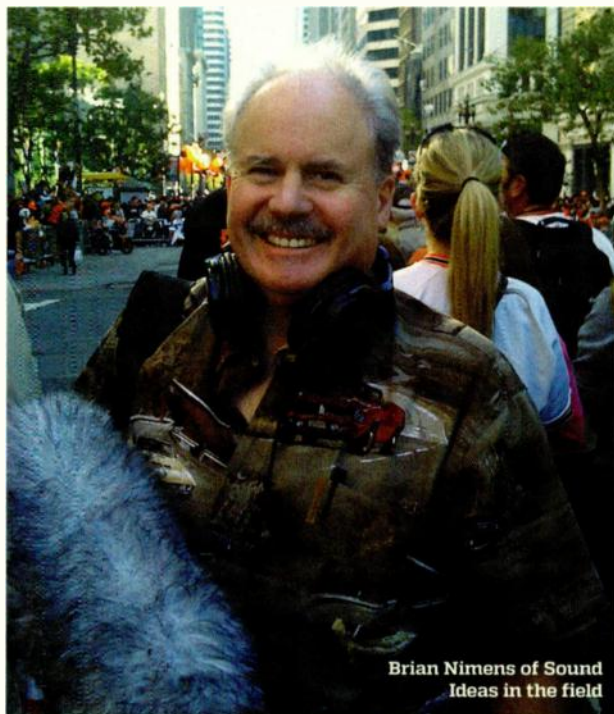
WHAT'S GOING ON IN 2015

By JENNIFER WALDEN

You'll find it hanging on the museum wall, right next to cassette tape and the stone tablet. It's official, the CD is history. At least in the world of sound effects libraries. Rob Nokes, founder/president of Sounddogs in Los Angeles, the largest online sound effects library, says he'd be hard pressed to sell libraries on CD, even at a discount. Brian Nimens of Sound Ideas in Toronto adds, "I never thought I'd see the death of the compact disc."

Well, now he has. Nimens, founder/president of Sound Ideas—which celebrated its 37th birthday in March, remembers selling his first copies of the Series 1000 library on reel-to-reel. "It would take us a whole week to duplicate 10 copies of the library, and then we would ship them out on Friday." Now distribution happens via hard drive and download, though clients barely want to wait two days for a hard drive delivery. "People want it yesterday, or at the very latest, right now," jokes Nimens. He reveals that Sound Ideas is creating a new website where customers can instantly download the smaller libraries Sound Ideas has to offer. "We're hoping the website will be ready for premiere around the NAB show."

Recently, Nokes and Nimens were involved in a major rearrangement in the sound community. When Todd-Soundelux closed up shop, Nokes purchased all of Todd-Soundelux's library assets and trademarks, which included The Hollywood Edge. "I was after the jewel, which I believe was Soundelux. Their best material was kept in-house because they didn't want to provide their competitive advantage to other sound



editing companies. Soundelux is an incredible sound effects library."

Nokes sold The Hollywood Edge to Nimens at Sound Ideas. "We were lucky enough to be able to purchase The Hollywood Edge," Nimens says. "I look at it as a big fish eating a little bit smaller of a fish. I always felt as if Sound Ideas was number one and The Hollywood Edge was number two. So, with me swallowing up The Hollywood Edge, it's made us, without a doubt, the largest publisher of sound effects in the world today."

The takeaway: The Hollywood Edge gets to live on under the protection of its longtime rival Sound Ideas (think Rome expanding its empire), and Nokes is free to license the treasure trove of beautifully recorded Soundelux effects to the audio community, as a complete collection for clients with deep pockets—like Wild Tracks, Technicolor, King Soundworks, Warner Bros., and Formosa Group. "I think our business is really moving toward licensing big libraries now to big clients," observes Nokes. Additionally, 250,000 Soundelux effects will be available on an à la carte basis through Sounddogs.com.

Even more consolidation could be on the horizon due to oversaturation in the sound library market. With recording technology getting cheaper and better, Nokes observes, "There is a lot more average content recorded by semi-professional recordists. That's causing a lot of saturation in the market. You don't need a huge investment or experience to capture an average recording."

"With word-press templates and shopping systems, everyone can click together a shop almost instantly," adds Axel Rohrbach, creative director of BOOM Library in Mainz, Germany—a

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Axel Rohrbach, creative director of BOOM Library

Mich., believes the cleanest, most useful sound libraries will rise to the top. But one negative impact of oversaturation is downward pressure on pricing. "There's a lot more people making sound effects libraries, and so everyone is giving it away for pennies on the dollar," explains Viers. "It's really sad to see somebody spend hours designing or creating something, and then you can download it on a website somewhere for a \$1.99."

WHAT IT TAKES

Tremendous work goes into releasing a sound effects library, from capturing, cleaning and curating the sounds to selling

high-res sound library company started in 2010 by audio pros from award-winning game sound company Dynamedion.

Despite the sea of sound effects to search through online, Ric Viers, founder/owner of the ever-growing Blastwave FX located in Detroit,

the collection, either as downloads or on a drive. But how much longer will customers want to buy a hard drive library? Will hard drives join the CD as an outmoded form of distribution? Rohrbach notes that some companies don't even offer hard copies of their libraries, and only offer



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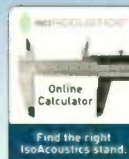
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—Elliot Scheiner,
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digital distribution. "We all tend to want to use everything we bought right away; however, downloading several gigabytes can take some time, even with high-end, cloud-based content delivery systems," he says. "But still, it is of course much faster than shipping and this is what we have experienced over the last five years—physical copies are less and less ordered. It's all going to download-only."

General collections created with high-res audio files, 96k/24-bit and above, can add up to terabytes, and moving that much data via download would require significant bandwidth increases. "Five years from now, it might not be a big deal to download that much through the Internet," says Viers, whose flagship general collection Soncpedia (delivered on a hard drive) is continuously growing, with updates sent to customers every quarter. Without updates, collections on hard drives run the risk of becoming stagnant.

Douglas Price, founder/president of Pro Sound Effects in New York City, offers a solution: a hard drive general library with 50,000 to 150,000 effects, plus access to a growing online database of more than 200,000 sounds. "Our online library allows us to quickly pipe in new content. It's in the cloud so we can immediately put [updates] online and make them accessible to our hard drive users. It really allows us to keep up to date with the

sounds of the times, and keep up to date with the metadata terms of the times," says Price.

Metadata rules. A sound effects library is only as good as its catalog. Viers points out that if you can't find a sound effect you're looking for then there is no purpose of having it in the library in the first place. That's why Blastwave FX is four months into improving the metadata on over 65,000 of their effects.

"It's in the cloud so we can immediately put [updates] online and make them accessible to our hard drive users. It really allows us to keep up to date with the sounds of the times."

—Douglas Price

THE BUSINESS

A huge pitfall of digital distribution is that digital content is so easy to share. Big-time or boutique, sound library companies are feeling the effects of piracy. "It's not cool to steal. We spend literally years and thousands of dollars preparing and putting together a collection," says Niemens. The music industry is having a hard time controlling piracy, but for that industry, listeners tend to not alter the file, making it easier to map and trace. Unless you catch someone selling

copies of your sound library—as Nokes did when he found a guy, whom he says worked on a major studio lot, selling copies of SoundStorm on craigslist—then it's nearly impossible to trace because users manipulate, process and layer effects.

While you can't stop piracy, you can try to slow it down, through

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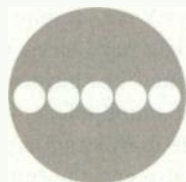
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Doug Price, center, of Pro Sound Effects, talking to people at a trade show.

anti-piracy companies, like Link-Busters in Amsterdam. Or, through a more grass-roots approach of education. "Together, with all the boutique libraries, we can all start to educate people who are using our products so that they don't give our stuff away for free. If you're a professional and you're making your living in sound, then you shouldn't be building your house with other people's stolen property," says Nokes.

Another issue plaguing sound library companies is a misinterpretation of licensing and usage policies. "We regularly remind our clients to work with the right license type—whether a single-

user license is sufficient or a multi-user license is needed," says Rohrbach. It's not enough to simply buy one license when a whole company is using an effects library. Price explains, "If you have more than one user then you need a multi-user license. For example, if you buy a plug-in, it doesn't mean 10 people in your company can use

it. That hasn't really been made clear until the last five years. I think people assume that if they buy a library, then it's a buyout and anybody they work with can use it. And that's not the case."

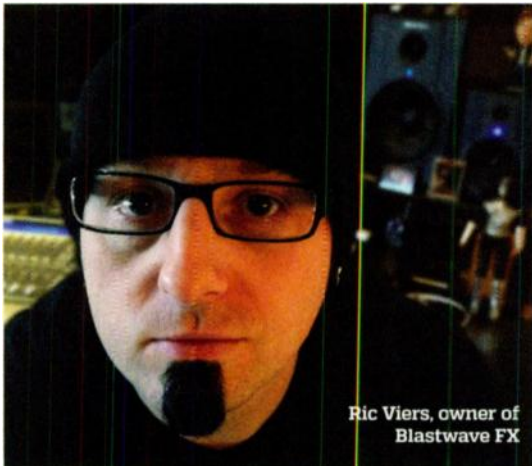
In response, Pro Sound Effects has pioneered an annual licensing model for companies with multiple users. Instead of a company paying the single-user price 10 times, for example, they simply pay for an

annual subscription. "That has been really well received," says Price. "It has brought to the forefront the way sound effects are licensed."

The need for quality sound effects libraries will never go away, says Viers, despite the fact that consumers might have access to better recording equipment. "The purpose of creating a really good sound effects library is to not only provide useful and hard-to-get sound effects, but also save the end user the time and money that it takes to gather and catalog those sound effects." The industry

"If you're a professional and you're making your living in sound, then you shouldn't be building your house with other people's stolen property."

—Rob Nokes



Ric Viers, owner of Blastwave FX

may have a solid foundation of large-scale, high-res general libraries, but consumers now constantly seek out fresh new sounds. The days of identifying specific sound effects in a film are over. In fact, there's a growing aversion to overplayed sound effects. Sound designers want their work to be unique, so it's up to sound effects libraries to supply a diverse array of raw sounds.

"Moving forward, I think a lot of the material being created will be sound designer-oriented," Viers says. "Blastwave FX libraries are really focused on the sound designer. I look at sound clips like paint. You can take all of those colors and make many different pictures. We want people to be able to take the sounds and layer, loop, design and create many different things with them, to be able to create sounds that have never been heard before, though individually, the sounds came from a sound effects library."

The future for sound libraries lies in what Rohrbach terms "interactivity": Sound effects libraries offering greater hybridization with the music industry. "Having [sounds] interactively implemented in sampler instruments, drum pad hardware or distinctly developed plug-ins is more intuitive and opens the market for sound effects library developers to composers and producers," says Rohrbach.

