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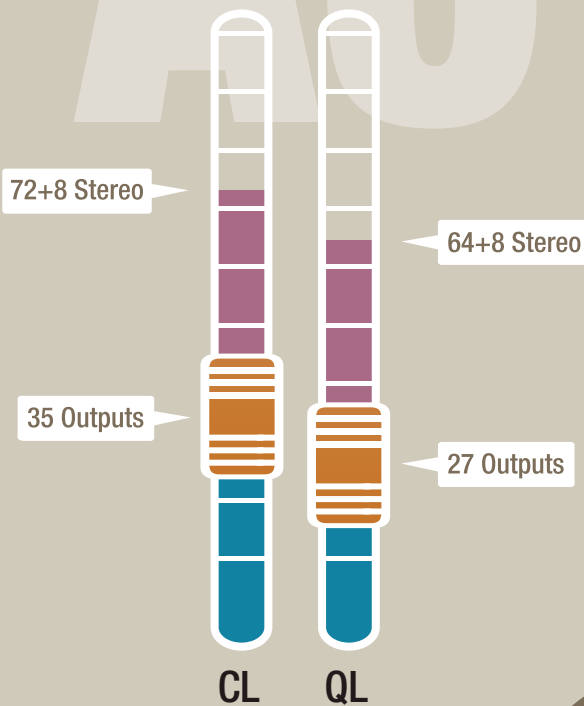
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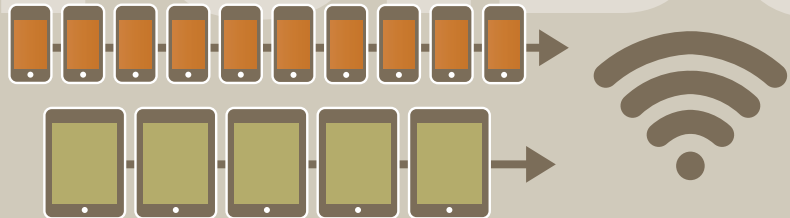
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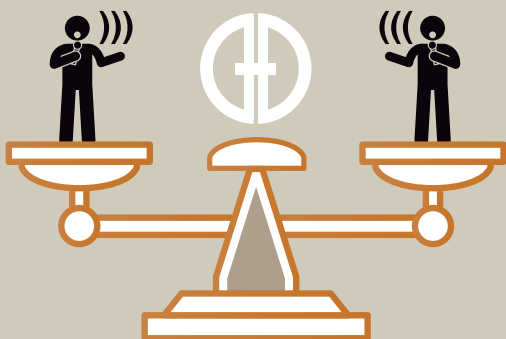
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- S** Smooth
- D** Default

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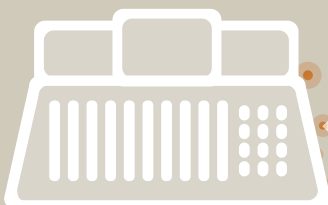
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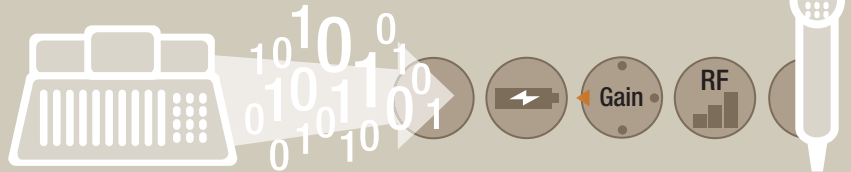
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Photo: Matthew Murphy



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On the Cover: The Tracking Room, Nashville, one of Music City's biggest studios, underwent an extensive renovation recently and updated its SSL 9000, featured here. **Photo:** Reed Brown.

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BY DAVID SCHWARTZ, PENNY RIKER AND BILL LASKI

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From the Editor

THANKS FOR THE DINNER, DAVID

Last night, in Santa Fe, I had a nice dinner with David Schwartz, co-founder of *Mix* and the man who hired me as an editorial assistant for \$5.50 an hour way back in 1988. At the time, his was the signature at the bottom of this page. I had some amazing colleagues on the staff to introduce me to pro audio and to the magazine world, among them Blair Jackson, who taught me more about writing and decision-making than he'll ever know; George Petersen, who provided a cynics'-eye view of technology and an avuncular wisdom; Paul Potyen, who brought the musicians' perspective and showed that you can have an outside life; Linda Jacobson, a music and technology dynamo with the widest range of interests imaginable, to go with a penchant for VR dating back to the mid-'90s and a remarkable knack for writing about complex topics and making them seem simple; and Karen Dunn, who ran the editing desk, got me an extra \$100 a month when I was finally hired, and whom I still work with regularly on *Mix* events. There was also Hillel Resner, who taught me about the business end of publishing, a genius in marketing before most people even knew what marketing was. But David? He gave me my very first opportunity at a feature story, on *The Doors* movie. He was a fellow Hoosier. And he was the boss.

We didn't actually work together that long, as David was gone by the early 1990s with the sale of *Mix* to Norman Lear's Act III Publishing. But we stayed in touch over the years, some years more than others. We would hook up at the TEC Awards, AES and occasionally in L.A. while I was there on a story. At dinner we caught up again. I probed him about Santa Fe, as my daughter just moved here and David was now going on 10 years. We talked about art and music and ex-girlfriends, all the things one might expect. It was a great couple of hours.

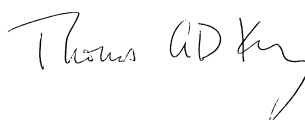
I then left Raaga, the Indian restaurant, and walked home in the light rain, the New Mexico-type of rain where the droplets are drying as they land on your shirt. I made up an entire editor's note in my head about our industry, from the time I first met David. About how the more things change, the more they stay the same. In this very issue, I thought, we have stories about both

Tom Jones and Kandace Springs recording live with a band in the studio, with old-school analog and high-end digital. Separate generations, on the same groove. That's our industry. I can write about that, about how the tools are different, but the art is the same. And I've been in the front row watching it for 28 years.

Then I thought, "Wait, that was just a nice dinner with a good friend. Of course we share *Mix*, we share friends, share some experiences. But tonight wasn't about a grand declaration on the evolution of pro audio. Tonight was about some good curry and naan, some good stories and eventually some perspective on the paths our lives take."

David is an ideas man, I realized. He never stops. Since leaving *Mix* more than two decades ago, he's been in a constant state of project management, working on his own and with organizations. Some of the ideas and events have been brilliant; some not so much. But he never stops pushing new possibilities in whatever he does. At dinner I found out that he's working with a fabulous local singer-songwriter named Tiffany Christopher and had just got back from Sonic Ranch, while at the same time he is planning a gala awards ceremony as the new chair of the New Mexico Music Commission. He's also upping his role in developing TEC Tracks in conjunction with NAMM. Plus a dozen other things, from screenplays to industry summits. New ideas, all the time. Constantly moving forward.

I remember that same passion and drive in the conference room of *Mix*, many years ago. It played a large part in hooking me on pro audio. I've been fortunate to come across many people who have played a role in my professional life; David was the first. And I am forever grateful. Everybody should be so lucky.



Tom Kenny,
Editor

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Photo of Elliot Bergman of Wild Belle's Home Studio



Mix Presents Sound for Film

The third annual Mix Presents Sound for Film will be held September 17 on the studio lot of Host Sponsor Sony Pictures Studios in Culver City, Calif. This year's theme—"Sound for Film and Television: The Merging of Art, Technique and Tools"—brings film, television and virtual reality together in an all-day exhibition with a series of expert panels.

This year, the event has added:

- **Audio for VR Room:** From binaural recording, object-based audio processing and headphone playback, to positional sound effects, music placement and offscreen dialog, new tools and techniques are shaping an entirely new three-dimensional, fully immersive audio experience.

- **Sound Reel Showcase:** Film studios will present 10-minute reels of their showcase films, with introductions by the sound teams, in the Atmos and Auro-3D equipped William Holden Theatre.

- **Production Sound Pavilion:** On the Barbra Streisand Scoring Stage, leading production sound mixers from film and television bring their sound carts loaded with mics, mixer, recorder, wireless systems, batteries and ancillary gear.

Featuring five world-class theatrical re-recording stages, eight television re-recording studios, four major sound design suites, and countless editing rooms—along with the historic Barbra Streisand Scoring Stage, ADR and Foley facilities, and in-house engineering—Sony Pictures Studios is a one-stop shop for everything related to sound for picture. And it is the ideal location for a gathering of audio professionals.

The third annual Mix Sound For Film & Television is presented with the support of Event Host Sponsor Sony Pictures Studios; Event Partners Motion Picture Sound Editors (MPSE) and Cinema Audio Society (CAS); and Event Sponsors Avid, JBL by Harman, and Meyer Sound.

General Admission is \$99, while CAS and MPSE members, and students, may attend for \$49. For more information on the programming, and to register, go to mixsoundforfilm.com.

68th Emmy Awards Nominations



In July, the Television Academy announced its nominations for the 68th Emmy Awards, recognizing the creative teams behind broadcast television programs that aired between June 1, 2015 and May 31, 2016. Final-round online voting begins August 15.

Mix magazine congratulates the nominees in the Television Academy's Sound Editing and Sound Mixing categories: Outstanding Sound Editing For A Series, Outstanding Sound Editing For A Limited Series, Movie Or Special, Outstanding Sound Editing For A Nonfiction Program (Single Or Multi-Camera), Outstanding Sound Mixing For A Comedy Or Drama Series (One Hour), Outstanding Sound Mixing For A Limited Series Or Movie, Outstanding Sound Mixing For A Comedy Or Drama Series (Half-Hour) And Animation, Outstanding Sound Mixing For A Variety Series Or Special, and Outstanding Sound Mixing For A Nonfiction Program (Single or Multi-Camera).

View the complete list of nominees at mixonline.com.



GameSoundCon 2016

GameSoundCon, an annual conference that focuses on videogame music and sound design, takes place this year on September 27-28 in the Millennium Biltmore Hotel in Los Angeles. Newly added offerings include a full day dedicated to Audio for Virtual Reality and another full day on academic and research topics.

"Virtual Reality is not only taking the game industry by storm, but most other forms of media and entertainment as well," says GameSoundCon Executive Director Brian Schmidt. "Along with Augmented Reality, VR presents a whole new set of challenges and opportunities for composers and sound designers. Due to the inherently interactive nature of VR and AR, those who are familiar with interactive audio tools—such as game composers and sound designers—will definitely have a leg-up over those who have only worked in traditional media."

For more info and to register, go to www.gamesoundcon.com.



Pensado Awards On August 20

The third annual Pensado Awards will take place on Saturday, August

20, 2016, at Sony Pictures Studios in Culver City, Calif., outdoors in Calley Park. Co-hosts include producer/engineer Chris Lord-Alge, recording/mix engineer MixedByAli and mastering engineer Gavin Lurssen. A VIP reception will be held in the complex's Main Street area, and an after-party will take place in the Sony Commissary, which is connected to the park.

Herb Trawick and Dave Pensado, the producers and co-hosts of the online series *Pensado's Place*, created the awards as a means of acknowledging the work of music producers and engineers. A video production of the ceremony will follow and be posted on the *Pensado's Place* YouTube channel.

For information, including sponsors, award categories, nominees and co-hosts, go to pensadoawards.com. ■



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Brian Kennedy

(Producer/Songwriter credits include Brandy, Chris Brown, Jesse McCartney, Rihanna, Jessica Mauboy, Natasha Bedingfield, BoA, Cheryl Cole, Backstreet Boys, Jamie Foxx, Nelly, and Westlife.)

...simplified my home studio remarkably

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On the Cover

By Frank Wells // Photos by Reed Brown

THE TRACKING ROOM, NASHVILLE



The Tracking Room has ample space for musicians to record together, isolated acoustically as necessary by gobos and by remoting amplifiers to one of the five Iso rooms.

Just off of Nashville's famed Music Row, Music Circle South doglegs and then ends at a cul-de-sac in front of The Tracking Room, a single-purpose facility that is Nashville's largest recording studio. "There's something about this room that is really unique," says David Haskell, president of the Morris family of entertainment enterprises, The Tracking Room's parent organization. "People who work here regularly know it already. The ones that don't feel it as soon as they walk in. This is what a properly engineered room is supposed to sound like."

In January of last year, implementation began on a deliberate and calculated plan to restore The Tracking Room to peak performance, to ensure unsurpassed client support and satisfaction, to provide the technology to enable

creativity. A substantial investment was made in modernizing hardware and software and in giving the facility aesthetics a facelift, its first major overhaul since opening in the mid-1990s.

ROOM TO BREATHE

Space is the missing ingredient in nearly every personal production studio: Space for musicians to comfortably play together and interact while still isolating instruments effectively. Space for an orchestra. Space for instruments and artists to breathe. The Tracking Room measures 70 feet long by a varied 25 to 45 feet wide, with 20- to 25-foot ceilings. Sound absorption is hidden behind the grille cloth walls and in the ceiling. The building sits on Tennessee limestone, with an interstate just beyond and 20 feet below the foundation;

inside The Tracking Room, with its floating floors and room-within-a-room construction, you'd never know. The quiet demands attention when the room's not in session.

The 100 feet of space along the studio's rear wall is divided into five generous isolation rooms. Iso 1, the Stone Room, has a slate floor and rock walls with a sloped hard-plaster ceiling. It is highly reverberant yet can be tamed—an intriguing space for experimentation. Iso 2, with a walk-in amp locker designed to produce a natural acoustic compression, is for electric guitars. Isos 3 and 4 are remarkably spacious, with one wood wall, soft front and side walls, and trapped rear walls. Dense curtains can be used to dampen the wood. Iso 5 is the Piano Room, with all hardwood walls (two with curtains for damping) and a hardwood ceiling. A popular Yamaha C7 is

the featured instrument, with the room imparting a natural and piano-flattering tone. Side windows let musicians see from Iso 1 through to Iso 5; front windows look onto the main studio floor.

The spacious control room, with its volume continuing above ceiling and into the side and rear walls, was designed to allow a 20 Hz wave to develop. The main monitors are the 20Hz version of the Kinoshita/Hidley cabinets (in stunning piano black), with a horizontal center-channel version to support surround applications.

The control room floats on nine German-engineered springs. The air-handling throughout the facility is quiet, with large insulated flex ducting snaking through the ceiling above the iso caps, avoiding direct paths between spaces and the outside world. The list of fine details in the Hidley design and the studio's construction goes on extensively.

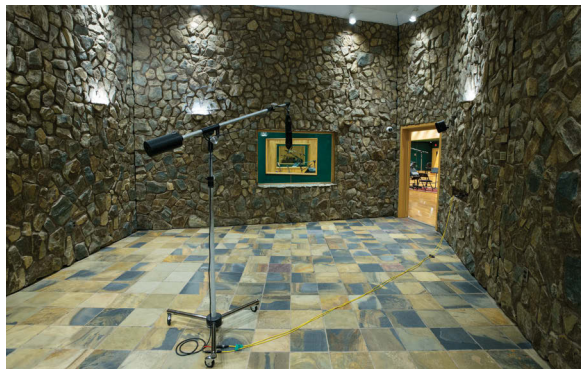
There are many impressive somethings about The Tracking Room. Space, flexible lighting, warm wood tones and fabric accents catch the eye immediately when entering the main studio floor. The blend of hard and soft surfaces, with carefully planned angles, gives the enormous space a subtle character. With all the available spaces, and the spaces within those spaces, the permutations for a broad palette of sonic signatures are legion. And in the finest tradition of service-oriented studio staffing, the people truly do make The Tracking Room special.

But true understanding of what makes the space unique comes from working there.

THE CLIENT VIEW

Justin Cortelyou is a Nashville-based recording engineer and mixer with credits ranging from Paul McCartney to Phish, from Taylor Swift to Alice Cooper. His first Tracking Room experience was with frequent collaborator and mega-producer Bob Ezrin, working on tracks for Deep Purple's 2013 release, *Now What?* Cortelyou's most recent dates at The Tracking Room were for Deep Purple's follow-up. While having positive experiences prior to the renovations, Cortelyou says there was a "night and day difference."

The replacement of the very-early SSL 9000J (one of the first built) with the 80-channel 9000J from Quad Studios Nashville, was one major difference. The already impressive complement of outboard gear was enhanced with kit including 16 channels of Millennia Media HV-3D preamps (given kudos by Cortelyou), an Empirical Labs Fatso Jr. and a pair of Kush Audio Clariphonic EQs. The house Pro Tools HDX system now supports 90 channels of I/O and boasts a plethora of plug-ins. A producer's desk was added



Three of the five spacious iso booths, from top: the Stone Room, the Piano Room, and one of two Large Rooms.

in the back of the spacious control room.

Cortelyou was quick to compliment the previous staff, while praising current studio manager Matt Leigh, calling him "just fantastic...the little things definitely do not go unnoticed." Additional praise went to staff engineer Bryce Roberts. "Bryce is just terrific," Cortelyou says, singling out his notetaking and documentation. "He was so engaged in the session. You cannot have technical problems. If you have to change a mic placement or swap out a snare drum, that change has to be made as quickly as possible so we don't kill the flow of the session. Before Bob would even ask if there was a mic that needed to be moved, Bryce was up out of his seat and halfway there."

The physical facility is a large part of the attraction of The Tracking Room. "It is so impressive, it is so well-thought-out and sonically pleasing to work in," Cortelyou says. "The comfort of having those large booths, especially for acoustic guitars—you don't get the booth sound, you get the sound of the instrument. And the vocals, too, especially the vocals. It's nice to have that space, but it's not a colored space."

For the Deep Purple dates, two drum sets were set up, one in the studio, one in Iso 1, the Stone Room. "When we were cutting the drums in the main room," Cortelyou recalls, "we always left the Stone Room door open, with a [Neumann U] 47 on omni, and it creates this beautiful reverb that you can't get

out of a box."

Former Tracking Room proprietor Glenn Meadows shared with Cortelyou the secret of keeping the Stone Room door shut when tracking drums in the iso, keeping the acoustic pressure in the room. "Glenn calls it the 'world's most expensive Fairchild' for the overheads in the room. The close mics stay relatively dry—they don't pick up too much of the swimmy ambience of the Stone Room—but those overheads just have this beautiful air to them. It was really nice to have those two color choices available, and enough mics and lines and channels to have both drum sets miked up and ready to go at a moment's notice."

Cortelyou also lauds the Piano Room, recalling a session where he used a stereo AEA R88 ribbon mic in the center of the piano, with The Tracking Room's pair of C12s to "mike it a little bit wider. The combination of those two mics, in that room, on that piano, it was so beautiful. It was such an amazing piano sound, and it kind of spoiled me."

FROM THE SOURCE

A client since the room was built and even a frequent visitor to the site

during construction, producer/engineer Dan Rudin refers to The Tracking Room as his “home away from home for over 15 years. Because of the wide variety of recordings I do—everything from standard rhythm sections to big band to 85-piece orchestras—I need a room that is extremely versatile in both acoustics and floor plan. The Tracking Room is just that.

“Over the years,” he continues, “it has changed hands, ownership as well as management, so you can imagine it’s gone through phases of better and worse technical upkeep. In recent years, there have been some folks there that really care, and it’s been in good form and an extremely reliable place to work. Bryce Roberts is an excellent staff assistant engineer; he knows what’s going on in the session at any time and anticipates just about any need.”

