Deer Tick in the Studio   ✳   Reviewed: Apogee Element 88, Sound Forge Pro   ✳   TajMo Live!

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MUSIC BY DESIGN

TOM HOLKENBORG/JUNKIE XL AND THE JOURNEY FROM STUDIO TO SCREEN

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On the Cover: Artist/producer/composer/DJ and analog synth aficionado Tom Holkenborg, aka Junkie XL, has a couple big scores out this fall: *The Dark Tower* and *Justice League*. He will also be keynote speaker at this month's Mix Presents Sound for Film & Television event at Sony Pictures Studios. **Photo:** Chris Schmitt

Current

From the Editor

BASED ON RELATIONSHIPS

There is a long and circuitous story, with only a couple degrees of separation, behind the appearance of composer Tom Holkenborg on this month's cover of *Mix*. It's a story that began, oddly enough, on the Disney dub stage in the early 1990s, where I met Oscar-winning supervising sound editor Mark Mangini on the final mix for *Beauty and the Beast*. I was still new and just happy to be in the room; Mark was building his legend.

Then in the 2000s, the parent company of *Mix* launched the late, great *Remix* magazine, which ultimately fell under my editorial umbrella. An early cover featured the internationally renowned artist/producer/DJ Junkie XL, who at the time might have had a Number One hit in more than 20 countries while playing to crowds of 100,000 at Ibiza. I wasn't hip enough to realize the depth and inventiveness of Junkie XL's productions at the time. But it was clear that this was Talent, capital T. And I do listen.

Then in 2015, when putting together the second annual Mix Presents Sound for Film event at Sony, I asked Mark to give the keynote speech on sound design. While milling around at the podium and catching up before his [brilliant] talk, hearing the tales of the emergency call to Sydney to work on *Mad Max: Fury Road* and how he was now finishing up *Black Mass*, he kept interjecting, "You have to talk to this guy Tom Holkenborg. Junkie XL. He's unbelievably talented. I've never had so much fun working back and forth with the music side." Mark is a guitar player, Holkenborg a multi-instrumentalist. They did the two films together. Four months later, in his Oscar acceptance speech for Best Sound Editing on *Mad Max*, Mark thanked Holkenborg.

Now, on September 16, Holkenborg will deliver the keynote speech at the fourth annual Mix Presents Sound for Film event, and Mark will be in the audience, later in the day moderating an expert panel on sound editing and sound design. The relationships continue.

Here, now, is the side road in that circuitous route, where I was reminded of the importance of building real relationships. Not just business or professional relationships, but real relationships. It also, tangentially, involves Mr. Mangini, who will likely be embarrassed to read so much about himself.
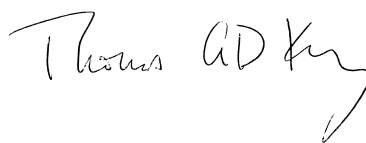
While putting together the feature story on Formosa Group (Mark was one of the first eight supervisors to sign up) and talking with Bob Rosenthal and Matt Dubin, they both kept saying how much the film industry, in all of its many facets, is based on relationships. Enduring relationships. When they launched Formosa Group four years ago from a small office on The Lot, they had no facilities. They went after talent first, approaching top-shelf supervising sound editors and offering them a home. A place to be creative.

To be sure, there is a long and strong history of independent sound facilities in Hollywood, but the rapid rise of Formosa as a bona fide force has been remarkable. They have five brand new television mixing stages (and dozens of editorial rooms) to go with their existing facilities in Santa Monica and on The Lot, all new headquarters, a high-end audio presence across Features, Interactive, Music, Commercials and Broadcast, and a supportive group of like-minded owners. Talent first. Relationships matter.

I miss my heyday in film sound, when the magazine was fat and we could fill pages with stories from the highly creative teams working across Hollywood. While at Formosa, I ran across Per Hallberg, whom I met years ago on *Gladiator*. I also ran into Annalee and Mat from the *Game of Thrones* mix team, wrapping up season 7 on Stage 2 in the new 959 Seward facility. I didn't run into Mark this trip, but I will see him in September.

I miss this atmosphere. The dub stage. Lots of relationships, and they all matter.

Tom Kenny
Editor

Mix Presents Sound for Film & Television
Sony Pictures Studios, Culver City, Calif.

The fourth annual Mix Presents Sound for Film and Television, a one-day exhibition and expert panel series, will take place Saturday, September 16, at the world-class audio post-production facilities of Host Sponsor Sony Pictures Studios, Culver City, Calif.

"We're excited to be back at Sony and eager to bring all these talented, creative editors and mixers together with some of the leading technology companies in high-end entertainment," says Tom Kenny, editor of *Mix*. "In previous years, we've looked into Immersive Sound, Sound Design, brought in television, and this year we're adding The Composer's Lounge, to showcase the music side of post-production."

Also new this year at Mix Presents Sound for Film & Television:

Keynote Speech. Tom Holkenborg/Junkie XL. The internationally renowned artist and producer has carved out a successful compositional career and was the musical force behind *Mad Max: Fury Road*, *Black Mass*, *The Dark Tower* and the upcoming *Justice League.*

The Composer's Lounge. Moderated by music editor Steven Saltzman, MPSE, The Composer's Lounge will be set up as a living room-style environment, with panels on music editing, re-recording, the music team, as well as feature presentations on top scores for film and television.

Master Class Series. Hands-on product demos and presentations from sponsors including Yamaha, Audionamix, Sound Particles, Focusrite, Westlake Pro and others.

Sponsor Programming. Unique insights from the *Game of Thrones* audio team, courtesy of Avid; Dolby presentations on Immersive Sound mixing; Yamaha/Steinberg presenting the music tools within Nuendo; Meyer Sound introduction of a new speaker; and much more.

The event, produced by *Mix* and held at Sony, is supported by Event Partner organizations Motion Picture Sound Editors and Cinema Audio Society. Sponsors include Avid, Dolby, Yamaha/Steinberg/Line 6, Meyer Sound, Westlake Pro, Focusrite, Formosa Group, RSPE, Sound Particles, Audionamix

For complete program information and registration, please visit www.mixsoundforfilm.com. ■

Anna Behlmer to Receive
CAS Career Achievement Award

Photo: Natasha Lee

Multiple CAS and Oscar-nominated re-recording mixer Anna Behlmer will receive the Cinema Audio Society's highest accolade, the CAS Career Achievement Award, to be presented at the 54th CAS Awards on Saturday, February 24, 2018, at the Omni Los Angeles Hotel at California Plaza.

"It's truly an honor to announce the selection of Anna Behlmer for our Career Achievement Award," says CAS President Mark Ulano. "Anna is a world-renowned re-recording mixer with a huge portfolio of iconic credits. Her longtime collaborations with filmmakers and her work on over 150 projects is a testament to her excellence and creativity. She is a beloved figure, and I take great pleasure in announcing the recognition of Anna and her terrific body of work."

Behlmer, who grew up in Hollywood not far from Glen Glenn and Todd-AO, never thought she would be involved in the film business, but after helping a friend out at the famed Ryder Sound, she was encouraged to get a union card. "I was advised to go to Glen Glenn Sound because they had two women working there, and a woman in charge of scheduling and hiring crews," she recalls. "I walked into Jan Olson's office and asked her to help me, and she said yes."

Her first call was on the Paramount lot working on *Laverne and Shirley* and *Happy Days* as a Y-15 loader. She then went to work in the new Glen Glenn building on stage 2 doing mostly TV and was promoted to recordist working with Gary Bourgeois. Glen Glenn merged with Todd-AO and they developed a mixer training program. In 1989, with the encouragement of JR Delang, Chris Jenkins and Bourgeois, Behlmer joined the program; there were no female re-recording mixers at that time. "I never looked back. I found something that was fun, that I loved doing and that I had an aptitude for," Behlmer says.

She stayed at Todd-AO and worked with the great Richard Portman for several years, before beginning an almost 20-year collaboration with Andy Nelson. In 1996, Behlmer became the first woman to be nominated for an Academy Award in the Sound Mixing category for *Braveheart.* The following year there was a second Oscar nomination for *Evita*, and she has added eight more for *L.A. Confidential*, *The Thin Red Line*, *Moulin Rouge!*, *Seabiscuit*, *The Last Samurai*, *War of the Worlds*, *Blood Diamond* and *Star Trek*. ■

Edward J. Greene, 1935-2017

Ed Greene, who mixed some of the most highly regarded music, variety and award shows in the history of television, as well as earned a well-deserved reputation of being the go-to guy for drama series like *ER*, *Fail Safe* and *The West Wing* died peacefully in Los Angeles on August 9, with his family by his side. He was 82 years old.

His live productions included decades of The Kennedy Center Honors, The Grammy Awards, The Tony Awards, The Academy Awards and The SAG Awards. He also mixed the *Live from Lincoln Center* specials, *Carnegie Hall, Live at 100*, numerous Macy's Thanksgiving Day Parades, Tournament of Roses Parade, The AFI Life Achievement Awards, The 52nd Presidential Inaugural Gala, The 1996 Summer Olympics, The 2002 Winter Olympics Opening and Closing Ceremonies and years of *American Idol*.

Greene garnered 22 Emmy wins, his most recent in 2015, and an astonishing 61 Emmy nominations, ranking him third for most nominations and second for most wins by an individual.

He is survived by his wife of 30 years, Lynne Cruise, and his children, Grant, Sam, Lynda and Larry in Los Angeles, and his brother David in Toronto. ■

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Photos: Laura E. Partain

L-R: Ian O'Neil, Dennis Ryan, John McCauley, Christopher Ryan

DEER TICK TIMES TWO

Ketchup or Mustard? Rock 'n' Roll Band Chooses Both
By Barbara Schultz

When engineer/producer Adam Landry mentions that his friends in Deer Tick were strongly influenced by The Replacements, it's like a key turning in a lock. The two bands share a similar combination of qualities: raw, clever, sardonic but sincere. And the deeper a listener digs, the more intricacies are found to the parts, the lyrics and the production as a whole.

When choosing material for their next album, this multifaceted group was overflowing with ideas, so frontman John McCauley suggested they make two albums: *Deer Tick Vol. 1* is a more acoustic-sounding collection, while *Vol. 2* turns

it up with electric guitars and a more aggressive approach to keyboards, horns and vocals. The artistic design of two mostly matching album covers belie Deer Tick's MO: One album is clearly more ketchup, while the other is more mustard... but each is classic in its way.

Vols. 1 and *2* are actually the 10-year-old band's fifth and sixth full-length releases. Their previous album, *Divine Providence*, and a few of their many EPs were co-produced and engineered by the bandmembers' friend Adam Landry (Middle Brother, Vanessa Carlton, Lilly Hiatt), who helped them make Vols. 1 and 2 in Ardent Studios (Memphis, Tenn.).

"We had been doing pre-production and demos at my place [Playground Sound, Nashville] for a couple months, and John [McCauley] had the idea that it would be great to cut the band in a larger studio where they could be free to do more live," Landry recalls.

He and the band liked the idea of working at Ardent because of its inspiring history and its location—not too far from their Nashville home, but just far enough to avoid distractions. First they booked a seven-day dry run, to make sure they would be comfortable there.

"That studio is impeccable in all areas," says Landry, who captured everything to a Studer

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TIPS & TECHNIQUES
From the Pros

1 You Don't Need to Slam an Input at 24-Bit
In the analog days, it was often desirable to drive preamps as hard as possible, for tonal purposes. The same held true in the 16-bit world, but for issues relating to the noise floor. However, neither of these issues apply to 24-bit, so give yourself valuable headroom—you'll need it later on.

2 Check for Mono Even though it's 2017
In the old days, one often checked mixes for mono compatibility due to technological constraints of the times. You should still do this today, since your average listener won't hear a mix in perfect stereo (think sitting in the driver's seat, or sitting on the left side of a couch).

3 Try Out a Manual De-Esser on Vocal Tracks
What is a manual de-esser? The answer is, you. Go through the track and manually gain down each sibilance, either by clip or pre-fader automation. Pretty quickly, you'll learn to recognize the football-like shape of a peaky sibilance, which will expedite the process. Sure, it takes time, but it's one of the most natural ways to tame those ear-splitting "ssssss" sounds.

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Singer/songwriter/guitarist John McCauley (left) and producer/engineer Adam Landry mix on the custom SSL console in Ardent Studio C.

A800 16-track, 2-inch machine. "We tracked a little bit in A and then moreso in C, and mixed in C, as well. A lot of the band's favorite records were recorded there. The Replacements recorded there. And then just the vibe: Everyone is so friendly. Jody Stephens [the drummer] from Big Star is the General Manager, and he couldn't have been more of a gentleman. Adam Hill, who assisted me during the engineering and mixing process

was just great. He's worked there for years and knows every corner of it."

During that first week, in September 2016, Deer Tick recorded five songs—three acoustic and two electric—in Studio A. "The atmosphere was great, so we went back home and we booked out the necessary time to finish the two albums—three weeks-plus in November," Landry says.

However, the weeks that he and the band managed to free up all together were not available in Studio A, where the project had started.

"In A, they have an old vintage Neve console and it's beautiful," Landry says. "You have to stick toothpicks in a lot of the buttons because they have worn out and won't stick down, and honestly, that's my dream: an old, weird console that's quirky but sounds amazing. We were very disappointed initially, when we found out we couldn't use A for the entire time. It's funny how the universe works, though. Adam Hill said to me, 'Come look at C because that's open the whole time,' and he promised me that C is an even better room.

"I went in there and I saw that console, and I just said to myself 'Oh, no. This is horrible,'" Landry continues. "I said that, mind you, loving the room itself. It was smaller but an incredibly well-designed live tracking room, a great control room that was designed so well for mixing and listening.

