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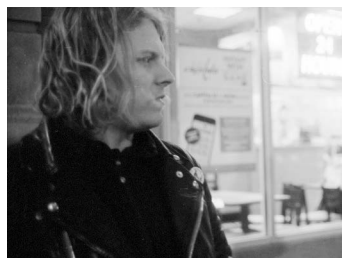
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Photo: Courtesy Universal Music Group/Apple Corp.

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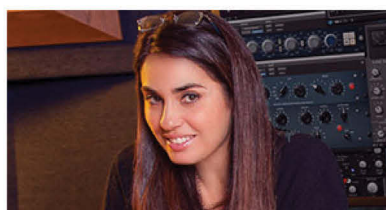


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From the Editor

NEVER ENOUGH BEATLES

This month's cover story started out as a simple half-page assignment on the release of a DVD-Blu-ray. A notice had gone out to journalists that Ron Howard and Imagine Entertainment would be releasing *Eight Days a Week—The Touring Years*, a documentary on the Beatles' five-year run of live performances, with never-before-seen footage and the whole nine yards. The package would include a remixed edition of *The Beatles at The Hollywood Bowl* and the theatrical-only re-release of *The Beatles at Shea Stadium* TV special from 1966.

Within about five minutes, Matt Hurwitz, our resident Beatle-phile and a fine contributing writer, called and asked if he could do a piece. I said, "Sure, give me 400 words, a who, what where, when and how." Six weeks later, he turned in 9,134 words.

My first thought was: Nobody reads that many words anymore! Then I read it, took in the information he had gathered, much of it all-new, thought about the *Mix* audience, and decided to blow it out. The cover, plus eight pages inside. Because nobody—no artist, no band, no celebrity of any kind—has captured the mystery and mastery of the recording industry, the mystique of the musical and recording arts, like the Beatles. I can admit today that the fascination somewhat surprised me when I joined *Mix* in 1988. I understand it a lot better now. I've seen John McBride's collection of 21,000 pieces of Beatles vinyl. I've talked with the amazing engineer John Harris and heard the stories about George. I've gone back and listened.

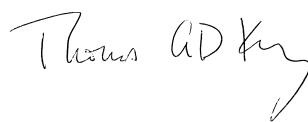
Perhaps nobody is more engrossed in the Beatles than Matt Hurwitz, and in the cover story he dives into the technologies and the people that really helped launch the modern rock and roll show back in 1964 and 1965, with the Beatles tours of the States. Only three multitrack recordings exist of those years, two from the Hollywood Bowl and the other from the famed Shea Stadium show. The production, as you can imagine, involved a lot

more than trying to overcome screaming teenage girls. It involved the best technical and creative minds at Capitol, the late, great Wally Heider, the money from Bob Eubanks, and the technical know-how of George Velmer and Bob Norberg. It's a great story.

But that's only half the story. The restoration process led by Giles Martin, son of George Martin, and the team at Abbey Road, took those tapes and restored them as they felt the energy demanded. Using deMIX technology developed in house by James Clarke, they were able to separate individual tracks and then engineer Sam Okell remixed them to a more accurate picture of what a night at The Bowl would have been like at the time. Primitive P.A., lots of cables and wires, Sound Tower to stage left, two Ampex 300 4-track machines in a box truck, and four microphones on the stage. But the energy is what they went after, the live experience of seeing the Beatles on stage. And it sounds fantastic!

And Matt Hurwitz, our resident journalist-detective, put it all together—the original recording, the original TV productions, the post-production on the originals and the re-releases, and finally, how it all came together to show a part of the Beatles that hadn't really been explored before—*The Touring Years*. Well done, Matt.

Looked at another way, it's the perfect cover story to send to the NAMM Show, where musicians, engineers and live performance all come together for a wild weekend in Anaheim. Every man, woman and child walking the aisles might give a silent nod to the Beatles. They laid the foundation, in the studio and on stage, for everything that followed.

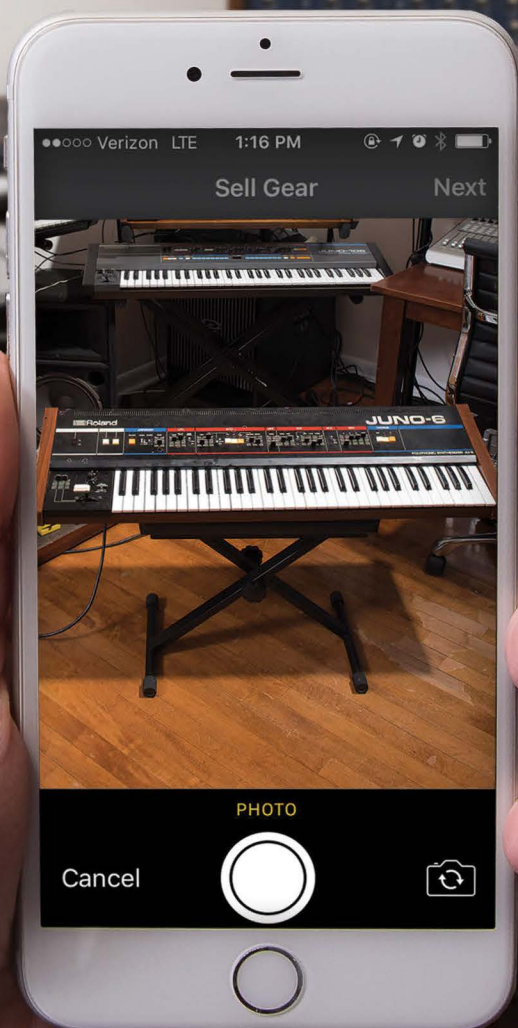


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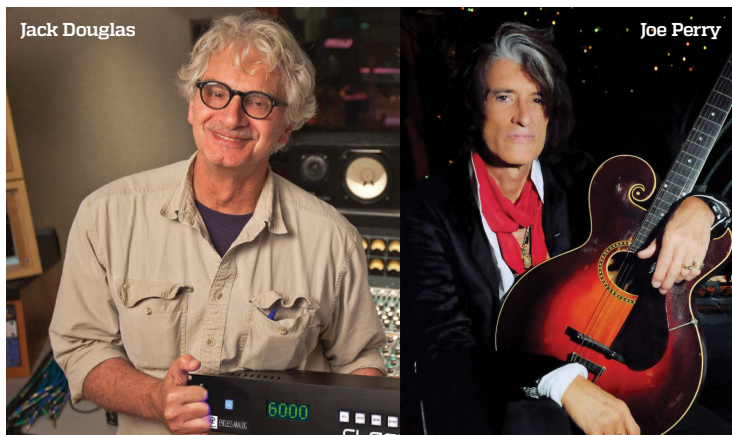


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Aerosmith at the NAMM TEC Awards

Ceremony Will Honor Jack Douglas and Joe Perry



As part of the 2017 winter NAMM show, the 32nd annual Technical Excellence & Creativity Awards (NAMM TEC Awards), the NAMM Foundation has announced, Aerosmith guitarist and Rock and Roll Hall of Famer Joe Perry will receive the Les Paul Award, which honors individuals who have “set the highest standards of excellence in the creative application of recording technology, in the spirit of the famed audio pioneer, inventor and musician, Les Paul.” The award is set to be presented as part of the NAMM show, at a ceremony on January 21. Perry, one of *Rolling Stone*’s “100 Greatest Guitarists of All Time,” is also scheduled to perform live at the event. Perry will join an accomplished group of past Les Paul Award recipients, including Sir Paul McCartney, Brian Wilson, Stevie Wonder, Bruce Springsteen, Pete Townsend, Slash and Don Was.

This year’s awards ceremony promises to be somewhat thematic, as legendary producer/engineer Jack Douglas will be inducted

into the NAMM TEC Hall of Fame at the same event. The Hall of Fame award was established nearly 30 years ago to recognize great audio technology pioneers, producers and technicians. And Douglas has engineered and produced numerous multi-Platinum Aerosmith albums, including the smash seminal records *Toys in the Attic* and *Rocks*. He is also recognized for his work in the early days of the Record Plant Studio, where he engineered John Lennon’s *Imagine* and The Who’s *Who’s Next*, among other releases.

As it does each year, the NAMM TEC Awards will also recognize the accomplishments of sound engineers, producers and technology developers behind some of the past year’s most memorable recordings, tours and events, films, TV programs and videogames. Awards will be presented in eight creative and 25 technical categories. Two new categories were added this year to recognize achievements in Audio Education Technology, and DJ Production Technology.

Also at this year’s ceremony, eight products will be welcomed into the TECnology Hall of Fame, which pays tribute to products that have made a great impact on music and audio production. *Front of House* magazine editor (and former *Mix* magazine editor) George Petersen will present this year’s TECnology Hall of Fame inductees: the Decca Tree (1954), Neumann’s U67 condenser microphone (1960), the wah-wah pedal (1966), Tascam’s 80-8 8-track analog recorder (1976), the Wendel Drum Machine (1978), API’s Audio Lunchbox 500 Series (1985), Neutrik’s Speakon connector (1987), and AEA’s R44-C ribbon microphone (1998).

TEC Awards nominees and winners are chosen through a three-step process that is detailed on the TEC Awards’ website. For more information about the selection process or about this year’s nominees and honorees, or to purchase tickets, visit TECAwards.org.



Winter NAMM Show Welcomes Visitors

The National Association of Music Merchants is set to hold its winter conference January 19-22 in Anaheim,

Calif. As always, the show will feature demos and new product introductions for musicians, live and studio audio pros and enthusiasts. At last year’s show, for example, more than 1,700 exhibitors showcased 6,000-plus brands.

In addition to instruments and products, winter NAMM also showcases the organization’s efforts in education and advocacy. Two days before the tradeshow begins, on January 17, a group of NAMM members can join in a day of service, providing music instruction at a local Anaheim elementary school. This special NAMM programming is funded by donations, which are matched by the NAMM foundation up to \$10,000, to provide school-aged children with daily access to music education.

And the show itself features dozens of educational opportunities for attendees through presentations and workshops, and NAMM will recognize the contributions of the music education community. The show’s ten-year-old Music Education Days programming, for example, offers informational sessions, networking opportunities, and band and orchestra instrument demos that are open to all teachers and administrators.

NAMM goers are also treated to one-of-a-kind concerts, and this year more than 150 artists will perform within the convention hall and surrounding hotels and venues. Artists scheduled to appear include Josh Logan from Season 5 of NBC’s *The Voice*; Laura Dickinson from The Disney Channel show *Phineas and Ferb*; the Mark Wood Rock Orchestra Camp, featuring touring drummer Elijah Wood; and Elektric Voodoo, led by Grace Potter & The Nocturnals’ Scott Tournet.

Visit NAMM.org, to find essential information for exhibitors and attendees, including registration details, a complete calendar of events, hotel booking links, and regular news updates.



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Music



KEEGAN DEWITT
By Markkus Rovito **12**

TV SEGALL
By Barbara Schultz **16**

CLASSIC TRACK:
RIGHT TIME OF THE NIGHT
By Robyn Flans **18**



Keegan DeWitt balances work with his band, Wild Cub, and composing for films and TV series.

Photo: Brett Warren

KEEGAN DEWITT

Composing at the Speed of Sound Design By Markkus Rovito

Keeagan DeWitt, the 34-year-old indie rock musician, also composes music for HBO's *Divorce* and the upcoming Fox comedy *Making History*. Handling multiple scoring gigs while maintaining his band Wild Cub, DeWitt often appears to be in more than one place at a time. He's a driven and efficient dynamo who loves the act of collaborative composition, or what he has called "musical filmmaking."

Unlike many composers for film and TV, DeWitt wasn't classically trained for composition, but rather attended film school

for directing and writing at SUNY Purchase in the upstate suburbs of New York City. He also attended an acting conservatory for two years. He'd been habitually recording music on a 4-track for years, the way some people keep a diary, "as a way of being creative, and for being in touch with my emotional world," DeWitt says. When a friend asked him to score his student film, DeWitt's music career began.

By the time he was 26, DeWitt had scored half a dozen indie movies, including some critical and festival darlings. However, in 2008, the cost of living in Brooklyn sent him packing

to Nashville, where he was able to build a studio. While scoring a few small films a year and putting out solo singer-songwriter material, DeWitt met the guys with whom he'd form the band Wild Cub, and his life would take another turn. The band's debut album of danceable indie rock, *Youth* (2013), and supporting live shows took a lot of DeWitt's time; it was a slow build until the song "Thunder Clatter" became the band's breakout hit. DeWitt found out about it while at the Berlinale film festival in Germany for one of his movies.

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was like, 'Hey, do you know the song you made is charting on Sirius XM?' I had no idea. Then within a month we had signed a record deal, and it's been a crazy ride."

DeWitt found himself in growing demand from two different worlds—composing and rock 'n' roll. The former indulges his proclivity for myriad genres such as minimalism (*Queen of Earth*, 2015), jazz (*Listen up Philip*, 2014), orchestral (*This Is Martin Bonner*, 2011), and hip-hop and electronic (*Morris from America*, 2016).

"I enjoy film composing because I can do a project, totally live in that world for three or four months, and move to something else," DeWitt says. "You meet new people; it's really inspiring; then there's closure. The music business is so different. It's so broken at this point, the only way to sustain that kind of career would be to [tour] nonstop."

After a couple of hectic years of supporting *Wild Cub* and working on film scores on the side, DeWitt returned to his life of cranking out several film scores a year, which led to the call that would return him to his college stomping grounds.

Divorce, a dramedy starring Sarah Jessica Parker and Thomas Haden



Church, takes place in wintry New York City and its suburbs. When DeWitt found out he was up for the job, he knew he could nail the feeling of that environment, but because it was an in-demand, high-profile gig, he wanted to give them something that would be the opposite of what they expected. The music supervisor, who had licensed a lot of '70s soft-rock songs for the show, told DeWitt they wanted it to sound like an early-'70s domestic drama and mentioned flute.

"I try and take whatever limitation and turn it into a strength," DeWitt says. "I like things when they are played nontraditionally. I took a bunch of small

quartet string samples with lots of harmonics, glissandos and things like that, and layered those on top of a bunch of flutes and woodwinds, but played in an almost like Steve Reich-y percussive way, where they are doing patterns and arpeggiations rather than just a lyrical flute line."

After sending the team four cues in that style, DeWitt got the job and was able to spend three months working on the series last spring without crazy, last-second TV deadlines. "We got to dig in, try a whole bunch of ideas—from Irish drums to crazy flutes, to punk rock—and find

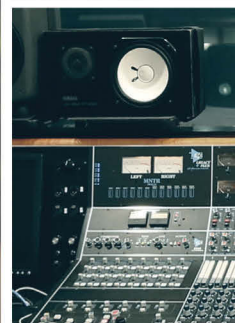
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something that was unique and had the same depth musically as they were going for with the show itself.”

DeWitt feels just as comfortable composing in a studio as he does using an ultra-compact mobile rig. For *Divorce*, he flew to New York on a week's notice and set up temporarily in a production office just yards away from the shoot. “I enjoy that kind of boot-camp feel,” DeWitt says. “There’s an intangible thing I get instead of being in a windowless studio tons of miles away from wherever they’re shooting.”

This mini-rig includes an Apogee One audio interface/mic, a MIDI controller and a Universal Audio UAD-2 Satellite DSP Accelerator with plenty of UA plug-ins. DeWitt loves to pull material from Spitfire Audio’s many top-shelf sound libraries, but he also tries to use each new job as “an excuse to create my own treasure chest of samples.”

To accomplish this, DeWitt calls on musician friends in L.A. or Nashville—sometimes collaborating with them remotely—and records multiple takes of them using different creative miking techniques, or records himself playing guitar, bass or sample library material. He then dumps everything into Ableton Live and gets to work, building his sound library as he writes music.

“People like to think of composers as either very sample-oriented, or purists who only compose on piano and deal with an orchestra,” DeWitt says. “I think it’s interesting to meet those two worlds, to treat it like you are making a collage. I enjoy Ableton for that. It opens up a huge world of possibilities. I might have 50 saxophone phrases, but really all they are an

inspiration. I chop them up and re-pitch things, slow it down, speed it up, jump markers around, change the rhythm, change the pitch and length of the notes, stretch things out and layer things on top of each other.”

The Soundtoys 5 Effect Rack is another huge weapon for DeWitt, for the way users can creatively combine plug-ins into a custom signal chain. “I’ll end up throwing a crazy vocal slap effect on a piano. Or even their Decapitator [saturator], which is a more-traditional plug-in, feels crazy, every time you throw it in the Effect Rack,” DeWitt says.

Since wrapping *Divorce* in June, DeWitt scored a film a month until beginning *Making History* in November. Amidst all that, he also reunited with Wild Cub, which will release its second album soon. The band turned a rented house in Palm Springs into an impromptu studio equipped with DeWitt’s original Neve 1073 preamp/EQ and Adam A7X studio monitors. “I used to get really bass-y, big speakers that felt great while you were mixing,” he says. “The nice thing about the A7Xs is that, similar to the Yamaha NS-10s, they are very flat, and they make your music sound as unexciting as possible, but in a good way.”

To keep up with his hellacious pace of scoring and cutting band tracks, DeWitt says, “I keep everything where I can just reach there and grab the guitar and go,” he said. “I can drop it, grab a bass, a grab a synth and do it all as fast as possible. I like to keep things slightly messy and improvisational, so I can go back later and clean up. But every thought is that I’m moving as fast as possible. I’m overlapping on projects and doing two at a time, and it’s crazy. It’s a lot.” ■

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TY SEGALL

Found Sounds and Live Music

By Barbara Schultz



Photo: Kyle Thomas



There's an entertaining video online labeled, "Watch Ty Segall and Steve Albini randomly smash a toilet into pieces." Turns out, it was not so random. The footage was captured during sessions for Segall's eponymous new album, recorded in Albini's studio, Electrical Audio, in Chicago.

"There was a song that was intended to have a... I don't know if you would call it a psychedelic interlude, but it was a nonmusical interlude right in the middle," Albini explains. "And that nonmusical interlude was going to involve some found sounds and some created sounds; that was like a whole separate little project within the project. Smashing the toilet was in service of that psychedelic moment."

Moments like that are inspiring in their own way, but rest assured, the punk-prog-psychedelic album *Ty Segall* (Drag City) is eminently musical—full of Segall's powerful vocal harmonies and magnificent guitar fuzz.

Tracking sessions took place during several days at Albini's place, with basics going down live and, Segall says, requiring the fewest overdubs he's ever needed on a project. "If you want your band to sound how they actually sound, [Albini] is the most perfect match you could

ask for," Segall says. "He's hands off when the band wants him to be, but when he did throw in ideas, they were always amazing."

"The live band Ty has been playing with for a while wanted to play as they'd been playing live, as much as possible, and that naturally suits the way I work, so it was fun and easy," Albini says.

Segall and guitarist Emmett Kelly, and their amps, were set up in the main studio, while bassist Mikal Cronin was situated in what Segall calls the "most dead" room in the studio, and drummer Charles Moothart played in Albini's drum room. Windows and room positioning in Electrical Audio allowed all of the bandmembers to make eye contact.

Segall plays through a silver-face '72 Fender Quad Reverb that he once told our sister magazine *Electronic Musician* is "broken—it breaks up way too much. It's way too distorted... but it's my lucky amp."

Apparently, that luck only increased on Albini's watch: "No one has ever gotten my guitar amp to sound that good," Segall says. "I've never found an amp that topped it, but Steve made it sing."

Albini says he put up three mics to capture Segall's guitar: One was an RCA 74. "That is sometimes called the Junior Velocity microphone,"

Albini says. "It's like a tiny version of a 44. It was originally used as an announcer's mic, so it has a presence rise; it has a coil in it that creates a slope and a slight rise in high frequencies, which makes it really good for electric guitar."

Albini also put up an AEA N8 that he says he's been using a lot on electric guitars since he received an early prototype. Both close mics were centered on loudspeaker cones, approximately 12 to 14 inches from the grille. He also uses a distant ambient mic—in this case, a Crown PCC. "It's a small, flat plate that sits on the floor and picks up the sound of the room," Albini says. That mic was also on hand when they overdubbed Segall's vocals..

Segall sang in the middle of the live room, into a Shure SM7 and RCA 44. "I'm fairly sure I would have used the mic preamps that our chief technician Greg Norman makes," Albini says. "They're called the EAPreQ; the Q is because there's a simple high- and lowpass shelving EQ built into the preamp."

Albini says his compressor/limiter would have been a UREI 1176 or dbx 165. "And most of the time, for guys who are very demonstrative as singers, I use an ambient microphone in the singing room, as well, so that would have been the Crown PCC again; that ambient microphone is often set up on an expander so when he's singing quietly it doesn't add room noise, but when he sings more loudly, it opens up and you can hear it kick in." ■

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Classic Tracks

By Robyn Flans



"RIGHT TIME OF THE NIGHT"

Jennifer Warnes

Right Time of the Night," released in 1976, was all about firsts. It was the first hit by songwriter Peter McCann. It was artist Jennifer Warnes' first hit single. And the record was Jim Ed Norman's first production. But from the producer's point of view, the road to the success of this career-changing song was quite rocky.

Before producing "Right Time," Norman recalls, he was working as a tape copy boy and a sometimes string arranger and side musician in the studio for The Eagles, when the assistant in the tape copy room told him there was a call for him from Clive Davis. He thought it was a joke. He said, 'Yeah, right,' and kept on working. Seeing the blinking light on the telephone persist, he finally picked it up and said, 'Yeah?'

"Is this Jim Ed Norman?" "Yeah." "This is Clive Davis." "Yeah, right." "It really is. I got your name from Hank and Dave." Davis had heard of Norman from producers Hank Medress and Dave Appell, with whom Norman had worked on an album for the Group With No Name.

"Hank and Dave said you want to be a record producer. Is that true?" Davis said, according to Norman, who responded, "Yes I do, I want to be a record producer."

They met, and Davis played Norman several songs. Norman wasn't wild about most of them until he heard "Right Time of the Night." "If

you're going to give me a chance to make a record for you, let it be with that song," he told Davis.

The song had been written by McCann, who was then signed to a publishing deal with ABC. McCann told The Tennessean in a 2015 interview that the song was inspired by a beautiful day spent on the beach in Malibu. "It was one of those perfect sunsets," McCann said in the article. "I was there for the entire evening, and the sun went down and the stars came out.... Clive Davis, who was heading up Arista Records at the time, he had just signed Jennifer Warnes, and they needed a single for her."

Davis then played Norman some demos by Warnes and asked whether he thought she could sing "Right Time of the Night." Norman said, "Absolutely." Davis explained that she had already cut a record with producer Jim Price, but Davis didn't hear a hit, so he was still fishing for one. Then he played Norman a song she had already cut, "I'm Dreaming," and asked his opinion.

"I said, 'I really like that song, but it could have a more romantic, orchestral and full arrangement,'" Norman says. Davis agreed and gave him his first shot at production, putting him in charge of cutting both songs.

However, convincing Warnes that he could do the job was not so simple; Norman says he spent an abundance of dinners trying to do so. She has since been quoted that she was not crazy about "Right Time of the Night" initially. Norman says she was also upset by the fact that he was a first-time producer.

"I remember having several meetings with her and explaining to her about what I wanted to do and how I was sufficient to the task. I used my most persuasive powers," Norman laughs.