Like Cortelyou, Rudin notes the console upgrade. “It’s nice to sit at a 9k with everything working—channel strips, computer, phase meter. You scarcely find that anymore. The new client desk and outboard rack was so helpful on my sessions that I was inspired to do the same thing in my own control room. And the changes to flooring and other amenities that Matt Leigh has initiated since stepping up as manager there—he really is doing a great job of running the place—have made all of my clients comfortable and excited to be there. In fact, the building itself, being a large, private building to work in, has always been a major comfort factor for clients.

“The Tracking Room is full of great memories for me and many of its mics are old friends,” he shares. “I’m especially fond of the old C-12s. But it’s the combination of the spaces, gear and people who work there that’s so special to me.”

THE LEGACY LIVES

The Tracking Room was built by Glenn Meadows, owner of Masterfonics, and later became part of the Emerald Entertainment Group. When Emerald ceased business, the leased space reverted to the property owner, Dale Morris. Morris purchased the whole of The Tracking Room’s equipment and has kept the facility open as a traditional commercial studio, regardless of the value of the real estate in a market that’s seen more than a few studios lost to more lucrative ventures.

“Dale has owned the building all the way through, from its years as Carlo Case and Sound, through to today,” states Haskell. “Nashville’s given tons to Dale, and keeping this building alive is part of his giving back, giving a gift to the recording industry.” Evidencing that commitment, the debt of The Tracking Room investments has been retired, notes Haskell, allowing bookings for a competitive day-rate that includes engineer Bryce Roberts’ services. “This room has a worldwide reputation, a legacy of great sessions,” Haskell concludes. “That legacy will continue.” ■

Frank Wells is a freelance professional audio consultant and writer. “This story is personal,” he says, “I served as Chief of Technical Services for Masterfonics for more than nine years, including the period when The Tracking Room was built. My tireless staff and I were responsible for the technical installation of The Tracking Room. It’s heartening to see the pride the Morris staff takes in continuing the story, and that it’s a place where great music continues to be made.”



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Music



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Photo: Mathieu Bitton

KANDACE SPRINGS' 'SOUL EYES'

Session Aces Captured Live in the Studio for Debut Album

By Barbara Schultz

With her smooth, soulful voice and elegant piano style, Kandace Springs sparked excitement in the R&B and jazz worlds with her self-titled EP in 2014, gaining her guest spots on the late-night shows, as well as festival slots and an invitation to perform in June of that year at Paisley Park with Prince, when he celebrated the 30th anniversary of *Purple Rain*.

More recently, Springs told So Cal radio station KPCC's online arts site, *The Frame*, that she received some unforgettable advice

from Prince when she met him: "Prince said to always be true to who I am [because] at some point in life, somebody will try to change who you are," she said.

With Prince's words in mind, Springs seems to have chosen excellent production partners who respect her artistic voice and value the spontaneous beauty of her live performances. Springs' debut album, *Soul Eyes* (Blue Note)—a blend of original songs and R&B covers—was produced by Larry Klein (Joni Mitchell, Herbie Hancock), recorded by engineer Vanessa Parr (Rhiannon Giddens, Lucinda Williams) and

mixed by Tim Palmer, whose credits stretch from Bowie to U2 and beyond.

Tracking for *Soul Eyes* happened almost entirely live in The Village's Studio D to Pro Tools, with Springs situated in a booth before the studio's Yamaha C7 grand and her Rhodes. "We had a fort built around the piano so we could keep the lid open, and we built a foam wall behind the music stand to isolate the vocal," Parr says. "That way, we were able to do some vocal punches and fixes later."

Out in the live room were Dean Parks on guitar (his amp was isolated), bass player Dan



Back row, L to R: Larry Klein, Vinnie Colaiuta, Kandace, Dean Parks, Pete Kuzma, Evan Rogers; front row, L-R: Vanessa Parr, Carl Sturken, Jeff Gartenbaum

Lutz, keyboardist Pete Kuzma, and drummer Vinnie Colaiuta. "In that room, even when you're isolated you have great sight lines, which is important," Parr says. "Larry loves it when everyone can play live, because that's when cool things happen."

On the Yamaha piano, Parr placed a spaced pair of AEA R84s on top, through an EMI compressor, and a pair of RCA 44s underneath. "We could feather those in a little bit for more warmth if we wanted," Parr says. "The C7 is pretty bright, so I wanted to use ribbons to temper that a bit".

The overall piano sound on the album is quite warm, with a softened vintage quality.

"And with Larry we always use a lot of analog effects, so we had quarter-inch slap rolling all the time for her vocal and other instruments as needed," Parr says. "We were also recording the Village plates, chamber and EMT250, which gave us some great options for vocals as well as other instruments."

Springs vocal mic was a Stephen Paul-modified Neumann U 67 that belongs to Klein, placed right above Middle C. "Sometimes Larry will put up a 44 as well on vocals," Parr says. "We'll use that to supplement a little bit, but with Kandace it didn't seem necessary, and it's also logistically a little complicated trying to add a microphone of that size in front of the piano." The 67 went through a Neve 1081 mic pre, a Distressor and a Retro Sta-Level.

One of Parr's favorite aspects of working with Klein, for whom she has engineered several projects, is his innate sense of which musicians will best support singer/songwriters like Springs. Parr says that Colaiuta, for example, makes an engineer's job feel pretty easy.



Alan Smart SSL compressor. He also uses 16 Avid Artist Series faders. His speakers of choice are Genelec 1031a.

"The Tone-Lux system lets me keep a traditional analog signal path, but with all the control of the digital world," Palmer says. "The way I mix for Larry is very different from a lot of my other projects. First, the tracks he sends tend to be played live, by great musicians! This immediately changes things for the better. The performances breathe and are not linear, so methods like relying on the grid and leaving faders static is not an option. There is a lot of fader riding to be done, as the players rarely stick to the same parts every verse and chorus, and of course the panning was very important, too. Larry's records have a very classic feel, and the sound I go for tries to enhance that."

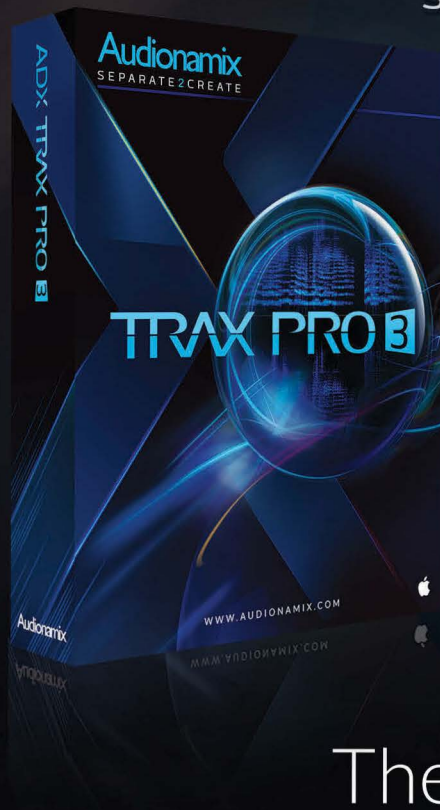
Toward that end, Palmer used classic plate reverb plug-ins, such as an EMT 140 emulation: "Or, in many cases, Larry will print the real echo chamber returns from his session, and I can use those. Often, it's a combination of both.

"It all plays a part, even the coffee," Palmer continues, "but I must say that I do love using the analog simulator plug-ins; my favorite is still the DAD tape, which I find very useful for getting rid of any digital nastiness. I also like the Waves J37, as you can saturate the sound a little, and I think the combination of the Tone-Lux rig and my GML EQ really give a great starting point to the mixes.

"What I tried to achieve on this record was to hear humans playing and interacting, and of course right in the middle of it all, center stage, is Kandace singing and playing piano. What a classic voice she has!" ■

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BT'S DROPPING A NEW ALBUM—YOU NAME IT

By Gary Eskow



Brian Transeau, aka BT, has been a leading figure in EDM for the past several decades, but it would be a mistake to pigeonhole this multitalented artist. His tastes are eclectic, he has collaborated with a wide variety of artists (including Peter Gabriel and *NSYNC), and his credits as a film composer include *The Fast and the Furious* and *Gone in 60 Seconds*. He's also provided music for a number of videogames.

BT recently completed work on a new album, an interesting work that infuses the layers of synths and beats he's known for with an Asian aesthetic. It was released in June 2016.

What's the title of this album?

The album is un-named. I've never done this before and I'm excited to hear what fans end up calling it. Like Prince's *Black Album* or *The White Album*. It's such a specific and unique body of compositions that it defied normal album-naming nomenclature.

What role did the country of Japan play in this work?

I wrote one piece watching a tropical storm roll in toward our hotel on the 80th floor in Tokyo. I actually filmed this as well. The concept was sonification of the feeling of travel. It's all recorded, processed and mixed in remote locations while my wife and I were traveling.

Where did you record/mix these tracks?

In Poland; Prague; Kennebunkport, Maine; Orlando, Florida; Holland; Tokyo; Bora Bora; Rangiroa; L.A.; and D.C.

Did you engineer the project?

Yes. I mixed the whole album myself, over two-and-a-half hours of material.

What was your recording platform, desk, etc.?

I used the following DAWs in equal measure, in a specific order: FL Studio, Ableton Live 9 64-bit, Ableton Live 5 on Snow Leopard—Virtualized in parallels—Logic 9, Logic 6.43 in OS 9 with 24-bit Pro Tools, Cubase 7 and some Bitwig, as well. The special stuff was all done in CDP, Csound, SuperCollider, MAX and lots and lots of scripting in the terminal. Judicious field recordings, as well, including GoPro cameras diving on our honeymoon and lots of other crazy stuff. Again, I could write a paper about it.

For the track "Artifacture": Did you have a plan when conceiving this work?

It's a wild and long ride. There is the contrast between completely acoustic instrumental sections, spoken word and modern electronic rhythmic textures and rhythms. This is pretty characteristic of my body of work as a whole, but I had a lot of fun stretching the form and cross-pollinating these different and diverse modalities in a way I don't often allow myself compositionally.

What instruments did you use in this piece?

It's honestly way too many to list. There are lots of live instruments like the Strum Stick, Hammered Dulcimer, Bowed Guitars and small strung and plucked instruments I like to collect while traveling. I have a stereo mic/Ableton Live setup where I record stuff like this. There is some simple warp markering, next comes Melodyne—at times—then on to the OS 9 Logic/PT rig for time correction and basic sound design—reverse reverb, EQ, compression.

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The heavy-lifting sound-design stuff is mostly terminal [CDP] or Csound. I've written piles of Apple scripts to batch process things now. All the micro-rhythmic percussion treatments on this track were done with batch processing Break Tweaker stems in the OS X terminal using batch scripts I've made for CDP.

Sounds like a tuned sine wave and kick drum were playing the same pattern. If so, did you play both parts on one MIDI channel with the kick tuned to the same pitch on all keys?

It's a low, mid and high stack for that kick. I like making kicks from scratch, so in this case a pitch-enveloped sine wave, a midrange plosive—FIR filtered about 400 samples in length—and a 30-sample hi-click are all used and glued together using a variety of compressors and limiters. Making drums from scratch is a very meditative and exciting hobby. Especially on the modular stuff. So much fun.

How does the inclusion of this kick drum/bass/snare section work with the other sections?

It's a micro-movement I'd say and a reinstate of the main leitmotif but mirrored in the percussion and countermelodies.

Were you thinking of the Beatles "Revolution #9" when you decided to include the spoken section that eventually ends being detuned?

No, but I love the reference. It was just something that came to me and

I asked Christian Burns and his whole family (mom, dad, niece, nephew, sisters) to say the same line. I kind of don't want to talk about it too much because it's a great twist in this composition you don't see coming. It's something missing from so much music currently. Surprise.

What instruments did you use in the round/canon that concludes this piece?

The final movement is 100 percent live modular improvisation.

For "Found In Translation": Was the cello part written out first?

Yes. I wrote this down on staff paper and did a series of improvisations with three cellists. Then I actually did a considerable amount of the counterpoint using the harmonics in Melodyne. I'd never done this before and actually stumbled on a new technique that I've subsequently used in a couple new film scores.

For "7 Ω.m4a": How would you define industrial music? Does this track qualify?

Industrial music, to me, uses found-sound objects usually associated with mechanical and other industrial types of machinery and the like. So although not necessarily industrial, I get where you're coming from. The overall aesthetic is this idea of micro-movements as opposed to ternary form or other traditional compositional forms.

For "Five Hundred and Eighty Two," there's a touch of Zen here, and



...No Question

elsewhere in the album. Was this a conscious decision?

Yes, for sure!

For “Chromatophore”: There are water sounds, and it’s an atmospheric track. Is there an injection of the natural world at this point in the album?

Yes, absolutely. There were so many wonderful field recordings I’d made at this point I needed to find some good landing places for them. This was one.

What did you use for your bass sounds? Do you have a go-to bass?

This is a Yamaha DX5. Believe it or not, I made that patch from scratch; those reading that love FM synthesis know what a pain that is. That’s one of my favorite FM synths, but I’ve got a weak spot for Additive and FM physical synths.

Low frequency bass plus high-pitched kick—is this an orchestral combination that appeals to you?

That’s a great question, and yes! I love exploring different relationships these two entities can play in electronic composition. They are, after all, the cornerstones of electronic music. I love early drum and bass, how the kick plays an ostinato with a higher-pitched kick—almost the role of marching snare in orchestra—and the bass is subsonic—similar to contrabass and tuba in octaves. It’s a compelling way to make a unique motoring ostinato.

You have a great ear for the overtone series. What is the relationship be-

tween the part of this gift that is intuitive and the part that is thought out?

A bit of both, and thank you for the kind words. I’m obsessed with traditional orchestration and the overtone series. You have that so drilled into you in conservatory, the idea of reinforcing first, 8va, the 3rd (5th) harmonics because even in things that are atonal or dissonant it creates a familiarity or calm in the end user. It’s often overlooked in electronic music, but since I came up studying classical music and jazz, it’s something constantly at the forefront of my mind and therefore an integrated part of the compositional process for me.

Do you believe that soft synths and samplers have progressed to the point where hardware synths are obsolete?

Absolutely not, and they never will by virtue of what they are. One is a program and the other is a physical object. The haptic feedback you get from a physical object determines where you are led in a creative context. That’s the beauty of them. They literally guide you. Now don’t get me wrong, look at some of the amazing synthesizers made as software: Serum, Razor, I could go on and on, and I use them all. There are wonderful soft instruments. I’d say I’m not a fan of any subtractive emulation soft synths, like the more modern additive, spectral, granular, FFT stuff. And for physical instruments, I’ll keep things like my Fairlight CMI III, Prophet-5, Yamaha CS80 and probably 100 others until I’m dead and gone. They give me so much joy to restore those instruments to their former glory and use them in a modern context. I literally could not live without them. ■

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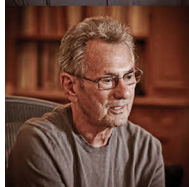
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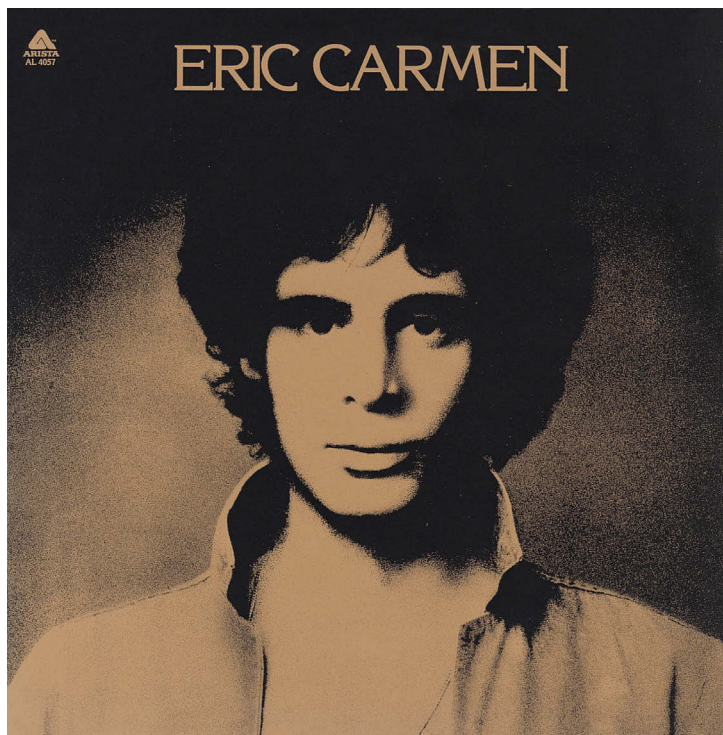
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Classic Tracks

by Matt Hurwitz



"ALL BY MYSELF"

Eric Carmen

In late 1974, Raspberries were still in full gear as one of power pop's biggest bands. But the Cleveland-based group's front man, Eric Carmen, was already composing what would be the first megahit of his solo career, which began perhaps sooner than expected with the group's demise the following year.

Trained as a classical pianist at the Cleveland Institute of Music, Carmen was pulled astray at 14 when he first heard The Beatles. "I said, 'Wait a minute, they don't have any pianos. I better learn something else, cause this is what I want to do,'" he recalls. But his classical chops would remain and would serve as the root of his first two solo hits, "All By Myself" and "Never Gonna Fall In Love Again," both recorded on his first post-Raspberries excursion, *Eric Carmen*, released in November 1975 on Arista Records.

"All By Myself," like all of the songs on the album (and much of Carmen's Raspberries' output), was written on the Model O Steinway piano in the living room of his 19th floor apartment in The Watergate, a high-rise overlooking Lake Erie in the Cleveland suburb of Euclid. As part of his writing routine, Carmen would get inspired by listening to his favorite piece of music—Rachmaninoff's "2nd Piano Concerto." He recalls: "About 10:30 or 11 every night, I'd turn everything off and go sit in my living room, where there was nothing but two chairs, a big stereo system and my piano."

Properly inspired, he began composing the first bits of what would become a 4.5-minute classical interlude within "All By Myself," written over several months, adding bits and pieces at each sitting. "Eventually, I thought to myself, 'This is really cool. Now I need a song to put it into the middle of,'" he says.

A favorite theme in the 2nd adagio movement of the Rachmaninoff concerto got his attention. He remembers thinking, "If I can change the timing of this a little bit, I could adapt that theme, and it could be the verse of a pop song." That became the opening line of "All By Myself."

The lyrics came months later, beginning with the title, which he wrote in just 45 minutes. He played the 7.5-minute composition—verses and choruses, plus the classical interlude—for bandmate Scott McCarl at one of Raspberries' last gigs in April 1975, singing it in a Barry Gibb-style vocal he had originally considered.

That same year, Carmen went looking for a post-Raspberries label and approached Clive Davis, who had created Arista Records the year before out of the ashes of Bell Records and several other labels. Unlike other execs, who insisted the artist submit a cassette demo, Davis, on Carmen's invitation, flew to Cleveland, where the artist played him most of the album on his piano. "I remember him sitting on the bench next to me, singing the chorus to 'All By Myself,'" Carmen relates. "The next day, Clive flew back to New York and offered me a deal. For a guy who couldn't get into his office a few years earlier, to have him fly out and then sign me...that was pretty cool."

To produce, Carmen stayed with legendary rock producer Jimmy Ienner, who had also helmed the four Raspberries albums. Like Davis, Ienner flew to Euclid that spring to hear the songs, which would be recorded in August and September. "I like to sit down with an artist, they give me what they're doing and feeling or what they want to do, and we talk about it," the producer explains. When it came to "All By Myself," he noted, "This is a song for every kid who's feeling insecure or lonely. That was the audience for that track. I thought [the classical interlude] was perfect for the piece. And it left room for beautiful, unique orchestration to accompany the rest of the song."