"I was torn because I was petrified of the console. It's a custom, half-

million-dollar SSL, and whenever I run into something that looks like the bridge of the Starship *Enterprise*, I want to run the other way. But Adam Hill said, 'Trust me. You're going to love it.' And sure enough, I did. We all ended up loving C."

Ardent Studio C includes two booths where Landry set up recording stations for the two guitarists, McCauley and Ian O'Neil. The recording chain on acoustics included Neumann KM54 microphones into mic pre's from the studio's original Spectrasonics console. This gave the musicians the isolation for delicate acoustic parts and allowed them to shift easily from the acoustic tracks to electric.

The guitar amps were situated in the live room, miked with Shure SM57s, along with the rest of the musicians, so when the mood struck, McCauley and O'Neil could simply make a move.

"We would cut whatever the band was feeling, but on the technical side we didn't want to have to switch setups over and over again," says Landry.

Dennis Ryan's drums, on the other hand, required few changes from song to song. "I unabashedly rob from the great Glyn Johns,"

Landry says. He placed a mono Neumann M249 overhead, a Sony C38 on kick, Shure SM57s on snare top and bottom, Sennheiser MD421s on toms, and a stereo pair of Earthworks room mics.

"The primary drum setup was just the overhead, snare mics, kick combo, while the 421s on toms were used in isolated situations. The workflow was smooth," Landry says. "The meat and potatoes of everything was done live. Most of the keyboards were even done live—the B-3, the Wurlitzer, the piano. But most of the vocals were overdubbed. It's hard to focus 100 percent on a perfect instrument performance and get keeper vocals.

Still, commitment was the order of the day— especially in light of the limitations of 16 tracks. "We never left 2-inch tape, and we used maximum of 16 tracks," Landry says. "Some songs were way under and others were right at 16. We like the limitations of destructive editing, where you have to make a decision. And then sonically, people can debate, but in my experience, tape just sounds fantastic in certain areas. I don't ever like to say, 'better,' but it has a specific sound and that sound is classic. It sounds like the records I love." ■

RINGO STARR: "WE'RE ON THE ROAD AGAIN"

"We're on the Road Again" is the first track on Ringo Starr's album *Give More Love*, out September 15, and it's the perfect All-Starr concert opener. Co-written by Starr and Steve Lukather—and produced by Starr and Bruce Sugar—the song was built around an Indian-tinged guitar lick that Lukather brought into Roccabella West Studio, in the guest house behind Starr's Beverly Hills home.

Sugar says that their workspace is equipped with the latest version of Pro Tools, "a bunch of outboard gear, preamps and a little 12-channel Trident board to run the monitors through." On "Road," Ringo's drums and some basic guitar were tracked first. The kit was set up in a bedroom with two Coles 4038 overheads, two Neumann 87 room mics, an AKG D112 on kick, Beta 57 on snare and Sennheiser 421s on toms.

Then Lukather added a synth part and layered guitars. Sugar records most guitars through a Retro Powerstrip. They also tracked a Lukather bass part, but then Paul McCartney came to town and offered to record. "Luke was over the moon," Sugar says.

For vocals, Sugar put up a vintage M49 that he'd found a couple of years ago in a box, in a storage space above the studio in Tittenhurst, the home John Lennon once owned and then sold to Starr. "It has an English power supply and I didn't convert it; I bought an English step-up transformer so I could record at 220 volts. I use no EQ and a little bit of compression," Sugar says

He kept the vocal mic up so anybody who came by could add a background vocal to Starr's, Lukather's and McCartney's. Others on the track include Joe Walsh, Gary Burr, Edgar Winter and Richard Marx. —*Robyn Flans*

COOL SPIN: SHELBY LYNNE & ALLISON MOORER
NOT DARK YET
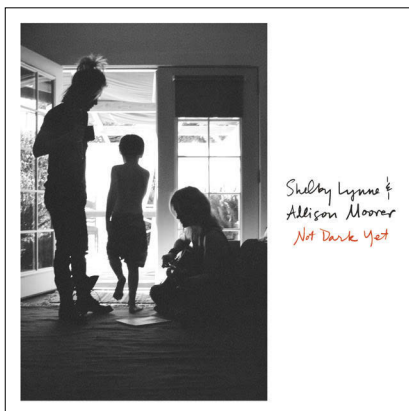
Sisters Shelby Lynne and Allison Moorer have collaborated on a beautiful mostly covers album, *Not Dark Yet*, and like so many sibling singers, these two create special, seemingly effortless harmonies. The song choices are not all rare, deep cuts: Kurt Cobain's "Lithium" and Nick Cave's "Into My Arms" are exceptional choices for a pair of folk singers, but Jessi Coulter's "Looking for Blue Eyes" and Merle Haggard's "Silver Wings" not so much. Yet every track is realized with feeling that's never oversold, and airy arrangements that serve the songs; each rendition is lovely and masterful if not visionary.

Producer: Teddy Thompson. Engineer: Scott Campbell. Recorded in Lynne's home. Mastering: Pete Lyman/Infrasonic Sound (L.A.).
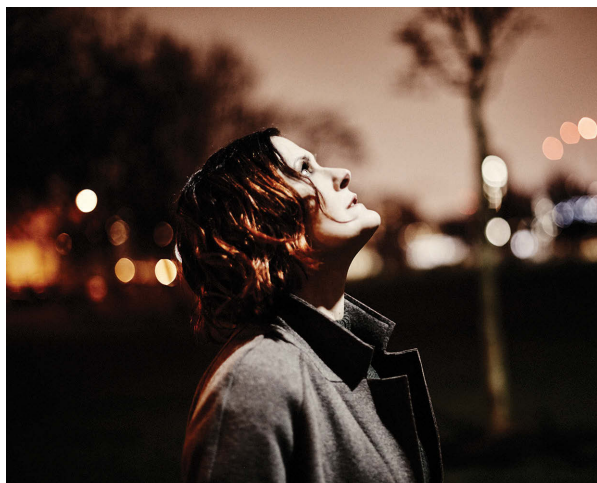
Photo: Steve Gullick

ALISON MOYET'S *OTHER*

Possibly best known as the one-time front-person for Yazoo, powerhouse singer Alison Moyet has had a formidable solo career, as well. Her latest goth-pop album is *Other*, her second with producer Guy Sigsworth, whose credits also include Britney Spears, Madonna and Bjork.

"My working method is mainly in the box on Pro Tools," says Sigsworth, who worked with Moyet in space within London's Tileyard Studios. "I love choosing the instruments and coloring in the sound around the vocal. I prefer creating sounds by weighing them against the vocal, knowing exactly where I have the chance to take liberties, and where I don't."

On *Other*, Sigsworth chose elements that complement rather than match each other. For example, when guitars and bass go in an electronic direction, the drums will lean toward an acoustic feel. However, in some cases, he had to avoid going too far in that direction. "The English U," for example, features strings, harps and harpsichords, so Sigsworth was initially trying to force an Aphex Twin-style beat onto it, but he eventually realized a simpler, tighter sound was more appropriate.

"What was a big challenge for me were the songs that were previously co-written with other people," Sigsworth says. "It was tricky finding my way into something somebody else had done. On 'The Rarest Birds,' she was loving the verses but I sensed I had to rock out more on the chorus than I am used to, channel my inner headbanger, lose my demons, and prepare to be more of a rocker than I am by nature." —*Lily Moayeri*

Taj Mahal and Keb Mo front a nine-piece band that includes three of Mahal's children.

Photos: David Weiland

TAJMO ON THE ROAD

Blues Stars Taj Mahal and Keb Mo Join Forces for Album and Tour   By Barbara Schultz

TajMo is the collaborative release by blues artists Keb Mo and Taj Mahal, who will celebrate the 50th anniversary of his debut album next year. TajMo is also the touring name of their band, currently playing mainly festivals and theaters in the eastern U.S.

Mix enjoyed the TajMo tour at a rare club date, at the UC Theatre (Berkeley, Calif.), a 1917 movie palace that was converted to a 1,400-capacity concert venue and re-opened last year.

"Most of our shows have been in sit-down venues," says front-of-house engineer Aaron Hedden, whose career in live sound included helping to renovate the 300-seat Franklin Theatre (Franklin, Tenn.), where he then served as the house mixer. "The Berkeley date was definitely a different crowd than we nor-

mally play to—more of a bar crowd. But that can be a lot of fun."

Hedden made use of the UC Theatre's Meyer Sound Leopard P.A. system, but the tour is carrying all of the remaining audio gear and backline needed for a band that ranges in size from two pieces—as the headliners play an acoustic set in the middle of every show—to 11 strong, including keyboards, horns and backing singers.

The legendary Taj Mahal at center stage.

To prepare for the tour and nail down equipment choices, Hedden and the band got together in Keb Mo's Nashville home for a first round of rehearsals, and then moved over to Clair Brothers' facility for a full-blown production rehearsal. "They have a great facility. That's when we tried out different mic positions and fine-tuned the stage plot," Hedden says. "We

were there for a full week, all except for our young [keyboardist] David Rogers. He had to leave rehearsals a day early to go graduate from Vanderbilt."

This past May, the band hit the road, carrying two DiGiCo consoles: a brand-new SD12 at FOH and an SD9 for engineer Melissa Britton's monitor mix. "We used DiGiCo last year, too," says Hedden, referring to Keb Mo's tour dates, which the engineer has been mixing for the past three years. "The SD12 is a great fit for this show because it's a compact size with so many features.

"When we first started rehearsals, the guys showed up with 17 guitars," he continues. "It's a complicated show, requiring inputs for on all those guitars, each one needing different EQs and the different compressors. It really helps that the DiGiCo is so flexible on the input channels and on the routing setup. And DiGiCo has been absolutely bulletproof in terms of reliability for us."

Each show begins with the opening act Black Pacific, made up of Ahmen, Deva and Zoe Mahal: a trio of Taj Mahal's children.Lovely sibling harmonies, acoustic instruments and relaxed energy set the tone. And then the band takes the stage with Keb Mo, who gets things rolling before Taj Mahal takes his seat.

Hedden's vocal chains for the two lead vocalists are identical, with each singing into a Neumann KMS105. "It's a great-sounding condenser microphone and it helps us balance the acoustic parts of the show—where we need to get the sweetest sound possible out of the two vocals—with the loud rocking part of the show. This mic works well in both of those sit-

uations," Hedden says. "I also use the new Rupert Neve Designs Shelford channel strip on the two lead vocals up front."

Many of the instruments are captured with mics from sE Electronics. "We work with their microphones quite a bit," Hedden says. "They've taken great care of us. We mike the guitarists with the sE5s. Mostof [Marcus Finnie's] drum mics are sE VR1s. The horns [Quentin Ware on trumpet and Dana Robbins on sax] are miked with V7s. Anything I can get from them, I do. Taj's daughters, who also sing backup, bring their own Telefunken M80 mics, though; that's what they like to use, and they sound great."

Stan Sargeant's bass and most of Rogers' keyboards are taken direct. "[Rogers' Korg] Kronos actually doesn't take a direct box," Hedden explains. "It's an active output that goes straight to the console. We've closely examined each of those microphones and every one of those direct boxes; Keb, Taj, and Stan use an RNDI from Rupert Neve Designs. Kevin [Moore, aka Keb Mo] likes to 'nerd out' on everything on the stage, so every piece has been compared and analyzed. As an engineer, it's great to work with an artist who cares as much as he does about making sure it's the best sounding show we can create."

But of course it's the artistry and songs at these musicians' command that makes a great-sounding show: selections from the Tajmo album, such as "All Around the World" and "Waiting on the World to Change"; Keb Mo favorites including "Government Cheese" and "Life Is Beautiful"; and Taj Mahal's unforgettable recordings, from "Take a Giant Step" to "Lovin' in My Baby's Eyes."

On the monitor end, Keb Mo and the bandmembers listen through Shure PSM1000 in-ear systems, but Taj Mahal still listens through a

FOH engineer Aaron Hedden with monitor mixer Melissa Britton

QSC KW122 wedge. "Taj just likes to hear his own vocal, and relies on the sound of the room created by the FOH mix," says Hedden. "But Keb always wants his monitor mix to sound like a record. He likes to hear everything that's going on, on the stage, and Melissa is really good at reproducing that every night." ∎

ELVIS LIVES AT BALTIMORE'S MODELL LYRIC

There was an Elvis Presley tour held this summer, strange as that might seem. It included a Baltimore concert in early August at the Modell Lyric Performing Arts Center, just five days before the 40th anniversary of Presley's death; a sold-out August 16 show at Memphis' FedEx Forum marked the actual anniversary.

"Elvis: Live in Concert" somewhat fulfilled a dream of Presley's, according to ex-wife Priscilla Presley (who was featured in a cameo after intermission), as he always wanted to play with a live orchestra but never did. Content owner Graceland Live accessed classic TV performances, like the *'68 Comeback* special and *Elvis: Aloha From Hawaii*, as well as plenty of movies, hooked up with the Memphis Symphony Orchestra and a rock band, and went for it.

The tour cruised into the 2,500-seat Modell Lyric, a symphony hall, after playing in various U.S. and UK sheds, theaters and arenas of up to 15,000 seats. For the worldwide jaunt, FOH engineer Howie Lindeman and crew carried an Avid Venue Profile console, with 64 to 96 outputs, for FOH, and DiGiCo SD5 for monitors. The tour contracted with SSE for the UK and European runs, and in the U.S., Clair Global, which provided a CO-12 P.A. system, with 14 speakers per side for the mains.

"The overall understanding is that since 'Elvis' is a digital transfer of video playback with most everything stripped away, the band and symphony depend on a click track," Lindeman says. "The challenge is in making the best presentation of his vocal, which has audience leakage and original band leakage in his mic, so it's a constant ride for accurate levels. [It's taken] more than 90 console snapshots to keep this going."