The job did not go smoothly, from the start. Norman thought he'd find a rhythm section that could go into Wally Heider Studios and cut both the songs. He knew some great musicians from having arranged publishing demos, and hired Reinie Press on bass, Richard Bennett on guitar, Alan Lindgren on piano and Dennis St. John on drums. While "I'm Dreaming" came out fine, "Right Time of the Night" did not; he had to re-cut the entire song.

"I didn't capture the ethos of the song," Norman says. "I had said, 'If you're going to give me a chance, give me that song,' and I didn't accomplish it with that track. I'm an arranger, so when putting the budget together, I put in to do strings as an arranging expense. I was all excited now as a producer—I was getting ready to hire my hero, Nick DeCaro. As I was listening, I was heartsick that I had blown it." He would now have to do his own string arrangements.

Norman took a deep breath and figured it out. He enlisted friends to play: Matt Betton, Jr. on drums, Kenny Edwards and John Hug on guitar, Doug Livingston on steel guitar, Michael Bowden on bass, Brian Whitcomb on piano and Doug Haywood on backing vocals.

They went into North Hollywood's Davlen Studios, which had a Trident B console, Studer multitrack machines for recording, and a Studer 2-track machine for the mix. Rhythm tracks were cut first, with Warnes singing a scratch vocal. Ultimately, Warnes' final vocal was the most important element, Norman says. "The vocal had to sell the song and be expressive of the song," he explains. "Jennifer had such a beautiful voice; sometimes I had her

sing in harmony with herself.”

“Right Time of the Night” was engineer Eric Prestidge’s first project with Norman, and he recalls immediately thinking the song was a hit. Today, he’s not certain what mic he used on her vocals, but he guesses either a Telefunken 251 or a Neumann U269, a European version never released in the U.S.

“The 269 is still my favorite microphone,” he says. “The Telefunken 251 is still maybe the overall best microphone ever made, but they were very inconsistent. I’ve kind of avoided the solid-state microphones for vocals.”

During tracking and mixing, Prestidge says, he used a lot of Teletronix LA-2A limiters, particularly on Warnes’ vocal. “I actually used two, back to back,” he explains. “I would use one coming in that limited, and then when I mixed I would switch the LA-2A compression, which is a switch on the back of it, and run the vocal through it again in a compression mode and slightly compress it.”

Prestidge recalls using a Sennheiser 421 on the kick drum, AKG 414s on the toms, AKG 452s or 451s overhead, and “probably an SM57 on the snare or a Sony C500.” But, he says, it also may have been a Neumann KM 84 after he had a conversation with Ken Scott to find out what mic he used on Supertramp’s “Crime of the Century.”

On the acoustic guitar, Prestidge used AKG 452s or 451s. On electric guitars, he says, he used two different mics: “I would do a close miking with a Shure SM57 to get that funky, gritty sound, and use a Neumann U67 backed off from the amp for a fuller, fatter, more hi-fi sound to mix with the SM57.”

The bass was taken direct through a UA 1176 limiter, “compression setting of 4, medium attack, slower release,” Prestidge says. “The mic was a modified Neumann U87 with resistor R8 removed.” Steel guitar was recorded direct.

The day they went in to Kendun Recorders in Burbank to cut the strings, the studio, which Prestidge recalls having an SSL console and Studer machine that had one problem after another. “I just thought, ‘I’m doomed,’” Norman recalls. “They finally got the thing put back together, but sessions go in three-hour increments, and I was out of money after three hours. They got it fixed about two-and-a-half hours into it.”

With 30 minutes remaining in total, he spent the first 25 on “I’m Dreaming,” which left five minutes for “Right Time of the

Night.” He said, “Roll the tape,” got one pass, and they were out the door.

When he listened back, Norman suddenly heard a big clash in the bottom end between the bass and the cello. “What in the world is that?” Norman asked himself. Then a lightbulb went off: “When I had written the chart I had been writing from memory,” he says, “and I wrote the chart to go with the first time I cut it. Fortunately, it was only noticeable in the bottom end.”

Of course this was pre copy-and-paste days, so Norman turned the cello down when that part came by, but up came another problem. He had written a modulation going out of the bridge and the violins were off.

“I had written the violin notes in the new key on the run-up,” Norman admits. “You’re not at the new key yet. For some reason I was writing in a hurry.”

He put a loud guitar part on the modulation, but Norman says, “To this day I can hear one violin note that sounds out of tune.”

Norman says that he talks about making this record so people will learn. The project was definitely a learning experience for him, so he wants budding producers to see how he found himself in a tough spot, but he still managed to make it through and to have a career despite all the rough patches at the start.

While he was a fan of “I’m Dreaming” in particular, Davis ended up releasing “Right Time of the Night” as Warnes’ first single, and the song reached Number 6 on the Billboard Hot 100 chart. And because of that single, a few months later Norman got a big producing gig with Anne Murray and proceeded to make 10 albums with her. McCann went on to write Top 40 songs for Louise Mandrell, K.T. Oslin, Mickey Gilley and others. “It was the on ramp for all three of us to go on and do better things,” McCann said.

Norman doesn’t recall how Warnes felt about having to re-cut “Right Time of the Night.” “I probably blocked that,” he admits. “But I do know that after we got finished with the record she was upset with me and didn’t want to talk with me for years because she was just unhappy with the whole thing.”

About four years after the sessions, though, Norman was living in Nashville and one day he was sitting on the floor going through a pile of tapes when the phone rang and it was Warnes. “She said, ‘Jim Ed, will you make records with me again?’” Norman recalls. “And in the end, everything was wonderful.” ■

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The Beatles at The
Hollywood Bowl,
August 23, 1964.
Note E-V 666 mics in
plentiful use.



©Getty Images

BEATLES LIVE!

Recording and Restoration for 'Eight Days a Week—The Touring Years'

BY MATT HURWITZ

The Beatles were always known for their songwriting and studio wizardry, as evidenced by their 13 iconic studio albums and countless hit singles. But almost forgotten is the fact that, from 1963 to 1966, they were the world's most successful rock 'n' roll live act. With the arrival of Beatlemania in America in 1964, their audiences grew exponentially, essentially forcing them to become the architects of stadium rock tours.

That touring life was recently documented by Ron Howard in his award-winning film *The Beatles: Eight Days a Week—The Touring Years*. The film, accompanied by a remixed edition of *The Beatles at The Hollywood Bowl* (originally released on vinyl LP in 1977 and long out of print) and the theatrical-only re-release of *The Beatles at Shea Stadium* TV special from 1966, offer evidence of the Fabs' prowess—and raw excitement—as a live band.

Bowl and *Shea* are the only two multitrack recordings made of the group live. The remaining audio recordings seen in the film represent occasional TV appearances and soundboard recordings, the latter typically made without authorization from The Beatles' manager, Brian Epstein.

The Beatles' very first concert appearance in the States took place at the Washington Coliseum on February 11, 1964, two days after their record-breaking appearance on *The Ed Sullivan Show*. The show, presented by L.A.-based Concerts, Inc., the booking arm of National General Cinema Corp., was recorded on 2-inch videotape, clips of which are seen in the film. "The idea of us filming it was that we were going to show it on closed-circuit television in over 100 movie theaters three weeks later," states the show's promoter, Lou Robin. The broadcast was filled out by segments featuring The Beach Boys and Lesley Gore, transmitted live from a studio in Burbank.

National General shot the show using local CBS mobile facilities, directed by Lee Tannen and technical director Clair McCoy. As seen in the footage, the audio recording was made up of vocals (captured with Altec 633A mics), which were shared with the house P.A., as well as direct feed from The Beatles' guitar amps to the mobile unit's recording mixer. Starr's drums were picked up only by leakage into the vocal mics.

Capitol Records intended to record the group's shows at Carnegie Hall in New York the next day, but Musicians Union issues prevented these from taking place.

When the group returned to the U.S. later that year for their first true American tour, they were represented by General Artists Corp., as would be the case for all three years of Beatles tours. GAC invited Concerts Inc. to produce a show at The Hollywood Bowl, but the company turned it down. "They wanted \$25,000 and wanted the tickets to go on sale [for the August show] in March, and we normally went on sale three weeks in front, so we passed," says Robin. "A lot of the English groups that came in weren't doing business. It wasn't a slam dunk, when one would come every six weeks."

KRLA-AM disc jockey (and future *Newlywed Game* host) Bob Eubanks and his business partner, Mickey Brown, were willing to take the chance, mortgaging a property they owned together in Hidden Hills to raise the \$25,000 deposit. Eubanks would continue to bring the band to L.A. over the following two years—again to the Bowl in 1965 and to the larger Dodger Stadium in 1966. "I'm the only living person to have produced their concerts all three years they toured," Eubanks says.

GAC's agreement with Eubanks, as with all the Beatles promoters, required (besides a case of soda, a television and towels) "a high-fidelity sound system with adequate number of speakers" and "a first class sound engineer." At all venues over the three touring years, sound reinforcement was provided strictly for vocals, and usually included provision of P.A. and loudspeakers, avoiding use of house systems.

Such was not the case, however, at the Bowl, which regularly hosted concerts of all kinds and had its own superior audio system to project to the back of the 18,500 seat (550-foot throw) of the venue.

Though a state-of-the-art RCA-based P.A. system update had been installed in 1955, it was upgraded after the 1960 season with the arrival of Head Audio Engineer Bill Blanton, formerly Ray Coniff's tour and television mixer at The Coconut Grove, and a team of four techs.

"The sound system was a three channel [left, center, right] stereo sound reinforcement system for symphony orchestra concerts," Blanton explains. "A fourth channel was used as a solo channel, vocal and/or instrument, patched as a mono solo over the stereo orchestra via a



The Abbey Road sound restoration team of, from left, audio producer Giles Martin, deMix programmer James Clarke, and engineer Sam Okell.

Abbey Road Studio

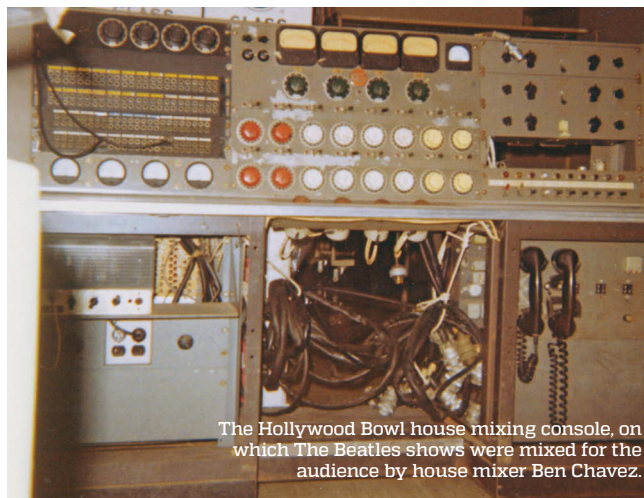
transformer arrangement." For pop and rock concerts, it worked as a 3-channel mono system, again using the transformer arrangement, playing the same content in all three speaker arrays. The fourth output channel could also be patched as a standby/backup in case of failure of one of the other three channels during a performance.

Mic inputs from the stage went to preamp arrays in a tall Sound Tower structure (now gone), about 25 feet forward of the Stage Left speaker tower. The preamps each essentially had three outputs, one of which sent the mic signals at line level to the mixing console, located 300 feet away, across the promenade aisle from the current mixer location, the last two rows of box seats left of the center aisle.

"The console had 20 inputs—four left, eight center, four right and four as part of the fourth solo channel," explains George Velmer, who became the Bowl's mixer and head of audio in late 1965. "It was a totally passive board, with classic RCA knobs; there was nothing active in it." The mic channel assignments were hardwired in the Sound Tower to the 20 console inputs, though they could be reassigned, if necessary, through a rarely used patch bay on the left side of the console.

"On the right was simple channel EQ, just high and low," Velmer adds. "And each input channel could be previewed, like a 'solo' in a modern console, via a headphone monitor amp we had there." The four mixer output channels returned at line level to the Sound Tower, where the signals were sent to line and power amps.

The Sound Tower also had provision for either visiting radio broadcast or recording teams, most often for radio. "We did all the broadcasts for the symphony for KFAC radio," Blanton explains. Two bridging loss pads were employed across the two remaining outputs of each mic pre-amp, to reduce the output by 40 dB down to mic level and provided to



The Hollywood Bowl house mixing console, on which The Beatles shows were mixed for the audience by house mixer Ben Chavez.

Courtesy George Velmer

any visiting broadcaster or recording company via a snake cable feed, without affecting the line level signal going to the mixing console.

Capitol Records' second attempt to make a recording was more successful, negotiating with both the American Federation of Musicians and the Hollywood Bowl Association to record The Beatles (sans other acts on the bill).

Capitol did not have a mobile unit of its own, though at the time the label occasionally rented a truck and threw in a mixer, recorders and Altec monitors from the studio. For the August 23 show, they did what many labels did in the L.A. area when doing a remote recording: They hired Wally Heider.

"They liked us showing up and doing all the dirty work, and they could just come in and engineer," recalls veteran producer/engineer Bill Halverson (Cream, CSN), who joined Heider's Studio in November 1964.

While Halverson recalls Heider originally schlepping his gear around to jobs in the trunk of his Cadillac, by the time of The Beatles' shows, he had a converted 14-foot Dodge box truck. Inside, typically, were a pair of Ampex tape machines, including a 300 3-track similar to those Capitol was using at its studio.

"Capitol was kind of behind the times," notes retired label engineer Don Henderson. "We didn't get 4-track until 1966-67, and then a long time before 8-track." Heider's 300 was one he had acquired from Ozzie Nelson in exchange for studio time. The second machine, he notes, was a hybrid 350 or 351, which could be fitted with a 3-track head stack.

For the 1964 recording, Capitol brought two of their own 3-track 300s, but utilized the rest of Heider's gear. The console was a 12-input, 3-output Universal Audio desk built by Bill Putnam, with rotary knobs. (It was not the famous "Green Board" built by Frank De Medio for Heider a few years later, now owned by Neil Young.) Monitoring was done via three separate Altec 604 cabinets, one for each channel. There was no air conditioning inside (remember, it's August), but the inside was lined with packing blankets to help with isolation. The truck was positioned backstage, behind the Stage Left speaker tower, and connected via cable to the Sound Tower.

Because of union rules, only union stagehands could set up microphones onstage. The workhorse house mic at the Bowl at the time was the Electro-Voice 666, distinctive by the air tube along its back, to bring back pressure up to the capsule and help with wind noise. The mic was applied essentially everywhere onstage, says Blanton, who supervised

Otto Rothschild/Courtesy Los Angeles Music Center



Courtesy George Velmer



the 1964 setup, with the show mixed for the house by Bowl engineer Ben Chavez. "Today you have mics built specifically for drums; we didn't have that convenience. We just picked a good-quality mic and used it wherever we could use it."

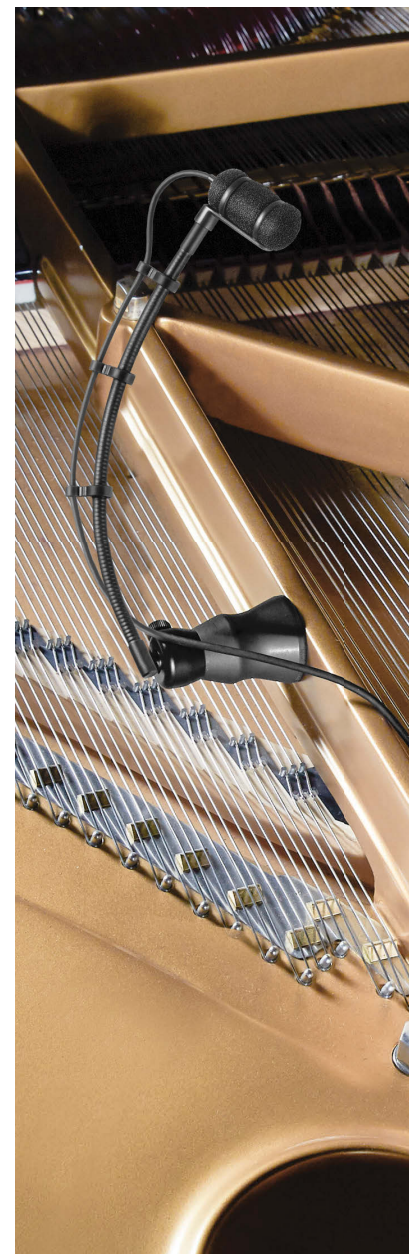
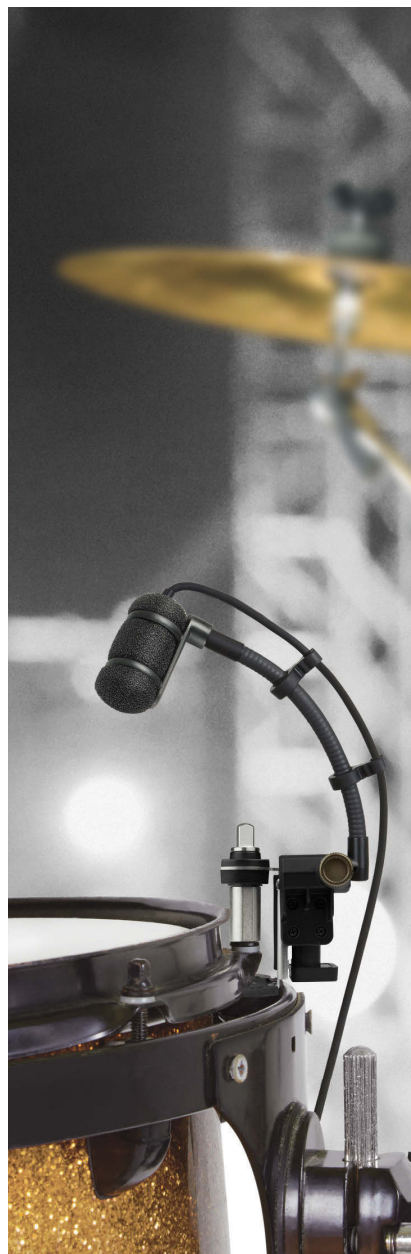
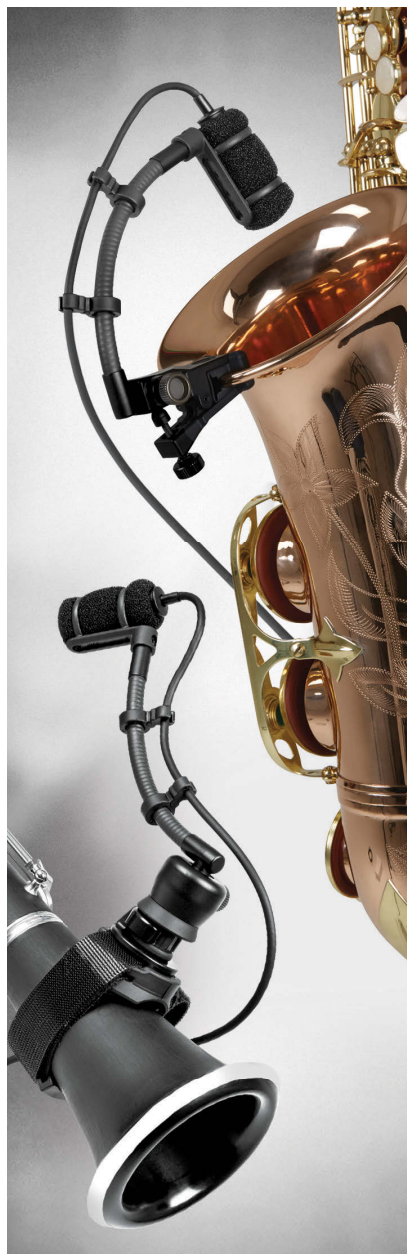
Not that the 666 didn't have its drawbacks, Velmer notes. "The pickup was overly sensitive. It was a cardioid, but it was a wide cardioid. So there would be leakage from guitar amps into the vocals—which was a problem if you were also miking the amplifier, because you had the same signal going into the vocal mic, introducing a time difference, which affects the response," something that, indeed, can be heard in the raw Bowl recordings.

The mics were placed on both John Lennon's and George Harrison's Vox guitar cabinets, as well as on Paul McCartney's bass amp. Ringo Starr's kick drum had a 666 set on a desk stand in front of the kick drum, while an Altec M20 ("The only one we had," Velmer notes), suspended in a shock mount, was used as an overhead. Another 666 was on a boom near the drummer, swiveled into place for his one featured vocal.

Though the Bowl audio department had no need for audience mics (or "applause mics," as they were known), a label doing a recording did like to have them. "You had an audience there, so you wanted the excitement of the audience," says retired Capitol mastering engineer Bob Norberg. Adds Halverson, "Wally kept a matched pair of Neumann U67s in the truck, which we used on every remote I ever did. We always had them Stage Left, Stage Right, off to the side, to be clear of the sound system speakers—something I learned from Wally." The pickup from the applause mics would nonetheless remain the bane of the Beatles Bowl recordings for decades to come.

Inside the truck running the recording was Capitol staff engineer Hugh Davies, supervised by staff producer Voyle Gilmore (Sinatra, The Kingston Trio) and assisted by disc cutter Billy Smith, who would occasionally be called into service to assist on remotes. "My main job was cutting proof refs and lacquers, but I would occasionally go out on a remote to the Troubadour and others, like this," Smith recalls, to run the tape machines and make track notations.

Davies tracked to 3-track, using 1/2-inch 3M Scotch 111 tape. "The old rust-colored tape," notes Norberg. "It held up like crazy, compared to later Ampex tapes." Davies mixed to the following track layout: (1) bass and drums; (2) vocals; (3) guitars. Harrison's lead guitar was often picked up by the mic he and McCartney shared, which was placed just down-



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stage from his amp. Lennon's guitar also sometimes appeared in Track 2, picked up by his own vocal mic, similarly placed downstage from his amp, when he wasn't blocking the sound flow while standing at the mic singing. (In the 1964 recordings, Lennon's guitar is unfortunately mixed at a low level, compared to Harrison's, sometimes barely audible in the guitar channel.)

The applause mics, left and right, were mixed into Tracks 1 and 3, respectively—and, unfortunately, at a fairly high level. “It used to really bother them, even then,” Smith says of the loud crowds. “I remember Ringo coming in the studio once and remarking to me about it. They were great musicians and it didn't appear the fans really cared.”

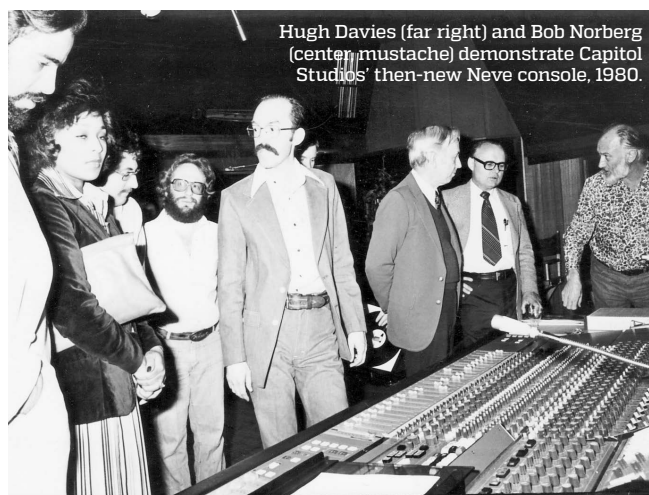
Each of the Ampex machines was running 2,500-foot reels, which, at 15 ips, would capture just a little more than 30 minutes of program. “The idea was not only to have a backup running, but to create an overlap,” Norberg explains. “Hugh explained to me: He would start the machines at the same time, but stop the ‘B’ machine five minutes before the tape would run out, allowing the ‘A’ machine to continue recording, while the tape was changed. So there was never any loss.” Adds Smith, “It was actually nerve wracking; you couldn't let it run out. There had better always be tape running.” The 1964 show ran just over 37 minutes (including an introduction by Eubanks and KRLA program director Reb Foster), generating two pairs of reels.