Price, for his part, takes the interactivity idea further by suggesting that future sound libraries have better integration into DAW workflows, bringing inspiration to sonic realization quicker, and more creatively than ever before. "Right now we are focused on workflow efficiency, making sure people can find what they need as quickly as possible. But inspiring the creative process is also important to us. I want to see more tools that inspire the creative process and allow the raw sound effects content to be remixed, edited, twisted, flipped and blended into exactly what the designer is imagining for any purpose." ■

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GHOST EMBRACE AT HYPERTHREAT SOUND

Morgan Rose



Morgan Rose, drummer/producer/founding member of alt-metal band Sevendust and also a member of Ghost Embrace, recently worked on tracks at HyperThreat for the second Ghost Embrace album, due out this spring.

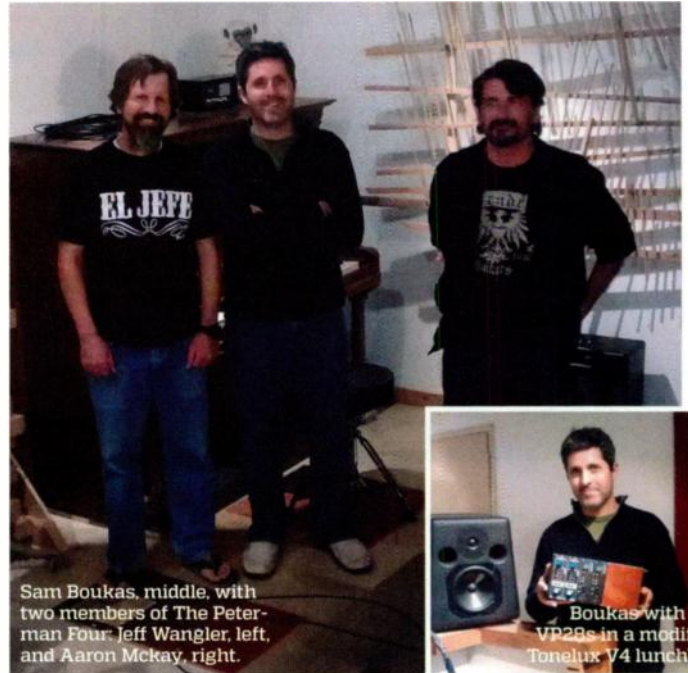
"Morgan is pretty easygoing in the studio as far as setups go," says Johnny Fantozi, Rose's drum tech. "In a live setting, he likes his cymbals super tight and his snare drum cranked. When we hit the studio, I like to loosen the cymbals up so we get a smooth decay, I tune the snare drums lower for a fat tone and more body. It's funny because he will hit the snare a few times, and you can tell he doesn't like the feel of it. He always asks me how it sounds in the control room and he trusts my judgment. He understands that the studio setting is way different from a live show, and he is always willing to make compromises to get the best sound."

The project is ongoing, with Jerome Lee on bass, Nema Sobhani on guitar, and Eric Moon, who is orchestrating the material.

"I've worked with Eric Moon on several recordings and the thing that always amazes me about him is his ability to hear a song once, write it down as a chart, and almost immediately come up with a brilliant orchestration to accompany it," says engineer Rick Thompson. "He's a master at building layers, finding tones, and making them blend. What I do when I'm engineering Eric is just try to be an extension of his workflow. He likes to work quickly as the ideas pour out of him, so I find myself constantly moving from track to track, opening virtual instruments, editing MIDI notes, and doing my best to capture his ideas."

Annette Freeman is producing the project, and Jesse Avalon is also engineering.

Jim Allen, *The Peterman Four* Record at XYZ Audio



Sam Boukas, middle, with two members of The Peterman Four: Jeff Wangler, left, and Aaron McKay, right.



Boukas with the VP28c in a modified Tonelux V4 lunchbox

Blues/folk/country artist Jim Allen recently recorded his album *Ten Songs* at XYZ Audio in La Mesa, Calif. The project was self-produced, and studio owner and engineer, Sam Boukas, engineered it. "With Jim, much of the main bed tracks were just Jim playing his Larrivee acoustic and singing a live vocal," Boukas says. "To capture this, I used an AKG 414 on his voice and put it in figure-8 mode to reject the guitar. On the guitar, I used a Blue Dragonfly and an Oktava o2r.

"One thing I love to achieve is a very phase-coherent, 3-D image, so I actually placed the Oktava right next to the 414 and pointed it at the guitar," Boukas continues. "Some of the vocal got into the mic, but it was perfectly in phase. The result was very dimensional. To add to the overall ambience of the tracks I mainly used the Apollo UAD EMT 140 plate reverb plug-in.

Jim's daughter, Rachel Allen, who plays trumpet for the La Jolla Playhouse Theatre, came in to play on a cover of Tom Waits' "Shiver Me Timbers."

Boukas is also working with local San Diego band The Peterman Four. He and the band are producing the album together, and Boukas is also engineering.

"On this project, I'm getting a lot of use out of the Shure KSM313 ribbon mic, which I love," Boukas says. "For guitars it captures the true sound that's coming out of the amp. That mic, coupled with a CAPI VP28 mic pre, is the perfect combination. I built two of the VP28s and I use them everyday.

"One thing I can say is, I don't mind it when a mix has some asymmetrical qualities, and I'm a huge fan of mid-side microphone setups," Boukas continues. "I'm often shocked at how few recording engineers even know of the MS technique. I learned a lot while recording with producer Jerry Finn on Blink 182's self-titled album and the Box Car Racer project."

Evergroove Studio's EAR Education



EAR (Evergroove Academy of Recording), the education arm of solar-powered Evergroove Studios (Evergreen, Colo.), has embarked upon a new series of workshops for audio engineers, producers and musicians. Brad Smalling, Evergroove's founder and master recording engineer, teamed up with fellow master producer/musician/engineer Alan Evans and two-time Grammy Award-winning recording engineer David Glasser to bring two workshops this spring to the Denver area: "When You Think You're Ready—You're Not. How to Properly Prepare for the Recording Studio," and "Let It Bleed—The Art of Live Studio Recording."



"It's important for me to try to pass on what I've learned and make it easier for the next person who comes along," says Smalling. "We've focused a lot of energy on supporting the Denver/Foothills music scene, and this is another way of ensuring that Colorado continues to be acknowledged within the industry as a center of excellence in production, recording and mastering." "Historically, sound engineers have had to learn on their own, by trial and error," he continues. "That's a painful way to acquire a high-profile skillset, and worse yet, the age of the Internet has brought forth a great deal of misleading information. I'm excited to team with Alan and David this spring to put out good information, and I think Colorado's recording community will be just as excited about the names we're lining up for the fall."

The spring 2015 workshop series is the first in a planned series of hands-on, practical learning sessions, with topics already being planned out for the following year, including drum production, guitar production, vocal production and bass production.

"This is an exciting new format for us," says Jenny Smalling, business manager and co-founder at Evergroove. "We've always considered ourselves partners and educators as much as service professionals, and this is a fantastic opportunity for us to share the experiential knowledge that's made the 'Evergroove sound' a unique voice in the modern recording industry."

In other news, Evergroove has seen the following projects come through the studio: Michael Aldridge, with Brad Smalling producing and engineering his album *All or Nothing* (Aldridge also produced); The Primary, with Smalling engineering and the band producing; Springdale Quartet, with Smalling producing and engineering (the band also produced) the album *Decades*; and Woodhouse, with Smalling producing and engineering (the band also produced).

YOUNG JEEZY AND YOUNG MC DROP BY THE SALTMINE

The Saltmine staff (l. to r.) John Gray, Don Salter, Tyler Nervig, and Andre Nelson (Kyle Colley not pictured).



With the Super Bowl in Arizona this past February, The Saltmine Studio Oasis was the place to be, tracking and mixing many artists, including Young Jeezy and O.T. Genasis for a "CoCo" remix for Atlantic Records, which was engineered by Saltmine producer/engineers Tyler Nervig and Kyle Colley.

Young MC also mixed sound for his new movie, *Justice Served*, in the Saltmine's Studio B mixing room with engineer John Gray. Gray also worked with artist FriskOLAY laying down vocals and SSL mixing the track "Booty" for Ferrara Records with a video just released.

Lil Wayne also came back to The Saltmine twice in 2014 to record and collect some "good karma"—which he got when he recorded "Lollipop" for *Tha Carter III* at the studio in 2008—by recording a handful of songs for the forthcoming *Tha Carter V*. Staff engineer Andre Nelson got to lay some heavy guitar to fatten the production on "Gotti."

Meanwhile, The Saltmine Studio A is currently getting a new

modern monitor makeover, installing "Mega-sound Cluster 5" monitors that will feature four TAD TL-r603s plus TAD TD-4001 drivers and massive wood horns per side, powered by Bryston amps and crossovers and dual 18-inch subwoofers. Westlake BBSM15 TADs and custom Augspurgers continue to pump sound to the other SSL rooms in Studios B and D, the Villa.



Don Salter and Young Jeezy

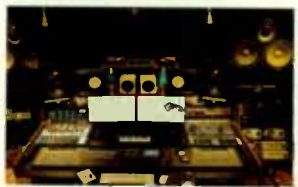
SESSIONS: SOUTHWEST U.S.



Back row L to R Pat Thrall, Zoe Thrall (studio director), Mark Everton Gray. Seated are two members of Bianca Bananas & the Scoundrels: Steve DeZarn and Bianca Bananas.

STUDIO AT THE PALMS - LAS VEGAS

Elton John was in Studio X with engineer Matt Still...Nico Vega was in Studio X with engineer Rob Katz...Snoop Dogg was in Studio Y with engineer Jason "JayBull" Patterson (Snoop also produced)...Marie Osmond was in Studio X, with Jason Deere producing and Patterson engineering... Bianca Bananas & the Scoundrels were in Studio X, with Pat Thrall and Mark Everton Gray both producing and engineering.



SIDE 3 STUDIOS - DENVER, COLO.

In-house producer Daniel Majic was signed to Artist Publishers Group in the fourth quarter of 2014, getting right to work on a few David Guetta's tracks for his latest release, and also co-producing the newest single from K-pop superstars 2PM...Side 3 opened Studio B,

which features a large acoustically designed control room and vocal booth and an SSL XDesk. The Studio also records most of the voice-overs for Comedy Central's animation series *TripTank*...Skrif recorded his debut EP *Renegades Never Die*, with Mario Romero producing and Andy Flebbe recording, mixing, and mastering the entire project...David Murphy (formerly of STS9) worked on an EP in Studio A for his new band Seven Arrows, with Murphy producing and Flebbe engineering... Young The Giant worked on new material in Studio A, with Young The Giant producing and Flebbe and Chris Scott engineering...Christina Perri was in Studio A, with Matt Morris producing and Jon Bonus engineering.