While the Raspberries albums were recorded at Record Plant New York with engineer Shelly Yakus, for Carmen's new disc, Ienner turned to ODO Sound Studios in Manhattan. Owner Vinnie Oddo had built the studio in 1961-62 into a former nightclub, in the basement at 254 West 54th Street, next door to what would become Studio 54.

ODO had a single live room—an ample 40 by 40 feet. The floor was carpeted, save for a 10-by-10-foot parquet area in front of the control room window, allowing some amount of reflection for spot players. Burlap bags filled with Fiberglas insulation hung on the walls.

When staff engineer Jack Sherdel arrived on the scene, the control room featured a tube broadcast console with four outputs and no track selectors. "All of the bubblegum stuff was done on that console," he remembers. "That was all 4-track. And we had four Pultec equalizers in a box sitting



Eric Carmen, left, with producer Jimmy Ienner at ODO Studios' Quad 8 console.

off to the side. There was no EQ on any channels. Nothing." The desk was eventually updated to a Dynamix console, and, just prior to the Carmen recordings, ODO underwent a control room upgrade, including a custom Quad-8 desk, made by Studio Consultants.

The tape machines originally consisted of a pair of mono Ampex recorders, accompanied by a 2-track. These were updated over the years to Scully 2-, 4- and 8-track machines, and, with the final upgrade, an MCI 16-track, on which Carmen's album was recorded, running at 30 ips, with no Dolby. For reverb, ODO had an EMT plate and an Eventide reverb, supplemented, at times, by the studio's rest room.

As part of the fresh start, Carmen hired a new band, a local group called Magic that he had seen on Christmas night at a popular Cleveland venue, the Agora Club. The group—Rich Reising (keyboards), Donny Krueger (drums), Dan Hrdlicka (guitar) and Steve Knill (bass)—was joined by Raspberries drummer Michael McBride and converged at Carmen's apartment to rehearse for three months, from May to June.

"We were in a new studio, with a new engineer, and I wanted to get a feel for what was going on there before we got to 'All By Myself,'" Carmen says. "I knew that it was going to be a very, very difficult track to cut because it was just piano, bass and drums, no vocal, and it was seven-and-a-half minutes long."

There were also two drummers. While the two played in unison for most of the songs, for this one Carmen assigned tasks to each. "Mike McBride was a great timekeeper, but didn't naturally play with the sensitivity of a drummer who plays tom fills that are kind of behind the beat," he explains. "So I decided the way for me to approach it was to have Mike play

kick drum, snare and hi-hat, and have Donny Krueger just play snare and tom fills. And they were pretty tight. Every so often, you can hear just a little flam when they both hit the snare together. But it actually makes it sound really thick."

While the two drummers played identical kits, and Sherdel miked them in the same manner, he varied the mics between the players, "so they wouldn't sound exactly the same, and would help thicken them up," he explains. One's snare received an AKG 414, while another was miked with one of the two American Microphone D4T "Salt Shaker" microphones that were a favorite of the studio. Kicks took a Sennheiser 421 and an EV 88, with toms covered by 421s on one, and a Beyer ribbon mic on the other.

With only a single 16-track machine, Sherdel first, with the band playing live, tracked the two drummers to 8 or 10 tracks, and then bounced them down to 4, to create room for overdubs. During mixing, Ienner had him apply plenty of EQ, echo and delay, particularly on the lead-ins to the choruses. "I wanted it to sound like a building fell down," the producer states.

The group tracked the song live, with Carmen playing a Baldwin piano that had "the hardest action I have ever played in my entire life," he recalls. Sherdel close-miked it with a pair of Telefunks. "We wanted to do it live, and weren't going to overdub it, except Eric's vocal," he states. "But part of the unique sound we got was just through the leakage into those piano mics, which picked up some room ambience, which was kind of nice."

Carmen led the group through 25 takes of the song—the group playing the rhythm section, Carmen playing his classical break, and then the band returning to close the song. "Somebody was always a little bit behind or ahead of it," Ienner notes of the many takes. "I knew this melody was so precise, and had to hit it, knowing where the vocal needed to sit." Finally hitting their mark on Take 25, the group went into the control room for a listen, only to find that a limiter had failed them. "The next take, Take 26," says Carmen, "is the one you hear."

Ienner's normal methodology, Sherdel notes, was to add a reference vocal, either after completing a rhythm track or after several songs had been recorded. But no such vocal had been recorded when Carmen brought in guitarist Hugh McCracken, the only session musician (other than string players) on the album, for the song's Harrison-esque lead guitar break. Carmen played back the rhythm track for the guitarist in the control room.

"When it came to the part where the solo was going to be, we walked out to the studio to the piano, and he said, 'What kind of thing are you thinking about?' And I put my hands on the keyboard and started to sing, right off the top of my head. He loved it, and played it."

McCracken took three passes at the solo, played with a slide on his Stratocaster while sitting in the control room, direct to the console. Sherdel produced a single-track comp, which during mixing was treated with a delay unit made by one of the staff engineers, Dale Ashby, resulting in a beautiful stereo, drawn-out sound when combined with the raw guitar track. "When he played it, it was happy sounding," says Ienner. "I wanted it to sound a little sadder, to make it fit emotionally with the track."

For the string overdubs, Ienner brought in veteran arranger Charlie Calello, whose credits included Frank Sinatra and The Four Seasons, to

Continued on p. 33



Rocking the House With a Childlike Charm

By Eric Rudolph

When *School of Rock—The Musical* opened last fall, critics seemed surprised that Andrew Lloyd Webber—he of the elite billion-dollar-grossing Broadway club—had transformed the little Richard Linklater-Jack Black movie into a family-friendly Broadway musical.

But it's true. And the show's odd multigenerational appeal is encapsulated when a tiny, pigtailed 'tween girl in a private-school uniform steps downstage, boldly playing a big rock bass. Already, there's cheerful, cheeky fun in the air. But when young actress Evie Dolan makes a pouty-lipped, tough-rocker bass face, she instantly captivates the huge theater... and nearly steals the show.

"Family audiences should be grateful for a show that only wants to have fun, and hopes you do, too," raved *The New York Times*. Family audiences have indeed made *School of Rock* a long-running smash.

You likely know the story: Dewey (Alex Brightman), an impoverished, paunchy rocker dropped by his band for slovenly showboating, impersonates his roommate to get a substitute-teaching job at a stuffy private school. He has no teaching experience and doesn't impress the worldly-wise little kids one bit. The situation looks hopeless, until he hears them playing stiff, serious music.

"Why did nobody tell me you could play music? I thought you all were a bunch of little douchebags!" Dewey exclaims, in his wildly inappropriate but charming way.

So he secretly transforms the kids into a rock band, aiming for a \$20,000 contest prize. They don't win, but Dewey redeems himself, transforms the kids' regimented lives and brings them closer to dysfunctional but loving parents—all with the power of rock 'n' roll.

Notably, the show starts with a pre-recorded announcement from Lloyd Webber saying they are constantly asked if the children are really playing live; they are rocking totally live, he states most emphatically.

However, *School of Rock* is not strictly a rock musical; it is actually

Photo: Matthew Murphy



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TIPS & TECHNIQUES

From the Pros

1 Studio Monitors Placement

Placement of your studio monitors should form an equilateral triangle. The distance between each speaker should match the distance to your listening position. The high-frequency driver should be on axis with your ears. If your monitors are placed higher than your head, turn them upside down.

2 Use a Reference Track

Save yourself time and frustration by using a Reference Track when mixing. A reference track is a commercially mastered track that is similar to the track you are mixing. It's difficult for your brain to remember the relationship between Kicks and Bass, as well as other instruments. Start your mix session by listening to 60 seconds of your reference track to "reorient" your brain.

3 Take Breaks Often

It's important to give your ears and mind a break during long mixing sessions. Every 45 to 60 minutes, you should take a 10- to 15-minute break. Walk around, stretch, or grab a snack. After your break, remember to listen to your reference track for 60 seconds before getting back to work.

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Photo: Matthew Murphy



Photo: Joan Marcus

Katie (Evie Dolan), the bass player, steals the show and sets the family-friendly mood.



Photo: Matthew Murphy

The sound design had to have a different tone in the classroom before exploding onstage with a big rock sound.

three musicals in one, says sound designer Mick Potter (*The Phantom of the Opera*, *Les Miserables*). “A lot of the show is a rock musical and the rest is quite a conventional theatrical musical,” Potter explains, noting that the last 20 minutes are full-on encore-level hard rock.

Plus, it’s Andrew Lloyd Webber (*Cats*, *Phantom of the Opera*), and the famed composer/impresario is very much about a natural sound image; the sound should seem to emanate from the stage, notes associate sound designer Adam Fisher.

So *School of Rock* has to work as a rock musical, a loud hard-rock concert and a natural-sounding, seemingly acoustic Broadway musical.

To rock hard and loud in the Winter Garden Theater, a large, exceptionally wide house, Potter started with a serious rock speaker system and worked backward, adjusting for the less-intense show styles.

“In general, speakers don’t sound great when they’re working too hard,” Potter says. “So we put in a rock system—a big Meyer Sound LYON linear line array, which is designed more for arenas than theaters.” Twelve big speakers were hung on each side of the proscenium, just like in rock. But a rock arena system is quite different from a musical theater rig. That’s where the show’s DiGiCo SD7T console earns its stripes.

“We did a lot of programming on the console to shape the system so it works for all three sound styles,” Potter explains. “We’re fully using the DiGiCo’s matrixes, outputs and flexibility for controlling equalization dynamics and delay times. It is much more than a mixing console, taking on a great deal of automated multibank compression and dynamic EQ. We maxed out all 256 processing channels, sometimes robbing Peter to pay Paul. A lot of the work was subtle

compression and EQ to shape vocals and the overall system. Rock vocals are highly compressed; the book material [dialog] and Broadway-style songs, of course, we made much more natural.”

For example, when we first see the stuffy private school, the children sing the Horace Green Alma Mater and it is “just kids singing in schoolroom, a natural sound underscored with organs,” says Potter. “So we treat it like Broadway, delaying vocals to the acoustic sources—the actors—and adjusting EQ and compression so they sound as natural and uncompressed as possible.”

At the other extreme, especially at the hard-rocking Battle of the Bands at the end, with singers 100 percent transitioned from their RF

boom mics to handhelds, the sound is heavily compressed and EQ'd, to sound like a rock concert. In between, there are the key story-point rock numbers, "Stick It to the Man" and "You're in the Band." "These need to feel like rock songs, but we're still in classroom, developing the band and the characters and balancing between rock and musical theater."

"So we're going from completely natural," with the kids singing the school song, "and then we get somewhat bigger," with more compression and EQ as the score turns to Broadway and then rock, says Potter.

Another key challenge was to make some form of rock-level sound actually come from the stage, adds associate Fisher. "We have electronic V-drums onstage and no real amps, so that there are no significant uncontrollable band sounds there."

The guitar amps onstage are all props, hollowed-out cases with a Meyer Sound UP Junior inside to provide a bit of stage imaging and foldback. But they are mainly for rock 'n' roll verisimilitude—to give the 'tween actors the performance-boosting sense that their guitar sound is really coming from the amp. To create some major stage imaging for the house, back scenery walls in the classroom hide six Meyer Sound UP Juniors in clusters of two, feeding just drum sounds. The scenery's wood paneling is actually gauze, Fisher explains.

While there is much fake audio gear onstage (including prop backline tech, with cool-looking lights), a bit of actual working audio tech is seen everywhere, throughout. The entire cast of 24 wears quite noticeable skin-colored boom mics, off-the-shelf DPA d:fine 4066s.

This evolved during the show's workshop process. The team's first challenge was to get children's smaller voices out over rock music, with plenty of room to spare. "They had to be able to act and so not be straining, and also give us enough gain. So the kids had to be on ear-mounted RF booms," rather than Broadway-musical-style hidden head mics, Potter explains.

"We could've had some cast members on head mics. However, Andrew [Lloyd Webber] and director Lawrence Connor decided it would be better if the booms were the look of the show for the whole cast, rather than just for the kids."

The booms are mics only, without foldback earbuds, except for the onstage guitarist and drummer; they both have one earbud for click track. Foldback is extensive, however, given that the eight-member pit orchestra is in a purpose-built room-within-a-room studio under the stage. Fisher notes that about 30 speakers are onstage, with the main blast coming from 16 d&b E5s in 4x4 clusters, hidden in the stage deck grid.

All monitor mixes for the onstage rock band are programmed and cued from FOH, with different settings for Kids Classroom, Audition and Battle of Bands, etc.

For the pit orchestra, an unmanned DiGiCo SD10 console backstage feeds Roland M-48 Live Personal Mixers, one per player, enabling a custom personal

micro monitor mix for each.

Out front, to fill the wide Winter Garden Theater, more mains were needed in addition to the LYON system. So Potter hung four "legacy, low mid-range boxes" Meyer Sound DS-4P mid-bass speakers, at both sides of the main arrays, aimed across the width of the house.

And even that wasn't enough, so Potter took a Meyer Sound MINA Compact Curvilinear array and hung it high and horizontally, as a center cluster to add "huge wide coverage," he notes. In all there are 209 house speakers in the 1,500-seat theater, counting delays, fills and surround.

"We were trying to get a balance between a live vibe and not sounding not too much like a studio CD," Potter adds. "However, working with musicians of Broadway caliber, who are so good, it is tough to make it too raw! But I think we ended up with a good balance." ■

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THE NEW SPHERE STUDIOS

A Bit of London in the Heart of L.A. Recording

BY ROBYN FLANS

Once you've seen the pretty red SSL 4072G+ in studio B at Sphere Studios in North Hollywood, you won't forget it. Nor will you forget the convenient way Pro Tools is configured right in the middle of the console. You will be impressed with the immense gear selection—so many mics and vintage basses (the owner started out as a bass player)—once you've set eyes on them in the special closet and all throughout the rooms.

And if you have a conversation with studio owner/producer/engineer Francesco Cameli, what will definitely stick with you will be his passion and commitment to music, sound and art.

He'll tell you it's all about creating an environment for "the guys and girls who still want to play, who do really care about making organic music, and it's about making it easy for them as artists to come in and perform their work, instead of the attitude of, 'That'll do, I'll fix that.'"

And he'll say he wants to be one of those people to capture one of those works of beauty. "It sounds really romantic and pie in the sky," he says, "but if I'm not making music that makes me happy and makes my client happy, why are we even doing it?"

Which is what led him to move his Sphere Studios from London to Los Angeles in 2014, including loading that SSL into one of two 40-foot containers to ship the studio and his home on over.

Cameli, who grew up in London and went to Berklee College of Music in Boston before returning—built his studio from the ground up, which included 5.1 mixing as well. After 13 years, he says, London's music industry began to suffer greatly so it was time for a change. Fortunately, the investment he made had compounded greatly and made it possible for him to make the move.

For the first 18 months he worked out of Devonshire Studios while he looked for a permanent place to land. At first he bought a building in Burbank where he spent a year and a half arguing with the city about parking spaces. Luckily the neighbor wanted to expand, bought him out and he found the 10,000-square-foot building that was Royaltone from 1995 to 2005 and the privately run Kung-Fu Gardens from 2005 to 2015.

"It was meant to be; there's something really magical about this building when you walk into it," Cameli says. "It just feels like you want

The uniquely styled Studio A at Sphere Studios, Los Angeles.



to be creative in here and make some music. I was very taken by that the first time I walked in the building."

Cameli says he renovated the consoles—his SSL and Studio A's original Neve 8078—re-wired the facility and tried to keep as much intact as possible.

Progressive Design began work in November 2015 and converted several spaces, including turning an office into a creative room with a vocal booth, sponsored by Roli, with a Roli Seaboard.

What had been a gym is now Studio D, a privately leased space, and what had once been a jacuzzi is now Studio E, also for private leasing.

"These two rooms were empty and tenants fill it with their own gear," explained studio manager Megan Milius.

Studio A has three Steinways—an original 9-foot from Royaltone days, an upright that will be a tack piano and a 7-foot that Cameli brought over from London—as well as a Rhodes, Wurlitzer and Hammond B3. A drum wall full of snare options will thrill drummers.

Cameli says the fact that he makes a point of having his gear in perfect working order at all times is something that he believes sets his studio apart.

"If it's in the rack, it works, period," he says. "You plug into it, sounds great, next. If it doesn't work, it's in the tech shop being fixed and you put a blank in the rack until it's fixed. It's acceptable for something to fail during a session because it just fails, you can't stop that, but it's not acceptable to have something that has failed to be sitting in a rack."

He mentions his extensive collection of instruments.

"That's my background," he says. "I grew up as a musician before I became an engineer, so I appreciate that a great instrument will inspire you a certain way. And options and not having to chase your tail over, 'This drum is not giving me what I need, let's try to tune it perhaps in a way that makes the actual instrument itself uncomfortable to be



in a tuning it shouldn't be in.' It's so much easier to say, 'Let's put the right instrument there, let's change the microphone, let's change even where we've placed the microphone,' and all of sudden you've arrived organically at a sound you're not going to have to throw a ton of plug-ins at or a ton of EQ on, or here's a bunch of compression or here are six microphones, when really here's the right instrument and one instrument."

Cameli favors PMC monitors now.

"Not an awful lot of people know about them in this town yet," Cameli says. "They're more with the film guys, but people in our control rooms go, 'Wow.'"

The studio hasn't been open long, but artists have been coming. Animals As Leaders recorded in Studio A with Cameli co-producing. TV's "Fear the Walking Dead" booked Studio A, as well. There have been some Disney sessions and recently Toto mixed their 1991 Toto Live at Montreux Jazz

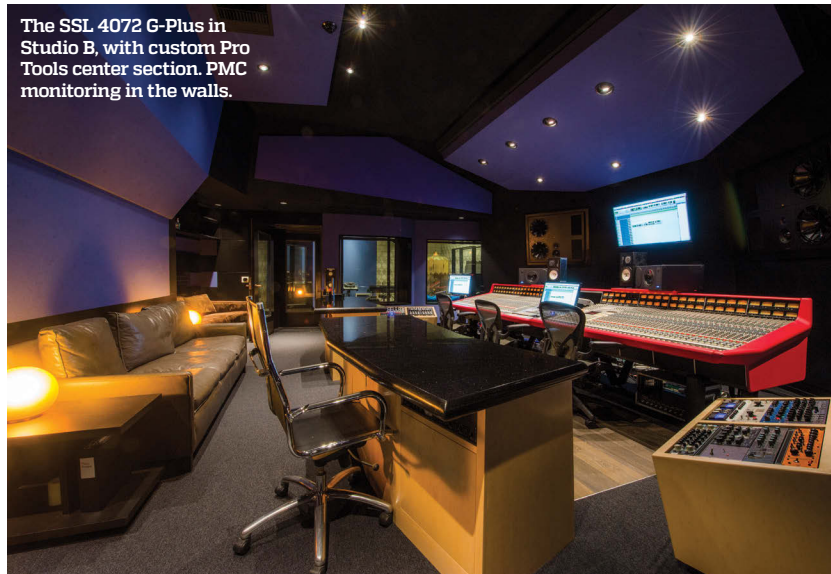
Festival DVD with Steve Lukather at the helm.

On the Toto sessions, Cameli demoted himself to assistant engineer.

"Gladly," Cameli says. "Because it's 5.1 and our assistants haven't done much 5.1 yet, and I have done a bunch of it back home and it's Toto, so I'll happily be a fly on the wall."