The following day, back at Capitol, Davies edited together the last two songs, “A Hard Day's Night” and “Long Tall Sally,” off of the second “B” crossover safety reel onto the first “A” reel (whose reel had been changed after “Boys,” missing part of “Night”), creating a complete show reel. Over the next several days, he worked to create a rough stereo mix for George Martin's review. The mix utilized EQ, limiting and reverb, the latter including a 15 ips tape delay in the send to Capitol's famous reverb chamber. After finishing on August 27, protection copies for Capitol's L.A. and New York studios were made of the 3-track edit, and then the original 3-track, along with Davies's mix, were sent to EMI in England the next day.

Upon review by Martin and The Beatles, though, it was decided that the recording's quality wasn't satisfactory for release. “The recording tended to emphasize the crowd, so you get a lot of top end,” explains Abbey Road software engineer James Clarke, who worked on the restoration. “They may have boosted the higher frequencies and flattened out the drums, which are buried in the mix. And Paul's bass basically disappeared. It was easy to see why EMI rejected it.”

So the following year, when The Beatles returned to the Bowl on Sunday August 29 and Monday August 30, Capitol took another pass at recording, again using Heider. This time, the label brought just one of its Ampex 300s as its “B” machine, the “A” being Heider's. “That was Ozzie's 300 in the truck that recorded The Beatles,” says Halverson.

This time, in Blanton's absence, mics were set up by Velmer (who left



when his shift was over at 5 p.m., missing the show), 666s were again utilized, but with a slightly different arrangement for Ringo's drums. A single RCA BK5 on an Atlas Sound boom stand was slipped in underneath the ride cymbal, with a mic for the kick on the beater side of the drum. “In those days, you typically had one overhead and a kick drum mic, and that was it,” Velmer explains. “So there were times we could come in from the front, at an angle, to catch the snare and toms, and be under the cymbals. That was really not unusual. It may not have been the best technique, but it was what it was.”

The second year's shows featured an additional instrument, a Vox Continental organ, which Lennon notoriously played on the show closer, “I'm Down”; it was plugged into a second channel on Lennon's guitar amp. “In those days, you didn't have a direct box,” Velmer notes. “It would go through the amplifier. You wanted the effects of the preamp to give it all of that character; it would otherwise be really dry.”

The concerts were once again mixed by Ben Chavez, who this time brought his family along. “We all knew it was pretty important, so he brought us all down to see,” says his widow, Ellie. “Ben so looked forward to being out there in all that excitement.” That excitement included female fans actually climbing over the fence that separated the mixing area from the aisle behind, climbing over Chavez and the console itself to get to the pool in front of the stage to try and get at The Beatles. “That happened to me more than once,” Velmer recalls. “It happened so fast I didn't even know how they did it!”

During the show, the recording engineers were left to themselves, Heider and Halverson watching the show from outside the truck. “Wally took a pretty good whack in the shins from a girl who was trying to climb over a barrier, when The Beatles were leaving the stage for an ice cream truck we had for them,” Blanton remembers. “When he tried to break her fall, she got him pretty good!”

The system on August 29 experienced a technical issue that rendered the first part of the recording unusable. The mic cable connection of Paul's/George's vocal mic, somewhere between the Sound Tower and the truck, was apparently unplugged or disconnected for the first four songs, the error realized and repaired in time for “Ticket to Ride” (the signal apparently did make it to the house mixer—the audience can be heard reacting to McCartney's conversation with the crowd, picked up faintly by other mics, as heard in the raw recordings). The band's performance for the remainder was somewhat uneven, and a 60Hz hum/distortion could be heard throughout, so the following night's show was also recorded.

Though engineer Pete Abbott has long been credited as Capitol's on-site engineer (as first seen in the sleeve notes for the 1977 LP), no evidence on the tape boxes indicates this. Instead, Davies (with his signature “H” in a circle in the “Engineer” field) and assistant Mike Martin appear to have tracked the date (again under Gilmore's supervision), as



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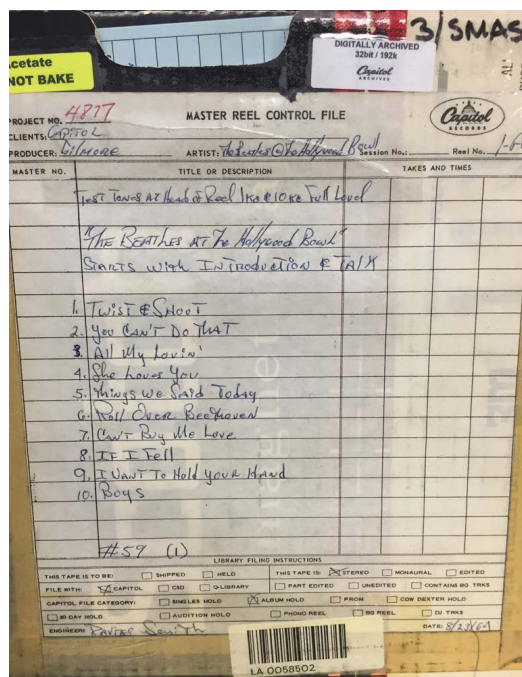
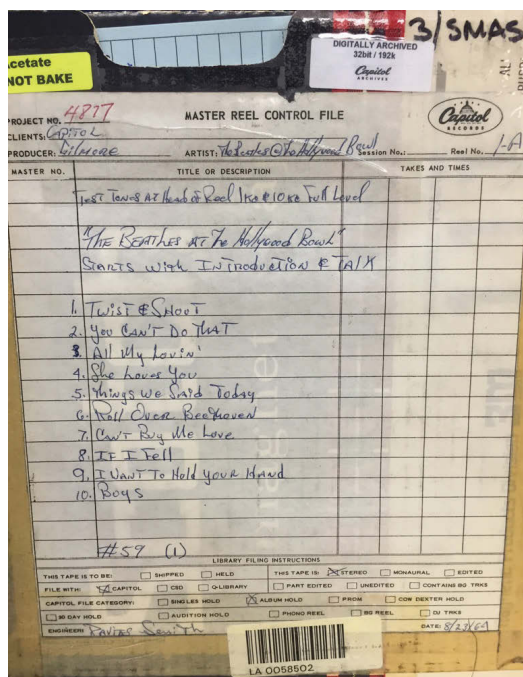
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Left: Tape box for first of two reels from "A" machine from the 1964 Hollywood Bowl recording, written by engineering assistant Billy Smith. Note "#59," identifying which of Capitol's Ampex 300 3-track recording machines was used; Right: Box from August 29, 1965, signed by engineer Hugh Davies, indicating tracks with vocal dropouts at start of the show.

noted on all the 1965 tape boxes. (Technical Studio Report [TSR] session records would have identified the engineering team, as well as technical info, but the studio's entire collection was tossed in the early 1980s, according to Norberg and Henderson.)

Eubanks once again introduced the band, this time joined by five other KRLA jocks, including Casey Kasem and Dave Hull. "So that no one would feel slighted at somebody introducing them by themselves, we collectively decided that we would introduce them together," Hull explains.

The recordings were apparently equally deemed unusable for release, just like their predecessor. "It's funny, there isn't a huge difference between the '64 and '65 recordings," says Giles Martin, son of The Beatles' original producer, George Martin, and producer of the current remix of the recordings. "I can just imagine my father's frustration—'Didn't you learn anything from the previous year?'" he laughs.

The project laid idle, though a copy of the 1965 recordings was dubbed onto 8-track in April 1971, perhaps with consideration for release then. On March 24, 1976, Capitol staff producer John Palladino assembled an album, *Beatles at The Bowl*, drawn from the second 1965 show, with "Twist and Shout" through "Ticket to Ride" on Side 1 (TRT 14:06), and the remainder on Side 2 (18:45). The tape was even mastered, but it, too, never saw the light of day.

In January the following year, Capitol decided to move things further, asking George Martin to review the tapes for release. He and engineer Geoff Emerick copied the three shows' worth of 3-track recordings to 8-track, and then spent several weeks processing/mixing them at AIR Studios in London. They eventually created an assembly of tracks selected from the 1964 and second 1965 shows (including Eubanks's band intro from that second show), skillfully mixed and crossfaded to offer, essentially, a single Beatles show. The album was mastered at Capitol by Emerick and Wally Traugott on February 28, with final mastering coming a month later. The album was released on May 5, an immediate treasure for Beatles fans who had waited so long to hear the band live.

deMIX AND RESTORATION

In 2012, as The Beatles' Apple Corps Ltd. was beginning to get the ball rolling on *Eight Days a Week*, restoration of the Bowl recordings once again commenced.

"I listened to the album my dad made in 1977, and, with today's ears, I don't think it's good to listen to, sonically," says Giles Martin. "The ambition we had was, could we make a Beatles live album that was good to listen to? And I think with the kinds of tools we have available to us today, we were able to create an album that's better than if you were standing in the Hollywood Bowl listening to The Beatles in 1964 or 1965. We tried to peel back the effects of the technology at the time and try to get closer to the experience."

The most significant technology advance came about when, in 2010, James Clarke, a software analyst looking after the business systems at Abbey Road, had a chat on a break with senior engineers Peter Mew and Allan Rouse. "I asked them, 'Is there any software that can unmix recordings?'" Clarke says. "They all started laughing, and said, 'That's the holy grail of the recorded music industry, and it's not possible.' So I just thought, 'Well, if the human ear can do it, then software should be able to do it.'"

Clarke, who has a physics degree from University of Wai Kato in New Zealand, began studying the literature on blind source separation, which allows software to track a face through a video. "They realized, when they applied it to music, that they could use the spectrogram to do exactly the same thing," the engineer explains. He began writing code himself and getting good results, prompting Rouse, who was the shepherd of Beatles projects at the studio, to try the system on one of the few Beatles tracks for which no multitracks exist, only mono mixes—"Love Me Do"—eventually creating a fairly good stereo mix, separating the harmonica from the guitars, etc.

The system, which Clarke calls deMIX, works with a combination of spectral and power models of whatever an engineer wishes to create a separation for. Clarke first creates a spectral model of an instrument, for example, Starr's drums or McCartney's bass, from Beatles multitrack recordings available to him in the Abbey Road vault. That is accompanied by a power model of the same recording, which matches the spectral model. "When you have overlapping frequencies, the only way to distinguish whether it belongs to a guitar or to a bass is by its power spectrum," Clarke explains.

When the program is run, it creates an array of 300 or 400 "atoms" of the item Clarke is attempting to separate in a recording, via a Fourier Transform of that recording, and compares it to a Gaussian distribution of the model he's built of the instrument. "It says, 'Well, this little atom matches the spectral and power fingerprint that belongs to the drum. So it

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more likely belongs to the drum than it does to the bass guitar,” he explains. “So I then cluster all these broken up samples to the instruments I want to grab out, and just iterate over and over and over, throughout the entire length of the song, until it decides, ‘Yes, that is the drums.’”

A technique known as Weiner Filtering essentially uses binary mask created by the separation process, digitally filtering out everything of the original wave but the instrument being sought, after which, a Fourier Transform turns what remains, digitally, back into the waveform of that individual instrument. That is done

for each instrument in the original wave, creating separate wave files for each instrument in what was a single track. All of those can then be phase-inverted and combined back with the original wave, as a test for success. “If we get a flat wave, we know it’s worked properly,” says Clarke.

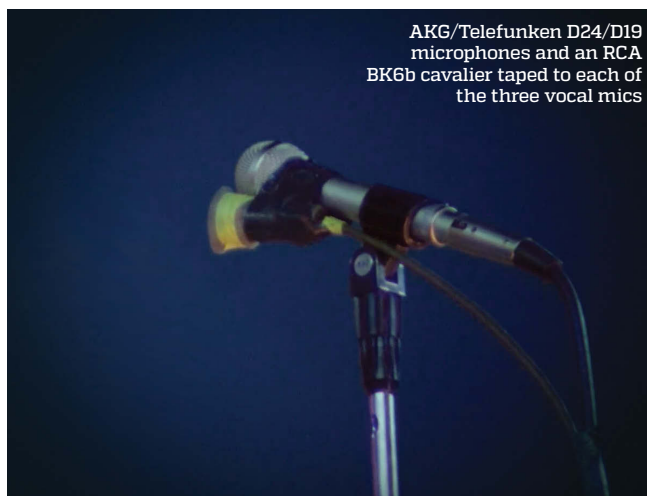
Processing of a single song file, such as the 1.5-minute “Twist and Shout” from the Bowl, takes about three hours, a vast improvement over the two years what Martin and engineer Paul Hicks spent creating the “demixed” audio tracks for The Beatles Rock Band, released in 2009. For that project, the team used Cedar ReTouch to painstakingly paint out bits of instrument wave off spectrograms of Beatles session recordings to get isolated tracks.

So with that in mind, when *Eight Days* work began in earnest in 2012, Martin asked Clarke to try his deMIX system on the Bowl recordings to help with the most difficult challenge: the audience screams. “I did the same thing with the crowd noise as I did with the instruments,” he says, taking samples of the crowd from moments of Bowl recordings where the crowd was screaming but no music was being played, of which there was plenty, to build his spectral and power models of the screams, and treating them as if they were an instrument. “I’ve got loads of examples of just the crowd cheering away,” Clarke notes. “The more samples you have of an instrument you’re trying to model, the better your fingerprint will be.”

The result, using deMIX, was a clean track of the audience screams, which could then be mixed out of the tracks on which they appeared (Tracks 1 and 3), leaving just the instrumentation. Clarke similarly was able to use the system to separate McCartney’s bass from Starr’s drums on Track 1, offering yet more flexibility, though Harrison’s and Lennon’s guitars, on Track 3, couldn’t be separated, because the spectral/power models of their two guitars are simply too similar.

The deMIX’d tracks then allowed Martin and Okell to do their magic. “When you take the sound of 16,000 screaming girls out, it gives you a much cleaner guitar track or bass track to work with,” Okell notes. “That’s partly how we get so much more clarity in the mixes—we could duck down and EQ the guitars, without EQ-ing the crowd.”

“The reason the original vinyl album sounds dull,” Martin explains, “is the reticence of my dad and Geoff Emerick to add any top end to it, just because of the screams. If you brighten the drums, you brighten the screams. The crack of a snare drum is between 2 and 3 kHz. If



you add that, that’s exactly where the screams hurt your ears. And you could forget about compression; it just made things worse.”

Okell notes that while Martin’s father and Emerick had applied slap-back reverb to give a sense of the size of the venue, to offset the otherwise dry close-miked recordings, he and Giles made use of authentic gear, such as Fairchild limiters, tube reverb plates and Abbey Road’s legendary reverb chamber, as well as another tried and tested method: “We’ll also do re-amping—playing the track out of loudspeakers in Studio 2 and recording it back from the

other end of the room. That’s particularly useful when creating a 5.1 surround mix for the film. It’s a matter of giving it some size without feeling like it’s just smothered in cheesy reverb.”

After processing, the whole recording can be reassembled—with the screams added back in at a more palatable level. “It’s a bit like baking a cake,” says Martin, “and realizing you want to add more eggs. The cake isn’t going to be a cake if you just add more eggs. You have to put the whole thing together again, which is what we had to do.”

As for track selection, Martin followed the same path his father took: processing and mixing all the tracks from all three shows and then selecting the best. “I hadn’t really been thinking about what was on the original LP,” he says. “And then, I wasn’t surprised that Sam and I made almost exactly the same choices my dad had made with Geoff Emerick.” Even though an additional four songs were deemed of high enough quality to include, Martin decided to leave the running order intact, with the same 1964 and 1965 tracks interlaced the same as before, adding the new songs as bonus tracks. “I thought, ‘We might as well make this a celebration of his work.’ The only reason to have inserted those other songs in some other order would have been ego—‘This is my version of *Hollywood Bowl*’—and that didn’t make any sense.”

Consideration was made to use the 1965 closer, “I’m Down,” as the album closer, but it was found that the first night’s recording was marred by distortion, and the second night featured a performance flub. A brief attempt at using some elements from each night to create a blend was made, but ultimately rejected, as was the case with other tracks. “Things like lead parts that just aren’t there or almost inaudible or obvious technical flaws ruled things out for us,” Okell explains. (One such edit was successfully executed, borrowing a lead guitar break from the August 29 recording of “Dizzy Miss Lizzy” to fix a low-level spot in the August 30 track.)

“The purists, of course, want us to release all three shows in their entirety. But we’re not releasing a flawed performance. If you release a Beatles album, whatever it is, that comes with a certain level of quality that people expect.” Adds Martin, “Music’s not for collecting, it’s for listening.”

The result, Martin says, “is a snapshot of the peak of Beatlemania. What you hear now is how much fun they’re having when they’re playing. They were musicians, first and foremost. And I think that’s what you now can hear.” ■



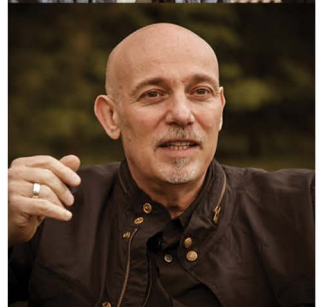
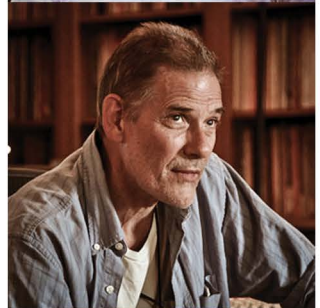
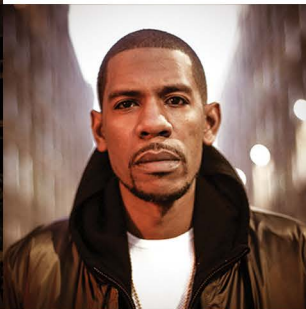
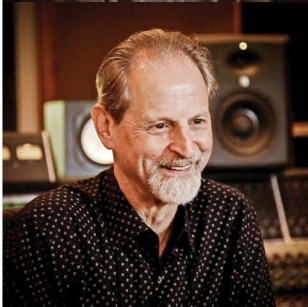
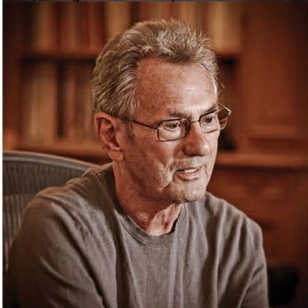
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The Beatles at Shea Stadium



On August 15, 1965, two weeks before their second Hollywood Bowl appearance, The Beatles put on a show that would mark the beginning of true stadium rock concerts, playing to a record crowd of 55,600 at William A. Shea Stadium in Queens, NY. The show opened their second U.S. tour, which would run for a little over two weeks, visiting ten different cities.

Realizing the show would be a milestone event, Beatles manager Brian Epstein and Ed Sullivan's Sullivan Productions decided to film the concert for posterity for a television special to air that Christmas. A restoration of that film, featuring The Beatles' concert footage, recently appeared in theaters, accompanying Ron Howard's documentary, *The Beatles: Eight Days a Week—The Touring Years*.

To produce the special, Sullivan hired Clayco Films, whose principal, M. Clay Adams, had a history of work in television, including *The Phil Silvers Show*, and who would regularly shoot location inserts and segments for Sullivan. The film was shot with a dozen strategically placed 35mm cameras by cinematographer Andrew Laszlo, a family friend of Adams, according to Adams's son, Michael.

The audio recording was made by a 42-year-old engineer named Fred Bosch. Born in Stuttgart, Germany, Bosch worked as a field engineer for Altec Service Company on theater sound systems, before joining Cinerama in 1951, acting as recordist for all of its three-stripe Cinerama films from 1952 to 1963. He moved with the company to Hollywood in 1960, returning to New York with his family in June 1964, and apparently became a favorite recordist of Adams.

It is unclear who provided P.A. audio engineering services for the show, and the P.A. mix was apparently not piped through the stadium's audio system, as is often described; the vocal mix instead played solely through an array of Electro-Voice LR4 column speakers splayed about the field toward fans. "The delay, combining those field speakers and the screaming house speakers, would have been atrocious; it would have been a horror show," says legendary live mixer Bill Hanley, who not only mixed the 1966 Beatles Shea show, but three years later, with his brother Terry, would provide the audio for Woodstock.

As with the Hollywood Bowl concerts, all of The Beatles' amps and

drums were miked for recording, as were the vocals, using AKG/Telefunken D24/D19 microphones, identifiable by their unique side vents that aid in the mic's directionality. In addition, taped to each of the three vocal mics was an RCA BK6b lavalier, each capped by a jerry-rigged baffle, with foam taped over the screen to limit the effects of wind and increase the mic's directionality (which was otherwise omnidirectional). Ringo Starr's vocal mic was suspended on a boom stand, allowing him to swing the mic into place for his solo vocal, "Act Naturally." In addition, a single E-V 666 appears to be tucked under his crash cymbal on an Atlas MS-20 stand, right next to a D24 set up in front of the kick drum.

Both Bosch and the unidentified P.A. engineer set up behind the elevated stage platform, just behind Stage Right. Both used Altec 1567A mixers, which had four mic inputs (plus a line input) and a single mono output. "Those mixers were ubiquitous at the time," says Tom Fine, whose father, film mixer Bob Fine, was the post-production sound engineer for the film. "But they were designed for P.A. and broadcast use. They weren't designed for a guy screaming rock and roll into a microphone. The overloading could have started at the input transformer."

The P.A. mixer's 1567s were housed together in a single road case with two rows of XLR mic inputs on its side. Three mic cables were connected in the bottom row of inputs, which are likely the three D24 vocal mics. It is not known which vocal mics are plugged into which mixers, but it is likely that the lavaliers are being used by Bosch, connected to one of his two mixers. And why a lavalier? "They were very popular in the broadcast world, being sturdy, predictable and omnidirectional," says Harrison. "He probably didn't have a lot of mics to choose from, particularly one small enough to tape to the D24."

Bosch recorded the show to Scotch 111 tape on a pair of ¼-inch 2-track Ampex 350 tape machines. Each machine received the same content—the output of each of the two Altec mixers going to Tracks 1 and 2 of each machines, respectively, via an unknown splitter arrangement (perhaps a simple Y connector).

FIX IT IN POST?

Bosch certainly had his work cut out for him. He was treading in new territory, and, unfortunately, the results reflected it. "Everything was really primitive then," Fine notes. "You can't look at this from a modern perspective. These guys had small space and limited time. They just set up whatever worked. This was the beginning of stadium rock P.A.—it had never been done before." Adds Abbey Road engineer Sam Okell, who restored the tracks with producer Giles Martin, "He's in the middle of a baseball field, with headphones on and he can't hear anything. It's absolutely crazy they got anything."