Engineer Scott Wiley

JUNE AUDIO - PROVO, UTAH

EDM artist Kaskadee is mixing his forthcoming album with producer/engineer Finn Bjarnson...Alt-rock band The Moth & The Flame is recording and mixing for its forthcoming debut album on Electra Records with engineer Scott Wiley...Alt/slacker punk band Sego is working with producer

Nate Pyfer and engineer Wiley...Indie/folk band The National Parks is recording and mixing its second album with producer Wiley and engineer Ryan Shengren King...Alt-rock band Fictionist is working on a new single with engineers Wiley and King...Indie/electronic band The Brocks is working with bass player Branden Campbell of Neon Trees, producer Pyfer and engineers Wiley and King...June Audio is also building a second studio this year to handle its increasing workload.

NOISEBOX STUDIOS - OREM, UTAH

Singer-songwriter Madilyn Paige, a season six contestant on *The Voice*, worked with producer Stephen Nelson and engineer Dave Zimmerman recording vocals, electric guitars and drums...Cinematic pop trio Gentry worked with producer Nelson and engineer

Zimmerman on new material...Indie-rock band DateNight worked with engineer Zimmerman...The studio is also in the middle of building another home studio from the ground up, to be completed by May 2015. It will feature a medium-size vocal booth, a larger room of approximately 400 square feet and a 500-square-foot control room. Ceilings for the tracking room will be around 14.5 feet.



Macy Gray and Jesse O'Brien

COLORADO SOUND STUDIOS - WESTMINSTER, COLO.

Macy Gray was in Studio A with engineer/producer Jesse O'Brien working on new material. O'Brien used a Neumann tube U 48 through a Manley Voxbox to get some great vocal tones...Colorado Sound Studios Mobile partnered with Immersive Records to capture

two once-in-a-lifetime performances with Medeski Martin & Wood and New York chamber orchestra, Alarm Will Sound. The performances were held at The Newman Center for the Performing Arts in Denver and at Macky Auditorium in Boulder. The studio's crew captured the events through fiber into the truck's Studer Vista 5 console...Mixing engineer Kevin Clock and mastering engineer Tom Capek recently finished the double CD *Live at the Oasis Vol. 11* for an independent, public radio station, KUVO Jazz. Disc 1 features traditional jazz sounds by renowned artists, and disc 2 features the new sound of jazz with the help of young, up-and-coming musicians.



EAGLE ROCK STUDIOS - ALBUQUERQUE, N.M.

Black Eagle recorded tracks for the album *Forever More*, with Blane Sloan producing and engineering (Black Eagle also produced)... Siyeric worked on *White Sands Lady* in Studio

A, with the band self-producing and Roger Baker engineering...Richard Martin worked on *Fall Roundup* in Studio A, with Martin and Sloan producing, and Sloan also engineering...Emerson Susan Corely worked on *Things Are Looking Up* in Studio A, with Corley and Baker producing and Baker also engineering. They recorded an all-rhythm section (including live grand piano) and six horns live in one room for traditional swing effect.



L to R: Engineer Pat Heaney, Aino Jawo and Caroline Hjelt from Icona Pop, and engineer Christian Cummings

SIGNATURE SOUND - SAN DIEGO, CALIF.

Studio A recently went through a large computer and converter upgrade. The room now features a 32-in/32-out Apogee Symphony conversion system mated to a new 12-core 2013 Mac Pro with Thunderbolt display. The studio also acquired a new matched pair of Bock 251s to add to its mic collection...Wovenwar worked on new material with Bill Stevenson producing...

Tiesto featuring Icona Pop worked on the single "Let's Go," with Christian Cummings and Pat Heaney engineering...Nico & Vinz worked on new material... Matthew Lien was in the studio with engineer Mike Harris...Reik was in the studio with producer Kiko Cibrian.

THE TONE FACTORY - LAS VEGAS, NEVADA

Engineer Vinnie Castaldo recently finished producing, engineering and mixing Eddie Levert's new solo record, *Make Ya Go Ohh*. Levert is an original member of The O'Jays. Dennis "Doc" Williams—the The O'Jays musical arranger since the early '70s—was in



Eddie Levert

the studio with Levert conducting a string section.

ROCK IN RIO ... IN VEGAS

BY BARBARA SCHULTZ



The main system, which is modeled on the one used in Rio, features 120 VTX V25 loudspeakers (60 per side), and 60 VTX S28 flown subs (30 per side). An auxiliary sub system includes VTX G38 stacks. All is powered by Crown amps and controlled via the Dolby Lake system. Gabisom also provides 24 d&b M2 wedge monitors, plus J8 sidefills and B2 subs.

Front of house at RIR Vegas' main stage is managed by engineer Peter Racy, though many of the main artists will arrive with their own FOH and monitor engineers. To accommodate the needs of a variety of acts, Gabisom

In the spirit of the many other international "cities" within the city (Paris, New York, Venice, etc.), Rock in Rio has come to Las Vegas. The long-running Brazilian festival, which has also staged events in Spain and Portugal, has been constructing a permanent outdoor venue at the north end of the Las Vegas Strip, adjacent to Circus Circus, to facilitate a large-scale music festival that will take place during two weekends this May.

May 8 will mark the start of Rock Weekend at the festival, with artists including No Doubt, Gary Clark Jr., Metallica, Linkin Park and many more appearing on three stages (Main Stage, Sunset Stage, Electronica Stage). The following weekend, pop acts will perform, and the 80,000-capacity venue will host Taylor Swift, Ed Sheeran, Bruno Mars, Sam Smith, John Legend and dozens more. The project also includes three "Rock Streets," based around international themes, with stages for scheduled "street performers."

The audio system and installation for this impressive project is headed by Maurice Hughes, who has been Rock in Rio's production manager since 2001. "Ever since the first version in 1985, [festival founder] Roberto Medina has said the festival would go out to the world," Hughes says. "We went to Portugal in 2004, and from there to Spain. Then this opportunity in Las Vegas turned up, and it's exciting because of how close the site is to the main strip. Normally a site this big is on the outskirts of a town, but we're in the middle of everything, and there's a monorail station right beside us."

Equipment for Rock in Rio Las Vegas is being provided by Gabi Ferreira's Gabisom Audio Equipment (Sao Paulo, Brazil); the company also supplies gear for the festival's events in Rio, Portugal and Spain. "From 2013 in Rio, we've been using the JBL VTX system," Hughes says. "Everybody who plays the festival has been 100-percent happy with it."

sends several consoles: Yamaha PM5DRHs, Avid Profiles, and a pair of Midas Heritage 3000s for engineers who prefer to mix analog. The festival's main monitor engineer is Fernando Ricca.

The audio rigs are reasonably close together within the 37-acre development to allow fans to focus on any or all of the stages. "Everything is scaled so that you can see every act if you want to," Hughes says.

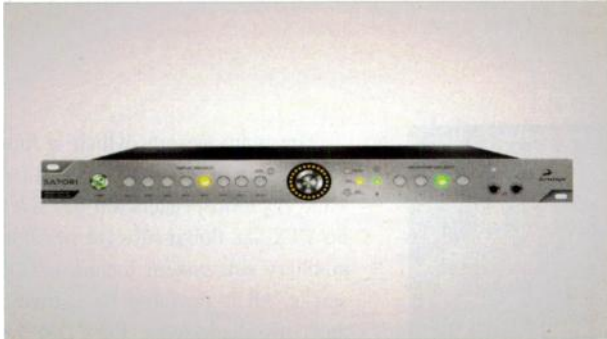
The project also, of course, includes extensive infrastructure that the public will never see: "Underground ducts and fiber-optic cabling carries signal and power all over the park; everything is connected," Hughes says. "If you're in a VIP tent on the opposite end of the park, you can watch what's happening on the stages. We installed delay towers, as well. And the bathrooms! This is a new thing for our festivals this year. There will be—not all, but some—permanent bathrooms, so we're really giving the public a treat." Fans who frequent music festivals know that this is no joke...

And away from the 80k-capacity crowd, the Rock Streets offer three different flavors of civilization. "Each of these Rock Streets is a little complex," Hughes says. "It really looks like an authentic street with shops, bars and food. Right in the middle there's a central stage where we have a little P.A., and along the verandas, on top of the houses, we have reinforcements, so you can hear what's going on that stage all the way down the street.

"In the past, we've done just one Rock Street, with one central theme to it," Hughes continues. "This is the first time we've done three. The first idea was inspired by New Orleans, so the architecture, the scenic work, is all based on the French Quarter. Then we have another that's 'Europe,' based on London and Ireland. And the other, of course, is Brazil, so there's quite a bit of culture going on there."

For a complete lineup and schedule of Rock in Rio Las Vegas performances, visit rockinrio.com. ■

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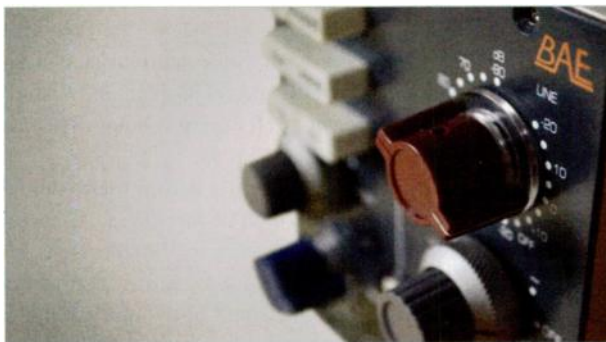
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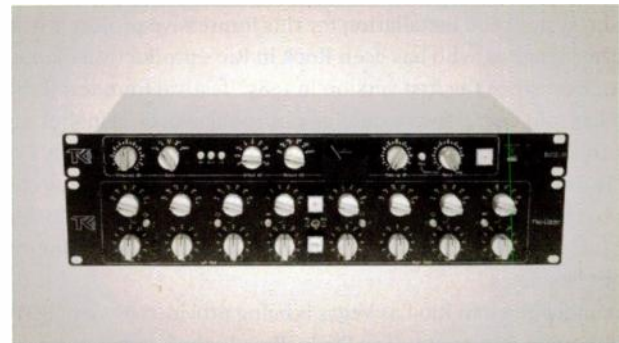
UNIVERSAL AUDIO APOLLO TWIN

UA's new 2x6 Thunderbolt audio interface reinvents desktop recording once again, complete with real-time UAD processing



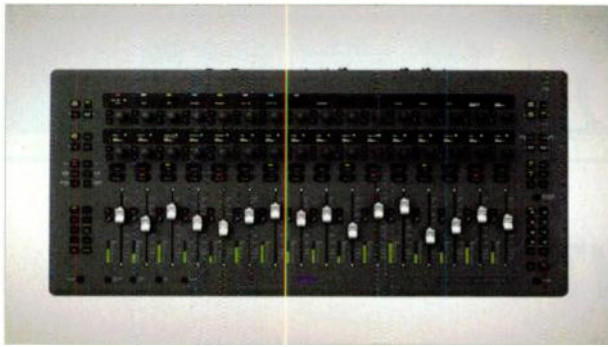
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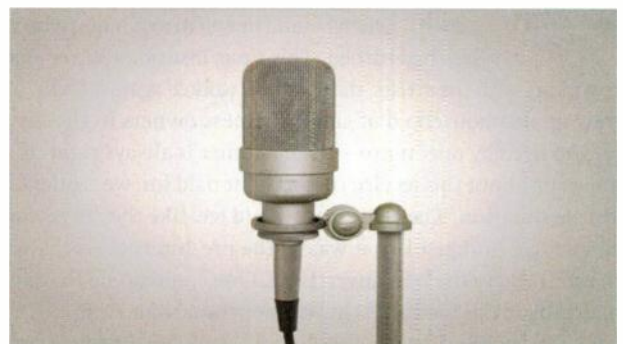
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RobairReport

TALES FROM THE CLIENT SIDE



By Gino Robair

The ink was barely dry on my January 2015 column about the dynamics of dealing with artists when I found myself in a situation where the tables had turned. This time, instead of the engineer and studio working with the artists, the situation worked against them.