Toto used Studio B with the SSL G+, which Cameli purchased from another studio in about 2000 after mixing a record for Clare Teal at that studio. Cameli says it is one of the last G+ models ever made.

The SSL 4072 G-Plus in Studio B, with custom Pro Tools center section. PMC monitoring in the walls.



"The console made my job on that record, which was really well recorded anyway, that much easier," Cameli says.

After no one in London could bring his idea to put the Pro Tools rig in the center of the SSL to fruition, he tried again in Los Angeles while restoring the desk.

"I'm getting old and grumpy and I'm quite tired of sitting sideways onto my speakers and craning my neck and going deaf in one ear," Cameli says. "So SSL is modular and you can split them everywhere and anywhere, so we split the desk in the middle and we inserted a center section and put in the Pro Tools rig."

He says they ripped out the patch bay which had been in the console and remoted it and expanded the console to a 72-channel.

"Everybody likes bigger and better, so we made it bigger," he says. "And she's red. So even if you don't remember the name of the studio if you're new in town, you'll remember the red SSL." ■

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The live setup at The Distillery, with Jones facing the band, no headphones. Producer Ethan Johns is on guitar, with his back to the camera; Jeremy Stacey on drums, Andy Fairweather-Low on guitar, Ian Jennings on bass



SINGIN' WITH THE BAND

Ethan Johns Brings Tom Jones Back to His Roots

BY MATT HURWITZ // PHOTOS BY MATT WOODWARD

Remember what it was like when you were a kid, how much fun you'd have when you started making music with your mates?" asks producer Ethan Johns. "Just the four of you, sitting around, playing live and making music. That's what this is."

"This" is *Long Lost Suitcase*, the third in a series of albums Johns has produced for legendary singer Tom Jones, following the acclaimed *Praise & Blame* (2010) and *Spirit in the Room* (2012). The disc, released by S-Curve Records in October 2015, follows the same winning formula as its predecessors: putting the singer in a studio with top musicians and

letting him do what he did in the beginning of his career—sing live with a great band.

"Ethan knew that I started with a small band in Wales when I used to play the pubs and clubs—a rhythm section, and that was it," Jones explains. "I knew some of the things he had done, with Ray Lamontagne, The Kings of Leon and Ryan Adams. I asked him what he had in mind, and he said, 'I'd like to get you into a studio with very few musicians and just get to the essence of your voice,' which he felt hadn't been done before."

"To get the opportunity to put a microphone in front of a singer like Tom, who's lived the kind of life he has lived and the experiences he can put into delivering a lyric, with that voice, that was just too good an opportunity to miss," Johns says.

All three albums were recorded by engineer Dominic Monks, whom Johns had met at Peter Gabriel's Real World Studios in 2007 while mixing Crowded House's *Time On Earth*. "I was working in a very small control room, struggling to get a decent sound, so I gave Dom a crack at it," Johns recalls. "I had spent three or four days at it, and he got a staggering sound in about 15 minutes. He walked in, 24 years old, and didn't even bat an eyelid. So I was, like, 'Right, do you fancy coming and working with me?' By that point, I'd engineered almost every record I'd ever made, and I really wanted to take on an apprentice, to work with someone young to whom I could pass on what I'd learned from my dad." Their

Continued from p.25

work closely with Carmen.

To brighten up the mostly carpeted studio, Sherdel sent out for a heap of plywood sheeting, which was laid on the floor and duct taped together. "New York studios, especially ODO, had notoriously low ceilings," he explains. "That room was really dead, so the plywood helped liven it up. The hardest part, though, was keeping it quiet. We had 40 musicians in there—the room was full—all tapping their feet to keep time. We had to ask them to take their shoes off."

The orchestra did one pass, recorded to four tracks, which Sherdel mixed down to two. As was common then, they asked for another pass to double the sound, even though, contractually, they would normally have had to pay double. "It was kind of an unwritten rule back then," Sherdel chuckles. "You didn't say anything, just, 'Can you do it again? I think we need another one.'" The strings were mixed live to stereo, with the stereo pattern reversed for the second set, creating a lush, full string sound.

With the track complete, the last step was Carmen's lead vocal, which Sherdel recalls recording with a Neumann U 47, slightly compressed. Jenner, keen to capture the emotion of the lyric, had everyone leave the control room, save Sherdel, who was asked to sit on the floor so that Carmen couldn't see him. "The very beginning of that vocal, that first line, was so emotional," the producer recalls. "I made everybody leave, turned all the lights off, and I made Eric think about everybody in school who had either made him lonely or who had made him feel less than himself. I knew the song had to introduce itself. He had tears in his eyes."

After 20 or 25 takes ("Eric is a perfectionist," says Sherdel), the engineer applied a favorite effect. "I liked to delay the send to the EMT plate reverb, like a slapback delay, and then combine that with the dry vocal. It made it different; it brought the vocal close to you, but it had reverb applied to it."

The completed track, selected by the label as the first single from the album *Eric Carmen*, was still 7.5 minutes long. "Clive said, 'Whoa, we can't put out a seven-and-a-half minute single. You've gotta come up with an edit,'" Carmen recalls. "The problem was that the piano interlude changes keys four times. There was no logical way to cut it."

He, Jenner and Sherdel spent a long day and night attempting a handful of edits, eventually throwing their hands up and doing what Carmen called the 4:22 "joke edit," which was eventually released. With just a bit of the full classical interlude heard on the LP version, Jenner notes, "It gave you the story, it didn't give you the dialog."

The single, released on December 1, 1975, reached No. 1 on the *Cash Box* charts (No. 2 on *Billboard*), selling more than a million copies and certified gold the following April.

Though Carmen, when writing the song, had thought the Rachmaninoff concerto was in the public domain, the song's success brought its presence to the attention of the composer's family, who pointed out that that was not the case. Carmen then arranged to pay the estate a 15 percent royalty, but still considers the song a gift. "I always felt that Rachmaninoff gave me those verses, for loving that piece so much." ■

Special thanks: Ken Sharp, Bernie Hogya



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Engineer Dominic Monks setting up one of only a few drum mics with drummer Jeremy Stacey.

says Monks. "It's the most extraordinary sounding bit of gear I think I've ever faded up."

Suitcase was tracked to an Otari MTR-90 analog deck, using ATR Magnetics tape at 15 ips. "Sixteen tracks is fine for us," Monks explains. "When you only have three or four mics on a drum kit, and a small band, that's plenty of space. And a wider track means less noise and a richer sound all around."

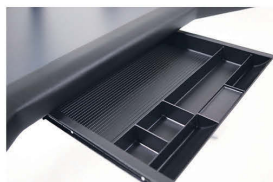
Song suggestions came mostly from Johns, Jones himself and Jones's son, Mark Woodward, who works closely with his father. The main criteria was that they resonated with Jones. "Ethan knew I love gospel, country and blues," says Jones, "so that's what we did." The resultant list included, among others, Willie Nelson's "Opportunity to Cry," Little Willie John's "Take My Love (I Want to Give It)," Los Lobos' "Everybody Loves a Train," the spiritual "He Was a Friend of Mine," Henry Russell's "Tomorrow Night," The Rolling Stones' "Factory Girl" and Hank Williams' "Why Don't You Love Me Like You Used To Do."

"When I learn a song, I can actually see the story," Jones explains. "On 'Everybody Loves a Train,' for example, I see the concrete platforms and the people. Where are these people going? I put myself in the story of the song. I'm living it as I'm singing it. And I'm seeing it. Every song is like a mini movie to me. If I'm not seeing it, I can't expect other people to."

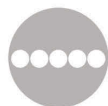
"Tom can sell you anything," Monks smiles. "He actually used to be a vacuum cleaner salesman, door to door. And I'm sure he sold a lot of them."

first project together was Ray LaMontagne's Grammy-nominated *Gossip in the Grain* in 2008, and they have been working together ever since.

While the first two albums were recorded at Real World, *Suitcase* was tracked, mostly, at The Distillery in Somerset, a studio built by musician Sam Dyson initially to record his own band, The Chemists. Designed by Neil Grant (who also designed Real World), The Distillery boasts a fine mic collection, tape machine and a live room with a stone floor mezzanine. While the studio houses a Neve 8036, *Suitcase* was recorded through a Universal Audio 610 console built originally for Frank Sinatra's home studio by Bill Putnam. "We ran Tom's vocals through that,"



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BRING IN THE BAND

Johns assembled a core group of topflight musicians to back Jones for three separate five-day sessions in 2013: the last week in March, last week in June and first week in November, recording 11, nine and nine songs, respectively.

Besides the talented Johns on guitar and other instruments, the producer brought in guitarist Andy Fairweather-Low, an old friend, it turns out, to both he and Jones. “We both come from South Wales,” the singer notes. “I used to see him playing in London at the same time I was, with his band, The Amen Corner. And Andy was friends with Ethan’s father, Glyn—he remembers Ethan when he was a baby.”

Says Johns: “I’ve known [Andy] all my life. He was a hero of mine, growing up. He would come ‘round to the house and would always take time to help me restring my guitar or show me a new chord. So to be able to stand in a room with him and make this record was a real treat.”

Bass was handled by either Dave Bronze or Ian Jennings, while the drummer was another veteran, Jeremy Stacey. “A lot of thought goes into what Jeremy plays,” Johns explains. “He’d bring maybe three kits, at least five snares, 15 or 20 cymbals. He’d even vary what sticks he was using or the type of hardware.”

The band played live with Jones singing live in the studio, all grouped together closely, without headphones, Jones included. “To me,” he says, “it was a more natural way of recording. When I was first singing in pubs in Wales, we’d rehearse in the pub, we’d get some songs together, and



Tom Jones with producer
Ethan Johns.

then we’d go out and try them. There were no preset arrangements. They were done on the spot.”

The method is one Johns generally prefers on nearly all his recordings. “Everything sounds better if you do it that way,” he explains. “You’re pitching, you’re tuning, you’re timing—you’re balancing yourselves. That’s a fairly fundamental skill as a musician. If you’re stuck in headphone world, you’re isolated from everybody. Everybody’s got their own headphone mixes, listening to their own mix. You can’t get a musical conversation going. Overdubbing is a one-way conversation. If the thing you’re playing off is stagnant, and not responding to what you’re



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playing, then what are you doing? Who are you playing for? You're certainly not making music with the band. You're doing something else. To me, it's criminal to take a singer like Tom, go away and record a track without him, and then ask him to come in and sing it on his own."

Johns and Monks set up the room with the musicians close to each other, separated by low gobos, and Jones facing them so that all could see and hear each other. "You really want everybody to be primarily listening to the vocalist," Johns explains, "because that's where the beginning of a great take will occur, in the vocal performance. That should be inspiring and leading and informing every choice that you make as a musician. We're all trying to catch the same wave. Tom responds as much to what we're playing as us responding to him. You don't have one thing without the other. If we're not feeling it, all five us, it's not gonna happen."

The method suited Jones just fine. "They're listening, they're hearing the expression in my voice—they're living in it the same as I am," he says. "Jeremy does little things with his brushes, for example, following my phrasing. It's like he reads my mind—he seems to know what phrasing I'm using and puts in accents to accent it. He changes things as I'm changing them. It's extraordinary."

Monks would mike Jones with a classic RCA 44, which, he notes, had benefits besides its inherent tonal qualities. "Half the drum sounds come in the back end of the 44," he explains. "Everybody is coming down Tom's mic. You can solo Tom's mic and just enjoy the records. That's the sound, basically. I would treat that as if it was the main microphone, as you would a main pair in a classical recording. Everything else in the room is a spot mic."

For louder tracks, the engineer would place a Shure SM7 directly next to the 44. "The 44 is a figure-8 mic, so if you stick a cardioid—like the SM7, which has great rejection out the back—next to it and mix them together, you end up with a hypercardioid microphone."

Johns played his guitars through a 10W or 15W Magnatone Lyric amp, a Vox AC4TV and a Fender Excelsior, while Fairweather-Low had a 15W Supro, with a single 12-inch speaker. "The key to recording in this manner is you've got to be getting a great sound, but at low volume," Johns explains. "So lots of very low-wattage amps knocking around." The Vox was used for the grungier leads, though Johns sometimes would use a

diminutive 1W Marshall. "It's a little boutique handmade Marshall, with incredible sound."

Monks miked the amps with a Coles or Telefunken C12, often with a Unidyne SM57 alongside; for smaller combos, a 57 or a Sennheiser 421 in the back, mixed together with the front mics, out of phase, onto a single track. "That's a trick I sometimes do on those really small amps, when you're trying to get some of the low-end resonance output from them," Monks says. "If you just put a mic in front, they can sometimes be a bit small."

For Stacey, Monks had the drummer bring his own vintage AKG D30 bass drum mic, supplementing a selection that included C12s, U 87s, Coles, the 57s and AKG D19s, the latter for louder tracks. "It would change drastically from track to track," Johns says. "I'd marvel at how Dom would change his miking technique depending on the sound Jeremy was making."

Four additional tracks were cut elsewhere, all of which had been attempted previously, but, upon late review of existing tracks, not to Johns' satisfaction. So a year after the last Distillery recordings, Jones, Johns and Monks went to Real World and tracked "Elvis Presley Blues" and "He Was a Friend of Mine," with just Johns on a tremoloed guitar and Jones singing alongside him. In a rare instance of overdubbing, Johns doubled his guitar, producing a unique stereo effect. "We only did two takes of the song," the producer reveals. "We put the guitar track from the alternate and flew it into the first pass—that's that guitar sound." Two more, "Factory Girl" and "Honey, Honey," were recorded anew at Paul Epworth's studio, The Church, with Irish band Rackhouse Pilfer.

Johns mixed most of the album himself at his home studio, Three Crows East. Since he doesn't own a 16-track analog machine, the tracks were transferred to Pro Tools at The Distillery, then converted to analog via a set of RADAR converters before being mixed through his API analog console and recorded to a Studer C37 ¼-inch 2-track.

"I do quick mixes, almost like roughs," Johns reveals. "There's very little processing, no program compression or bus compression, and very little EQing on anything. It's all balance. And I spend no more than 30 or 45 minutes on any song, and then just live with them for a few weeks."

Occasional slap echo does appear, Johns using either an Electro-Harmonix Memory Man or Lexicon PCM42, in lieu of several vintage Echo-plexes he has around. "It's pretty crunchy; it has its moments," he laughs. "There's a lot of old gear here, so it's always a bit of 'fingers crossed.' You're running tape, an old console, tubes everywhere. You just hope that nothing's gonna fail catastrophically during the live take, during the keeper."

Tracks like "Why Don't You Love Me Like You Used To Do" can even end up with a mono mix, as was the case here, giving it an authentic 78 rpm sound. "I think one of the enemies of creative record making is decision deferral," Johns says. "You should just trust your instincts. I mixed that song four or five times, and just one day went, 'You know what? I'm gonna mix this mono.'"

The process, from beginning to end, was just Tom Jones and his band, playing songs. "You can hear the joy in those songs, in his voice, because Tom is having a good time," Johns states. "The musicians are being allowed to play and express themselves and perform. And Tom is just sitting in front of people that he loves, making music he wants to sing. When you hear the smile in his voice, it's real." ■

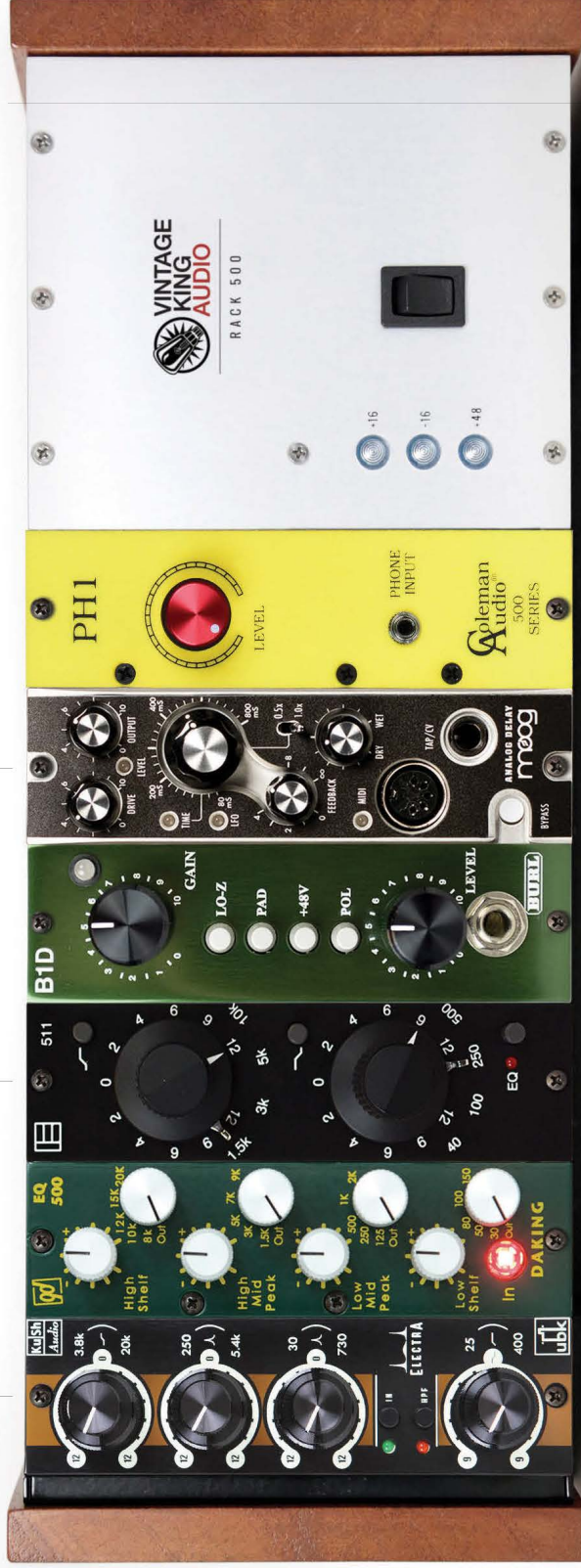
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THE MODERN WORK SURFACE

WHERE TOUCH AND TRADITIONAL CONTROL COLLIDE

BY STROTHER BULLINS

The true innovations behind modern audio mixing work surfaces are driven by thoughtful development for specific applications. A different beast than the traditional console stocked with preamplifiers and a variety of analog components for in-board processes, the modern work surface generally doesn't process anything; it simply allows more detailed manipulation of digital audio content by the fingertips. While the touchscreen revolution has certainly pushed both traditional console manufacturers as well as DAW developers to provide more tools to better "reach inside" a user's chosen workstation, touchscreens are not work surfaces, at least for the purpose of this article.

Here, I touch on options for those users wanting not only multi-touch GUIs but those great workflow institutions such as moving faders, knobs, buttons, meters of all types, and so on. Where a mouse and a keyboard are stalwart tools for DAW users, these proprietary products listed below are examples of the latest touch-based paintbrushes for modern audio engineers, content creators and musicians alike.

Perhaps, for example, you are a Pro Tools-centric composer working on a variety of pieces and spots, leaning toward larger pieces but living on smaller projects and spots. The quality and speed of your work depends on breaking away from too many keystrokes or pages; you seek to find a device to help you complete projects as quickly as they are inspired, yet are restricted by budget.