The Beatles went onstage at 9:02 p.m. and were finished by 9:36 p.m., performing a dozen songs. The opening tracks, "Twist and Shout" and "She's

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a Woman,” suffered from barely audible lead vocals, and vocals are otherwise distorted in many places throughout. For Ringo’s number, “Act Naturally,” Bosch, curiously, somehow momentarily connected only Ringo’s overhead vocal mic directly to the Track 1 input of the “A” machine, leaving just McCartney’s harmony vocal on Track 1 on the “B” machine’s reel for the song—the only place the two reels differ.

Clay Adams, upon reviewing the tracks, turned to his old friend, Bob Fine, for help. Fine was highly regarded in New York for his film and television post work. His Fine Recording studio was set up in the former Hotel Great Northern, at 118 W 57th Street, where he built a



Courtesy Tom Fine

Bob Fine, original re-recording mixer for the TV broadcast of the Beatles at Shea.

pair of film mixing studios on the building’s 8th floor, connected to the hotel’s former ballroom, which he used for scoring, via audio tielines and a telecine projection system connection with the film mixing studios.

Fine took three passes at the mix, the first on October 28, after transferring the 2-track recordings to full-coat 35mm mag tape, as was customary for mix for picture work, mixing through his modified Gates Dualux

console, which featured a 3-track output. As early as September 23, “She’s a Woman” and “Everybody’s Trying to Be My Baby” had already been dropped from the TV show’s edit, the former due to an unfortunate absence of footage resulting from camera reel changes, and the latter just due to show length.

His second mix took place on December 2. But upon review a few weeks later by The Beatles and their producer, George Martin, it was determined that the tracks were still not ready for prime time. So a day was booked at London’s CTS (Cine Tele Sound) Studios in London on January 5 for Adams and Fine to record fixes with The Beatles.

As chronicled in a letter from Adams to his son, Michael (featured in Dave Schwensen’s book, *The Beatles at Shea Stadium*), Adams went to Abbey Road the day before to listen to the tracks with Martin and map out a battle plan, reviewing with Fine that evening. The next day’s session first captured McCartney, who arrived before the others, adding a bass overdub to four songs, and, upon arrival of the others, three songs were re-recorded in their entirety — “Ticket to Ride,” “I Feel Fine” and “Help!” Time ran out, so instead of recording a new version of “Act Naturally,” Martin simply provided Fine with a mix of the studio recording of the song. For “Twist and Shout,” Fine was given the August 30, 1965, Hollywood Bowl recording to replace the Shea recording.

The Beatles recorded, as would typically be the case at CTS, a popular post-production house, to 35mm full coat 3-track mag, one track of which Fine would have loaded his December 2 mix, the Beatles recording vocals and instrumentation onto the remaining two. “My dad said he was amazed by The Beatles’ ability to sync precisely to picture, particularly when they were patching their vocals. They could match completely what they did onstage,” Fine says.

Upon returning to the States, Fine went back to his studio on January 25 and mixed the 3-track full coat from CTS to a mono mix (sometimes combining the new recordings with the original), and adding effects and dialog, where needed. The finished film was broadcast first in Britain by the BBC a few months later, on March 1, but not until January 1, 1967 in the U.S. by ABC.

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RESTORATION

When Ron Furmanek began his restoration research in 1987, retrieving existing audio reels from Clay Adams, what he found, he says, was the pairs of 2-track ¼-inch field recordings, as well as Bob Fine's three ¼-inch mono mixes (which Fine copied from the 35mm mag finals). "The only thing I was disappointed about was that he did not have any of the 35mm 3-track mag recordings made at CTS," he recalls. "That's what I was hoping to find, so that we would have some separations for those overdubs to work with."

Furmanek says he created true stereo mixes, when possible. For those songs that The Beatles had re-recorded in their entirety at CTS, Furmanek followed suit and used those mono mixes, he and Mike Jarratt buffeting them by creating fake stereo, to avoid sudden jumps when meeting his adjoining stereo mixes. "Twist" once again was the August 30 Bowl recording. "I just couldn't get a good mix out of the Shea tracks for that; it was a sonic nightmare."

The original television special included not only footage of The Beatles' concert, but also other acts on the bill, backstage sequences, etc. But in 2016, an edit of the film featuring just the Beatles footage was restored and released, playing theatrically only as a bonus to *Eight Days a Week*. The edit features the entire concert, minus "She's a Woman" and "Everybody's Trying to Be My Baby."

For the audio, producer Giles Martin and engineer Sam Okell opted to base their restoration work as much as possible on the original raw Shea recordings made by Bosch, rather than the final broadcast mix featuring the CTS overdubs and Hollywood Bowl material. "Sam and I had a rule for ourselves," Martin states, "and that was, 'Whatever is live, we must use.' If they were playing live, and we could hear them playing live, we used it. The whole idea with Shea was about capturing the live performance."

The two worked, for the most part, from Bosch's original 2-track recordings made on the Ampex 350s, though both Fine's pre-CTS mixes and his final, which includes them, were also available. Where fixes were required, Martin and Okell took advantage of other Beatles resources that were available to them from Beatles session tapes of the same songs from the Abbey Road tape library, flying in instruments or vocals which otherwise were wholly absent on the raw recordings.

For "Twist and Shout" and "She's a Woman," the first two songs, Okell notes, "The vocals are very low, and they're blended in with the drums; there's not much we could do about that, besides EQ and trying to dig that out. So we used a bit of the Hollywood Bowl vocals [from August 30, 1965], in order to bring John up, plus a bit of the rhythm track, where needed. It's not a total replace, like they did in the film originally. It's a blend of the two."

"If we had access to a studio rhythm track, for a couple of numbers, we tried syncing that up and then bring in the low end, maybe the bass and kick drum that wasn't really present on those kinds of live recordings," Okell notes. "And we were very careful about it, it's done very subtly. Nobody would know there's anything else there—it just makes it sound a bit more full than it would otherwise."

The film and its restored soundtrack, along with the live performances heard in *Eight Days a Week*, show a hard-playing band, working nonstop to give the fans what they came for—hearing them play, whether they could hear them or not.

"They were such a good live band," says Martin, "and they were the most successful live band in the world, for quite a period of time. People don't realize that. Hopefully they will now, after seeing these two films." ■

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PACIFIQUE STUDIOS

NEW BLOOD FOR THE BEST-KEPT SECRET IN HOLLYWOOD // BY LILY MOAYERI



Pacifique Studios co-owners Tony Valenziano, left and Ted Greenberg at the custom Neve/API/Decca hybrid console in West Studio.

Photo: Eric Boccia

There is an inconspicuous brick building, one with no identifying markers that looks abandoned, with twin doors, the right hand one with an ancient bell. Push that bell and no sound comes out—at least not one that's audible over the bustle of a major street in North Hollywood. The building's deserted air might have to do with the fact that those who frequent the place use the discreet doors located in the back alley, accessible only through a gated parking lot.

This air of intrigue is necessary for the space, which houses the one-of-a-kind Pacifique Studios—the place where Beyoncé camped out to finish *Lemonade*, completing overdubs, mixing and mastering; where 50 Cent recorded vocals; where Billy Gibbons of ZZ Top worked on his contribution to an acoustic Jimi Hendrix tribute album. And that's just in the past year or so. Prior to that, Pacifique Studios provided services to Michael Jackson, Prince, Justin Timberlake and Poo Bear, to mention just a few.

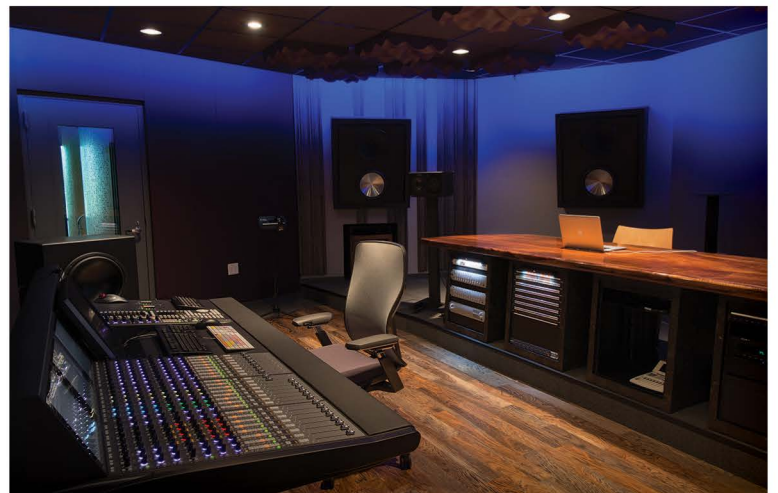
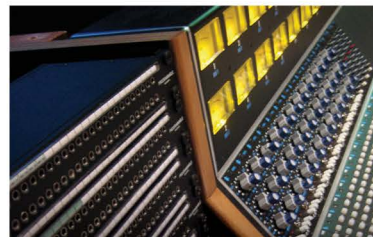
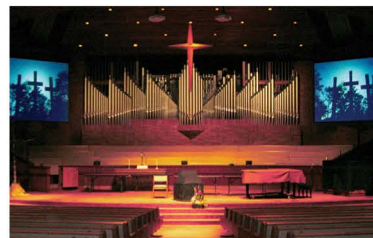
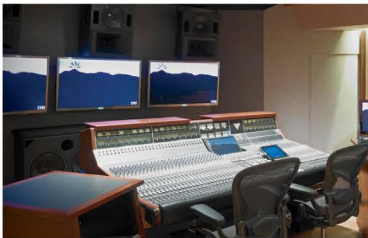
When the studio was just shy of 30 years under its previous ownership,

facilities. Both are equipped for tracking, vocal recording, overdubs, mixing and mastering. The smaller areas of each room are flexible, allowing, for example, for a temporary production suite to be assembled inside, as Beyoncé arranged to do while she was working at the studio. Alternatively, the rooms can be opened to one giant space.

Up a spiral staircase is the central nervous system: Valenziano and Greenberg's office. It's also where many guitars hang, shelves house even more vintage analog pieces plus boxes from every version of recording software; and DATs with labels like Michael Jackson, Destiny's Child, Prince, Kanye West, Enrique Inglesias, Aaliyah and so many more sit in forgotten boxes.

"The place has major history," states Greenberg. "There's magic here. There's a muse."

"People who have been here, they come back," adds Valenziano. "We've done some advertising, but it's word of mouth. People talk about it. Other studio owners have come in here and said, 'I remember



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what it used to look like, you've done a really good job."

The studio was always successful, from the time Natalie Cole recorded "Unforgettable" there in 1991. But for many years, the place didn't benefit from a lot of upkeep. Valenziano and Greenberg re-hauled the place, aesthetically as well as technically, streamlining and repairing much of the equipment that was either not functioning or not functioning optimally, turning Pacifique into a sleek yet comfortable operation. This has resulted in people like mix engineer Kevin Davis (K. Michelle, Ne-Yo, Dionne Warwick) setting up camp at Pacifique to work with the likes of Emeli Sande.

"You've got options," Greenberg says of the studio. "We have Decca EQs that don't exist anywhere running through Telefunken amps that the Beatles recorded through. We have compressors from the 1950s. We have Neves and an API. We have Universal Audio 610s console module, the real stuff. We have a whole microphone collection that includes Lenny Kravitz's RCA KU-3A ribbon mic. You can't find this stuff. If you do, you're going to pay rentals for it. Here, it comes with the room.

"We're recording to 2-inch, mixing to half-inch, but we've also got the latest Pro Tools HDX, pro converters," he continues. "We can do whatever you want. We have the SSL 9096 XL but you can be mixing off your laptop and just use faders one and two. That's what Stuart White (Beyonce) did and what Josh Gudwin (Justin Bieber) does."

"Everyone that comes here hears and knows there is a huge difference between their cool stuff in their home studios and our space," says Valenziano. "We were re-recording some hits with artists who have lived with those songs for years. They know the originals intimately. After re-recording those same songs here, the guys came out saying, 'These sound better than the originals. It's the best bass and drum sound we've ever had, what's going on?' We knew no matter what else was going on here, these rooms were special, we just knew."

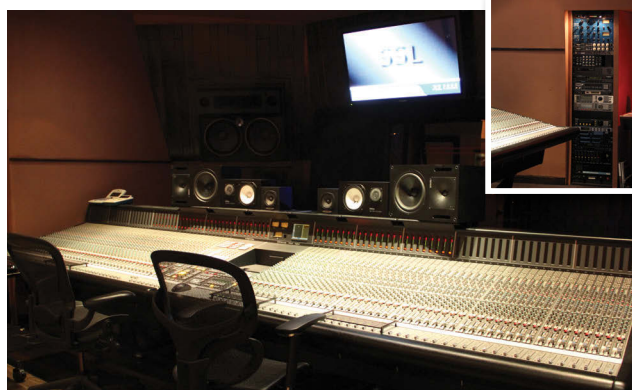
Besides a state-of-the-art facility with unique features, Pacifique Studios offers Valenziano and Greenberg's skills and knowledge. The two provide a level of personal customer service that's rare. They can be as involved or uninvolved as clients would like them to be. If an artist needs an instrument that Pacifique doesn't have—as unlikely as that may be—if the owners feel it's something the studio will benefit from, they'll buy it and make it available. And if a client is really well-behaved, a whole host of other rare pieces of gear will make an appearance from the studio's many hiding places—as well as Greenberg's seemingly never-ending supply of singular pieces—ready for use.

Valenziano's strength is his business acumen from years of running companies. He also is the diplomatic one, able to get along with every-

Photo: Arthur Chambazyan



West Studio live room.



East Studio, with SSL 9096 XL K Series console. Inset: A small taste of the eclectic outboard gear available.

one and keep them happy. Greenberg's strength is his ability and insistence in maintaining the physical studio in top shape. His extensive background in teaching has produced a number of excellent studio rats, many of whom find their way to Pacifique. Arthur and Jack Chambazyan are the current multitasking studio hands, and alumni of Greenberg's, whose abilities lend themselves to many aspects of both studio operations and client services.

"Because I'm self-taught and learned by doing it wrong, I know how to teach you to do it right," says Greenberg. "I can get directly to the correct way of doing things very easily. I can show you the straightest line between two points so you don't have to search around in the dark like I did for years. There are careers to be

had here. This place is crawling with former students. It's like graduate school. I haven't asked any of them to come here, they just do."

Valenziano's studio background is not that different from Greenberg's. He, too, started in a band, using outboard gear, and wants to pass along the tradition. "I was at an old MCI console, learning how to get in there, twisting the needle, trying to splice a beautiful long song into a single," he recalls. "Back then, you got one shot at it. If you were using the master, maybe you dubbed it down and fixed and spliced from there. There was a certain art and a certain passion for people who wanted to do that, which is a long time gone. We offer that."

Coming from musician backgrounds and having been signed to record deals, Valenziano and Greenberg remember what they didn't like about their experiences; they strive to avoid the negatives and focusing instead on what they wished labels had done for them, while keeping their eyes on super-efficiency. The convenience of having a home studio is not lost on them, but at the same time, they know what they offer is above and beyond; the quality they produce is their showcase, something they're both in complete agreement on.

"He's the best partner I've ever had," says Greenberg of Valenziano. "He really stands up. He does everything he says he's going to do. He's honest, and I've never been able to say that about any partner I've had."

"I've had success with other partners that weren't good people at the end of the day," says Valenziano about Greenberg. "It's always about money. I am about making everything great and having a business, way more on the community side. I know what it takes to run this whole thing and I now have someone to say, 'Go, do your thing.' I can give him a look and he'll know what I'm trying to say. It's a nice yin yang, and the artist gets the best of the deal." ■



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PORTABLE P.A. SYSTEMS, 2017

Options to Suit Any Artist, Any Venue

BY STROTHER BULLINS

Portable P.A. systems have experienced perhaps the most dramatic growth of any pro audio product category over the past couple of years. Supported by both manufacturers and retailers, this segment of the market offers more new technologies packed into all-in-one systems than ever before, and is being accepted by a broader base of end-users. It's now common for musicians to own their own P.A., tailored for their specific music, instrument(s) and the venues they frequent.

Here we present the top manufacturers of Portable P.A. products in alphabetical order. There are others, to be sure, but the following companies reach an ever-growing customer base for uniquely compelling reasons. Read on to find out why.



Alto Pro: Best known for attractively priced traditional powered P.A. speakers, Alto Pro offers a range of interesting options in Portable P.A., including a pioneering product within the “all-in-one” category introduced nearly a decade ago, the MixPack

Express; the larger, higher input-count MixPack 10; 3-channel, Bluetooth-ready Trouper; and Transport 12, a 400W battery-powered PPA with wireless microphone and USB media player.

Anchor Audio: With a clear emphasis on “portable,” Anchor Audio specializes in American-made, battery-powered portable speakers, designed for remote locales in which speakers are stand-mounted, as well as personal/carry P.A. systems for tour guides, etc. Anchor Audio also offers a range of lecterns and all-weather portable P.A. systems, including the Bigfoot Line Array, a caster-equipped, all-weather battery-powered system designed specifically to cover sporting events.



Behringer: The Music Group's Behringer brand offers a wide range of powered/portable P.A. enclosures of all types, sizes and purposes. Specifically under its PPA banner, all-in-one systems, battery-powered, handheld systems as well as three-piece, higher-wattage

systems are available. Notably, the Europort PPA2000BT (pictured) is a 2000W, 8-channel system featuring Bluetooth connectivity, wireless microphone option, Klark-Teknik multieffects processing, FBQ Feedback Detection, and more.



Bose: Having emerged as one of the top portable P.A. brands in the industry, Bose offers its legendary and super-portable L1 Series of “stick”-type portable line array systems, debuting in 2004, which notably offers 180 degrees of horizontal coverage. Following the success of the L1, Bose built even larger portable P.A. to effectively handle more inputs and a larger live band with its F1 Series (pictured). The F1 is noted for its high power, adjustable four-setting line array coverage, and optional powered subwoofer.



Cerwin-Vega: Lacking all-in-one portable P.A. systems, Cerwin-Vega specializes in high-powered two-way enclosures and subwoofers equipped with legendary Vega Bass circuitry; its latest workhorse enclosure is the 1000W P Series, featuring two sizes of full-range enclosures and a component subwoofer. Possibly my favorite powered/portable P.A. speaker of all time is the CVA-28 (pictured), Cerwin-Vega's 400W (continuous), tri-amped enclosure featuring dual 8-inch mid-woofers and concentric HF driver.

EAW: Under the umbrella of Loud Technologies, EAW is best known as a manufacturer of high-end touring line arrays. However, current collaborations with Mackie are bringing EAW innovation down-market, potentially broadening both brands' customer bases. Case in point: Mackie's new flagship AXIS mixing system is easily networked with EAW's intelligent RADIUS Series of network-enabled powered loudspeakers—far from “portable P.A.,” this collaboration may hint at the future of Mackie products and their network-based capabilities.

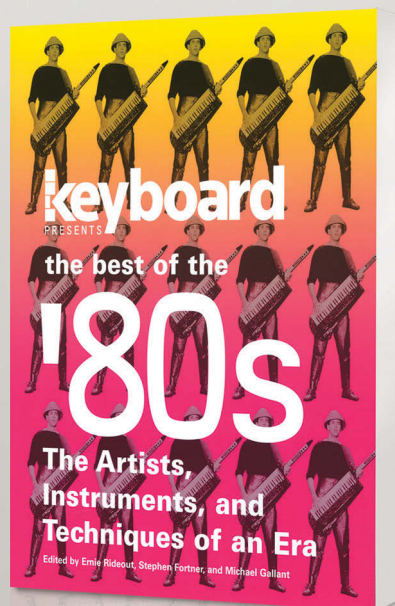
Electro-Voice: E-V builds some of the absolute best “workhorse” powered P.A. enclosures in the marketplace. From the ZLX to EKX to ETX—the company's budget, midgrade and flagship portable powered enclosure lines—all offer multiple input and throughput types and are equipped with well-chosen DSP parameters to bring out the best in most every placement. I continue to rely upon ZLX enclosures for many gigs, from a couple of dynamic mics straight into its XLR/TRS combo inputs for quick and low-key singer/songwriter moments to dual EV ZXA1-Sub augmented systems that are powerful enough to fill most mid-sized clubs for possibly high-channel count, full band productions.

FBT: Built in Recanati, Italy, and distributed via FBT USA, FBT portable sound systems include the new bi-amplified, birchwood cabinet-equipped Verve Speaker Series featuring Class D amplification, newly designed DSP with four EQ presets and a reportedly “extremely low” noise floor.

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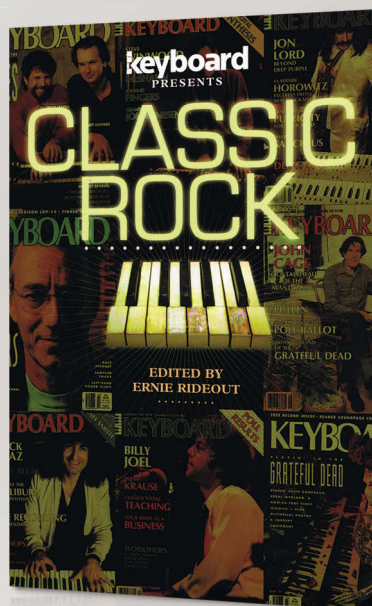
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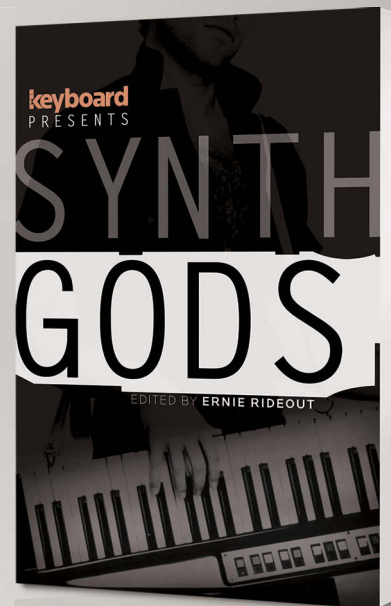
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SYNTH GODS

Culled from the pages of *Keyboard* magazine, this book spotlights artists who did much more than just play synthesizers: they changed the course of music history and inspired generations. Featuring in-depth profiles of Jan Hammer, Wendy Carlos, Rick Wakeman, Brian Eno, and others, this book delves into how these new, untested boxes of circuitry captured the imagination of so many legendary artists.

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Fender: For those in the know, Fender is not only a premier guitar manufacturer, the company lends its name to some of the best little portable P.A. systems in the business, and has for quite some time. The Passport brand is notable for its small size and unique all-in-one packable designs; operating a bit outside the realm of traditional pro audio brands, Fender has his-

torically brought a unique, simplistic sensibility to the portable P.A. marketplace. Worthy of note is the tiny Passport Mini, a dual-channel, 7W, battery or AC-powered unit featuring electric and acoustic guitar-based effects, built-in chromatic tuner, and USB connectivity for Fender's proprietary FUSE application and recording applications, etc.