I grew up in a household of small business owners in the service industry who lived by one motto—the customer is always right. If a problem comes up about the service that a client paid for, we worked hard to remedy the situation. The customer should feel like they're getting their money's worth. And just like it was in the pre-Internet world, word-of-mouth referrals are the best advertising. One could argue that, in an era dominated by social media, it's more important than ever.

Even if you're offering a "friend's rate" or doing a project pro bono, you're obliged to take the work just as seriously as if the client was paying full pop. Of course, you don't have to go all out with these folks as you might do with top-tier clients, but you should, at the very least, show them the same amount of respect and courtesy while providing the same level of service you normally would. If you suspect these clients will take advantage of your good nature, listen to your intuition and don't make the offer, or say no when they ask.

Most music professionals have negotiated both sides of this issue at some point in their career: They have asked for a rate cut for projects that have little or no budget, as well as entertained bids from clients working on limited means. When I've been asked to provide my services for free or for less than I usually charge, I'll say yes only if I can give it my all and feel good about it. Otherwise, the answer is no. Pro bono doesn't translate from the Latin as half-assed job.

ALL OR NOTHING

In this recent situation as a sideman, I was taking part in the latter half of a half-day session. I arrived after the first part of the date was done to find my mic in position and ready for me to set up—perfect. After a quick level-check with all the players—woodwinds, brass, and percussion—we were ready to roll. And that's when things got interesting.

The first piece had a long, soft ending, with the full ensemble navigating the entrances and dynamics very well. Suddenly, a new sound joined in: The air conditioning had come on, adding a low rumble to the mix. But we finished the take, bringing our sounds to silence. A few

moments later, as the musicians discussed the merits of the take, the engineer walked through the tracking studio to an adjacent room and turned off the AC without comment or acknowledgement.

A few takes later, another quiet section, but this time voices could be heard chatting from the control room, clearly distracting the musicians. When the piece was finished, and after the long pause to let things die out, we asked the engineer from the studio if we could keep it rolling and do another take.

Silence.

A few moments later, the engineer appeared and asked us to repeat the question because he was talking to someone.

If I had known that we wouldn't have an engineer paying attention as we recorded, I would have suggested we do the session ourselves somewhere else. A couple of us in the group have the gear and know-how to do it.

One reason tech-savvy artists occasionally choose not to record themselves is that they want to be able to stay in the creative space and let someone else deal with any problems that come up. But for that to happen, the person on the other end of the glass needs to be paying full attention. The players shouldn't be the only ones asking if the drummer accidentally hit the snare mic or whether that sudden fortissimo blast

from the trumpet caused clipping. That's information the client needs to know immediately after the take, not something left for them to discover after they've taken the files home.

Unfortunately, this wasn't an isolated case: I've had previous experiences in this studio where, for example, I found dropouts in the media after the session. Later, when I alerted the engineer about the problems, his only reply was "Oh," followed by a long silence. He didn't ask to hear the dropouts, offer to edit them out, or even suggest that he would check his gear to see if it was a recurring problem. Since then, his studio has upgraded a few things, but the attitude toward the client doesn't seem to have changed.

Of course, there will always be technical issues that arise during a session. What makes a studio and its staff worth the expenditure is how such problems are handled. It doesn't matter if you run a home studio or a professional one: Do the job to the best of your ability so the client feels at ease. That should be a no-brainer, especially considering the current state of the studio biz, where customer satisfaction is more important than ever. ■

It doesn't matter if you run a home studio or a professional one: Do the job to the best of your ability so the client feels at ease.



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World Radio History

Tech // new products



DANGEROUS CONVERT-2, CONVERT-8

Audiophile-Grade Converters

The Convert-2 (\$2,499) and Convert-8 (\$3,499) are reference-grade D/A converters from Dangerous Music. Features of the Convert-2 include high-definition 2-channel conversion, USB input for connecting a DAW, and integrated Dangerous Monitor ST/SR switching. The Convert-8 is an 8-channel D/A converter offering surround monitoring, a dedicated summing/stem mixing D/A, input for DAW connection, and integrated Dangerous Monitor ST/SR switching. Both units offer support for AES, S/PDIF, USB, ADAT, and Toslink digital formats.



BUZZ AUDIO DBC20 COMPRESSOR

Old-School Gain Reduction

Designed by Tim Farrant of Buzz Audio, the DBC-20 (\$1,895) is a 2-channel compressor that uses a gain reduction element of silicon diodes in a transformer-coupled bridge arrangement. Features include a self-adjusting ratio that increases with deepening gain reduction, promising control of very dynamic signals in a seamless fashion. The DBC-20 offers a Class-A discrete amplifier design in a balanced configuration from input to output, and controls including six switched attack and release times, a big knob for the amount of compression and an output gain control. Another switch introduces a highpass filter to the sidechain to lower compression sensitivity at low frequencies. Each channel has a bypass switch, and the sidechain of the two channels can be linked for stereo operation.

FURMAN M-8X AR POWER MANAGER

Stable AC And More



The M-8x AR from Furman (\$479) provides a stable 12A-15A, 120V output ($\pm 5V$) from input voltage of 97V and 141V. Features like Extreme Voltage Shutdown protect against dangerous sustained over/under voltage conditions, while Extreme Current Shutdown detects over-current conditions and shuts down the outlets before damage is done to the M-8x AR or any connected equipment. The ECS circuit has been designed to detect high-speed and high-level currents, and will ignore low-speed/low-current transients, such as amplifier inrush currents. All internal components are specially designed to distinctly recognize damaging fluctuations from natural fluctuations, and therefore only react if there is danger to equipment or the unit itself. A three-color "in-regulation" indicator provides quick assurance that power is being properly managed, in addition to the unit's "Protection OK" indicator.



RADIAL JDI AND J48 STEREO DI

New Tricks for Old Dogs

Radial Engineering has launched two stereo direct boxes: the JDI Stereo and the J48 Stereo (\$299 each). The passive JDI features phase accurate, distortion-free signals from its stereo outputs. The JDI promises the handling of excessive transients without flinching, producing a natural, vintage-sounding compression.

The unit uses high-quality transformers expert at reducing hum and buzz problems caused by ground loops. The active J48 uses technology working within the confines of 48-volt phantom power to deliver a wide frequency response, more headroom with less distortion, while introducing a new way of lifting the pin-1 ground without cutting off phantom power. The unit employs an internal switching supply that converts phantom power for more rail voltage, resulting in less distortion and more gain without the use of an input pad.



BLACK BOX ANALOG DESIGN HG-2

Tubes, Transformers & Tone

The HG-2 (\$2,780) is a line-level, stereo unit designed to add saturation, harmonics, natural compression, increased RMS and enhancement during mixing and mastering. Features include Cinemag input transformers feeding two paths. The main path travels through a 6U8A Pentode tube stage that drives the following Triode stage, which produces subtle harmonics to full-on saturation. A parallel signal path uses a set of 12AX7 tubes voiced specifically for harmonics and saturation—this parallel saturation circuit is outfitted with a 3-way Tilt switch that allows the user to choose the frequency content of the signal feeding the circuit. The “low” position saturates just the low midrange and sub frequencies; the “flat” position saturates full bandwidth; and the “high” position saturates only the high midrange and high frequencies.



HOSA TECHNOLOGY ZAOLLA SILVERLINE

High-End Instrument/Audio Cables

The Zaolla Silverline from Hosa (\$99.99 and up) encompasses guitar and microphone cables, analog interconnects, and digital audio cables and snakes—all designed to provide the most transparent signal transfer possible. Featuring solid-silver conductors and premium connectors, Zaolla cables exhibit superior build quality and the highest level of attention to detail. The cables use solid-silver conductors for a superior transfer rate far exceeding that of copper while remaining completely transparent in terms of audio quality. The cables are designed with redundant shielding that ensures EMI and RFI interference does not penetrate the cable and corrupt the signal.



NCH WAVEPAD SOFTWARE

DAW for iOS, Mac, PC and Android

WavePad audio editing software (\$49.99) features include cut, copy, paste, delete, insert, silence and auto-trim. Onboard audio effects include amplify, normalize, equalizer, envelope, reverb, echo and reverse. Integrated VST plug-in support offers access to additional tools, VIs, and effects from third-party developers. Audio and music file format support includes MP3, WAV, VOX, GSM, WMA, AU, AIFF, FLAC, Real Audio, Ogg Vorbis, AAC, M4A, MIDI, and AMR. WavePad software also handles batch processing, scrub, search and bookmarking of audio. It supports sample rates from 6 to 96 kHz, and stereo or mono files that are 8, 16, 24 or 32 bits.



NEVE RNDI DIRECT BOX

Split Personality DI

The RNDI from Rupert Neve Designs (\$299) uses a custom Rupert Neve-designed transformer and a Class-A biased, 48-volt phantom-powered discrete FET amplifier to balance a signal from an instrument or a 1,000-watt amp. With sonics extending 100 kHz, unrivaled phase coherence, steel construction, and classic Rupert Neve tone and design, this is the first stand-alone DI bearing Rupert Neve's name. Features include level handling from an instrument (+21dBu) or speaker level up to +41.5 dBu. Output level measures +11.5 dBu at maximum input level, and output impedance at less than 40 ohms for driving long lines without effort.

New Sound Reinforcement Products



QSC TOUCHMIX

8- and 16-Channel Desktop Mixers

The TouchMix range of mixers from QSC includes 8- and 16-channel models. The TouchMix-8 (\$899) includes four mic, four mic/line (XLR/TRS Combo), two stereo line (TRS), and

main R/L (XLR), and cue/monitor (TRS) outputs. Dimensions are 2.2x13.1x9.6 inches. The TouchMix-16 (\$1,299) features 12 mic, four mic/line (XLR/TRS Combo), two stereo line (TRS), talkback (XLR), USB 2-track inputs plus six aux (XLR), two stereo (TRS), main R/L (XLR), cue (TRS), and monitor (TRS) outputs. Dimensions are 2.3x14.2x11.5 inches.



