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FEATURES



- 34 Asset Management for Post-Production
- 44 Live Music on *The Today Show*
- 52 The Rockin' Return of Evanescence
- 58 Anthrax's *Worship Music*
- 62 Phish 2011 Summer Festival Season
- 68 GC Pro Celebrates 10 Years

MUSIC

- 17 **Julie Feeney**
BY DAVID WATTS
- 18 **Mastering Red Hot Chili Peppers**
BY SARAH BENZUZY
- 20 **News and Notes**
- 22 **Classic Tracks: Country Joe and The Fish's "I-Feel-Like-I'm-Fixin'-to-Die Rag"**
BY BLAIR JACKSON



LIVE

- 27 **The Decemberists**
BY SARAH BENZUZY
- 28 **Aviom to the Symphony**
BY SARAH BENZUZY
- 30 **News and Notes**
- 32 **All Access: Adele**
BY STIVE JENNINGS



DEPARTMENTS

- 6 from the editor
- 8 current
- 12 on the cover
- 105 marketplace
- 109 classifieds

On the Cover: 25th Street Recording, Oakland, Calif., is a modern update on a classic analog tracking room. Designed by Francis Manzella, the 4,400-square-foot facility is centered around an API Vision console and ATC monitoring, with room for up to 35 musicians. For more, turn to page 12. Photo: Ed Freeman. Inset Photo: Getty Images.

TECH

- 74 **Ask Eddie**
- 78 **New Products**
- 84 **Review:** Slate Pro Audio Fox mic preamp
- 87 **Review:** Sonodyne SM 100Ak studio monitors
- 90 **Review:** Sonnox Fraunhofer Pro-Codec
- 98 **Review:** PSPaudioware oldTimerME plug-in
- 102 **Review:** Focusrite Control 2802 mixing console
- 112 **TechTalk:** The Score: Consumers 10, Pros 0
BY KEVIN BECKA



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BEING A GOOD STEWARD? WHAT DOES THAT MEAN?

I was on the phone with Kirk Imamura, president of Avatar Studios in New York City, talking about his SPARS column for this month's issue. He said, "It's the issue that's going to AES, right? I thought I would talk about being a good steward of the industry, you know, in how you run your business and how you help promote the industry at large." "Good," I said. "I like it." We talked a little more, hung up and a bit later in the day I thought, "Huh. Steward. That's a word you don't hear very often. Do I need to go to Wikipedia?" It got me thinking: What does it mean to be a good steward today, one who helps take care of things, both at home and as part of an industry?


My first thought was that being a good steward is especially important when your industry is going through a massive transformation. Smaller budgets, shorter bookings, software piracy and a helter-skelter distribution model. How can anyone afford to be a good steward when they're forced to charge less than they did 10 years ago for a higher-quality product, whether it's a 2-channel preamp, a software release or a song mix? How can anyone be a good steward when they're already working 14-hour days and it's still not enough? The truth is, you can't afford not to be a good steward. And it starts at home.

By home I mean your business, your craft, your art, your daily life—whatever that might be. Studio owner, engineer, producer, musician, educator, facility designer, manufacturer, it doesn't matter. Strive for quality in whatever it is you produce, at whatever price point, and look for quality in those you deal with. If you own a studio, big or small, commercial or private, keep it maintained and up to date. If you're a manufacturer, design and build quality into your product line, no matter your MSRP. If you're an educator, make sure your students are well-versed in the fundamentals of recording and have a healthy dose of respect for the realities of today's market. Run a business that makes people want your business. Treat every client like they are Beyonce.

But don't forget that you are part of a professional community, too, one that benefits from each and every contribution of knowledge and show of support. Go to the local EARS meeting if you're anywhere near Chicago. Join NARAS so that you can attend local chapter meetings and represent the Producers and Engineers Wing. Or head to Nashville in May for the annual golf tournament to benefit the Engineer Relief Fund through the local chapter of the AES. It's a real fun time to boot.

Finally, seeing as this is our AES issue, keep in mind that the manufacturing community is a vital part of our industry. They are the people who drive innovation, both from a boutique, high-end point of view and from the mass-consumption, feature-laden, Best Buy side. There is room in our industry for the \$10,000 mic and the \$99 mic, the high-end studio and the project room. But if you want quality products, no matter the price point, then you have to buy quality products. Whenever you make a purchasing decision, you are voting with your wallet.

Our industry is facing challenges today, no question. We rely on technology for both production and distribution, and sometimes that can feel like an ever-changing, ever-moving model. But if you strive to be a good steward of your business and you make the effort to take part in the industry at large, good things will come. You can bank on it.



Tom Kenny
Editor

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COMPILED BY SARAH BENZULY

JERRY LEIBER, 1933-2011

Co-songwriter (with Mike Stoller) of "Hound Dog," "Jailhouse Rock," "Yakety Yak," "Stand By Me" and countless others, Jerry Leiber died unexpectedly



of cardiopulmonary failure. The songwriting duo chronicled their success—including induction in the Non-Performer category of the Rock and Roll Hall of Fame in 1987—in a 2009 memoir, *Hound Dog: The Leiber & Stoller Autobiography*.

During their career, they had 15 Number One hits in a variety of genres, performed by such artists as Barbra Streisand, Aretha Franklin, The Beatles, the Rolling Stones, Otis Redding, James Taylor and many others. In the 1990s, their songs were used in the Broadway revue *Smokey Joe's Café*, which won a Grammy for Best Musical Show Album in 1996.

Poetic License

Michael Golub, a 30-year recording engineer in New York City, continues to provide us with the results of his audio muse. Enjoy!

Ode to the Equalizer

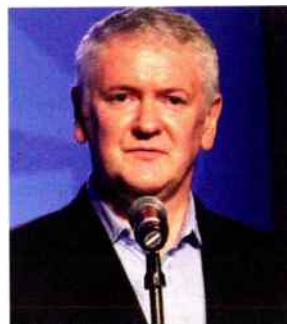
O equalizer, equalizer, with frequencies of three /
Your highs your mids your lows, you mean the world to me. / Hark! a precious sound, just waved past microphone / Alone I shall not leave you, I must rebuild your tone. / I boost you in the mid-range, I boost you up on top / I boost the sound I boosted, I boost until I drop. / I boost the lows to meet yon highs a mighty 10 dB / I boost and it gets louder, and loud sounds best to me. / And tho all sounds flow through the air, and beg me to get goosed / I had a novel, new idea of what replaces boost. / Take all this boosting action and hear me when I say / You might just try subtraction and take some sound away.

AES READY TO ROLL

The professional audio industry turns its attention to New York City later this month for the 131st Audio Engineering Society convention, and there will be plenty to see and hear, much of it beyond the exhibitor aisles. Jim Anderson, an NYU professor in the Clive Davis Institute of Recorded Music, returns for his third term as New York City convention committee chair, and he and his team have assembled quite a series of events and programming.

"For the past 10 years, there has been a real effort within our workshops and tutorials to stay ahead of the curve, to keep the topics relevant to where we are and where we are headed," Anderson says. "Our Gaming line is a perfect example, where it's been the most rapidly growing area of our membership and our content reflects that. The Education market, too. This year we're particularly excited about the Archive track, where each day we will have a different focus. With all the digital information coming out, people don't always know how to take care of it—archiving, metadata, storage. If you can't monetize your assets over the next 50 years, that will be a problem."

A series of Special Events is sure to draw a lunchtime crowd, with keynotes by Karl



Heinz Brandenburg, Ron Carter and Skip Pizzi; Master Classes include presentations by renowned producer Tony Visconti and film mixer Gary Chester; and the Live Sound Series includes what is sure to be an entertaining exchange between mixers Robert Scovill and Dave Natale. The show opens Thursday with a showcase featuring Phil Ramone and

Tony Bennett discussing the making of *Duets II*.

"The industry has changed, no question," Anderson says. "And we are busier than ever tackling the issues that face engineers today—areas like streaming audio while maintaining high quality. Or the White Space issues that [affect] everyone from concert sound to Broadway. At the same time, we can't forget our foundations. That's why we're presenting our Oral History Project: every day a new video for the 50 days leading up to the convention. By signing up, members can have a three-minute excerpt streamed to their mobile device each day, or visit the AES site for the full interviews. People like Phil Ramone, Ray Dolby, Bob Ludwig—these are the kind of people who built our modern industry, and we want to have them on record."

For more, visit aes.org.

—Tom Kenny

API SCHOLARSHIP WINNERS



Each year, API awards scholarship funds to students enrolled in audio engineering programs that use API Vision, Legacy Plus or 1608 consoles. Applicants must submit a completed questionnaire and essay, and are also encouraged to provide a personal recording that they have created. This year's winners of the API Visionary Scholarship (which are worth up to \$2,000 each) are Elton Charles (Berklee College of Music), Nicholas Nagurka (University of Michigan), Jeff Braun (Middle Tennessee State University), Eva Imber (New York University), Denial Mesanovic (University of Michigan) and Timothy Harris (New England School of Communications).

“ The RIAA plays an important role in helping shape public policy in connection with America’s music.

Setting the legislative agenda at both national and state

levels, working to protect and promote intellectual property in the U.S. and throughout the world, coordinating with law enforcement on both physical and digital theft, and representing the industry in negotiations and before government tribunals to empower new business models and standards—all of these are vital functions and I look forward to taking them on.



” — Cary Sherman, new RIAA chairman/CEO



GIRLS WANNA ROCK

For 10 days in August, 14 girls checked into the Institute for the Musical Arts’ (Goshen, Mass.; ima.org) Rock and Roll Camp for Girls, a program where they were given an intensive how-to in the recording production arts. Famed mixer Leslie Ann Jones (assisted by Dan Tinen) began with an orientation and dived right into

terminology and signal path, where the students checked out mics and mic pre’s, different setup for drums/baby grand/vocals/etc., and began work on recording; each session has an artist, engineer(s) and producer. Within a few days, they’re up and running in the overdub/editing and mix stages. Artwork for the music is created by the attendees, with completion handled by executive director Ann Hackler, where in few hours a complete album is finished. The final mixes are played in the performance area and the girls talk about the songs, their roles and experiences.

“We have many returnees year after year,” says artistic director June Millington. “It’s an experience that they just don’t want to miss. It’s exciting as they work and bond.”

MIXBLOGS



Update: Studio In Progress

The L.A. studio build I’m following is near completion. According to integrator David Knauer from Audio Perception: “The wood floor is in and the wall treatments are about 70-percent down. We still have to build diffused wall treatments for the live room.”

>>blog.mixonline.com/mixblog/category/techticker



Ask Eddie: Topic4—Search and Destroy

Upgrading op amps in the audio path can be a bit of a minefield. But not all op amps are in the signal path...so when an op amp’s functionality is circuit-critical, check the manufacturer’s Website.

>>blog.mixonline.com/mixblog/category/ask_eddie

SPARS Sound Bite

The Future In Numbers

Every organization related to pro audio has been affected by the democratization of content creation. New, powerful tools that aid songwriting, music creation/production and audio recording have opened the doors to many, many more individuals, whether in music, sound design or post. To illustrate the macro effects of this type of explosive growth, let’s look at the recent experience of ASCAP. According to an article on *The Huffington Post* by Paul Williams, president and Chairman of the Board for ASCAP, 600 people sign up with the organization every week, which “equals more than 30,000 self-declared, career-minded songwriters per year.” The issue is whether the people who want to make songwriting their career can actually do so given the today’s realities.

Let’s look at it from another angle. If I remember my basic statistics correctly, and songwriting talent follows a normal distribution, then those outside three standard deviations, the outliers, make up 0.3 percent of the total group. Focusing on just the exceptional ones, it becomes half of that. So if the group size is 30,000 songwriters, you can expect 45 exceptional writers to emerge. With 1 million, you get 1,500 potential superstars. As group size increases, so does the number of exceptional songwriters; perhaps they have a chance of being discovered.

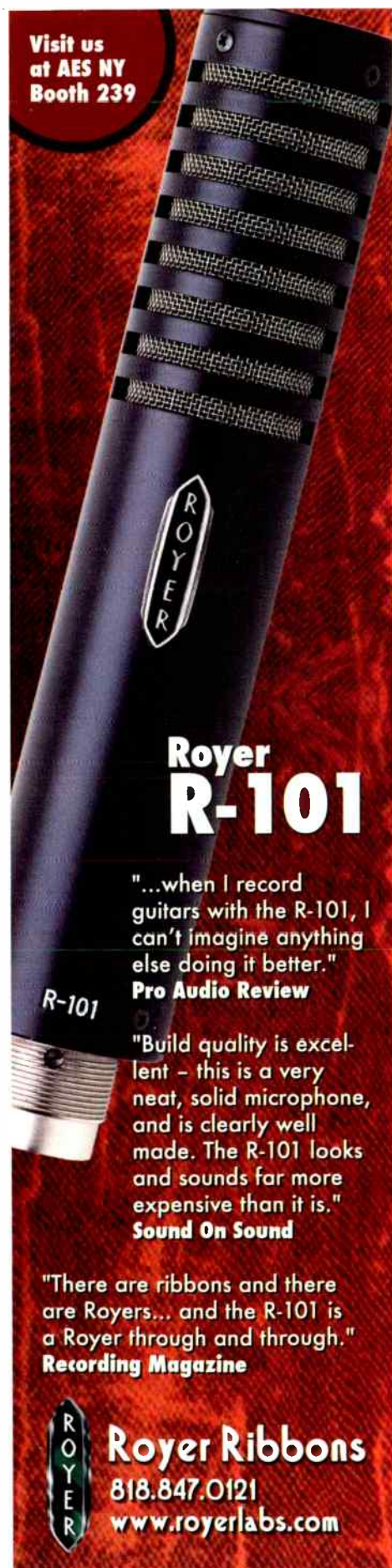
Similar things could be said about musicians. Just scan MySpace and Facebook, and you can see that there are thousands and thousands of bands vying for attention. Audio engineers, who work closely with many of them on a daily basis, have a unique vantage point where we see more of the artist than just about anybody. We should look at ourselves as enablers and as catalysts to those who are truly talented and deserve a wider audience.

The same can be said about people dabbling in recording. We should be happy that so many people have taken an interest in what we do. Let’s show them how to do things right at every opportunity that presents itself and bring everybody’s level up, raising the overall bar.

That is what I think stewardship is about: looking to the next generation to see that our craft is preserved and that it is built upon, especially as the number of practitioners has skyrocketed.

—Kirk Imamura, president/director

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Recording Magazine



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PopMark Media Update

Learning lessons can often be a painful—albeit valuable process. In this month's "Confessions of a Small Working Studio," we ask studio owners to reflect on some of the most valuable lessons they've learned and how they've successfully put them into practice.

>>mixonline.com/studio_unknown

Cool Spin

Radical Face *The Family Tree: The Roots* (Bear Machine)

It's an interesting concept: In addition to sculpting the lyrics around a family in the 1800s, indie pop-folk artist Ben Cooper (aka, Radical Face) only used instruments that would have been found in that time period (piano, acoustic guitar, floor tom, voices). Granted, the recording is obviously not of the 19th-century ilk, but the simple, clean



and straight-ahead mix only adds to that "good-old days" vibe. Cloaking himself in this down-home methodology, Cooper camped out in the tool shed behind his mother's house in Jacksonville, Fla., for 15 months, writing, recording and tweaking, all by his lonesome.

>>mixonline.com/cool-spins

SoundWorks Collection Update

Finland-based composer and sound designer Ari Pulkkinen seems to be one of the most listened to composers in the world right now, with more than 250 million people who have heard his original *Angry Birds* theme. Pulkkinen's catchy theme was also recently performed by the London Philharmonic Orchestra as part of a music festival in the city.



>>mixonline.com/post/features/video_sound_works_collection

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GAME CHANGER

MICHAEL BEARDEN

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On the Cover

By Tom Kenny

25TH STREET RECORDING, OAKLAND, CALIF.



Photo: Ed Freeman

Dave Lichtenstein is an avid surfer, so it's not really in his nature to feel the pressure to do anything too quickly. But he's also an artist, so he knows what he wants and he cares about quality sound. After nearly 30 years in and around the recording industry—as an engineer, writer and performer, with various sidetracks along the way—Lichtenstein knew he wanted to build a big room that was comfortable for musicians, a place where a band or a small orchestra could come together to play. Now he's got one, and it's a beauty.

Located in the hip and burgeoning Uptown

district of Oakland, Calif., 25th Street Recording is a modern take on a classic analog tracking room: 20-foot ceilings, large booths, a very “live” sound and a spacious control room that is equally suited to tracking or mixing, stereo or surround. It's the type of studio that just isn't being built as much today as the industry moves toward a more direct-line, production-oriented, in-the-box model. But Lichtenstein has always followed his own path, and after completing a record in 2007, he looked around the San Francisco Bay Area and thought there was a hole in the local studio scene that he could fill.

“In the summer of 2007, I went in to Fantasy Studios to record 13 songs I had been working on at home and in my space at Soundwave [rehearsal facility],” the soft-spoken Lichtenstein recalls. “Part of the reason for going in to Fantasy was simply to shake out what it was like to be in a real studio again; it had been awhile since my New York days. We spent about three months, and it was a lot of fun. But right when we finished, Fantasy was going through its changes and we still needed to mix. The only real comparable room to mix in, according to Jeffrey Wood, my producer, was Prairie Sun in Cotati, about an hour north of San Francisco. Like Fantasy, it's a

nice studio, but it made me think that there was room for another big studio in the Bay Area.”

NEW YORK CITY ROOTS

While Lichtenstein is the new kid on the block, he is hardly a Johnny-come-lately to the recording scene. He’s a self-described electronics nerd who started drumming in the fifth grade in Princeton, N.J., formed a band in the seventh grade, learned guitar, took a break to surf for a year, then took a road trip to Dallas with his new band and saw the inside of his first professional studio. He then came back to New York and enrolled at the Institute of Audio Research. “I was always into the ‘sound’ of things back then,” Lichtenstein says. “And I think that’s part of why I wanted to build a studio today. I see signs out there that people are starting to turn back to high-quality sound.”

Shortly before finishing at IAR, he took an apprentice job with Paul Wickliffe at a small 8-track studio on 28th Street in Manhattan. While assisting and sometimes mixing, he also did maintenance, and when Wickliffe started building Skyline Studios in the late-’70s, Lichtenstein got a real-world education in what it took to put a top-notch facility together.

While at Skyline, the first record he did on his own was for Alan Vega of the proto-punk band Suicide, followed by The Fleshtones. Soon after, he was engineering a John Cale session when Cale asked him to sit in on drums. That led to three years of touring with Cale in the early ’80s, throughout Europe and the States. That was followed by the formation of his own band, Cowboy Mouth, where he wrote, played guitar and sang. Then he left that behind and enrolled full time at Columbia University, earning an EE degree in the early ’90s.

Lichtenstein came to the Bay Area in 1994 and took a job writing code for a software company. By 2002, he was back writing music and bought his first DAW—Cubase—then got the rehearsal space at Soundwave, then did the record at Fantasy, then decided he wanted to be a studio owner. But first he

needed a building.

BACK IN OAKTOWN

“Actually, the first few months I spent convincing my wife,” he says with a laugh. “Then I went looking for a building, and that took about two years. I wanted a stand-alone structure, at least 4,000 square feet, with high ceilings and a nice concrete slab. Of course, once we got into the design with Fran, we ended up ripping that out and putting in floating floors, but it was a nice selling point for me.”

Fran is Fran Manzella, the noted studio designer from New York who had known Lichtenstein back when they were both working at Skyline in the early ’80s. The years went by, and then, as Manzella recalls, he “got this call out of the blue from an old friend who wanted to build a studio.

“Dave was in the process of buying the building when we first met, late 2009,” Manzella continues. “I came out for a site visit, and we literally drove into what would become the studio. It was a great host building, a British auto repair shop on the edge of a real up-and-coming area. Dave started to describe for me his vision, which I would describe as rough-and-ready, with a slightly unfinished look but absolutely professional in its infrastructure. Rough-sawn wood, custom-milled, local reclaimed woods.

Nothing too detailed, nothing too perfect. The term he used back then was ‘a gallery aesthetic.’ And he was decidedly analog.”

Originally, Manzella submitted designs for both a one-room and a two-room facility. Lichtenstein acknowledges that from a business standpoint, two rooms may make more sense, but he wanted something that separated him from the competition, something that would make him unique, so he stuck with his original vision of a big, live tracking room.

From the initial site visit to the API console install in July 2011 was about 18 months, and while there were a fair amount of changes in the finishing, Lichtenstein stayed true to the original architectural and acoustic design, and he ended up taking Manzella’s advice—albeit a bit more costly—to float four slabs on springs and rip out two steel trusses in the ceiling.

“Dave really liked the look of the open trusses in the ceiling,” Manzella recalls, “but isolation was paramount, and once we decided to float the floors, we had to take them out. Then we decided to replace the roof, and I have to say, the ceiling is fantastic. It’s this old barn-style structure with four segments, so we put in some lighter-steel, bent I-beam construction and were able to maintain the height. Dave liked the height and wanted to keep it throughout.



Photo: Sherri Tantiuff



The San Francisco Bay Area's A-list studio construction crew, under the direction of Dennis Stearns, from left: Vince Shaw, Miles Hart, DJ Burns, Stearns, John Ferlauto, Tommy Thompson (Thompson Electric), Kyle Beigel and Freddy Lopez. Not pictured: Aaron Johnson. Inset: studio designer Fran Manzella.

Twenty-one feet in the live room, fourteen feet in the control room. As designers, we love that.”

While Lichtenstein definitely had a vision for the look and feel, he is not shy about seeking advice from other professionals. When he needed a contractor, all talk led to Dennis Stearns, one of the best in the country. “Dennis was just fantastic,” Manzella says. “A real professional who has been doing this a long time, with great insights and a huge breadth of resources. He has a top crew and a fantastic electrician [Tommy Thompson]. Do you know how hard it is to find a good electrician? They are rare. Dennis is also great with custom woodwork, so all those diffusion boxes and panels along the wall, with that rough-sawn look, he built them all according to the geometries of the spaces.”

Stearns also found the flooring for the studio at a lumberyard in Novato, Calif. It turned out to be reclaimed bleacher seats from a stadium at Southern Illinois University, refinished for floors. The ceiling and front wall of the live room is the rough Douglas fir, burned with an acetylene torch, then coated with five layers of a Brazilian oil. It looks stunning.

OPENING UP THE CONTROL ROOM

At the time construction started, Lichtenstein still hadn't selected a monitoring system or a console. He

was pretty set on the ATC 400s, and was finally sold following a listening test at EastWest Studios in L.A. He went for full-range surround monitoring, with a dual-sub.

As for the console, Lichtenstein says that while he was definitely going analog, API wasn't even in the running until he visited Dan Zimelman at the San Francisco AES in October 2010. Zimelman invited him out to Nashville, where they spent some time on a Vision at MTSU, then headed over to Blackbird Studio D for a look at the 96-channel Legacy. The next day he booked the order for a 64-channel Vision.

“I checked out every major brand of console, new and reconditioned,” Lichtenstein says. “The light bulb sort of went off for me at the AES show. API is known for its sound, tracking through the mic pre's—very punchy. Then it's full surround for mixing, with all-discrete analog circuitry. No ICs in the circuit path. Plus, there are people who love their SSL or they love their Neve, but this was the only console where nobody has a negative opinion. Nobody.”

When it came time to begin amassing equipment, Lichtenstein turned to Stephen Jarvis, one of the best resources and consultants around, and he's become something of a sounding board, business partner and mic supplier at 25th Street. Much of

the gear came from a liquidation at Rumbo Recorders in Los Angeles, where he started picking up some of the classic vintage outboard gear that now dominates his racks. On the day of this interview, they were running the remote to an EMT 240 plate reverb. The Hammond B3 in the photo is Daryl Dragon's—the Captain's—very own from Rumbo.

The outboard racks are a Lichtenstein and Stearns special, something this writer has not seen before in countless studio visits over the years. They are angled and on wheels so they can be rolled out of the way, as they are on the cover, or pulled in lengthwise for the more traditional approach. “I never really understood the producer's desk,” Lichtenstein says, “because it's not ergonomic for the engineer to crouch down to make adjustments and turn away from the speakers. And it separates the room into two exclusive areas. This way, we can open it up for a more relaxed listening environment. Or we can seal it off if the engineer prefers.”

The API was installed in early July, and the last few months have involved testing and tweaking. Manzella came out the first week of September to listen and they ended up putting “maybe 1 dB of EQ in the monitors, which can be popped out if it seems to make a difference,” Lichtenstein says. “But we were 95 percent of the way there right when we turned everything on.”

Scott Bergstrom, a recent graduate of Peabody Conservatory's master's program in recording, has been hired as assistant engineer and has been central to shaking down the room with cue system testing, patchbay labeling and rack wiring. John Smart, who graduated from Ex'Pression in September, has also been brought onboard. They all love the sound of rock drums in the big space (local artists Let Fall the Sparrow), and they had Mark Wilshire in engineering the Cypress String Quartet; he gave a ringing endorsement, which bodes well for some of the scoring work they hope to pick up.

The goals are lofty but completely realistic in and around 25th Street these days, with an eye on the local community and plans to reach out to artists and engineers across the country. “I've grown to believe over the years that a great-sounding room can accommodate all genres of music,” Manzella concludes. “Rock, pop, indie, jazz, classical, hip-hop. You may have to adjust a few things, but the room still functions as a room. And this is a great-sounding room.”