Fishman: Two key products have solidified Fishman's foothold in the portable P.A. marketplace: the SA Series, purposely designed for the singer/songwriter or duo (the latest SA Series product, the SA330x, is pictured), and the Loudbox Series, offering a clean, accurate translation of acoustic guitar with added XLR inputs. "Fast forward to today and our three Loudbox models—the Mini, Artist and Performer—collectively make up 48 percent of the acoustic amplifier market in the U.S.," explains Fishman's own Larry Fishman. "You'll see Loudbox

amplifiers in coffee shops, arenas and everywhere in between."

Galaxy Audio: Best known for its line of HotSpot powered personal stage monitors, Galaxy now offers its Traveler series of portable P.A., featuring AC or battery operation. The latest model is the Traveler TV8 (pictured), a 4-input, Bluetooth-equipped two-way system featuring an 8-inch woofer, 1-inch horn and 80W amplifier, designed to cover up to 600 people.



HK Audio: Known for building a range of line arrays and impressive powered portable speakers, German manufacturer HK Audio builds notably high-quality portable P.A. systems, too. Its Lucas and Lucas Nano lines feature small, full-range speakers and integrated subwoofer/mixer/amplifier "bases." The latest HK PPA, Lucas Nano 608i (pictured) is reportedly the first all-in-one P.A. to feature an onboard iPad-enabled mixer and features eight channels, comprehensive effects and Bluetooth streaming capabilities, and it is notably light (under 40 pounds) and easy to maneuver.



JBL: After years of the EON Series of portable powered speakers' popularity in the marketplace—we've surely all used them somewhere along the way—JBL has now joined the portable compact line array business. EON ONE is an impressively powerful system, with full bass and natural frequency-wide sound. This user-friendly, all-in-one system is easy to carry with one hand and has a super-wide dispersion. Bluetooth-ready, it offers two XLR/TRS combo inputs, stereo input, eighth-inch input and the wireless channel.

Mackie: Mackie, first known for its compact analog mixers, was next known for its powered speakers, both in studio and live realms. Today, Mackie makes some of the most innovative and dependable powered portable speakers available, and has recently zeroed in on the PPA mar-

ket with its superb FreePlay and Reach products featuring digitally controlled mixing capabilities and Bluetooth connectivity.

It's arguable that one of most important products in Portable P.A. isn't really PPA at all. It's the Mackie Pro DX Series of digital mixers, which rely upon your iOS or Android OS smart device via Bluetooth. With six or two XLR/TRS inputs, clean Mackie preamps and the super user-friendly parameters and effects borne of the DL Series' MasterFader, add some powered speakers and go.

MIPRO: Wireless systems, microphones and an interesting array of truly portable P.A. solutions: This is what Taiwanese pro audio firm MIPRO offers to the market, and it has been building its PPA systems for years. MIPRO offers the MA-808 Portable Wireless PA System, accommodating up to four wireless microphones, XLR and 1/4-inch input, RCA input, and master level volume control via wireless with memory, all with built-in battery or AC powered and with cool extra features such as a Speakon main mix output and retractable handle and wheels. MIPRO also offers USB and SD card-ready personal P.A. I must also mention that this company's handheld microphones are superb bargains, too.



Peavey: Well before portable P.A. existed, Peavey empowered budget-restricted engineers and bands with relatively hefty (but indestructible) and affordable live sound speaker enclosures—the first portable P.A., in my experience, however portable or not. Today, Peavey offers some truly powered portable P.A. in its broad all-in-one Messenger Series and the perennially popular Escort Series, Triflex II 1000W full-range enclosures, and the P2 Powered Line Array system (pictured).

PreSonus: PreSonus is one of the newest pro audio manufacturers to cover both studio and live realms. Having purchased Worx Audio years ago, and with continued development of its live sound division, PreSonus today offers some impressive powered portable speakers, a widely accepted live sound (and recording) end-to-end system called StudioLive while raging DAW wars against Pro Tools (with its Studio One). The StudioLive AI Series is particularly interesting with Ethernet or Wi-Fi control, as well as, with its optional Dante card, ready for CAT5 or CAT6 connectivity.

QSC: Opposite of Mackie, QSC was first known for its powered enclosures and, increasingly now, for the innovative, intuitive Touch-Mix-8, -16, and -30 Pro digital mixers with integrated, proprietary GUI. Together, QSC offers an incredibly "pro" P.A. system that is certainly portable by self-mixing ensemble standards, and quite possibly for the most discriminating self-mixing singer-songwriters, too. Still, QSC remains a top source of powered portable loudspeakers, from its superb and rugged 1000W K Series with multiple input options and beyond.



RCF: Based in the mechanical/industrial tech-based city of Reggio Emilia, Italy, RCF produces a wide range of high-quality speakers for live/touring and installation, and even mixing consoles, headphones and studio monitors. In PPA, RCF offers several series of powered portable speakers; most notable is its Evox Series of compact active line arrays. Pictured is the 1,400W Evox 8 featuring eight 2-inch full-range transducers, a 12-inch woofer in its base's bass reflex enclosure, internal DSP, and more.



Roland: Too often overlooked as a source of superb portable P.A., Roland has been producing fine all-in-one systems for decades. From the CUBE Series of battery-powered “street P.A.,” perfect for busking, etc., to the larger BA-330 Stereo Portable Amplifier (pictured), Roland designs thoughtful, musician-centric PPAs

for creating music anywhere.



Samson: Builder of a wide range of portable powered speaker solutions, Samson offers its Expedition all-in-one portable P.A. The most powerful Expedition, the XP1000 (pictured), is a three-piece, Bluetooth-enabled, 10-channel mixer offering 1,000 W of power (500 x 500 W) for its dual two-way full-range enclosures featuring

10-inch woofers and 1-inch HF drivers.

Turbosound: Like Behringer, Turbosound is owned by Music Group yet has a long history prior of supplying world-class touring acts with large sound reinforcement rigs. Today, Turbosound is committed to commercial/performance-install and live sound, as well as portable P.A. markets. Notably, Turbosound’s iNSPIRE iP2000 is a column-style

portable line array with 17 neodymium drivers, 12-inch subwoofer featuring 1,000 W of power, Bluetooth connectivity, Klark-Teknik spatial sound technology, and much more.

Yamaha: Beyond Yamaha’s superb range of powered portable loudspeakers for live sound, the company has been selling its STAGEPAS of all-in-one portable P.A. systems for quite some time, and in it, pioneered “one knob” effects, such as reverb and compression before the rest of the industry caught onto the appeal of such ease-of-use among PPA end-users. Yamaha’s STAGEPAS range is notably ruggedly built with great-sounding components, all intuitively designed and easy to transport. Yamaha, among the first to the all-in-one portable P.A. party targeting DIY musicians, is a great example of doing PPA right.

Yorkville: A privately owned Canadian firm specializing in powered speaker enclosures, mixers, amplifiers and more, Yorkville has long sold well-made portable loudspeakers into the American marketplace, all of which are notably affordable. Worthy of special note is Yorkville’s Excursion EXM400 Compact PA, a 400W 4-channel system featuring compact extension speakers, “pole-through” connectivity, and integrated input/mixer features and functionality. A subwoofer, 24-bit digital effects and Bluetooth connectivity are also included. ■

Strother Bullins is Technology Editor for NewBay Media’s AV/Pro Audio Group. sbullins@nbmedia.com

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SOUND FOR FILM: AWARDS SEASON 2017

THE OSCARS, MPSE GOLDEN REELS AND CAS AWARDS

It's the beginning of the year, which means it's time to hand out the awards for the best in sound for film—the Academy Awards, the MPSE Golden Reels and the CAS Awards. Flip the page for a look at the sound teams behind 12 films that might just take home the awards. And scan below for the important dates surrounding nominations and voting, along with a few special awards to be handed out this year.

ACADEMY AWARDS

The 89th annual Academy Awards will take place on Sunday, February 26, 2017, and of the 13 awards handed out, two will recognize outstanding contributions in sound: Best Sound Editing and Best Sound Mixing. Last year, *Mad Max: Fury Road* took home both statues, with Mark Mangini and David White earning Best Sound Editing and Chris Jenkins Gregg Rudloff, Ben Osmo for Best Sound Mixing.

PREVIOUS WINNERS

Best Sound Editing

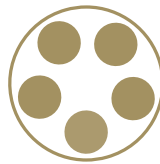
2016 *Mad Max: Fury Road*. Mark Mangini, David White
2015 *American Sniper*. Alan Robert Murray, Bub Asman
2014 *Gravity*. Glenn Freemantle
2013 Tie: *Skyfall*. Per Hallberg, Karen Baker Landers. *Zero Dark Thirty*. Paul N.J., Ottosson
2012 *Hugo*. Eugene Gearty, Philip Stockton

Best Sound Mixing

2016 *Mad Max: Fury Road*. Chris Jenkins Gregg Rudloff, Ben Osmo
2015 *Whiplash*. Craig Mann, Ben Wilkins, Thomas Curley
2014 *Gravity*. Skip Lievsay, Niv Adiri, Christopher Benstead, Chris Munro
2013 *Les Misérables*. Andy Nelson, Mark Paterson, Simon Hayes
2012 *Hugo*. Tom Fleischman, John Midgely

ACADEMY DATES OF NOTE

| | |
|-------------------|---------------------------------|
| January 5, 2017 | Nominations voting opens |
| January 13, 2017 | Nominations voting closes |
| January 24, 2017 | Oscar Nominations Announced |
| February 6, 2017 | Oscar Nominees Luncheon |
| February 11, 2017 | Scientific and Technical Awards |
| February 13, 2017 | Finals voting opens |
| February 21, 2017 | Finals voting closes |
| February 26, 2017 | 89th Academy Awards |



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MPSE GOLDEN REEL AWARDS

Guillermo del Toro, Harry Cohen to Receive Honorary Awards

Founded in 1953, the Motion Picture Sound Editors is a nonprofit organization of professional sound and music editors who work in the motion picture, television and gaming industries.

The 64th Annual MPSE Golden Reel Awards ceremony will take place on February 19 at the Westin Bonaventure Hotel in Los Angeles.



MPSE CAREER ACHIEVEMENT AWARD: HARRY COHEN

Supervising Sound Editor and Sound Designer Harry Cohen, MPSE, will be honored with the 2017 MPSE Career Achievement Award at the MPSE Golden Reel Awards ceremony.

An 18-time MPSE Golden Reel Award nominee, Cohen has contributed to more than 150 movies and television shows. He has frequently collaborated with director Quentin Tarantino, including on

the films *The Hateful Eight*, *Django Unchained*, *Inglourious Basterds* and *Kill Bill: Vol. 1 & 2*. He has also worked alongside directors Oliver Stone, Ridley Scott, Rob Marshall, Edward Zwick, Roland Emmerich and Paul Verhoeven, among many others. His most recent project was *Deepwater Horizon* for director Peter Berg.

"Harry is an endlessly resourceful and imaginative artist who is always inventing new ways to use sound to tell stories," said MPSE President Tom McCarthy. "We are very pleased to honor the creativity and dedication of a sound pro who embodies the spirit of the MPSE and its members."

"I am surprised and honored to be recognized by the friends and colleagues in the MPSE," said Cohen. "Sound editors work under the radar and are largely invisible to the public, but those of us who practice the craft know how hard it is to produce a great soundtrack."

A native of Queens, N.Y., Cohen began his career as a musician. While visiting a Los Angeles recording studio, he was asked to help organize

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its sound effects library and that set him on a path to become a sound editor. He worked for many years at EFX Sound and later at Soundelux, where he frequently partnered with Supervising Sound Editor Wylie Stateman. Along with his many nominations, he won a Golden Reel Award in 1999 for *A Texas Funeral*. In 2000, he received an Emmy Award nomination for the series *The Others*.

Cohen joins a distinguished list of sound innovators, including 2016 Career Achievement recipient Richard King, Skip Lievsay, Randy Thom, Larry Singer, Walter Murch and George Watters II.



GUILLERMO DEL TORO TO RECEIVE FILMMAKER AWARD

Guillermo del Toro, the acclaimed director of such films as *Hellboy* (2004), *Pan's Labyrinth* (2006), *Pacific Rim* (2013), *Crimson Peak* (2015) and the forthcoming *The Shape of Water* will be honored with the annual Filmmaker Award from the MPSE in

recognition for his outstanding contributions to the art of cinema.

"Guillermo del Toro's relentless imagination and energy provide inspiration to all of us in the entertainment industry," said MPSE President Tom McCarthy. "He is constantly surprising, challenging and delighting audiences worldwide. We are extremely proud to recognize his contributions to our industry and culture with our Filmmaker Award."

"Texturally and narratively, sound and image fuse in the cinematic experience," said del Toro. "I have spent as much time on the mixing board as I have on a stage, shooting or in a color correction suite grading the final film. To paraphrase Mark Twain: 'The difference between the almost right sound and the right sound 'tis the difference between the lightning bug and the lightning.' I am thus delighted and honored to receive this award from my colleagues and partners in the storytelling experience."

Del Toro was born in Guadalajara, Mexico. Early in his career, he worked as a special effects makeup designer and made a number of short films. His first feature, *Cronos*, appeared in 1993. He has since directed a wide variety of films, from comic book adaptations (*Blade II*, *Hellboy*) to historical, fantasy and horror films, two of which are set in Spain in the context of the Spanish Civil War under the authoritarian rule of Francisco Franco. These two films, *The Devil's Backbone* and *Pan's Labyrinth*, are among his most critically acclaimed works.

Past recipients of the MPSE Filmmaker Award include Sam Raimi, Darren Aronofsky, George Lucas, Ang Lee, Michael Bay, Steven Spielberg, Clint Eastwood, Brian Grazer and Gale Anne Hurd.

MPSE DATES OF NOTE

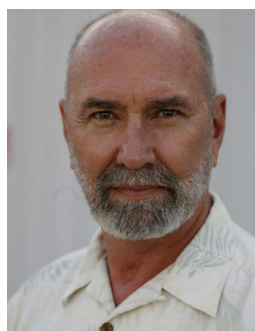
| | |
|-------------------|-------------------------------------|
| January 9, 2017 | Final entry forms due |
| January 11, 2017 | Nomination Voting Begins |
| January 25, 2017 | Nomination Voting Ends |
| February 19, 2017 | 64th Annual MPSE Golden Reel Awards |



CAS AWARDS

The CAS Awards honor Outstanding Achievements in Sound Mixing in seven categories: Motion Pictures, Animated Motion Pictures, Documentary Motion Pictures, Television Movies and Mini-Series, Television Series-One Hour, Television Series-Half Hour and Television-Non-Fiction, Variety, Music Series or Specials.

The 53rd Annual CAS Awards will be held on February 18, at the Omni Los Angeles Hotel at California Plaza in downtown Los Angeles. A special part of the evening will be devoted to the annual Student Filmmakers Awards.



CAS CAREER ACHIEVEMENT AWARD: JOHN PRITCHETT, CAS

Sound mixer John Pritchett, CAS, will receive the Cinema Audio Society's highest accolade, the CAS Career Achievement Award, to be presented at the 53rd CAS Awards.

"It's truly an honor to announce the selection of John Pritchett by the CAS for our Career Achievement," said CAS President Mark Ulano, CAS. "John is the consummate 'Mixer's Mixer,' with a widely diverse career in film and television. His collaboration with directors such as Robert Altman, Paul Thomas Anderson and Richard Linklater and many others on over 100 projects is a portfolio of excellence and innovation. He's a winner of the prestigious CAS award for his mixing work and is also multi-nominated by his peers at the Academy of Motion Pictures and the British Academy as well, signifying his well-earned reputation for creative excellence."

Pritchett, who was born in Santa Monica, Calif., was discovered by director Robert Altman while working as a recording engineer in Dallas, Texas. Pritchett made seven pictures with Altman, including *The Player*, *Short Cuts* and *Kansas City*. He was the second soundman in Hollywood to go digital, with Altman's *Short Cuts* in 1993.

Known for his successful working relationships with some of Hollywood's most creative directors, Pritchett has made four movies with director Lawrence Kasdan, including *Wyatt Earp*, and *French Kiss*; four with writer-director David Mamet, including *The Spanish Prisoner* and *State and Main*; three with writer/director Paul Thomas Anderson, *Magnolia*, *There Will Be Blood* and *Inherent Vice*, and two films with Oliver Stone, *World Trade Center* and *W*. He was also the sound mixer on such hits as 2006's *The Break-Up*, 2000's *Miss Congeniality* and 1987's *Dirty Dancing*.

His 102nd film, *Everybody Wants Some*, for director Richard Linklater continues his reputation for expertise in handling complex technical requirements during production. "People hire me because my team and I are able to get the sound needed with the least disruption," said Pritchett.

Pritchett joins an illustrious group of past CAS Career Achievement



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Photo: Merrick Morton

FAVREAU TO RECEIVE FILMMAKER AWARD

Multi-hyphenate Jon Favreau will receive the Cinema Audio Society Filmmaker Award at the 53rd Annual CAS Awards.

"I am particularly pleased to announce the selection of Jon Favreau as the recipient of the CAS Filmmaker Award," said CAS President Mark Ulano. "Jon has been a steadfast presence humanizing his storytelling with intelligence and skill. His light touch continues to produce engaging

classics, from *Elf* to *The Jungle Book*. As a director, actor, producer, his ubiquitous creativity continues to entertain millions and makes him a wonderful choice for the CAS Filmmaker Award."

Favreau began his career in the industry as an actor in the inspiring sports film *Rudy*. He went on to establish himself as a writer with the acclaimed hipster comedy *Swingers*. Since then, he has continued to work on both sides of the camera as an actor, writer, director and producer. Most recently, Favreau directed and produced Disney's live-action adap-

tation of Rudyard Kipling's epic adventure *The Jungle Book*.

An integral part of the formation and the expansion of the Marvel Universe, Favreau had his director hat firmly planted when making the blockbuster hits *Iron Man* and *Iron Man 2*, which grossed a combined \$1.2 billion at the worldwide box office. He also served as executive producer on Marvel's *The Avengers* and *Avengers: Age of Ultron*, which grossed a combined \$2.9 billion worldwide, becoming the fifth and seventh highest-grossing films of all time.

In a change of pace from the big blockbuster, 2014 saw Favreau writing, directing, producing and starring in the indie hit *Chef*, a well-received comedy.

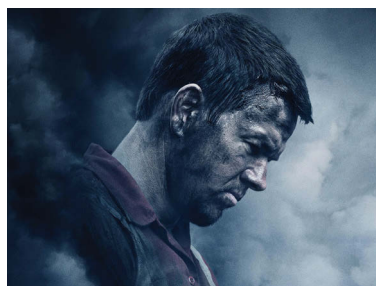
Favreau will be the 12th CAS Filmmaker Honoree. Past honorees include: Jay Roach, Richard Linklater, Edward Zwick, Jonathan Demme, Rob Marshall, Taylor Hackford, Henry Selick, Paul Mazursky, Bill Condon, Gil Cates and Quentin Tarantino.

CAS DATES OF NOTE (ALL VOTING ONLINE ONLY)

| | |
|-------------------|---------------------------------|
| December 19, 2016 | Nomination Ballot Voting Begins |
| January 1, 2017 | Nomination Ballot Voting Ends |
| January 10, 2017 | Final Nominees Announced |
| January 25, 2017 | Final Voting Begins |
| February 12, 2017 | Final Voting Ends |
| February 18, 2017 | 53rd Annual CAS Awards |

12 Film Sound Jobs THAT MIGHT JUST WIN

Deepwater Horizon



Director: Peter Berg

Movie Studio: Lionsgate

Re-Recording Mixers: Ron Bartlett, Michael Keller, Mike Prestwood Smith

Additional Re-Recording: Dror Mohar; Eric Hoehn, immersive mix;

Sound Designer: Wylie Stateman, Harry Cohen, Dror Mohar

Supervising Sound Editor: Wylie Stateman, Renee Tondelli

Sound Editorial: Kris Fenske, sound effects editor; Michael Feuser, dialog editor; Sarah Gible, assistant sound editor; Gary A. Hecker, supervising Foley artist; Rick Owens, Foley artist; Randy Singer, Foley mixer; Branden Spencer, dialog supervisor; Michael Miller, ADR mixer; Chris Navarro, ADR mixer

Production Sound Mixer: David Wyman

Music By: Steve Jablonsky, **Senior Music Coordinator:** Ryan Svendsen, **Supervising Music Editor:** Katrina Schiller

Music Editor: Ryan Rubin, Del Spiva

Hacksaw Ridge



Director: Mel Gibson

Movie Studio: Lionsgate

Re-Recording Mixers: Kevin O'Connell, Robert Mackenzie, Andy Wright

Sound Designer: Robert Mackenzie

Supervising Sound Editor: Robert Mackenzie, Andy Wright

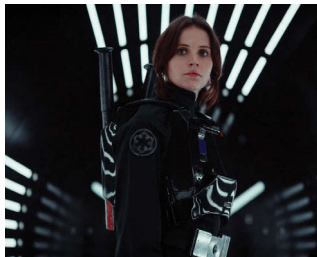
Sound Editorial: Steve Burgess, sound effects editor; Liam Price, sound effects editor; Tara Webb, sound effects editor; Mario Vaccaro, Foley artist; Alex Francis, Foley recordist; Jed M. Dodge, dialog editor; Justine Angus, ADR supervisor; Kimberly Harris, ADR supervisor; Patrick Christensen, ADR mixer; Howard London, ADR mixer; Diego Ruiz, ADR mixer

Music By: Rupert Gregson-Williams, **Music Scoring Mixer:** Daniel Kresco, **Executive Music Producer:** Tara Finegan

Music Editor: Matt Friedman, Andy Patterson

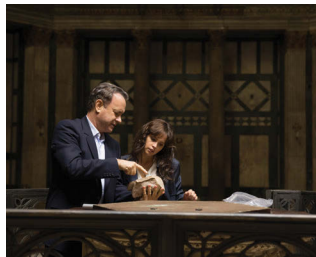
12 Film Sound Jobs THAT MIGHT JUST WIN

Rogue One: A Star Wars Story



Director: Gareth Edwards
Movie Studio: Disney/Lucasfilm
Sound Re-Recording Facility: Skywalker Sound
Re-Recording Mixers: David Parker, Christopher Scarabosio
Additional Re-Recording: Michael Semanick; Tony Villaflor/Danielle Dupre, assistant re-recording mixer
Sound Designer: Christopher Scarabosio, David Acord
Supervising Sound Editor: Christopher Scarabosio, Matthew Wood
Sound Editorial: Jon Borland, sound effects editor; Ryan J. Fria, Foley editor; Richard Quin, dialog and ADR supervisor; James Spencer, dialog and ADR editor; Trey Turner, assistant dialog and ADR editor; Stephen Webster, ADR mixer; Glen Gathard, ADR mixer; Andy Smith, ADR mixer; Nick Kray, ADR mixer; Michael Miller, ADR mixer
Production Sound Mixer: Stuart Wilson; Rashad Omar, action
Music By: Michael Giacchino
Music Scoring Mixer: Peter Cobbin
Supervising Music Editor: John Finklea
Music Editor: Stephen M. Davis, Warren Brown