DENON DN-304SAM SPEAKER SYSTEM

Versatile, Portable Sound Reinforcement

Denon has released a compact high-performance powered speaker system: the DN-304SAM (\$TBA). The unit promises wide-range, high-output sound in a trim, space-saving design. The system comprises two acoustically inert MDF speaker cabinets, each containing a 4-inch polypropylene-coated woofer and a 1-inch ferrofluid-cooled tweeter mounted to a proprietary waveguide. The left speaker contains the system's stereo amplifier, rated at 20 watts of Class-A/B power per channel. A 1/8-inch (3.5mm) stereo input jack lets users quickly connect auxiliary audio sources, while a headphone output allows for private listening.



D.A.S. AERO 20A SYSTEM

Compact Powered Line Array

Joining the new generation of DASnet-capable powered line arrays, the Aero 20A incorporates a new D.A.S. 12-inch loudspeaker designed to provide high output and reliability. A light aluminum voice coil bonded to a new Fiberglass reinforced cone, an optimized magnet circuit, and a new suspension design contribute to the performance of the 12AN4 loudspeaker in terms of distortion, power handling and maximum SPL. The 12AN4's new voice coil venting scheme is said to be particularly effective in dissipating voice coil heat providing the speaker with a high thermal rating and low power compression. The Aero 20A is powered by an advanced electronics package comprising a compact Class-D amplifier that combines the power supply, output stage and connectors in a single, lightweight chassis.



VUE AUDIOTECHNIK H-5 LOUDSPEAKER

Ultra-Compact, Versatile Design

The h-5 from VUE Audiotechnik offers the quality and versatility of the larger h-8, h-12 and h-15 systems in a compact design that's ideal for stage lip and under-balcony applications. The unit combines two precision-engineered, 5-inch low-frequency transducers with a 1-inch exit compression driver that features a Truextent beryllium diaphragm at its core. Onboard electronics, including the same 64-bit digital processor found in the h-12 and h-15 systems, provide highly sophisticated networking capabilities and next-generation DSP that's programmed to address every individual element within the h-5's ecosystem. The powerful processor handles EQ, time alignment, crossover management, and speaker protection, as well as System-VUE network control and monitoring functions.



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950MX
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32CS
CHANNEL STRIP

Continued from p. 36

roll drums, a live TV broadcast? There's such a huge depth of knowledge here." It doesn't hurt that for many years Genewick has been joined at the hip with Schmitt, and he's the right hand for Tommy Vicari when he brings in the Oscar orchestra for 10 days every February.

"My role kind of evolves with the business of the studio," Genewick says. "As we started to diversify more, we found that we never had to say no—we would always find out how to do it. That's the attitude here. Capitol has always been about the people. Our clients know they can count on us. The Academy Awards didn't come here because we were close to the Dolby Theatre, although that's a benefit. They came here because they knew we could pull off the show."

Oh, yes, the Academy Awards. Composer/conductor Bill Conti approached Salvatore in the late 1990s about bringing the orchestra in for a week of rehearsals and pre-records leading up to the broadcast. The doors were opened between Studios A and B, and 60-plus pieces were spread out in a rather nontraditional arrangement, with strings in B, the others in A, and singers upstairs. Rolling carts held the CRT monitors. It was tight, but it worked.

Tommy Vicari, whose first job was in the Capitol mailroom in the 1970s, has mixed the Academy Awards orchestra for the past 16 years. Three years ago, the process changed considerably when the show's producers wanted to make use of the orchestra pit for TV props and a song and dance number.

"So what do I do with the orchestra?" Vicari asks. "Put them upstairs at the theater or keep them at Capitol? It wasn't really a decision. Rather than working a week on a mix and then moving into the Remote Recording truck while the orchestra would go into the pit, now I get to record and mix the entire show on the same console, same setup. All my EQs and compressors are on playback, so I can tweak up until the show and get a pretty tight mix. Plus, there's all the resources and support of Capitol right here.

"The problem is that we're now half a mile away," he continues. "We have to get signal there and back, with the conductor at Capitol and a video monitor showing him back on the Dolby stage for the artists. In the past three years we've got it down to a 5.5-millisecond delay, so, for instance,



Photo: Carl and Desiree Alabie

Lady Gaga can sing *Sound of Music* live with the orchestra. People like Steve Genewick and Chandler Harrod are here with me to assist. On Pro Tools is Larry Mah. We can do whatever we have to do. It works."

It was a huge technical effort, with AT&T stepping in and installing 48 dedicated fiber lines between the Dolby Theatre and the Tower. The video monitoring throughout the facility was upgraded to full SDI/HD. Cameras were brought in and shots went live to air. ABC provided its own generator. That's not an easy job to sync. They've now done it for the past three years.

The reason that the many and varied jobs get done, and that clients trust they will get done well, is the Capitol staff. Everyone interviewed for this story said the same thing, raving about the professionalism and attitude of engineers and the staff like Charlie Paakkari, Chandler Harrod, Travis Ference, Joe Napolitano, Jeff Fitzpatrick, Nick Rives, Dave Martinez, Ira Grylack and Diego Ruelas. On the maintenance side there is Dave Clark, Peter Gonzales, Niall Murphy and James Goforth. In transfers and preservation there is Dave McEowen and Perry Cunningham. Holding the line in administration are Mark Moreno, Jenny Sloatman, and Ryan Simpson, as well as Ursula Kneller in Marketing and Special Projects.

"The building, the studio, the brand, the people, they all say one thing: authenticity," Barnett, CMG head, sums up. "That's what we want to stand for. Excellence in music. Of everything we've done, the project I'm most proud of is probably the New Basement Tapes. It has everything we stand for. Bob Dylan's lyrics, fantastic musicians, T Bone Burnett producing, incredible studio, great filmmaker, an amazing record, and an incredible documentary. That project says it all in how we feel about our people and our studios." ■

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Tech // reviews

TRIDENT SERIES 88 CONSOLE

First Look at the Newest British Analog Console from PMI Audio

I had a music project that just screamed for an old-school rock 'n' roll, hands-on mix using a proper analog console. So I used this opportunity to take a first look at the only Trident Series 88 console currently in the U.S. [first orders were expected to ship this month]. The 24-channel version of the Trident 88 had been under final revision and real world testing for about nine months at Charlie Waymire's Ultimate Studios in Van Nuys, Calif. This console is representative of the production models that come in 16, 24, 32, 40, and 48- (or more) channel frame sizes starting at \$17,999 MSRP for the 16-channel model.

OVERVIEW

The Trident 88 is a split, inline console with fully-discrete Class-A microphone preamps, stereo mixing bus, eight buses (or Groups), eight auxiliary sends and effect returns, and complete monitoring and headphone facilities. It builds on the Trident heritage—a heritage I'm familiar with over the years of recording and mixing in many L.A. studios that had Trident 80 A, B and C desks, the larger TSM boards, and the revered A-Range consoles, of which only 13 were ever made.

With a total width of less than 44 inches, the 24-channel Trident 88 has everything within comfortable reach—moving out of the sweet spot is unnecessary. All models vary in total width (depending on channel count) but are all the same 36.2 inches deep and 13 inches high.

Like all the Trident consoles I've used in the past, the 88 is intuitive and ergonomically laid out to handle a quick and responsive workflow from any recording engineer/mixer.

On the front is a set of jacks for each channel strip and Master section. At this studio, all of these jacks were connected to the TT patch bay. For each of the 24 channels there are XLR mic input, then TRS jacks for Direct Output, Mic Insert (for substituting an outboard mic pre in the channel path), Channel Insert and separate line inputs for both the 100mm fader channel path and the monitor path.

The Trident 88 has a 4-band sweepable Series 88 EQ (based on the Trident 80 C console EQ) near the top of each of its 1.25-inch-wide removable input modules. You can order any number of modules fitted with a Lundahl 1538 microphone input transformer (\$150 option per channel) pre-installed. My console had transformers installed in Channels 1 and 2. You can also order Lundahl 1517 transformers (a \$200 option) on the stereo mix bus output. The 24-channel model without transformers sells for \$25,000 MSRP.



LET'S MIX

My guitar- and drum-heavy rock song was tracked in Pro Tools, and after I configured the sessions for multitrack outputs, it was easy to spread out the drums, bass, keys, guitars, vocals and backing vocals across the 88. I'm mixing "old school": hands on with most of the vocal rides made inside of Pro Tools. Coming soon, Trident will offer the TriMix fader automation package as an option for the 88.

Any channel can feed both the stereo bus and any number of bus groups at the same time. So I also routed all the drum track channels (except the kick drum) to buses 1 and 2. I would bus-compress these and mix it in parallel with the channels already feeding the stereo bus. The eight bus (Group) output faders will feed either the monitor path or the stereo mix bus and include 12kHz and 80Hz shelving equalizers, mute, pan-pot and fader/monitor flip.

I had many more than just 24 tracks coming from Pro Tools to mix. I used the channel's monitor section's line-level inputs to feed additional tracks to the stereo mix bus at the same time as its 100mm fader channels, so it was possible (with track organization and patching) to have 48 channels of audio in front of me in less than four feet of console width. I tried to arrange my mix so that instruments and vocals that needed hands-on fader moves and the full EQ came up on the channel faders.

The module's Input Reverse button "flips" the monitor and channel paths. If you want to use the Trident Series 88 EQs in the monitor path, then the monitor's Tilt EQ automatically goes to the channel. Normally, I preferred the Tilt EQs on the monitor section. Essentially it's like a simplified car radio tone control: turn a single knob clockwise and boost highs and reduce lows, or turn it the other way and the opposite will happen. The Tilt EQ is centered at 650 Hz and has

up to 6 dB of boost/cut using a 12dB/octave shelving EQ. Occasionally the Tilt EQ was the better tool for the job, such as for printed effects and occasional noises. Having the ability to flip the EQs back and forth is awesome. For most of the well-recorded keyboard tracks in this song, it is all I needed.

Besides the 48 channels for more inputs to mix, you can also use the eight stereo effects returns that have pan pots, level and the same 12 kHz and 80 Hz shelving EQs as the Groups. Those broad EQs reminded me of the A-Range consoles. At this studio, the DAW's reverbs and effects are routed to these returns with the 88's eight Aux sends (with submasters and pan pots) used to send out to the DAW effects.

Once everything was routed and labeled, I got a rough mix up fast with the console working flawlessly on all channels. It was like mixing a live show! The Series 88 EQ is responsive, and I could get that cool, low-end boost on kicks and bass guitars that I have always loved about Trident boards.

The console was quiet and clean sounding, and I had plenty of fader travel range for making big mix moves if I wanted. At one point the console showed that one channel of I/O had gotten noisy, and it was comforting to realize that I could hear that immediately during mixing and take care of it.

For monitoring, the Trident 88 has a main control room monitor and two alternate speaker choices called Alt 1 and Alt 2, each with its own volume control. I switch between monitor speakers while mixing, especially for checking the bass on big speakers and the mic-range mix on small speakers. With individual volume controls, once I had them set this process was seamless, with no surprising jumps in monitor levels; however, there is no dim monitor button.

There are also 2-Trk 1 and 2-Trk 2 external stereo playback sources available that included a 3.5mm, 1/8-inch stereo mini jack input for playing music out of cell phones or portable music players. Handy dandy.