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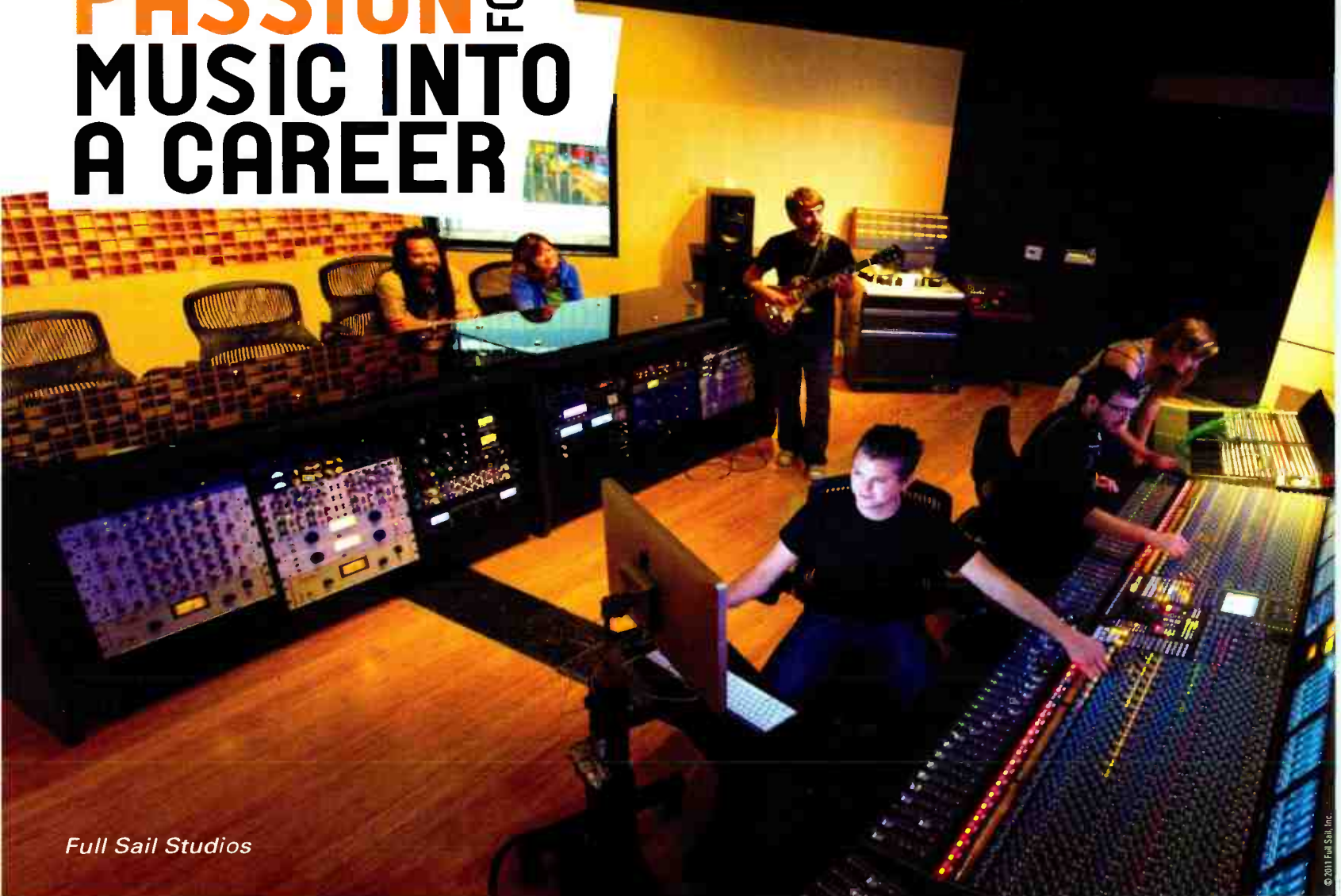
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MUSIC



JULIE FEENEY
By David Weiss **17**

MASTERING THE PEPPERS
By Sarah Renzily **18**

NEWS AND NOTES
By Mix Editors **20**

COUNTRY JOE & THE FISH
"I-FEEL-LIKE-I'M-FIXIN'-TO-DIE" RAG
By Blai Jackson **22**

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JULIE FEENEY

Master of Vocal, Student of Sound

By David Weiss

Prepare to meet one of Ireland's most audacious exports in some time, but first a little history—or rather, a lot of history when you're talking about singer/composer/orchestrator s Julie Feeney. Of course, you could simply absorb her most recent album, *Pages* (2009, mittens), without knowing any history about Feeney, and that alone would be sufficient. A 12-song collection, *Pages* instantly hooks listeners with its remarkably adept merging of influences classical to thoroughly modern.

Fittingly, Feeney's roots lie in Galway, a west coast region known as "Ireland's Cultural Heart" for its highly concentrated collection of dance, festival, film, visual arts and music groups. Being born into such a vibrant artistic center no doubt had a multitasking impact on Feeney: While establishing herself as a singer, composer and dancer, she earned three master's degrees quickly, including one in Music and Media Technologies, on the way to a 2002 graduation from Trinity College Dublin.

While her power to connect the dots can clearly be heard on *Pages*, Feeney has co-created another far-less abstract reflection of musical history in

a radio series called *High Fidelity: A Century of Recorded Song* for Irish Public Service Broadcaster RTÉ. "On many levels, music is crucial and central to people's lives," Feeney says. "It's indispensable. It's vibrant, it's the core, it's a pulse. And music has an innate importance to me; it's constantly pulsating through me."

With her Bach-fueled biorhythms ("You can't live your life until you've heard every piece of Bach music"), Feeney and *High Fidelity* co-host Jack L. make every 50-minute episode a continuous source of discovery for the listener. In each, the pair eschew a rigid timeline for an unfolding train of thought, one where Leadbelly, Van Morrison, Nirvana and Woody Guthrie may coalesce in one show; Cole Porter, Frank Sinatra, Eartha Kitt, Judy Garland and U2 in another; and Thomas Edison's

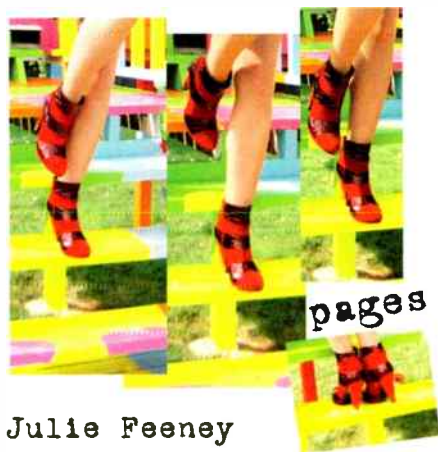
landmark “Mary Had a Little Lamb” meshes with Miles Davis, Enrico Caruso, John McCormack and Scott Joplin in another.

CREATING PAGES

After composing and orchestrating the record’s 12 tracks, Feeney conducted 24 members of the Irish Chamber Orchestra in one day during the course of two pressure-packed sessions at Irish Chamber Orchestra Studio in the University of Limerick, Ireland. For the recording, engineer Ger McDonnell and assistant engineer Edel Griffith set up a pair of mics behind the conductor position and two more at the back of the room, along with close-miking for the various sections, with all signal going into Feeney’s personal Pro Tools rig.

“The Irish Chamber Orchestra Studio has beautiful acoustics, and the moment I stepped in, I knew that it would work for the orchestra,” Feeney says. “I was the first person to record there, as it was only newly built. When I stood in the position of conductor and the musicians played, there was a kind of electric hot spot where the music actually appeared to bounce right in front of my body. It was magical.”

Feeney admits that quickly conducting and capturing 12 songs with some of Ireland’s top string, woodwind and brass players was incred-



Julie Feeney

ibly stressful, though just as rewarding. “Nobody had heard any of it, apart from me, so I didn’t know whether or not it was any good,” she says. “I had been told, ‘Feeney, if they don’t like it, they’ll let you know,’ so I was pretty scared. The complete opposite happened. The orchestra was extremely positive,

lovely, professional, brilliant and possessed incredible musicianship.”

For vocals, Feeney sang into a Neumann U87. “In terms of how I have my voice recorded, my next album will be completely different,” she says. “I want a new departure. It won’t exactly be lo-fi, but you know the way that people love the demo sound—I want to go in that direction with it. I can’t wait to go back, experiment with different mics and see what road I’m going to take. I want to experiment with different spaces. Next time I want to do the singing first, and the rest is going to follow.”

PEPPERS IN THREE PARTS

It makes sense. As most listeners will check out a new album on iTunes—or at least the first single from a long-awaited *I’m With You* release—the Red Hot Chili Peppers and producer Rick Rubin opted to provide the album in three different formats: iTunes’ AAC, CD and vinyl. While creating three different versions from the final mixes may not seem too daunting, for mastering engineer Vlado Meller (below), pinpointing the most current AAC encoder proved tricky.

“For iTunes, we take a 44.1k/24-bit file and test it with Apple’s proprietary AAC converter,” Meller explains from his home base in New York City’s Masterdisk. “Apple keeps changing the AAC encoder, and you have to have Apple’s cooperation to make sure you’re hearing the exact results. Until now, we had to guess about what the actual Apple AAC encoder sounded like. The emulations available as plug-ins are only an estimate. Apple’s encoder has evolved and they haven’t provided much information about it in the past. We then tweaked



our master so that when the AAC file is played back, it sounds to the ear to be very consistent with the CD.”

Working on his custom mastering hardware, Meller’s purpose-built high-resolution processors allow him to be precise and transparent, making adjustments to EQ and level to help disguise the data reduction in the iTunes version, working closely with mix engineers Andrew Scheps and Greg Fidelman. For the CD version, Meller took Rubin’s 96/24 files, using digital processing to fine-tune each mix and bring it down to 44.1/16. The vinyl master was cut from the original 96/24 mixes.

“I do think this will be a process that every major project will start to consider,” Meller says. “Considering how many listeners are only going to hear the iTunes version, care should be taken to make sure the AAC version sounds as good as it possibly can. As bandwidth and technology improve, so too will the sound quality of streaming and downloaded music. For now, we try to make our existing formats sound as good as they can.”

—Sarah Benzuly

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Read more about making Feeney’s latest album at mixonline.com/october_2011

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A NOBLE ENDEAVOR

Studio owner Henry Gooderham has opened the doors to his 800-square-foot, purpose-built Noble Street Studios (Toronto, noblestreestudios.com), hoping to attract local and international music projects, as well as film and TV clients with its 5.1 surround system. Acoustic engineering was handled by Terry Medwedek of Group One Acoustics, while Athos Zaghi (AZA and Theatre Consultants Collaborative, LLC) and Robert Kastelic (AKB Inc.) handled the facility design.

Studio A features a 1,200-square-foot live floor with 19-foot ceilings, floating on an 8-inch concrete pad and 430 specially engineered springs. There are direct sightlines from the iso booth to the control room and live floor. The 460-square-foot control room houses a vintage SSL 4056 E/G console with monitoring via PMC MB2-XBDs and AML-2 surrounds. Studio B provides a smaller control room, with an SSL 900 SE+ 24-channel analog console/DAW controller, and four floating rackbays filled with analog and digital goodies; rounding out the space is a 350-square-foot live lounge. The building is Cat-6A-wired and can accommodate up to six streaming cameras in Studio A, with editing on site in real time.

—Sarah Benzuly



MATHIEN BRINGS THE FUN(K)

Produced by Chris “Wolfdog” Schneider and recorded and mixed at Pressure Point Recording (Chicago) by Steve Kovacs, *The Night I Was an Alpha Male* from Chris Mathien (lead vocals, guitar, programming) and band—bassist Mike Schiff, drummer Aaron Bouslog and keyboardist Peter Wilkins—provides a full-blown album experience. A regular resident of Pressure Point, Mathien has crafted a sound that is old-school and thoroughly world-beat modern.

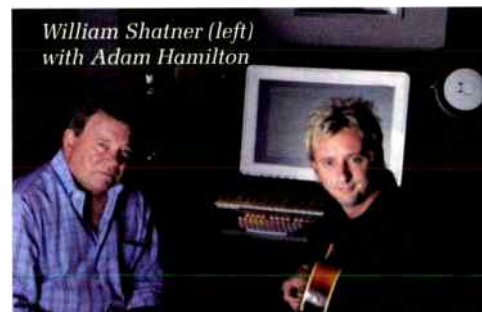


SHATNER AND HAMILTON

Los Angeles-based producer/composer/musician Adam Hamilton christened his new home studio by producing a new release for William Shatner titled *Seeking Major Tom*, a “concept record” inspired by David Bowie’s astronaut character and 19 cover songs.

Shatner recruited friends such as Sheryl Crow, Brad Paisley, Steve Miller, Lyle Lovett and Bootsy Collins to contribute. Some artists visited Hamilton’s space, while others collaborated remotely. Hamilton weaved all the elements together in Pro Tools. “I’d say 90 percent of the time everything would line up perfectly,” Hamilton says, “and then sometimes it’s like a jigsaw puzzle that got thrown up in the air, and all of a sudden you have to put it back together piece by piece.”

—Matt Gallagher



William Shatner (left) with Adam Hamilton

INTO THE BUNKER

Miloco Studio’s new programming/writing room The Bunker (London, miloco.co.uk/studios/the-bunker), in association with producer Stephen Street, was custom-built by Miloco’s recently launched Miloco Builds studio design/construction company. When Street is not in session, the room is available for outside producers, engineers and artists, who can use it as an editing room or employ the additional vocal booth. Select gear includes an Audient Zen console, Pro Tools|HD3, and Focal Twin and KRK monitors. A wide selection of outboard gear, backline and microphones provide Street and outside clients with a wide swath of recording selections.

—Sarah Benzuly





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who had been instrumental in the blues revival of the late '50s and early '60s, supervised the recording. "It was the first rock record I'd ever done," he said recently.

Though "Fixin'-to-Die" was part of the band's live repertoire, it didn't fit in with the acid-soaked material on their first album. Instead, it became the cornerstone of their sophomore LP, which was cut in New York at Vanguard Records' studios in New York City during the summer of 1967. Charters again produced (he ended up doing the first four Fish albums), and it was engineered by Vanguard staffer Ed Friedner, who had helped design and build the studio on West 23rd Street in Manhattan during 1964.

Friedner, who started in Vanguard's art department in 1959 after a stint on Madison Avenue, slowly gravitated to the recording side of Vanguard's operation over a few years and soon was recording folk and classical albums and became the label's chief engineer.

"Vanguard Studios on 23rd Street was a church originally," he recalls in a recent conversation. "When Vanguard bought the space, it was a 100-foot-long room with a concrete floor and church windows. The control room end was where the organ loft was, slightly elevated. But we took stuff apart and broke it

EQs, LA-2As and LA-3As, and other pieces. All the Langevin pre's and line amps were tube slide-in amps in trays, and we used Cinema sliders for faders. We were able to mix four outputs to the Scully 8-track and use individual sliders patched direct to the 8-track, so we had fader control on all mics. I also built an 8-input, 4-output monitor system that allowed us to send any one of the eight Scully tracks to any or all of the four outputs, and each of those outputs went through Dyna 60 power amps to JBL S7 speakers." The studio had EMT plate reverbs but also mono and stereo live chambers in another part of the building. By 1968, when Friedner and Charters teamed up to make Fish's next album, *Together*, the studio had installed a 24-input Neve console—the first in an American studio.

Why would the band record in New York at all? Charters notes, "There were very limited recording facilities in San Francisco in 1967. We had used the little Berkeley studio [for the first Fish album] because there really wasn't anything better. But Vanguard soon realized it was actually cheaper to pay for bands to use their empty [N.Y.] studio than it was to pay recording costs in someone else's studio. And the bands could stay at the Chelsea Hotel [a few doors down from Vanguard's studio]." The Chelsea was a colorful place in those days,

between the rock bands that came through town and various artists, writers and actors who lived there for days, weeks or months at a time.

Tracking for the Fish's album was done live, without lead vocals (unless it was one of McDonald's quieter, acoustic-based ballads), with gobos separating the players in the big room. "You have no idea how loud they played," Friedner says. "If you walked in front of an amp while they were tuning, your trousers would shake, there was so much sound pressure. Barry had these two Fender Twins, but I'd only mike one of them."

Friedner admits that he was "green" when it came to recording rock 'n' roll drums or such heavily amplified guitars, and "it took some experimentation to find the right mics. When we



down and closed all the windows up. We needed floating walls because we had to separate the control room from the main hall.

"On the end of the room we built a control room and next to it a fairly large isolation booth, and then we had another booth out in the hall," he continues. "This was a very live room, and we had a huge, very thick drape that we could pull across the room and break it in half. When we did pop sessions, we would cut the room in half and put carpet on the floors. The ceiling was pretty high—maybe 30 feet. But there was also this overhang around the perimeter and we made a drum booth under that. It was a fantastic hall for classical—which is a lot of what we did at Vanguard—and if we had to do strings or horn overdubs on a pop record, we'd just open the curtain and we got this fantastic string sound. Other record companies would come in to do strings there."

The control room was equipped with a custom console built by Friedner. "It was a 16-input, 4-out with Langevin 5116 and 5117 preamps, and EQs patched to each input," he says. "We had racks of Pultecs, Cinema Engineering graphic

first started, we were using some mics on the drums we shouldn't have used." Eventually, he settled on a combination of Neumann U67s, KM56s and an assortment of high-quality dynamic mics. In fact, the studio's large stash of 67s proved best on nearly all of the instruments, as well as vocals. Bruce Barthol's bass was recorded direct. With just eight tracks to work with, Friedner would usually put the kick drum and electric bass on one track, premixed stereo drums on two others, guitars and keyboards mixed to two more, lead vocals on another, and then he had two tracks for bouncing background vocals and sound effects. (This album has a bunch.)

One reason "Fixin'-to-Die" had not appeared on the first album is because the band could never quite work out the right arrangement for what was essentially a jug tune, and that dilemma carried over to the second album's sessions. David Cohen recalls, "We spent three or four hours trying to arrange the song, trying to figure out how to make the song work for a rock band. We were frustrated. So we took a break, and I started to play a ragtime version of

it on a piano, just fooling around. Sam Charters jumps up, and says, 'That's it!' and everyone got all excited. So we decided to do it like a ragtime song. Then, one of the instruments that was sitting around the studio was this electric calliope, so Joe got the idea, 'Let's put that on it!'" Cohen doesn't recall the make of the small electric calliope, but says it was painted to look like a traditional circus model. It came from a local instrument rental company, and Charters says it had caught his eye in a catalog "because I knew about calliopes from early New Orleans jazz history."

Four of the five members of the band sing a verse each on the song (in order): McDonald, Melton, Barthol and Cohen. The whole band sang the chorus and contributed to the fast-paced old-time backgrounds ("psychedelic, psychedelic, psychedelic") and played kazoo punctuation. "We'd always had a slice of vaudeville in us," Barthol says with a chuckle. "I have a basically good feeling about those sessions. I remember having fun recording 'Fixin'-to-Die' because we were getting pretty good at that point, and the recording was less daunting and there's all that weird fun stuff on it—like the background vocals—and I got to use some fuzz bass on it."

Friedner then capped the song by using some potent machine gun and

MUSIC EVENTS IN 1967

February 14: Aretha Franklin records "Respect" at N.Y.-based Atlantic Studios.

March 25: The Who perform their first U.S. concert, in New York.

May 12: Pink Floyd stage the first rock concert with quadraphonic sound at Queen Elizabeth Hall, England.

June 1: The Beatles release *Sgt. Pepper's Lonely Hearts Club Band*.

September 17: The Doors appear on *The Ed Sullivan Show*, performing "Light My Fire."

October 18: The first issue of *Rolling Stone* makes its appearance.

bombing sounds taken from sound effects records. Later, "The Fish Cheer" (which was "F-I-...", not "F-U-..." in those days) was added to the opening of the track, but it's not technically part of "Fixin'-to-Die."

When the album came out in the fall of '67, "I-Feel-Like-I'm-Fixin'-to-Die Rag" was an immediate hit on free-form rock radio stations that were just coming into vogue in select cities around that time. Regular AM radio—which still ruled the roost most places—wouldn't touch it, of course, and Friedner laughs when he says, "It was the first time I ever got hate mail for something I engineered. My name was on the jacket and some people wrote to me at Vanguard saying, 'How could you record this crap?'" The song also became a favorite in Vietnam among some of the troops, who appreciated its dark humor. The album as a whole was quite successful, staying on the *Billboard* charts for many weeks.

McDonald was sued in the early 2000s by the daughter of "Muskrat Ramble" co-author Kid Ory for copyright infringement, but the courts ruled in McDonald's favor. The song has appeared in many dramatic films and documentaries, and has also been re-written dozens of times by others to comment on more recent wars and political situations. And though Country Joe & The Fish were about so much more than that one political statement, that song, above all else, seems to have defined their place in music history. For me, however, they'll always be one of the great acid bands.

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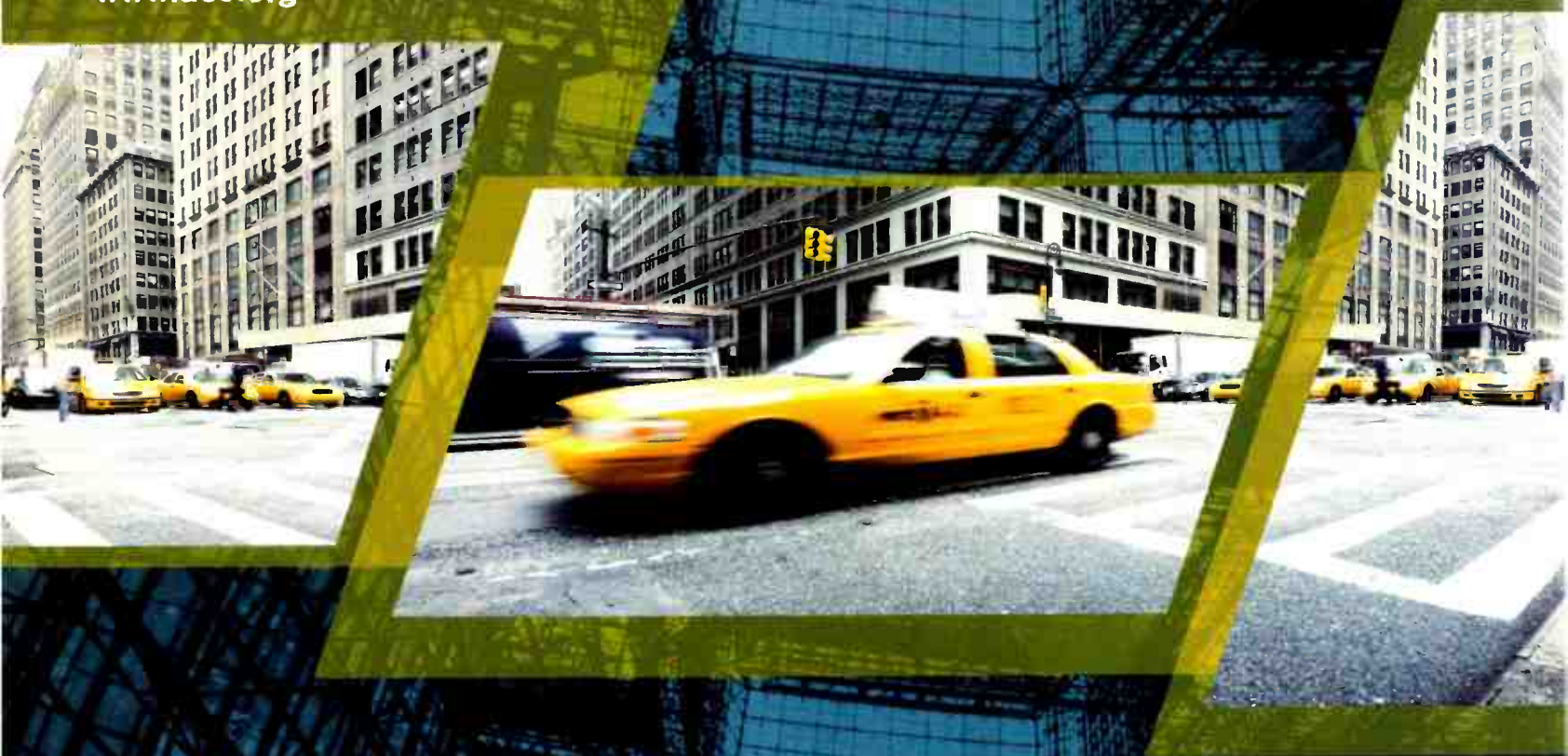
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Live

THE DECEMBERISTS

By Sarah Benzuly 27

AVIOM TO THE SYMPHONY

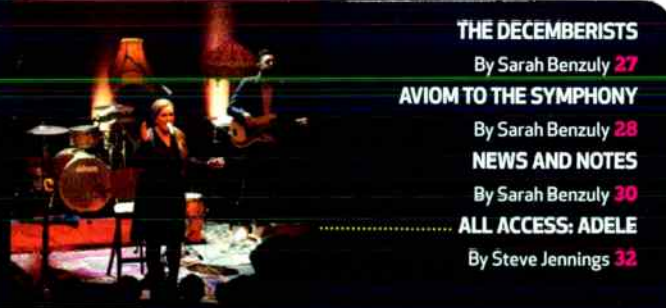
By Sarah Benzuly 28

NEWS AND NOTES

By Sarah Benzuly 30

ALL ACCESS: ADELE

By Steve Jennings 32



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THE DECEMBERISTS

Acoustic and Electronic Mingle In Clubs, Festivals

By Sarah Benzuly

Out in support of their sixth studio release, *The King Is Dead*, folk/pop artists The Decemberists made a pit stop at the annual Outside Lands festival, San Francisco, playing to sold-out crowds near the end of the last day. For the festival date, the crew—including front-of-house engineer Rich Hipp and monitor engineer Marcel Caccac—brought in all their normal touring gear except for the Meyer speaker system, which was provided by UltraSound. For the rest of their recently wrapped 2011 tour, Portland, Ore.-based Horne Audio provided all equipment.