Otherwise, mixing the show is similar to mixing with a live singer. "I mixed at The [Modell] Lyric as I mix any show, with a 'record mix' in mind," he says. "If I can give the listener a record-quality mix, or as close as I can get it, they'll walk away with that in their minds and in their
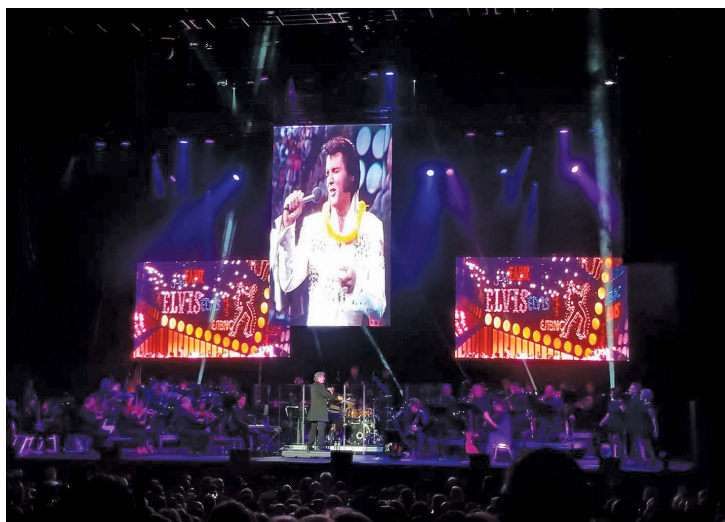
FOH engineer Howie Lindeman at the Avid Venue console

ears. That's the most important thing we do."

This particular show," he says, "is a 'ride the fader' mix," to coin a phrase from a lifelong friend and artist, Roberta Flack, who once said, 'That's why they call it mixing,' and that's how I've mixed every show I've done over my 48 years in this business. I've never just let faders sit there and never will. On this show, it's pretty crazy because the video cuts from year-to-year, thus the mic-to-mic changes on Elvis, as does the quality."

As for the symphony, it's not a passive mix by any means. "It must be aggressive at times and lush at others. I'm on my toes, and sometimes the edge of my chair from the down beat until 'Elvis has left the building,'" Lindeman says with a smile. "But he never complains, asks for something different or does an encore." *—Mark R. Smith*

THIEVERY CORPORATION AT THE KENNEDY CENTER

Rock meets orchestra at Thievery Corporation's May 2017 Kennedy Center performance.

Money is almost always useful. For many artists, fame is cool, too. Then, there's respect. And if an artist has been selected to play a one-off gig at the John F. Kennedy Center for Performing Arts, in Washington, D.C., they're rich with the latter.

That word rings loudly within the camp of Thievery Corp., the Washington, D.C.-based recording artist and DJ collective composed of Rob Garza, Eric Hilton and supporting artists that performed at the Kennedy Center's Concert Hall. That's where the group and its sound engineer, Gianmaria Conti, co-conspired with KenCen Composer-in-Residence Mason Bates' KC Jukebox and five other composers to present a Thievery show with a 22-piece orchestra.

"It was a unique show," Conti says, "and I had to take a completely different approach. We had an extra 30 input lines for the orchestra that needed

to be mixed in, and I had zero inputs left on my desk; so we used the house console Soundcraft Vi6 kind of like a side desk, just for that purpose." D.C. Valentine, longtime Kennedy Center FOH, handled the Vi6. The Corp. travels with its own consoles, a Midas Pro2 at FOH and a ProX at monitors, and Conti offered props to monitor engineer Thomas Smith of Atlanta Sound & Lighting, Thievery Corporation's regular audio system provider.

"I run about 48 inputs at FOH without the orchestra," Conti explains. "So we were sending a stereo feed [from the Vi6] to my desk so I could control the overall volume. [There were] too many microphones," he adds, with a laugh, "so there was lots of bleed. That was the most challenging aspect of mixing this type of show: the 30-some mics on the orchestra's instruments. We were picking up everything from drum cymbals to the FOH P.A., creating a wash in the mix if it got too loud. That room is so live and made to amplify sound naturally, so that didn't help. The performance had to be mixed relatively quietly, which is not my usual way.

"This was certainly the most active mix I've done so far," says Conti. "Because of the orchestra bleed, we were constantly riding faders. Actually, the funny thing is that Mason Bates was sitting between the two consoles with the music charts, kind of conducting us—that you didn't want to turn the orchestra up if nothing was happening, for instance. It was an honor to do this and to collaborate with all the musicians." *—Mark R. Smith*

On the Cover

COMPOSER TOM HOLKENBORG (AKA JUNKIE XL)

Music and Sound and a Lifetime of Learning

Tom Holkenborg in front of the modular synth wall in his home studio.

To Tom Holkenborg, aka Junkie XL, music is sound and sound is music. "Here, listen to this," he says, sitting at his workstation at his home studio in Tarzana, surrounded by synthesizers, young and old—including two large wall racks making up a pair of modular synth systems.

"That became this," he explains, playing a single distorted guitar note he recorded earlier in the day, sitting on the couch behind him with a guitar and amp, followed by an unusual, yet curiously melodic, set of bee-like sounds that he also created for his library and scoring template. Synths and audio gear are everywhere. There's even a rack of amplifiers in the bathroom... just in case.

In a nearby room, assistant Aljoscha Christenhuß concentrates quietly at his own rig, creating new sounds as he has been for the past two years. Both his and his mentor's work will one day find their way into a film score, when the time is right. And both represent the two key components to Holkenborg's legacy: creating new musical landscapes and teaching others to do the same.

The Dutch-born multi-instrumentalist was already at the top of his game as an electronic artist when he came to the U.S. in the early 2000s to make the shift to film scoring. "I was always fascinated by films," he tells *Mix*. "I was doing well in the electronic scene, and my albums were always concept albums, traveling through all these different atmospheres." But after hearing his 1997 hit

"Dealing With the Roster" from his first album, *Saturday Teenage Kick*, used in a fight scene in Wesley Snipes' *Blade*, he became intrigued. "I was so blown away at how it worked. I wanted to know more."

Holkenborg has always been surrounded by music, with a mother who taught theory to young kids, and also, like his father, played numerous instruments. "We would always make music together in the house," he recalls. He got his first toddler drum kit at age four, becoming proficient in drums, guitar and bass by 13, and working in a music store selling—what else—synthesizers at 16. His mother imparted something else, though, which had an impact. "She also taught classes at night for kids who came from more unfortunate families that didn't make that much money. One-on-one lessons, even in the '70s, were still a fairly expensive thing. I never forgot that."

Electronics were always around, too, Holkenborg making his own printed circuit boards and building his own amplifiers and pedals from childhood. While still a teenager, he volunteered at a radio station, assisting with engineering.

After becoming enamored of the likes of Trevor Horn as a teenager, as well as Steely Dan, Quincy Jones, The Who and Pink Floyd, Holkenborg began recording himself. "When I was really young, those were all super-inspirational to me—records that were really well-produced. The way those records were put together was like ear candy to me. But then I started to appreciate bands with shitty production, but had fantastic music. Because that sound, very low-fi, became a tool of its own."

For his first "multitrack" recordings, at age 13, he used a pair of cassette players and a mixer he had built himself. The results were noisy from ping-ponging back and forth, but like many young players of the time, he eventually got a Tascam 4-track cassette PortaStudio, recording with a DX7, a Rev 5 and a DMX drum computer ("plus a lot of guitars"). He landed at a local studio, assisting and then producing, with access to an Ampex 24-track tape machine and a DDA Profile mixer with Neve EQs, which he later bought. "That's when I really started to learn to engineer and record," he says. "And it's something kids miss out on today because you had to learn to quickly set up a mix from scratch. That's when you become a really good engineer."

After several years of making records, he was invited in 2000 by Jason Bentley, music supervisor on *The Matrix Reloaded*, to come to America to create the title song for that film with Depeche Mode's Dave Gahan. Though the track went unused, Bentley suggested he move permanently to L.A. "He said, 'If you're here, then you can start building your career as a composer. You can't do that from Amsterdam,'" Holkenborg recalls.

He made the move, and began meeting with studios (e.g., Warner Bros., which gave him a 15-second cue to do for *The Scooby-Doo Movie*) and, more importantly, composers. "I realized there was a long road ahead," he notes. In 2002, Harry Gregson-Williams invited Holkenborg to work with him at his studio in Venice, Calif. "I knew immediately, 'Wow, I need to learn a lot. This is not gonna be easy.' So I just decided to take a back seat in the bus and see how other people worked, and do tiny jobs. There I was, down in the cellar, chopping up audio files, while at the same time, I had a Number One hit worldwide in 24 countries [a remix of Elvis' "A Little Less Conversation"]. But I was willing to start from the ground up."

Besides creating loops, Holkenborg learned plenty just by watching Gregson-Williams at work, and after a couple of movies there, he began getting scoring jobs himself. In 2011, Hans Zimmer offered to make him part of the Remote Control fold in Santa Monica.

Holkenborg at his Cubase 9, cockpit-style workstation setup

"I really knew what I wanted to do with film scoring by then," Holkenborg recalls. "Hans said, 'Okay, what you need is two years of good monitoring and just seeing what I do, and then you're ready to go.' But it wasn't so much things on the music level; I had that down. It was that last 10 percent that I really needed to learn—how to deal with the politics with a studio and how to deal with a director. That's what he showed me, because these big movies, which Hans and I worked together on, were the NFL, the big leagues." It didn't hurt that the two had a love of electronica in common. "We're both nerds," Holkenborg laughs. "I can send him a picture of a synthesizer at 1 a.m., and then, within 10 minutes, he's sending me something back."

The two worked together until 2013, Holkenborg helping out with certain cues for Zack Snyder's *Man of Steel*. The director had such a strong connection with Holkenborg that, when things didn't work out with the original composer for his *300: Rise of an Empire*, he asked him to take the reins—and create a new score in 23 days. Since then, with the exception of last year's *Batman v Superman*, for which he and Zimmer shared composing duties, he has been on his own.

SCORING BIG

While he only had a scant few weeks to create the score for *300*, Holkenborg says the lead time a composer will have to build a score can vary from picture to picture and director to director. "If you've worked with the director before, the next time you come in will likely be before they even start shooting, because you've become friends. But when you work for the first time with a director, you can be brought in as early as five or six months before the movie is done, or as late as three or four weeks before it's finished. Sometimes they can't focus on finding the right composer, so they keep working with a temp score until the latest moment."

Temp scores can be an issue, he says, particularly if they've been in place for a while. "If you get a film really late, everybody's completely in love with what they've been hearing for months and months. When that happens, the solution is to come up with something that is so incredibly strong that people just forget about the temp score altogether. The other thing I do is make sure that when they start editing the movie, they already have a lot of

Holkenborg's infinite-source studio setup, with modular synth detailed in inset.

film *Tomb Raider*, he may never see any footage, just the script. He will develop themes and sketches based on the vibe of the scenes as he reads them, along with conversations he has with the director. "You have to listen to a whole story that's being told to you by a director, and, at the same time, process all that information. And when he's done talking, come up with a solution—right away," he explains.

Directors may not speak the way a composer will understand it, so he has to be a good interpreter. "It's not a visual language, like you'd expect. They speak a character language. They talk about what a character is and what they're feeling in a scene, what the emotion is. Eventually, you start to understand what the musical equivalent is of what they're saying."

Holkenborg won't do what one might expect—start at the beginning of the film and work his way through. "I start from scratch, just create sketches, building a suite, from

music that is mine, especially written for the film, so they can start editing with that. That's the only way to beat it."

For some projects, he might visit the set, though for others, such as his current

which I'll take things out of it to craft a film score. I make long pieces of music and then send them to the director and ask, 'Do you recognize your movie in this?' When they say, 'Yes,' then I move forward. I'll then ask the director, 'What's the most important scene for you?' For a superhero movie, usually, that's the Third Act, the final fight or something. I'll tell him, 'Okay, I'll take that one on.' I'll work on it for a week or so, and show it to him."

55TEC · Beijing, China

His score for George Miller's *Mad Max: Fury Road* features plenty of everything: lots of loud, raucous music to work in tandem with Miller's wild ride, but then follows with a touching orchestral piece when Charlize Theron's Furiosa locates what's left of the "Many Mothers" clan she's hoped all her life to find. "Most of the movie is just an insane amount of chaos that is so far removed from what we think is normal," Holkenborg says. "Then, when they arrive in the desert, they can just take a breath for a second and become humans again, and interact like humans. So it made sense to completely shift to something else."

The score is indicative of a scoring approach that Holkenborg has embraced, and perhaps championed, one in which the composer and supervising sound editor—Oscar-winning sound designer Mark Mangini, in this case—work together to create a sound field which, in a way, marries the two disciplines. "For a lot of movies, it's not until you get to the final mix on a dubbing stage that the sound designer is hearing what the music is and the composer is hearing what the design is. They're both hearing it together for the first time and thinking, 'How do we make sense out of all this?'" the composer notes.

For *Mad Max*, he and Mangini worked closely together, Holkenborg spending more than three months in Sydney composing and interacting with his counterpart. "We were both there in Sydney, and we had breakfast every morning and a beer every night," says Holkenborg. "We had a bed of what we both did, and then would get together and say, 'Okay, what are you doing? What am I doing?' We would talk a lot, try stuff out.

George Miller wanted really interactive music and very big and annoying, so to speak. So we had to coordinate. 'Hey, what if in this shot, we drop the engines and make the music a little louder, and the next shot, we take the music out and make this a little louder.' It's a lot of give and take, and it takes true collaborators to make it work. It was incredibly effective."

On session day on the scoring stage, though he has occasionally recorded his own scores, Holkenborg most often will make use of a skilled scoring mixer, like veteran Alan Meyerson, as on his recent score for *The Dark Tower*.

