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EDUCATION ISSUE

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2012 DIRECTORY

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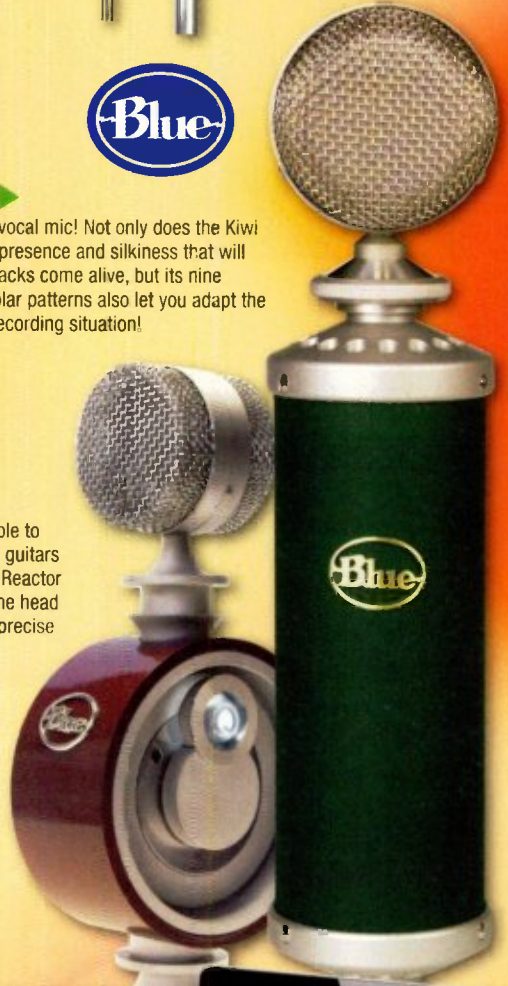
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FEATURES

28 Neil Young's Moonlit Sessions



34 Gotye Live at Red Rocks

78 Tape Emulation Plug-ins

SPECIAL SECTION: EDUCATION

40 An Open Letter to Students

42 Where the Jobs Are
BY BARBARA SCHULTZ

MUSIC



13 **The Wallflowers Come Roaring Back**

BY BLAIR JACKSON

16 **News and Notes**

18 **Classic Tracks:**
Eddie Money's
"Two Tickets to Paradise"
BY BLAIR JACKSON

50 Studios for Students
BY MIX STAFF

52 2012 Education Directory

LIVE

23 **Tour Profile: Missy Higgins**

BY BARBARA SCHULTZ



24 **News and Notes**

26 **All Access:**
Esperanza Spalding
BY STEVE JENNINGS

DEPARTMENTS

6 from the editor

8 current

12 **On the Cover:**
Wisseloord Studios

106 marketplace

109 classifieds

TECH

88 **The Robair Report:**
Becoming "Ready Now"

90 **Ask Eddie:**
Audio Education

92 **New Products**

96 **Review:** Universal Audio
Apollo 

100 **Review:**
Focal SM9 Studio
Monitors

102 **Review:** Aphex Channel

104 **Review:** MXL CR30
Microphone

112 **TechTalk:**
Your Career Begins
Before School
BY KEVIN BECKA

On the Cover: The API Vision forms the centerpiece for the all-new Studio 2 at Wisseloord, part of a facility-wide restoration/rebuild of the classic Netherlands studio complex. Monitoring is by PMC, converters by Prism, cabling by Grimm, and yes, there is Pro Tools. Photo: Benny De Grove.

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TAKE CHARGE OF YOUR EDUCATION

Two of *Mix's* monthly columnists are full-time educators. Technical editor Kevin Becka cut his engineering teeth in the 1980s and '90s in Los Angeles, then moved to Nashville, and has been director of education at the Conservatory of Recording Arts & Sciences in Phoenix for 10 years now. Eddie Ciletti, our resident analog/electrical fix-it man, is an ex-pat from the 1980s-'90s New York studio era when maintenance was king. He now teaches at two Minneapolis-St. Paul schools, MMI and IPR, both founded by the late, great Tom Tucker. I am a former faculty brat, son of a professor and brother to a professor. One of *Mix's* early directories, from the late 1970s, was a listing of recording programs in North America. We talk about education, we care about education, and, quite frankly, we're just a little bit concerned.