Both engineers are quick to say that the approach to their respective mixes doesn't change that much for a festival situation. Caccac says, "We've been lucky in that we are able to use our production at festivals: consoles and local racks, splitter, snake, power distro, mics, stands, cables, et cetera. This has given me the luxury of a consistent mix and confidence without needing a soundcheck. I usually recall a show file from a previous festival or similar-type outdoor venue, and away we go!"

It also helps that both engineers are working on compact setups: Avid VENUE Profiles at both stations, with no outboard gear. Some of Hipp's go-to plug-ins include Echo Farm, TC Electronic VSS3 and ReVibe for ambience; and Purple Audio MC77,

Impact, Focusrite d2 and d3, and Serato Rane Series for dynamics and EQ. Caccac uses many of those same plug-ins, adding in Fairchild 660s for Jenny Conlee (accordion), Nate Query (upright bass) and vocalist Colin Meloy's overall in-ear mix; a mono Fairchild 660 on John Moen's snare top; and a few onboard gates/expanders for Leslie cabinet, glockenspiel and guitarist Chris Funk and Conlee's vocals, "to reduce bleed as well as channel comps for various acoustic instruments," Caccac says.

In addition, Hipp's VENUE system has an HDx card connected to a Macbook Pro with an HD Native card running Pro Tools|HD9 for multitrack archive and virtual soundcheck. "I can use the live tracks from the night before to check my workflow from input to output. It's an amazing tool."

Onstage, acoustic and electric instruments mingle together, creating a wider sonic palette that keeps the engineers anticipating their next fader move. "The dynamic range from song to song is



Front-of-house engineer Rich Hipp and monitor engineer Marcel Caddac (below) both work on Avid VENUE Profiles.



BACKSTAGE PASS

Sound Company:
Horne Audio
FOH Engineer:
Rich Hipp
Monitor Engineer:
Marcel Caddac
FOH/Monitor
Consoles:
Avid VENUE
Profiles

another drum mic.”

That bleed onstage is also affecting Caddac’s monitor mix, as Moen will sometimes play keys or sing in Funk’s mic or even play melodica on Meloy’s mic. “I

have a very active mix and I’m constantly reading their body language, too,” he says. “I make a considerable amount of fader moves based on their body language, always anticipating and, for the most part, pre-emptively mixing what I believe they need at any moment without losing the feel for the song or the dynamics of the moment. Depending on the set list, I have several cues, especially when they change instruments, which happens often.”

The majority of the band—with the exception of Funk, who has an L-Acoustics 115XT HIQ wedge—is on in-ears so that Caddac can create the same musical environment in each performer’s mix; they use Sensaphonics 2X-S models, and drummer Moen also has a ButtKicker Concert Series transducer. In addition, fiddler/vocalist Sarah Watkins (special to the tour) is on Ultimate Ears.

At the end of the show, Hipp finds that his addiction to creating and establishing “good audio” continues to grow. “Each day presents a new set of challenges in which I learn something more about that pursuit,” he says, “and understand more deeply what is good audio and what is not.”

AVIOM TO THE SYMPHONY

Not only home to the New World Symphony, Miami Beach’s New World Center (nws.edu) also offers Pulse, a spin on the traditional orchestral experience within a nightclub setting. Pro Sound and Video (Miami) brought in Aviom Prot6 personal mixing systems for each of the performers. “In a symphonic building, with such a long RT60, the sound that engineers hear from a reference monitor is going to be vastly different from what the musicians are hearing onstage,” says the installer’s managing director, Brad Gallagher.

“The nominal reverb time of the room is 1.5 seconds, so when the Aviom A-1611 personal mixers are used with headphones or in-ears, it allows us to totally eliminate any unnecessary stage volume, while keeping our options flexible for onstage performances,” says Alan Miller, New World Center production technician and audio specialist.

For the first Pulse show, DJ Mason Bates and some performers were located on



stage lifts while other performers were on the hall’s satellite stages. “Three percussionists played a rather difficult piece on djembes that were positioned on different performance platforms throughout the hall,” says Miller. The platforms surround the stage with about 50 feet separating each and are between audience seating areas. “We recognized that the percussionists would need to hear each other clearly while competing with the late-night crowd noise. We also provided an A-1611 to the orchestra conductor.”

The music selected for the venue’s second Pulse event required a different setup, with two soloists playing on separate performance platforms in sync with the full orchestra onstage. “The distance time delay and reverb would not allow us to do this setup without any monitoring, so this time I pulled out the A-16CS control surfaces to be used with our A-16R personal mixers that are rackmounted in our monitor console desk unit,” says Miller. “The DiGiCo D1 allowed us to send the signal to these A-16R units, and then the output of the A-16R can be routed back to the console so I could send it to our wedge monitors.”

more online



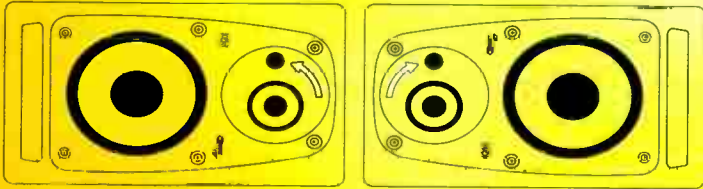
Check out additional photos from the Outside Lands Festival at mixonline.com/october_2011

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MUSIC IN THE PARK

Walking through Madison Square Park this past summer, you would have heard the sounds from concert series "The Oval Lawn Series." The New York branch consulting firm SIA Acoustics designs and implements the portable P.A. system each year. The audio crew comprises SIA's Adam Shulman, Gino Pellicano and Chris Greco. The system employs two Danley SH-96 full-range boxes in a stereo configuration, with two SM-60F compact molded horns for the audience areas on the sides of the stage. Four Danley DBH-218 subwoofers, arranged in an "expanded cardioid" configuration, cover the 270-degree audience while providing substantial attenuation onstage. On the 12x24-foot stage, eight Danley SH-LPM monitors provide volume and clarity for the musicians. A Danley DSLP48 processor conditions the input from an Avid Profile and the output to a rack of Lab.gruppen (house) and Yamaha (stage) amplifiers.

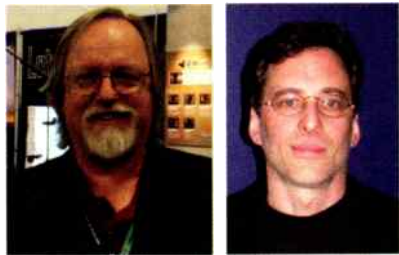


EIGHTH DAY SOUND SYSTEMS ENGINEER/CREW CHIEF EDGARDO "VERTA" VERTANESSIAN ON JUANES TOUR

FIXIT Juanes is particularly big in South America, where he plays at big outdoor soccer stadiums pretty much all the time. The challenge at those locations is to have a powerful yet crystal-clear P.A. response even when many times we have to supplement what we carry with us with local P.A. add-ons. We would have mains and side arrays, maybe a 270-degree hang, flown subs, four to five main ground sub stacks, and two to six delay towers with distributed sub stacks, depending on the venue. [Front-of-house engineer Robert "Cubby" Colby] runs subs through an aux send and sometimes we have three different aux sends for the different subs zones. Phase is very important to us as we carry a heavy-loaded sub-bass P.A., but one of our goals is to have the right balance all throughout the bass guitar range. At certain points, we spend a lot of time playing a bass guitar track through the P.A., making sure all the notes had the right presence at different places in the stadium. Cubby is very focused not only in having a powerful P.A., but also an accurate one in the low and sub-low range. He looks forward to a system with enough dynamics to get the impact he likes but also very clean all throughout the spectrum. The d&b J Series is really up to the task, and we have been using it with great results at many different locations.



LIVE SOUND AT AES!



Mac Kerr (left) and Henry Cohen

The 131st AES Convention Live Sound co-chairs Henry Cohen (RF expert) and FOH engineer Mac Kerr have put together an exciting list of events.

FOH on FOH: Robert Scovill Interviews Dave Natale. With a cumulative 60-plus years' experience

on the road for such artists as Tom Petty and The Heartbreakers, Rush, Prince, Tina Turner, Lenny Kravitz, the Rolling Stones, Yes, Fleetwood Mac, Madonna, Joe Cocker, Motley Crue, Lionel Richie and John Mellencamp, these two FOH giants will banter about their mixing experiences. Educational panels include "DSP Algorithms," "Data Networks as a Digital Audio Transport Mechanism," "Subwoofer Arrays and Beam Steering," "Auditoriums and HOWs," "Multitrack Recording for the Live Sound Engineer," "Production Wireless Systems" and much more.

DANLEY PLAYS IN BEATBOX



New San Francisco live music venue BeatBox is the first club on the West Coast to feature Danley Sound Labs loudspeakers and subwoofers. The 30x10-foot stage can move to different locations and take on different configurations. Matt Long, principal of A/V integration firm Sonic Sus-

tenance, installed four Danley SH-60 full-range loudspeakers and four Danley TH-118 subwoofers. On each side of the stage, paired SH-60s deliver a combined 120 degrees of coverage horizontally and 60 degrees of coverage vertically. Powersoft amplifiers with integrated DSP and network accessibility serve as a front end for the system.

Jim McGorman

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THE SWEET SOUND OF ADELE



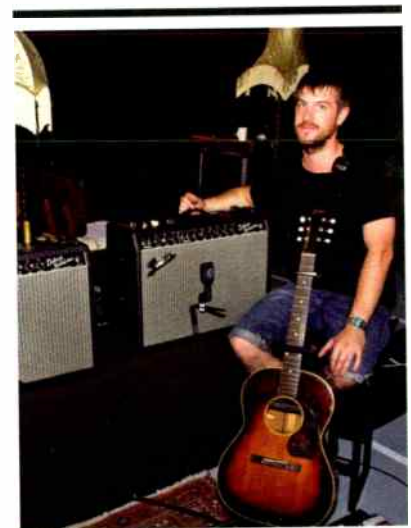
Adele sings through a Sennheiser SKM 2000 radio with a hypercardioid 965 capsule in gold.

You could hear the sigh of discontent across the San Francisco Bay Area when Adele cancelled her North American tour mid-run due to laryngitis. Fortunately, just a few months later, this songstress sensation was back on the road, resuming where she left off. *Mix* caught up with the tour at the Los Angeles Greek Theater.

[Note that the opening photo is from the first show of the tour in Washington, D.C., and supplied by Getty Images.]

Front-of-house engineer Dave McDonald is no stranger to the Allen & Heath iLive 12 console, having mixed on it for Florence and the Machine, AIR and now Adele. "It seemed logical that we were starting small to use the iLive, but as we raise the bar, it just keeps up with what we need it to do," McDonald says. "No plug-ins are needed as the board, hands-down, has the best modeling I have heard."

On the North American dates, the tour is not carrying P.A., but McDonald specs an L-Acoustics or d&b system. "This does not always go as planned, so many times you have to use some different manufacturers," he says. "So you get to see the good, the bad and the ugly of the P.A. world; it keeps you on your toes." For the UK leg, the tour will be carrying a package from SSE.



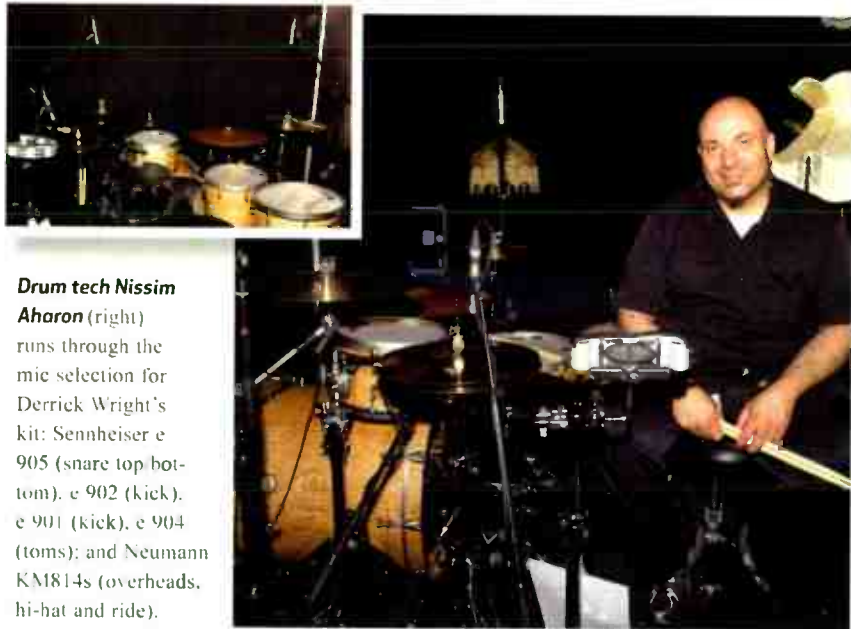
Stage-left guitarist Tim Van Der Kuil uses two Fender Deluxe Reverb amps, each miked with a Sennheiser e 906 dynamic. According to guitar tech/stage manager Adam Carr (above), Kuil's foot pedal comprises a TC Electronic Polytune poly-chromatic tuner, Electro-Harmonix Deluxe Memory Boy analog delay, Empress tremolo, Fulltone OCD and Full-Drive 2, and a Peterson Strobe Stomp 2 tuner.



Stage-right guitarist Ben Thomas plays mainly Gibson and Taylor models. According to guitar/keyboard tech Adam "Flea" Newman (at left), the two Fender Twin Reverb amps are miked with Sennheiser Evolution e 906 dynamics. Thomas' foot pedal (below) comprises an MXR Carbon Copy analog delay; Electro-Harmonix Holy Grail Plus and Stereo Pulsar Tremolo; Catalinbread SCOD; Fulltone Fat-Boost; TC Electronic PolyTune; and Boss TU-2 chromatic tuner.



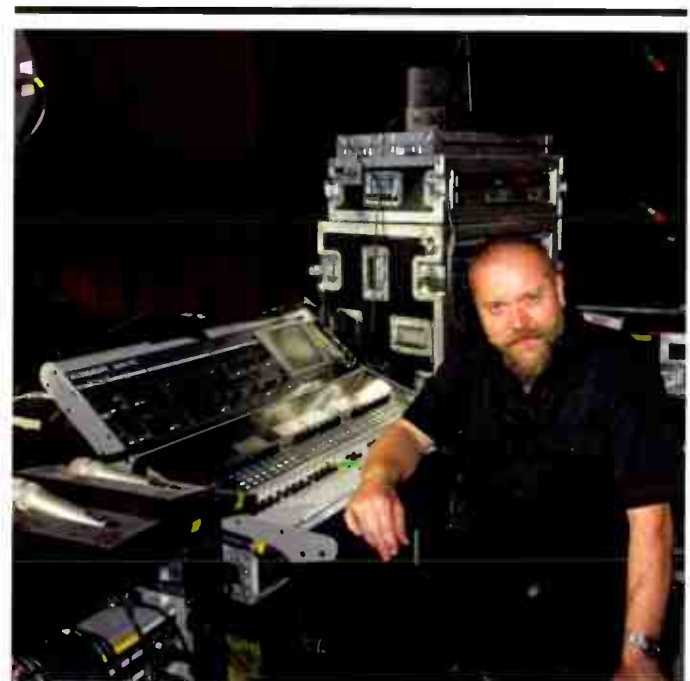
Keyboardist Miles Robertson plays a Yamaha XF-7 and XF-8, both housed in a custom-built, one-unit piano shell built by Matt Snowball in London. The unit also contains the Radial J-48 Mk2 DIs. According to Newman, there is also a small playback system run by two solid-state hard drive Macs (one running Logic and one for backup and program changes to the keyboards) into two MOTU UltraLiteMk3 audio interfaces and then into the Radial SW8 switch. "This runs the strings and percussion backing tracks, along with clicks and occasional horns," he says. "The whole rig was originally built and put together by Dan Roe in the UK."



Drum tech Nissim Aharon (right) runs through the mic selection for Derrick Wright's kit: Sennheiser e 905 (snare top/bottom), e 902 (kick), e 901 (kick), e 904 (toms); and Neumann KM14s (overheads, hi-hat and ride).

Monitor engineer Joe Campbell is also on an Allen & Heath iLive, using all onboard effects, gates and comps, saying, "There's no need for anything else—all the dynamics are great and the reverbs especially are brilliant."

Although the band is on a combination of in-ears and wedges, Campbell says that the clarity of a stereo ear mix with the added weight of a couple of wedges sounds great. "We have been using d&b M4 wedges run bi-amped on D12 amps, which has been ideal," he says. "These wedges sound good, they are nice and light, but powerful. There are no monitors near the drum; I use a Butt Kicker and a hard-wired in-ear system for Derrick. I use two pairs of wedges for Adele, in stereo, and Sennheiser G3 in-ears with UE7 molds."



At Warner Bros., editors and mixers have assigned rights to part of the facility's tape library.

SO MANY FILES!

By Mel Lambert

ASSET MANAGEMENT FOR STREAM-LINED POST-PRODUCTION

ments—tracking media during a complex workflow poses major asset-management challenges. Not only must individual files be cataloged and indexed upon ingest, the companion metadata also needs to be integrated into an easily accessible database utility available at each connected workstation. The key, of course, is easily locating an asset, identifying its current status and delivering it to the DAW or mixing console for editing into a composite soundtrack. It then must be made available for offload as a deliverable asset to the client. And it had better be the right version!

Asset management covers all types of media and metadata files—from acquisition to post-production/mixing to archive. Key features of a well-designed media asset-management solution include overseeing all target resources, regardless of format or source, and offering enhanced collaboration across the media enterprise, including production and post.

IT'S A COMMON SCENARIO. It has been decided to move forward by 10 days the final sound-editorial sessions so that the composite dialog, effects and music tracks will be ready for the first day of predubs. So the supervising sound editor brings on a swing gang of eight more editors. Where are the Pro Tools and Logic Pro sessions on the in-house server; and which interconnected WAN holds the re-edited Foley elements from Vancouver, and the last-minute ADR tracks voiced yesterday in England? Wrangling such a large number of digital audio and video files needs a steady hand, and one more vital component: a well-implemented media asset-management strategy that allows everything to be tagged and labeled, and then stored where the editorial and mixing teams can quickly find them.

For post-production facilities—and the engineers, editors, mixers and creatives who provide them with component sound and picture ele-

Such an integrated system has to recognize all forms of data-storage topologies—video and audio—and LAN/WAN network access, ideally, should be via conventional IP-based client tools, with easy-to-implement metadata searches and automated workflow throughput.

“We track assets as an extension of our work orders and master catalog numbers in our JD Edwards digital vault system,” says Kelli Clark, senior facility engineer at Fox Post Production Services. “We store BWAV-format files on our storage-area network servers and archive to LTO tape. Our main pain points are tracking the various versions of audio files generated during a film project, and making sure that they accurately reflect various picture changes, which may occur after the mix is completed. What versions have already been entered into the vault that need to be recalled and updated?”

“Our new digital vault is under construction here in Los Angeles, with

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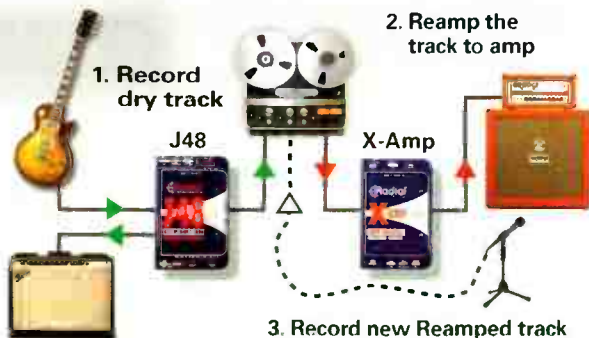
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a disaster-recovery center in another to-be-determined remote location," Clark continues. "When completed, the vault will offer well over a petabyte of storage, using Quantum's StorNext file systems on high-speed, RAID-format arrays [connected to] Linux servers."

ACCESS GRANTED

Consistent naming conventions are a major headache when initiating and maintaining asset-management databases. "It's a bit like painting the Golden Gate Bridge," Clark says, with a knowing grin. "You are constantly culling data and updating asset information, only to find more waiting to update when you think you are

"Our main pain points are tracking the various versions of audio files generated during a film project and making sure that they accurately reflect various picture changes."

—Kelli Clark,
Fox Post Production Services



"For Sony projects, we use a powerful renaming tool to provide consistent titles for dialog and effects files before transferring them to specific sub-folders."

—Robert Smith,
Sony Pictures Entertainment



done!"

"We tailor our storage and asset-management according to different classes of user," says Kevin Collier, director of engineering, post-production services, at Warner Bros. Studio Facilities, Burbank, Calif. "We utilize various group-rights available via the Linux operating system to keep users from accidentally stepping on one another; editors and mixers have carefully assigned rights to parts of our online storage. For example, we might digitize an edited picture as a proxy file so that editors can cut

sound effects against that version; they can only access the images, however, with sufficient rights. We add various levels of granularity to provide enhanced security for our assets and those of our third-party clients. And we generate a high-quality digital picture file to our in-house standard for the dub stages. To prevent unauthorized access, the file is only accessible from a separate, private network [on the server] at the locked projection booth."

Warner Bros. Studio Facilities has standardized a four-character file-name header that defines the film or TV project, and then adds more characters to define the file's revision or version number. "Users can log onto our proprietary, password-protected servers—what we refer to as the PPSnet—and see a folder-based [interface] that is divided into separate areas for editorial and stages," Collier continues. "Editors locate the sound and image files they need, and then, if authorized, pull them off the server for access on local drives and then push them back as edited files with appropriate file-name revision numbers so that each digital asset is unambiguously labeled. Deeper-level folders hold, for example, pre-dubs, stems and final masters," the latter sub-divided into English-language,

foreign-language, M&Es and so on.

Separate disaster-recovery and archive mechanisms ensure that these assets are continuously protected and accessed long after the project is completed. "Our Disaster Recovery comprises a mirrored copy of the main RAID-5 server on a back-line array, which is updated daily," the director of engineering says. "We have approximately 500 terabytes of spinning storage on which we keep material for the life of a project, and then, following the release date, will stream it off to an LTO tape library, which is a snapshot backup of the mirrored server. Then we perform a digital archive to twin sets of LTO tapes and a set of DVDs holding the mixed stems and print masters. Why DVD? Who knows if the DAWs we use today will be around in 10 years' time; we selected an archive format that lets us recover flattened files from a film or TV project."

Robert Smith, systems and media engineer at Sony Pictures Entertainment's Digital Studios division, stresses that a successful asset-management scheme requires accurate and consistent metadata. "We use a proprietary naming system," he reveals. "Because of the degree of specificity we need in sound editorial, the file names can become rather long. For Sony



"We utilize various group-rights available via the Linux operating system to keep users from accidentally stepping on one another; editors and mixers have carefully assigned rights."

—Kevin Collier,
Warner Bros. Studio Facilities

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A new Media Storage Service from Technicolor combines enterprise storage and data-management expertise from disc-store vendor NetApp to manage digital assets; the NetApp “secret sauce” provides highly optimized storage area networks and/or network-attached storage for post facilities and content providers. “The new service offers a ‘pay-as-you-go’ pricing model, allowing our customers to scale storage to meet fluctuating demand and avoid over-investing in off-peak periods,” offers Chuck Parker, Technicolor’s chief commercial officer. Technicolor’s customers “can provision the [cloud-based] storage they need in days instead of weeks, accelerating completion of projects,” he says. “We married NetApp storage expertise with our own expertise in video.” The service is directly integrated with MediAffinity, Technicolor’s digital content-management and access platform.

“Our core business is about manipulating content—everything from visual special effects at the very beginning of the chain through production and post-production,” Parker continues. “Today, we face storage challenges. A new TV show might need up to 500 terabytes of data for 26 weeks of shooting and then—bang—it goes away when the show is over. With that kind of workflow, we need to turn on storage very quickly and then archive and retrieve it.”

“A cloud service is about a shared infrastructure that can be turned up and turned on,” adds Rick Condgon, NetApp’s Western area VP. “And then when one of our clients is done with that infrastructure, they can give it back and we can re-deploy it again to another customer; that is a very cost-effective solution. We know data management, and Technicolor knows about workflow.”

THE AVID SOLUTION

If you work in sound or picture, you will eventually encounter Avid. Avid offers a pair of inte-

“By optimizing these ingest and delivery operations, Interplay Production can sometimes double the audio creative time available per assignment.”

—Jim Frantzreb, Avid



“We have a large combination of RAID-protected systems with more than 600 terabytes of spinning storage holding our video and audio files.”

—Paul Chapman, FotoKem

WHAT IS IMF?