His preference is to make orchestral recordings in sections, rather than track the entire orchestra at once. "I have to, for a couple of reasons. I'm not writing a score like *Star Wars*, where the music is written for the orchestra to play off each other, and a riff is being passed around from the strings into the flute into the clarinets. If you record everything at the same time, yes, you get that live feeling, but I usually shoot myself in the foot, not being able to control individual sections in the mix."

Mixing is somewhat of a favorite pasttime for Holkenborg, a task he prefers to do himself, at his home studio. "That's my favorite process," he says. "I just take the drive home and mix the whole thing here. For me, mixing is really relaxing. I can spend 12 or 14 days just mixing a whole score, and just noodling with plug-ins."

Pieces of his mockups often end up in the final mix. "If it's a massive action movie, samples in the string and brass mockups that I use for demos are always in there with the live players. The live string players,

for instance, are very much defined, 500 Hz and up, and the samples are more defined in the lower frequencies. So I'll roll off everything from 500 Hz up on the samples, and everything below that on the live strings, and combine them. You get this really interesting texture, and lots of power, without it ever sounding artificial—just bigger."

SPREADING THE WORD

There at his home studio, Holkenborg has young composers whom he mentors. "It constantly changes," he explains. "They work for a period with you, and then either want to go somewhere else or feel that they're ready to go on their own. I just like to make sure that when people leave, they're really ready to take on the world."

Assistants will spend the first few weeks with him, getting to know his composing template inside Cubase 9 (as well as sampling software Vienna Ensemble Pro), containing hundreds of samples. "They'll look at sessions that I've done, see how the mixing and programming are done, how the whole piece of music works as a piece of music. Then, step by step, I slowly integrate them into the process, without too much stress. I want them under my safe umbrella, so they feel like they can be creative."

Emily Rice, a recent arrival, works in her room, making her own music within the template. "We're just testing her out, on a personal level and on a musical level," he explains. Aljoscha Christenhuß and Antonio Di Iorio, meanwhile, two veteran assistants with Holkenborg, are busy creating new sounds to add to the template's library in another room

in the house. And another assistant, Alex Ruger, tends to the technical maintenance of the studio.

It's a given, he says, that when someone arrives to begin an assistantship, they are already a talented composer. There are plenty of other things to learn. "There are deadlines you need to manage. You need to manage people, and you need to manage expectations, with the studio and with the audience. You need to learn how to communicate with a director. And you need to withstand a shitload of criticism and pick yourself up again. You need to be a problem solver, not a problem creator. And that's what I try to teach them."

Holkenborg's education program doesn't stop there. For the past two years, he's made video tutorials, "Studio Time," available for free at his website, www.junkiexl.com. The videos cover everything from composing for strings, how to use/program a modular synth, producing guitar effects, mixing and more. "I had run a four-year course of study in Holland for a music university there for eight or nine years, and when I quit that in 2015, I was thinking, 'What next?'" After brainstorming with his manager, he decided to offer tutorials online and make them free, paying for their production himself, with no sponsors.

"These kids are obviously highly educated people. I never show them what they should do; I show them how I do it. That's what I learned from all of the composers I worked with—Hans, Harry, Klaus Badelt. When kids from USC graduate a master class in film scoring and start here, they're really just beginning; you're not done learning. Then there's another road of 40 years that you can learn. It just never stops." ∎

FORMOSA GROUP
BUILT ON TALENT, ALL ABOUT SOUND

By Tom Kenny

Stage 1 at the new Formosa Hollywood, where the *Game of Thrones* mix team wrapped up Season 7 in mid-August.

Photo: Linus Shentu

Formosa Group moves fast. Even by Hollywood standards, where the semblance of a small town can be put up in a morning and torn down at the end of a day, Formosa Group moves fast. Not randomly, not without direction. Just fast, and with a vision.

In the past 10 months, Formosa has opened five new re-recording stages and about 30 new editorial rooms, built from scratch in two new locations, to support the launch of a new broadcast/televison division in January 2017. That is in addition to the previous three years of refurbishing existing stages and rooms in Santa Monica, upgrading three stages and editorial on The Lot in West Hollywood and outfitting a building down the street for Oscar-winning sound supervisors Mark Mangini and Per Hallberg/Karen Baker Landers.

Oh! Plus, the formation of five divisions, five pillars of sound: Feature Film, Interactive, Music, Commercials and now Broadcast. From zero to 200 employees, roughly half of them editors and mixers. Four years ago, Formosa

Group was simply an idea that was being tossed around by industry veterans Bob Rosenthal and Matt Dubin—an idea based on talent, not facilities.

"We didn't build this company based on market," says Rosenthal, Formosa founder and CEO, whose background is in finance but whose heart is in entertainment. "We built it based on relationships, and the people we had strong relationships with were feature film supervising sound editors and mixers. That gave us an opportunity to build a brand and create excitement.

"People who committed early on—Mark Mangini, Odin Benitez, Martyn Zub, Mark Stoeckinger and a few others—they committed before we built out the environment, before we had acoustically treated walls," he continues. "They believed in the idea of what we wanted to do as much as the reality of it."

The idea of an independent audio post-production company serving high-profile projects, amid the web of film studios with their own sound departments, is not new. The rise and fall of independents has been

Bob Rosenthal, Formosa Group
founder/CEO

Matt Dubin, EVP of Formosa Group

part of the industry cycle since the 1950s, from Ryder Sound to Todd-AO to Soundelux, Weddington, Skywalker Sound and others. What's different this time is that Formosa started with the assembly of a large and diverse collection of talent.

"The idea is that if you attract the creative talent and make something they want to be a part of, the rest will follow," says Formosa Executive VP Dubin, who first worked with Rosenthal at Todd-AO Lantana in 2008 when the latter was president of CSS Studios. "Our belief was that the shift of the industry was a shift in the paradigm, and workflow was changing. More time was being spent on the editorial side, which doesn't mean that mixing is any less a vital part of the process. It's just that more is happening in the smaller rooms, in the editorial and the sound design portion of the process. Editors who might also mix. We made a conscious decision to focus initially on feature film sound supervisors. Those are the people we had relationships with."

To be fair, many of those relationships were already in place, and Formosa didn't suddenly appear from nowhere. Rosenthal, Dubin and VP of Engineering Bill Johnston were all part of the Soundelux-Todd-Liberty-Ascent-Discovery-CSS consolidation. Rosenthal left one week after the operation was sold to equity partners in 2012, and he saw where they were headed (i.e., closing stages, trimming resources). Dubin followed soon after. Then Johnston was let go in an early cost-cutting round.

Rosenthal and Dubin met up a few months later within the Picture Head/Audio Head footprint on The Lot, a historic Hollywood studio complex, and they began to engage supervisors, many of them former colleagues who were looking for a home. They also reached out across town, recognizing the need for diversity and fresh talent. The Lot, with three stages, an ADR stage, and 12 rebuilt editorial rooms, would be the base, with more to come in Santa Monica at the former POP Sound facilities.

Everything was humming along two years in. The interactive group had launched, Modern Music came over essentially intact under the leadership of Leigh Kotkin to form a music division, and there was an eye on television. But the five new stages were not in the original three-year plan. Neither was the new headquarters at 959 Seward. Things were just settling down when about two years ago Rosenthal received notice from

Stage X at Formosa NoHo, built primarily to go with the company's expansion into television editorial/mixing.

the Department of Water & Power that their facilities on The Lot would be razed in favor of residential power needs.

"It was a gut-wrench moment," Dubin recalls.

"It was awful," adds Rosenthal, who kept the threat and early negotiations private between him and Dubin. "We thought, 'Is this too much to overcome?' We had built a significant company by then, and had multiple facilities in multiple markets. I think that our diversification helped us with the ability to deal with a surprise like that."

All involved at the time credit Formosa Group owners—Barbara Glazer, Mike Greenfield, Tim Nett and Craig Murray, also owners of Picture Head/Audio Head—with having the vision and fortitude to move forward and find new facilities. So they did. Twice in one year.

"You have to give kudos to the Picture Head partners," says Johnston, Formosa VP of engineering. "Faced with this crisis at The Lot, they allowed us to do 959 and were in it wholeheartedly. And halfway through that, they said, 'Sure, build more in North Hollywood.' My jaw dropped. This just doesn't happen today. But they had a vision, and the *cojones* to pull the trigger."

Johnston is a longtime veteran in the trenches of independent facility construction and operation, working simultaneously across multiple rooms in multiple facilities from back in his early days at Soundelux. Once Rosenthal and team settled on 959 Seward as the new company headquarters (they have maintained three stages on The Lot), Johnston met with the architects the next day and began laying out the audio needs, in CAD.

"I've always liked medium-sized stages," Johnston says. "The building owners worked with us and were great. Things like, we asked them to dig down two feet in the front of each of the main rooms to get more ceiling height, and they did it! Without that two feet, you wouldn't get that size of screen, and it would have felt cramped. Now it feels right. It was an empty shell in October 2016, and we moved in January 2017. Then simultaneously we started working on plans for three more stages and a complete buildout in NoHo. That opened officially in June."

Johnston, a self-proclaimed master of 'value engineering,' has outfitted the main feature stages with Avid S6 consoles, keeping the TV rooms on Icon D-Control, which he says the mixers prefer. All rooms use RedNet I/O, Pro Tools recording and playback, and JBL 5532 monitors powered by Crown 8600 Series amps with BSS control. The editorial supervisor rooms, the backbone of the company, feature JBL 6332s with Crown amps. There isn't a patchbay in either new facility; it's all routers.

"We've gotten to a very concise and simplified workflow," Johnston explains. "You edit to Pro Tools, you dub to Pro Tools, and you play Pro Tools back on the stage. To get 64 channels of I/O is two rackspaces of RedNet, and they all hook up and network together. There really isn't a lot to these rooms anymore, whether MADI or RedNet. I've always been a guy who tries to simplify the process—put a lot of power in the right places. If you save money in one place, you can buy more plug-ins. Processing. That's where the power is.

"Also, we're first and foremost an editorial company, and largely mobile," he continues. "We have multiple facilities in multiple locations, and we have editorial teams that might pick up all their systems and move over to Fox or Warner or Sony for four weeks. We have to simplify the process."

Editorial teams are often mobile these days, especially at independent facilities that feed the re-recording stages on the studio lots. When setting up the company, from Day One, Rosenthal and Dubin were aware of coming on too strong. It wasn't about them, and it wasn't about filling their rooms; it was about servicing the filmmakers.

That sense of community is something that many supervising sound editors and creative teams were looking for. Per Hallberg and Karen Baker Landers, an award-winning team for some 30 years, were early adoptees. "We were looking for a place where we would feel at home," Hallberg says, "with people we like and who understand what we need. Bob's goal has always been to make us comfortable and to be supportive, to give us that creative freedom. Decisions weren't based on the number of rooms you can pack in a hallway. It started with taking care of the talent."

"There's nobody better at talent recruitment and talent management than Bob Rosenthal," adds Dubin. "There are very few people in town that he doesn't know, or hasn't worked with. I have an interest and a similar path. My whole career has been in this vein of supporting the people who make the magic. Knowing that about Bob, I wanted to be a part of it." ∎

Photo: Linus Shentu

The new Formosa Group headquarters, housing admin and support services, as well as two TV stages and more than 20 editorial and design suites.

"We were sensitive to the fact that the studios have their own sound departments, and their own goals to use those facilities as best as possible," Rosenthal says. "But they also understand that this is a relationship-based segment of post-production. We have to be sensitive to the fact that the studios are clients, as well, so we need to collaborate with them where it makes sense. That was an early message. Collaborate with studios, and let the filmmakers decide who they want as a supervisor and what mixing team they want."

While the DWP disruption forced the company's hand, and they ended up making lemonade out of a lemon of a situation, the ancillary benefit is that it allowed them to centralize admin and support services, as well as bring more editors together under a single roof. From the beginning, Rosenthal and Dubin would talk about building a community of creative people who wanted to work together, wanted a home, from the executive team down to the runners.

The intense realism of 'Dunkirk,' from the soldier's point of view.

Credit: Courtesy of Warner Bros.

YOU ARE THERE
THE REALISM OF 'DUNKIRK'

By Blair Jackson

Christopher Nolan's critically acclaimed and popularly embraced World War II film, *Dunkirk*, has many grand and epic moments, as you'd expect. But really, the three story arcs that dominate his artfully fractured narrative are all intimate and personal sagas, so the sound crew, led by supervising sound editor Richard King, was charged with capturing not just the overwhelming cacophony of all-out war, but also the frightening intensity of each perilous, life-threatening moment endured by the major characters. There is almost no backstory and not much dialog. It's basically a two-hour white-knuckle ride into and out of the jaws of death—on land, on the sea and in the air.

"The goal in my mind was to put us in the place of those characters," says King, who has won Oscars for his sound work on two previous Nolan films, *The Dark Knight* and *Inception*. "I wanted people to be able to really feel what it was like on a stormy day on the English Channel, or in the cockpit of a Spitfire during a dogfight, or on a miserable, cold, windy beach. I looked for and found inspiration in the images and the way Chris told the story; his pacing and the way [film editor] Lee Smith cut it . There are big set pieces, but they all seem to revolve around the main characters. I wanted to make the audience participants in those massive events, and in the smaller more personal events, as well. Chris wanted to make it a first-hand experience for the audience."

King says his job actually began before shooting even started. "The script gave me a good idea of the sort of sounds we'd need, so we started recording things here [in the L.A. area], with John Fasal and Eric Potter and others, but also a lot overseas. For the recording of the planes, we were looking for owners and pilots who would be willing to really push the planes, and that was difficult. There are only a couple of hundred Spitfires left in the world that still fly, and collectors and museums own them all; they're obviously valuable historical artifacts. But we did find a couple of owners and pilots who were keen to push them, so we got that underway.