The Trident 88 uses the same size aluminum knobs in different colors for everything, including the monitor level pots. Although these small knobs keep the overall size of the console compact, I would like to change the knob size and color of certain controls here and there to quickly recognize and easily find them. I like to see different colored pan pots with center-detents and a larger, more precise-feeling master volume control knob.

BACK TO THE MIX

The mix of the rock song went well and started to sound finished. I had large stacks of backing vocals stemmed out in Pro Tools and playing out on stereo pairs of adjacent channel faders. Static track elements such as tambourines, cowbells, shakers, loops that did not require riding, I relegated to the monitor mixer path. In general, the Tilt EQ worked fine for percussion, loops and virtual instruments—these sources were dialed in already “in the box” and only needed slight tonal adjustment if at all.

But my lead vocal required external compression and the full facilities of the channel strip's 4-band EQ. I like the EQ's high-frequency section, where I boosted in the 12- to 15kHz range for a shelf of air. To me this has also been a big part of the sound of British consoles. My singer had no “S” problems, and boosting at 15 kHz opened up her sound and the space she was recorded in! Loved it.

However, there were other frequencies that also needed a look. I supported a drop of 3kHz by boosting around 200 Hz with the EQ's low-frequency shelf section but also using the 50 Hz, 18dB/octave highpass filter. I also used the channel's Insert path for compressing the lead vocal. I especially like being able to change the insert point routing between post and pre in the channel's equalizer section.

For the lead vocal the compressor was post EQ, but for the bass guitar track (dropped-tuned down to D) I used the EQ pre the compressor. The ability to quickly audition the exact insert point of the compressor is a very pro feature.

There are both AFL and PFL solo modes with master solo level control and LED warning indicator. However, there are no Solo-In-Place mix solo facilities on the Trident 88. I got into the habit of soloing inside of Pro Tools.

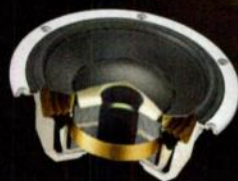
For its size/footprint and cost, the Trident 88 is a solid choice for small- to medium-size recording studios. Made in the U.S., the Trident 88 gives you everything you'll need to record and mix music or produce sound for film/video projects. ■

Barry Rudolph is an L.A.-based engineer and educator. You can visit him at www.barryrudolph.com.

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DYNAUDIO
Professional

SUNSET SOUND S1P, CHANDLER TG2-500

Two Classic Preamps Repurposed

There are a lot of 500 Series preamps to vie for your attention. Some pack many features into a single vertical space while others are simple yet solid, offering excellent sonic performance and few extras. The two units reviewed here are of the latter type, with designs that hail back to the golden age of audio production. The Sunset Sound S1P Tutti comes from Hollywood's legendary Sunset Sound studios, founded in 1959 by Tutti Camarata. The Chandler TG2-500 is a replication of the EMI TG12428 found in the mastering and recording consoles at EMI and Abbey Road studios in the '60s and '70s.

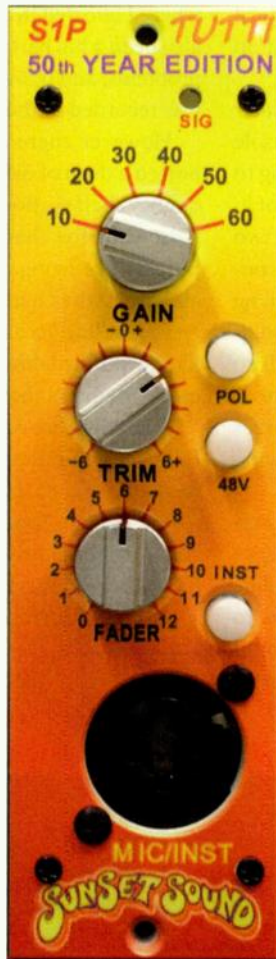
SUNSET SOUND S1P

BY BARRY RUDOLPH

The Sunset Sound S1P Tutti was released about 18 months ago as a single-channel, 500 Series microphone preamp commemorating the 50th anniversary of Hollywood's legendary Sunset Sound studios, home to the Doors, Van Halen, Led Zeppelin, Prince, Sheryl Crow and so many others. They came for the sound of Studios 1 and 3, as well as the sound of the studios' Frank De Medio consoles that featured API 550A EQs and custom preamp modules on every channel. The S1P is a faithful reissue of those mic preamps that are still in use today.

The S1P uses Cinemag nickel core input and output transformers based on the original drawings/specs of the Jensen transformers, also made back in the day by Cinemag. The S1P uses two John Hardy 990C+ discrete operational amplifiers with the same basic circuit design as the original 990 introduced in 1979. The 990C+ uses surface mount construction and higher-grade precision components, and operates over a wide range of power supply voltages.

The S1P's metal front panel is printed directly with a beautiful, sunny, psychedelic graphic that complements the set of customized aluminum knobs and front-mounted XLR Combi jack. There are no attenuator pads used; rather, a coarse gain rotary switch sets gain and a separate ± 6 dB volume pot for fine-tuning. The Sig/Peak LED reads signal present at the output of the first 990C+



Recording loud snare drums inches from an SM57, the 1608's preamp tended to overload, necessitating its -20dB pad and causing a change in sound. With the S1P, I selected the 10dB range for just the right amount of gain without clipping. I also tried S1P on kick and toms using my usual dynamic mic choices with good success; I loved the fast, three-knob (Coarse, Trim,

stage. As with the originals in the consoles, there is no highpass filter switch, but modern features include a fader output level control for manual fadeouts, lighted buttons for polarity reverse, +48-volt phantom on/off, and the Inst button to switch the front XLR Combi jack and back mic input over to the 1/4-inch Instrument (DI).

For my first test, I set up my single-channel Jensen transformer mic splitter to route the output of an AKG C451 B condenser (no pad or roll-off) to feed simultaneously both the S1P and the mic pre in the studio's API 1608 console. On the 1608, I patched the console's preamp out to feed directly to Pro Tools.

I recorded a Martin D-18 acoustic guitar with the mic aimed at the 12th fret, about 10 inches away. I immediately heard the S1P's clearer, transparent sound in the bass and low mid-range. Listening to both rhythmic strumming and flat-picking revealed that the S1P had more definition and presence in the midrange and upper ranges, as well. By comparison, the 1608 preamp produced a bright but smaller sound with a muddy lower mid-range calling for equalization.

PRODUCT SUMMARY

COMPANY: Sunset Sound
WEB: www.sunsetsound.com
PRODUCT: Sunset Sound S1P Tutti Mic Pre-Amp
PRICE: \$995 MSRP
PROS: Identical to the preamps in Sunset Sound Studios 1 and 3.
CONS: Like the original, no HPF.

TRY THIS

The front panel XLR Combi jack of the S1P makes instant inputs for DI guitar, bass or any -10dB line level. I use those inputs for quickly connecting stereo keyboards within the control room. First-class sound is offered here using the same preamp outputs as when using the XLR or 500 Series rackmount mic connections.

Fader) recall of these signal chains.

At another studio, I used two Radial JS2 passive mic splitters, a pair API 312 preamps and two S1Ps. I recorded the studio's Yamaha C7 grand piano with a pair of DPA 4011 cardioid mics aimed toward the hammers but placed halfway down the length of the harp. This test demonstrated to me the S1P's low harmonic distortion and good transient performance. The S1P pair satisfactorily conveyed the bottom and top octaves of the piano's range. With the S1P, the piano sounded more "grand," with a bigger dynamic feeling and sound stage.

For vocals, the S1P was outstanding. It produces a presence that is punchy, forward, and "in your face" like an API mic pre, but with more fullness and clarity. I used a Retro Instruments Doublewide tube compressor to level out my singer's dynamics and kept the Fader knob on the S1P in the middle position; this pot could use a detent. I would "ride" the Fader control up for the singer's quiet verses and then back down for the loud choruses.

The Sunset Sound S1P is my go-to 500 Series solid-state mic preamp; a pair goes with me whenever and wherever I want to record a big sound.

CHANDLER LIMITED TG2-500

BY KEVIN BECKA

The Chandler TG2-500 mic/line amp is simplicity defined. There are three gain controls, with the most prominent—a large red chickenhead knob at the top of the unit—for setting coarse gain from +20 dB to +50 dB, in 12 steps. The second control, in the middle of the unit, is continuously variable and fine-tunes gain from -10 to +10, rolling through zero at the 12 o'clock position. Last is the output control, also continuously variable and marked from 0 to 10.

Buttons and switches include polarity and 48V buttons, an impedance switch offering 1,200- and 300-ohm positions, and a mic/line switch for setting the input type. Like the original, the unit can be used for mic and line signals, if you want to impart the richness of the unit's signal path or drive the input and lower the output to add a bit of grit to already recorded signals during a mix.

I first used the TG2-500 to power a female vocalist singing through a Shure SM7B microphone. This singer had an incredible power range, which the SM7 could easily handle, but the output was giving me troubles when I sent it through another well-designed and respected preamp. Her volume would send spikes that required me to constantly check the gain control by hand. I plugged up the TG2, which handled the peaks better and also sounded richer and fuller. From there, I sent the vocal through the new Kush Tweaker compressor, which tamed the peaks very well on the way to Pro Tools.

Next, I recorded an electric guitar through a Fender Deluxe amp captured by a SandHill active ribbon microphone. So far, I'd left the



as the cymbal roll builds. The TG2 had no problems, and I heard nary a hint of distortion even at the absolute loudest parts of the performance.

Although the TG2 has no filters, DI input, signal present LEDs or other extras that are commonly found on competitively priced preamps, the Chandler offers confidence and great sonic performance. This is a solid piece that will please any engineer looking for a reliable gain stager with a past. ■

TG2's impedance switch at 300 for the best results, and this was no different. Being active, it didn't take much gain to power the Sandhill. Once again, I used the Kush Tweaker compressor but with a more aggressive setting, which brought out the rich midrange frequencies that the prior signal stops provided. The best compliment for any recording is that it "sounds like a record," and this was the case here. The guitar was chunky when the player bore down, but still had a beautiful ring when he went for harmonics. It sounded great with just a little help at 2.5 kHz and 400 Hz, provided by a GML 8200 EQ.

I used the TG2 to record an active bass from a Wolfbox DI, through the TG2, then through a Retro Sta Level compressor and API 550A EQ on its way to Pro Tools. Wanting a clean sound, I set the output fully clockwise and the trim at zero, and used the stepped input gain control to set my level to the Sta Level. I added 2 dB of 100 Hz with the 550A, and that was just the ticket to give the bass a tight and full bottom end. When the player got more aggressive, the TG2 handled the active bass's peaks with ease, with no distortion present.

For cymbal overdubs, I used a Royer R-121 that I positioned three stick lengths above the bell and sent the signal through the TG2. The gain was way down to the second position on the top knob and the other two at the 12 o'clock. This time I used the 1,200-ohm position, which sounded best. I rolled off the bottom end on a shelf at 100 Hz and added a few dB on high shelf starting at 6 kHz.