It's not the worry about jobs. There are audio-related jobs out there for students who distinguish themselves. Good people can get good jobs, in any market, any economy. And it's not our concern that the market is disappearing. We've seen the loss of the traditional assistant-engineer-in-the-studio path, yes, but we've also witnessed the emergence of dozens of new job titles, related to gaming, mobile, on-demand entertainment, live event streaming and so many other niches and specialties. And we're not worried that there are simply too many recording schools, a decade-long expansion fueled largely by easy access to federal loans and now affecting enrollments across the board. That's economics. All schools are businesses, and markets are cyclical. Public or private, the good ones, the innovators, will survive, and the poor ones will fold.

No, we're worried about the students. Or, rather, we're worried for the students. The daily news is dire out there: high unemployment, few prospects at the entry level, huge student loans, unpaid internship in the hope of a job. The five-year plan to rise above minimum wage while bartending at night. We want to shake them and say that it's not that bad! There are jobs if you look for them! Deal with it! Work for it! Be creative! And don't give up!

Building a career in audio can be tough, yes, but so can becoming a lawyer or a plumber, a doctor or a teacher. There will always be jobs for those who excel in class, but there will be careers for those who exhibit the intangibles, the kinds of things a school can't teach. As both Becka and Ciletti point out this month, they come across a handful of students each year who have the interpersonal skills, the smarts, the humility and the drive to succeed—no matter what career they choose. As Becka says, "I would hire them even if they didn't know a thing about audio. I can teach them about signal flow and mic placement. We can't teach them to be who they're not."

So much of a college education—liberal arts, business or technical/trade—takes place outside of the classroom, even outside the studio or lab. We learn to work with people by being around people; we learn to complete projects by learning how to budget time; we learn to solve problems by meeting challenges head-on. No potential employer is going to expect a Grammy Award-winning engineer or a patent-creating product designer to walk out of graduation and into their company.

But they will take a chance on a young man or woman who shows a desire to learn long after they leave school. And they will take a chance on someone who continually shows drive and competence, confidence and humility. Schools can provide the knowledge. It's up to the student to bring the desire.



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Current

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Berklee Names Michael Bierylo Chair of Electronic Production and Design

Berklee College of Music in Boston has named Michael Bierylo (pictured) chair of the college's Electronic Production and Design Department (EPD). Bierylo—an electronic musician, guitarist, composer and sound designer—has been a Berklee faculty member since 1995. In his new role, he intends to embrace advances in videogame design, software development, and all aspects of computer music and video performance.

"Music technology is a moving target, and while new trends tend to disregard what precede them, EPD looks to celebrate all avenues and vintages of electronic expression," Bierylo says. "We look to both analog and digital systems, lo-fi and hi-fi. Our students design software for iPads and hack Speak and Spells. They create thumping dance tracks, interactive audio-visual installations, and inspired sonic landscapes for videogames."

Bierylo's commercial work includes music and audio production for Hasbro Interactive, the Smithsonian, Nickelodeon and the Oxygen Network, as well as music and sound design for the Incredible Hulk Roller Coaster at Universal's Islands of Adventure. As a composer, Bierylo's work has been featured on A&E's *Biography*, the Learning Channel, and Martha Stewart Living. Recent projects include work on the films *Granito*, *The Reckoning* and *Traces of the Trade*, all featured at the Sundance Film Festival.



AES Returns to San Francisco

Taking place October 26 to 29, the 133rd AES Convention (aes.org/events/133) will welcome thousands of audio industry professionals to San Francisco's Moscone Center and present expert panels, workshops, tutorials, papers, special events, and manufacturer exhibits addressing an abundance of creative and technical issues. Over the past few months, co-chairs Valerie Tyler and Jim McTigue have unveiled the details of the 2012 programs developed by members of the planning committee, who began meeting in January.

New this year, the Networked Audio Track was originally chaired by Nathan Brock, who passed away during the summer. "Before his untimely death, Nathan Brock was an international leader in the field of networked audio," McTigue says. "We mourn his loss, but his collaboration with [new chair] Tim Shuttleworth will stand as an invaluable addition to the AES Convention. Shuttleworth is a master engineer with a special focus on high performance analog and networked audio." Networked Audio Track Workshops include Audio Network Device Connection and Control, The Unified AV Network (a discussion of the AVnu Alliance, a consortium of audio and video product makers and core technology companies), Interoperability Issues in Audio Transport Over IP Based Networks, Open IP Protocols for Audio Networking, and more.