"We also wanted to find pre-War boats that had diesel engines, which were what was used commonly in Europe; here, pre-War, most boats had gasoline engines. So I had a number of people searching all over Europe for one- and two-cylinder diesel engines that had that unique, quaint *chuggida-chuggida* sound. John and Eric recorded some anti-aircraft guns. We recorded a lot of material, and then even more as we were editing and making decisions. Oh,

and surf!" he quickly adds with a chuckle. "We recorded so much surf."

Most of the recording was done using Sound Devices rigs—"which are pretty much the standard at this point," King notes, "and a wide variety of microphones for different applications. In the Spitfires, for instance, some of the mics had to be wired up into the engine compartment. They pulled all of the engine cowlings off, and I had studied diagrams of the plane and had ideas of where I thought we should try to place mics. They ended up placing anywhere from 22 to 25 microphones throughout the plane, including running them up to the supercharger and the air intakes, and each of those mics sounded quite different, so I was able to 'tune' the sound of the plane based on what was happening in the shot."

The FX predub was done in the box using Pro Tools, and then the main re-recording mix happened on Stage 9 at Warner Bros., on a Neve DFC, with Gary Rizzo handling dialog and Gregg Landaker taking on FX, Foley and music. King notes, "This was Gregg Landaker's last mix; he retired after this one. Not because of the movie!" King laughs. "It was long-planned, and after a much-storied career of a number of Oscars and wonderful films, this was his swan-song."

This is a film where, sonically, everything feels as if it's been turned up to "11," and certainly Hans Zimmer's relentlessly propulsive score is a large part of the equation, too. "How the music was done was unique in my experience," King says. "The score didn't come in at the end. There was an evolution from the very beginning of their cut, and then throughout; just like with the sound effects. It was all experimentation and trying different things and pushing, pushing, pushing to amp up the intensity and really try to make an unbreakable thread from the beginning to the end in all the sound realm. Chris wanted the movie to go at breakneck speed to reflect imminent danger at all times—if you stop for a moment, you're certainly doomed! It's constant movement forward. So the idea of the pulse, and music as the heartbeat of the movie, was something he was interested in really early.

"There were certain times Hans and I had to keep up with each other, in terms of the intensity, because I was also pushing everything to try to make the sound have as strong an impact in the moment, too. It all came together quite miraculously in the end. It was a bold and challenging idea, and Chris made it work and he inspired all of us to make it better." ∎

'BORN IN CHINA'
BARNABY TAYLOR'S SCORE CAPTURES DRAMA OF THE NATURAL WORLD

By Gary Eskow

The documentary film *Born in China*, a Disneynature collaboration with the Shanghai Media Group, captures the journey of three animal families—snow leopards, monkeys and pandas—who live in the majestic wilds of that country. The plum assignment of scoring the filmmakers' epic footage fell to Emmy Award-winning composer Barnaby Taylor.

A UK native, Taylor spent his early years in New York; the contract his father, singer/songwriter Allan Taylor, signed with Universal brought the family to the U.S. Taylor studied piano from an early age. He felt he lacked the chops to set out on a performing career, but he loved to tinker with ideas and his passion for nature films would ultimately intertwine with his musical creativity.

"I have a deep love for the natural world, and growing up I was addicted to [TV series such as] *The Undersea World of Jacques Cousteau* and David Attenborough's *Life on Earth*," says Taylor.

Taylor landed jobs in the BBC's production department and for Icon Films, located in Bristol, England. While doing research and production, he came into contact with composers who were scoring these projects. Eventually, his talent and those contacts helped him to snare composing assignments for a number of natural history films, including *Frozen Planet: On Thin Ice*, which won a Music and Sound Award (MASA).

"I suppose I've become known for scores that capture a place or a culture. I do a lot of research and love working with local instrumentalists and performers," Taylor says. "I've recorded in places such as Bangladesh [for the BBC film *Tiger Hounds*] and Kenya [for the series *The Great Rift*]."

Taylor became fascinated with Chinese music in 2009, when he was tapped to score the film *Wild China*, which won a News & Documentary Emmy Award for Outstanding Individual Achievement in a Craft: Music and Sound. A long-standing relationship with producers Phil Chapman and Brian Leith, who also worked on *Wild China*, led to Taylor's introduction to filmmaker Lu Chuan. After submitting a reel to Disney the composer was awarded the job of scoring *Born in China*.

Now back in the UK, Taylor says that the process of communicating with creative and production personnel sprinkled across the globe presented some problems on *Born In China*. "It was pretty intense, working
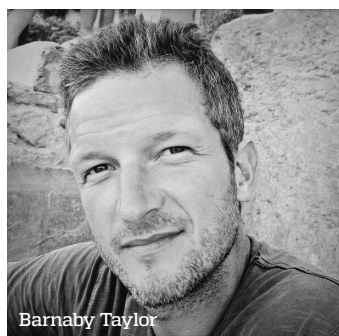
Barnaby Taylor
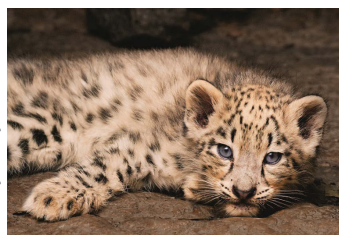
Courtesy Disneynature
Barnaby Taylor composed orchestral music for Disneynature's epic film.

across so many time zones," he says. "I would wake up to comments and feedback from China, work on the issues that were raised, and get my work ready in time for the start of the workday in Burbank!

"I find music speaks across language barriers, and it was good to find our groove with the animal characters. There's always a scramble to get everything ready for the recording sessions but these went very well, and I've had great feedback."

Taylor records his orchestral scores in large facilities—preferably, Abbey Road—but maintains his own project studio as well. Like many other film composers he uses a workstation that combines Pro Tools as a recording platform with Logic serving as a front end. He favors a pair of Adam A77X speakers controlled by an SPL 2381, and his favorite plug-ins include products from Waves, Softube, Kontakt and PSP. The piece of outboard gear he leans on most heavily is his Manley Stereo Variable Mu limiter/compressor.

Although Taylor employs orchestrators to flesh out his scores, he says that handing over his work to an arranger is the among the last of the many steps he takes on the journey to produce a score. "For me, the work begins long before I involve an orchestrator," he says. "I do a lot of research, and a lot of listening. I get the script early, way ahead of the edit, and spend time reading and walking over to the piano and writing down or recording ideas on my phone. In the vast majority of cases, these first ideas make it into the score, or—worst-case scenario—stop me from going down a dead end!"

On *Born in China*, Taylor worked with orchestrator Alastair King. Using a combination of sample libraries that include material from Vienna Symphonic Library, Spitfire and others, he prepared mockups. When the mockups were approved by the director, Taylor would send MIDI files, MP3s and notes to King.

Taylor's finished orchestral score for *Born in China* is whimsical, emotional, and grand, with Chinese influences and musical moments of tension. And now the composer is moving on to two Netflix projects that relate directly to *Born in China*: *Ghost of the Mountains* and *Expedition China*. He's also working on a world music library album for Red Bull, and one rather unusual project. "Toward the end of the year," Taylor says. "I'll be scoring a David Attenborough film about… eggs." ■

PRODUCTION PLUG-INS FOR GUITAR-CENTRIC SOUND DESIGN

BY STROTHER BULLINS

I often collaborate with colleague Rich Tozzoli on pro audio product reviews. Rich is an award-winning, Grammy-nominated producer, engineer, composer and sound designer for television, contributing short songs, soundscapes and more to programming such as FOX NFL, NBC's Rio Olympics broadcasts, the History Channel's *Duck Dynasty, Counting Cars* and *Pawn Stars*, among others. One of our ongoing conversations revolves around cool and∕or new plug-ins that make his life easier, as Rich—being the prolific guitar-centric composer he is—constantly searches for new sonic tones as he continues to broaden the scope of his work.

"In a lot of the score-to-picture work that I do, I use sound design with the music," Rich explains. "In other words, I often consider my music and sound design to be one and the same. Whether it's a videogame-related piece—and especially sports sound—sound design elements are used with music. Being that I do both, I can integrate them together for overall effect. If I'm asked to break them out, I will break off my mental space and look at it as, 'Oh, this is just sound design; this is music.' But I think that the entirety of the sound is integral to any scene."

When presented with the idea of featuring a short but carefully curated list of superb plug-ins for sound design, I turned to Rich to discuss his favorites, those digital tools that are always just a click away, allowing his fingers to create nearly any sound he can dream, via guitar. In turn, I offered him a few new ones to check out, too.

Below are the plug-ins we discussed, listed in alphabetical order by manufacturer.

Audionamix ADX TRAX Pro
ADX TRAX Pro features Audionamix's patented audio source separation algorithms, allowing nondestructive spectral editing and processing. As such, ADX TRAX is used for vocal isolation and instrumental creation.

In discovering Audionamix at the last AES show in New York City, Rich was impressed, if not just a bit skeptical at first. "ADX TRAX Pro allows you to raise or lower the level of a vocal or solo instrument in a mono or stereo mix, without the multitrack… but sure enough, it works! It now also allows MIDI imported as a Pitch Guide, and it has multiple bit-depth and sample-rate compatibility."

Avid SansAmp PSA-1
Featuring amp emulation, harmonic generation, speaker cabinet simulation and equalization tone-shaping options, the SansAmp PSA-1 is perhaps Rich's favorite Avid plug-in.

"Believe it or not, I rely on Avid's SansAmp constantly; it drives things in a unique way," Rich says. "It has buzz, punch, crunch and drive. I'm actually looking at it right now. I use it like an equalizer. It's even so good that I bought the hardware."

Eventide Blackhole
First available in Eventide's DSP4000 hardware effects unit, this ambient reverb for guitar and keyboard is inspiring for many users, including Rich. "It's gigantic, a sound designer's treat," he explains. "I use gravity and size parameters most often."

Notable features of Blackhole include more than 50 presets, many of which were created by Eventide artists; "Supernatural" settings (e.g., abstract spatial effects and drones); "Gravity" control, a reversal of "the arrow of time" via reverb decay inversion; Kill Switch for muting input, leaving only reverb; and more.

iZotope De-reverb
Part of iZotope's RX Audio Repair Software package, De-reverb is designed to reduce reverb components surrounding source audio, and is one of Rich's favorites to use when noise gates, etc., are not sufficient for specific tasks.

"It's cool," he notes, "If there's a sample I'm using that has too much reverb, I'll just suck all of the room out of it. I use impacts all the time; if I don't particularly like the reverb of the impact, I can use De-reverb, then use my own reverb choice."


Line 6 Helix and Workbench HD
"Line 6 is always in front of my face, and—as a guitar tool—you'd think it would be a tricky thing to talk about when it comes to sound design," explains Rich. "But it's not. Guitars can be effectively used in sound design, which is what I do. I use the Workbench HD and Helix software; the latter allows me to go in and trigger and tweak all

the sounds of my outboard Helix [hardware unit]. The Workbench HD allows me to change my Variax guitar into anything—from a sitar to an acoustic 12-string."
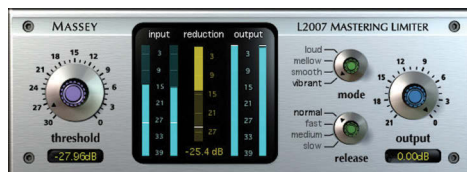
Massey Plugins L2007 Mastering Limiter
The affordable ($96 direct) L2007 Mastering Limiter from Massey Plugins is a superb go-to, mastering-grade, look-ahead brick wall limiter, one that Rich applies to nearly everything he produces.

"Though I use the Massey DRT drum replacer all the time, that doesn't necessarily relate to sound design, though I mention it because it's so good," he says. "But the Massey L2007 Mastering Limiter is often the last thing in my production chain. I think that Steven Massey is incredible, and his stuff is fantastic."

McDSP 4030 Retro Compressor
The 4030 Retro Compressor from Colin McDowell's McDSP is a dynamic-range controller paired with wet/dry mix control, allowing balance of compressed and uncompressed signals, plus active attack and release parameters. As part of McDSP's Retro plug-in collection, the 4030 Retro Comp provides an output stage topology to eliminate digital clipping; overall, this produces a smooth and pleasing distortion characteristic.

"McDSP's 4030 Retro Compressor can be anything," Rich notes. "That's why I like it. I also use Revolver, their convolution reverb." The unique Revolver provides complete impulse response control, dedicated and routable EQ, two sync-ready delay lines, reverb decay crossover network, and stereo imaging.

Sonnox Envolution
Envolution from Sonnox is a frequency-dependent envelope shaper featuring separate transient and sustain sections. It is designed to sculpt the envelope of nearly any sound source dramatically, allowing tilt and parametric-style focus modes to choose the affected frequency bands. From individual tracks to master bus or output applications, Rich attests that Envolution is an incredibly creative tool.

"The most useful sound design tool that I use, along with iZotope's De-reverb, is the Sonnox Envolution plug-in," he says. "It's almost like a super-gate or great to enhance, for example, an impact sound, pushing it to create a monster effect, just using two knobs—Transient and Sustain."

Soundtoys 5
Featuring 20 useful effects tools for a wide range of applications, Soundtoys' affordable (currently $399 street) Soundtoys 5 collection features standout effects such as Primal Tap, Little AlterBoy, Radiator "and, most importantly, their Effects Rack," notes Rich. "With it, you can drag-and-drop your own Soundtoys custom effects chain and even lock them all to a master tempo. Talk about endless creative possibilities! It's all in there."

Universal Audio Thermionic Culture Vulture

Billed by UA as a "singular, enigmatic piece of all-valve boutique hardware," Thermionic Culture's Culture Vulture is a hardware unit modeled by UA for DAW-based users everywhere, providing many thick, rich and complex distortion tonalities to liven up virtually any sound source.