The player was using mallets, which can quickly get overwhelming

PRODUCT SUMMARY

COMPANY: Chandler Limited
PRODUCT: TG2-500
WEBSITE: www.chandlerlimited.com
PRICE: \$955
PROS: Great sound. Simple to use.
CONS: No extras like DI input, metering.

TRY THIS

For this review, I mostly set the TG2 for the cleanest possible results. However, because this unit has a line switch, try sending a recorded bass through the box with the output control set lower than the input. You can fine-tune the grit using the center fine-tune knob until you have something you can bring back directly to the mix in a serial fashion, or patch back parallel to blend with the clean original.

OVERLOUD-MOREVOX REMATRIX

Multi-Layered Convolution Reverbs and Effects



Figure 1: REmatrix can mix five convolution reverbs with five other effects and EQ. The Master effects iGUI top-center) and a room IR's Extended Controls panel (left side) are shown here.

REmatrix is the space-y brainchild of joint developers Overloud and MoReVoX. Supplied as both a plug-in and stand-alone application, REmatrix combines five different convolution reverbs that you can further process with EQ and five effects. Scores of impulse responses are included with the software, and you can import your own (in WAV and AIFF formats). I reviewed Version 1.0.10 of the AU plug-in in Digital Performer V. 8.06, using an 8-core Mac Pro running OS X 10.9.5.

At the bottom of its GUI, REmatrix provides five mixer channel-like slots; you can load a single impulse response into each (see Fig. 1). Each slot is dedicated to recalling one particular type of IR—hall, room, plate, early (reflections), or special (effects)—from an associated browser. Each slot provides a fader for adjusting the IR's level, plus associated L/R ladder-style meters with clipping indicators. (REmatrix affords both stereo and mono-to-stereo operation.) You can adjust all five IRs' levels together by holding the Shift key down while adjusting any one fader, thereby preserving the combined reverbs' relative balance. Each IR also has its own solo and mute buttons.

Toggle a button below an IR's fader alternately opens a global presets browser and the IR's Extended Controls panel on the left side of the GUI. Presets store and recall the entire state of the plug-in and are arranged in banks named for their suggested applications: voices, drums, keyboards and so on. The Extended Controls panel hosts a browser used to load a single IR—whether

supplied by the factory or imported from your own library—into a slot. There you can also edit the currently loaded IR as follows: Adjust the length of its reverb tail, apply 2-band parametric EQ, pan its stereo positioning, and adjust its stereo width (from mono to wider than normal) and pre-delay time. At extreme settings, the parametric equalizer's Q controls provide shelving, and highpass and lowpass filtering.

The top-center section of the GUI is the Display area. Toggling the Master button in this section alternately shows a waveform view or a Master view, in which a block diagram appears. The diagram shows how the plug-in's combined IRs and built-in effects are connected in the signal path (see Fig. 1). The impulse responses can be processed—together as a group, not individually—by modulation, delay, algorithmic reverb, drive, compression and EQ. Clicking once on the icon for a processor in the block diagram gives you access to the processor's parameter controls for adjustment, whereas double-clicking alternately activates and bypasses the processor.

Toggle the Master button so it's not highlighted, and the block diagram is replaced by a waveform view for whichever IR you select. In this view, a slider lets you proportionally adjust the reverb time for all the reverbs as a group: from half to double their original lengths. In both the waveform and Master views, separate meters show L/R input and output levels for the plug-in and include temporary-hold clipping indicators.

MASTER VIEW'S EFFECTS

The configuration of the signal chain for REmatrix's effects blocks is fixed and can't be altered. All IRs that are active in the current preset are summed and then sent first to a modulation effect, which at extreme settings can produce chorusing. The modulator feeds an HPF and algorithmic reverb, in that order, in a parallel circuit; controls allow you to adjust the length of the algorithmic reverb's tail, the geometry of its virtual space, and its timbre and output level. In a second parallel path fed by the modulator, a stereo delay can be set to different times in left and right channels, filtered with an HPF and LPF, and regenerated (fed back on itself). Unfortunately, only the left channel's delay time can be synched to the host's tempo; you must manually set the right channel's delay time by applying to it an offset (in milliseconds) to the left channel's delay

TRY THIS

To make a vocal track sound bigger without washing it in reverb, add a little Early IR to the wet mix. If the effect sounds too ambient, narrow the IR's stereo spread in its Extended Controls panel to 0% or lower setting. Adding some Drive effect—with 30% to 40% drive setting—will make the vocal sound bigger still.

time. Both the stereo delay and algorithmic reverb are disabled when an IR is soloed, a good thing.

The modulator, algorithmic reverb and delay's outputs are summed and sent on to a drive processor, which adds harmonics to the signal. The drive processor's output serially feeds a compressor with attack, release, sustain and output-level controls; the sustain control simultaneously lowers the compressor's threshold increases the ratio and applies makeup gain. The compressor's output serially feeds a 2-band parametric equalizer that, like the parametric equalizers that serve individual IRs, can also provide shelving, and highpass and lowpass filtering.

In the bottom-right corner of the GUI, separate faders control the plug-in's output levels for dry and wet signals; these signals can be independently muted and panned in the stereo field. A preference setting locks the dry and wet levels and mute settings when you load presets; that's particularly useful when feeding REmatrix via sends for tracks, in which setup you'd always want to audition 100-percent wet signal.

The GUI is fast and easy to navigate after you spend about an hour learning it. Online documentation and a contextual-help function bring you up to speed with REmatrix's finer points of operation.

GIVE ME SPACE

REmatrix offers a large variety of IRs, many of which sound great. The only IRs I was consistently unimpressed with were those for the Special slot; they comprise many highly effected reverbs, some resonating at distinct pitches and others creating strong echo patterns or bubbly or flanging sounds.

The only bug I encountered was that mute buttons sometimes stayed lit after unmuting a slot (Overloud is correcting this in a future update). I liked that I could temporarily bypass all Master effects and they would remain bypassed while I auditioned each IR in turn—a good starting point for rolling my own presets.

On a rock mix, I sent the snare drum to REmatrix and recalled a short,

PRODUCT SUMMARY

COMPANIES: Overloud and MoReVoX
PRODUCT: REmatrix
WEBSITE: www.ilio.com (distribution)
PRICE: \$ 359
PROS: Unique. Includes many great-sounding IRs and complementary effects. Well-designed GUI.
CONS: No damping controls. Can't sync IRs' pre-delay times or stereo delay's right-channel delay time to host's tempo.

dark, quasi-gated plate IR, to which I gave the maximum stereo spread. I added an IR for a small room, giving it a narrower spread and severely boosting shelving EQ above 2.44 kHz in the room's Extended Controls panel. The room's reverb time was a half-second longer than the plate's. The combined effect was a bright 'verb with ostensible heavy low-frequency damping—the plate's dark tail was first to die off—starting out wide and then collapsing on itself. To this mix, I added a medium-length, highly diffuse algorithmic reverb for added density. Switching in

the compressor—with high sustain setting—made the reverb explode. Adding moderate drive processing to the mix created just enough distortion to push the sound over the top. The resulting sound was phenomenal.

Because REmatrix doesn't provide damping controls, I found it a little difficult to perfectly meld a hall IR's reverb tail with a lead vocal on a haunting ballad. And as REmatrix couldn't sync the hall's pre-delay time to my DAW's tempo, I had to calculate and set a 32nd-note pre-delay manually. That accomplished, I was well on my way to creating a beautiful effect. I added tightly spaced, lowpass-filtered early reflections and mild chorusing for a rich stereo ADT effect. At the end of the effects chain, I dialed in a quiet, regenerated stereo delay, attenuating the echoes' extreme highs and lows. The end result was a big vocal sprinkled with a shadowy, rolling reverb that sounded wonderfully ghostly.

THE BIG PICTURE

REmatrix is a great tool for building super-thick, multi-layered reverbs and complex ambience effects. It doesn't replace a full-featured algorithmic reverb; the ability to artificially edit room size, ER spacing, diffusion and other parameters makes an algorithmic 'verb more adaptable than an IR. But REmatrix does way more than generate a single reverb. It produces outstanding, composite effects my algorithmic reverbs—and other convolution reverbs, for that matter—cannot. It's a unique product in a me-too market. I like that! ■



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FABFILTER PRO-Q 2

Superb EQ Plug-in Delivers Pristine Sound, Eminent Flexibility

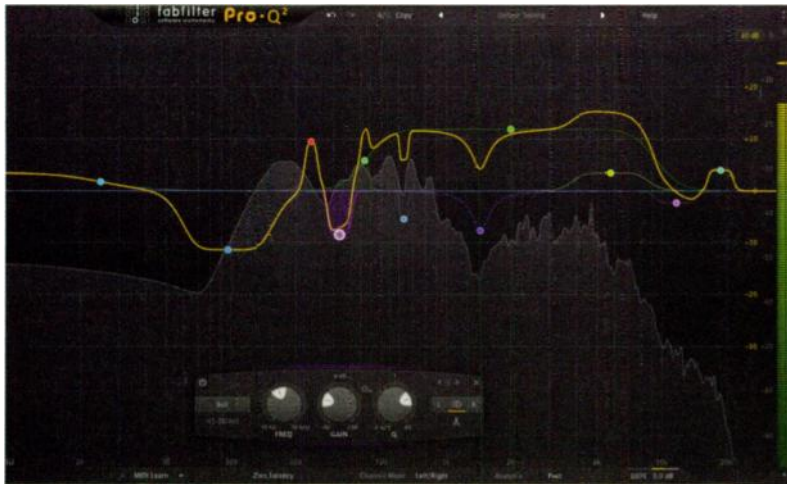


Figure 1: Pro-Q 2 offers a potpourri of filters, each independently assignable to the left, right, mid or side channel (or channel pairs). The new EQ Match function, produced the yellow equalization curve seen here.

When FabFilter unleashed its Pro-Q plug-in in 2010, it quickly became my go-to equalizer for mixing, mastering and post-production sessions. With the release of Pro-Q 2, the euphonic and versatile plug-in has become even more musical and powerful. Pro-Q 2 is available in AAX Native, Audio Units, VST, VST3, AudioSuite and RTAS formats (with both 64- and 32-bit frameworks, except for the 32-bit-only RTAS). I reviewed the AU plug-in using Digital Performer Version 8.06 and an 8-core Mac Pro running OS X 10.9.5.

OLD & NEW

Like its predecessor, Pro-Q 2 offers up to 24 bands of analog-modeled equalization and mono, dual-mono, stereo and mid-side operation. Both linear-phase and zero-latency (minimum-phase) filters are offered, their parametric control sets (frequency, gain, Q, channel assignment and so on) displayed for only one selected filter at a time in the uncluttered GUI (see Fig. 1). A real-time spectrum analyzer transparently overlays the plug-in's interactive EQ (x-y) display. Multiple-undo/redo functions, A and B workspaces, preset management and online documentation are included.