The 133rd AES Convention also introduces a dedicated Sound For Picture Track, co-chaired by Brian McCarty and Steve Martz. "Our objective is to adopt a consistent approach for Digital Cinema sound installations, and contemporary digital dubbing stage recording and mixing activities worldwide," McCarty says.

A new Project Studio Expo will offer two days of clinics on operating a small studio.

The "Mastered For iTunes" initiative will be the subject of a Platinum Mastering event moderated by Bob Ludwig of Gateway Mastering, in which pan-

133rd AES Convention planning committee



elists will discuss Apple's higher-fidelity AAC encoding format for consumers and dispel the process for mastering and recording engineers.

Broadcast/Streaming Sessions, chaired by David Bialik, offer panels on formats and playback systems, loudness and metadata (Living with the Commercial Advertising Loudness Mitigation Act), facility design, and IP in the mobile environment. Steve Martz of THX Ltd. chairs the Game Audio Track, which looks at building an AAA title, game audio in a Web browser, mind controlled interactive music, new models for game audio education, careers in game audio, new techniques in generative audio, and getting into sound design. The Product Design track will present a commercial audio processing suite developed to enhance the sound of devices such as laptops, tablets, and mobile phones, and a tutorial that will outline future audio trends for portable consumer devices.

Tutorial sessions chaired by Vene Garcia and Mike Wells will cover topics ranging from small room acoustics and mastering for vinyl to social media for engineers and producers, while highlights of the workshop program, co-chaired by David Bowles and Jeffrey McKnight, include "mini-tracks" on digital and 3-D cinema sound, loudness and the Height Channel. Finally, technical tours will visit San Francisco Bay Area audio landmarks, while historical events will examine the technical evolution of RCA Victor Studio, and more.

For more information, visit the AES Calendar of Events at aes.org/events/133/calendar/calendar.cfm.

Pete Townshend, Rose Mann Cherney To Be Honored at TEC Awards

Legendary lead guitarist and principal songwriter for The Who, Pete Townshend (pictured), will be presented with the prestigious Les Paul Award at the 28th Annual Technical Excellence & Creativity Awards on Friday, January 25, 2013, at the Anaheim Hilton during the 2013 NAMM Show. Sponsored by the Les Paul Foundation, the annual Les Paul Award honors individuals or institutions that have set the highest standards of excellence in the creative application of audio and music technology. Russ Paul, son of Les Paul, will make the presentation to Townshend on behalf of the Foundation.

Also on Friday, January 25, the TEC Foundation for Excellence in Audio will induct Record Plant Studios President Rose Mann Cherney into the TEC Awards Hall of Fame. Mann Cherney has been responsible for Record Plant's overall operation as well as maintaining its stellar reputation as one of the world's top recording studios.

"Her focus has always been all about technical excellence combined with the service level of a 5-star hotel, a formula that has kept Record Plant on top for many years," says Record Plant CEO and owner Rick Stevens. "Rose has had a profound influence as a studio executive and has literally changed the way modern recording studios operate. She's broken ground as the first female president of a major recording studio, but it's always been about the way she treats each client and her uncanny ability to build the team to serve them. Many major figures of the music industry got their start as a Record Plant runner or junior engineer, and Rose showed them the way. We are proud of Rose and her achievements and are honored to call her the First Lady of the legendary Record Plant."

Proceeds of the ceremony provide scholarships for students of the audio arts and sciences, and support programs promoting safe hearing in the music environment. For more information on the TEC Awards, go to tecfoundation.com. Visit the Les Paul Foundation at lespaulfoundation.org.



Photo: Ross Halfin



Photo: Karen Dunn

An AES Education

By John Krivit

At the end of this month, thousands of audio professionals from around the world will descend on San Francisco to present research papers, agree to new technical standards, share recent technologies and to witness an amazing exhibition of the latest audio products and services. Among the participants will be a vibrant crowd of motivated college audio students who are there to take part in an illuminating collection of workshops, tutorials, technical tours, presentations and competitions.