At \$1,499 street, such Pro Tools users have arguably never had such tactile control over their DAW than with Avid's Artist Control, featuring motorized faders, a decent-sized customizable touchscreen GUI, and programmable buttons and rotary knobs including a dozen smart keys. Connected via Ethernet and operating under Avid's EuCon control protocol, Artist Control is compact for small, project studio-sized setups, yet large and comprehensive enough in its control to truly save significant time. Fitting with its name, it has a musical instrument-like flow to its layout, allowing it to quickly become natural for PT-centric end users.

For those working in Pro Tools with more channels and doing more "traditional" recording and mixing on not one but multiple DAW platforms, Avid's S3 (\$4,999) delivers a classic console feel and flow based around AVB Ethernet control protocol with the bonus of a 4x6 AVB interface for digital audio I/O. Larger still, Avid's S6 control surface offers a wide range of modular components to populate a large-format style mixing surface, notably including the M10 Master Touch Module featuring a 12.1-inch multitouch GUI surrounded by eight programmable



Avid Artist Control



Avid S3

rotary encoders plus Master Automation, Display, Knob, Fader and Process Modules. As such, prices are varied depending on the S6's makeup, yet still quite affordable compared to S6's System 5 and ICON ancestors.

For commercial mix settings at the top end of audio production leaning toward Steinberg's Nuendo DAW for its proven capabilities in audio post-production, audio-for-video work, audio-for-games

and the like, Yamaha's Nuage control surface is purpose-built for use with Nuendo, allowing tactile control of Nuendo's uniquely nuanced features. Like Avid's S6, Nuage is also modular, allowing the user to build out its workflow with Fader and Master units. Up to three DAWs can be switched and controlled via a Nuage Fader unit, allowing dialog, sound effects and other various elements needed in post-production to converge for mixing within the Nuage ecosystem. Nuage uses no dedicated DSP cards, allowing user choice in CPU, and is interconnected via Dante network protocol.

I recently spoke with Kyle Snyder, Lecturer and Outreach Coordinator at Ohio University's Scripps College of Communication, School of Media Arts & Studies about his school's post-production and critical listening facility and, specifically, its centerpiece, a Nuage work surface for its a 5.1 surround monitoring setup. Teaching Nuendo as a preferred DAW along with Pro Tools and Adobe Audition, Ohio U's program carefully researched all workstation and work sur-



Yamaha Nuage control surface

face options for the new facility, choosing Nuendo and Nuage. "There is absolutely no better software for creating audio for virtual reality than Nuendo," Synder told me. "I know that Oculus [VR development company] has adopted Nuendo and the Nuage mixing system as what they use internally, and since our studio has a game research lab including the Immersive Media Initiative with Nuendo and Nuage installed, too, it supported that choice."

RECORDING MEETS LIVE

PreSonus has arguably set the DAW world afire with its burgeoning software, Studio One, now in its third version. Studio One has clearly thrived by its simultaneous development alongside PreSonus' hybrid analog/digital console and work surface series StudioLive, a line

featuring both tactile, partially analog mixers and rack-mount mixers with touchscreen control. And, of course, StudioLive is controllable via an untethered tablet, too.

In an industry where recording production profitability has plummeted and sound reinforcement opportunities have multiplied, Studio One is embraced, as it was a very affordable by-product of amalgamating recording and live sound production processes, borne from PreSonus' Capture—a multitrack recording and soundcheck program for StudioLive mixers largely taking the place of freestanding multitrack hard disk recorders. As such, PreSonus now provides a complete audio production ecosystem for multi-market serving audio professionals.

Meanwhile, Mackie's DL Series took the proliferation of tablet-based consumer products in the marketplace and built hardware that could take full advantage of its popular ergonomics, fleshing out the concept in a range of touch-based, networkable live mixing and multitracking tools. Starting small and going big, Mackie now touts its flagship AXIS system featuring a DL32R 32-channel Rackmount Digital Mixer (also controllable via tablet, iOS or Android) and the new DC16 Digital Control Surface.



PreSonus StudioLive Mix System



Mackie AXIS system



Soundcraft Ui16 Remote-Controlled Digital Mixer

Offering tactile control over one of the user-friendliest software mixing systems I've seen, the DC16 closes the circle on easy "anywhere" mixing while offering the faders and buttons we may want at a more traditional front-of-house position.

A unique live mixer from QSC Audio that is also tablet-centric, TouchMix-16 features 16 input channels, up to 10 aux sends, four effects channels and some basic recording capabilities. As such, it's an ideal tool for the club-touring, low-input-count audio engineer with a need to multitrack record performances, too. With the help of audio engineer and pro audio industry veteran Morten Støve, I organized a review of the TouchMix-16 last year; we discovered that its clever, traditional console-like design featuring premium built-in preamps are a great combination for small-scale live mixing and audio capture jobs.

TABLET/TOUCHSCREEN MIXING

For better or for worse, consumer technology habits have guided our



QSC TouchMix-16

most popular present-day audio sculpting mechanisms. Look no further than our many tablet-inspired tools—some described above—that are now integral parts of an audio professionals toolbox, used daily.

Across the board (pun intended), the touchscreen-controlled CPU is pushing it all forward. In its ubiquitous nature, the smartphone and fleshier cousin tablet have enabled us to control mixes via Bluetooth from the crowd. Are options limited? Sure, but perhaps we don't want mixers having that many options, assuming they're volunteers, newbies and general tinkers—think community theaters, churches/houses-of-wor-

ship, and school/institutional productions.

The fact is, today I can easily send someone, for example, a few sculpted channels of audio via Mackie's DX Series of Bluetooth-controlled live mixers (\$199 and \$299) at house-of-worship settings and not overwhelm a soul—rather, I give them the parameters they need and adjustments are made live, easily, via a happy-to-help volunteer. After all, they al-

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~ Brad Madix
FOH: Rush, Shakira, Marilyn
Manson, Def Leppard



"The JDX gives me all the character and distortion without the worries of

bleed and feedback."
~ Jim Warren
FOH: Radiohead, Arcade Fire, Nine
Inch Nails, Peter Dinklage

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INSIDE



Slate Raven MTi2 Multi-Touch Production Console

ready had the mixer—the phone in their pocket or tablet from home—they download the app, and there they are.

Soundcraft's Ui Series, available in 12- and 16-input varieties, take live tablet control a step further, basically eliminating the need for any

particular OS or particular app, simply controllable via its built-in Wi-Fi. This mixing product is, indeed, the “anti-console,” or the “BYO-CPU” for a low-cost solution in a variety of low-channel count, live sound reinforcement applications.

Finally, I would be remiss if I didn't mention Slate Digital's groundbreaking Raven line of touchscreen DAW controllers, which only now seem to not be sitting on the bleeding edge of pro audio technology. Officially unveiled years ago, the idea of a huge iPad-like touchscreen to essentially turn processor knobs in Pro Tools made a big splash on the pro audio marketplace, and as such, arguably ignited ideas for a wide range of next-generation control surfaces throughout our industry for live, recording and all applications in between. Now, years later, the idea is still cool and evolving; upstarts such as Neyrinck and their V-Control Pro 2 software—an iOS-, Android-, OS X- or Windows

OS-friendly system—allow remote, multi-unit DAW control via a universal-looking UI. And the beat goes on. ■

Strother Bullins is Technology Editor for NewBay Media's AV/Pro Audio Group.

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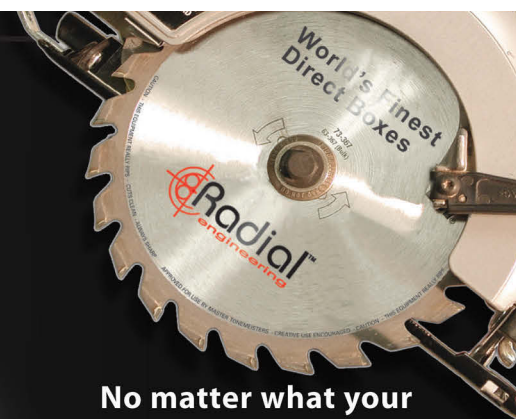
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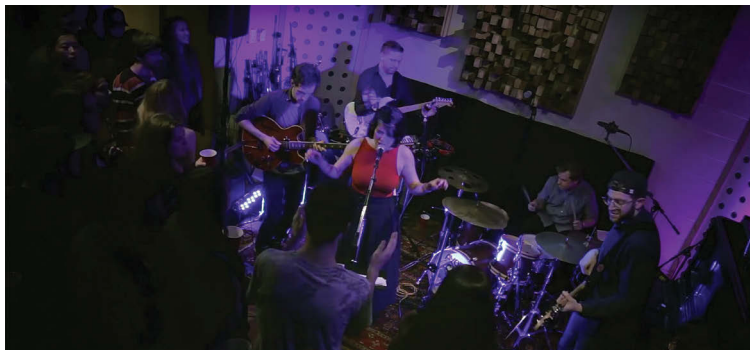
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MIX REGIONAL: CANADA



Tiny Havoc's Blue Light Session at Blue Light Studio.

Blue Light Studio Begins Live Session Series

Blue Light Studio of Vancouver has launched a concert/showcase series called Blue Light Sessions, where it hosts 50 guests in its live room for an up-close and personal show with a select band. The whole night is recorded live and filmed. The first Blue Light Session took place June 24 with Vancouver-based band Tiny Havoc.

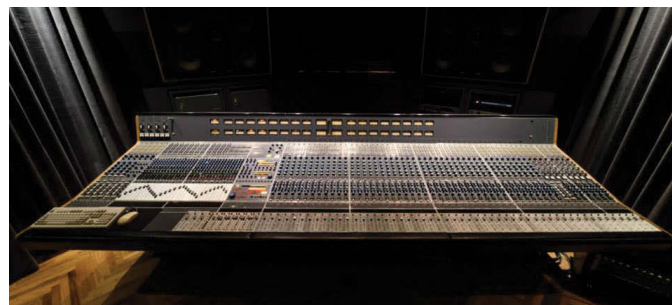
Chief engineer Kaj Falch-Nielsen says the studio has the next four months booked, but because interest is increasing, there are plans to host sessions twice a month; check the Upcoming Events section of the studio's Facebook page for the next event.

"I was inspired by YouTube videos and the love for good-quality audio on live videos," says Falch-Nielsen. "Too often I feel videos are lacking either good audio or good video, and I really just love the idea of having the live vibe but still having the controlled environment of the studio."

"There really isn't anything like this in Vancouver, and I can't think of a better venue to see a band," he continues. "So it is adding a lot of value to the music scene here, which we believe is a great thing. It's also really good marketing for us to constantly be putting out videos of the event and a great way for way more musicians to see the space."

Blue Light has also recently completed the renovation of its new space and is now fully functional. The new location at 1839 Franklin Street in Vancouver features two control rooms, two iso booths, a shared live room, and three production suites, as well as a full kitchen, lounge, and deck outside to enjoy the beautiful Vancouver mountain view.

Renovations started in May 2015 and were completed in May 2016, starting with an empty warehouse. "We completely custom designed the inside, and built it all ourselves...with the help of a few professionals like the electrician, of course," says Falch-Nielsen.



Subterranean Adds AIR Montserrat Neve

Toronto's Subterranean Sound recently acquired the famed AIR Montserrat Neve console. Only two other consoles were ever made that feature the 31106 Module. (Subterranean's console is the first of the three. The second of the three consoles is still in use today at AIR Studios in London. The third was originally purchased by Atlantic in New York, but was later sold to Bryan Adams' Warehouse Studios in Vancouver, where it is still in use today.)

As the story goes, the late, legendary producer Sir George Martin commissioned his friend, Rupert Neve, to build an ambitious console for his new studio in Montserrat. Some special notes about the console include: It was one of the first Neve consoles to feature remote mic pre's, and it has a bandwidth up to 100 kHz. No other Neve has this feature.

While Subterranean Sound Studios has operated since 2006, it closed in 2011 and then re-opened in 2015 after a major renovation—they had a new space built, acquired lots of new equipment, and, most significantly, they swapped out their Trident Vector 432 console for the Neve, which was purchased from Allaire Studios in New York.

The new studio, located in downtown Toronto (near Yorkville), houses three rooms: a live room (600 square feet), a control room (400 square feet) and an iso booth (100 square feet). The new space was constructed from the ground up and designed by Martin Pilchner, with expert guidance from Brian Chapnik of HGC Engineering. Construction was done by Den Bosch + Finchley of Toronto.

"Our philosophy is total privacy—when the studio is rented, only the client is allowed in," says engineer/studio manager Scott Lake. "Our studio is for people who want to record on one of the best consoles on Earth and with some of the best outboard gear and microphones in the world. Period."

"George Martin certainly made some of the greatest contributions to modern recording, and in light of his recent passing, we are both very proud and honored to carry on Sir George's legacy through this very special console," added Lake.

He also notes that there are no Studio 2s or Studio 3s at Subterranean. There is a private B room, but it does not get rented out often or at the same time as Studio A. The B room features a host of vintage synths—a Modular Moog, Roland Jupiter-8, ARP 2600, EMS VCS 3, Oberheim Four Voice, Yamaha CS-80, and Sequential Circuits Prophet-5, among others.

"We are a semi-private and not primarily profit motivated. We're music motivated, and we're selective about whom we work with," Lake continues. "If people need extra time, we give it to them. We want to make records the way they used to be made."

Ziad Al-Hillal is an in-house producer and engineer at Subterranean.

SESSIONS: CANADA

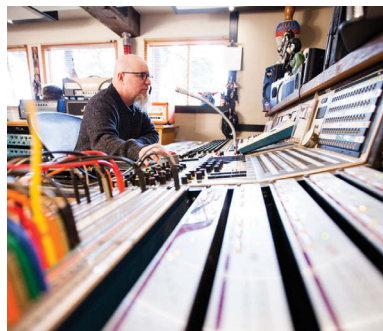


Engineer George Seara at Noble Street Studios

NOBLE STREET STUDIOS, TORONTO

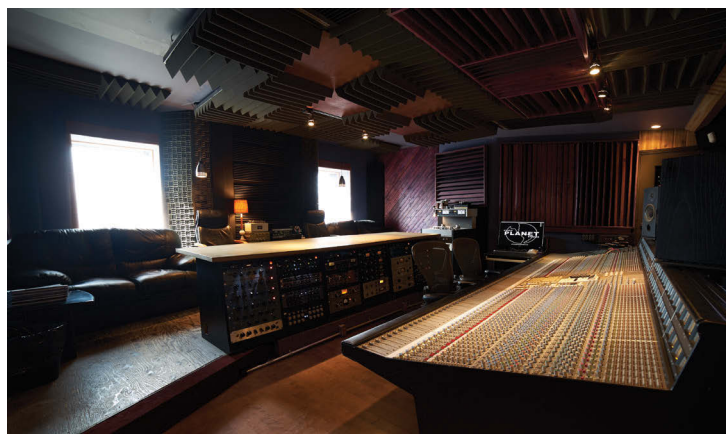
Shawn Mendes Mix Sessions, including “Treat You Better” and several other songs from the upcoming album, took place in Studio B, with various producers and engineer George Seara. They mixed on an SSL 6040 console... The Tenors Christmas album was recorded and mixed in Studio A and B, with various producers and engineer Seara. They recorded using Mytek converters and mixed on the SSL 6040. Microphone

of choice was a vintage Telefunken ELA M 250...The majority of mixing for the Chantal Kreviazuk Mix Sessions took place in Studio B, with various producers and engineer Seara. They mixed on the SSL 6040...The Arkells were in Studio A, with Joe Chiccarelli producing and engineering and Trevor Anderson as second engineer...Arcane Roots were in Studio A and B, with Dave Schiffman producing and engineering and Alex Krotz as second engineer...Carvin Winans, Martha Reeves and the Vandellas, Michael McDonald, David Clayton-Thomas, and Take 6 worked on *Carvin Winans and Friends: The Gospel of Soul*, with producer Gavin Brown and engineer Lenny DeRose...The Weeknd was in Studio B with various producers and engineer Shin Kamiyama...Deep Purple worked on a new release in Studio A with producer/engineer Bob Ezrin...Will Smith worked on an upcoming album in Studio A with producers Shane Eli and Doc McKinney and engineer Anderson...Courage My Love was in Studio A with producer David Bendeth, engineer Brian Robbins and second engineer Krotz...The studio also installed a new pair of Qested monitors in Studio B.



GGGarth Richardson at The Farm

Lexicon 480L, Pultecs, Studer A80 8-track, 1176 Blueface, and an 1176 Blackface.



Planet Studios

PLANET STUDIOS, MONTREAL

Justin Bieber recorded vocals with engineer Daniel Cinelli (One Republic, Prince, Mika, Lauryn Hill, Wyclef Jean) in the newly renovated Studio 2...Timber Timbre mixed their latest album in Studio 2 with engineer Marcus Paquin (National, Local Natives, Little Screams)...Recording and mixing for Nikki Y (A440/Universal Music) took place, with Wyclef Jean producing and Cinelli engineering...Robert Charlebois recorded an upcoming project for Cirque Du Soleil, produced by Jean-Phi Goncalvez (Beast, Plaster) and recording/mixing by Pierre Girard (Galaxie, Steve Hill, Ariane Moffat)... Steve Hill (2015 Juno Award winner for Blues Album of the Year, 2015 Maple Blues Award winner) was in Studio 2 mixing his upcoming album with Girard...Florence K (Universal Music) recorded new material for upcoming album in Studio 1 with producer/engineer Cinelli...Roch Voisine (RV International) was in Studio 2 with producer Jay Lefebvre and engineer Cinelli... The studio also recently fully renovated Studio 2. The Control Room has been completely redesigned and includes an SSL 4064 G+ with Ultimotion, the Live Room has been expanded with multiple iso booths, and they have a private lounge area, full kitchen and patio.

ARMOURY STUDIOS, VANCOUVER

The Wild was in Studio A with producer/engineer Mike Fraser and assistant engineer Spencer Bleasdale. Drums were tracked to RADAR before being transferred to Pro Tools for editing and overdubs...Devin Townsend Project was in Studio A with engineer Adam Getgood; assistant engineers Karl Dicaire, Taylor Jean, Adrian Mottram, and Mike Young (Young also edited, and Devin Townsend

Photo: billy talent/Bowman (@bowmanit) 2016



Billy Talent at Revolution Recording

REVOLUTION RECORDING, TORONTO

Billy Talent was in Studio A (Neve Room), with producer Ian D'sa, engineer Eric Ratz and digital engineer Kenny Luong...Producer Gavin Brown and engineer Lenny DeRose were in Studio A working on projects for Carvin Winans, Maia AF, and Taryn Manning... Chantal Kreviazuk was in Studio B (SSL Room) with producer Thomas “Tawgs” Salter and

engineer Stephen Koszler...The Strumbellas were in Studio A recording a cover of Bryan Adams’ “Summer of ’69,” an exclusive single for Amazon Music Songs of Summer collection, with engineer Denis Tougas. The band self-produced... Natalie MacMaster and Donnell Leahy were in Studio A recording a session—which included guest vocals by Johnny Reid, Measha Brueggergosman and Ron Sexsmith—with engineer Vic Florencia. MacMaster and Leahy self-produced... Laila Biali was in Studio A with producer Ben Wittman and engineer L. Stu Young. Biali also co-produced...Tanya Tagaq was in Studio A recording the follow-up to her Polaris Music Prize-winning album *Animism* with producer Jesse Zubot and engineer Koszler

THE FARM STUDIOS, VANCOUVER

The Farm Studios owner GGGarth Richardson recently saw the following artists: Halfmoon Run, produced by Nygel Asselin and engineered by Shawn Cole; Hedley,

Continued on p. 60

Tech // new products



NEYRINCK V-CONTROL PRO 2

Hands-on iOS and Android DAW Control

V-Control Pro 2 from Neyrinck (\$49.99) is a new system offering hands-on control of audio and video projects using almost any device. The app controls OS X and Windows Media applications including Pro Tools, Cubase, Logic Pro, Studio One and Premiere Pro. Free control apps connect through the V-Control Pro 2 software. V-Control Pro 2 is also used to connect the Slate Raven MT12 and MTX mk2 systems to media applications such as Pro Tools and Logic Pro. Also included is V-Console, a free 8- or

16-fader iOS and Android control app for recording, editing and mixing that can also use multiple devices for up to 32 faders of control. V-Console upgrades include V-Window, which allows users to control plug-ins using the actual plug-in screens, and an improved insert and plug-in popup window.