Inferno



Director: Ron Howard
Movie Studio: Sony/Columbia
Re-Recording Mixers: Chris Jenkins, David Giammarco
Sound Designer: Casey Genton
Supervising Sound Editor: Daniel Pagan
Sound Editorial: Ruy Garcia, sound effects editor; Eric McAllister, assistant sound editor; Marko A. Costanzo, Foley artist; Eric Milano, Foley artist; Steven Visscher, supervising Foley editor; Heather Gross, Foley editor; George A. Lara, Foley mixer; Tony Martinez, supervising dialog editor; Dan Korintus, dialog editor; Deborah Wallach, supervising ADR editor; Pam DeMetrius-Thomas, ADR editor; Scott Cannizzaro, ADR mixer; Howard London, ADR mixer; Derek Casari, ADR engineer;
Production Sound Mixer: Tamas Csaba
Music By: Hans Zimmer
Score Producer and Mixer: Stephen Lipson
Music Scoring Mixer: Bernd Mazagg
Score Wrangler: Bob Badami

La La Land



Director: Damien Chazelle
Movie Studio: Lionsgate
Sound Re-Recording Facility:
Re-Recording Mixers: Ai-Ling Lee, Andy Nelson
Additional Re-Recording:
Sound Designer: Ai-Ling Lee
Supervising Sound Editor: Ai-Ling Lee, Mildred Iatrou
Sound Editorial: Luis Galdames, sound effects editor; Melissa Lytle, assistant sound editor; Lee Gilmore, sound effects editor; John T. Cucci, Foley artist; Dan O'Connell, Foley artist; James Ashwill, Foley mixer; Blake Collins, Foley mixer; Teri E. Dorman, dialog editor; Galen Goodpaster, ADR editor; David Betancourt, ADR mixer; Derek Casari, ADR engineer;
Production Sound Mixer: Steven Morrow
Music By: Justin Hurwitz
Music Scoring Mixer: Nick Baxter
Executive Music Producer: Marius De Vries
Music Supervisor: Steven Gizicki
Music Editor: Jason Ruder; Anele Onyekwere, additional music editor

Arrival



Director: Denis Villeneuve
Movie Studio: Paramount
Re-Recording Mixers: Luc Boudrias, Bernard Gariepy Strobl
Sound Designer: Olivier Calvert, Michelle Child, Dave Whitehead
Supervising Sound Editor: Sylvain Bellemare
Sound Editorial: Pierre-Jules Audet, sound effects editor; Mathieu Beaudin, sound effects editor; Mimi Allard, sound special effects editor; Simon Girard, assistant sound editor; Nicola Becker, Foley artist; Gregory Vincent, Foley artist; Olivier, Guillaume, Foley mixer; Niels Barletta, Foley mixer; Steven Ghouti, Foley mixer; Valery Dufort-Boucher, dialog editor; Claire Pochon, dialog editor; Stan Sakellaropoulos, ADR supervisor; Kyle D Krajewski, ADR mixer; Louis-Antoine Lassonde, ADR mixer
Production Sound Mixer: Claude La Haye
Music By: Johann Johannsson
Musical Sound Design: Simon Ashdown, Will Slater
Music Scoring Mixer: Jan Holzner, engineer; Daniel Kresco, score mixer
Music Editor: Clint Bennett

Star Trek Beyond



Director: Justin Lin
Movie Studio: Paramount
Re-Recording Mixers: Jon Taylor, Frank A. Mantaño
Sound Designer: Eliot Connors, MPSE; Peter Brown, Stephen P. Robinson
Supervising Sound Editor: Peter Brown
Assistant Supervising Sound Editor: Paul Aulicino
Sound Editorial: Ann Scibelli, sound effects editor; Dan O'Connell, Foley artist; Shelley Roden, Foley artist; John Roesch, Foley artist; Lee Gilmore, sound effects editor; John C. Stuver, dialog editor; Jeff Gomillion, ADR mixer; Jason Oliver, ADR mixer; Andy Smit, ADR mixer; Stephen Webster, ADR mixer, **Production Sound Mixer:** David Husby, **Music By:** Michael Giacchino, **Music Editor:** Warren Brown, Stephen M. Davis, Paul Rabjohns

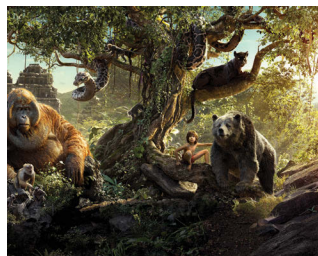
12 Film Sound Jobs THAT MIGHT JUST WIN

Fantastic Beasts & Where To Find Them



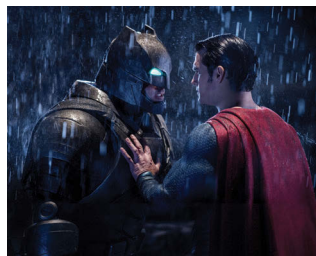
Director: David Yates
Movie Studio: Warner Bros.
Sound Re-Recording Facility: De Lane Lea
Re-Recording Mixers: Niv Adiri, Andy Nelson, Ian Tapp
Additional Re-Recording: Matt Vowles
Sound Designer: Niv Adiri, Ben Barker, Glenn Freemantle, Eilam Hoffman
Supervising Sound Editor: Glenn Freemantle, **Sound Editorial:** Danny Freemantle, sound design editor, sound effects editor; Robert Malone, sound design editor, sound effects editor; Peter Burgess, Foley artist; Jason Swanscott, Foley artist; Glen Gathard, Foley mixer; Lilly Blazewicz, Foley editor; Adam Bourne, assistant Foley editor; Gillian Dodders, ADR and dialog editor; James Wichall, dialog editor, **Production Sound Mixer:** Simon Hayes, **Music By:** James Newton Howard, **Music Scoring Mixer:** Shawn Murphy, **Score Mixed By:** Kirsty Whalley, **Music Supervisor:** Karen Elliott, **Supervising Music Editor:** Jim Weidman, **Music Editor:** Allan Jenkins

Jungle Book



Director: Jon Favreau
Movie Studio: Disney
Re-Recording Mixers: Christopher Boyes, Lora Hirschberg
Additional Re-Recording: Kevin Bolen, assistant re-recording mixer
Sound Designer: Christopher Boyes, **Supervising Sound Editor:** Christopher Boyes, Frank E. Eulner, **Sound Editorial:** David Chrastka, sound effects editor; Ken Fischer, sound effects editor; Dennie Thorpe, Foley artist; Jana Vance, Foley artist; James Likowski, Foley editor; Dee Selby, Foley editor; Chris Manning, Foley mixer; Lisa Chino, dialog editor; Marshall Winn, dialog editor; Scott Cannizzaro, ADR mixer; Vikram Biswas; Ian Gaffney-Rosenfeld, ADR mixer; Nick Kray, ADR mixer; Howard London, ADR mixer; Chris Navarro, ADR mixer, **Production Sound Mixer:** Ron Judkins, Michael Krikorian, **Music By:** John Debney, **Music Scoring Mixer:** Simon Rhodes, **Supervising Music Editor:** Charles Martin Inouye, **Music Editor:** Tanya Noel Hill

Batman v Superman



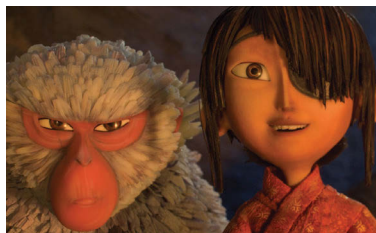
Director: Zack Snyder
Movie Studio: Warner Bros.
Re-Recording Mixers: Chris Jenkins, Michael Keller
Sound Designer: Chuck Michael, Jussi Tegelman
Sound Effects Designer: Phil Barrie
Supervising Sound Editor: Scott Hecker
Sound Editorial: David Grimaldi, sound effects editor; Roy Seeger, first assistant sound editor; Gary A Hecker, supervising Foley artist; Rick Ownes, Foley artist; John Sanacore, supervising Foley editor; Margit Pfeiffer, ADR supervisor, dialog supervisor; Daniel Saxlid, dialog editor; Jay Fisher, ADR mixer; Thomas Whiting, ADR editor
Production Sound Mixer: Michael McGee
Music By: Junkie XL, Hans Zimmer
Music Scoring Mixer: Alan Meyerson
Music Wrangler: Bob Badami
Music Editor: Melissa Muik

Jason Bourne



Director: Paul Greengrass
Movie Studio: Universal
Re-Recording Mixers: Chris Burdon, Mark Taylor
Sound Designer: Oliver Tarney, Michael White, Michael Fentum, James Harrison
Sound Effects Recording: Eric Potter,
Supervising Sound Editor: Oliver Tarney
Sound Editorial: Ben Chick, assistant sound editor; James Taylor-Beeson, assistant sound editor; Dawn Gough, sound editor; Andrea King, Foley artist; Jack Stew, Foley artist; Jason Swanscott, Foley artist; Hugo Adams, Foley supervisor; Adam Mendez, Foley mixer; Rachael Tate, dialog supervisor; Simon Chase, supervising ADR editor; Simon Diggins, ADR mixer; Michael Miller, ADR mixer
Production Sound Mixer: Tim Fraser
Music By: David Buckley, John Powell
Music Scoring Mixer: Shawn Murphy
Supervising Music Editor: Peter Myles
Music Editor: Sally Boldt, Thomas A. Carlson

Kubo and the Two Strings



Director: Travis Knight
Movie Studio: Focus Features
Re-Recording Mixers: Tim Chau, Tim LeBlanc
Sound Designer: Tim Chau, **Supervising Sound Editor:** Tim Chau, **Sound Editorial:** Thomas O'Neil Younkman, sound effects editor; Clayton Weber, sound editor; Gregg Barbanell, Foley artist; Catherine Harper, Foley artist; Darriin Mann, Foley mixer; Travis Crotts, Foley editor; Carlos Sotolongo, original dialog mixer, **Production Sound Mixer:** Adam Risner, **Music By:** Dario Marionelli, **Score Recordist and Mixer:** Nick Wallage, **Music Supervisor:** Sara Matarazzo, **Music Editor:** James Bellamy, Dominick Certo



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MIX REGIONAL: SF BAY AREA

The San Francisco Bay Area has been Mix's home since the magazine was founded more than 40 years ago, and the tragic loss of so many young music creators and fans in the Ghost Ship warehouse fire in Oakland weighs heavy on our hearts. As we compile our annual Bay Area issue, showcasing the vibrant music and audio production facilities in our backyard, we also grieve with our community.



In SFJAZZ's Digital Lab, Jef Stott teaches music-production workshops and seminars.

The Digital Lab at SFJAZZ

The SFJAZZ organization is dogged in its mission to promote awareness and enjoyment of jazz music through performance in its performing arts center. Since the SFJAZZ Center celebrated its grand opening four years ago, San Francisco has enjoyed a nearly nonstop jazz festival; at the time of this writing, the venue was about to host multiple dates with the Robert Glasper Experiment, Maceo Parker, Aaron Neville and Terrace Martin, as well as plenty of festive holiday jazz programming.

SFJAZZ's education efforts also extend to various forms of youth outreach: visiting local schools, teaching jazz repertoire to youngsters, and staging family matinees with artists. In addition, SFJAZZ operates a perhaps lesser known audio production program, holding master classes, intensive weeklong workshops and all-day seminars in its Digital Lab.

"The Lab is a small 10-by-20-foot classroom where we have a dozen or so computers that are outfitted with basic DAWs: Pro Tools, Logic and Ableton," explains Jef Stott, Digital Lab manager and chief engineer. "We teach an intro to all of those programs, and we also teach things like film scoring, how to DJ live with Ableton, and how to remix jazz and hip hop."

"Some of our classes are boot-camp-type courses on a platform or topic, but we also offer boutique courses with pros. We had Michael Romanowski come in and teach a master class on mastering," Stott continues, noting that

artists, including Glasper, often agree to work with students as part of their SFJAZZ stay.

"We offer some of the same audio education that they have at the audio schools like SAE and Pyramind, but we also do jazz-thematic programming: how to record big band, how to work horns into your jazz arrangements, and how to mix hip hop and jazz, or remix jazz tunes. Plus, we do a lot of Afro-Cuban and Afro-Brazilian percussion workshops, and we partner with afterschool programs like Youth Art Exchange and the Boys and Girls Clubs of San Francisco to teach kids about audio production and remixing."

Stott—a musician, engineer and producer—balances his commitment to the Digital Lab with his personal projects, working out of a studio in the multi-use ActivSpace building in nearby Berkeley. "I mostly use my studio for writing," he says, "but I do some mastering and mixing, too, and I've gotten into video editing and production. I'm producing a travel show about music called *The World Is Sound*."

Stott also has a background studying anthropology, and *The World Is Sound* combines his fascination with the intersection of traditional music and culture with electronic music, and with music production.

"I was in Istanbul for a month in September; I'm going to New Orleans in January, and making plans to go to Cuba and Morocco. Everywhere I go, I interview people, jam with them, possibly collaborate, and then I come home and edit."

Watch episodes of *The World Is Sound*: worldissound.tv/jefstott.com.



FANTASY STUDIOS, BERKELEY

Under the direction of Jeffrey Wood, Berkeley's venerable Fantasy Studios keeps busy with national and local artists. The studio is hosting an ongoing live performance series for Dunlop, showcasing artists using Dunlop products; Beats Antique, Snarky Puppy, Big Wreck and others have participated, working with engineers Adam Muñoz and Jesse Nichols. Videos are available on Fantasy's website.

This past November, the studio hosted artist and chair of the Mills College music department, Roscoe Mitchell, and a varied group of musicians, who spent three days tracking for three upcoming projects. Alberto Hernandez and Robert Kirby engineered the sessions, which included one-and-a-half days devoted to six compositions for 20-piece orchestra, for the upcoming album *Discussions Orchestra*, and two evenings spent recording for *Throttle Elevator Music* with Matt Montgomery, Mike Hughes, Gregory Howe, Mike Ramos and Erik Jekabson. Then, on November 10, Erik Jekabson's Quintet tracked nine compositions.



Chuck Prophet (kneeling center) and band at Hyde Street.

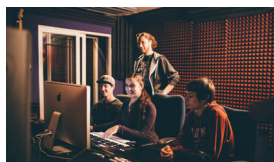
HYDE STREET STUDIOS, SAN FRANCISCO

Hyde Street Studios recently completed an overall technical revamping of Studio A and is under way in building an annex studio in San Francisco's Sunset district. The technical upgrade involved extensive restoration and modifications to the studio's vintage Neve 8038 console, with head technician Kevin Ink leading a team to replace capacitors, switches, all the pots in the 38 channels of EQ, and more. Consulting on the project was Nashville-based Neve expert Fred Hill.

Hyde Street's new Sunset buildout, Rancho Rivera, is designed for tracking, mixing or editing, with a total of five tracking rooms tied to one control room featuring an Avid D Command, Pro Tools HD system, Otari MTR 90 II with 24-track or 16-track heads, and a full complement of vintage outboard gear. Rancho Rivera is set to open later this year.

Even with all of the technical tweaks, Hyde Street has been booked up: Hope Sandoval and engineer/collaborator Colm Ó Cíosóig mixed Hope Sandoval and the Warm Inventions' new single "Let Me Get There" (Feat. Kurt Vile) on the Neve 8038. Sandoval's vocal features tape delay from an Otari MTR-10 and a Teletronix LA2A. Engineer Jaimeson Durr assisted...Chuck Prophet worked in Studio A, tracking basics for his album *Bobby Fuller Died For Your Sins*. Paul Kolderie engineered with assistance from Will Chason. Prophet's project was tracked to 2-inch 24-track tape via a Studer A820...Mark Kozelek of Sun Kil Moon was joined by Faith No More's Mike Patton to cut vocal tracks for Kozelek's upcoming album *Mark Kozelek Sings Favorites*. And Josiah Johnson of the Head and the Heart recorded some vocals for the group's album *Signs of Light*. Kozelek's session was engineered by Will Chason; studio manager Jack Kertzman reports that they used Neumann U87 and Shure SM7 mics, Neve 1081 preamps, and a Teletronix LA2A for the recording.

SESSIONS: BAY AREA



In Pyramid's studio called The Vault, students learn music production and sound design.

including Ableton, FL Studio, Logic Pro X, Native Instruments and more," says Pyramid's marketing director, Jeff Straw. Mentoring sessions are available to students for prices starting at \$60 per hour.



Jason Aldean recording for Pandora

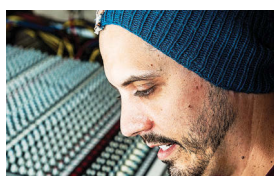
tracking their new recording with Scott Bergstrom.

25th Street has also been capturing and streaming events live from the studio: Performances by Yonatan Gat, Donny McCaslin + Fast Future, Jamie Freeman and more are in production and will be available in January 2017. Pandora Radio has also produced several performance films in the facility, including footage of artists Jason Aldean, and Peter, Bjorn & John.



L- R: Paul Anastasio, Tony Marcus, Bobby Black

and is co-teaching a series of soundtrack composition workshops in conjunction with Mills College professor Fred Frith.



Starita

The She's recorded and mixed their third full-length album. The band tracked to the studio's Studer A827 analog machine and mixed on the SSL board.... Also recording and mixing in the studio was Sasha's Black Caviar, who completed a hip-hop album in less than two weeks...Studio manager Jorge Hernandez produced and mixed an album for Vocab Slick; he says the music is a blend of sampling and live playing.



tUnE-yArDs, Kiran Ghandi and Terri Winston

Winston and engineer Kelley Coyne.

PYRAMIND, SAN FRANCISCO

Just a couple of weeks before we went to press, Pyramid, which offers a wide variety of audio and music production courses f, launched its Pyramid Mentorship Network: a worldwide group of mentors who can engage online with students, one-on-one.

"Our mentors will be providing customized training and guidance on a broad range of topics including music production, composing and arranging, DJing, music business, branding and music theory, as well as software-specific skills on platforms

25TH STREET RECORDING, OAKLAND

David Lichtenstein's 25th Street Recording, in Oakland's Uptown neighborhood, hosted Gabriel Shepard working on a new release with legendary drummer Zigaboo Modeliste from The Meters... Brazilian guitarist José Neto tracked a new release engineered by Peter Labberton...Donny McCaslin and the SJD Big Band completed a new release engineered by the studio's general manager, John Schimpf...And local bluegrass group Front Country finished

GUERRILLA RECORDING, OAKLAND

Engineer/producer Myles Boisen has owned and operated Guerrilla Recording for 23 years, offering recording, mixing and CD mastering. Recent projects include new releases from Fred Frith, John Butcher, Thollem McDonas, Nels Cline, Rova Saxophone Quartet/ Orkestrova, Bathysphere Big Band, Allen Clapp, Kyle Bruckmann, Paul Anastasio, Tony Marcus, Bobby Black, Crying Time and more. Boisen has also resumed teaching beginning recording workshops

DIFFERENT FUR, SAN FRANCISCO

In this longtime San Francisco studio, producer Starita was working on a collaborative "producer record," which features Jarobi of A Tribe Called Quest, Mystikal, Trevor Hall, Los Amigos Invisibles, Madame Gandhi, and other musicians, engineers and producers. Starita says the album "blends many styles of dance, R&B and funk music, using electronic elements as well as acoustic instruments."...San Francisco's

WOMEN'S AUDIO MISSION, SAN FRANCISCO

WAM continues its mission to educate and train future female engineers and producers, hosting artists in the world's only professional studio that's run entirely by women. Under the guidance of founder/executive director Terri Winston, the studio has seen more recent sessions than we can list: Jessie Farrell, engineered by Veronica Simonetti; AIDS activist Cleve Jones for his audiobook of *When We Rise* with engineer Veronica Simonetti; Wu Man, produced by Winston and engineered by Laura Dean; Lia Rose with producer Winston and engineer Kelley Coyne.

PRAIRIE SUN RECORDING

30-Plus Years of Magic From Sonoma County

STORY BY BARBARA SCHULTZ // PHOTOS BY JOSH REINHART



Pictured during Bruce Cockburn's sessions (front L-R): producer/guitarist Colin Linden and his wife, Cockburn, Jaycob Bellochio (PSR assistant). Back row, L-R: Matt Wright (PSR chief engineer), Gary Craig (drummer), John Dymond (bassist), Nate Nauseda (studio manager/engineer), Mooka Rennick (PSR owner), Michael Cole (PSR intern), Ben Bacey (intern).

Among the many gifts of life in the San Francisco Bay Area is the proximity of urban arts and culture to a beautiful natural landscape. An hour's drive north from the city leads to a world apart, in the sunny, bucolic Sonoma County countryside.

In the Sonoma County town of Cotati you'll find Prairie Sun Recording, the studio complex where, for 38 years and counting, musician/engineer Mark "Mooka" Rennick has hosted artists including the Grateful Dead, Van Morrison, Nine Inch Nails, Dick Dale, Faith No More, Neko Case, The Tubes, and Carlos Santana, to name just a few. The Grammy-winning records that frequent visitor Tom Waits made there are so admired that artists come from all over to track in the Waits Room.

Rennick started Prairie Sun in a rented house in 1978, when he was studying East Indian music at Sonoma State College and tracking projects for fellow students. A few years later, he entered a partnership with Clifton Buck-Kaufman, an art collector and co-founder of the annual

Cotati Accordion Festival, and they transported the studio gear to the Buck-Kauffman family's ten-acre property: the former La Lomita Hatchery chicken farm, which has been the studio's home since 1981.

Rennick, who grew up in rural Illinois, named the new studio for the actual prairie in his home state. "I grew up in a farm town called Wyoming, Illinois," he says. "It's in the second-smallest county in the state, Stark County, with about five thousand people—and corn and soybeans."

It's maybe a little ironic that Rennick traveled so far from a midwestern farm town, to settle in a western farm town, but as Prairie Sun became better known in the Bay Area music scene, the studio became a true recording destination.

"Van Morrison was one of the first projects we did here," Rennick says. "He was living in [neighboring] Marin County at the time, and he came to do some overdubs. Before too long, we were working with all the record labels."

"One of the more serious landmarks at the beginning of my career,

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which people might not know about, was speed metal," Rennick continues. "We did Faith No More's first record. We did the first record for a band called Legacy, which quickly morphed into Testament. We did the first record for Exodus."

Mike Varney, producer and founder of the Shrapnel Records group of labels, brought a lot of the shredders he signed to record Prairie Sun during the '80s. "The first big thing we did with Mike was with Yngwie Malmsteen and his band, Steeler," Rennick recalls. "There was a whole plethora of those rock bands: Tony MacAlpine, Greg Howe, Cacophony, Racer X."

Over the years, the studio has grown into a three-studio residential facility with a country attitude and an L.A.-level abundance of classic and

state-of-the-art pro equipment. "You need to have more than one room if you want to keep your doors open," Rennick says. "I started with Studio B in 1980 here. I commissioned A in 1987. I commissioned Studio C in the early 2000s, because I knew that if I was booked in one room for this week, I could move a booking into another room."

Prairie Sun also offers mastering services by Grammy-winning engineer Tim Gennert, whose recent projects include albums from John Fullbright, Kitaro and others. The most recent addition to Prairie Sun's family of businesses: Prairie Sun Live, managed by Travis Strain. Rennick has equipped this new venture to the hilt, with about every popular FOH console model, several P.A. systems and more. In the past year, PSL's clients have included Ziggy Marley, Michael Franti, the Green Music Center and Wells Fargo Center; and they have gear out on tour with Bonnie Raitt, Daft Punk and others. Where other studios might have downsized or closed their doors, casualties of a damaged music industry, Rennick has diversified and invested.