Pro-Q 2's new processing engine uses CPU resources more than twice as efficiently as its predecessor. Newly added Natu-

ral Phase filters more closely match the phase response of analog EQ than Pro-Q 2's other filter types, without producing noticeable pre-ringing artifacts or incurring long latency. The plug-in's linear-phase mode has reportedly also been improved, offering better magnitude response and avoiding artifacts when using any of its lower-resolution options (which incur lower latency). You can change the frequency, gain or Q in linear-phase mode without incurring zipper effects—a plus for automating EQ changes while mixing or mastering.

The updated plug-in offers steeper filter slopes for all filter shapes, including bell and shelf: up to 96 dB/octave. (Eight other slope selections are available.) Tilt-shelf and band-pass filters have been added to the pre-existing arsenal of bell, HPF, LPF, notch and low- and high-shelving filters; the tilt-shelf boosts on

one side of the selected frequency while cutting on the other (see Fig. 2). A Gain-Q interaction function, when activated, progressively narrows a bell filter's Q as you boost the filter's gain—much the same way as some analog mixing boards work.

A new EQ Match mode changes the spectral balance of the plug-in's input signal to match that of signal routed to its external sidechain input. Normally, both signals are analyzed at once, but controls let you analyze each in turn so that, for example, you can conform the input signal's spectra during a chorus to the sidechain signal's spectra during a verse. The spectrum analyzer can be made to show the sidechain signal's spectrum in lieu of or together with spectra pre- and post-EQ for the audio path's signal.

In Piano Display mode, Pro-Q 2 shows the musical note—including any +/- offset in cents—corresponding to each band's center or corner frequency: for example, "441.83 Hz A4 +07." In this mode, Pro-Q 2 replaces the frequency titling traditionally used along its x-axis with the 88 keys of a virtual keyboard (the frequency grid remains; see Fig. 2). For each filter you add in the x-y display, a colored dot is placed on the key that corresponds to the filter's

TRY THIS

When using a steep highpass filter to roll off bass response, use Pro-Q 2's Zero Latency mode for transparent results. A linear-phase filter (from any manufacturer) could cause audible pre-ringing, most often perceived as a softening of transients.

center or corner frequency. Click a key's dot to quantize its associated EQ node to the frequency of the corresponding musical note. Drag the dot to another key to quantize the node to a different musical note. Alternatively, double-click either a band's node or its frequency knob and type in a musical note value (such as D#2) to quantize the band's frequency.

Activating Pro-Q 2's Auto Gain mode applies make-up gain to compensate for gain changes caused by equalization. Drag the new Gain Scale slider to proportionally scale—from 0 to 200 percent—the boost and cut amounts of all active bell and shelving filters. You can also flip the phase of the plug-in's output signal.

The new Spectrum Grab function removes the guesswork in identifying and neutralizing offending peaks in frequency response: Click on a peak displayed by the spectrum analyzer to create a bell-curve filter centered at that frequency, then mouse-drag the amplitude lower.

The spectrum analyzer has been updated to offer gain-range settings up to 120 dB, horizontal zooming, a freeze (peak-hold) function and adjustable tilt settings. Higher tilt settings give more weight to



Figure 2: A high-Q setting for a tilt-shelf filter creates classic overshoot response. The plug-in's Piano Display mode replaces frequency titling with a virtual keyboard along the x-axis.

(display relatively higher amplitudes for) frequencies above 1 kHz than below. You can select among four different GUI sizes or full-screen mode. (The VST3 plug-in's GUI can be made any size by dragging the edge of its window.)

Although Pro-Q 2 offers virtually unlimited internal headroom and will never clip, its new output level meters are useful to alert you to possible clipping downstream from the plug-in. The meters include peak-level readouts and can be hidden.

IN USE: POST-PRODUCTION

Whether used on music or dialog tracks, Pro-Q 2's new Natural Phase filters sounded outstanding—very subtly more analog-like than the

PRODUCT SUMMARY

COMPANY: FabFilter
PRODUCT: Pro-Q 2
WEBSITE: fabfilter.com
PRICE: \$199 (discounted upgrade pricing available)
PROS: Superb sound quality. Extremely flexible. Feature-rich. EQ Match works very well with minor follow-up adjustments. Excellent GUI. No apparent bugs. Good price for value.
CONS: Can't save EQ Match's analyzed spectra as presets

plug-in's also excellent Zero Latency filters.

I found Pro-Q 2's steeper filter slopes to be extremely useful when using highpass filtering on dialog tracks. On a track terribly marred by rumble in one particular spot, I automated the bypass for an HPF and dialed in a 96dB/octave slope. The super-steep slope allowed me to move the filter's corner frequency much higher than usual without audibly thinning the talent's timbre, completely eliminating the rumble.

I also liked the new Auto Gain function. One videographer I work with likes to ride fader levels on dialog tracks before sending them to me for noise reduction, equalization and so on (an

ass-backward approach, I know). Auto Gain provided me a shortcut to preserving her preferred balances.

EQ Match mode worked beautifully when given a relatively simple task: making the timbre of an unprocessed dialog track match that of a copy of the same track that had been EQ'd to taste. In this application, EQ Match made the two track copies sound identical. Matching the track's timbre to that of a totally different dialog track, on the other hand, yielded a sound that was noticeably phase-y—no doubt due to the extremely steep slopes the process rendered on a few midrange filters implementing high amounts of boost or cut (see Fig. 1).

Thankfully, lowering the Gain Scale slider to roughly 60-percent all but eliminated the phase artifacts. Lowering the Q for a few of the steepest filters smoothed the sound further. Bottom line: I could get a bit smoother and warmer sound by EQ'ing manually from scratch, but with a little bit of follow-up tweaking EQ Match sounded very good. Unfortunately, there's currently no way to save EQ Match's analyzed spectra as presets for later recall. (FabFilter plans this capability for a future update.) Presets would allow EQ matching across multiple projects and greatly speed use on lengthy programs with high track counts.

The spectrum analyzer's lowest tilt setting more readily revealed excess energy in the upper-bass and lower-midrange bands—a common problem with dialog tracks. Spectrum Grab, spectrum freezing, full-screen mode and horizontal zooming all worked beautifully. All that said, I usually get better results equalizing by ear than when relying on a spectrum analyzer (unless I'm tuning a control room to mitigate room modes). Everyone has their own work methods, though, and you may find these tools to be very helpful. As was the case with other FabFilter plug-ins I've reviewed, I encountered no bugs.

BETTER THAN EVER

Pro-Q 2 is one of the finest plug-ins I've had the pleasure to use. The sound quality is superb. Its bountiful selection of filters, wide-ranging controls, and dual-mono and mid-side processing meet any static equalization challenge in mixing, mastering and post-production applications with grace and surgical precision. What's more, Pro-Q 2 is reasonably priced. Two thumbs up—way up! ■

Michael Cooper is a recording, mix, mastering and post-production engineer and contributing editor for Mix magazine. You can hear some of Michael's mixes at www.soundcloud.com/michael-cooper-recording.

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What Kind of User Are You?



By Kevin Becka

Last month I wrote about new subscription/membership models that are now being offered by Avid, Slate Digital, Cakewalk and Audionamix. This month we're going to dive into why a user would benefit from going monthly when buying their audio tools rather than an outright purchase. It's a potentially complex set of variables based on the type of product, what you get in the deal, and if it makes sense for your personal workflow.

First let's cull the herd. Commercial studios that use a product every day, like Pro Tools, are most likely going to purchase outright. Keeping studio systems stable is paramount, and new features outside of their basic needs, like advanced MIDI editing or new virtual instruments, are of little interest. Systems tend to be "frozen" in time, outside of bug fixes, because upgrading to the latest OS may disable some plug-ins, or present other downtime-causing issues.

Some users may want to buy Pro Tools 12 on subscription for cloud collaboration across projects. But this way of working hasn't caught on in the past—Xonami offered a cross-platform solution similar to this in 2010 and it never flew. And I'm not so sure a file upload via Hightail, Dropbox or Apple's Mail Drop is a more realistic way to work. You can send a large project (up to 5 GB in Mail Drop) to another user. They can work on it, send you their files for import to your session and you're done. It's not as elegant as never having to leave the DAW, but then again, it's not running active in the background, which can bog a system down.

I'm guessing a facility that doesn't use Pro Tools as its primary DAW could benefit. It could ramp up a number of seats for a particular project, and then after it's completed, reduce the active seats using a combination of perpetual and subscriptions licenses. Likely first adopters would be post-production facilities and/or crews, whether for a feature film or a complex game with lots of moving parts.

This decision to purchase outright may change when considering a bevy of popular plug-ins like Slate's range of processors. Studios trying to be the one-stop shop for producers, mixers and self-mastering clients, or those with personal systems wanting fresh new toys, would benefit from an impressive array of goodies that are automatically updated. If Slate releases a new processor tomorrow, you could have it right away without shelling out extra \$. The key word here—if—is im-

portant because users become wary once they've been down the path of broken promises and delayed updates and releases.

Audionamix offers its top spectral editing software apps, ADX Trax (\$299), and the more able ADX Trax Pro (\$499) as a direct purchase or for \$19.99 or \$29.99 per month, respectively. The company is fairly new, its software not established so the monthly plan would be a great way to have it around to compare to Sony SpectraLayers Pro 3 (\$399 purchase only), or other post/forensic oriented products in your bag of tricks. For \$30, you could purchase a 30-day trial, then buy or stay opted in as long as you wanted.

Personally, I think the subscription model is a fit for just a few companies that can afford to offer it. Avid is the 800-pound gorilla

and it can do what it wants. The company's push for collaboration is a good thing, and its control over its chunk of the cloud would presumably alleviate security concerns. Slate's deal seems to be the best match for the purchase model—that is, if the company offers new products and

upgrades in a timely manner. Cakewalk is a different matter. Users new to the game wanting to try and compare before they buy and not worry about timing out could become a short-term "member"—different than the old 30-day trial in that if you're hooked, you can continue to subscribe or purchase outright.

Logic is the finger in the industry's eye at \$199. No one can compete with that price vs. feature set. It makes the Apple app a no-brainer and possibly a deal breaker when posed against higher-priced products. Logic Pro will never go subscription at that price. Apple's upgrades to the popular app are spotty at best. Historically, it's taken between two to three years to jump to the next version of Logic Pro as Apple likes to tilt resources to other products such as iPhone, iWatch, iCar, or who knows what.

There may be a couple of players who are missing the boat here. Although the company doesn't offer it, I could see pricier software like Magix Sequoia (\$2,975), or Steinberg Nuendo (\$1,700) bringing in new users with this model. Sequoia offers a great range of features for the PC user that are not found anywhere else, but the price leaves out users who don't have that kind of money upfront, especially the young, new music maker with limited funds.

So where does that leave you? What kind of user are you? I'm sure there are pockets of users I've missed, so please chime in on *Mix's* Facebook page if you want to continue the debate. ■

Personally, I think the subscription model is a fit for just a few companies that can afford to offer it.

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