AUDIO PRECISION APX1701

Speaker, Headphone and Mic Measurement



The new APX1701 Transducer Test Interface from Audio Precision (\$3,950) integrates instrument-grade amplifiers and microphone power supplies for designers and pro-

duction test engineers seeking clear insight into the behavior of their electro-acoustic devices. With a signal-to-noise ratio of 134 dB, the APX1701 provides 20 dB of fixed gain amplification from DC to 100 kHz. The system's power amplifiers are configured as two independent channels, with power ratings up to 100 watts for a single channel into 8 Ω . For microphones, either as measurement mics or as the device under test (DUT), the APX1701 is equipped with pairs of balanced and unbalanced microphone inputs. The balanced inputs include switchable +48-volt phantom power, while the unbalanced inputs support switchable CCP (Constant Current Power) and are TEDS-capable (Transducer Electronic Data Sheet).



MESANOVIC MICROPHONES MODEL 2A

Active Ribbon With Custom Resonator Plates

The Model 2A from Mesanovic Microphones (\$1,199) is an active version of the company's Model 2 ribbon mic. The microphone features signature motor structure and custom designed resonator plates to provide extended, detailed and 3-D-like response found in the Model 2. The Model 2A's high output is provided by a custom, in-house wound, toroidal transformer. The phantom-powered electronics work as an impedance buffer and provide no additional gain or coloration to the sound. The result is 13 dB more output than the Model 2 and extremely low self-noise. The Model 2A will work with any preamplifier, including an entry-level interface or a high-end dedicated unit. The Model 2A is covered by a lifetime parts warranty and a free re-ribboning for the original owner within two years of purchase.



ZOOM H4N PRO HANDHELD RECORDER

Upgraded Mics, Preamps and Noise Floor

Zoom's new H4n Pro 4-track recorder (\$219.99) features advanced microphones, high-performance mic preamps, and an extremely low noise floor. The built-in condenser mics have been updated to handle up to 140dB SPL promising distortion-free X/Y recording in even the loudest environments. The Pro's two XLR/TRS inputs use the same high-performance, low-noise mic preamps as the company's Zoom H5 and H6 Handy Recorders, and the improved noise floor (-120 dBu EIN) allows for audio capture with less noise and fewer artifacts. Other features include a new rubberized, ergonomic body, locking combo connectors, a headphone/line out jack and a built-in monophonic reference speaker. Also included are three recording modes, built-in studio-grade effects, and the ability to function as a 2-input/2-output USB audio interface.



PLATINUM SAMPLES ACCENT OCEAN WAY DRUMS

New VI Brings High-End Sounds

Platinum Samples has released Accent Ocean Way Drums, the first library using their new powerful but easy to use Accent virtual instrument. The Accent player is available as AAX64, VST2, and AU, and supports sample rates up to 96 kHz with a resolution of 24 bits. Accent also includes its own internal effects (Gain, Filter, 4 Band EQ, Compressor, Limiter, Gate, and Reverb) as well as support for third-party plug-ins. Features include a resizable user interface and familiar DAW-style mixer. This library includes four full kits with Crash, Splash, China and Ride cymbals, plus four bonus Kick and Snare drums. The Kicks and Toms were recorded with the snare strainer both on and off. Each snare drum is recorded with two microphone options: Shure SM57 and AKG C12A. All kits also include three sets of stereo room microphones.



IK MULTIMEDIA T-RACKS SATURATOR X

Modeled Classic Analog Tape Effect

IK's T-Racks S Saturator X (\$79.99) brings the color, flavor and saturation effects of classic analog audio processing gear to digital recordings. Features include 10 individual styles of saturation and distortion from the gentle, subtle hint of drive from a slightly over-driven transformer to the full-on, aggressive "in-your-face" mayhem of tubes driven beyond their limit. The processor can be used as a plug-in on the individual tracks in a mix or as part of the T-Racks signal processor chain. Controls include Input Gain, Output drive (can be independent or inverse linked controls), Saturation Mode select, Brickwall limiter engages and Oversampling select. Saturator X also features a "Magic Eye" VU meter that quickly gives users a vintage-looking, visual indication of the amount of saturation being applied to the incoming signal.



FOCUSRITE SCARLETT INTERFACES

Second-Generation USB I/O

Focusrite's second generation of Scarlett USB audio interfaces (prices TBA) is packed full of improvements including round-trip latency as low as 2.74 ms. There are six interfaces in the range, as well as two studio pack bundles. Improvements include the latest Scarlett mic preamp and a redesigned instrument input with increased headroom to handle the hottest inputs. New analog protection circuitry across both the inputs and the outputs guards the interfaces against unwanted power surges. The Scarlett range also now operates at sample rates up to 192 kHz. The Scarlett interfaces will also ship with Avid Pro Tools | First. Named Focusrite Creative Pack, the exclusive offering features the free version of Pro Tools and 12 additional plug-ins, including the Eleven Lite for real-life guitar amp emulations, and Tape Echo, which brings the sound of classic analog delays to mixes.



BLUE MICROPHONES BOTTLE MIC LOCKER

Versatile Turnkey Transducer

Blue Microphones Bottle Mic Locker (\$5,999) combines the company's flagship Bottle microphone with a variable-sensitivity power supply and four of Blue's interchangeable classic capsules. Components include the Bottle, a Class-A tube circuit powered by a hand-selected EF86 pentode vacuum tube using a hand-wound transformer. The hot-swappable capsules include the Bo Bottle Cap for silky, extended presence; B6 Bottle Cap offering classic warmth; B7 Bottle Cap with detailed midrange and airy presence; and the B8 Bottle Cap for crystal-clear sound with incredible detail. The Bottle Mic Locker ships with the Power Stream, a precision-engineered power supply that allows the user to vary the polarization voltage.

New Sound Reinforcement Products



L-ACOUSTICS KIVA II

Ultra-Compact Modular Line Source

The new Kiva II from L-Acoustics (\$TBA) offers 6 dB of max SPL versus its predecessor, maximized amplifier density with 16-ohm impedance, and a new rugged enclosure material. Despite its ultra-compact format, the Kiva II features L-Acoustics' Wavefront Sculpture Technology, giving it a long throw capability and delivering even SPL from the front row to the back of the audience.

Its coplanar transducer arrangement and new K-shaped coplanar transducer configuration generate a symmetric horizontal coverage of 100 degrees without secondary lobes over the entire frequency range. Weighing only 31 pounds (14 kg), the stealthy design and form targets it perfectly for Performing Arts Centers and special events demanding minimum visual obstruction, and particularly in L-ISA multichannel configuration installations.



PEAVEY ELECTRONICS XR-AT POWERED MIXER

Portable High-Power Unit With Auto-Tune

The XR-AT powered mixer from Peavey (\$999.99) incorporates a 9-channel mixer and 1,000 watts of power (1,500 watts peak) into a unique, portable design. Plus, for the first time, the mixer includes the Antares Auto-Tune pitch correction technology. Targeted for small to medium-size venues, the XR-AT comes with onboard digital effects and features only available from Peavey such as MidMorph and FLS, the company's exclusive Feedback Locating System. The mixer also includes the Peavey exclusive KOSMOS bass enhancement and Bluetooth wireless connectivity. Other features include an assignable Main/Main or Main/Monitor power amplifier with four twist-lock combination outputs, including a subwoofer line output with analog record output capability.



YAMAHA EXPANDED HS SERIES

Mounting Points for SR Applications

Yamaha has expanded its popular HS Series (\$TBA) powered studio monitor line with three new models. The HS5I, HS7I and HS8I are available in both black and white finishes and can be used in conjunction with three optional bracket types—wall, ceiling and baton. The HS enclosures are constructed from dense MDF with a dampened acoustic response and employ a traditional three-way mitered-joint technique that firmly anchors the corners of the enclosure to dramatically improve durability and eliminate unwanted resonance. HS Series full-range models feature two response controls with detailed settings that allow them to adapt to the surface acoustics of rooms of varying shape and size. As with the original models in the series, the new HS-I models can be used in conjunction with the HS8S, an 8-inch bass-reflex powered subwoofer that delivers low frequencies down to 22 Hz.



D&B Q-SYS PLUG-IN

Cross-Platform Amp and Speaker Control

d&b audiotechnik has announced a new software plug-in for the Q-SYS platform from QSC enabling the comprehensive control and monitoring of d&b amplifiers and loudspeakers from any Q-SYS Core. Integrators can provide Power on/off, Mute, Gain, Preset Recall and other amplifier controls from any Q-SYS user control interface hosted on any number of control devices and, likewise, can read extensive status information from the d&b loudspeaker system. This allows system designers to achieve high-performance d&b quality in installation applications requiring detailed, customized remote control features. Extensive integration with Q-SYS also allows the status logging of all audio connections to amplifiers, and the operating state of connected loudspeakers to be surveyed.

Your search for a new microphone ends here.



AEA N8

Phantom-powered ribbon mic
featuring AEA's signature Big
Ribbon technology



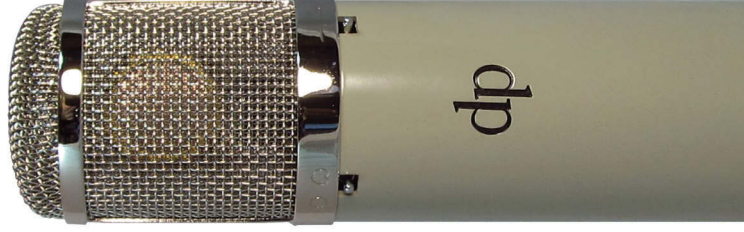
JOSEPHSON C715

Unique single-diaphragm variable
pattern condenser mic with metal
mesh grill



PEARLMAN TM-250

Classic design & masterful hand-built
quality; a sound to behold



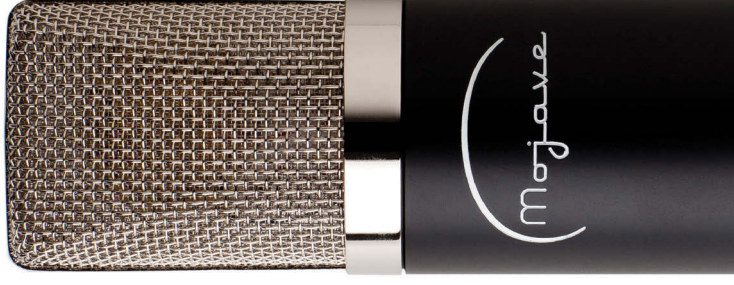
TELEFUNKEN M60 FET

Telefunken's first non-vacuum
tube, FET-based solid-state
condenser mic



MOJAVE MA-300

Multi-pattern tube LDC
promising warm, full-bodied
sound reproduction



Tech // reviews

GROVE HILL AUDIO LIVERPOOL TUBE COMPRESSOR

Modern Take on a Classic Beatles Processor



Five rotary controls and a gain-reduction meter grace the Liverpool's front panel.

The Liverpool is a hot-rodded version of the EMI RS124 compressor, which was used in early Beatles albums recorded at Abbey Road Studios. Its lineage predates the Fab Four's seminal albums, however, as the RS124 was itself a modified Altec 436C compressor, fashioned by EMI engineers. Incorporating an all-tube signal path and solid-state power supply, the single-channel, feedback-style Liverpool compressor uses a dual-triode 6BC8 remote cutoff tube as its gain control element—a variable-mu circuit design.

HIT IT HARD

The Liverpool's operation manual states that the 6BC8 is re-biased by a "6AL5 vacuum tube rectified side-chain control voltage which causes the 6BC8 to smoothly change its mutual conductance." This design reportedly allows the Liverpool to handle a wide range of input signals quickly without introducing harmonic distortion.

Five rotary controls grace the Liverpool's front panel and adjust input gain, threshold, attack time, recovery time and output gain. The Input and Threshold controls each have more than three-dozen detents, facilitating precise, repeatable setups. The Input (gain) control is located directly after the input transformer in the signal path and before the tubes; raising it drives the gain-reduction tube harder and increases compression depth (up to 30 dB max). The Liverpool's Threshold control also increases compression depth by adjusting the compression ratio from 2:1 to 4:1 as you rotate it clockwise (which simultaneously lowers the

threshold). A second gain stage amplifies the signal. The Liverpool's Output (gain) control is a stepped attenuator with a range of 0 to -30 dB (in 5dB steps, presenting constant impedance).

Neither the Altec 436C nor the EMI RS124 offered adjustable attack times. The Liverpool's Attack control is a stepped affair offering six attack times ranging from 3 to 138 milliseconds. The fastest setting is faster than either the 436C or RS124 provided, while the three slowest settings provide longer attack times than those models yielded; the remaining two attack-time selections are close to what the vintage units provided, respectively. In between each attack-time selection is a setting (labeled 'C') that bypasses compression and allows the unit to be used as a line amplifier, with power output of +20 dBm.

The stepped Recovery control selects one of six release times ranging from 127 ms to 6 seconds. In between each release-time setting is a setting (labeled 'H') that turns on the compressor's Hold function (one of the mods introduced in the EMI RS124). The Hold function maintains compression depth by preventing its release phase from occurring.

The trim control on the Liverpool's front panel, below the Attack control, adjusts the provided VU-style gain-reduction meter to show 0 dB of gain reduction with no signal input and all controls turned down or off. (The smaller trim immediately

TRY THIS

Compressors can sometimes produce an accentuated thump when processing the first note of a percussive track. To preclude this, play the track back and, the instant gain reduction is achieved, place the Liverpool into Hold mode. Then rewind the track and compress it from the beginning.

below the backlit meter is not intended for use.) A power switch and associated status LED finish off the front panel.

On the Liverpool's rear, you'll find balanced XLR I/O connectors, a ground terminal, an IEC receptacle for the 6-foot detachable AC cable, a ¼-inch tip-sleeve jack for linking two units for stereo operation, and a voltage selector. Liverpool accommodates 115 or 230 VAC at 50 to 60 Hz. Fifteen to 30 minutes of warm-up time is recommended to achieve optimal performance.

The Liverpool's frequency response is stated to be 10 to 40,000 Hz ± 1.5 dB—more extended than the vintage compressors on which it's based (the 436C had a 30 to 15,000Hz response for the same tolerances). THD is cited as 0.08-percent at 1 kHz with the output attenuator set to 0 dB. The noise level is said to be 82 dBu below the rated output. Maximum output level is about +34 dBm (hot!) with the compressor bypassed. The Liverpool is covered by a 90-day warranty for labor and materials, 360 days if you register the unit within 30 days of purchase.

MAKING TRACKS

Working with the Liverpool in recording sessions, I found it a little difficult to find the sweet spots for the Threshold and Input controls. The Threshold control had a much greater effect on compression depth than it did on the actual threshold for signal processing, for which it seemed to have a quite limited range of adjustment. Because of that, I found it best to set the Threshold control strictly for the ratio I wanted and then adjust the Input control to determine how much of the signal would exceed the threshold. Even with the Threshold control set for the lowest possible ratio and highest threshold, I often found myself setting the Input control very low—between '2' and '3' to avoid compressing tracks too much; raising the control from 2 to 3 typically increased gain reduction a whopping 20 dB.

Once I learned the ropes and put on my kid gloves, I got great results using the Liverpool to compress lead vocals. There was no mistaking this was a tube compressor; the sound was rich and full-bodied. I could increase flattering distortion by raising the Input control—thereby driving the input tube harder—and lowering the output gain, although this often increased compression more than I wanted. Using the same technique with the compressor bypassed (using the Liverpool as a line amplifier) sounded terrific, dishing out velvety tones.

Heavy compression produced the euphonically dense sound variable- μ compressors are renowned for. (This phenomenon is due to the gain-control tube saturating.) On electric bass guitar—recorded via DI using an upstream Millennia TD-1 Music Recording System in FET mode—the Liverpool delivered a supersize track brimming with lush overtones and exhibiting beautifully leveled dynamics. I was shooting for a non-percussive, compact sound. Very fast attack and release times and more than 15 dB of gain reduction produced a rounded

PRODUCT SUMMARY

COMPANY: Grove Hill Audio

PRODUCT: Liverpool Tube Compressor

WEBSITE: grovehillaudio.com

PRICE: \$1,495

PROS: Sounds terrific. Can be used as a line amplifier.

CONS: Finicky operation. No internal side-chain filters or external sidechain input.

attack and wonderful sustain, without any hint of pumping or unpleasant distortion (like fast time constants can sometimes cause on bass tracks). I also got great electric guitar tones—dense and creamy—using a fast attack and slow recovery.

The Liverpool's multiple compressor bypasses (which, remember, are situated between attack-time settings on the Attack control) are meant to help ease A/B comparisons of wet and dry signals, but they didn't always act as advertised. If I switched the Attack control to a bypass position before compression was released and level restored, the gain reduction would persist in the supposed bypass mode.

Regardless, I'd rather the compressor featured a single, isolated switch for bypass; that would allow me to adjust attack times on the fly without potentially whipsawing dynamics as the compressor gets repeatedly turned on and off. I could put the Liverpool into Hold mode to prevent gain recovery while stepping through attack-time settings, but such a workaround ideally shouldn't be necessary. My only other disappointment was that, considering the relatively high price tag, I'd like to see internal sidechain filters or an external sidechain input.

My criticisms concerning the Liverpool's operational quirks don't take away from the fact that it's a terrific-sounding compressor. If you're looking for a compressor that delivers rich texture, girth and density, be sure to give the Liverpool a test drive. ■



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WAVES VITAMIN SONIC ENHANCER AND SUB ALIGN PLUG-INS

Enhanced Tone and Phase Correction for Live Sound

Waves describes Vitamin (see Fig. 1) as a “multiband harmonic enhancer and tone-shaping plug-in,” but its influence can range from subtle to completely changing the character of a sound. Vitamin is a parallel processor so you can use it as an insert and balance dry versus enhanced signals. It has five bands with level faders and four adjustable crossover points, so you can dial in the region that you wish to process. That flexibility also means you’ll need to spend some time becoming familiar with what Vitamin can do.

Vitamin’s input and output controls provide 18 dB of boost or cut, and each band can be boosted up to 48 dB. There’s also a “Punch” switch and stereo width control (per band) ranging from mono to expanded. I experimented with these a bit but felt they’d be more useful in a mastering application than in a live context.

I used Vitamin on Avid Venue and Profile systems as a channel and group insert and had no issues regarding latency. To get a feel for what Vitamin could do, I tried it on overheads and dialed up “Overheads 3” from the preset library. This sounded great, pushing the transients forward and brightening up the cymbals without causing them to take off your head. I then tried presets for snare: “Snare 1” was sweet, adding some smack to the attack without making the drum sound thin. “Snare 3,” not so much—it exaggerated leakage from the high hat.