Developed with the Entertainment Technology Center, IMF is a voluntary specification for master files (and associated metadata) that will enable standard interchange and automated creation of downstream distribution files. Version 1 of the voluntary file-based specification has been passed to SMPTE for further work toward a published standard. Benefits include a single, interchangeable master file format, automated packaging/delivery, minimized storage and simplified post-production transcoding processes.

grated media-asset solutions that accommodate both Media Composer and Pro Tools session files, plus component audio and video digital media. Interplay Production Asset Management (PAM), as the name suggests, is designed for in-house workflows, while Interplay Media Asset Management (MAM) handles cross-platform and delivery mechanisms to enable completed material to be reused, repurposed and monetized by content providers. Optimized for all steps in a real-time media-production workflow, PAM allows users to track production file formats at every instance of a project’s history, with versioning, non-destructive rollback, collaborative access and role-based front ends.

“Interplay Production was initially developed for broadcast and video customers,” says Jim Frantzreb, senior market segment manager at Avid. “We will

continue to add new functionality, with audio workflows being one of the next logical steps in the product’s continued development. The audio-production aspect of the current Interplay Production workflow focuses on Interplay-connected Media Composer—or Symphony or NewsCutter—editors delivering projects to Interplay-connected Pro Tools systems, and then Pro Tools editors delivering mixes to the Media Composer or Symphony for finishing.”

While the current Interplay Production release does not have specific functionality for Pro Tools-to-Pro Tools workflow or the ability to automatically populate audio-specific metadata, “It can help streamline the workflow of audio professionals who work on extreme time-sensitive projects,” Frantzreb explains, “such as promos, daytime dramas, cable programming, et cetera. By optimizing these ingest and delivery operations, Interplay Production can sometimes double the audio creative time available per assignment. [We] will continue to work closely with our customers on how best to address Pro Tools/audio-specific metadata.”

Interplay Production allows users to find and browse content, and then perform frame-accurate annotation or shot-listing, either locally

Every Time, All the Time

Front of house engineer Patrick Mundy knows a good thing when he sees one. Take for example Yamaha's M7CL. Beating out any and all competitors, the M7CL is chocked full of useful features making his life at FOH a breeze. Asked what he enjoyed about the mixer, Mundy had much to say. Here's just a sample.

"When mixing artists whose music you may not be familiar with, having access to all your channels in a pinch is crucial. With most competing desks, plus or minus thousands of dollars in the price range, you'll end up flipping through pages trying to find what's ringing in monitor world or over the mix for FOH. Yamaha's M7CL is a true professional board. Being a professional is about being consistent and fast every time all the time. The M7CL gives me a flexible customizable work surface that does not stunt my creative vision as a mixer."

- Mundy

California Based Freelance Engineer mixing festival gigs such as SXSW and Rock the Bells as well as House of Worship festivals such as Light at the Lighthouse and Calvary Chapel events.



Mundy offered up some of his secret sauce settings that he uses as a starting point.

Check them out and download them at www.yamahaca.com/mundy



or across a WAN. Ingest scheduling through a dedicated or Web-based user interface lets a facility use a conventional workstation's OS to access and monitor asset databases across a wide range of third-party media servers.

The post community puts unusual demands on file access and media-asset management, Warner Bros' Collier concludes. "We need the flexibility of working with serial *and* parallel workflows. In reality, we deal with *working* asset management and not curated asset management, where the materials are fixed and unchanging. It is a major challenge for Warner Bros. and other post facilities."



Technicolor's central hub allows for projects, dailies and other production elements to be viewed while sharing time-stamped comments and playlists.

mentioned in this article, the author would like to thank the following individuals for their invaluable assistance while researching the subject:

David Hansen, VP of sales at SanSolutions, which offers a number of integrated storage

systems for post facilities.

David Evans, VP of technology solution sand services from P1 Technology, and formerly with NBC-Universal; P1 offers a number of storage and disaster-recovery solutions for post facilities.

John Mallory, product manager at NetApp Media Solutions, which offers a range of SAN/NAS storage media options from high-capacity SATA disk drives to contiguous server farms.]

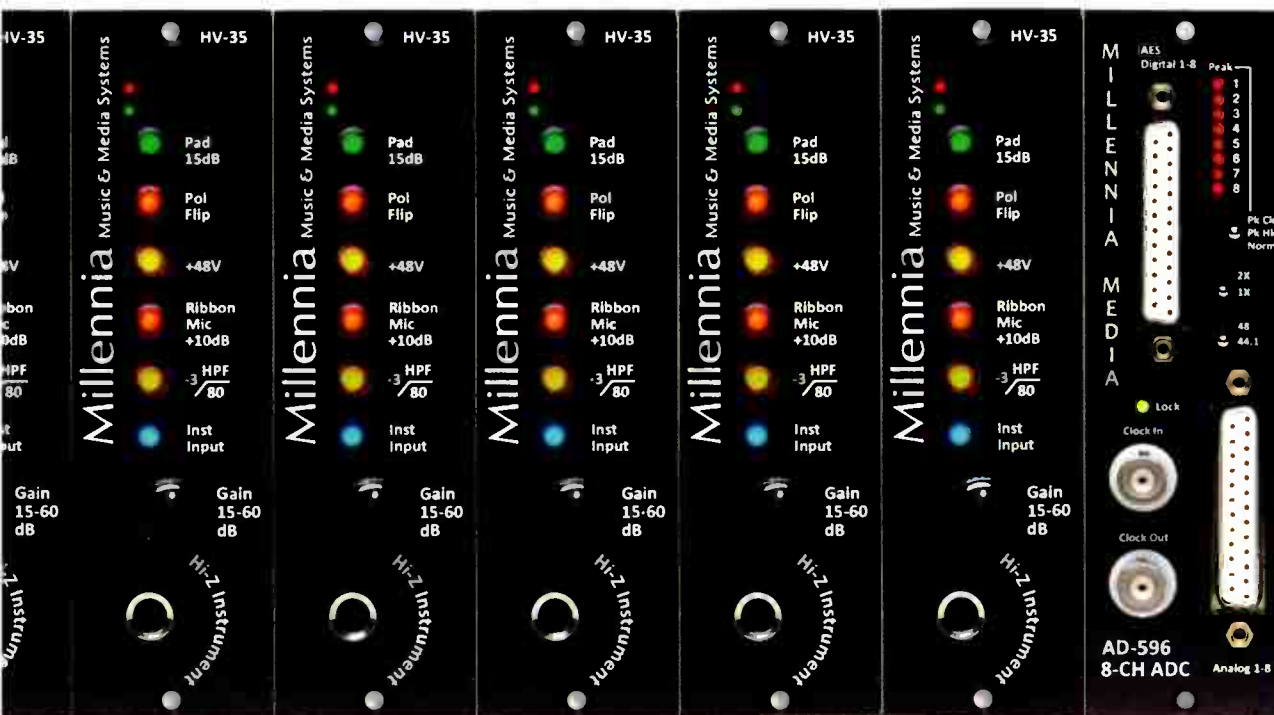
Mel Lambert has been intimately involved with production and broadcast industries on both sides

of the Atlantic for more years than he cares to remember. Now principal of Media&Marketing, a Los Angeles-based consulting service for the professional audio industry, he can be reached at mel-lambert.com.

[A *Thank You* footnote: In addition to the people

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Blackstar
A downpour prevented Journey (singer Arnel Pineda is pictured) from doing a soundcheck before their performance.

The *Today Show* on NBC has been the ruler of the morning network airwaves for most of the past 59 years, an incredible feat given the fickle nature of TV viewers. The show regularly attracts an audience of more than 5 million weekdays, and sometimes millions more depending on news events or the star wattage of the day's guests. So it's no surprise that *The Today Show* has long been a coveted destination for show-business personalities, from actors wanting to promote their films to musicians pushing their latest project.

LIVE MUSIC CHALLENGES TODAY SHOW MIXER

Working Fast Is Only Part of It

By Blair Jackson

Through the years, live music performances have played an increasingly important role on *The Today Show*, as improvements in technology and signal transmission in the digital age have allowed music to come across into our homes with greater fidelity, power and nuance, and as such are more appealing to the performers and viewers. These days, it's not at all unusual for the program to stage a live mini-concert or two per week before thousands of spectators outside the program's Rockefeller Center studios (mostly, but not exclusively, spring to early fall), plus feature singers and bands playing inside on one of the show's soundstages. It's a grueling schedule that requires the coordination of a huge number of people just to get the

music portions of the show on the air, as principal mixer Matt Rifino explains.

"It's such a group effort, such an undertaking," he says. "The guys are really amazing. In just a few hours, they turn a city block into a concert venue and a television studio at the same time, and within 12 hours it's back to being a street again. Everybody plays such an important part, from the guys that build the stage to the ones who do the lighting to the audio crew that we have—they're so good: the guys who plug in the mics on the stage, our monitor engineer, our front-of-house engineer. If it weren't for all of them, there's no way this could happen."

GETTING HIS START

Rifino, who is just 30, got his start as a go-fer at a 16-track studio near his central New Jersey home-

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town while he was still in middle school. The engineer there gave him lessons on how to use the 32-channel Tascam board, the MDM recorders and the limited outboard gear the studio owned, and when Rifino graduated from high school, he enrolled at SAE in midtown Manhattan. He got his first real break through family connections (no shame in that!): Rifino's grandfather was an electronic keyboards expert who worked for many years as a tech at the Power Station (and had known Tony Bongiovi since the owner was a teenager), and his father was a lawyer who represented Power Station in some legal



Bruno Mars performs

he can at Fenix and also doing engineering on his own with a mobile rig, for the past three-plus years Rifino's main gig has been working as the primary music mixer for *The Today Show*, manning a room downstairs in "10 Rock" (as it's called; the more famous "30 Rock" headquarters of NBC is across the plaza), which is very well-equipped for Rifino's needs, as he outlines.

"I have two complete Pro Tools|HD6 systems with expansion chassis; two Mac Pro 8 Core Intel with 16 gigs of RAM; three Glyph removable hard drives chassis per system and 10 Digidesign 192 A/D/A per system, or 20 total. I have a Digi Sync and Digi MIDI for each system to control the mic pre's from the 48-fader [Avid] ICON con-

IN THE WEE HOURS OF THE MORNING

Because *The Today Show* airs live every weekday day between 7 a.m. and 10 a.m., preparations for an early morning concert on the plaza must begin hours before, in the dead of night. And for Rifino, there is usually some preparation days before that. "In advance, I usually will have talked to the band's production manager and the front-of-house engineer and monitor engineer," he says. "We get all the equipment ordered—we use a company called PRG Audio for the gear because NBC doesn't really have a place to keep it, so instead they rent the [FOH and monitor] consoles, mic kit and P.A. each time. After I'm done with the planning and special ordering—let's say they need



Principal mixer Matt Rifino

matters. Matt Rifino was around the studio quite a bit as a kid, so it wasn't a tremendous surprise when he was brought onboard—first as an intern, later as an assistant—at Power Station, which by that time had transformed into Avatar Studios.

Assisting some of the greatest engineers in New York at Avatar further broadened Rifino's knowledge base. But when it became clear that getting a shot at a coveted engineering spot at Avatar could be eons away, he started working other places on the side—at Fenix Studios in Staten Island, a room that had a Neve VR when he started there, then an SSL 9k; and also at NBC, where he started by doing A2 jobs (putting mics on people, setting up P.A. systems, etc.) before moving up the ladder and getting a shot at mixing. While still working when

sole, then eight Grace M108 8-channel mic pre's for a total of 72 channels, with power supplies. As far as outboard, I have three Neve 33609s, two Manley Vox Box, one Manley Vari-Mu comp, a Lexicon 960 and an Eventide H8000. More than anything, though, it is the Waves plug-ins that are on every mix. I use the SSL E-Channel on every track. Then I use the CLA compressors, Puig Fairchild and Pultecs, C4, L1, L2, Renaissance Axx, Maxx Bass, HDelay and Revibe on every mix. When the SSL Channel and Buss Comp came out, that's when I could really mix in the box! For monitors, I have an M&K 5.1 speaker setup, stereo Genelecs and little Wohler speakers to get an idea of what it sounds like on TV speakers."

a mic that we don't have—I come in at 12:15 a.m., I give everyone their input list and the stage plot I've made up, and we go over the details of the day.

"A group's full touring setup might be 80 inputs," he continues, "but we want to cut back as much as possible due to time, so if it's three songs, we'll cut it down to whatever they need for those three songs, maybe get it down to 45 or 50 inputs. Then the guys will come in, unload the trucks, start building the P.A. system and the staging guys are doing the stage and the lights. I'll be in my room during that. I like to be prepared, so usually I've already pre-set up my Pro Tools sessions, and I'll probably just have to patch and make some final tweaks.

"We do a line check with the techs around 4:30 or 4:45 a.m. The bands show up about 6 o'clock, and

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the crowd is loaded in around 6, as well. However, we have a noise restriction—we're not allowed to make any noise until 6:30. So the band is up there from 6:30 to 7—that's what I get with the band; that's what everyone gets. So it's pretty fast in terms of getting everything dialed up.

"I record the rehearsal flat. At that point, I'm just worried about getting good pre levels in Pro Tools and having a good gain structure. After I get that and I'm happy with everything, and nothing is distorted or too low, I'll start opening up plug-ins and start to do some EQ'ing and compressing and actually mixing. I'll record each song and then I'll play back each one after the fact as I'm doing my mix and save a snapshot of each song." This way, the board and the processing details are instantly accessible during the band's performance a bit later during the live telecast. "I record the live performances on multitrack, too, but they never get used." The band's FOH mixer will often sit at the console with Rifino to clue him in on a performer's specific sonic needs or desires.

And it is always a *live* performance, even if there are occasionally tracks being fired into the mix.



Rihanna makes a stop at π during her U.S. concert tour dates.

"Probably 80 percent of bands have tracks these days," he says, "but a lot of it is little things—percussion and things like that where they want it to sound big, but they don't want to pay a guy to be

on the road to play shaker. But things like vocal effects—AutoTune or whatever—those are still going on a live vocal, absolutely!

"We have a rule that it really has to be 'live' because our show is a news show first and foremost. It's *NBC News*, not *NBC Entertainment*, like *Saturday Night Live* or *Leno*. So we cannot have lip-synching on the show. There will never, ever be lip-synching on *The Today Show*. The program could lose its credibility as a news program if they say such-and-such is playing live and it's actually me holding a [vocal] track fader."

During the actual televised performance, Rifino follows the action on a couple of video screens above his ICON, and he makes small sound adjustments as needed based on what he's hearing: "I have all the individual cameras [there are usually nine to 11 for outside performances], plus I have program feed, plus the preset feed, which is usually whatever camera they're going to take next. I can see everything. In my head I've usually played the song back enough and rehearsed where the solos are, if I have time, so I'll be able to tell that if the director is going to the guitarist, I'll usually know it's the solo. I try to follow it as much

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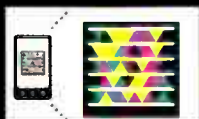
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as I can. Sometimes the band comes out and they're immediately playing a lot hotter than they did in rehearsal because they're pumped up and on TV, or the singer is singing way hotter, or maybe the singer is singing softer. My hands are on the faders *constantly*. I try to really follow the vocals, the solos and the crowd.

"What I'm actually sending out is six channels of audio in 5.1, and I've got four audience mics I put up—lately I've been into the Shure KSM32s because they're very un-colored. I've got two farther back that I use in my rear speakers and that's a lot of what's in my rear, so the P.A. mix definitely matters. Then I have two in the front to grab crowd as the artist moves onto the truss [narrow thrust stage].

"I try to mix the band like it's an album and make it as tight and punchy and big as I can, and then I start to open up the ambience around it. But it's not like a concert DVD where you're saying, 'Okay, here's my 5.1 mix; I'm going to go back and do my stereo mix.' Since your cable box is doing that downmix, I'm very careful about what I put in my rears because the Dolby quotient takes the rears, monos them, flips them out of phase and then puts them 6 dB in the front. So if you start panning

stuff half-way—let's say you want your guitars to feel a little wider—half of that signal is going to get flipped out of phase in mono and put back in when someone listens on a stereo television."

ARE YOU IN OR OUT?

The live outdoor environment itself is a challenge for everyone involved, as it is a narrow space between very tall buildings with pavement below (though always covered by a crowd, which can range anywhere from a few thousand to up to 20,000). Dave Swanson does the FOH mix on a Yamaha PM5D-RH, and Pat McLaughlin usually works hand-in-hand with the band's monitor engineer to handle that aspect of the sound. "This year the Avid Profile has been the hot [monitor] desk," Rifino comments. Directing the show is Emmy-winning veteran Joe Michaels. Rifino also credits his trusty A2s, Dave Auerbach and Mitch Blazer, "for saving my butt many times when a mic or cable has gone bad."

Indoor performances bring their own set of challenges. Though there is no crowd to deal with or stage and P.A. to assemble, the space is quite small, "so sometimes it's actually harder to mix because the

musicians are so on top of each other and there's a lot of bleed. The lead singer is usually only four or five feet in front of the drum kit, and the backup singers are right there, too, so I'll usually do a lot of mutes on them." Rifino rarely does small indoor ensembles: "They bring me in to do full bands," he notes. "If it's more than 10 inputs, I'll usually do it."

Rifino has had the opportunity to mix a broad range of top artists (some multiple times) through the years, including Rihanna, Chris Brown, Lady Gaga (a performance that earned Rifino his first Emmy), Beyonce, Bruno Mars, Journey, the Zac Brown Band, American Idol winner Scott McCreary, Elton John, New Kids on the Block/Backstreet Boys and many others. Asked if he's ever been starstruck, Rifino laughs, and says, "Not really, but I do feel incredibly fortunate to have worked with so many people I admire. Like Robert Plant. You look down at the fader, and it says 'Robert Vocal.' That's awesome! Or Bon Jovi. I'm a kid who grew up in central New Jersey. You look down at the board and you're reaching for Richie Sambora's guitar solo during 'Wanted Dead or Alive,' and it's like, 'Yeah, I remember playing air guitar to that when I was 6!'"

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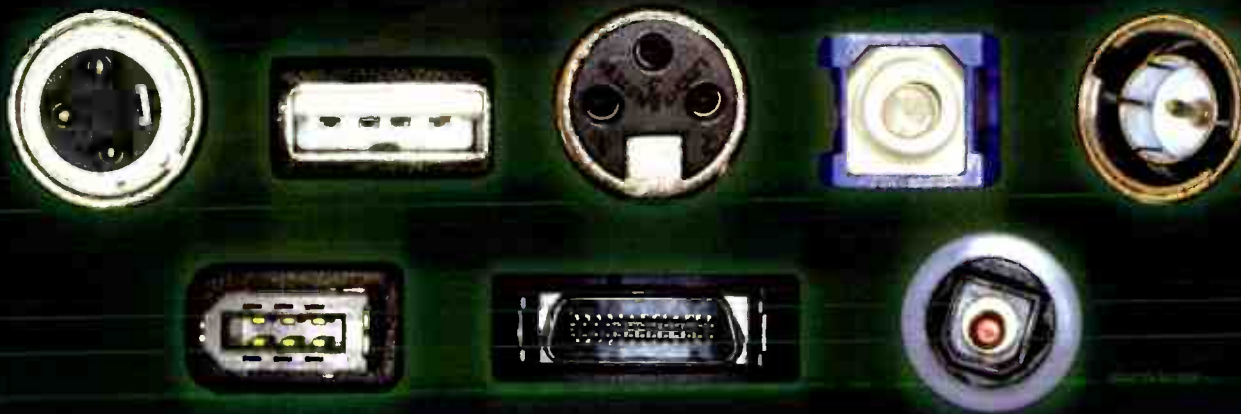
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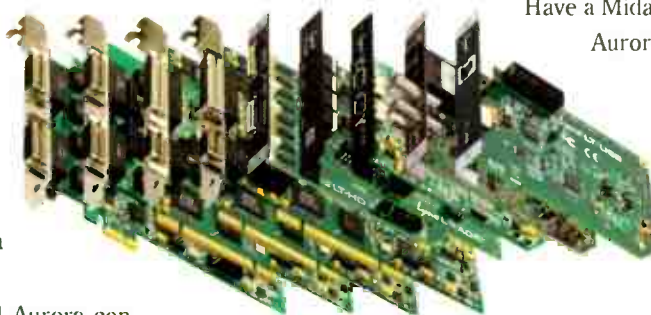
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EVANESCENCE

Evanescence, from left: Troy McLawhorn, Terry Balsamo, Amy Lee, Tim McCord and Will Hunt

Goth-Rockers Bring in Electronic Stylings for Self-Titled Outing

It's been five years since Evanescence put out its last album, *The Open Door*, which was also the hard-rockers' first number one album. Since then, there have been changes in the group: In the middle of a year-long world tour to support that disc, rhythm guitarist John LeCompt and drummer Rocky Gray departed and were replaced by two members of Dark New Day—guitarist Troy McLawhorn and drummer Will Hunt. Both drifted in and out of the band over a period of a couple of years before ultimately joining Evanescence for good. The core of singer/songwriter/keyboardist Amy Lee, lead guitarist Terry Balsamo and bassist Tim McCord remained intact.

By Blair Jackson

During the first half of 2010, Evanescence worked on a new album with producer Steve Lilywhite, but ultimately, Amy Lee decided against releasing what she termed an “experimental” record; instead, the band regrouped several times and developed some new material together. After searching for an appropriate producer

to make a new, from-scratch album, the group ultimately hired Nashville-based Nick Raskulinecz (pronounced “Rask-a-len-iks), whose long and impressive resume includes sonically adventurous albums by the Foo Fighters, Alice in Chains, Coheed and Cambria, Stone Sour, The Deftones, Rush and many others. Paul Fig (Figueroa), who has worked on numerous projects with Raskulinecz since assisting on an al-

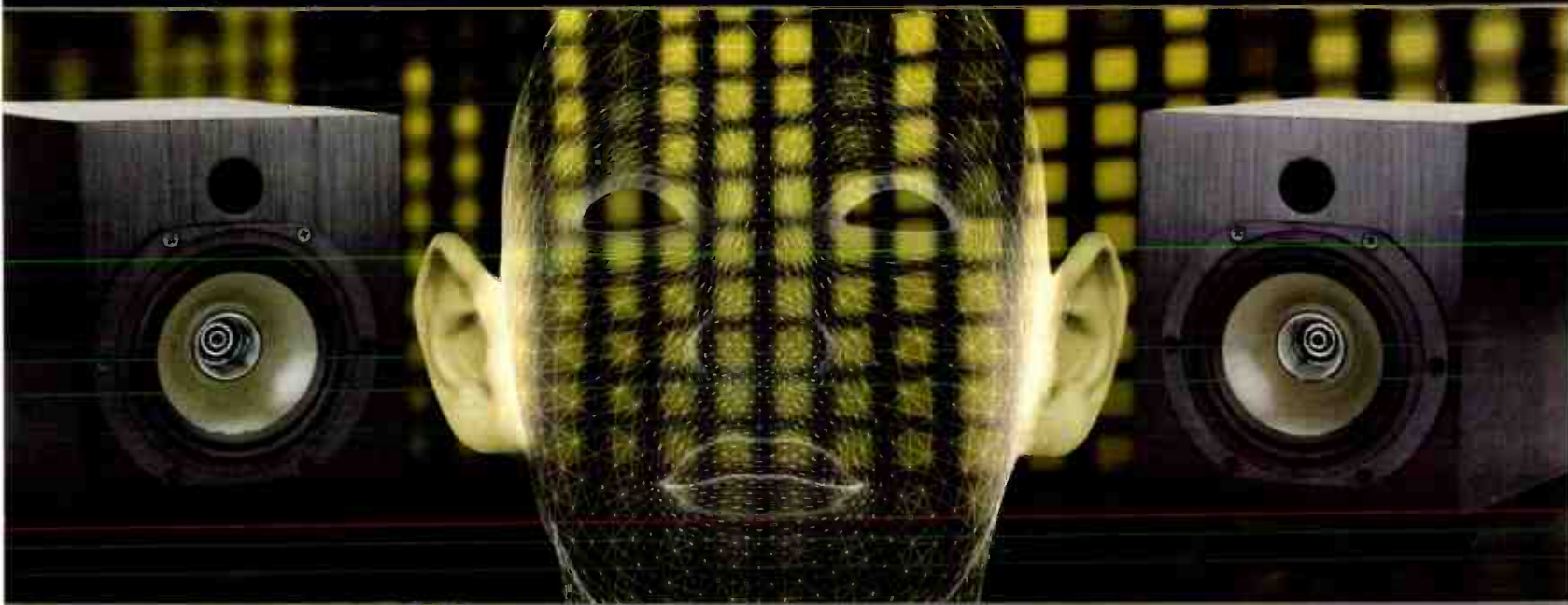
bum by The Exies at Sound City in L.A. back in 2004, engineered the sessions at Nashville’s Blackbird Studios this past spring. The album is simply titled *Evanescence*.

“Evanescence’s camp called me and asked if I might be interested in working with them,” Raskulinecz explains. “Never having been a fan

of the band, I said yes anyway because you never know. And when they sent me a few demos, I really heard some stuff that I thought could be great. That’s how it starts with any project for me.