"But it's having our guest house and being on this property that makes this a musician's dream," he adds. "It was my dream to retire some day and go to a farm, and we're on a farm."

If there's one client who put Rennick's "farm" on the map, it's Waits, who tracked his Grammy-winning albums Bone Machine (1992) and Mule Variations (1999) there. In a Mix "Classic Track" article on the song "I Don't Want to Grow Up," engineer Biff Dawes talked about the Waits Room.

"We found a room that had been used as an office, with a high ceiling,

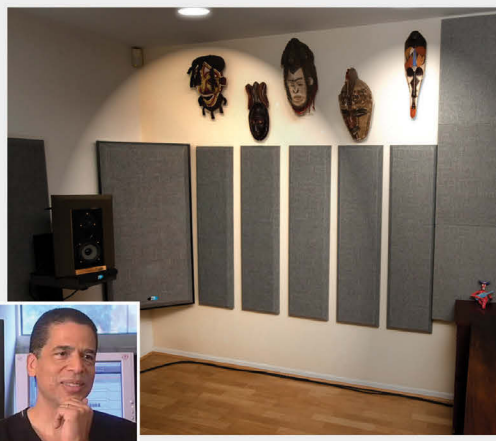
Primacoustic... better design, better



"The ease of install really allowed us to experiment with placement and with the quality of the treatments, we achieved the sonic balance we were looking for!"

~ **Tommy Lee**

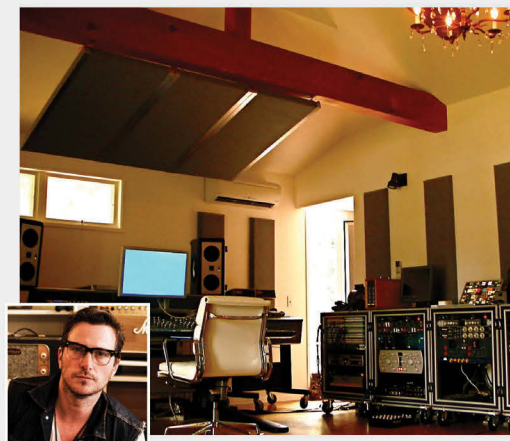
Founding member - Mötley Crüe.



"Being able to fine-tune a room on site makes all the difference. The Impaler mounting system make the panels easy to install and let you make adjustments without trashing the surface. It works!"

~ **David Rideau**

Engineer/producer - Janet Jackson, Sting, TLC, George Duke and Jennifer Lopez.



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

~ **Butch Walker**

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

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

a cement floor, redwood paneling, some old water heaters and metalwork in the corner," Dawes said. "It was connected with tielines to the control room up the hill because there was also an echo chamber there. We were able to put preamps in that room, and we recorded everything in there."

The Waits Room holds a mythic quality for artists who admire Waits' brilliant adventures in lo-fi. "He would actually have a carpenter on staff and he would build instruments right there, where he was recording," Rennick says. "One day, I drove up our driveway and this guy is out there on the sidewalk with microphones, recording. I said, 'Tom, we would gladly ask people to park around the other side of the property and give you the space you need to record outside.' But he says, 'Mooka, I love the cars. I love it all, Mooka, it's real.'"

When we spoke with Rennick for, he and studio manager/engineer Nate Nauseda were wrapping up a week of live-to-2-inch band tracking with another iconic artist and a first-time visitor to Prairie Sun, Bruce Cockburn.

"I'm living in San Francisco now, and that meant that I could commute to the studio and still drop my daughter off at school in the morning," Cockburn says. "My producer, Colin Linden, had checked it out and was very enthusiastic. The atmosphere was just right for what we were doing: It's a very relaxed, and relaxing, place to work with enough isolation between the rooms that we were able to have a rhythm section plus a trumpet player all playing at the same time, with eye contact. It was terrific to do it in a way that was very performance-based, to where I'm sure a lot of the first takes will end up on the record." ■

Breaking down the Studios

This list hits the big-ticket items. Visit prairiesun.com for complete details.

STUDIO A

Console: SSL 4080 E/G

Monitors: TAD TSM-1, Barefoot MM27 Gen2, ProAc Studio 100, Yamaha NS-10

Analog: Studer A80 2-inch 16-track, Ampex ATR-102

Digital: Pro Tools 12 HDX, Burl Mothership and Lavry Blue Converters

STUDIO B

Console: Custom Neve 8036

Monitors: UREI 811, Barefoot MM27, Yamaha NS-10

Analog: Studer A827 2-inch 24-track

Digital: Pro Tools 12 HDX, Lavry Blue Converters

STUDIO C (INCLUDES THE WAITS ROOM)

Console: Custom Neve 8026 MkII, API 1604

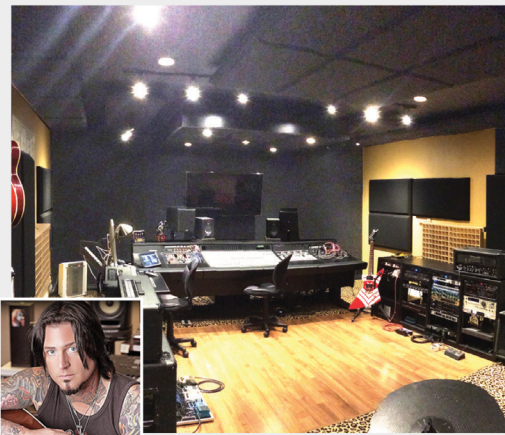
Monitors: Barefoot MM27, Genelec 1022A, Paradigm

Reference Studio 20s, d&B Q1, Yamaha NS-10

Analog Studer A820 2-inch 24-track, RADAR Super Nyquist converters

Digital: Pro Tools 10 HD

performance, amazing results!



"When building The Leopards Nest studio, we tested a number of different acoustic treatments and chose Primacoustic. It was easy... Primacoustic did the best job and my studio sounds amazing!"
~ Jason Hook - Five Finger Death Punch.

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

~ John Rzeznik

www.primacoustic.com

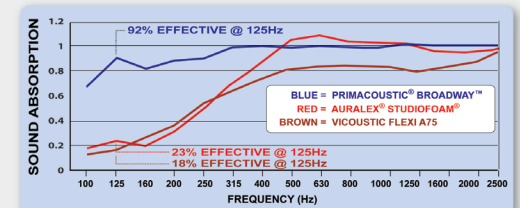


"We've got a mixture of bass traps, diffusion and clouds and the result was phenomenal. It ended up costing less than 25% of the custom solution and it turned out very cool!"
~ Keb' Mo' - Grammy winner, roots-legend.

Primacoustic Broadway™ high-density glass wool acoustic panels perform well where the others fail, in the critical low frequencies.



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



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Tech // new products



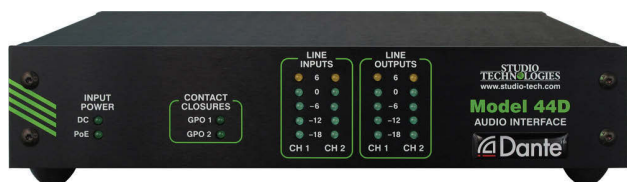
UNIVERSAL AUDIO V9.0 SOFTWARE

Models of Iconic Compressors/Limiters/Delays

Universal Audio's v9.0 UAD Software upgrade offers three new plug-ins: the API 2500 Bus Compressor (\$299), the Chandler Limited Zener Limiter (\$299) and the A/DA STD-1 Stereo Tapped Delay (\$199). The Zener Limiter plug-in, developed by Softube is inspired by the EMI TG limiters and rare RS168 from Abbey Road Studios. It adds Mid/Side functionality, channel linking and presets from Tony Maserati, Kevin Kadish and more. The A/DA STD-1 Stereo Tapped Delay, developed by brainworx features six bucket-brigade delays, LFO and modulation controls, flexible panning and independent Dry/Wet mix control for each stereo output.

STUDIO TECHNOLOGIES 44D DANTE INTERFACE

2-Channel, Line-Level I/O Over Ethernet



The Model 44D from Studio Technologies (\$745) connects its XLR in/outs to a data network using a standard 100 Mb/s twisted-pair Ethernet and features four five-segment, front panel LED meters displaying the levels of the two line inputs/outputs. The unit

is powered via Power-over-Ethernet (PoE) or an external source of 12 VDC and provides two channels of analog line-level audio to and from applications that utilize Dante audio over Ethernet. Two Model 44D units can also provide one-to-one signal paths, two in each direction, over a standard local area network.



TEGELER CRÈME MASTERING EQ/COMPRESSOR

Hardware Gain Reducer and Pultec-Style EQ

Berlin-based Tegeler Audio has released Crème, a passive EQ based on the Pultec EQP1A and a high-end bus compressor in a single device. The filter circuitry from the original Pultec has been updated, removing unnecessary controls and irrelevant frequencies from the mix bus. The compressor features a low-cut filter (60 to 120 Hz) and controls for Attack, Release and Ratio. The EQ may be placed either before or after the compressor. The unit features an internal power supply, balanced I/O and rasted potentiometers.



MOJAVE AUDIO MA-1000 TUBE MICROPHONE

Remote-Controllable Multipattern Condenser

The Mojave Audio MA-1000 large-diaphragm, multipattern tube condenser microphone (\$2,995), designed by David Royer, features an original new-old-stock 5840 tube, a 251-style capsule, and a custom-designed transformer built by Coast Magnetics. Other features include a remotely controlled, continuously variable polar pattern selector located on the microphone's power supply, a switchable 15dB pad and switchable low-frequency roll-off.



WATTS POLYRIBBON MICROPHONE

Multipattern Dynamic With Three-Position Filter

The new Polyribbon from Watts (\$750) is a multipattern ribbon mic with hypercardioid, omni and bidirectional settings. Other features include a three-position onboard filter circuit for reducing proximity effect, high output and a flat frequency response up to 16 kHz. The passive, dual-ribbon design features internal parts made entirely in the USA, with a custom coil and transformer from Cinemag. Mics may be ordered direct; they take three to four months to manufacture per pair.

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AUDIONAMIX ADX SPEECH VOLUME CONTROL PLUG-IN

Mono or Stereo Speech to Background Mixer

The Audionamix ADX Speech Volume Control Plug-in (\$249) allows independent volume level control over both separated speech and separated background elements within a mono or stereo mix. Features include volume control of speech and background audio content up to ± 12 dB, a speech-optimized separation algorithm, plus an automatic consonants and voice activity detection algorithm. The plug-in is available in AAX, AU, VST formats, is Mac/PC-compatible and can be purchased for \$249 (perpetual license), \$99 as a crossgrade from Audionamix VVC, or for \$19.99 for a two-week rental.



SLATE CONTROL

Analog DAW Monitor Section

Designed by Paul Wolff, Slate Control (\$2,499) acts as a monitor section for the Raven MTX mk2, Raven MTi2, or as a free-standing, table-top studio monitor controller. Features include seven stereo inputs with solo bus signal and logic input for console retrofits. Three speaker selections with individual LFE enable/disable and trim controls, multiple cue outputs, talkback with built-in or external mic, listen mic input and auto talkback based on DAW play/stop. Other features include LFE output with 80/120 Hz, 12dB/octave, LPF and direct output mode, polarity and level trim, and a 1/8-inch input for audio source playback.



RME, MADIFACE PRO DESKTOP INTERFACE

64-Channel I/O With TotalMIX FX Software

The MADiface Pro is based on the company's Babyface Pro interface, offering integrated XLR and analog I/O while replacing the ADAT I/O with a MADI port. Features include 64 channels of audio on a single cable, two analog mic/line XLR inputs, two XLR line outputs, two universal TS inputs (line or instrument), and two stereo TRS outputs for low/high-impedance headphones. Also included is RME's TotalMix FX software adding 3-band parametric EQs, time-based effects, plus many mixing and routing options. The bus-powered unit (without optical MADI) also features a MIDI I/O, operation at sample rates up to 192 kHz and operation as a stand-alone or DAW-connected interface.



PLACID AUDIO COPPERPHONE MICROPHONE

Narrow Band Transducer

The Copperphone from Placid Audio (\$264.99) isn't your average microphone. This limited-bandwidth beauty concentrates on the 200 to 3k Hz frequency range, producing output reminiscent of an era where low fidelity was the norm. The passive, magnetic moving-coil element works with a tuned, ported, resonant chamber to capture its signature, unique sound. It's all housed in a 2.5 x 6-inch, polished copper body featuring an integral mic mount and a Switchcraft XLR.

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New Sound Reinforcement Products



LECTROSONICS DBa DIGITAL BELT PACK TRANSMITTER

USB Updatable, Extended Operating Range

Part of Lectrosonics' DSW (Digital Secure Wireless) microphone system, the DBa belt pack (\$2,150) features 24-bit/48kHz audio, USB firmware updates, rugged machined-metal construction and operation using the AES-256-CTR encryption technology. The DBa features wideband tuning (470-698 MHz), a highly linear RF output stage for reduced intermodulation distortion and a true 50 mW transmission RF power for excellent range and resistance to dropouts. The TA5M mic/line input found on the DBa digital wireless belt pack transmitter accepts all lavalier and head-worn microphones wired for Lectrosonics servo-input transmitters.



SENNHEISER DIGITAL 6000 SERIES

2-Channel Transmitter/Receiver

The Sennheiser Digital 6000 Series uses the same long-range mode and proprietary Sennheiser Digital Audio Codec as the Digital 9000. The system offers a 2-channel receiver in two different versions, a bodypack, a handheld transmitter and a 19-inch rackmount charging unit. Features include the receiver's switching bandwidth of 244 MHz (470 to 714 MHz) covered by three transmitter versions (470 – 558 MHz, 550 – 638 MHz, and 630 – 718 MHz). For larger systems, up to eight receiver units can be daisy-chained without the need for an additional antenna splitter. The SKM 6000 handheld transmitter can be combined with microphone heads from the evolution Series, the 2000 Series, and the special 9000 Series.



FULCRUM CS118 AND CS121 SUBWOOFERS

Passive Cardioid Boomers

Fulcrum's new CS118 and CS121 cardioid subwoofers eliminate excessive rear LF radiation without the extra cost, space requirements and inconvenience of active cardioid systems. It features a single passive cardioid speaker doing the work of an active cardioid array. The CS118 is 120 pounds and features an 18-inch woofer, 4-inch voice coil, ceramic magnet, and power handling at nominal impedance of 1200 watts at 8 ohms. The CS121 is 132 pounds and features a 21-inch woofer, 6-inch voice coil, ceramic magnet and power handling at nominal impedance of 2000 watts at 8 ohms.



CABLE TECHNIQUES LOW-PROFILE CONNECTORS

XLR and TA for Live/Field Use

Production sound pros will love the organizational ability and weight reduction offered by Cable Techniques LoPro connectors. The adjustable connectors can be assembled DIY as easy as standard connectors and repaired

on-the-fly. XLR male or female cables (\$14.95) feature 3-pin and 5-pin versions, adjustable cable outlet and ten interchangeable color caps. The TA3F and TA5F connectors (\$19.95) offer 15 mm of exposed surface in use, eight colors, and fixed right or left cable exit.

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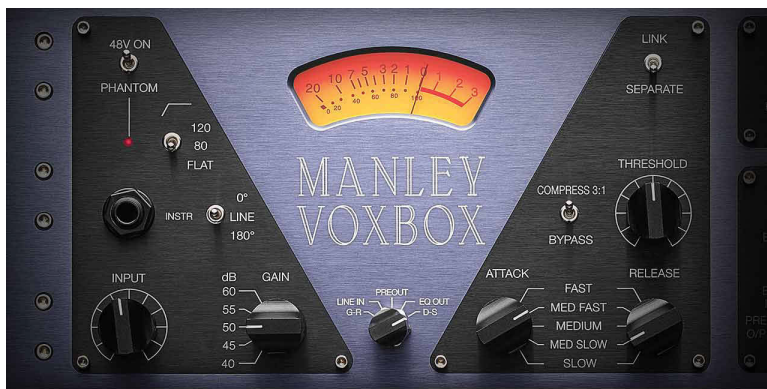
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Tech // reviews

UA MANLEY VOXBOX AND SONNOX ENVOLUTION PLUG-INS

Vocal Chain and Transient Shaping Processors



Unison technology allows the user to imprint the VOXBOX hardware preamp's personality on an Apollo preamp.

Universal Audio's award-winning plug-in collection for the UAD platform is extensive and ever-growing. The company's award-winning Apollo audio interfaces work with many of their plug-ins and allow for real-time processing while recording and for the plug-in channel strips to control many different characteristics of the Apollo preamp. The two reviews here test something old (an accurate emulation of the Manley VOXBOX channel strip), and something new (the Sonnox Envolution transient shaper).

MANLEY VOXBOX CHANNEL STRIP PLUG-IN

Universal Audio's development of the Manley-sanctioned emulation for the UAD platform did not just set out to model the workings of the VOXBOX; it also incorporated Apollo's Unison Technology, allowing re-creation of the hardware preamp's characteristics while using the inputs and preamps on the Apollo hardware.

The UA VOXBOX contains all of the sections of the hardware unit, including the Optical compressor, De-esser (which can also be a secondary 10:1 limiter), and Pultec-style EQ. The optical compressor has the added benefit of a Link/Separate switch for working with a stereo signal during mixing. Another plug-in-only feature is the addition of a XFMR IN switch. On the hardware unit, the XLR output is fed from the output transformer while the 1/4-inch line out

is fed before the output transformer and thus does not have the associated "transformer" sound. The XFMR switch allows a user to access both output flavors achieved with the hardware unit.

For this review, Manley shipped me a VOXBOX for comparison. Although this was an early unit tested by UA, it was ultimately not the unit modeled for the plug-in. After the hardware had warmed up for more than an hour, I routed the hardware VOXBOX into channel 1's line-in on the Apollo. This way, the analog circuitry in the Apollo and A/D conversion would be the same as when I plugged the microphone straight into channel 1 on the Apollo with the UAD VOXBOX plug-in loaded. For a fair comparison, I wanted to go through the same channel for the "B"

test to remove any question that a change in the basic signal chain would have added any color to the sound. For the plug-in comparison, I unplugged the line-in from channel 1 and plugged the mic into the Apollo's Channel 1 Mic input, this time with the VOXBOX plug-in on the channel (the hardware unit was never plugged into the channel at the same time as the plug-in was applied and compared.) I recorded the two setups to two separate channels taking care to match the levels then came back the next day to A/B compare with fresh ears. All results were recorded at 96 kHz into a Magix Sequoia DAW. Listening back was done over multiple sessions using a Mytek Stereo192DSD into Neumann monitors. The Apollo's preamps are professional-sounding—clean, clear and concise.

One of the truly stellar aspects of the hardware VOXBOX is its ability to draw sound from the microphone, pulling resolution and depth. When first recording acoustic guitar using an AT4050 in Omni, the Apollo sounded more upfront, tighter and modern,

PRODUCT SUMMARY

COMPANY: Universal Audio

PRODUCT: Manley VOXBOX Channel Strip

WEBSITE: uaudio.com

PRICES: \$299

PROS: Excellent emulation of the Pultec EQ sound. Paired with Apollo for Unison Technology real-time tracking.

CONS: Preamp section is excellent but does not have the same flavor as the HW unit

PRODUCT SUMMARY

COMPANY: Universal Audio/Sonnox

PRODUCT: Sonnox Oxford

Envolution Plug-In

WEBSITE: uaudio.com

PRICES: \$249

PROS: Frequency-dependent dynamic processing. Unique in its abilities.

CONS: None.

while the hardware VOXBOX had a more open top end with a three-dimensional depth and true-to-life sound. I got similar results with vocals and other acoustic instruments. One of the favored methods for tracking bass guitar is to go directly in using a hardware VOXBOX, and during testing this was the one example where I struggled to hear a difference between the hardware and Apollo.

The A/B tests were compared between two Sequoia channels, one recorded line-in with the hardware VOXBOX, the other with the mic plugged into the mic input, where the VOXBOX plug-in was used (at no time was the plug-in and hardware used in a serial fashion). Because of the difference in sound at the input between the hardware and the plug-in versions, I was unable to find a perfect A/B test of the EQ section. Because of the difference in sound at the input between the hardware and the plug-in versions, I was unable to find a perfect A/B test of the EQ section. I can conclude that using the UA VOXBOX during mixdown was everything I hoped it would be. The reactions of the dynamic processors and sound of the expanded Pultec EQ are Manley VOXBOX all the way.

Does the UA VOXBOX replace having a microphone connected to an actual Manley preamp? The answer would be no. It's different; not bad, just different. You may think because the unit isn't the actual hardware UA used, there could be a slight difference, but what I heard was not subtle. Knowing this, would I want a VOXBOX to use with my Apollo and/or during mixing? Definitely, if not just for the Dynamics and Pultec EQ alone. The emulation of the VOXBOX's processors is top-shelf.

the operational principles of a transient shaper, but with total control of the envelope and the ability to be frequency range-dependent.

The basics of the Sonnox Oxford Envolution starts with the same two controls we have grown to know and love: Attack (here called Transient) and Sustain. These control the level of boost or cut for the Transient and Sustain sections and portions of the audio. The Transient section consists of a variable Attack time, Hold, Release time and a Sensitivity control,

which controls how the plug-in detects transients.

The Sustain section has the same Attack, Hold and Release variable controls, and both sections contain the ever-so-important **FREQ** Button. If you click on **FREQ** in the Transient section, the center display changes to an EQ-style frequency display and the operator is given the ability to change the frequency range being addressed by the dynamic processor for the section. The available EQ types are a standard parametric style with bell shape or Tilt EQ, which also acts as a shelf EQ.

The output section offers three useful features beyond the simple output level fader. The Mix control is for parallel processing; the Warmth control adds harmonic content and gentle clipping on any peak overs on output; and a **DIFF** button allows you to hear only what is changed by the process.

Having the EQ filters is an amazing and powerful feature. On a simple snare drum track, where once we were only able to tighten up the snare or allow its sustain to be brought out, now we can completely alter the timbre of the drum. On one mix, I completely changed out the snare from a bright and

scooped sound to a fat, punchy sound by centering the transient boost around 200 Hz. Next, I boosted the sustain on just the high end to bring out only the snare wire sound without increasing the low ringing overtones of the drum.

On a bass guitar track that was suffering from fret buzz and clanking, I set the Transient section's EQ for 1 kHz, and brought down the Transient control 12 dB and raised the hold time. This effectively damped the upper-mids and high end just on the part of the note containing the offending buzz but left the sustain of the note's full frequency. Adjusting the Sensitivity allowed me to hone in on only louder notes with the offending fret buzz, but did not steal the high-end fidelity from the rest of the track. The results from the Envolution were much more appealing than trying for the same fix using a Multiband EQ, as any loud

sustaining note would trigger the multiband EQ. But on the Envolution, only the very beginning of the note would be darkened when triggered. The **DIFF** button came in handy in setting up this sort of dynamic EQ setting.

The Sonnox Oxford Envolution belongs in every audio engineer's toolbox. I find new uses for it every day and am amazed at its ability to bring out, or clean out, audio content from a track. ■



Envolution features separate transient and sustain sections and a broader Tilt mode.