Since it’s possible to add tons of gain to a channel with Vitamin, the I/O level controls come in handy. Cranking up the midrange or low-midrange band can clip Vitamin’s output, so on a few occasions, I reduced the input level a few dB to avoid distortion.

Vitamin excelled in two particular applications for me. The first was on lead vocal where I set the low-midrange/midrange crossover point to 500 Hz, the midrange/high-midrange point to 2.5 kHz, and the high-midrange/high crossover point to 9 kHz. Gains were set as follows: mid +17, high-mid +20, and high +32. This pushed the lead vocal to the front of the mix, making it more intelligible and present without making it sound processed. I found that I could use the high band to add more “back of the throat” to



Figure 1: Each of Vitamin’s bands can be boosted up to 48 dB.

a vocal than I could by using EQ. Setting the high-midrange/high crossover point to 5 or 6 kHz and cranking up the high band +20 added air to the vocal.

The other application I liked for Vitamin was using it as an effects return for drums (no dry signal). I could dial up an aux send on the snare, hat and cymbals as needed, helping them pop through the mix without stepping on vocals or guitars. There’s not much you cannot accomplish regarding timbre using Vi-

tamin. It’s got tons of versatility and can impact sounds profoundly—so I’d recommend using it judiciously.

SUB ALIGN

As its name implies, Waves’ Sub Align plug-in (see Fig. 2) was designed to allow engineers to correct time- and phase misalignment between subwoofers and “top” cabinets in a P.A. system. Experienced (and skeptical) engineers might ask, “Why would I need such a tool when I can simply adjust these parameters in the system processor?” And they might have a valid point. However, engineers don’t always have access to the system processor. I’ve worked casino showrooms where the processor is locked off, with only the installer having access to parameters such as crossover points, phase, and the signal delay between top and subwoofer cabinets. In most cases, the system has been set carefully and accurately, but there are exceptions—and that’s where Sub Align comes into play.

PRODUCT SUMMARY

COMPANY: Waves
PRODUCT: Vitamin Sonic Enhancer
WEBSITE: www.waves.com
PRICE: \$249
PROS: Zero-latency processing. Native and SoundGrid compatible. Stereo mode allows control over image width for each band.
CONS: Takes a bit of practice to use effectively.

TRY THIS

You can use Vitamin to add crunch to your drum overheads. Insert Vitamin on the overhead channel(s) and recall the Big Room Beat 3 preset. Crank the input level up to +18. Do not modify the crossover points or the Direct level. Set Lo to 36, Lo-mid to 32 or 33, Mid to 33, Hi-mid to 38 and Hi to 30. Take the output level down to -18 dB. The result will add a subtle distortion to snare and tom hits. If you find that the overall sound is too bright for your particular P.A., back down the Hi-mid control.

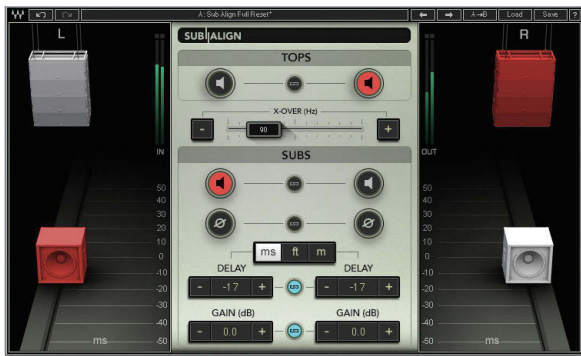


Figure 2: Controls are provided for Crossover Frequency, Solo, Phase Reverse and subwoofer delay.

Sub Align is intended for patching across the main L/R mix bus. This is easy on digital desks capable of running Waves plug-ins, but other situations (analog mixing consoles in particular) may require Waves MultiRack and an audio interface. The Sub Align manual thoroughly describes the purpose of each control in the very friendly UI but does not include much in the way of tips. Waves has a helpful video on YouTube.

The Sub Align window shows a pair of P.A. tops and subs. Controls are provided for Crossover Frequency, Solo (tops or subs), Phase Reverse (subs only), subwoofer delay in feet, meters or milliseconds, and subwoofer gain. Parameters may be stereo linked or separated, and the ability to separate phase reverse on the subs is an excellent feature. For most of my tests, the crossover remained at the 90 Hz default setting.

One of the first things I checked when using Sub Align with various P.A.s was whether or not the left and right subwoofers were in phase with each other (see the "Try This" sidebar for Sub Align). Most times the subs were in phase, but in at least one instance reversing the phase of one side corrected phase. To determine if the subs were time-aligned with the tops, I played a click through the P.A., grabbed the on-screen sub cabinets and dragged them

PRODUCT SUMMARY

COMPANY: Waves

PRODUCT: Sub Align

WEBSITE: www.waves.com

PRICE: \$129

PROS: Clear, easy to use interface.

Does exactly what it claims and is highly effective.

CONS: May require additional hardware; not a tool for the inexperienced.

TRY THIS

Play a kick drum or a click through the P.A. system. Link the left and right subs and click solo. The tops will mute and you should hear a dull thump. Physically walk over to the left sub(s) and the right sub(s) to make sure they are all working. Unlink the subs and solo each one individually. The low end should be strongest with both subs playing. If the low end decreases when both subs are playing, there's a good chance that one side is out of phase. How do you know which side? Unlink the tops, solo the left top and the left sub. Reverse phase of the left sub. If the low end gets stronger, the left sub is out of phase. Do the same with the right side of the P.A., then un-solo the top and solo both subs. The low end should be stronger with both subs playing.

in the direction I felt they needed to "move." If the subs were placed physically forward of the tops I pushed them back in Sub Align (and vice versa). The results of changing the sub delay were clearly audible.

Back at the shop I set up a stereo P.A. system with left and right subs, both placed a few feet in front of the tops. I played a kick drum through the P.A., checked the phase relationship between the two subs, then used Sub Align to dial the subs back a few feet. Make absolutely no mistake: as you adjust the graphic position of the subs, you will clearly hear the difference. This is not subtle; when the alignment is correct, the difference is profound.

When evaluating Sub Align, it's important to keep in mind its intended use—for when you do not have access to the system processor. Audio snobs may retort with, "Why are you working on a P.A. where you can't access the processor?" And bless their hearts. But like many engineers, I do not live at the top of the food chain. Sometimes I have to feed my (rented) desk into a headliner's desk, and the headliner's engineer or systems engineer are the only ones allowed access to system parameters. Other times I am working on P.A.s that were not properly installed, or were properly installed but have the subs set too

loud or too low. In cases like that, Sub Align is an invaluable tool. ■

In addition to being the Sound Reinforcement Editor for Mix, Steve La Cerra is the tour manager and front of house engineer for Blue Öyster Cult.

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GRACE DESIGN M905

With plenty of connectivity, Grace's new intuitive monitor controller is a sublime home base for the modern control room



MANLEY NU MU

Manley adds to their legendary family of tube gear with an innovative new approach to dynamic shaping



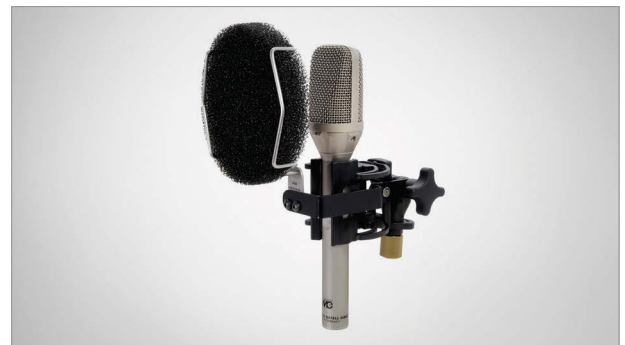
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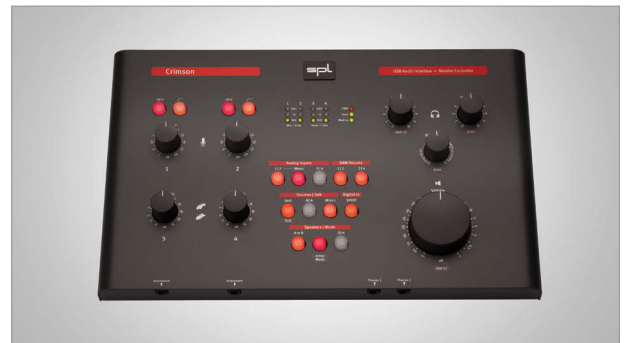
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Tech // reviews

RF EXPLORER HANDHELD SPECTRUM ANALYZER

Affordable Diagnostics Features RF Venue Vantage Software

When it comes to wireless audio, there always seems to be a shroud of mystery around why a device works on some days in some venues but not on others. This is likely because the human eye cannot see the radio frequency link between the transmitting and receiving antennas. This is where the RF Explorer Handheld RF Spectrum Analyzer and RF Venue Vantage software (Mac/PC, iOS/Android) come to the rescue.

The RF Explorer Handheld Spectrum Analyzer (see Fig. 1) offers a very affordable and portable alternative to some of the bulkier, high-dollar analyzers on the market. Together with the very reasonably priced Vantage software, this duo allows a simple, quick and precise picture of the active RF environment. Additionally, RF scans can be exported and then imported into third-party software for wireless device coordination.

The handheld unit tested here is made by RF Explorer while the Vantage software is manufactured by RF Venue, an unaffiliated, separate company and Website based out of Massachusetts. This latter company also makes a rackmount unit of the RF Explorer called RF Explorer RackPRO, not tested here.

SMELLING THE AIR

The RF Explorer reviewed here is the 3G combo, which offers two antenna connections for differently ranged frequency scan modules. Module 1 covers 240 to 906 MHz, a range encompassing the RF bands where most of the pro audio RF devices on the market reside. Module 2 covers a wider range, offering 15 to 2,700 MHz of analysis. This could be helpful when the need arises to scan WiFi activity (2.4 GHz), as there are some pro audio RF devices that do transmit in this range.

Setup and scanning are very simple. I began by attaching two of the three supplied, different-length antennas to the RF Explorer. I used the longest antenna for the 240- to 960MHz module and connected the shorter one to the 15- to 2,700MHz module. There wasn't much indication as to which antenna was designed for which module, but any of the lengths could be used on either module. As long as the antenna you are using is at least a quarter-wavelength as long as the lowest frequency you want to analyze, you should be fine.

Next, I made sure the module I was going to use, in this case 240 to 960 MHz, was selected in the unit's Frequency Menu. This must

be done before connecting the RF Explorer to the computer, as you can't change modules once the Vantage software is active. There are several other menu items that must be configured before the RF Explorer can be actively scanning with the software. The good news is that upon registering the software I was sent an email with a detailed set of video instructions. It took me about five minutes to get it all set.

Connection to the computer must be done in a specific order. With the handheld scanner turned off, I connected it via USB to my MacBook Pro that had the Vantage software installed. The RF Explorer immediately came to life and started scanning while being powered by computer's USB port. Next, I opened the Vantage software, which took over displaying the normally black and white scans from the handheld unit in a high-contrast, easy to read, full-color display.

The RF Explorer is fine little scanner without being connected to the Vantage software, but I found its display small and hard to read. This is because the unit is designed to be portable so I can't really fault it for that. It does offer great mobility for the operator when not connected to the computer, making it handy for walking the performance area or stage to find out if any RF interference sources are location-specific. Additionally, the internal battery in the RF Explorer is charged via USB, so it's always ready to go.

VANTAGE SOFTWARE

The Vantage software offers three basic features. First, RF scanning: Simply use the menu at the top left of the display to choose some preset frequency ranges or choose a custom range. Custom frequency ranges can be made as finite at 1MHz wide or as broad as the chosen RF module on the scanner.



Figure 1: The pocket-sized RF Explorer comes in six models ranging from \$129 to \$365.

PRODUCT SUMMARY

COMPANY: RF Explorer
PRODUCT: RF Explorer Handheld Spectrum Analyzer 3G Combo
WEBSITE: j3.rf-explorer.com
PRICE: \$269
PROS: Portable, compact, cost-effective, broadband spectrum analyzer.
CONS: Small, two-color display.

PRODUCT SUMMARY

COMPANY: RF Venue
PRODUCT: Vantage Software
WEBSITE: rfvenue.com
PRICE: \$99
PROS: Easy to read, simple software design. Provides easy export of .CSV files for use with third-party coordination software.
CONS: Only available as a Mac OS app.

The second function is Monitoring. This lets the user select, monitor and label specific RF signals or devices. This is perfect for looking at or keeping an eye on the levels of your mission-critical signals. You can also set up a RF level threshold, which sends an alert if your monitored device falls below the mark. All monitored devices are also marked and labeled inside the active frequency scan window, allowing the user to see any points of possible interference.

The third function is Export. This allows for exporting of scan data. Exports can be a single scan, an average of multiple scans or a maximum of multiple scans. The user can decide from the drop-down menus how many scan passes are to be included within multiple scan exports. I chose to do an average of four passes between 240 and 960 MHz. After hitting the scan button and the four passes finished, I exported the scan as a .csv file. I was then able to easily import this into Shure's Wireless

Workbench 6 and use it to coordinate my wireless devices.

One of the things that I liked about using this scanner was the ability to scan a broad range of spectrum. I have been using Wireless Workbench for many years and sometimes was limited in how much bandwidth I was able to scan due to the range of the devices networked to the software. Having the ability to import a broadband scan saved me time and proved helpful. Although I relied on the handheld device and my Mac for running the Explorer and Vantage software, it should be mentioned that the RF Explorer can be used on a PC via the Touchstone software available from nutsaboutnets.com. Touchstone comes in a free version with limited ability, a fully functioning version for \$49, or a separate Android mobile version for \$49.

SUMMING IT UP

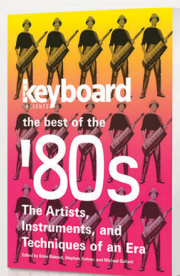
I am adding the RF Explorer and Vantage software to my gig toolbox. I love the simplicity of the layout and the portability. It's a great tool that offers excellent visualization of the RF environment over a broad area of the spectrum. Its ability to run scans and monitor frequencies in real time in a live environment make it an excellent tool. Add to that the ability of Vantage to export scan data to be used with other wireless coordination software and it makes a very solid foundation on which to coordinate RF devices. ■

Kyle Welch is a live sound engineer and director of The Blackbird Academy's Live Sound program in Nashville.

THE BEST INTERVIEWS

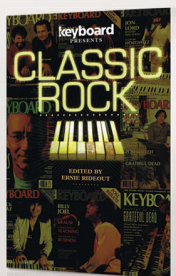
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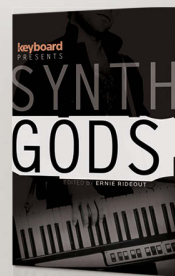


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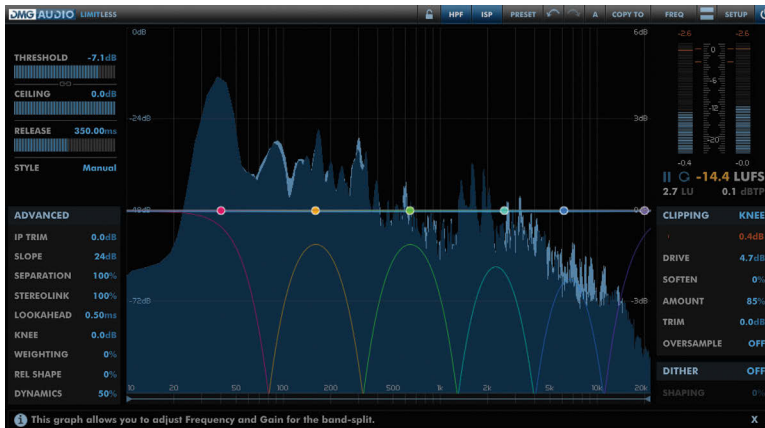
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Included in the plug-in's features is a 64-bit oversampled pre-limiter Clipper section featuring three different algorithms.

DMG Limitless (\$199 MSRP) is a modern mastering limiter plug-in for PCs and Macs that offers precision dynamic control using two closely integrated limiters. One limiter is specially configured to work only on transients, while the dynamics limiter uses look-ahead and a more conventional release time to control dynamics musically. Limitless produces loudness enhancement to any desired stylistic effect—from transparent to very colorful—based on built-in preset Style algorithms. Styles are Aggressive, Punchy, Warm, Smooth, Tight and Transparent.

For the mastering engineer, Limitless is a smart “complexity inverter”; it uses numerical solvers on a sample-by-sample basis to work out the best possible limiting action for producing loudness to a specified targeted output level without clipping and without adding artifacts. As the excellently written manual states for basic workflow: “Reduce Threshold until track reaches desired loudness. Enjoy!” I liked that Limitless works straightaway like any full-bandwidth limiter—important for quickly dealing with problems.

DIGGING DEEPER

Limitless (Version 1.03 tested) is a multiband processor that uses six Band Strips with linear phase filters, each with adjustable frequency centers, band gain faders, mute/solo buttons, and individual release time settings. There are nine additional Advanced controls, a 64x oversampled pre-limiter Clipper section with a choice between three different clip algorithms, plus a Dither dropdown menu with noise-shaping/bit-depth preferences.

To monitor everything, Limitless has several information-rich, resizable screens with four resident Master controls: Threshold, Ceiling (or maximum output), and Release time that groups the release times for all six Band Strips together.

There are zoomable PPM and GR meters and fully integrated EBU R-128 Loudness metering with both True Peak and LRA measurement; you can switch between gated (LUFS) and un-gated (LKFS) measurement. A resettable separate History screen with an adjustable time scale shows a Short-Term loudness line with LRA (Loudness variance) displayed around it in gray.

LIMITLESS MASTERING

My first Limitless mastering project was a Wall Street protest song. The producers used no real instruments—just synths, samples, loops and shouting vocals. He wanted it clean-sounding and louder than loud for downloading and streaming; they complained they were unable to match the loudness of other Electronica/EDM tracks.

My workflow in Pro Tools | HDX started with copying the Aggressive style to Manual—you can also step through any Style, or any of the included presets from the Preset tray. There is a lot to learn about Limitless processing parameters from these descriptively named presets.

I used two screens—Frequency and Time Graphs—to monitor and set up Limitless. Sculpting the sound is made visual using the Frequency Graph screen with its spectrum analyzer overlaid with six multiband crossover nodes. You can delete nodes, change their frequency centers, audition (solo and mute), and set their contribution to the finished sound. While in Manual mode, each band's release time is adjustable.

For this song, after I dialed-in and centered the six frequency nodes, I shortened the Release time for the upper bands and lengthened it for the lower frequency bands. I found the adjustable release timing for each band crucial for obtaining loudness with transparency and minimal collateral damage.

Traveling across the GUI from left to right, it continuously redraws Limitless' current activity. When synched to the song's timeline, it's easy to see where each and every peak and resultant gain reduction happens, plus understand the Release time curve shapes visually. You can set up beat-synched redraw in Preferences in the Setup window.