Rich loves Culture Vulture as a deep well of distortions. "It offers three key parameters—bias, drive and distortion type," he explains. "You can drive signals to kingdom come with crazy, saturated and almost clipping distortion, which is truly unique. I use it to add grit, somewhat like I use the SansAmp PSA-1. For example, I use [Heet Sound Products] EBows all the time [a monophonic handheld electromagnetic string driver, or 'electronic bow'] for 'uncomfortable' sounds. That, paired with the Culture Vulture, I can make you feel very uncomfortable with that combination."

Waves Dorrough Meter Collection and PAZ Analyzer
Alongside useful Waves plug-ins he has used over the years, Rich insists that some of his favorite Waves tools for sound design are on more of "the technical side" of creativity, notably the company's Dorrough Meter Collection and his favorite analyzer, the PAZ. The PAZ Analyzer generates a real-time visual representation of stereo positioning, frequency spread and peak/RMS levels. Key features include Position, Frequency and Meter components; Real-time vector display with zoom; optional resolution in 10Hz steps for detailed LF analysis below 250 Hz; and more.

"Often, sound design has lots of low-frequency, low-impact sounds that you may not easily hear—especially when working from a mobile system—but you can see them on the PAZ analyzer," Rich says. "I will use that on my master chain. If I isolate a particular sound design element and it has way too much bottom end in it, I can see it. It's an invaluable tool." ∎

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MIX REGIONAL:
PACIFIC NORTHWEST

Studio owner John Raham plays drums with Matthew Rogers of Harpoonist and the Axe Murderer

Photo: Jodie Ponto

L-R: Douglas Jenkins, Karen Schulz-Harmon, Diane Chaplin, Collin Oldham

THE PORTLAND CELLO PROJECT AT JACKPOT!

Among the many projects that Jackpot! owner/operator Larry Crane is juggling is a forthcoming album by the Portland Cello Project. Crane has been working with the PCP for more than ten years, tracking and mixing their studio sessions as well as advising founding member Doug Jenkins, who records some of the musicians' parts in various locations.

The PCP is a versatile group with diverse tastes and collaborators. Their melancholy 2014 album *to e.s.* pays tribute to the late singer/songwriter Elliott Smith. They rose to Beck's challenge in 2012, joining with various guest vocalists to create roots-music arrangements on *The Portland Cello Project Play Beck Hansen's Song Reader*. Their new album will be a jazz release including appearances by bass player Damian Erskine and drummer Jeff Anthony.

"Many of these records are recorded in parts, though some simpler arrangements are performed as quartets and such," Crane explains. "Many are tracked by Doug on his own, but complicated stuff I end up doing."

Crane tracks the PCP to his Pro Tools HD12 system. "A pair of old Gefell M582/M62 small-diaphragm tube mics almost always get used for ensemble recordings," he says. "So much so that Doug bought a pair, too."

"It's become a pretty consistent general philosophy for the tracking," Jenkins says. "If the arrangement is for just cellos and orchestral instruments, it usually all goes down live. If there are other instruments involved, it goes down in pieces. For solo and lead parts, if it's really focused-sounding, like Nancy Ives' Chris Dungey cello, it tends to be whatever ribbon sounds right. If the cello has a looser tone, where the charm is in the overtones—like Diane Chaplin's 1740 Testore—it usually ends up being whatever U47 or copy that is sounding good."

"The new record has a number of songs with full rhythm section," Crane says. "Bass was direct through an A Designs REDDI [direct box] to a Retro 176 [limiter]. Drums: Overheads were a Telefunken M260 pair. Kick was EV RE20, I think. Toms were Shure SM81s. Snare mic—possibly Shure KSM8. Mic choices are incredibly personal to me, and I swap out fast if I hear something I don't like.

"The basic tracks went down with one cello by Skip von Kuske and two guide cellos in the control room that were replaced later. We wanted to get the drums and bass mostly. Players had charts and it all went down fast. Then we overdubbed a trio of cellos and that was only a few hours. Doug has a lot of overdubs and comping to do!" ∎

Afterlife Studios Builds on Mushroom Studios' History

For 40 years, Mushroom Studios in Vancouver developed an international reputation for groundbreaking projects, beautiful acoustics, and a great rock vibe. In the 1970s, Mushroom was associated with seminal recordings by BTO, Heart, Queensryche and others.

In 2006, then studio owner John Wozniak sold the facility and gear to Rob Darch, who operated the facility as Hipposonic West for four years, until he sold the building to investor Jason Goto. Darch moved all of his gear out, and the Vancouver music community sadly assumed that the former Mushroom rooms would be absorbed into some sort of condo or retail development. However, Goto—a musician himself—surprised everyone by keeping the facility intact, under the leadership of producer John Raham, who now operates the rooms under the name Afterlife Studios.

"Jason and I really wanted to keep the classic feel of the room alive, including the three reverb chambers," says Raham, whose production MO is well-suited to the historic facility: "I started working on this side of the glass when digital made it possible for more people to get into recording, but ever since, I've been moving backwards in time to where I now do almost everything through my 16-track, 2-inch Ampex MM1200 tape machine, vintage Neves and my Studer console—all this gear that could be from the heyday of this studio."

"When people found out that this was a studio again, I got so many thoughtful letters," Raham continues. "People kept saying, 'I'm so happy that you're doing this.'"

Many of Raham's clients are too young to have memories of Mushroom Studios. Recent projects have included Frazey Ford and UK artist Passenger. However, some are iconic Canadian acts returning to make new albums, such as Barney Bentall, who recorded his debut there in 1987.

"People really love this room for tracking big-sounding drums because of its density. Every sound that's made, every frequency that's generated in this room stays in this room," says Raham, himself a drummer. "This place is built into the side of a mountain, which also makes for an unbelievably low noise floor, allowing me to record extremely quiet things like solo violin or minimalist piano—things I couldn't do well in my previous studio." ∎

Lisa Harmon of The Sweet Goodbyes

EMPTY SEA, SEATTLE

Michael Thomas Connolly has operated Empty Sea Studios for about nine years. His studio is built into a 1913 craftsman house in a residential neighborhood. "The house was a retail store for years before I moved in, so some walls were knocked down internally already," Connolly says. "I built a stage and put in a P.A. and lighting for live shows [capacity 40], and we've hosted around 300 of those over the years. But the bread and butter is making records."

Connolly, a musician as well as an engineer and producer, plays a variety of string instruments and keyboards, and often plays on the sessions he engineers and produces. "We recently had The Sweet Goodbyes here, as I produced their first full-length album. Amber Darland and Lisa Harmon both have great voices and powerful songwriting, and wanted to make an album that showcased those elements with some supportive backing instruments."

Connolly, a longtime Digital Performer user, mixes on an SSL AWS 900+SE analog console. "For vocals, Amber's focused tone with minimal air was a great match for the Lauten Oceanus [microphone], which seems to add 'wool' to any source while remaining tonally balanced. For Lisa, I was totally surprised that the Chameleon TS-1 with a large-diaphragm capsule won the mic shootout for her vocals—just one of those serendipitous pairings."
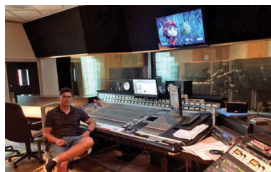
Photo: Jason Quigley
Tucker Martine

FLORA RECORDING & PLAYBACK, PORTLAND

Tucker Martine hosted Sweden's First Aid Kit in his Flora Recording & Playback Studio. Martine produced and mixed the sessions for bandmates and sisters Klara (vocals/guitar) and Johanna (vocals/keyboards/bass) Söderberg. The producer hand-picked a band for the sessions, including Wilco drummer Glenn Kotche. Also at Flora, Martine recorded and mixed his wife, Laura Veirs', latest album, *The Lookout*.

Phil Ek

AVAST STUDIOS, SEATTLE

Recent sessions at Avast include Grouplove recording and mixing with producer Phil Ek. Kesha worked on new material with producer/engineer Ryan Lewis. Fleet Foxes were in session for their album *Crack Up* with engineer Adam Burd, and Sylvia Massy taught a rock 'n' roll tracking class with Thunderpussy for Creative Live. The studio has also added new gear, including Burl Mothership converters in both control rooms, and two pairs of Pultec EQPM-1S3 and MEQM-5 Mastering Equalizers.

Producer Kaj Falch-Nielsen with Anna Katarina (left) and Aline Daigle of Rumour Mill

BLUE LIGHT STUDIO, VANCOUVER

At Blue Light Studio, Rumour Mill band was in recording their debut album with producer Kaj Falch-Nielsen. Vocalist Harrison Brome was working in Studio A, recording vocals with engineer Kenny Gourmet. And Vancouver noise-rock outfit American Space Monkey were in with engineer/producer Kyle Anderson, working on their latest album, *Crash Landing*.

Billal in session with engineer Vince Renaud

CREW STUDIOS, VANCOUVER

Singer/songwriter/producer Bilal visited Crew Studios with backing band The Modelos and engineer Vince Renaud. Andy Warren and Meagan Carsience assisted on the session. Bilal recorded the theme song for upcoming film *In God I Trust*, written by Paul St. Amand, and produced by Amand and Maja Zdanowski. Also at Crew, Flavia Nascimento and Itamar Erez recorded original duets.

Gus Berry

NETTLEINGHAM AUDIO, VANCOUVER, WASH.

In addition to serving as studio manager of Jackpot! in Portland, Ore., Gus Berry produces and engineers his own projects out of Nettleingham Audio. His recent sessions include mixing an Elmore James tribute in mono for producer Marco Giovino; artists include Patty Griffin, Tom Jones, Jamey Johnson, Billy Gibbons and others.

Wes Swales

KOKO PRODUCTIONS, VANCOUVER

KOKO Productions serves regional and international ad agencies, film companies and animation studios. One of the studio's recent productions was audio for *Beat Bugs*, an animated children's television series for Netflix, inspired by music of the Beatles. The program features 53 versions of Beatles' songs, performed by Eddie Vedder, Pink and Sia, among others. KOKO head animation engineer Wes Swales recorded the series.

It Gets Worse

MIRROR SOUND RECORDING, SEATTLE

Ska band It Gets Worse was in Mirror Sound Recording Studio, tracking and mixing their upcoming album via the studio's brand-new API 1608 console. Producers James Sweazea and Eric Stallard worked with their four-piece horn section. The sessions were tracked and mixed by engineer Ken Fordyce with assistance from Matt Loewen.

Tech // new products

FERROFISH PULSE 16 AD/DA CONVERTER

16 x 16 Interface with Plentiful I/O

The new Pulse16 AD/DA converter ($1,199) offers 16 channels of I/O using the most current generation of 24-bit/96kHz Cirrus logic converters. Features include 8 channels of 48 kHz ADAT Lightpipe operation and eight optical TOSLINK connections (4 in/4 out)—enabling support for 16 channels of 96 kHz digital audio when operating in SMUX2 mode. The 16 analog paths are always available, even when working at more than 48 kHz in SMUX2 mode. Also onboard are two TFT displays for detailed information on all 32 channels at a glance, wordclock and MIDI I/O for remote control. Any mono or stereo signal can be presented to the earphone output on the front panel.

SE ELECTRONICS SE8 MICROPHONE

Front-Address Condenser with Rolloff and Pad

The sE8 from sE Electronics ($599 matched pair) incorporates an extremely short, efficient signal path without the use of ICs or transformers. Features include two low-cut filters (switchable between 80 Hz and 160 Hz) and two pads (-10 dB or -20 dB). The mic can also be purchased separately and ships with a newly designed mic clip, mic stand thread adapter and protective windscreen.

EVENTIDE ULTRATAP PLUG-IN

Software Version of H9 Harmonizer

The UltraTap plug-in from Eventide ($79) is capable of rhythmic delays, glitchy reverbs, huge pad-like volume swells and extraordinary modulation. It's the perfect tool for creating drum fills, vocal choruses, swelling guitar chords and other evolving effects. Producers, engineers, sound designers and musicians will have loads of fun discovering its multiple uses.

MACKIE MR SERIES STUDIO MONITORS

Active Speakers Come in Three Sizes, Plus Sub

The MR Series is available in the 5-inch MR524 ($209.99), 6.5-inch MR624 ($349.99) and 8-inch MR824 ($559.99), plus the 10-inch MRS10 companion powered subwoofer. Three different acoustic space settings adjust for monitor placement close to walls or in corners. Plus, high-frequency EQ control for further adjustment to ensure an accurate response for your room. The included acoustic isolation pad decouples the monitor from the desk or stand for increased performance and accuracy.

PRESONUS STUDIO 26 AND 68 INTERFACES

Affordable I/O With Preamps

Both of PreSonus' new Studio 26 ($199) and Studio 68 ($299) USB 2.0 audio/MIDI interfaces record up to 24-bit, 192kHz resolution and feature PreSonus' XMAX microphone preamps, low-jitter clocking and MIDI I/O. The Studio 26 2x4 interface features two front-panel combo mic and switchable line/instrument inputs with +48V phantom power for condenser mics, L/R main outputs, and two balanced line outputs. The Studio 68 6x6 audio/MIDI interface offers two front-panel combo mic/line/instrument inputs and two rear-panel mic/line inputs. Both feature a Cue Mix A/B function while monitoring through headphones. Also included is PreSonus' Studio One Artist DAW software and Studio Magic Plug-in Suite for Mac and PC.

RTW TM9 TOUCHMONITOR FOR LAWO

Precise Metering for mc2 96 Grand Production Console

RTW's TM9 has been seamlessly integrated into the surface of Lawo's mc2 96 Grand Production Console. The TouchMonitor has been customized according to Lawo's requirements, including support for all relevant standards, such as SMPTE 2110, AES67, RAVENNA and Dante.