“Amy and I had a great meeting,” he continues. “She came down from New York, and we met at Blackbird in the studio that I had a vision for making the record in—Studio D. I’ve made other records there before and I thought she would love

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Producer Nick Raskulinecz and vocalist Amy Lee working in Blackbird Studios

the vibe and the 'hang' of it. It's such a great room to be creative in and make music in. So we just sat in the control room for a couple of hours and talked, and she asked me all kinds of questions. I think I had five or six songs at that point and I told her my ideas and what I thought about them. And she liked a lot of what I had to say and didn't like a little bit of what I had to say, but she accepted it. Then I think she had a couple of other meetings with other dudes after me, but I got the call a few days later telling me they'd picked me." Lee and the band had apparently been most impressed by the producer's recent work with Alice in Chains and The Deftones.

Once the ball was rolling, Raskulinecz and the group spent a month at SIR in Nashville—five days a week, eight hours a day—making sure the songs and arrangements were as strong as they could be, "and then from there you really dive into the details of what everybody is doing individually," he says.

"Amy knows what she wants. She's very focused and she's very passionate about her songs and her music," he continues. "It all starts with the piano melodies and the parts and the vocals, and then it goes from there. It's Amy's vision, but along with Tim and Terry. When I got involved, those three were kind of the core of all the songs I had heard. But I know when Will Hunt, the drummer, got involved, things evolved a little bit more, and he was in on some of the songwriting. And then when Troy came on board, he was really important in bringing some great ideas to the table. Everybody

in Amy's band is a great musician and a great guy. Will Hunt is an animal on the drums; he's amazing. The rhythm section of Will and Tim is on fire, man!

"Going into this record, before we even went into Blackbird, I knew that sonically it was going to be a big, dense album, so me and Paul Fig were very aware of that. The recording of it was very calculated. We knew that there would be lots of tracks—drums, drum samples, a big bass sound, two guitar players, piano, tons of vocals, harmonies and overlapping tracks—just massive. So it was a lot to organize and keep track of, but at the same time I wanted to make sure that by the time you got to the mix you could still hear everything."

TAKE UPON TAKE UPON TAKE

Still, even with all the layering of parts (we'll get to that momentarily), it was important for Raskulinecz and Fig that the base of the album be completely performance-oriented. "It wasn't, 'Play it once or twice and go have a snack; I'll sit here and edit it for the next five hours,'" Raskulinecz says with a chuck-

le. "It was more like, 'That was all right. Let's do it again—take 25.' It was lots of takes and comping from there, and then going back and punching in.

"The way we did it is we made stripes for everything. We would get scratch guitar, scratch bass and scratch vocals just with a click, and then we would track the drums to that."

Adds engineer Fig, "Nick likes to concentrate on the performance, so it's usually beginning to end. If there are tough sections, maybe we'll come in halfway. Generally we'll have six or seven playlists of drums we like and we'll comp something together from those performances. But he really doesn't want it to sound like somebody chopped it up and then slapped it together." Hunt plays a 26-inch kick drum, which Fig miked with a Sennheiser e

602 on one side and a FET 47 on the other. Toms were captured with AKG 451s set in hypercardioid.

Lee would sing her scratch vocals in the control room of Blackbird Studio D, without headphones, through a Shure SM7. "When we did the vocals for real, obviously we did it differently," Raskulinecz notes. "She's an amazing singer—she can sing all day long." Fig: "There were a couple of days when Nick had to be somewhere else and I was working with her on vocals and I was worried maybe I was pushing her too hard. But she's like an athlete. She stepped to the plate and hit it out of the park."

Raskulinecz and Fig did a shootout to choose the right vocal mic for Lee—the winner was a long-body Neumann U47 that is, coincidentally, Blackbird owner John McBride's favorite U47. (Fig: "That mic was mind-blowing—it could handle anything she could belt at it.") That was used for all of Lee's leads; her backing vocals—and there are many of them—went through a Telefunken 251. "Amy is really singing at the highest level possible," Raskulinecz offers. "Some of those songs have 30

"Going into this record, before we even went into Blackbird, I knew that sonically it was going to be a big, dense album, so me and Paul Fig were very aware of that."

—Nick Raskulinecz



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to 40 tracks of vocals, easily: Lead vocal, doubled in spots, tripled in spots, then the choruses are all tripled and the harmonies are all tripled and then there are overlapping vocals, ones that weave in and out of each other." And the rest of the vocal chain? Sorry, Fig says, "That's Nick's personal chain." Trade secret, apparently.

SEND IN THE BAND

Lee's piano work is all over the album (she's classically trained, with serious chops); she also added all sorts of electronic keys work, including a Ro-

land RD700X and various soft synths. Additionally, Chris Vrenna (of Nine Inch Nails and Marilyn Manson fame) contributed a plethora of electronic sounds and textures that were added in once the instruments and most of the vocal tracks were in place. This, too, was part of the original vision for the album.

"I don't think there's less than 30 to 38 pairs of stereo tracks of electronics on every single song," Raskulinecz comments. "It's little parts and noises and ambience; more synth, lots of low bass. This album has a massive low end. I introduced Amy

to the Moog Taurus [analog synth bass] pedals, which is one of my favorite pieces of gear ever. Rush was famous for that, and I was instrumental in bringing those back into their sound [when I produced them]. They didn't even own any of that stuff anymore when I got involved with them. Anyway, we put that all over this album."

Balsamo and McLawhorn played multiple guitars through a wide assortment of amps, large and small, including Marshalls (2250 and JCM 800), AC-30s, Bogner Shiva and Uberschall, Buddha Superdrive combo amps and others. "We have our own little secret amp collection, too," Fig teases. Favorite guitar mics on these sessions included Shure 57s (ol' reliable), FET 47s, AKG 441s, Mojave Audio MA-100s and Sennheiser 421s—"combinations of those going across four amps," Fig says. "For some overdubs we had an MA-100 and MA-200 and a [Neumann] 87." Adds Raskulinecz, "This isn't one of those records were there's layers and layers of guitars. Amy plays a lot of cool piano parts on every song so that took the place of a lot of guitar-style overdubs. Instead, we tried to make the guitar parts really interesting within themselves so there didn't have to be a ton of them. We were real conscious about that." The piano parts were recorded to tape, using multiple mics inside, a PZM on the floor beneath and AKG C-12s farther away.

The last part of the recording process was adding David Campbell's lush and evocative string parts, which were cut at Avatar Studios in Manhattan during two intensive days of sessions. And that, friends, puts us at well over 100 tracks for most songs. "To play one song back, we had to have two Pro Tools rigs and a tape machine," Raskulinecz says. "We completely maxed out the first Pro Tools rig with just the band—guitar, bass, drums, vocals, piano. Then there was another Pro Tools rig that had all of the programming and electronics and some of the strings on it. And then there was a Studer 24-track chasing with all the rest of the strings on it."

BRINGING IT ALL TOGETHER

Finally, the avalanche of tracks was sent to veteran engineer/mixer Randy Staub (Metallica, Bon Jovi, Nickelback, Motley Crue, etc.), who has worked on several previous projects for Raskulinecz. Staub mixed the record at The Warehouse in Vancouver on Studio 1's SSL G Series console. Ted Jensen mastered the disc at Sterling Sound in New York City. "He crushes it every time," Fig says admiringly of Staub. "It always comes back from Randy sounding bigger than life."

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The piano parts were recorded to tape using multiple mics inside, a PZM on the floor beneath and AKG C-12s farther away.



Which is exactly what Amy Lee wanted from this album. That, and to project some of the *fun* she and the band had making it. That's not to say there aren't plenty of brooding goth-rock textures on this album—there are. But as she told *Spin* magazine in the spring, "This has been a long trip and parts have been hard. But it's about not taking everything so seriously this time." Even so, "Writing with the band and working with a heavy rock producer has made it more of a rock record. It's Evanescence but with all these new sounds."

"THE NEW STANDARD"

Jim Anderson

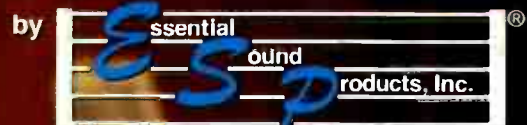
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Anthrax is (clockwise from top-left) Frank Bello, Scott Ian, Joey Belladonna, Charlie Benante and Rob Caggiano.

For the members of Anthrax, the interim time proved tumultuous. When they came back from that tour, they found that their vocalist for the past 10-plus albums, John Bush, had moved on. Following a revolving door of possible replacements, the members of Anthrax—guitarists Scott Ian and Rob Caggiano, drummer Charlie Benante and bassist Frank Bello—spent the past four years tracking, scrapping some of the tunes, retracking and so on. “It put everything into a tailspin and we had to put the record on ice for a while until we figured out what we were going to do, who was going to sing,” remembers Caggiano.

Despite not having vocals to work on, the band continued laying down their own tracks, knowing that the show had to go on and eventually the right singer would come along. So for the past four years, each member tracked their instrument at recording studios in their respective hometowns: Caggiano and bass in New York, drums in Chicago, Ian’s guitar in L.A. and even some guitar parts for “Judas Priest” on a tour bus in Belgium. Caggiano has donned the producer’s hat for any Anthrax outing since he joined the band in 2002, and so he would travel to either Chicago or L.A., bringing along his portable rig, to direct the sessions.

“I think one of the biggest challenges working with Anthrax is basically the fact that each one of us lives in a different state,” Caggiano says. “We used so many studios to make this album [last count is around 15] that one of the biggest challenges was keeping everything consistent sonically. I have my own mobile rig with my own gear that I shlep around so I can record basically anywhere.” That rig is centered on MOTU Digital Performer, a platform Caggiano has been working on for years.

“The other thing is, Anthrax has been around for a really long time—these guys are pros, a really solid band,” he continues. “As a producer, it’s more about capturing the energy and the

ANTHRAX

New Album Brings Original Vocalist Back Into the Fold

By Sarah Benzuly

Fans of heavy-metal pioneers Anthrax have been holding their breath, unsure of where their band would land next. Their last studio album, *We’ve Come for You All*, was released in 2003, followed by the shocking announcement that original vocalist Joey Belladonna was returning to the fold—albeit only in stage form—for their ‘80s-era reunion tour. Then, nothing. The tour ended. They still needed a singer.

“As a producer, it’s more about capturing the energy and the excitement for each song: making sure the tempos are right, that everybody is playing to the best of their ability.”

—Rob Caggiano



excitement for each song: making sure the tempos are right, that everybody is playing to the best of their ability. As far as making it sound good, to me that’s the easy part; I have it pretty much down to a science at this point. [Laughs]”

Worship Music brings a welcome blend of old-school Anthrax albums like *Among the Living* and *State of Euphoria*, while seeing their sound evolve. One of Caggiano’s main goals was recapturing Ian’s classic guitar, something he says had been a bit lost over the years. So Caggiano directed Ian to go into his locker and dig out his old Marshall 800 amp that was used on those classic records. “I wanted to combine the classic Ian sound with some of the newer amps like the Fiat Deliverance and Pitbull Ultra-Lead, and using a Radial ToneBone pedal to split the signal going to the two heads and out to the two different cabinets, each one isolated. I used two mics on each cab: a 57 and 421 on Ultra-Lead, and an Audio-Technica 4050 on the Deliverance cab. Everything was on a different track so it could be blended and mixed accordingly.”

For his guitars, Caggiano treated the solos and the overdubs almost like a lead vocal in terms of selecting the chain. “I like the sound of a 57 straight-up on the cone of the cabinet going through a Universal Audio 2108 mic pre that I love; I use that on a lot of stuff. I used it on Scott’s guitars, Frankie’s bass and my leads. My chain is the mic into the 2108 into a Universal Audio 1176 right into the interface. I used the Metric Halo ULN-8, which is an amazing box; great converters, it’s like an old analog workhorse.”

For bass, Caggiano placed a 421, a U47 and then a Yamaha SubKick to pick up all the sub-

frequencies; bass was also taken DI. “I wanted to make it very flexible in terms of what you can do with it in terms of the mix.”

Still, no singer to speak of.

BRING IN THE VOCALIST

When the band was asked to join the Big Four tour last year—with Metallica, Megadeth and Slayer—they knew that Belladonna had to be their vocalist; it only made sense as he was the singer from ’85 to ’92, the time period when The Big Four—the

ing—with 85 percent of the songs finished—went into serious fast-forward mode. Enter co-producer/mix engineer Jay Ruston, who had previously mixed their set for the Big Four DVD. When Belladonna was officially back in the band, they reached out to Ruston to do his vocals, bringing in a fresh perspective. “I think Joey felt comfortable having someone who wasn’t in the band working on his vocals,” Caggiano says. “It was a big step for him; he hasn’t recorded like this since *Persistence of Time* in 1992.”

“I tried a bunch of different mics on Joey,” says

Ruston,” and the one I settled on was actually a Studio Projects C1, which is quite an inexpensive microphone, but I’ve always had a pair of those kicking around for many years now and I really love the way they sound on a bunch of different things. On his voice it sounded fantastic and beat out a 47 and a U67.” The C1 went into a Neve 1073 and then into a Distressor and then finally into Pro Tools.

Tracking was done during the course of a few months, with Belladonna flying out to L.A. to lay down some tracks and then return home for a few weeks and then back out to L.A. again. He also recorded some guitars as they ended up re-tracking three songs from scratch. When the vocals were finalized, Ruston saddled up to his Trident Series 80 analog console to begin work on the mix. Caggiano sent Ruston the rest

of the band’s final comped files, using MobileMe, SendSpace, YouSendIt, DropBox, whatever was the fastest. Working alone in his space at this stage, Ruston drew from his knowledge of past Anthrax efforts—he’s also a fan of the band—to guide and shape his mix.

“I know what Anthrax should sound like and I knew Scott Ian’s guitar sound, which is very distinctive. Charlie’s drums, Rob’s guitar and Frank’s bass



Co-producer/engineer Jay Ruston

pioneers of thrash/heavy metal—started. “After the first show,” Caggiano says, “we all knew this was right. He sounded amazing; he’s actually singing better than he ever did before. But even at that point he wasn’t sure if he wanted to come back full swing and sing on the [*Worship Music* album]. We had to let it happen organically. After a while, he agreed to sing on the record; he was excited about it.”

And that’s when the past four years of track-

are also very distinctive. Then, of course, having Joey back in the band, he's very distinctive. So you have these five elements that are coming together and it has to sound like Anthrax. Basically, if you just take their tracks and push up the faders, it sounds immediately like Anthrax, so my job at that point was just to make it sound as big and slick and powerful as possible without messing with their tones. And that was pretty easy because Rob did a great job tracking."

There wasn't much "studio trickery" involved in the mix, with everything summing through the

Trident board. "The Trident sounds great," Ruston says. "I can hit it pretty hard and the EQ on it sounds great. I would build extensive stems in Pro Tools that would go anywhere from eight to 16 channels on the Trident as sub-groups. Then the stereo bus out of the Trident would go into a Neve EQ and then that would go into an SSL Bus compressor and back into Pro Tools."

For effects, Ruston employed Distressors on vocals, a TL Audio Fat Man compressor on bass and Manley optical comps for overall drum bus compression blended with the uncompressed

"If you just take their tracks and push up the faders, it sounds immediately like Anthrax, so my job was to make it sound as big and slick and powerful as possible without messing with their tones."

—Jay Ruston

drums. Monitoring was via Yamaha HS5os with a Tannoy sub.

When one track was mixed, Ruston would send it off to the rest of the band, who would reply with their comments fairly quickly, allowing Ruston to swiftly mix the album and send it off to mastering engineer Paul Logus [of Dangerous Audio and Sterling Sound fame], whom both Ruston and Caggiano are quick to applaud. "I've known Paul for years and he's an amazing producer/mixer in his own right," Caggiano enthuses. "He did a phenomenal job and he'll definitely be mastering everything for me from now on."

Ruston mirrors that sentiment: "I think he's one of the best [mastering engineers] out there. [The album's] not insanely loud, it's not crunchy; it's just perfect. He didn't lose the transient attacks of the mono information. Usually, the kick and snare are lost in mastering; they get mushed and have a little less punch. He was able to retain that and yet still be loud and retain the bottom end."

When I ask Caggiano—mere weeks away from the release date—his thoughts on this experience, he replies, "We're all relieved that the album is finally done. [Laughs] It's been haunting us for a while, but we're really proud of it. Obviously, it's not normal to take four years to record and mix an album, but we had no choice; certain things popped up and we had to find our path before we continued. But I think it worked to our advantage because we had all this extra time to live with these songs and push them as far as we could. We just can't wait to go out there and start playing the new songs for the fans."

Sarah Benzuly is *Mix's* managing editor.

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PHISH

New System Keeps Fans on Their Feet, Remixes At Their Fingertips

If you're going to change things up, you might as well go all out. For legendary jam-band Phish's summer tour, not only is front-of-house engineer Garry Brown manning a new console, but his mixes are heard through a new P.A. provided by a change in sound company providers—Clair Global. *Mix* caught up with the tour-de-force at their three-day SuperBall IX festival in Watkins Glen, N.Y., over the Fourth of July weekend.

Brown is on his third tour with Phish: Trey Anastasio (guitars/lead vocals), Jon Fishman (drums/percussion/vocals), Mike Gordon (bass/vocals) and Page McConnell (keyboards/vocals). Brown's new FOH board is the Midas XL-8 interfaced into a Midas 9696 recorder. A peek inside his outboard racks reveals Crane Song HEDD 192s, Waves Maxx BCL, GML 8200s and

Manley Vox Boxes. "Everybody needs to hear what everybody is doing," he says of his mix. "The placement in the mix is going to come down to personal taste. Some fans are going to want to have Page [McConnell]'s piano louder than other parts, so my goal is that you can hear everybody

or whomever you want to focus on; you can focus on them and hear what they are doing."

The band handles all of their own effects, leaving Brown to focus on reverbs, drums, vocal and piano. "Anything outside of reverb is them," he adds.

By Joanne Zola
All Photos by Dave Vann

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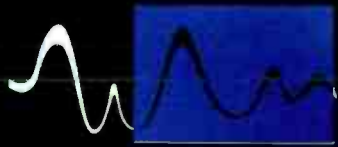
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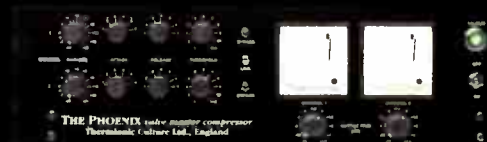
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Front-of-house engineer Garry Brown (above left and at left with the tour's new Midas XL8) and P.A. system tech Wade "Wookie" Crawford

Monitor engineer Mark "Bruno" Bradley works on a Yamaha PM5D (using onboard effects). Onstage are Clair 12AM wedges—nary an in-ear to be found, a practice the band has used since their 2009 tour. On the P.A. side, the Clair i5 line array features BT-218 subwoofers and P-2 front-fills. The system also comprises 18 i5s and 18 i5Bs per side. Says FOH engineer Brown: "Stage-left was eight deep and stage-right was six deep—16 subs for both sides in total. We had 12 and six cabinets on the first leg of the tour, upping it to 14 and eight for the last leg of the tour for larger venues

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Fans hard at work inside the House of Live Phish, which is manned by engineer Ben Collette (right).

to add a bit more throw. Three delay towers with Clair R4s past the mix tower assisted in covering the vast raceway-infield turned-concert site. All main stage system elements were powered by Clair StakRaks with Lab.Gruppen PLM amps.

"This year," he continues, "changing to a new P.A., the response from the fans has been huge. It's been the biggest response in the changes we've made since the band's return."

THE HOUSE OF LIVE PHISH

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hours post-lights up) and an opportunity to give away free music, the House of Live Phish has become a sensational hit among the band's fans.

"At Festival 8 at the Indio [Calif.] Polo Fields, I had the idea that it would be great to share a multitrack setup for fans to mess around with, because Phish music is so deep and complex that being able to dissect it on that level is really cool," says engineer Ben Collette. "A lot of Phish fans are technically inclined, and most of them are musicians, so it's super-interesting for them to be able to pick apart a mix." For that first outing, a call to the folks at Pro Media Training got Collette up-and-running with Avid MBox 8 setups and instructors to flesh out the eight stations.

Inside this year's House of Live Phish tent are Collette and Rob Oday, co-studio owner of The Tank. Avid and Dale Pro Audio provided laptops loaded with Pro Tools 9, Apogee Duet headphone amp, and Avid Artist Mix and Artist Control. "The controllers really help because most of the people who come in just want the experience of being able to solo the guitar, drums or bass," Collette says. "The songs are broken down into basic stems, stereo tracks. It's one thing to release multitracks to the public and have people do remixes at home, but to be able to provide the fans the opportunity to pick apart their favorite songs with the gear and with someone who really knows the software is great.

"We had a guy in here yesterday that was doing a real-deal mix, and he's coming back today to finish it up," he continues. "We had a guy come in the other day who was a drummer and he panned all the drums to the left and everything else to the right so he could hear everything 'Fish' [drummer Jon Fishman] is doing so he could learn it. And then we have people come in and mute the bass so they can play along. Parents and kids come in; the reaction has been amazing. Dancing in the corner, ride the faders—it's such a rewarding thing to see people so blissed out on this."

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By the Mix Editors



Germano Studios Studio 1

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Level of Involvement: Supplier of the equipment; studio owner Troy Germano handled design/installation/integration.

Final Remarks: "I deeply rely on Rick Plushner and his team for many of the studio's ongoing equipment needs and future-purchase strategizing, and also for my other company, Studio Design Group," says Germano. "I'm presently in the process of building a facility in Tampico, Mexico, and GC will again be supplying the majority of the equipment. They

will also be involved with a facility that I will be designing and building in Los Angeles in 2012. It is worth mentioning the people around Rick; they are the ones who make it happen for an owner/operator like myself. Those people are Richard Ash, Niyi Adelekan, Neil Jason and PK Pandey."

BLADE STUDIOS (SHREVEPORT, LA.)

Main Equipment Provided: GC Pro handled all equipment needs other than the SSL Duality,



Blade Studios

Shelley Taylor-Drumright

Guitar Center Professional is celebrating its 10-year anniversary throughout 2011. As part of its development, the company has expanded its system design, integration and installation division, which has been rapidly expanding across the US through regional centers. We look at 10 of the more notable facility build-outs to come from the GC Pro family of studio services.

for which the studio dealt directly with SSL. Blade Studios' rep, Jeffery McDaniel, out of Dallas, has "been fantastic in getting the studio everything it need in a timely manner," says Chris Bell, chief engineer/producer/mixer.

Level of Involvement: GC Pro was used as the broker for all the studio's equipment.

Final Remarks: "GC Pro was great to work with because it was a one-stop shop," says Bell. "We could call on them anytime and they would get us anything we needed, including vintage gear, which is sometimes hard to source out."

FARRIS WILKS (CISCO, TEXAS)

Main Equipment Provided: Assembly of Yahweh Seventh Day church: JBL Array Series, Avid VENUE SC48 digital live sound console and Pro Tools LE system, microphones, Aviom in-ear monitor system, related equipment. For home recording studio: 32-channel Neve Genesys digitally controlled analog console, Avid D-Command and Pro Tools|HD system, Ocean Way HR2 monitoring system.

Level of Involvement: After doing basic measurements for the studio, GC Pro account manager Jeffrey McDaniel reached out to his regional manager Derek Snyder, who recommended that McDaniel get in touch with Horacio Malvicino, managing director of the

Farris Wilks control room and main tracking room (inset)



Malvicino Design Group. McDaniel scanned his studio drawings and sent them to Malvicino, who put together a plan for the studio and presented it to the team at last year's AES convention.

Final Remarks: "We have been able to use them across the board, from live sound to studio sound, and we didn't have to shop around the state or the country looking for different expertise in live and studio sound technology," says music director Kevin Reed. "Instead, we had a one-stop solution and one salesperson, who knew what we needed or knew who to ask. The church sounds great and the studio is in the final stages of completion, and it's been a dream come true for all of us."

RAY STEVENS PERSONAL STUDIO (NASHVILLE)

Main Equipment Provided: Avid ICON D-Control and Pro Tools|HD3 system, mic pre's, compressor/limiters, outboard EQs, Genelec near-field monitors and Hearback cue system.



Ray Stevens (left) and engineer Ben Surratt

GC Pro also helped coordinate the design and purchase of the Sound Construction console and an auxiliary equipment rack.

Level of Involvement: GC Pro met with the studio to discuss needs and studio layout, and made many recommendations for equipment, installation and integration. The studio worked with GC Pro to finalize the design, equipment list and integration.

Final remarks: "We had an excellent experience working with them," says staff engineer Ben Surratt. "They handled the purchase, installation and usual breaking-in period with ease. Their ties to Avid are very helpful, and they have a very professional staff and very capable. I would recommend them again without hesitation."

BERNIE BECKER MASTERING, FIREHOUSE STUDIOS (PASADENA, CALIF.)

Main Equipment Provided: 16-channel AMS Neve Genesys console with 16 channels of dynamics and Incore moving-fader automation.

Level of Involvement: worked with GC Pro's Jason Cropper.

Final Remarks: "Jason Cropper was extremely helpful to us throughout the purchase and the installation process," says Becker. "We actually bought a good amount of gear after the console's purchase, as well, to work side-by-side with the console. Apart from business, he's a stand-up guy, too, which is always helpful."



GC Pro account manager Jason Cropper (left) and Dale Becker flank Bernie Becker (seated), with Bernie Becker's new 16-channel AMS Neve Genesys console from GC Pro, at Bernie Becker Mastering, Firehouse Studios, Pasadena, CA.