In Manual mode, the Advanced parameters are freely adjustable at any time, but I didn't touch Input Trim, Slope (adjusts the

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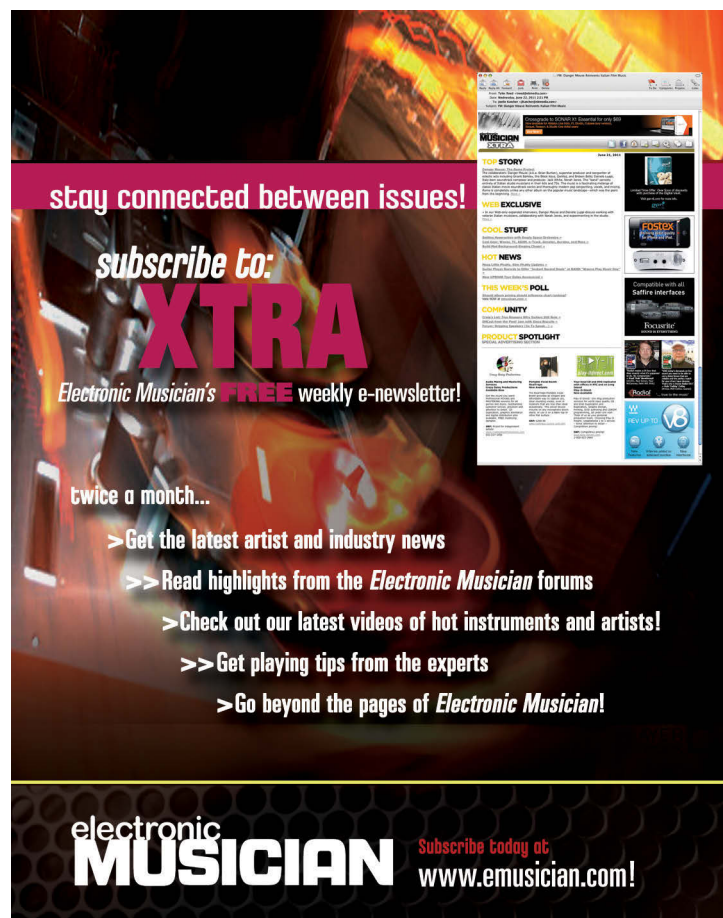
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slope in dB/Oct of the crossovers) or Separation.

Separation at 100 percent (the default setting, but ranges from 0 percent to 200 percent) is the most transparent-sounding, with each of the six bands acting independently. At 200 percent, the band that needs to change the most will change more, causing the other bands to change less. I found using Separation an acquired skill; it was the last adjustment in the quest for the best sound. I did put Stereo Link at 0 percent for wider stereo imaging, with the caveat that no loud mix elements are panned hard left or right.

Look-ahead was set to 0.25 ms (ranges up to 10 ms), but I reduced it to 0.15 ms for a more aggressive sound. This Style had the Dynamics control at 35 percent (50 percent is the default), so the transient limiter was working harder to produce loudness compared to the dynamic limiter. Here I used two different Dynamics settings and automated switching between them: 30 percent for choruses and 60 percent for verses. At 60 percent, the second limiter, with its slower release time, caused the verses (only) to sound smoother.

The Knee parameter is applied before the first limiter, and either narrows (hardens) or broadens (softens) the range around the exact threshold setting. It was set to 0 dB—i.e., hard limiting. I also switched on ISP so that Limitless prevents Inter-sample Peak Distortion and it works well; I never had any “reds” onscreen or on my interface metering.

I pulled Threshold down to -9.1 dB and set the Release time to 97.62 ms. Ceiling went to -0.8 dB, and that worked out well to produce a single, compatible audio file ready for both CDs and downstream for codecs

such as Apple's Mastered For iTunes. I had Pop music loudness and density while maintaining the song's dynamics.

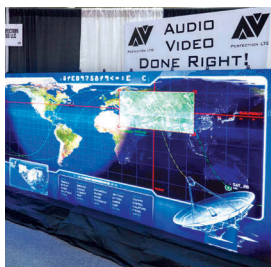
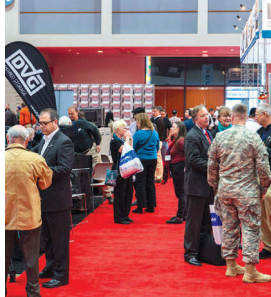
LOUDER THAN LOUD

But the producers wanted it louder! A particular mastering engineer style uses a clipper to add gain and clip the signal before the limiter. Limitless' Clipper has three algorithm choices: Swell and Swell2 both add third-order harmonic distortion, and the Knee algorithm varies from hard clip (ADC clipping) to soft clip.

I tried Swell2 and put the Drive control up to 7.7 dB and set the amount, a mix between the clipped signal and input, to 50 percent. Oversample was at 16x. I also changed the Weighting control to 124 percent (100 percent is the default) to encourage Limitless to limit the low frequencies more with this bass heavy music.

OPTIONS, OPTIONS, OPTIONS!

Limitless is a complete and very powerful mastering toolkit; it works as transparently as you like, or not! In the past for in-the-box mastering, I always fussed over getting what I wanted using a compressor followed by a limiter. Now as my new, singular mix bus processor, I found Limitless' sound and operation wonderful and worthy of “mastering” its immense capabilities and options. You can have your mixes loud yet retain musicality and high-quality sound with minimal downside. Awesome! ■



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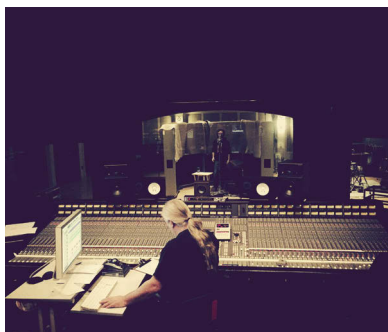
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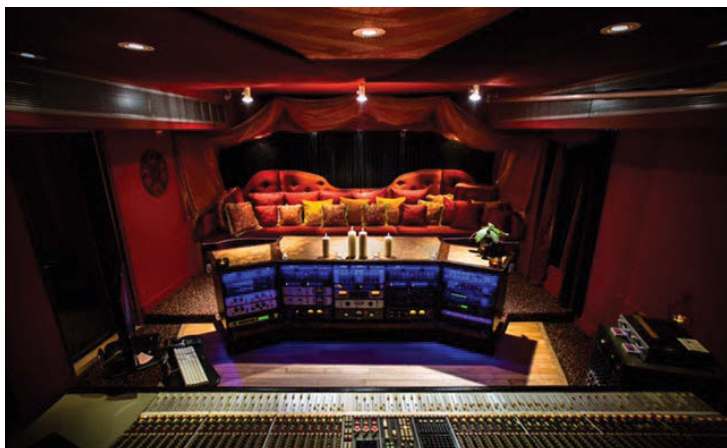
Continued from p.43



Mike Fraser working with Relic Kings

self-produced). Several recording stations were set up throughout the studio...Toseland was in Studio A with producer Toby Jepson, engineer Fraser and assistant engineer Bleasdale. With the time difference between Vancouver and the UK, James Toseland would have to stay up late to approve the mixes every night...Janne Saar was in Studio A with producer/engineer Rob Montes and assistant engineer Bleasdale. They set up a recording station for Saar in the large iso

booth where she would track her own vocals...Claude Choe was in Studio A with production assistant Angelica Kim, engineer Paul Silveira and assistant engineer Bleasdale (Claude Choe self-produced). Recorded and mixed at Armoury and then they went to Prague to record The City of Prague Philharmonic Orchestra...Chris Wong was in Studio A with producers Tony Arevalo Jr., Joe Chan, and Michael Nowak; engineer Kent Poon; and assistant engineer Bleasdale. Neumann KU 100 Dummy Head Microphone was a big part of the sound, as a room mic for many of the instruments...Relic Kings were in Studio A with producer/engineer Fraser and assistant engineer Bleasdale. The guys rocked so hard they blew a couple amp heads. Vocals were done in the main live room in a booth constructed out of the baffles...Hi Kommand was in Studio A with producers Joel Hedberg and Jessica Hedberg, engineer Silveira and assistant engineer Bleasdale.



Studio A at The Orange Lounge

THE ORANGE LOUNGE, TORONTO

Shawn Hook was in with producer Noel Zancanella using a vintage U 47 VF-14 and a Neve 1066...Alex Lifeson (guitarist for Rush) and producer Terry Brown were in working on material...Hollerado were in with producer Gus van Go finishing vocals for their CD. Van Go brought his own mic and used a Neve 1079...Serena Ryder was in with producer Thomas "Tawgs" Salter working on her upcoming CD. They used a Shure SM7, a Neve 1089, and an unknown compressor...Nelly Furtado was in doing vocals on a song. She used a vintage U 87, a Neve 1066, and a Summit TLA-100...DJ Alesso was in working on remixes for various artists...Keith Urban was in Studio A working on material...Ryan Tedder (lead vocalist for OneRepublic) was in Studio A working on material...J-Soul was in doing vocals and mixing for his new CD, with Matt Stevens engineering. They used a U 47 VF-14 and a Neve 1079, with a Tube-Tech CL-1B...Big Wreck was in working on new material for a CD with producer GGGarth Richardson. They used an SM7, a Neve 1066, and a vintage ADR 769 Vocal Stressor. All projects were recorded into Pro Tools HD.



Megan Hutton (Instant Rivalry) Vic Branco (producer/studio owner), Nick Lobodycz (engineer), Caleb Hutton (Instant Rivalry)

IGUANA STUDIOS, TORONTO

Purveyor of Chaos was with producer/engineer/mixer Dariusz Szczepaniak working on new material. Szczepaniak used a mixture of the Glyn Johns technique and some new school metal techniques on the drums. The bass was recorded with multiple amps and will be processed later with the latest in amp modeling and profiling. They did a mixture of different mic pre's on the console and ran some of the sounds through the

VCAs to get more of that console's modified sound...District Avenue worked with producer Vic Branco, engineers Andre Doucette and Nick Lobodycz, and mixer Szczepaniak. Once Szczepaniak gets a good level coming in with the preamp, he sorts out the drum microphone mix using the small faders on the way to tape, leaving his monitor faders at zero. He utilized the VCAs to sum LR pan blends of overheads and room mics. He started at +100 L and +100 R then slowly pans (hopefully with two pan pots) more toward center. He observed the change in the way the mics work together and found the ideal blend. Szczepaniak says, "If the overheads microphones are placed well to begin with they shouldn't be anywhere from 10-15 pan points from one another"...Instant Rivalry was in the studio with producer Branco (Instant Rivalry also co-produced), engineers Lobodycz and Doucette, and mixer Szczepaniak. On the single "Hoedown," they used a pair of headphones placed on the acoustic guitar body plugged into a DI to capture a warm lower end to the acoustic tracks. They blended that with a Neumann U 87 to get a great sound. They also ran the harmonica into a small guitar combo amp on full blast to get a gritty vibe...Fallen Heirs was in the studio with producer/engineer/mixer Doucette. He says, "When mixing, I'll often listen to the effects buses soloed in order to paint the backdrop, then blend the entire effects group it into the dry mix. I find it's a more accurate way to find a balance between my reverbs, delays and modulations."...Maddy Rodriguez was with producer/engineer Johnny Simmen working on the *Man Overboard* EP. When doing drums, he put a U 87 right above the kick drum in the middle of the drum, cranked the SSL mic pre and then slammed it with an 1176 in All Buttons mode. He also put two lapel mics on the floor behind the drum kit on each side and crushed those as well. He says, "When you blend these mics under the rest of the drum kit just right—so that you can't hear the distortion—it adds this energy that I can't seem to get from any other type of processing"...Park Eddy was with producer Giordan Postorino (Park Eddy also produced) and engineer Doucette. His favorite vocal recording chain is when the reverb send is patched before the LA-2A works. The singer's dynamic will control the level of the reverb, and when they get loud, the reverb will be get loud because the signal is uncompressed. When they sing softly the reverb turns down again. He says, "By compressing the dry signal only—create a parallel aux bus and patch the output of vocal to the input of the aux channel—the compressor/limiter will pull the dry vocal back during loud sections as you would normally have it, but allow the reverb to stay loud and with the original dynamics in place. This results in a blossoming type of effect. Essentially what you are doing is replicating the same effect the singer would experience if they were actually standing in this massive great sounding room you're creating"...Acid Test was with producer Adam Percy and engineer Simmen. For an interlude on the band's EP, he miked up the guitar strings themselves. He says, "There was a very dreamy section with a lot of reverbs and spacey sounds, and having just a clean guitar sound didn't seem to cut it. I put Steve [Fall, guitarist] in the live room, set up two 414s in XY and then filtered off most of the high end on the SSL. Blended with a handful of reverb underneath a double-tracked clean guitar fit the vibe perfectly."

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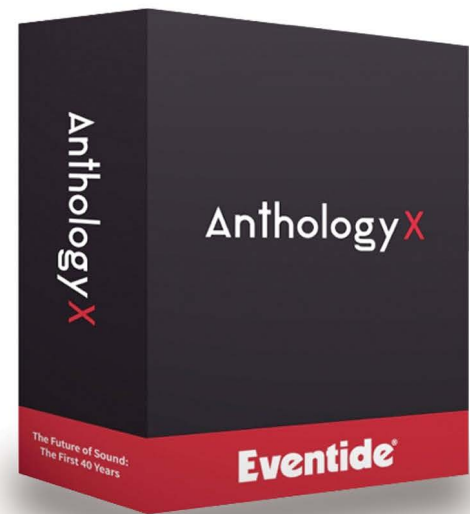
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Big Studios Bring It



By Kevin Becka

Unless you just woke from a 20-year sleep, you know that digital recording and the Internet have pushed us into a multi-level world of recording. Everything you need, all the toys you'd find in a commercial studio in the last century, are now available at a fraction of the price.

But the bigs are still here, in smaller numbers since the shakeout, but large rooms and commercial studios still exist. Even in smaller markets. For example, you'd expect that Conway Studios, the 40-plus-year-old L.A. studio pictured on the cover of last month's *Mix* would have a shot at figuring it out—they've been through the wars. But then there's Saltmine (*Mix* cover, February 2016) in Mesa, Ariz., in service 28 years, and Soundscape in Chicago, a newer, thriving multi-room facility. Many more are still at it, adding to the list of studios in second-, third- and fourth-tier cities.

The truth is, whether you're a big or small room in a big or small town, the lessons learned are similar. At the top, Capitol, Conway, the Village and many others in L.A.; Blackbird, Soundstage, House of Blues and countless others in Nashville; Germano, Jungle City and others in New York; and Noisematch and Hit Factory Criteria in Miami all serve their clients in three ways: providing community, technology and learning.

But first, let's go back in time for some perspective. When I was learning my craft in L.A. in the mid-'80s to mid-'90s, the rumblings of how home studios were going to grow was just starting. The ADAT bowed in '91 at NAMM and started shipping in '92, opening the door to pro-level private production. The studio business community, including many top studio owners, saw the future and formed a consortium called the Hollywood Association of Recording Professionals. They took on producer Chas Sanford's home studio and successfully put him out of business. But just like 1972 when Curt Flood lost the battle in his failed, road paving bid for free agency from Major League Baseball, the die was cast and home studios like Sanford's would ultimately flourish.

So timing and tech made personal audio workspaces and home studios thrive. But with the home studio comes, well, the home. Sure it might not be your living space, or then again it may be. You have to deal with parking, neighbors, noise, the clock, your spouse, kids and laundry, with only invited guests. Creativity and networks don't thrive in a vacuum and pros, both old and new, have grown to realize it.

Here's my own experience. I was setting up a tracking date for a band I'd never met. While we're putting up mics, an intern walks in

with a drummer and his gear. We introduce ourselves, and I point to the end of the room where the drums were going to be. He started setting up and Paul Simmons, the studio's drum tech, showed up and pulled me aside. "Do you know who that is?" he asked. I shook my head. "I think that's Jack White's drummer Daru Jones." Wha?!? Great! We were all ecstatic until we found out he was in the wrong room and was tracking in Studio D. We apologized for the mixup and quickly ganged together to move him where he needed to be. Fast forward two days and I see Daru again, apologized again, and started chatting. He's a super-nice guy, and it turns out he has some tracks he needs to finish which he wants to do with the students on a future date—winner, and just a small example of the power of community. This would never happen in a bedroom.

How about the tech? Studios have used it to expand their bookings. Got great looking rooms? TV and movies and videographers love that. It's not making a record, but you're booking the room and often adding a bit more to the tab for the trucks, trouble and extra folks you have to wrangle. Got a rental arm to your studio business? Mic Check, now in beta, offers a "platform to securely manage rental agreements, reservations, payments, communication, insurance, disputes, and delivery." It's all driven through an app that brings audio rental gear from the studio to your door using FedEx and Uber. And we're not even talking about the sound and gear. The one thing that big studios have brought to tracks over decades is their sonic signature—a combination of their rooms, mics, the signal path through consoles, and control rooms ending up in golden ears. It's magical.

How about learning? Again, a personal story. I'm in Blackbird Studio C teaching surround recording/mixing in Pro Tools. In walks Vance Powell (it happens!). He asks me if I knew about the downmix plug-in that started in beta but is available in HD. On a 5.1 or 7.1 track, it's a Soundfield plug-in that gives you individual trim faders for each output and a stereo fader. I've always used the trim plug-in in cases where I needed to break apart a multichannel track, but this was much easier and cooler. Would I know this if Vance wasn't there? No. Community and learning worked together in this case—and these are just my little stories. Multiply that by a thousand and you have myriad possibilities.

So get used to it. Big studios will always be around because of what they bring to music production. The strength of community, sound and technology, and what you take away from it all is a power to be reckoned with, and something that makes the studio more valuable than the sum of its parts. It's a thing of beauty. ■

Primacoustic... better design, better performance, amazing results!



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

~ **Tommy Lee**

Founding member - Mötley Crüe.



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

~ **David Rideau**

Engineer/producer - Janet Jackson, Sting, TLC, J-Lo.

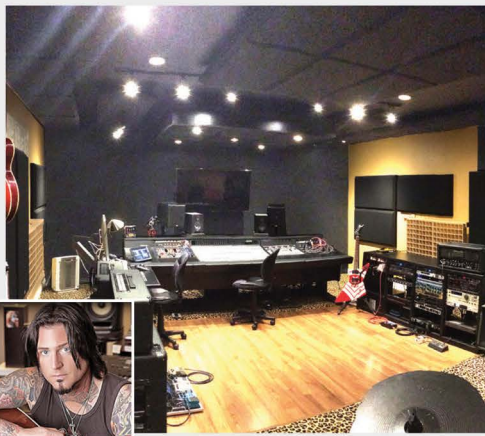


"The Primacoustic is up and kicking butt at my new studio in Santa Monica. I love the way the control and tracking rooms sound now... and so does everyone that records here!"

~ **Butch Walker**

Engineer/Producer - Avril Lavigne, Fall Out Boy, Pink.

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



"When building The Leopards Nest studio, we tested a number of different acoustic treatments and chose Primacoustic. It was easy... Primacoustic did the best job and my studio sounds amazing!"

~ **Jason Hook**

Guitarist - Five Finger Death Punch.



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

~ **Keb' Mo'**

Roots music legend



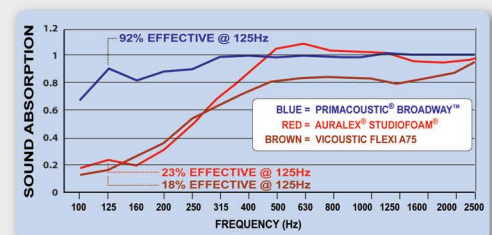
"Not only does my room sound amazing, it's also really beautiful!!!" ~ **John Rzeznik**

Performer/artist/producer - Goo Goo Dolls.

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

~ **John Rzeznik**

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David Rosenthal

Musical Director and Keyboardist for Billy Joel



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"I use the UltraLite AVB in my keyboard rig for every performance. Multiple units, in fact. The sound quality is incredible, and the UltraLite is so compact, rugged and reliable. I've been touring with Billy Joel for 23 years, and MOTU gear has always been there for me."



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