SONNOX ENVOLUTION

In the late 1990s, SPL gave the audio engineers of the world the Transient Designer, allowing us to go beyond the dynamic audio shaping abilities compressors could achieve. At the time, it was hard to imagine describing the Transient Designer as limited in its ability. I still use my Transient Designer to shape drums. Now Sonnox has given us the Oxford Envolution based on

iZOTOPE NEUTRON PLUG-IN

Five Processors Provide Automatic Spectral Shaping



Neutron's processors include an EQ, compressor, transient shaper, exciter and limiter.

Neutron is a music-mixing adjunct that combines iZotope's latest audio processor modules, extensive metering and algorithmic analysis; it runs native in 32/64-bit AAX, AU, VST and RTAS hosts. Based on the engineer/producer's predefined processing goals and stylistic preferences, Neutron will automatically develop and deploy customized signal-processing chains and parameters as suggested starting points, using up to five of its Ozone-style processor modules.

Designed to process individual audio tracks from mono to eight channels wide, its top features are an algorithmic analyzer called Track Assistant and the Masking Meter, a clever real-time display of frequency collisions and buildups between any two tracks in your mix with the goal of remediation.

Neutron has three versions. Neutrino is a spectral shaping plug-in that subtly increases separation between instruments and is available as a free download. It has four operating modes: Vocal/Dialog, Guitar/Related, Bass, and Drums/Percussive. It has controls for Detail (its frequency range) and Amount (its dynamic processing depth). Neutrino is for smoothing out resonances and harshness, and it becomes more effective when used on all tracks in a mix. Neutrino, as part of the Neutron plug-in, automatically selects one of those four modes in conjunction with every Track Assistant analysis.

The Standard and Advanced versions of Neutron are identical channel strips with both Input and Output sections, and five processor modules: EQ, Compressor 1, Compressor 2, Exciter and Transient Shaper. The modules can be placed in any order by clicking and dragging, and are followed by Neutrino and the Limiter.

The limiter has three algorithms: Hard, IRC LL, and IRC II—borrowed from the company's Ozone 7. There are also three modes: Mode 1 (Clear), Mode 2 (Smooth, a good starting place) and Mode 3 (Thick, useful for handling loud, low frequencies cleanly). Neutron Advanced supports up to 7.1-channel surround and includes separate plug-in versions of Neutron's EQ, Compressor, Exciter and Transient Shaper modules that can be used anywhere in your mix.

I inserted Neutron Advanced on a lead vocal track and clicked on the Learn button. EQ Learn analyzes a short portion of audio whenever you start playback and places “nodes or points of interest” at response peaks caused by fundamentals, sibilance, rumble, P-pops and resonant buildups. For this vocal track, I played a section of a quieter verse going into a louder chorus section to get a representative dynamic and spectral picture of the nature of the singer's voice and the recording/production. I tried scanning other sections of the vocal track and essentially got the same results. I found EQ Learn an incredibly useful tool that's better than a spectrum analyzer for identifying problems requiring corrective EQ.

The newly designed equalizer section has 12 adjustable bands with choices of vintage analog-style, Baxandall, band-shelf and proportional Q filters. In surround track instances of Neutron, there is an LFE bypass button so that the LFE channel passes through unprocessed and with the correct latency compensation.

I especially like that all these bands (except for the high and low filters) can be switched between static and dynamic modes with adjustable threshold and a choice between compression and expansion. There are also side-chain facilities to control the dynamics of any EQ band from its own frequency, any of the other EQ bands in play, or from external sources using the plug-in's side-chain input.

Next, I engaged Track Assistant on the same lead vocal track. The software's learning algorithm first identifies the nature of the audio it is processing and selects one of the four Neutrino spectral shaping algorithms, or Clean where Neutrino is bypassed. Neutrino's faders for Detail and Amount are set midway (50%) by default.

Track Assistant has a pull-down menu with three Modes that govern its strength: Subtle, Medium (default) or Aggressive. Three Presets further define the precise processing goals: Broadband Clarity (default), Warm and Open, and Upfront Midrange, for a total of nine combinations of Types and Presets to consider.

Running and constrained by the nine processing directives and Neutrino, Track Assistant scans audio and, in about 10 seconds, configures the signal chain order, parameters for all five of the modules including any dynamic EQs. It also bypasses unused modules

and sections to minimize CPU load. After a scan, a suggested chain position for the Transient Shaper is made (if deemed necessary) but not enabled, and the Limiter section must be manually turned on.

For my first scan, I set Track Assistant mode to Subtle with the Warm and Open preset. Neutrino switched to Vocals/Dialog mode and the equalizer had a 108Hz -12dB/octave highpass filter set, +3dB shelving boost at 247 Hz, a fairly high Q dynamic EQ cutting at 1095Hz, and +2dB of a proportional peaking EQ centered at 3,305 Hz. Compressor 1, a multiband compressor module, was set to wideband with a ratio of 8:1, fairly fast attack and 1.2-second release times. The lead vocal sounded hardly processed at all, with original dynamics intact and a warm and fuzzy tone ready for my automated mix moves. This initial starting preset was very close to what I wanted, save for a few refining tweaks.

I next set the mode to Aggressive and used the Broadband Clarity preset and let Track Assistant rescan. Track Assistant applied corrective EQ settings at seven different frequencies, with two as dynamic EQs. Compressor 1 was set at a 10:1 ratio and multiband Compressor 2 had crossovers at 360 Hz and 3.27 kHz, again in Vintage modes. There are Digital and the new Vintage compression styles with RMS, Peak and True (Envelope) -level detection methods. iZotope's 3-band Exciter module also came onboard with crossovers at 82 Hz and 3.25 kHz, with joysticks for each band to blend any mix of Warm, Tube, Retro and Tape harmonic profiles.

I would not have dreamt of using this kind of processing for a vocal track, but it sounded great, especially within the mix. Even with aggressive settings, the lead vocal never got harsh or angry sounding. I like that each of the five modules has Wet/Dry Global faders that are automatable, as are all the 200+ parameters in Neutron.

The Masking Meter shows auditory masking—the partial covering of one track's sound by another playing at about the same time and in the same frequency range. The Masking Meter has two parts: ghostly white lights behind the frequency EQ curve (the brighter the light, the more collisions) and the Frequency Collision Histogram bar chart that tallies collisions over an adjustable, resettable, three-second window.

Masking, termed "loudness loss" of one track's volume while colliding, is measured relative to another track in your mix. Multiple tracks instantiated with Neutron show up in a drop-down window in each instance to compare them to the currently running track under scrutiny. You can name each instance with the track's name, but I think iZotope should update the software so the track's name automatically flows into each instance of Neutron.

On a pop ballad mix, kick drum and 5-string bass masked one another. I wanted good separation, though the kick was a big sounding 24-inch drum with a front head and the bass played the low B string throughout.

I started by running Track Assistant on both tracks. With kick drum set to Aggressive and Upfront Mid-

PRODUCT SUMMARY

Company: iZotope Inc.

Product: Neutron Advanced

Web: www.izotope.com/en/products/mix/neutron.html

Price: Neutron \$249, Neutron Advanced \$349

Pros: Remarkable mixing tool but not perfect.

Cons: Track name should show up in plug-in.

range, all five modules came into play with the Transient Shaper positioned right after the EQ but in bypass. On the bass track set to Medium and Broadband Clarity, the Exciter module came up enabled right after the EQ. Later in the mix, adjusting the Exciter on bass gave it more presence, and I enabled the Transient Shaper on the kick to dial in more attack.

Clicking the Masking button on the kick drum's Neutron instance and selecting the bass guitar track in the Masking drop-down window, the EQ window divided in half with the kick on top and the bass guitar EQ window on the bottom. I found this very helpful

visually when setting slightly different EQs between a kick drum and the bass. You can elect to use the Inverse Link mode to automatically boost on one track and cut on the other at the same time on the same EQ band.

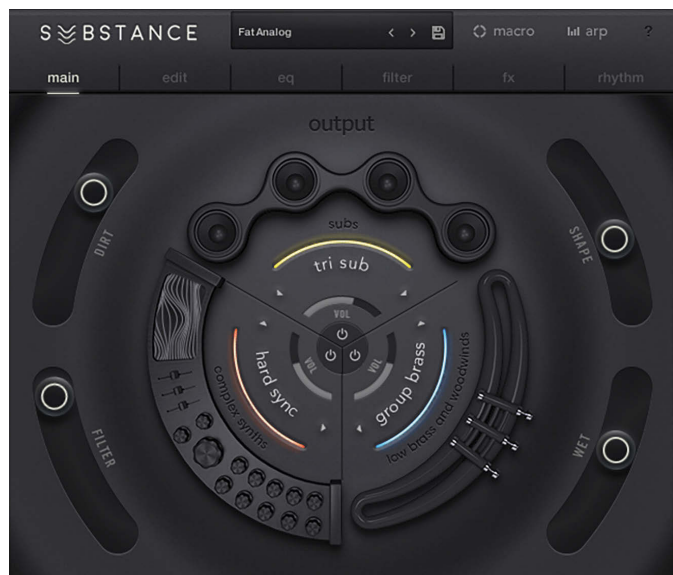
I am impressed with Neutron Advanced's automatic analysis and preset generation. I use Advanced experimentally and for problematic sources, and I love it! However, it's not perfect—Neutrino mode had trouble identifying a drop-tuned stereo guitar track, causing Track Assistant to produce a thin-sounding preset. Using the Masking Meter information effectively is an acquired skill, and I find new uses all the time. Neutron is a powerful, advanced music mixing toolset that I'm thrilled to recommend. ■

Visit engineer Barry Rudolph at www.barryrudolph.com.



OUTPUT SUBSTANCE BASS ENGINE

LF-Generating Plug-in Pushes the Boundaries of Bass



Substance features a 4.75 GB library of sounds and 300 presets.

The Substance Bass Engine plug-in from Output is a modern and innovative instrument aimed at today's boundary-pushing music makers. The interface is simple enough for new producers unfamiliar with synthesis to get a great sound right out the box, yet in-depth enough for experienced sound designers to sink their teeth into.

The sample-based instrument includes a 4.75GB library, 300 presets with smart-tagging, layered and global effects, a rhythm page that syncs to tempo, advanced arpeggiator and more. Substance runs in Kontakt or Free Kontakt Player version 5.5.1 or higher (Mac OS X 10.9, 10.10 or 10.11; Windows 7 or higher). My test system was running Ableton 9.6 on OS X 10.10.5 Macbook Pro Retina, mid-2012 gen.

After downloading Substance through Output's trendy-looking App Hub, I imported it to my Kontakt player and immediately noticed that its signature interface sliders are just like its vocal engine Exhale. (Be prepared to activate Substance twice; once in the Output download Hub, and again in NI's Service Center.) The sounds are immediately inspiring. After loading a preset and hearing the first note out of the monitors, I wanted to get working instantly.

The top-layer of the interface has six clear tab windows: Main, Edit, EQ, Filter, FX and Rhythm, with the preset list in the top center, macro and arp window tabs to its right, and four aux send sliders tucked in at the bottom. When clicking around, the interface responds smoothly,

but it takes about three seconds to load a sound. Output recommends that users run a Kontakt Batch Resave to speed up the load time.

While it is described as a Bass Engine, some sounds in higher octaves could easily translate as a lead, or other "non-bass" sounds—especially after third-party processing.

ALL THE TABS

The main Tab window contains four macro sliders, featuring a circular layout split into three sections that combine to make your overall sound. Both macro sliders and individual sound categories change between each preset, showing off the depth of the Substance engine, giving you the ability to dive in and manipulate the core of each sound layer. Output excels at giving the user an easy way to interpret the oscillators of synthesis, but deliver it in a more musical, straightforward way. Under this main tab alone, you're able to create an exciting sound to get you started. The preset menu allows the user to narrow down sounds by the character—dirty, aggressive, bass guitar, pad, and a lot more.

The Edit window is where you can go into your three sections and alter the sound character via sliders for attack, decay, sustain, and release to achieve the desired effect. Also included are controls for panning, tuning and sample start. For example, when using the sample start parameter with your attack, you can get the sound to articulate in a way that works with your compressor's side-chain settings—essential when working with low end in electronic music.

The ability to not only play with the attack but also when the sample starts allows you to create a sound that can articulate naturally and musically in your track. Under the Advanced tab, you can alter the glide, key range and velocity parameters. These are great for working with low end that needs to act as one coherent sound with the kick drum. For example, I like to commit my bass to audio and use simple fades to shape the sound with my kick along with side-chaining, rather than rely on the ADSR of the instrument.

The EQ window is unique and has a sound that matches the

TRY THIS

To create a tight 808-style kick drum using Substance, find a sub preset and tweak it to taste. Then, instead of side-chaining it to your kick drum, "Commit" (Pro Tools) or "Flatten" (Ableton) the instance of Substance to audio as if it is a "one-shot" sub sample. Next, find a short, punchy kick that you want to use for your attack/punch, and on the same channel, grab the kick punch and overlap it with the sub audio sample. Last, crossfade the short tail of the punchy kick with the start of your subbass. By crossfading your kick punch with your sub rather than side-chaining it, you can create a tight punch to sub-bass ratio that sounds much like a long 808 kick drum.

entire line of Output products. While this window assists in the design of a sound, I wouldn't say it's capable of surgical EQ. Overall, the EQs are workable, but not a highlight feature for me, as the intuitiveness and feel are slightly awkward.

The Filter tab is where it all happens. Within this tab alone you can easily get lost in the engine, transforming whatever you started with into something that isn't even noticeably similar. Along with traditional lowpass and highpass filters, it features resonant filters and a formant and phaser shape. ADSR capabilities can be bypassed entirely, per layer.

Finally, it comes fitted with a global filter at the bottom of the interface, limited to either a highpass or lowpass, allowing you to duplicate a Substance instance and treat your sub and mid-bass independently within the Filter window. Great job here by Output.

EFFECTS AND RHYTHM

Substance comes with most of your standard effects, such as distortion, compression, delay and reverb, with a Motion tab (containing flanger, phaser and chorus) and Pitch. While the effects are effective, I like to save a lot of these to be handled by third-party plug-ins built specifically for the purpose. The sonic character of the effects is not impressive, but it is great that they are specific to each layer of the sound rather than

PRODUCT SUMMARY

COMPANY: Output

PRODUCT: Substance Bass Engine

WEBSITE: output.com/products/SUBSTANCE/

PRICE: \$199

PROS: Simple yet powerful, modern and big. Fully capable of all things low-end. Signature to Outputs unique interface design style.

CONS: Sample-based, so 4.75 GB library can take some time to load.

processing the sound as a whole later.


In the Modulation tab, you can create and alter the movement of each layer respectively, or the sound as a whole. Each layer has volume, bite, cutoff and resonant parameters that act as a macro linked to the parameters in the other Tab windows. For instance, the "bite" LFO links to the amount of distortion set by the bite percentage in the FX window, and the cutoff and resonant links to the Filter window.

This window is clearly a vital component to Substance and holds a ton of happy accidents waiting to happen. The 16-step sequencer and flux tab are

filled with standard and unique LFP shapes linked to timing and swing options, with the flux option offering the ability to change the rhythm rate of modulation based on the flux step pattern

It's safe to say the hype around Output's Substance is justified. Filled with a massive 4.75GB library, it comes with a ton of unique and modern sounds and presets perfect for today's producer, plus more than enough internal capability to modify the sound in-depth. Output is becoming a staple in modern virtual instruments, and I love what the company has done. It will join Exhale as one of my go-to synths for all things low-end—and more. ■

Matt Zanardo is a Toronto-based producer, audio engineer, musician and DJ.



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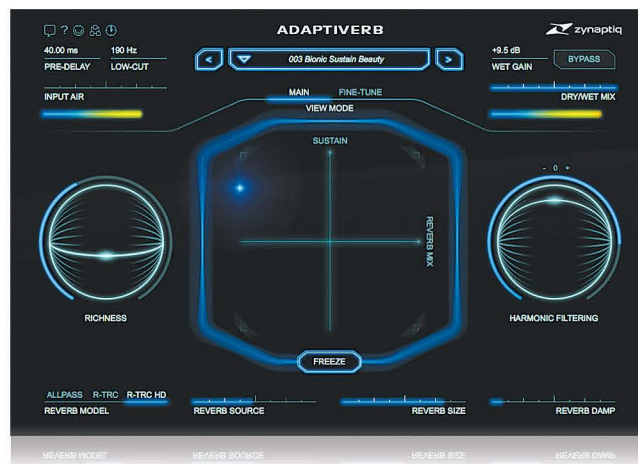
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Production Hacks



By Kevin Becka

Making sure you have top gear and proper gain staging along the signal chain goes a long way to assure you have great sounding tracks. But what about those things beyond signal flow that mess with the perceived pocket, session speed and quality of your production? This is where some smart techniques, or hacks, both inside and out of the DAW, go a long way to bring up the quality of the studio experience.

For example, I recently had to align some acoustic guitar “slaps” to a side stick because they were not in time with each other. The drummer was solid, which helped, but whenever the guitar player lightly slapped the instrument between chords, the guitar was noticeably out of time with the drummer. I could use the grid, but even the best band floats a bit, and this works even if I didn’t cut to a click.

First, turn on Pro Tools’ Tab to Transient feature and in the Edit window move the track you wish to align just below the source track so you can easily compare the transients. Play the song until you hear an errant hit, then drop the cursor before the transient you wish to align to and hit Tab to move the cursor tight to the hit. Then, use the letter “B” (for Blade) to split the clip at that point—this is your target.

Next, isolate the errant transient by tabbing to that transient, and while holding Shift, click later in time leaving a small chunk of time before the next entrance. This lets you move the track back and forth in time without covering up the next event. Then comes the magic: Select your target clip and while holding the Control key, click on the transient you wish to move with the grabber tool (hand). Bam! The front of the errant transient will align itself with the target transient. After a listen, you may have to do some crossfading for cleanup, and you can also repair the target’s Blade cut by selecting over the cut and pushing Command + H to heal the separation. Lather and repeat for other hits and all your tracks will start moving into the pocket.

I love to record a parallel, analog drum “crush” track along with the take as a band plays live in studio. It acts to bring the kit into focus, making it more powerful in the song. My new favorite pair of compressors to use are the R124s I reviewed in *Mix* last month, but you can use any stereo compressor you’d like. The problem is that while the track is being recorded, the drums (converted once) are being heard with the crush (converted twice). But here’s a simple technique to hear it live, correctly in phase both when recording and afterward, even when the session is opened another day on another system.

It all starts with the parallel signal flow. Send your large console faders, the ones going to your stereo bus, to a pair of multitrack buses panned identically to your mix. I like to send kicks, snares and toms to my crush only because cymbals can get out of control when compressed using this method. Patch the parallel stereo buses to the inputs of a stereo compressor, then mult of the outputs of the compressor back to the console for monitoring live. Another leg of compressor’s output mult should go back to the DAW for recording but be sure to mute the outputs on these tracks. This allows you to hear the parallel crush perfectly time-aligned because what you’re hearing is pre-conversion.

The hack is to build the converter latency into the session’s nudge grid so you can knock back the crush once it’s recorded. I always do this after each pass by selecting the stereo crush clips and hitting the minus key on the numeric keypad, which snaps it back into phase. What’s the amount? It varies by converter, but for Avid HD I/O converters the system latency values in samples are: 44.1 and 48k = 78 samples; 88.2 and 96k = 42 samples; 176.4 and 192k = 39 samples. You can also use the crush trick in your DAW when mixing and use Delay Compensation to correct for plug-in latency, but there’s nothing like the live version!

On a fast-paced tracking session, it can be daunting when quickly jumping to a new song. This is where Apple’s Stationery Pad feature comes in handy (sorry PC users!). Originally it was intended for text documents that you wish to alter into different saved versions, but it works for a Pro Tools session, as well.

Start by creating a working template for your session with track names, in/out, click track, nudge grid values mentioned above, and everything else you need for the session. Once you’re sure everything is working, close the session, select the session file in the Finder (.ptx) and hit Command + I to open the Get Info window. Click the Stationery Pad box, close Get Info, then drag the session file just above the trash can on the dock. Click once (important *not* to click twice) on this alias to create the session for the first song. You will be prompted to Edit Stationery or open a New Session—choose the latter. Name it and park it into your band folder. For each new song, repeat the process naming appropriately; the process is fast and brings up a fresh session in a folder named for each song every time you use it.

Using clever techniques like these and many more brings up the level of your session both in sound and professionalism. I’m sure you know more, so let’s communicate. Ping me on Facebook and let’s open a dialog about your personal session workflows. ■

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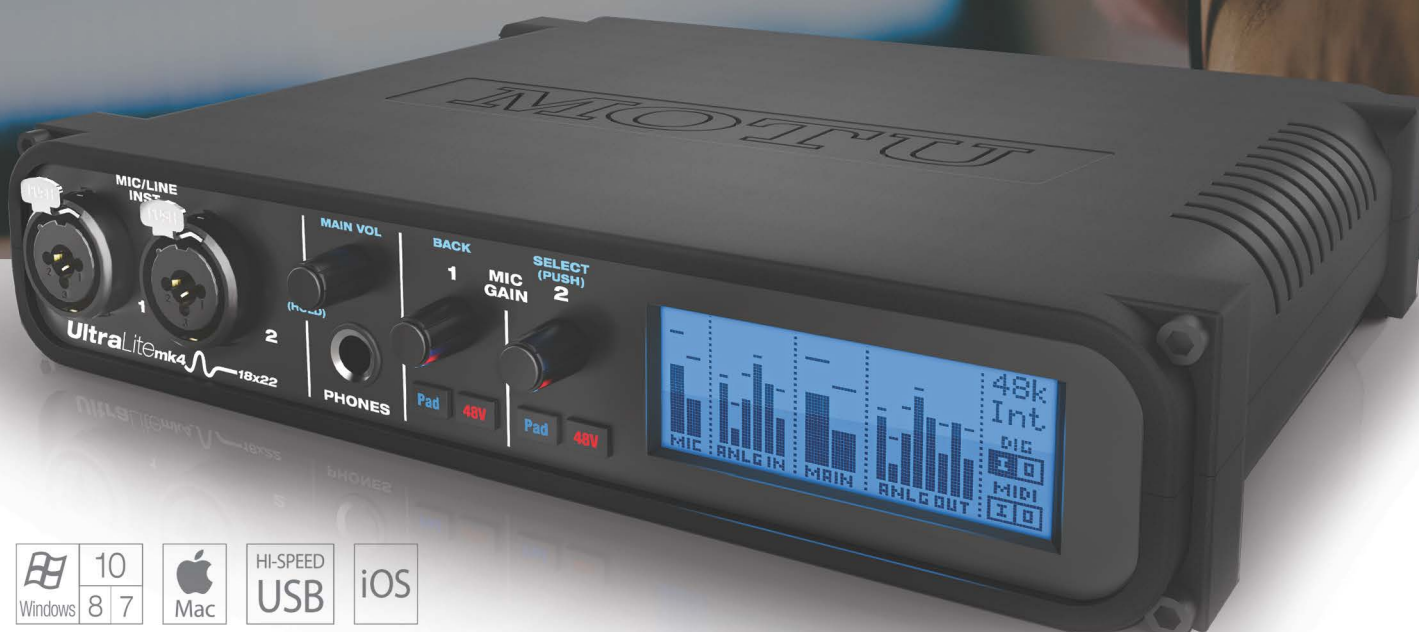
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