JUNGLE CITY (NEW YORK CITY)

Main Equipment Provided: outboard equipment, speaker systems and headphone systems.

Level of Involvement: PK Pandey was involved while the studio owners decided on gear and he worked closely with the Walters-Stork Design Group team and the integration team to put the studio together.

Final Remarks: "I love working with PK," says studio owner Ann Mincieli. "He started GC Pro!"



424 POST (CULVER CITY, CALIF.)

Main Equipment Provided: 32-fader Avid D-Control

Level of Involvement: GC Pro outfitted the original three Pro Tools systems in 424 Post's original space; in their new location, 424 Post now offers 15 systems provided by GC Pro. In addition to the Pro Tools systems and purpose-configured ICONs, 424 Post purchases the majority of its equipment through GC Pro. Assistance in construction and integration in cur-



From left: Derek Snyder, GC Pro business development, Western region; and 424 Post principals and co-founders Kami Asgar and Sean McCormack

rent location editorial suites.

Final Remarks: "We are three partners—Tim Tuchrello, Sean McCormack and myself—and we all deal with different parts of post," says co-founder Kami Asgar. "Bill [Learned, GC Pro account manager, Southern California] and Derek [Snyder, GC Pro business development, Western region] at GC Pro pick up the phone and they realize what we need and are able to decipher that with product that's out there. They know what's out there and what works for us, especially in the sea of plug-ins."

DAYTONA STATE (DAYTONA, FLA.)

Main Equipment Provided: all outboard gear, microphones and studio accessories for Studio A; outboard gear and accessories for recently completed Studio B; two Pro Tools|HD systems for control room and 20 Pro Tools LE systems for student labs; and keyboards, per-



Jake Niceley (center), program developer and instructor at Daytona State's Music Production Technology program



Michael Wagener's Wireworld Studios' SSL is front and center.

cussion, drums and guitar amps for music ensembles.

Level of Involvement: Installation services, equipment interfacing and all video needs for new control room.

Final Remarks: "I've known Rick Plushner for a long time," says Jake Niceley, instructor at Daytona State (Florida) School of Entertainment, Music and Art. "I think I've purchased at least three consoles from him over the years. He is a consummate professional and has always been responsive, knowledgeable and a real pleasure to work with. Mickey Greer of the Orlando store has been our go-to guy for all our equipment needs. He is always accessible and has been a real asset in the development of our program. We have a broad spectrum of needs, and GC has been able to help us with most all of our requirements."

MICHAEL WAGENER'S WIREWORLD STUDIOS

Main Equipment Provided: SSL AWS 900+ SE console, Euphonix MC Control, Universal Audio UAD-2 Quad DSP Accelerator cards, RME MADI cards, Mogami cabling, various custom-designed patchbays.

Level of Involvement: Nashville-based GC Pro account manager Chad Evans on hand throughout studio development process, recommending gear and helping with setup.

Final Remarks: "I have been working with GC



World Harmony

Pro since I moved to Nashville and have come to trust and value their input over the years," says Wagener. "Once I have done my research and have decided on the gear I need and the approach I want to take, I speak with Chad at GC Pro, who gives me his opinion, which I value very much. Because GC Pro's Nashville office is based so close to my studio, it is very conve-

nient, and they can always get me the equipment that I need very quickly and at a highly competitive price. I will surely continue working with GC Pro in the future."

ASTOUND STUDIOS (WEST L.A.)

Main Equipment Provided: SSL C300 console; Avid Pro Tools|HD3, HD2 and HD6; PMC IB2S

5.1 loudspeakers with Ayre amplifiers; ADAM A-7 monitors; additional monitoring and out-board gear.

Level of Involvement: equipment selection.

Final Remarks: "GC Pro has been great," says GenAudio senior VP Greg Morgenstein. "Rich Avrach is our account manager, and has gotten us everything we needed and on time. Response time is super-important for us—I usually get equipment the same day."



Astound Studios

Photo: Jeffrey Knevel

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By Mike Senior
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By Alex Case
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Ultimate sound quality. Logic and Pro Tools compatibility.
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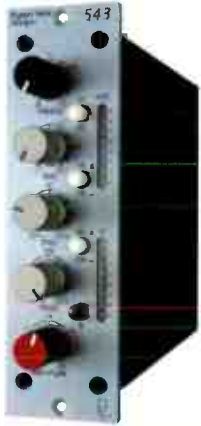
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FROM THE GROUND UP

When Plug-and-Play Meets the Noise Monster



While you are browsing the AES Convention aisles later this month, keep the foundation of your audio facility in mind, and by that I mean the power and ground distribution (P&GD). A humble project studio can be pretty much plug-and-play, but as it gradually morphs into a “facility,” the P&GD infrastructure becomes critical.

This month’s long-distance infrastructure question put me to the test, but before diving into the answer pool, I have a few questions of my own.

Q. “Why is there never enough time to do it right, but always enough time to do it over?”

Actually, this quote is from David Hewitt, and it rings even more true today than when I heard it more than 25 years ago. Then, David was director of the New York Record Plant’s Remote Truck division, not too long before he and Kooster McAllister purchased their respective vehicles. You don’t take a studio on the road without being over-prepared.

Q. “Why is the customer not always right?”

For all of us in the customer service business, this link will make your day: <http://positivesharing.com/2006/07/why-the-customer-is-always-right-results-in-bad-customer-service/>

Our goal may be to give clients what they want, but experience often requires us to speak the truth. This is not always what clients want to hear. You can invest in power and ground infrastructure well into the land of diminishing returns, but without an experienced consultant/contractor guiding the way, random purchases will not ensure that your “silence” is truly golden, especially when the facility spans multiple rooms.

AND NOW, THE REAL QUESTION...

A reader recently asked for assistance in solving power-related noise issues with a side dish of odd digital artifacts. To quickly gain insight into the system, I asked more questions than I answered, and though my consultation fee was more than fair, I’m not sure how much I “helped.” The client was never able to pro-



vide me with any wiring documentation (a drawing of the wiring/grounding scheme would have been very helpful), though I did get a picture of the circuit breaker box.

The client’s new studio was a significant upgrade, and as a result he needed to be a bit more particular about power and ground distribution. When the system ground is compromised or overwhelmed, it can also reveal non-power-related noises. That’s why I typically ask for noise samples to differentiate between real problems and technique-induced problems, like when lots of gain and compression are used to create stereotypical heavy-metal guitar tones. And while we are crawling around on the noise floor, grounding issues can aggravate not only power-related noises, but also reveal “the limitations of the equipment.” (Remember when a similar “warning” came on CDs?)

In my control room, a recent noise problem revealed itself while I was experimenting with a phono preamp. The prototype

Pro-Codec

Audio Encoding Changed for Good



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The Sonnox Fraunhofer Pro-Codec makes it possible, for the first time, to audition and encode to multiple formats in real time within a DAW environment. Maximum fidelity is assured, as the Pro-Codec helps create compensated mixes optimized towards specific target codecs for final coding and online distribution.

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"...the Fraunhofer-encoded file felt clearer, more open, less compressed, and closer to my original mix."

Joe Chiccarelli



was picking up noise that resembled “some type of data,” the source of which turned out to be my CD player’s display! I’ve been in the same space for 12 years; obviously, the preamp needs to evolve from prototype to market-ready.

ARE YOU WELL-GROUNDED?

With no wiring diagram in hand, I had to start with the tried-and-true: The ideal is a “star” ground system. That’s one simple sentence for man, one complex novel for mankind! Copper rods (roots) are inserted into the earth; the power company does this, but to ensure a long-term clean connection for audio purposes, sometimes multiple rods are used (and must be periodically maintained). From this literal earth connection, a large-diameter cable feeds a bus bar (tree trunk), to which are connected individual but still significant cables (branches) reaching out to each “audio rack,” within which is another bus bar feeding individual ground wires to each piece of gear in the rack (leaves).

The purpose of a dedicated zero-volts distribution system (ZVDS) is to be substantial enough to maintain low impedance between the “central star” and each piece of equipment, no matter how far away. Impedance is the AC version of DC resistance. Because our power distribution system is AC, all of the potential differences—from chassis to chassis—will be some combination of the 60Hz fundamental, plus various related harmonics (buzzes). The ZVDS will be so much more substantial than the safety ground as to literally be the path of least resistance. It is also the most cost-effective.

To the best of my detective abilities, I learned that the client’s only ground-distribution scheme was exclusively through the isolated-ground “hospital-grade” power outlets of the orange variety. This is a good start, but remember that the power outlet ground is for safety, not for low noise. Conventional 120VAC power distribution is unbalanced: The wide

blade of the plug is neutral (tied to ground), and only the narrow blade is actually hot. The round pin is safety ground so you won’t get electrocuted while shaving in the shower.

The client had two rack-mounted balanced power boxes. BP uses 120-volt transformers with a center tap tied to ground so that 60 volts appears on each blade—120V from blade to blade. I have never been convinced that BP is “The Big Solution,” primarily because, due to cost, it tends to be used “selectively” rather than system-wide. There are other reasons.

DO YOU NEED BALANCE?

Q. Why, in the opinion of this author, is balanced power not The Big Solution?

The AC power line is supposed to be a pure, undistorted sine wave, but it is far from that. All “appliances” reflect noise and distortion (buzz) back into both the power line and into the safety ground. The noise sources can be from outside the facility, as well as from every appliance in the facility, meaning each outlet will have a unique noise characteristic. Connecting all that gear together can make for wonderful harmony or a cacophony of intermittent random noises—the misnomered “ground loop.”

When balanced power works—as in, with before-and-after tests as proof—I believe its success is attributable to both a real component and a virtual variable.

► REAL. What we expect from balanced power distribution: two signals of equal amplitude but opposite polarity reduce potential hum and buzz radiation from power cables into both safety grounds, as well as into nearby audio cables.

► VIRTUAL. BP conceals problems caused by some combination of problematic gear and lack of a fully thought-out wiring and grounding plan. Again, this is one sentence that could be a stand-alone article about why some gear must be modified to reduce both internal noise and its reception of external noise. All cabling is an antenna and it can bring noise into susceptible units.

EVERYONE A STAR?

There are two ways to minimize or eliminate power line noise from outside the facility: brute force or via an uninterruptible power supply (UPS). The former is a marriage of the most sophisticated power-line filter/surge

protector you can imagine—the good ones, at least. A UPS essentially converts AC to DC (rectifier) and replaces “filter” capacitors with batteries, from which conventional 60Hz AC power can be remanufactured. Larger facilities can justify the expense, so let’s get back to that “star” ground.

Running dedicated ground wires to isolated ground outlets is a step up from conventional commercial wiring, where the conduit typically doubles as the ground wire. It is, however, inadequate for reducing noise because the power/safety ground travels in the same conduit (physically parallel with the power lines), and as a result gets contaminated by noise in the AC power wiring. (This is also why audio and power wiring should never be routed in parallel.) The shorter the parallel distance, the less radiated noise will be picked up. From my own experiments, running the safety ground outside the conduit allows it to remain clean up to the outlet, but that’s not “electrical code,” and you know how pirates stick to the code.

From here I hope you can see that the most effective way to solve noise issues is to run a dedicated zero-volts ground-distribution system. While it may seem to contradict the purpose of the star-grounding systems, it is perfectly acceptable for the dedicated audio ground to be in parallel with the safety ground. (They both should share the same “root.”) The ZVDS is, by design, so much more substantial. It is the path of least resistance: thick-gauge cable that is as close to zero ohms as possible. Any noises—from safety ground and chassis—are short-circuited to the earth ground. That brings us full-circle, which musically is called D.C. al coda.

FINALE

I cannot claim recent facility-wide installation expertise, but I do have loads of troubleshooting experience and have done several modifications and experiments to prove my theories. When in doubt and when referring clients, I seek out people like John Klett, who contributed a distillation of his approach as an online bonus to this article. Thank you, John! And enjoy the show!

Feel free to ask Eddie questions at his MixBlog or visit tangible-technology.com, the virtual homestead.

more online



Pose your question to Eddie and read John Klett’s approach to this month’s question at mixonline.com/october_2011

Next Generation Digital Mixing

At last, a digital mixer with more feature, more technology and less snob!

With the Digital Mixer, Phonic redefines the ultimate live and studio mixing/recording experience. An advanced digital mixer with the soul and usability of an analog console, the Digital Mixer is the culmination of Phonic's 35 year mixing and electronics heritage. On the surface, the Digital Mixer is a 16 input channel mixer with a set of XLR and 1/4" inputs per channel. The unit also has flexible output possibilities through 1/4" multi outputs, and XLR main and control room outputs. But the Phonic Digital Mixer offers so much more than mere inputs and outputs...

An Entire Studio

The Digital Mixer packs an entire studio worth of gear into a small, compact system. Delay, EQ and dynamics are found on all inputs and output channels, so there is no need to waste money on external processors. An astonishing 77 signal processors are built in, including 25 dynamic processors, 25 4-band parametric equalizers, 25 delays, and 2 digital effect processors with a large array of effects and user adjustable parameters. Over 9700 research and development hours went into perfecting the Digital Mixer. As a result, users are rewarded with fast, accurate dynamics; smooth, flawless equalization; and high definition digital effects normally found on pricey, stand-alone processors.

PC and Mac Recording

Through the optional FireWire and USB interface, users are able to record up to 64 tracks — with four Digital Mixers daisy-chained — to the computer in 32-bit, 96 kHz resolution. Recorded signals can be returned directly back into the channels with the touch of a button. The interface is compatible with Windows XP, Vista and 7, as well Mac OSX Snow Leopard, and can be used with the most popular digital audio workstation programs, including Cubase, Logic, Sonar, Sound Forge, Garageband and Pro Tools 9.

Digital Circuitry

High quality AD/DA converters can be found on each and every input and output channel with a state-of-the-art 40-bit floating point DSP processing all digital signals. Digital AES/EBU inputs and outputs are included, which allow for expanding the scope of your system by connecting it to external digital consoles. The detailed color touch-screen offers clear, concise visual depictions of all settings and functions and allows users to control all features quickly and easily. A high definition digital algorithm takes care of the rest.

Powerful and Versatile

With built-in EQs, dynamics, delays, digital effects, signal generator, and input/output meter bridge, the Digital Mixer is not your run-of-the-mill mixer. It is powerful enough to suit multiple applications as a live sound reinforcement mixer, a stage and in ear monitor mixer or for producing professional studio recordings.

• FEATURES •

- 16 balanced microphone and line input channels
- 8 balanced 1/4" multi-purpose outputs
- Stereo balanced XLR main and control room outputs
- 8 auxiliary and 8 subgroup mixes
- 17 ultra-smooth automated faders encompassing a 3-layer design
- -20 dB PAD button on all inputs for attenuating hot inputs
- Insert points on all input channels
- 2-track RCA input and output connectors
- Dedicated headphone output with individual trim
- Digital AES/EBU input and output onboard, assignable to main
- Pair and link feature on all input channels
- Individual delay adjustable on all inputs and outputs
- A full digital meter bridge available for all input and output signals (pre/post)
- Flexible soloing with user-selectable AFLs and PFLs and safe soloing
- 25 onboard 4-band parametric equalizers for all inputs and outputs
- 25 dynamic processors with expander, gate, compressor and limiter
- Two effect processors with 8 effects, processor 1 with an additional 24 reverbs
- Signal generator with sine waves and pink noise
- User-selectable processing order through delay, EQ and dynamics
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- Limited-time only free 16-in, 16-out FireWire / USB 2.0 interface (32-bit, 96 kHz)



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WAVES H-EQ HYBRID EQUALIZER

Seven Ways to Heaven

The new H-EQ (\$99, Native; \$149, TDM) plug-in from Waves (waves.com) is a slick-looking EQ inspired by the finest British and American consoles. It includes seven different filter types per band—U.S. Vintage, UK Vintage 1, UK Vintage 2, U.S. Modern, UK Modern, Digital 1 and Digital 2—in addition to a newly developed, one-of-a-kind asymmetrical bell filter. A keyboard graphic lets users choose frequencies by clicking on notes, and an exclusive M/S mode allows users to apply different EQ to mid and side content. There is also a flexible real-time frequency spectrum analyzer with multiple display options. Other features include a real-time analyzer with a real-time graphical display of the input signal, output signal or both, as well as the EQ curve.

BRICASTI DESIGN M1 CONVERTER

Top-Notch DAC

Bricasti (bricasti.com) has released a high-end D/A converter, a first for the company. The M1 (\$7,995) features a dual-mono, crosstalk-killing design with two completely isolated channels, each with its own dedicated linear power supply, D/A converter, DDS clocking and analog circuitry. The dynamic range for each channel is optimized by using the stereo ADI 1955 D/A converter in a mono configuration; clocking is for each channel done directly at each DAC with a technique called DDS (direct digital synthesis), which takes clock induced jitter to immeasurable levels. The M1 is robustly constructed of milled and CNC machined aluminum sections. All sections of the construction, the front and rear panels, the sides and even the bottom and top plates start out as solid blocks of aluminum, which are precision-machined to shape, with exact tolerances for a perfect fit.



STUDIO 6 DIGITAL IAUDIOINTERFACE2

iOS Device IO

Designed from the ground up to be compatible with iPhone 4, iPod touch 4, and iPad 1 and 2, iAudioInterface2 (\$399.99) from Studio 6 Digital (studio6digital.com) wants to be the audio interface for all your iOS apps. iAudioInterface2 features a 48V phantom-powered XLR microphone input (50 dB of gain), balanced line input and output, Toslink digital output

and internal li-ion battery. The unit uses Studio 6 Digital's own A/D converters and DAC with precision USB audio clock recovery. Microphone is not included.

EQUATOR AUDIO RESEARCH D5 STUDIO MONITORS

Sonically D-licious

The new D5 (Direct 5) studio monitors (\$299.95) from Equator Audio Research (equatoraudio.com) feature a coaxially designed 5.25-inch woofer and center mounted 1-inch silk tweeter in an all-wood cabinet. The newly designed digital amplifier boasts extremely low distortion specs and delivers 2x50W of peak power. SPL is rated at 103 dB combined @ 1m. Frequency response is 53 to 20k Hz. The D5 employs a Zero-Point Reference coaxial design with internal DSP that handles numerous tasks, including matching the Digitally Controlled Transducer's™ output and the ability to apply pinpoint-accurate voicing.





ROLAND R-26 FIELD RECORDER

Powerful Portable

The R-26 field recorder from Roland (rolandsystemsgroup.com) provides up to six simultaneous channels of recording to SD/SDHC media. It features two types of built-in stereo mics, XLR/TRS combo inputs and USB audio interface functionality. Both omnidirectional and X/Y stereo mic types are integrated into the R-26's chassis, and there are two XLR/TRS combo inputs with phantom power for connecting high-quality external mics or line-level devices, plus a stereo mini-jack for a plug-in powered mic. There is a built-in limiter and low-cut filter onboard, as well as a Pre-Record function ensuring that you never miss the beginning of a recording. The R-26's large touch-screen provides detailed level metering and convenient fingertip control over many functions, and is equipped with a high-luminance backlight for perfect visibility in any situation. USB 2 allows for data transfer and audio interface functionality with Windows and Mac-based computers.



GEPCO POWERED SPEAKER CABLES

Audio Plus Power Plus Data

Each Gepeco (gepeco.com) Powered Speaker Cable combines power with two, eight or 12 channels of 110-ohm balanced audio for line-level, mic level or digital AES signals, and can be used with self-powered speakers or in DMX lighting control. Additional configurations include two channels of Cat-5e cable that can be used for data drops in remote power and audio applications. Snakes with optional data can also be used for digital audio transmission while running power to remote locations. Shielding around the power channels eliminates power noise from interrupting the audio/data signal, ensuring high-quality performance. Using industry-standard connectors. Gepeco-brand cables are available in pre-defined and custom configurations.

AURALEX ACOUSTICS SUSTAIN BAMBOO SOUND DIFFUSORS

Sound Investment

Auralex's (auralex.com) new "green" bamboo line of diffusers comprises the WavePrism, WaveLens, QuadraTec, Peak Pyramid Diffusor and KeyPacs (prices start at \$420). The Auralex WavePrism eliminates flutter echoes and other acoustical anomalies without removing acoustical energy from the space; WaveLens' open-boxed design scatters and redirects acoustical energy; QuadraTec's unique tiered design provides excellent scattering properties; the Peak Pyramid Diffusor is optimized to provide high-quality sound diffusion while also doubling as an effective bass trap; and the KeyPacs are designed to be mounted to the face of absorptive panels such as the company's ProPanels or Studiofoam.



BLACK BOX ANALOG DESIGN PREAMP

Old-School Gain Stage

This new preamp (\$TBA) from Black Box (blackboxanalog.com) features independently controlled pentode and triode tube stages, custom-wound Cinemag input and output transformers, switchable impedance, passive output attenuation and a linear power supply. The unit is hand-soldered, supplies phantom power from a separate power supply, uses military-spec switches and pots, and offers a five-position roll-off.



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SC SONIC CORE

A world of sound

"Xite is a truly great sounding system. The sonic quality is first rate, the versatility is unmatched to this day. The modular synth, in conjunction with the mixers and fx, beats most of the hardware out there."

Hans Zimmer

Scope XITE-1

DSP power for PC and notebook

- 18 Sharc-DSPs on Board
- Two mic pres, stereo AES/EBU on board
- Two ADAT ports and 2 Z-Link ports for an additional 32 I/O

"I used scope to run all the incredible synths that are available for the platform for many years now. From pads to fx, there is never a lack of options. Killer stuff!"

Tom Keane (Writer/Producer for Pat La Belle, Chicka Kahn, Colbie Dean, and now Anita Baker)

"I love the unlimited routing capabilities of the Scope Software, whether live recording or mixing out of my computer to outboard analog gear and back into the computer. Whatever you can imagine you can patch through the Scope Mixer and routing modules. Working 64 bit Scope is Awesome!"

William Goldstein (Scored over 30 film and TV projects including Fame, The Mack, Walker, Twister, Zorro)

Keep the spaghetti off of the floor



And now, an additional 16 I/O unit available from Ferrofisch... the perfect combination!

Third party devices available from: Brainwave, SPL, Algorithms, Source, and Original Audio Soft



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New Sound Reinforcement Products

ALTO PROFESSIONAL TRUESONIC

Loudspeakers for All

Now available from Alto Professional (altoproaudio.com), the TrueSonic TS112A (\$299) and TS115A (\$349) active loudspeakers are available in two-way 12-inch and 15-inch sizes, respectively. Features include 800W of Class-D power and an SPL of 125 dB for the TS112A and 126 dB for the TS115A. Both models are geared toward musicians, bands, DJs, and live sound reinforcement engineers, or for those who own or contract for bars, clubs, schools, gyms or houses of worship.



K-ARRAY BLUELINE SERIES

Line Array to Go

New from Sennheiser-distributed brand K-Array (k-array.net), the BlueLine Series' debut product is the portable (44 pounds) KB1, an ultra-slim, powered line array system featuring a 12-inch subwoofer and eight 3-inch drivers. The Class-D amplifiers offer a total of 240 watts. By using the K-Array presets or by creating new ones, users can custom-tailor the system. The KB1 also features onboard digital processors and a digital 4-input mixer so users can modify input levels, EQ parameters and add multi-effects; and compress and regulate output channels. Meant to be plug and play for setup, users can also connect a PC via integrated USB connector.



OUTLINE GTO-DF, IPAD APP

Hands-On System Control

The Outline (outlinearray.com) GTO-DF (Down-Fill) is mechanically compatible with GTO and was designed to provide audio coverage for the first rows of an audience in any type of event where a GTO system is in use. This element uses six loudspeakers: four 8-inch mid-woofers and two 3-inch compression drivers. In addition, its aperture (120 degrees) gradually flares out downward. The company also debuts an iPad app to control its self-powered loudspeaker enclosures. The app provides control of Mini-COM.P.A.S.S. systems and the new iSM Series of stage monitors.

JOECO BBR64-MADI

Record At Will

Now shipping from JoeCo (joeco.co.uk), this single-rackspace version of the Black-Box recorder is designed for audio acquisition and capturing live performance. Users can capture multichannel audio direct to a USB 2 drive in Broadcast WAV format, without the need for a computer. The BBR64-MADI records and replays up to 64 channels of MADI data. The recorder can capture the full 64 channels at standard sample rates, and also accommodates double sample rate MADI recording of up to 96 kHz. The unit has coaxial and optical MADI connections for interfacing with any MADI-equipped console or other equipment. Additionally, it allows for 56-channel legacy MADI and can record an additional eight channels of analog (balanced line in) for capturing audience reaction or general ambience.





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SLATE PRO AUDIO FOX PREAMP

Dual-Channel Unit With Four Input/Output Paths, Plenty of Gain



Steven Slate produces both software and hardware in his product line. The Trigger Drum Replacer and Virtual Console Collection, the former reviewed in *Mix* (January 2011), plus its FG-X Mastering Processor fall under the Slate Digital moniker, while hardware—including the Dragon Dynamic Processor and Fox preamp reviewed here—sit under the Slate Pro Audio division. The Fox preamp (\$1,799) is a solidly built unit with a hefty linear power supply. Its price and features put it squarely in the boutique realm, giving you a welcome range of choices when recording.