SCORING THE SCREEN

Book Offers Insider's View Of Iconic Film Music

Scoring the Screen ($34.99) from Hal Leonard Books offers a view from inside the process of scoring-to-picture. Author Andy Hill is a Grammy Award-winning motion picture music producer who served as VP of music production for Walt Disney Pictures. Chapters include score examples and analysis of classic film music, including Bernard Herrmann's music for *Vertigo*, Elmer Bernstein's for *To Kill a Mockingbird*, Don Davis' for *The Matrix* and Danny Elfman's for *Alice in Wonderland*. The book offers a "reverse score" of the picture, working its way back from the finished product to the composer's first note.
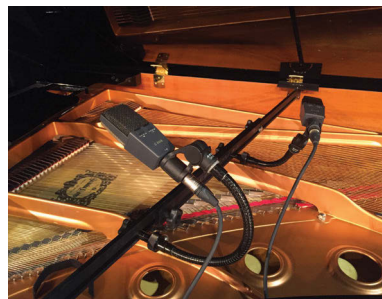
MIRIZIO MICROPHONE MOUNT

Grand Piano Recording With The Lid-Closed

The Mirizio Mic Mount ($339) simplifies the process of mounting microphones in a grand piano with the lid closed. Features include two felt-padded, aluminum, swiveling end plates that safely rest on the inside piano without the need for drilling holes. A pair of slotted rails easily adjusts from 37 to 62 inches, allowing the mount to span the case of any grand piano. Two custom mounting bolts attached to the rails may be moved to any position, enabling the user to focus the microphones precisely where they want.

New Sound Reinforcement Products

NEXO GEO M10 LOUDSPEAKER

Compact, Lightweight Monitor Delivers Sonically

The Nexo GEO M10 ($3,449)—just 21 inches wide and weighing 46 pounds—combines patented technologies with advanced DSP control. The 'no loose parts' rigging creates a compact, powerful, wide-bandwidth module that's quick and easy to deploy in flown arrays or ground stacks. Features include a 1.4-inch titanium diaphragm HF driver with a single Neodymium-magnet 10-inch driver that promises to outperform much larger, dual-driver designs. With a maximum SPL of 131 dB, GEO M10 is twice as powerful as its sister system, the GEO M6.

MARTIN AUDIO XE SERIES STAGE MONITORS

Low-Profile, Overlap-Reducing Dispersion

The XE Series stage monitors from Martin Audio ($ OnRequest) are low-profile enclosures featuring Martin's Coaxial Differential Dispersion technology and patent-pending third static waveguide. The XE300 (1 x 12-inch LF) and XE500 (1 x 15-inch LF) delivers a defined coverage pattern, allowing the artist freedom of movement while reducing overlap with adjacent monitors. The XE Series is designed as a complete system and is partnered with the new iKON 4-channel amplifier.

FULCRUM ACOUSTIC CCX1295 LOUDSPEAKER

12-Inch Subcardioid, Passive Design

The CCX1295 12-Inch Subcardioid Coaxial Loudspeaker features a single 12-inch 90x45-degree horn-loaded woofer and a 3-inch compression driver in a compact enclosure. The passive subcardioid coaxial loudspeaker provides 9 dB of low-frequency attenuation in the rear hemisphere. Unlike conventional designs that trade low-frequency directional control for compact enclosures, Fulcrum's Passive Cardioid Technology enables the CCX1295 to achieve excellent LF/HF control for a product of its size. The CCX1295 will soon be joined by 12-inch models offering a full range of horn patterns.

RADIAL DAN-TX AND DAN-RX

Two-Channel Dante I/O

The Radial DAN-TX ($399) features ¼-inch, RCA and 3.5mm inputs, with a single Ethernet output allowing you to connect any analog device to your Dante network. It provides a thru connection for a stage amp and includes a trim control that provides ±10dB of gain. Balanced signal levels up to +24dB can be accepted without distortion. The DAN-RX ($399) is a 2-channel Dante receiver accepting balanced analog audio at any point on a Dante network. Dual XLR outputs provide connection to a mixing console, amplifier or powered speakers to route audio from FOH to the stage, or to remote rooms within a venue with separate P.A. systems. A 3.5mm headphone output with level control is also provided to test audio or monitor locally.

By Brandon T. Hickey

Tech // reviews

APOGEE ELEMENT 88

Thunderbolt Interface With USB Control

The optional USB control interface puts the Apogee Element Control software under your fingertips

Last year I reviewed the Apogee Ensemble, a well-thought-out, feature-packed Thunderbolt 2 interface. The new Element Series was designed to take this even further, incorporating analog components on par with those of the Ensemble, an improved software mixer, and a price that targets engineers and musicians for whom the elite Apogee line may have been just out of reach.

On the front panel are eight Neutrik input connectors—four XLR/TRS combo jacks, able to accept mic, line or instrument-level signals, and four standard XLRs—a pair of headphone jacks and a power indicator. That's it. The back is similarly simple, having a pair of XLR outputs, a pair of ¼-inch TRS auxiliary outputs, and two pairs of TOSLINK connectors (two for input, two for output). These optical connectors allow a maximum of eight inputs and eight outputs but are doubled to allow this full I/O count at SMUX 24-bit/96kHz rates. Power, wordclock I/O and a single Thunderbolt connector complete the back panel.

Unlike most all-in-one interfaces, there are no buttons, switches or knobs on the interface itself. Likewise, there is no display, nor are there meters, or even signal indicator lights, apart from power. But there is a new proprietary software mixer, Element Control, and an Ensemble and an Element can be ganged together on one system, just as two Elements can be combined through the software.

Overall, the Element Control software features slicker and more modern-looking graphics than the old Maestro software. There is a higher degree of customizability, as well, with a handful of useful templates to point the way. On the left side of the application are nitty-gritty settings like sample rate, clock source, and choices of digital output types, meters, etc.

The main part of the Element Control interface features the input controls and monitoring mixers. In the most basic configuration, software outputs can be fed directly to hardware outputs, and given the low-latency Thunderbolt connection, this is often feasible. When sessions grow, Pro Tools buffer settings are increased, latency grows, and low-latency input monitoring becomes necessary. For this, the Element control software allows the creation of up to four separate monitoring mixes; each can be fed to any output or combination of outputs.

When building these mixes, there are a few points of convenience. For one, the main mixer features large faders, while each subsequent aux mixer features smaller faders and scaled back controls. This helps by minimizing the amount of necessary vertical scrolling, if any. To further this, any aux mixer that is not being used can be hidden from view. Similarly, any input, analog or digital, as well as any of the six pairs of DAW returns can be hidden. If more I/O is put to use, items can be returned to the mixer without causing interruptions in playback.

Residing at the top of the interface, inline with the corresponding channels, there are meters for any signal feeding the mixer. Below these, on analog input channels, input type selection, gain, and other tools like HPF, soft-limiting, and phantom power can be engaged.

For those who desire the tactile control of hardware buttons and knobs, Apogee offers an optional hardware controller called the Apogee Control, which attaches directly to a USB port on the host computer. It features a well-built rotary encoder with an integrated soft-button, and three mode buttons to toggle its operation between input gain, monitor level and headphone level. Eight more soft-keys, grouped into two rows of four, are completely customizable. About 25 different functions can be assigned to the Control's soft-keys, ranging from predictable things like monitor dim, engaging phantom power for a selected input, or clearing meter peaks, to a few more advanced operations.

For instance, any custom key could be used to engage momentary or latching talkback using the MacBook's built-in microphone. Another handy macro was a mute toggle for those recording themselves or working in the same room as the artist. When tracking, monitors could be muted, while un-muting the headphones, via a single button press. Another press reverses this.

One of my favorite things about the Element Control software is the way it acknowledges a single-screen workflow. I would typically run the Element Control as a full-screen app and have Pro Tools on a separate "space" using OSX Sierra's virtual desktop feature. This meant flipping back and forth between the Pro Tools space and Element Control space during tracking. Until I discovered the Essentials window.

The Essentials window took all of the input and monitor output controls and placed them on one narrow strip. While control of the submixes resided solely in the full Control window, everything needed at a moment's notice was accessible—oriented vertically or horizontally, taking up a minimal amount of real estate on the screen. When tracking, the Essentials window sat on the top of my screen just above the active Pro Tools window. This was extremely handy. While Logic X can directly control the Element's mic preamps from within the software, this was certainly a next best thing.

My only complaint about this workflow was that clicking on a preamp made the Element Control the active application, forcing me to tab back to Pro Tools to stop the transport with a press of the spacebar. It was frustrating if I forgot to tab back, because it all feels like one large application.

I used the Element 88 with MacBook Pro running OSX 10.12.3 and primarily with Pro Tools 12.7.1. I spent a good amount of time getting familiar with the D/A converters and software before using it for tracking. The overall sound of the Element 88 was definitely reminiscent of the Apogee Ensemble—clear, detailed and modern. There was no hype, just a punchy, honest and complete depiction of the source.

One of my favorite sounds captured with the Element 88 was a stereo recording of an acoustic guitar. Using an ORTF pair of small-diaphragm condensers, the realism of the stereo field was impeccable. The foundation of the song was a drum loop, which came across as fairly mono, so a piano and the acoustic guitar had to fill out the sides. The recording setup, along with the detail captured by the Element's front end, did a great job in the width department. There was also a clear, focused center that I could steer across the stereo image by slightly moving the mics, so the focal point of the guitar could sit just outside the centered vocal, with the overall sound of the instrument creating a large and immersive image.

Plugging a bass into the DI input of the Element 88 produced another very nice recording. The tricky thing about using DIs that are integrated into interfaces is that headroom often comes at the cost of tone. In many cases, turning down the input enough for an artist to perform comfortably without any chance of clipping places the signal at a thin-sounding point of the mic preamp's electronics. This never seemed to be the case with the Element 88's DI inputs. I could turn down the input, leaving generous headroom, and the device's input always seemed to perform with the same full bottom end and crisp top end.

When it came to overdubbing, building artist mixes of Pro Tools returns plus live, low-latency inputs was easy and convenient, once I got the hang of it. Like the Ensemble, the Element coordinates with the I/O settings in Pro Tools to correctly identify analog vs. digital inputs, and physical outputs vs. software returns to the Element Control's mixer. Given that Pro Tools 12 is more obtrusive than previous versions of the DAW when it comes to I/O settings, it was important to frequently check this, and make sure to "default" the I/O settings tabs to ensure that this stayed accurate. That's nothing against the interface; it's just a reality of the new Pro Tools.

Again, Apogee has created an interface full of slick innovations that blur the line between their software, the OS and the DAW. The Element Control software is a powerful next step from Maestro, and the Control USB is so slick that it will likely be copied by every other interface manufacturer.

The preamps and converters are top-notch, and the smart design of the Control software can't be overstated. If you're looking for a tracking interface, Element 88 brings great sound and convenience, and despite being affordable, should still be taken very seriously. ■

Brandon T. Hickey is an Arizona-based audio engineer.

Tech // reviews

SOUND FORGE PRO ADVANCED WAVEFORM EDITOR

New Developer, New Version, New Features

I n late 2012, Sony Creative Software released the first Mac version of Sound Forge, its wave editor that had previously been for Windows only. In mid-2016, the German developer Magix (Sampli-tude, Sequoia, Spectralayers Pro) purchased a majority share in Sony Creative Software, and we now have the first update of the editor since the transfer of owner-ship. The application is fundamentally the same but adds some useful new features.

Sound Forge is a 64-bit float application that can record and play back up to 32 channels of 24-bit, 192kHz audio. It can read and output in multiple audio formats and sup-ports burning Red Book audio CDs. The GUI is quite flex-ible, allowing users to open and display two different files in editor windows, with more open under tabs. Utility win-dows such as the Channel Meters, Plug-In Chooser, Media Browser and others can be opened on the sides or bottom of the screen. By default, the two open sound files stack verti-cally, but you can change them to horizontal.

In addition to a standard waveform display, each song file has an Overview Bar, which is a narrow lane above the main display that shows the entire file, no matter how much you're zoomed in on the waveform. It's useful for quickly navigating from one section to another.

One area in which the GUI is not flexible is its color scheme: There's no way to customize the color of the background or the rath-er retro-looking waveforms. There's no spectral display in Sound Forge, either, but the program is designed to integrate with Magix's SpectraLayers Pro, a spectral editing application. If you want to edit spectrally and don't want to pony up for an additional program, there's another option: Open your audio in iZotope's RX Elements software, which is bundled with Sound Forge Pro Mac 3. It features a standalone RX window with spectral editing. RX Elements has only some of the modules included in fuller versions of RX, but does offer some useful tools, including De-Click, De-Clip, De-Hum and Voice De-Noise. You get all four in plug-in format, too, allowing them to be opened directly in Sound Forge.

Also included is iZotope's Ozone Elements. This standalone applica-tion is essentially a preset-only version of Ozone 7. It comes with all the Ozone 7 presets (including the Greg Calbi collection), but with only a couple of parameters per preset. Nevertheless, its results are impressive.
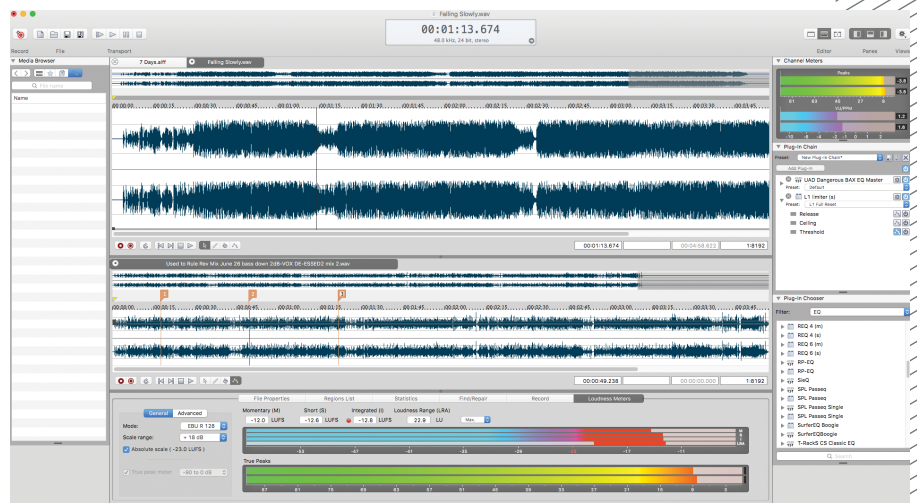
The Sound Forge GUI with the Loudness Meter open at the bottom.