QUALITY BUILD

Slate went the extra mile with the Fox. Inside the heavy steel chassis, all connectors, switches and rotary controls are top-of-the-line—even the front panel is “foxy,” sporting a raised, semi-gloss pattern. Features include a DI input, 12-position gain knob in 5dB increments and continuously variable rotary output control, which is at unity when wide-open. To avoid confusion, I would like to have seen zero labeled at full gain rather than the 0 to 10 as screened on the panel. Other features include switches for phantom power, -10dB pad, polarity flip and mic/instrument settings, as expected.

Where the Fox steps beyond the norm is its Vintage, Modern, Combo and Normal settings. This feature switches the input and output paths of the preamp between four options. I got the rundown on the tech from Fox circuit designer Tim Caswell, who went deep into the design for *Mix*. Modern/Normal is transfor-

merless, starting with a matched transistor pair followed by three Burr-Brown op amps, with a DC servo to eliminate the output coupling capacitor. This is followed by a line driver stage with a Burr-Brown op amp with MJE 182/172 transistor current boosters, also DC-servo'ed. In Vintage/Normal, the input stage is the Class-A C-4018 Altran transformer followed by a C-4000 Altran line driver.

TRY THIS

When working with a preamp with separate input and output controls, you can create interesting distortion effects by lowering the output and raising the input. This drives the output harder and works especially well when there's a transformer at that stage. You can also be sure you're getting the cleanest signal possible when the output is at unity gain, then using the input as your main level control.

You can also split the Vintage vs. Modern input/output stages with the combo switch. Vintage/Combo is the transformerless preamp followed by the Class-A/4000 transformer line driver, while Modern/Combo has the 4018 input stage followed by the transformerless Modern output. These four options provided a great way for me to A/B/C/D the preamp on any application. You can also play sonically with the Input vs. Output by bringing down the output and driving it harder with elevated input levels, making for endless sonic possibilities.

When I performed EIN tests on the Fox using an Audio Precision APx525 audio analyzer, I was able to confirm the specs that Slate printed in its manual. The Modern mode is dead-flat out to 20 kHz, and I found that the Vintage mode rolled off well before 20 kHz, which my ears confirmed. You can see all the bench

tests at mixonline.com/october_2011.

CLEAR AND PRESENT

I had the opportunity to hear the Fox used across a number of applications. On a pair of U87s placed as a spaced pair over a drum kit, Vintage/Combo gave the best results. Switching to the Vintage/Nor-

mal alone made the snare sink in the overall drum mix and dulled the overheads. Switching to solely the Modern/Normal setting brought back the top end and the snare, but something was lost in the snare hit's beefiness. The Combo brought that certain chunkiness that the vintage circuit brings to the kit on transient hits of the snare and toms while offering the clarity of the modern input.

Next I cut the same drum kit/drummer on two back-to-back sessions. On the first session, I used the Fox on the kick (Shure Beta 52) and snare (Shure SM57). I switched between all four input/output combos and settled on Modern/Combo for this application. It brought out the attack of both drums while giving me plenty of low and mid-low beef, making these core instruments sound great in the overall mix. In the next session, I switched the Fox to mics on the up and down of the kit's Lottom (Sennheiser E602/AKG D-112). I had previously used an SSL 4000 preamp on the tom earlier in the day when I had the Fox on the kick and snare, and noticed the difference immediately when I switched to the Fox. It was like a blanket was lifted off the tom in comparison to the morning session, making me pine for more Foxes.

I recorded bass through the Fox's DI input with the player plugged directly into the unit, making the long run to the control room at line-level. The only signal flow difference with this input is that the 4018 transformer is bypassed on any setting—the output of the FET instrument buffer goes directly into the Vintage output's 4000 transformer or the Modern's transformerless output only. I gave the player a quick tutorial on the gain and four settings, which he switched through while I listened in the control room. Both of us agreed that Vintage/Normal was the best combination for the bass, offering plenty of warmth and body to the instrument while still sounding well-defined in the upper midrange. I barely needed any gain in this application, running the output at unity and the gain only at the second detent.

Next I cut various hand percussion using the Fox to power an sE Electronics Voodoo VR1 microphone. Because of the quiet nature of some of the shakers I was cutting, plus the fact that the VR1 is

PRODUCT SUMMARY

COMPANY: Slate Pro Audio
PRODUCT NAME: Fox
WEBSITE: slateproaudio.com
PRICE: \$1,799

PROS: Great-sounding preamp. Combo vs Normal modes offer great flexibility.

CONS: Misleading manual needs an update. Output control not shown as zero when wide-open.

passive, the Fox had to be fairly cranked to achieve the levels I desired. I was pleasantly surprised that even wide-open, the Fox was whisper-quiet. I cut the percussion in Normal/Modern mode, which was open on the top, had an intimate presence and sounded great.

For the next test, two mics were A/B'd on an acoustic guitar through the Fox. One channel powered a Peluso U47 capsule with his BV8 transformer, and the other channel juiced a Peluso C12 capsule with his BV11 transformer. Both mics were pointed at the junction of the guitar's neck where the fretboard meets the body. Both mics sounded full and delightfully twangy in this application. On the Fox, Normal mode provided the starkest difference between the two mics. Switching to Modern brought out the harmonics of the strings while the Vintage setting brought the top-end emphasis down in favor of the body of the guitar. Kicking in Combo mode offered completely different results, with Modern giving the best sound: plenty of top and great body combined. The Combo/Vintage mode was a bit darker and not right for the track.

THE FOX ROX

No matter what I tried it on, the Fox preamp gave me plenty of sonic options and always sounded great. The only problem I had was with the Manual: It was misleading, containing information about the Combo/Normal switching that contradicted the info I got from circuit designer Tim Caswell. He assures me that this is being addressed, and the manual is being rewritten to reflect the proper signal flow. Other than that, the Fox is highly recommended. It offers many clean or dirty gains, depending on your Normal vs. Combo choices, giving a wide palette of sonic possibilities from which to choose.

Kevin Becka is Mix's technical editor.

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Check out bench tests of the Fox in use at www.slateproaudio.com October 2011

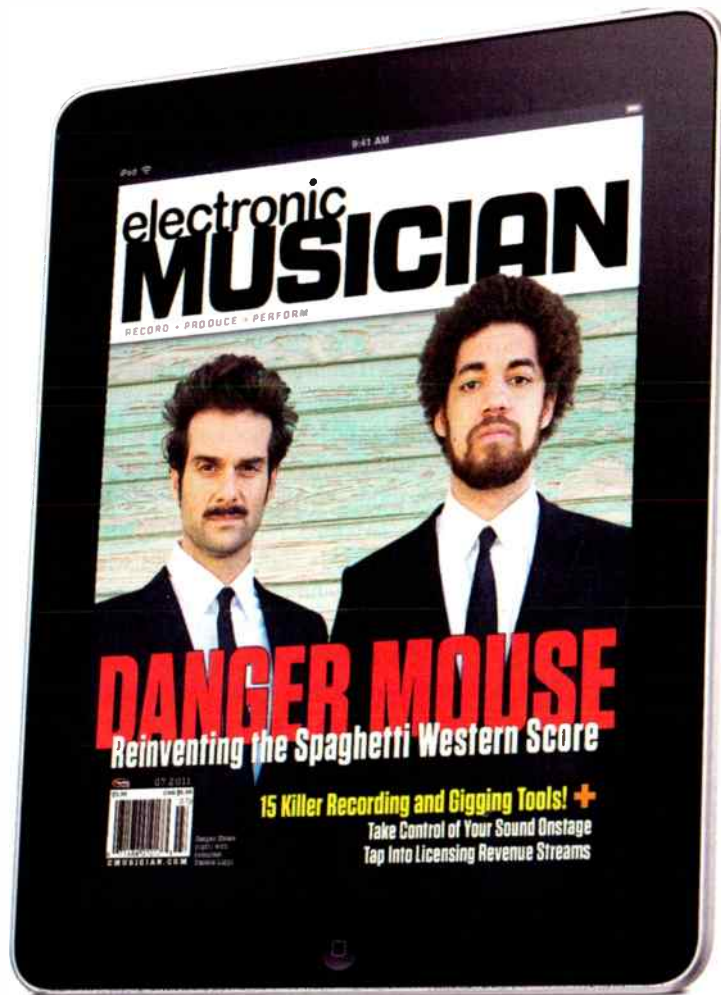
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SONODYNE SM 100AK MONITORS

Great-Sounding, Affordable Powered Speakers

In the 1960s, engineering student Ashoke Mukherjee launched Sonodyne with the idea of bringing stereo sound to India; ever since then, he has been providing both consumer and professional audio solutions out of the company's manufacturing facilities in Kolkata, India. I had heard rumors of Sonodyne for many years but never had the chance to hear their professional audio products. They now have distribution in the United States through the TransAudio Group out of Las Vegas, which gave me the opportunity to review their SM 100Ak Active Monitors. I found a range of pleasant surprises.

SOLID BUILD

Right out of the box, these little speakers appeared to be formidable contenders. There is a "heft," weightiness and finish about their manufacturing that spells "well done." The cabinets are constructed of die-cast aluminum, providing limited cabinet-induced resonance, which is a characteristic of a much more expensive line of speakers out of Finland. Also, the cabinet comprises a non-parallel design, both internally and externally, diminishing internal standing waves and providing a front-baffle time-alignment characteristic from this slightly trapezoidal cabinet. The cabinet is front-ported, with dual elongated ports placed vertically between the tweeter and edge of the speaker cabinet. The port does not output excessive air and sounds in-phase with the excursion of the woofer. All edges of the cabinet and ports are rounded to reduce edge diffraction and turbulence.

The low-frequency driver is a 6.5-inch Kevlar cone woofer in an aluminum die-cast frame, which makes for a fast, efficient, lightweight motor on the bottom end, resulting in a punchy low end that performs beyond its size. The top-end driver is a 1-inch silk dome tweeter, and even with a rather shallow waveguide, it provides a wide sweet spot when mixing.

The tweeters have a smooth high-frequency reproduction characteristic. I am a big fan of the silk-domed design, having heard everything from aluminum horns to beryllium tweeters, and these sound very accurate and smooth. The frequency response of



the entire system is rated at 60 Hz - 22 kHz +/- 2 dB, 50 Hz - 30 kHz @ -10dB. You will need to provide a subwoofer if you want to accurately reproduce information below 60 cycles, making these speakers perfect for a 2.1 or multichannel system.

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The onboard amplifiers output 80 watts for the woofer and 40W for the tweeter. This is not a massive amount of power, but for this particular speaker size, the amps, along with the crossover, are matched to the transducers with a high degree of precision, making the system work very well within its design parameters. The crossover is a 4th-order Linkwitz Riley design splitting the signal at 1.8 kHz. The transition between subwoofer and tweeter is smooth, and for a two-way design, virtually seamless, even in a near-field monitoring position.

Operational controls include a front panel on/off switch, as well as a volume control. The back panel provides input access to the amplifiers via balanced XLR and TRS connectors. Additionally, there is a gain control, infinitely variable from -6 dB to +6 dB, and four DIP switches: a 6dB/octave roll-off at 80 Hz, a bass tilt at 80 Hz giving a -2dB or -4dB/octave roll off (very useful when mounting the speakers close to a boundary), and a high-frequency tilt, giving a shelf cut of 2 dB above 4 kHz. As you can see, there is more control over the usually offending bass frequencies, due to room anomalies, bridge placement and back-wall acoustic issues. I would like to see a midrange EQ control in a future design. Many speakers are used in "desktop configuration" and can benefit from an EQ dip/cut around 160 Hz. There is a built-in, non-user-defeatable, 40Hz, 12dB/octave subsonic filter in line to avoid over excursion of the subwoofer. That's fine; you don't want to blow up these



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great-sounding little speakers!

There are plenty of safeguards. Along with the subsonic filter, there is over-current and overheat protection, as well as RFI and on/off transient filtering. I believe Sonodyne has thought of just about everything for a product in this price range.

SONIC SUGAR

Right out of the box these speakers sounded really, *really* good. I usually warm up to the sound of any given transducer and take my time learning the speaker, but as soon as I fired these up, it was apparent that these were well designed. As with any speaker, they started to sound even better after a break-in period. But I didn't have to run these for 100 hours at 100dB SPL to loosen them up. Generally, front port designs take a little longer to break in; getting the motor to work in-phase with the port takes some big air movement on the woofer to loosen it up. But these were punchy, with very little port turbulence on initial application of signal.

As far as SPL goes, these are not going to fill a large room—that's not what they are designed to do. They work very well in a near-field situation. The big question: Is the sound transferable to other speaker systems? The answer is yes. Mixes performed on these speakers sounded extremely close to being the same mix on other, more expensive speakers.

I listened to many different source tracks, both mixed and mastered, as well as raw tracks from Pro Tools sessions at 24-bit/44.1 kHz. What I found truly revealing (and truly delightful!) was the vocal range. Vocals are represented with the utmost detail and presence. There is an intimacy, with center imaging that is wide and solid. Reverbs have a depth that seemed to image and reproduce outside the speaker box. The "in-your-face" character of electronic music reproduction matches up with my reference speakers that cost more than twice as much.

Bass guitar is well articulated with very little of the "small box" sound associated with a smaller design. Drum timbre is reproduced accurately, with cymbals having only slight coloration by comparison to my titanium references. Clean electric and acoustic guitars showed all the timbre

TRY THIS

I've walked into many studios, both project and pro, and seen the speakers sitting directly on the bridge over the console or on a desktop! This will cause all sorts of acoustic problems, making your job harder to get a good, transferable mix. Audiophiles have been elevating their speakers on spikes, essentially decoupling them from the floor, for decades. Set your speakers on acoustic foam to decouple them from the work surface and your mixes will sound better everywhere you play them. I listen/mix/test all my speakers on Auralex MoPads or Primeacoustic Recoils. Even some extra foam out of an SKB case will do in a pinch!

of the original tracks. The distorted guitars of Norwegian death metal sounded only slightly forward, but there was no smear, masking or intermodulation distortion between like-timbered instrumentation. Hammond organ delivered all the nuances of a Leslie speaker system reproduced with accuracy. Even the intricate harmonics of acoustic piano where reproduced realistically on these little 6.5s. My references are rear ported, so there is a difference in the low-mid, upper-bass reproduction due to the positioning of the ports, that being a slight increase of amplitude in the 120 to 240Hz range—not a bad thing for a speaker this size, considering the system's roll-off at 60 Hz. The result is that the speaker sounds "full," with no hole in this critical range, which I have found missing in speakers of this size in the past.

PREMIUM PERFORMERS

The Sonodyne SM 100Ak monitors perform well beyond their price point. There are few speakers on the market right now

that offer this level of accuracy and reproduction in the 6.5-inch range *at this price point*. Punchy on the bottom end, a smooth and accurate silk tweeter, along with solid engineering principles, make the SM 100Ak a complete package; a solid performer at a ridiculously reasonable price. Get five of these, and a sub-woofer, and start mixing in surround, please! A must listen!

Bobby Frasier is an educator, audio engineer and Beatles fanatic.

PRODUCT SUMMARY

COMPANY: Sonodyne
PRODUCT: SM100Ak
WEBSITE: transaudiogroup.com
PRICE: \$700 each

PROS: Extremely affordable. Low cabinet resonance. Good bass response in a small speaker design. Smooth silk tweeter. Wide sweet spot. Superb imaging. Fairly small footprint.

CONS: No computer/networking control. No digital inputs. No midrange/low-midrange EQ control.

Powerful DAW controller. V-Control Pro



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- ✓ Logic 9

V-Control provides multi-touch control of transport, faders, pan, mute/solo/record, sends, automation, plug-ins, and more. It uses the iPad's Wi-Fi to wirelessly control DAW's such as Pro Tools, Logic 9, and Cubase. V-Control is the perfect remote controller for recording by yourself. At the studio or on the road V-Control gives you a comfortable bank of virtual mixer faders that you control with your fingers, just like on a real mixing console.

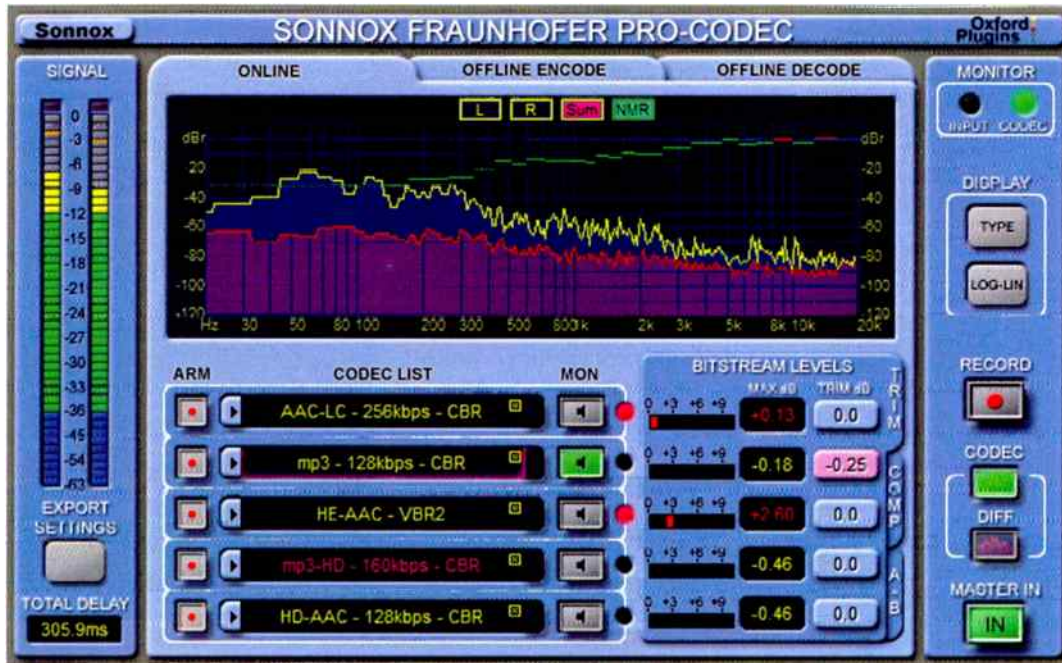
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SONNOX FRAUNHOFER PRO-CODEC

Feature-Rich AAC and MP3 Encoding in Real Time



In this era of ever-changing and ever-increasing Web-based media distribution, many of us have become accustomed to a workflow that involves bouncing a mix or a mastering job, encoding it to MP3 or AAC, hearing the result and then going back to apply changes due to deficiencies of the perceived outcome. This can be an irritating and time-consuming dance. The idea of instantiating a plug-in across the master fader during mixing or mastering, which could allow you to monitor the effects of encoding, is an obvious solution, and that is precisely what the Sonnox Fraunhofer Pro-Codec does: It provides the means to audition these codecs pre-bounce, accompanied by an incredible amount of analysis, allowing you to apply any given codec with absolute confidence.

THE GUI

The interface tabs through three main windows, according to the functions that the processor performs: online encoding, offline encoding and offline decoding. Online encoding is the most exciting feature of the software, where you can choose up to five different encoding settings and toggle between auditioning each of them while listening to the mix in real time. Ultimately, the preferred result can be recorded into a new file of the chosen format. The offline encoder allows you to import premixed material in WAV or AIFF format, choose up to five

different settings and batch-process the imported file, and then export the newly encoded files. The offline decoder is useful in instances where a DAW cannot import a file because it is currently encoded with a Fraunhofer codec that is incompatible with that DAW. In this case, the end result is an uncompressed WAV or AIFF file that you decide the format and bit depth.

The large, easy-reference input meter displays peak and VU in 1dB steps down to -36 dBfs, then 3dB per "LED" below that. Underneath this meter is a button that provides access to the Export Settings, where you control the destination and file-naming format used by any of the processing to be exported to new files. Here, the default file name for exported files can be built from a number of components, including the name of the codec employed, the quality setting and time stamp, as well as a "custom string" field that can be used to identify that particular file to the user, once exported. This information is automatically included as ID3 metadata.

As complete as this product is for creating Web-ready MP3 media, I was disappointed that

TRY THIS

Using the Difference control, you can hear what would be extracted from a signal to create the MP3 or AAC compressed output. This comes from a combination of psycho-acoustic processes, which can produce some very interesting results. From a sound-design stand-point, especially in the realm of sci-fi or horror, some wickedly disturbing vocal effects can be produced. Extracting this signal and processing it has been a lot of fun for a variety of different effects.

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there was not an option for additional metadata tagging, such as artist name, song title, album, etc. Also, AAC metadata is not supported. At the bottom of the Input window is a display indicating total delay imparted by the plug-in, which automatically, and instantly, updates when changes are made in any area of the online encoder, though not always immediately conveyed to ADC in a given DAW.

ONLINE ENCODER

The Online Encoder is really what this plug-in is all about; the other functions can be performed by other software, even iTunes, with only slightly fewer options. The bottom-half of the Online Encoder shows five rows of information, each to be loaded with a different setting for auditioning and potential encoding. Each could use a different codec, or the same codec can be used redundantly, configured with different settings. Provided are different AAC and MP3 codecs, including MP3, MP3 HD, AAC Low Complexity, High-Efficiency AAC, High-Efficiency AAC Version 2 (parametric stereo) and HD-AAC. Both MP3 HD and HD-AAC offer lossless encoding up to 16 bits, and HD-AAC carries on to lossless encoding up to 24 bits. The rest offer lossy data compression.

Each of the five settings has a Monitor button, allowing the auditory and graphical resources to allocate to that setting. You can toggle through them in real time, without any popping, glitching or delay in between. In the right-hand column of output controls is also a function to toggle between monitoring the plug-in's input vs. the resultant output of a codec. This is also toggled smoothly without a break in signal. I was most appreciative of another feature found slightly below these buttons: The DIFF button provided an option to toggle between monitoring the encoder output or the difference between the input and output signal. This is reminiscent of the type of control offered in Waves X-Noise or BIAS SoundSoap that allows you to hear only removed noise instead of either input signal or post-noise reduction output signal. Hearing just the removed signal in an AAC process, weighed against that of an MP3 process set to the same bit rate, was very revealing. Where the processed output signals from each appeared similar at first, hearing the difference signal in each case was quite unique; I could hear where the data compression was affecting each encoded signal.

All of this information is represented graphically in a large,





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easy-to-read FFT display occupying the top-half of the Online Encoder window. One curve shows the input signal, a second shows the DIFF signal, while a third shows what is described as NMR (Noise-to-Mask ratio). This curve highlights frequencies that will most likely be subject to artifacts as a result of encoding, and certainly paints a different picture than that represented by the audio or visual representation of “difference” signals. Where the “difference” is supposedly masked psychoacoustically and takes more discretion to perceive, the NMR suggests more readily audible effects. These effects are usu-

ally due to a combination of significantly high data reduction applied to highly complicated waveforms. This added layer of foresight is certainly helpful in making overall decisions about any settings applied. The FFT section can alternatively be repurposed and display phase scopes of input, output and difference signals.

There are output buttons on the GUI that relate exclusively to the Online Encoder, though these settings are displayed while viewing any of the three function windows. This is useful because even while using the Offline Encoder or Decoder, the



This is the string that the plugin can build

real-time encoder will pass its signal. That said, the plug-in cannot “multitask” between windows in terms of actual file creation. If the Online Encoder is rendering a file, there is no ability to tab to the Offline Encoder or Decoder. In the worst case, if the Offline Decoder is midway through the decoding of a file, tabbing to one of the other pages will cause the decoder to fail without warning. I would prefer that the other pages are locked-out until the process is cancelled or completed.

ADDITIONAL FUNCTION TABS

The default window on the Online Encoder page displays codecs being auditioned, monitor buttons and Max dB indicators. Interestingly, the same mix, subject to different encoding processes, widely varies in output level. This is because some codecs will actually introduce noise, others limit frequency response, others dither bit depth upward or downward. As a result, input signals arriving below 0 dBfs might clip the output of the decoder. Between the Max dB display and the monitor switches are clip indicators and meters showing the value of overs. This section also offers pre-codec trim controls to avoid any problems during encoding. The level of over-0dB signal can be automatically calculated and accordingly trimmed, or a manual value can be applied. In either case, the trim level is reversed during post-encoder auditioning to prevent level discrepancies from influencing decisions about sonic preference. That is to say that, regardless of which codecs are being toggled, their settings, or their corresponding trim values, all of them play back sounding equally loud for accurate comparison.

Another tab allows comparison of data-compression ratios, each displayed on a meter. I found this really helpful, as doing the math and comparing bit rates—both variable and constant, lossless compression vs. lossy, and varying bit depths—is overwhelming. Conversely, saying, “This codec is compressing twice as much as this other one” is simpler when comparing the relative ratios. The last tab in the Online Encoder offers hip A/B func-

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tions. Two codecs can be chosen as an "A" and a "B," at which point their FFT curves can be compared simultaneously. A single button toggles between them, allowing you to close your eyes and click between them for a blind taste test. This function could additionally be used while simply hiding the graphics displaying which setting was audible, allowing the same result with your eyes open. A more advanced A/B/X solution provides a greater deal of certainty. In this mode, again an "A" and "B" are chosen. The software plays "X," which could be either "A" or "B." You then guess if the "X" that you are hearing is actually "A" or if it's "B." The plug-in keeps track of how many rounds are played and the accuracy of your guesses. Theoretically, if you guess correctly 95-plus percent of the time, you are

actually hearing the difference. Otherwise, I don't know, I suppose you should let your demo plug in time out and hire a real mastering engineer. (Laugh, it's a joke.)