The iZotope applications would cost $129 each if purchased separately.

One other application, Convrt, also comes with the program. It's an easy-to-use and powerful batch converter that lets you not only convert multiple files to other formats, but also add metadata and even process the files with plug-ins. The interface looks similar to Sound Forge, and it makes you wonder why Magix didn't just merge its functionality, sav-ing the trouble of opening files in a separate program. If you count the two iZotope programs, there are four different applications in Sound Forge's ecosystem, which is not a particularly integrated approach.

The editing interface is flexible and powerful, offering four differ-ent modes. In Time mode, it functions as a standard stereo editor with cut, copy, and paste operations, zooming to the sample level, snapping options and so forth. Pencil Mode lets you draw in waveforms to fix glitches. Event Mode lets you designate regions and then move them around relative to each other, and even overlap them. This is ideal for album mastering, as you can create a region for each song, then manu-ally adjust the spacing and create fades between them. The final mode, Envelope Mode, can be used to automate the parameters of effects that are opened in the Plug-In Chain.

Sound Forge also has a useful feature called Find/Repair. With the Find option selected, you can set it to search for a variety of glitches and specific events. These include End of Silent Region or Largest Peak, Level Above (the first instance where level exceeds the Find Window's

Threshold slider) or Clip. The Clipping detection is new to version 3.

The Repair side offers three options. Interpolate replaces the selection with a straight line connecting the points just before and after the selection, and is only useful for very short glitches. Replace uses what comes before as source material and replaces the selection. Other than the size of the selection, there are no other adjustable parameters, so these de-glitching features are not nearly as effective as those in iZotope RX's impressive Spectral Repair module (unfortunately not included in RX Elements), but they're still effective. The final option, Copy Other Channel, is sometimes useful for eliminating glitches.

Sound Forge comes with a small suite of effects, some of which—Noise Gate, Reverb, Simple Delay, Chorus and Flange—are new to this version. Another, WaveHammer, a powerful compressor and volume maximize, has been a Sound Forge staple for years. The other built-in effect is Channel Volume. Sound Forge also supports VST2 and AU plug-ins, letting you integrate your own plug-in collection.

You can apply effects to any selected audio in the timeline. A preview button lets you audition the effect and adjust parameters in real time as the audio plays, which is particularly useful. The other way to apply effects is in the Plug-In Chain, which lets you create a chain of effects that are included when you export audio, and even when burning a CD. You can adjust the order and hear the results before committing the effects on export. Most effect parameters are automatable using Envelope mode.

Sound Forge Pro Mac 3 includes several third-party processing algorithms, most notably élastique for pitch shifting and time stretching, which is capable of large changes without a lot of artifacts. You also get iZotope 64-bit SRC and iZotope MBIT + Dither.

Sound Forge Pro Mac 3 includes some powerful professional loudness features. The Loudness Meter, which can be opened independently from the Peak and VU/PPM Channel Meters (which are very informative), lets you set the meter to either the EBU R 128 or ATSC A 85 standard. You can also choose a loudness scale, either EBU +9, EBU +18 or Absolute Scale (-23 LUFS).

The meter reads out several different measurements at once, including Momentary Loudness, Short-Term Loudness, Integrated Loudness, and Loudness Range. There's also a True Peaks Meter, which shows you've exceeded the target loudness.

A new feature is Loudness Leveling, which adjusts your audio levels to be compliant with your choice of the loudness standards. You can even set Sound Forge to generate a Loudness Log. If you're working in post-production or even podcasting, the loudness features could obviate the need for a dedicated metering plug-in.

Mastered For iTunes is a new feature that creates an M4a version of the sound file (or files) you're work-

ing on, making it possible to easily compare the compressed and uncompressed versions to see if you need to adjust anything in your mastering. It's a nice addition, although it's a little clunky to use compared to the Codec feature in the iZotope's Ozone 7 Advanced, which lets you preview how your audio will sound when compressed with a variety of codecs by simply pressing a button.

Sound Forge Pro Mac 3 also adds the ability to extract the audio portion of a video file for editing. It doesn't let you recombine it with the video, however, so you'll have to fly the processed soundtrack back into your video editor or DAW to do so. Sound Forge 11, the Windows version of the program, does offer video support, so hopefully, Magix will add it to the Mac version soon.

Magix's first revision of Sound Forge is solid. New features like Loudness Leveling and Clip Detection are excellent additions, and the inclusion of the RX Elements application and plug-ins and the Ozone Elements application add significant capabilities. Sound Forge Pro Mac 3 is definitely a player in the Mac audio-editor market; this revision should reassure users who were concerned what might happen after Sony sold the program. ∎

Mike Levine is a composer, producer and multi-instrumentalist.

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TechTalk

Keyboard Shortcuts: The Hidden Workflow Gems

By Kevin Becka

Last month, I talked about how the gear you use can affect the speed at which you operate in the studio, ultimately either saving you money or adding to the cost. Keyboard shortcuts, likewise, can lead to significant increases in speed. Here are some old and new chestnuts that you might not be aware of.

For example, the new Shift + up/down arrow shortcut for jumping between playlists in Pro Tools has changed the way I comp tracks. In previous versions, when comping vocals, I'd start by making a new playlist on the vocal track (Control + Backslash) and name it Voc Comp. Then expand all playlists by using Control + Command + Left arrow and organize them by using drag and drop. From there I'd make a short selection of a phrase or entire verse and hit Shift + S to solo the take in the mix. After playing it for the artist I'd jump the selection up or down to the next playlist by using the P or semi-colon key then Shift + S to solo the next take and so on. Once we found a word or phrase we liked, I'd drive it to the comp by using Control + Option + V. This worked very well until Shift + up/down arrow came along.

Now I'll create the comp track and display the playlists as before to organize them, but then I'll shut them down and use Shift + up/down to audition the takes from the single clip list view on the timeline. Once we find a piece or pieces we like, I'll use Command + C to copy it, Shift + up/down to the comp playlist and Command + V to paste it into the comp. Not having the playlists open keeps the workspace cleaner, and eliminating Shift + S is much quicker.

I'm a stickler about the state in which I leave a session at the end of the workday. There's nothing more annoying than opening a session where the playback head is parked in an odd spot in the song, tracks are in input or soloed, and the Edit window is zoomed into an edit. It's a time suck to reconfigure the view to see and hear what's going on. When you're through with a session, it takes just a few quick steps to put the session in great shape for the next engineer—or yourself.

First, deselect any tracks or clips, kill any solos, then use Control + Option + Command + down arrow to fit all tracks vertically in the mix window. Next use Option + A to fit the clips into the edit window horizontally and locate the playback head to the count-off or top of the song, so you hear the song as soon as you hit the space bar. This takes less than 15 seconds; you just have to remember to do it. Once you take all the steps, choose to view the Edit window, save the session and use Shift + Command + W to close the session. Whoever opens the session next will see all the tracks nicely centered in the Edit window and will hear the song as soon as they hit Play.

Another way to drive yourself crazy is to have markers in sequential order but not in numbered order. This can happen when you tuck a missed marker into an existing group, making the numeric order 1, 2, 3, 10, 4, etc. It may seem minor, but it makes for a disconnected experience when locating to sequential markers using period + marker number + period. It just takes a minute to make everything beautiful again. It's a hack, so some of the steps make no sense, but they work.

First, make a MIDI track (wha?). Then choose Export/MIDI from the File pulldown at the top of the screen. In the Export MIDI settings window that pops up, be sure the MIDI File Format is set to "0 (single track)." Click OK, then name and save the file as "Markers." I'll usually park it on the desktop so I can find it easily and throw it away later. Next, in the Pro Tools Edit window erase all Markers on the timeline by dragging across all to select them, then the Delete key. You're now ready to re-import them from the exported MIDI file. Under the File pulldown at the top of the screen, choose Import/MIDI (Command (⌘) + Option (⌥) + I). Choose the previously saved MIDI file from the desktop, and hit the Return key or click Open. In the MIDI Import Options window, be sure to choose Clip List (New Track is the default), then click OK. The Markers will now appear on the timeline in the proper order.

When tracking, there may be more tracks in your template than you record. For example, you may set up tracks for B3, Piano, Wurli, Rhodes and Synth, but you only may record one or two on a particular take. Add drums, bass, electric guitars, acoustic guitars to that list, and you have a hodgepodge of tracks you may or may not want in Record on any song pass. Here's where you can use a selection group to quickly get back and forth between non-consecutive tracks you want, or don't want to record.

For instance, if I know the band starts most songs with drums, bass, electric guitar and piano, I'll select just those tracks and push the Enter key on the numeric keypad. This brings up the same window you'd use to create a marker. Instead, check the Selection radio box, give it a high number (like 21), and name it TRACKS PNO. This selection comes in handy any time you have your tracks out of Record, like during a band playback and you quickly need to get back to your non-consecutive tracks you want to record. Simply type period + 21 + period, then use Shift + R to put the selection into record. I'll make other groups for other scenarios (TRACKS B3 – #23, TRACKS WURLI – #24, etc.) in my template so I can jump between selected groups during the session.

Shortcuts like these can bring speed and agility to your workflow that will make a difference in your sessions. Please share your shortcuts on my Facebook page; I'd love to have yours on my list. ■

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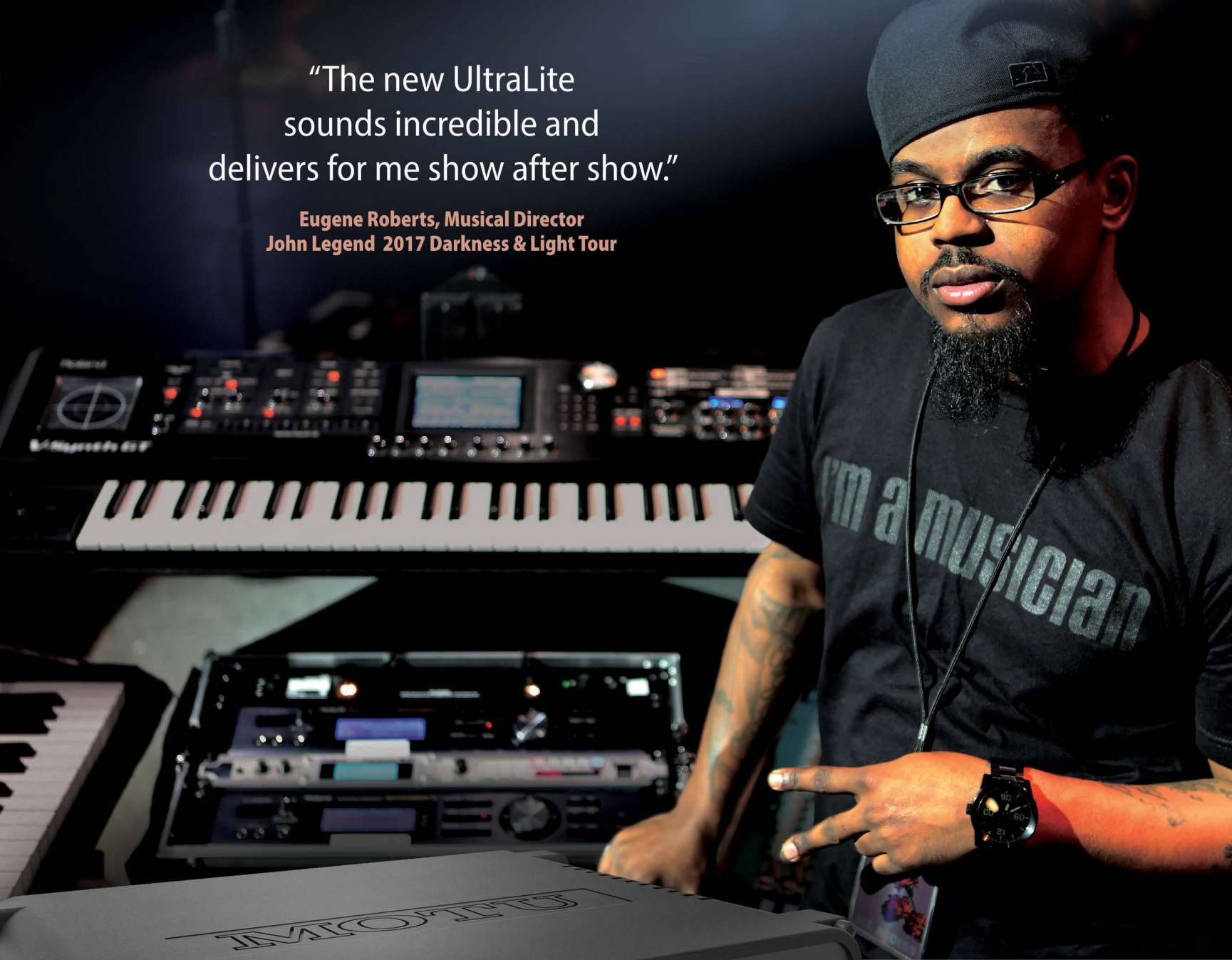
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