Once you are feeling confident in your codec decisions and settings, each of the five codecs can be armed individually or simultaneously and recorded to new files. In one case, working with five codecs armed and printing an 8-minute file, I got to the end of real-time encoding and was presented with an error saying that the resultant files probably had dropouts because of a CPU overload. It would have been nice if it had error'd out immediately and let me know. Fortunately, the same codecs were automatically loaded into the Offline Encoder so I could bounce my mix. Clearly, the Sonnox product developers anticipated this situation, which is why the Offline Encoder was included in the first place.

PRODUCT SUMMARY

COMPANY: Sonnox
PRODUCT: Sonnox Fraunhofer Pro-Codec
WEBSITE: sonnoxplugins.com
PRICE: \$470 (street)

PROS: Real-time codec auditioning with great analyzers.

CONS: No inclusion of AC3, DTS or non-Fraunhofer codecs. No comprehensive meta-data tagging.

analytic functions afforded by this plug-in. Given that any successful CD release will be accompanied by a downloadable 192kbps MP3 version on iTunes, foreseeing the effects of this codec is an obvious necessity. This Sonnox software supplies the missing step we have been waiting for: taking the mystery out of a workflow that will end in an AAC or MP3 file.

Brandon Hickey is a freelance engineer and audio educator.

more online



Watch a demo video of the Fraunhofer plug-in at moreonline.com/october_2011

GAME CHANGER

The Fraunhofer Pro-Codec is an essential tool for the modern engineer, especially for those mastering his/her own tracks. Even if you have a hardware solution to predict the sound of post-processed signals in real time, I'd be surprised if it offered all of the an-

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PSPAUDIOWARE OLDTIMERME

Vintage-Style Compressor Plug-In Gets a Mastering Makeover

When PSPaudioware's oldTimer was introduced a couple of years ago, I thought it was the best-sounding compressor plug-in for the price—a rock-bottom \$99. But while its idiot-proof control layout and chameleon-like personality made it a user-friendly and versatile processor for basic mixing duties, oldTimer lacked certain features needed for jockeying advanced mixing techniques and mastering.

The new oldTimerME (Master Edition) addresses those needs, bringing mid-side processing, parallel compression and an internal sidechain (with a built-in filter) to the table. (See Fig. 1.) Greater control over its time constants, levels and emulated tube processing complete the meal. Recognizing that you won't always need that much ammunition, PSP includes the original oldTimer with your purchase of the ME version. (See the sidebar "oldTimerME's Mini-Me" at mixonline.com.) Pinch me—the price for the bundle is still only \$99! And if you already own the legacy oldTimer, you can get the ME version for free.

oldTimerME (Mac/Win) supports AU, VST and RTAS formats; 32- and 64-bit floating-point audio streams; and sampling rates up to 192 kHz. I tested the AU plug-in in Digital Performer 7.21 (DP) and Pro Tools 9.0.3 (PT9) using an 8-core Mac Pro running OS 10.6.8.

IN CONTROL

Consistent with its newfound attention to mastering applications, five of oldTimerME's nine ratio control settings fall within the 1.1:1 to 2:1 range, allowing you to process with kid gloves. The highest ratio is 10:1. Raise the compression control to lower the threshold and increase processing depth. Tweak the make-up control for up to 30 dB of make-up gain.

Unlike with the legacy oldTimer plug-in, the ME version offers separate attack and release controls. Their knob positions are not delineated in milliseconds and seconds, but rather with nonspecific alphanumeric characters. The faster settings are good for limiting percussive tracks such as drums, while the slowest settings are good for leveling. In between those extremes, you get a response evocative of opto and tube compressors. Activating an



Fig. 1: oldTimerME combines vintage-compressor vibe with advanced features for a pittance.

auto-release switch implements program-sensitive release times, automatically quickening release times for transients.

You won't have to mult your track to set up parallel compression; oldTimerME automatically splits processed and unprocessed signals and combines them at the plug-in's output. Separate controls independently adjust the dry (unprocessed) and wet (compressed) signal levels, attenuating as much as 24 dB or boosting up to 6 dB. Want to compare your parallel-compression setup to normal compression? Mute the dry signal by clicking on the nametag for the respective control. Done!

Mid-side and dual-mono processing setups are not quite so lickety-split; they require using two instances of the plug-in on the same stereo track. For dual-mono operation, set oldTimerME's channel-selector switch to L (left) on one instance of the plug-in and to R (right) on the other. For mid-side operation, one instance of the plug gets set to M (mid) and the other to S (side). Linked-stereo operation requires only one instance of the plug-in. Set the channel-selector switch to left, mid or linked operation for best results on a mono track.

Mastering engineers, take note: You can increase the number of steps by a factor of five for several controls (compression, makeup gain, and dry and wet levels) by holding down the Shift key on your QWERTY keyboard while adjusting them. For

TRY THIS

Instantiate oldTimerME on a stereo electric-guitar track playing power chords. Use a 10:1 ratio and set the attack and release times each to F (fast). Set the valve reference level to Hi (max) and the sidechain frequency to 250 Hz. Adjust the compression control for roughly 6 dB of gain reduction on peaks. The guitar track should now sound fuller and crunchier.

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example, the compression control normally has 40 discrete steps; hold down the Shift key, and you get 200 steps. Makeup gain, and dry and wet levels can each be similarly adjusted in as little as 0.1dB steps.

Despite its precision, oldTimerME deliberately shuns transparency to impart a vintage vibe. Its classic character is derived from the varied compression curves it produces and a very convincing tube-emulation algorithm it employs to round transients. You can defeat the tube modeling by flipping a three-way switch (labeled Valve/Clear/Off) to the Clear position. The Valve position activates the tube algorithm, while the Off position disables compression completely.

When the tube algorithm is active, a five-step control (dubbed "Valve Reference Level") adjusts the depth of saturation. You can produce either more or less saturation than with the legacy oldTimer plug-in, which is not adjustable in this regard. The Mid setting duplicates the oldTimer's fixed saturation response.

oldTimerME includes an adjustable highpass filter for its internal sidechain. A choice of nine corner frequencies—from 30 to around 1k Hz—is offered. You can route other tracks into the plug-in's sidechain using your host DAW's facilities. A VU-style gain-reduction meter, A and B workspaces, and facilities for loading and saving presets and banks complete the GUI.

TO THE TEST

Slapped on stereo drum room mics, oldTimerME sounded excellent. Heavy compression with very fast attack and release times made the room tone pump beautifully. The punchiest sounds were produced by setting the valve reference-level control to its lowest setting or using the Clear setting.

A 4:1 ratio, Clear mode, and moderate attack and release times sounded outstanding on a stereo track for strummed acoustic guitar, produc-

ing an open and detailed sound. I also tried using very fast attack and release times on this track, with mixed success. On the plus side, the compression curve sounded similar to that produced by an SSL Bus Compressor. As I increased the compression depth just barely to the point where the track began to pump, oldTimerME moved the guitar track to the front of the mix and made it sound very aggressive and huge. But on the down side, the fast attack and release times also produced audible distortion.

Male rock vocals sounded great using parallel compression with moderate attack and release times. I compressed the vocal fairly heavily, dialed in a fair amount of pleasing tube-like saturation and then nudged the plug-in's dry output up a tad to restore definition. I got great results on electric guitar and bass tracks using similar settings.

oldTimerME also gave very good results mastering a Southern-rock mix, but it took some effort. On the mid channel, I dialed in moderate attack and release times, 1.3:1 ratio and 250Hz setting for the sidechain filter. That created a nice "thrust compression" effect that pumped up kick, snare and vocals while keeping the bottom end rockin'. Light compression with very slow attack and release times on the side channel made hard-panned electric guitars and drum room mics sound stronger and more "glued" in the mix. So far, so good.

But after my initial settings exceeded my DAW's headroom, I lamented that I couldn't link the mid and side makeup-gain controls to lower the overall output while preserving my carefully wrought mid-side balance. The lack of output-level meters also made me work harder to keep levels under control. Muting all outputs (wet and dry) except that for the side channel's wet signal allowed me to, in effect, solo the side channel; a similar tack allowed me to solo the mid channel.

PRODUCT SUMMARY

COMPANY: PSPaudioware
PRODUCT: oldTimerME
WEBSITE: pspaudioware.com
PRICE: \$99

PROS: Sounds great. Can do mid-side processing and parallel compression. Built-in sidechain filter. Extremely inexpensive.

CONS: No control linking in M/S mode. No output meters. Dual plug-in instances required for M/S and dual-mono operation hinder soloing channels and saving complete presets.

But I missed the convenience of having dedicated solo buttons in a single GUI integrating both mid and side channels. (The higher-end mastering processors also allow you to quickly solo the left or right channel.) I also couldn't save combined mid and side setups into a single preset.

STILL, IT'S A BARGAIN

oldTimerME wins very high marks for its convincing tube-emulation processing and the sheer variety of compression curves it makes available. The plug-in's somewhat kludgy implementation of M/S and dual-mono processing might dissuade time-pressured pros from using it for mastering, despite its euphonic sound quality. But oldTimerME's vintage vibe, excellent sidechain, user-friendly parallel-compression and shape-shifting character make it a versatile and musical processor for any mix engineer, no matter his or her level of experience. And you can't beat the price!

Mix contributing editor Michael Cooper (myspace.com/michaelcooperrecording) is the owner of Michael Cooper Recording in Sisters, Ore.

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FOCUSRITE CONTROL 2802 DUAL-LAYER MIXING CONSOLE

Versatile, Compact Unit Produces Clear, Vivid Audio



In April 2011, Focusrite Audio Engineering Ltd. and Audient Ltd. agreed to have Focusrite start the production and sale of certain Audient products. The dual-layer, small-format Focusrite Control 2802 is the first product created by both companies. Except for the new branding on the metal work and improved DAW integration, it is identical to the Audient ASP2802. The Control 2802 shares the same mic preamp topology and bus compressor design as the ASP8024, as well as many similarities to the Audient Zen console that I reviewed in *Mix*'s May 2010 issue.

The Focusrite Control 2802 is an analog recording console and DAW control surface in one. It makes the difficult easy by combining short and clean analog signal paths, as well as nearly limitless configuration and routing possibilities, with well-integrated workstation control.

IN CONTROL

The Focusrite Control 2802 is a 2-bus stereo mixer without equalizers nor multitrack buses. It has a wedge-shaped steel case, a built-in world power supply, and a rear panel covered with XLR, TRS and DB-25 sockets. It weighs just more than 40 pounds, measures 17.7x21.6 inches deep, and can be rackmounted in 15 spaces or placed on a desktop, as

I did for this review.

It has eight 100mm Alps motor-fader channels with Solo, Cut and Select buttons that control eight THAT Corp. 2180LB VCAs. Because no analog audio passes through the faders themselves, seamless global switching between DAW and analog layers allows the faders to function as either DAW automation faders or regular line/mic input faders for manually "riding" levels, etc.

The eight channels each have processor inserts (rear panel TRS jacks) with in/out switches and, along with the eight in-line cue inputs, are sourced from either the eight DAW inputs (DB-25) or the eight (TRS) line inputs or eight (XLR) Class-A microphone preamps via the individual mic/line switches.

Each channel has a DAW button that individually "flips" the fader's source between the DAW inputs and the mic/line signals. With the DAW button down, pushing the Alternate Input switch routes the line/mic signal to the stereo cue mixer.

Both channels and cue signals are individually

TRY THIS

The Control 2802's DAW Mix Input was the first mode I tried because it was easy to hook up with just two XLR output cables from my DAW's I/O. If you have a rig that does not have true, no-latency monitoring, you can use this input to listen to your in-the-box mix and use the entire console for recording inputs.

Songwriters could leave all their synths, guitars and microphones plugged in all the time and have a great front end. Connect eight mics, eight line inputs and eight analog lines from your DAW and get full access to record any of them to pre-assigned DAW inputs you've saved in your session template.

assignable to the stereo mix bus for up to 16 inputs to mix. By adding 16 additional inputs, I was set up for summing/mixing 16 stereo pairs or 32 tracks from my Pro Tools|HD rig.

For recording to your DAW, the channels and cue signals are also individually assignable to the eight direct outputs (DB-25). Using a combination of four switch positions, direct outs can exit the console post-fader, pre-insert, pre-fader or in Channel mode—directly out of the mic pre section—which is my choice for all mic pre testing. All of the 2802's inputs, outputs and insert send/returns are balanced +4dBu lines.

MIC PREAMPS

The 2802's mic preamps feature a hybrid design with a discrete front end and chip line driver. They each have switchable +48 volt phantom power; a smooth-sounding 75Hz, 12dB/octave highpass filter; and a polarity/phase-flip button.

While recording male vocals, I compared one of the 2802's eight mic pre's with my RTZ Professional Audio 9762 dual-combo mic pre. I used my transformer mic-splitter box (Jensen JT-MB-E inside) to route a large-diaphragm condenser mic to both pre's at the same time. I used the 2802's superclean Channel mode preamp output and then ran the RTZ's line out into an adjacent line-input channel on the 2802; in this way, I could match levels and route both signals out the direct outputs to Pro Tools|HD.

It was amazing how close both pre's sounded: quiet, warm and solid, and exactly as I remember the sound of the pre's in the Audient Zen console—fantastic! I would only say that the RTZ had more gain available and was more open-sounding. On the 2802, there is up to 15dB additional gain available using the Channel Trim control if you select the post-fader direct output path. Over the course of the nearly three weeks that I had the Control 2802, its mic pre's performed perfectly for recording all sources.

MONITORING

About one-third of the 2802's surface is dedicated to professional and comprehensive monitoring facilities. Between the mix bus and other signals, there are main monitoring and cue source selection, plus external sources such as an 1/8-inch jack for an iPod. There is a headphone cue level, main volume with adjustable dim and cut buttons, alt/main speaker select (two pairs of XLRs) and a built in talkback mic with level control or you may connect an external mic (XLR).

The Channel Solo button, along with the Solo



mode button and Solo/Mix Blend control in the monitor section, designate the four analog solo modes: AFL, PFL, SIP (Solo-In-Place) and SIF (Solo-In-Front). There is also SIP Safe, a way to isolate any channel from muting. In the DAW layer, the eight

The 2802 offers a variety of I/O on D-Sub, XLR and TRS connectors.

Channel Solo and Mute buttons follow the bank selected in Pro Tools.

I found the monitoring section to be transparent. The mix playing through my KRK ERGO monitoring-correction unit sounded the same whether connected directly to the 2802's stereo bus outs or its stereo monitor outs.

THE SUM OF ALL CHANNELS

Using two Avid Pro Tools|HD 192 I/O boxes (with

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16 output channels each), I took an existing “in-the-box” mix in Pro Tools and stemmed it out to 32 outputs. For the first 16 outputs I wanted panning facilities, so I used the channel and alternate input cue paths, each of which have pan pots.

For the next four stereo pairs, I used the 2802’s fixed-level summing input (DB-25), which equally sums the odd-numbered tracks to the left side of the stereo bus and the even tracks to the right. This was perfect for stereo tracks in the mix that rarely changed, such as effect returns, synth pads or for a one-time piano solo during the song’s bridge.

For the last eight tracks, I used the 2802’s two effects stereo returns for two stereo stems, and I enlisted the fixed-level DAW mix input (XLRs) and main mix insert return (TRS) for the last two stereo pairs.

Actually, the DAW mix input is for playing out a stereo mix directly from your DAW. That way, when tracking or overdubbing, the channel faders are free for riding mic levels and the cue mixer will provide a zero-latency mix of those channels’ recording inputs.

ALIGNED FOR MIX

To align the 2802’s 32 inputs, I sent a -18dBFS test tone out through Pro Tools’ 32 outputs and set each stem to contribute 0 dB to either the left or right side of the mix bus, as measured on the console’s 20-segment LED bar-graph peak stereo bus meter. The meter is calibrated to read 0 VU = +4 dB and has a 36dB range. The stereo master fader was set all the way up; it’s a 100mm Alps nonmotorized fader without a VCA.

In the analog layer when the Select mode is active and the Unity button is on, pushing any of the Select buttons above the channel faders caused them to “slew” to unity gain instantly—very handy for this setup process. Furthermore, the Channel

Trim knobs all aligned perfectly on their detents, indicating good design, manufacturing quality and tight circuit-component tolerances. To check and set unity accurately on the summing, DAW mix and mix insert returns, you’ll have to individually solo (inside Pro Tools) each of those 16 tracks.

AUTOMATION

The 2802’s DAW layer uses HUI protocol and will play nicely with Logic 9, Cubase 5, Nuendo and Pro Tools using its upgraded software/firmware. The console connects to your computer via a standard Cat-5e cable, or in this case to my hub. I downloaded and installed the latest Control 2802 driver and followed all of the manual’s instructions. After a restart, the console interfaced my rig the first time.

The console has analog automation on the eight channel faders. To set this up, in Pro Tools I opened eight MIDI channels and then immediately hid them so as to not take up mixer screen real estate. Next I went to Pro Tool’s Setup > Peripherals > MIDI Controllers and selected HUI and the predefined Receive/Send to Focusrite Control 2802 Control Surface paths.

The lower-right quadrant of the 2802’s surface is the DAW Control Surface panel with a blue-colored OLED and four multifunction data-entry encoders. In Setup mode, the OLEDs and encoders are for setting network parameters, the host DAW and showing console firmware info.

In the DAW layer, the OLEDs show the name and pan position of each track in Pro Tools (four at a time), aux sends A through E levels (only), and other parameters. Operational/editing shortcuts that your particular DAW allows over HUI are supported with solid-feeling controls and buttons, plus you can download DAW-specific manuals to configure and get the most out of the DAW layer.

The Select mode section defines the operation of the Channel Select switches for specific tasks in the DAW or analog layers. In Pro Tools, you can select tracks from any of the eight channels as they bank across Pro Tools’ mixer; you can page-left/right, record-enable and auto-save.

There are also four user-programmable function keys, and I was okay with the default values: toggle Pro Tools’ Edit/Mix windows, open/close the currently selected plug-in, and switch Pro Tools’ Transport window on/off. I also liked using the 2802’s onboard transport buttons and jog/shuttle wheel.

MIXING FOR REAL

I found 32 stem outputs an optimum working number of sources to mix. I had enough flexibility to

separate out important elements such as kicks and snares, guitar “wire choirs,” and lead and backing vocals. All of my plug-in effect returns, now routed to the 2802’s fixed inputs, sounded better because the board is quiet and transparent enough that I could hear reverb tails and long delays evolve to their actual endings; for whatever reason(s), I don’t always find that “in the box.”

I liked that Solo and Mute buttons are instant on the 2802, and all other Mute buttons on the console flash when a solo is pushed anywhere. The OLED shows the panning positions of the eight main fader channels, and the DAW Meters button changes the channel meters from reading input levels over to the DAW tracks’ levels.

I found the THAT Corp. 2180LB VCA-based stereo mix bus compressor was excellent across the mix bus in moderation and useful when patched externally using the rear panel TRS jacks. The wet/dry knob, complete set of controls and good metering facilities on this vibey compressor allow for subtle mix leveling, all the way to applying a good squash to drum submixes for effect.

SO MUCH, SO LITTLE

The Focusrite Control 2802’s diminutive size might fool the casual observer, but I found it to be everything I could want and more. This is a powerful and deep system, so there is a slight learning/acclimation curve, as well as wiring/configuration decisions to be made. But because the whole architecture is understandable, intuitive and malleable, I found the time well-spent learning it.

Just as when I reviewed the Audient Zen, the sound of my mixes took a quantum leap in clarity, vividness and stereo width. Unfortunately, hearing the song’s improved tonality caused me to rethink nearly everything I had already done in the box—equalization, panning, effects, etc. The Control 2802 also comes with Focusrite’s Midnight and Forté plug-in suites, dynamics and equalizers modeled on the original Focusrite hardware designs that are accessible from the DAW layer of the console. From now on, I want to mix only this way!

Barry Rudolph is an L.A.-based engineer.

more online 



With a view of the 2802 in use at mixonline.com/October_2011

PRODUCT SUMMARY

COMPANY: Focusrite Novation Inc.
PRODUCT: Control 2802
WEBSITE: focusrite.com
PRICE: \$5,999.99

PROS: Extreme flexibility. Open-design architecture. Excellent sound. Super-DAW controller layer.

CONS: OLED a little hard to read. User’s manual could use an index. Engineer’s headphone jack is on the rear panel.

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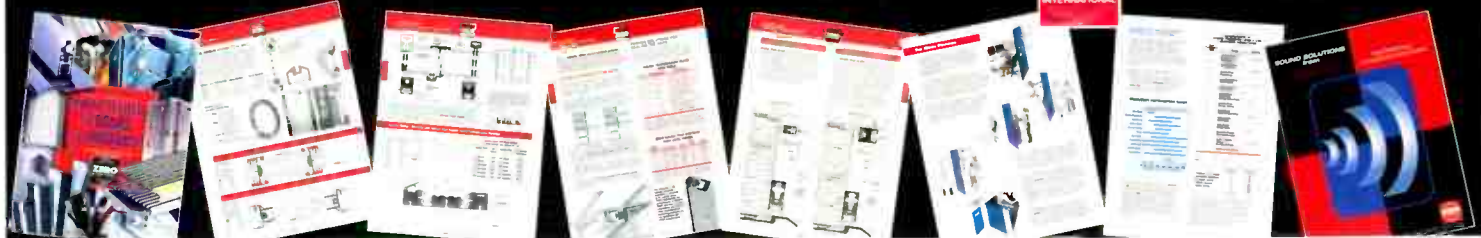
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Of all the great gear we use to record and play back sound, the only non-audio product in the signal chain is the personal computer. We've come to rely on either an Apple or a Windows-based hardware manufacturer to provide the goods.

And while audio companies are varied—offering a range of flavors, prices and options—the computer side offers more narrowly focused products targeted at a broader audience. We have always been able to get what we need, but this is changing.

Apple's booming success in the past five years—selling the function of their products rather than the physical features—has been a game-changer. But let's look back for perspective. Engineers, musicians and creative types in art and publishing have always leaned more toward Apple than Windows-based systems; its products were considered geeky and niche, which didn't necessarily translate to consumer sales, leaving the company struggling to maintain a 5-percent market share. Still, Apple always catered to the pro on some level.

For instance, it introduced the beefy X-serve in 2002, which was wicked-powerful, offering single or dual processors, lots of I/O and storage, a mixture of new and legacy card slots, and much more. Basic configurations started at \$2,999. It was discontinued in January of this year. Apple recommends users substitute the laughingly diminished Mac Mini Server running Lion Server software in its place; it costs around \$799.

A little more than a decade ago, Apple introduced Final Cut Pro (\$1,299), which over time became the favorite of indie and pro editors worldwide and competed heavily with Avid's Media Composer. Apple released Final Cut Pro X this year, and it was soundly panned by the pro community. FPCX (\$300) lacks key features aimed at pro use, and it will not open projects saved from past versions of FCP. Apple clearly made the move toward the broader sales appeal, aka the "new" video pro who creates content for the Web. It makes sense from a business standpoint—there are a lot more potential customers—but what about the pros who still need a high-end platform?

Apple bought emagic in 2002, and through a series of version releases rewrote the software, raising the roof on features and included extras. Today, for \$599, Logic Pro comes with the MainStage, Soundtrack Pro, WaveBurner and Compressor utilities, no slouches in

their own right, plus an impressive range of Apple Loops, instruments, processors and more. It's been two years since a major upgrade, and I wonder where Apple will position this product in its portfolio when Logic 10 releases: Will it be a GarageBand Pro? Like FCP, Logic catered to the pro market, but will it continue?

Now let's take that approach into hardware. One of the headlines that has been above the crease is that the PC age is over. DisplaySearch's 2011 Quarterly Mobile PC Shipment and Forecast Report shows that Apple killed the competition with a 21.1-percent share of market, with HP trailing at 15 percent, Dell at 11.6 percent, Acer at 10.9 percent and Lenovo at 7.5 percent. What's behind these numbers tells a different story: The report tallies shipped products, not sold ones. Apple's closest competitor, HP, is getting out of the hardware PC business altogether, blowing out its TouchPad tablet for \$100. In August 2011, Dell cut its 2012 revenue-growth figures, sending its stock south 10 percent, and Acer recently reported its first quarterly loss and did not expect to break even in 2011. Also remember these are mobile PC products (pads, laptops and phones), with the emphasis on consumer. If you can't make it in the consumer sector, you're not going to make towers for the pros.

You can't blame Apple for looking forward and going for the bigger brass ring. With the competition in shambles and Apple selling function in deference to tech-y features on its hardware, is this the end of the PC era? Steve Jobs himself told All Things Digital: "I think PCs are going to be like trucks: Less people will need them. And this transformation is going to make some people uneasy...because the PC has taken us a long way. They were amazing. But it changes. Vested interests are going to change. And I think we've embarked on that change. Is it the iPad? Who knows? Will it be next year or five years?...We like to talk about the post-PC era, but when it really starts to happen, it's uncomfortable."

As I write this, the ink on Steve Jobs' resignation is less than 24 hours old. Despite the stock taking a small hit the first day, this is still Apple's world and we're living in it. Will Apple bail on Thunderbolt? USB? Optical drives, hard drives and slots in favor of the Cloud? Wherever the company goes, it will mean we will have to adjust. New products will have to be conceived for our limited pro market. Not that we were ever the center of the computer-maker's universe, but we at least had a corner of it. We should see over the next year whether we are being brought back to the table.





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