The 133rd Convention of the Audio Engineering Society (October 26 to 29) might not be your first experience with this 64-year-old organization, but for the record number of 4,000-plus AES student members, it will offer



an exciting glimpse into a new world of audio.

What kinds of opportunity awaits? Seminars and workshops on everything from "Careers in Game Audio" to "Small Room Acoustics," and Recording and Design Competitions in which students can get noticed while receiving priceless feedback from the best in the business. As we did last year in New York City, the AES Education Committee will be partnering with SPARS to offer a unique opportunity for students to make connections with industry pros at the SPARS Speed Mentoring Event. We're even hosting a great party for students at one of the biggest and baddest studios in the San Francisco Bay Area.

AES has a long history serving the recording community and this year, we're introducing a Project Studio Expo, which brings the latest techniques, tools and experts together for professional training on topics ranging from optimizing small spaces to microphone placement, mixing and mastering.

So, if you know someone who is just starting out in the audio world, please send them to www.aes.org to find out more.

I'll see you in San Francisco.

John Krivit is the AES Education Committee Chair.

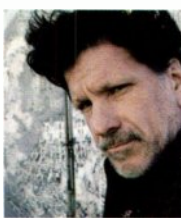
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Robair Report

In an exclusive interview, prolific ambient music composer and performer Steve Roach shares his thoughts on maintaining a creative balance when recording and engineering your own projects.

blog.mixonline.com/mixblog/category/robair_report



Ask Eddie

Teaching has been a remarkably rewarding experience; certainly, it has given back more than I would ever have expected. After eight years, I've got a few scars but have mostly succeeded—not only in my mission to share what I know, but surprisingly, I have gained a deeper understanding of the science behind the art.

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Kasey Chambers and Shane Nicholson:
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If you didn't know who made this album and where it was recorded, chances are you'd guess it was done in Appalachia or Nashville or some other Southern locale.

This is original old-time music at its finest, direct from...New South Wales, Australia! Australian singer Chambers has built a small but devoted following in the U.S. over the past dozen years and counts rootsy American artists ranging from Emmylou Harris to Buddy and Julie Miller to Lucinda Williams as avid fans. *Wreck and Ruin* is the second album she's made with her husband of seven years, Shane Nicholson.

>>mixonline.com/cool-spins



SoundWorks Collection Update

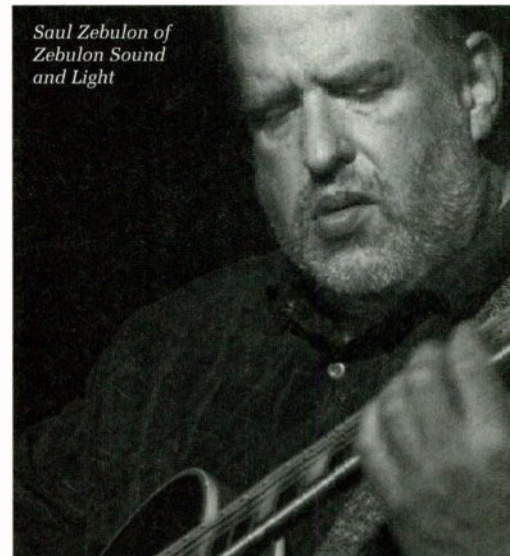
Chuck Michael and Craig Henighan

The SoundWorks Collection recently featured re-recording mixers Chuck Michael and Craig Henighan regarding their work on the Dolby Atmos mixes of *Chasing Mavericks* and *Taken 2*. Both mixes were recently completed in one of the largest screening rooms in LA, the Zanuck Theater at 20th Century Fox Studios which were recently outfitted with the Dolby Atmos system.

>>mixonline.com/post/features/video_soundworks_collection

PopMark Media Update

Saul Zebulon of
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By day, it's a an eclectic, full-service recording studio equipped to record and produce music for clients in a relaxed, inspiring studio setting. By night, it's a popular performance space that provides musicians and artists with a unique place to perform and display their work. In this edition of "Confessions of a Small Working Studio," the spotlight is on Zebulon Sound and Light in New York City's Chelsea neighborhood. Owned and operated by renowned jazz guitarist and producer Saul Zebulon, Zeb's, as it is known, has become a hot spot for local jazz vocalists and fans, alike. Find out what it takes to run this successful multi-faceted business.

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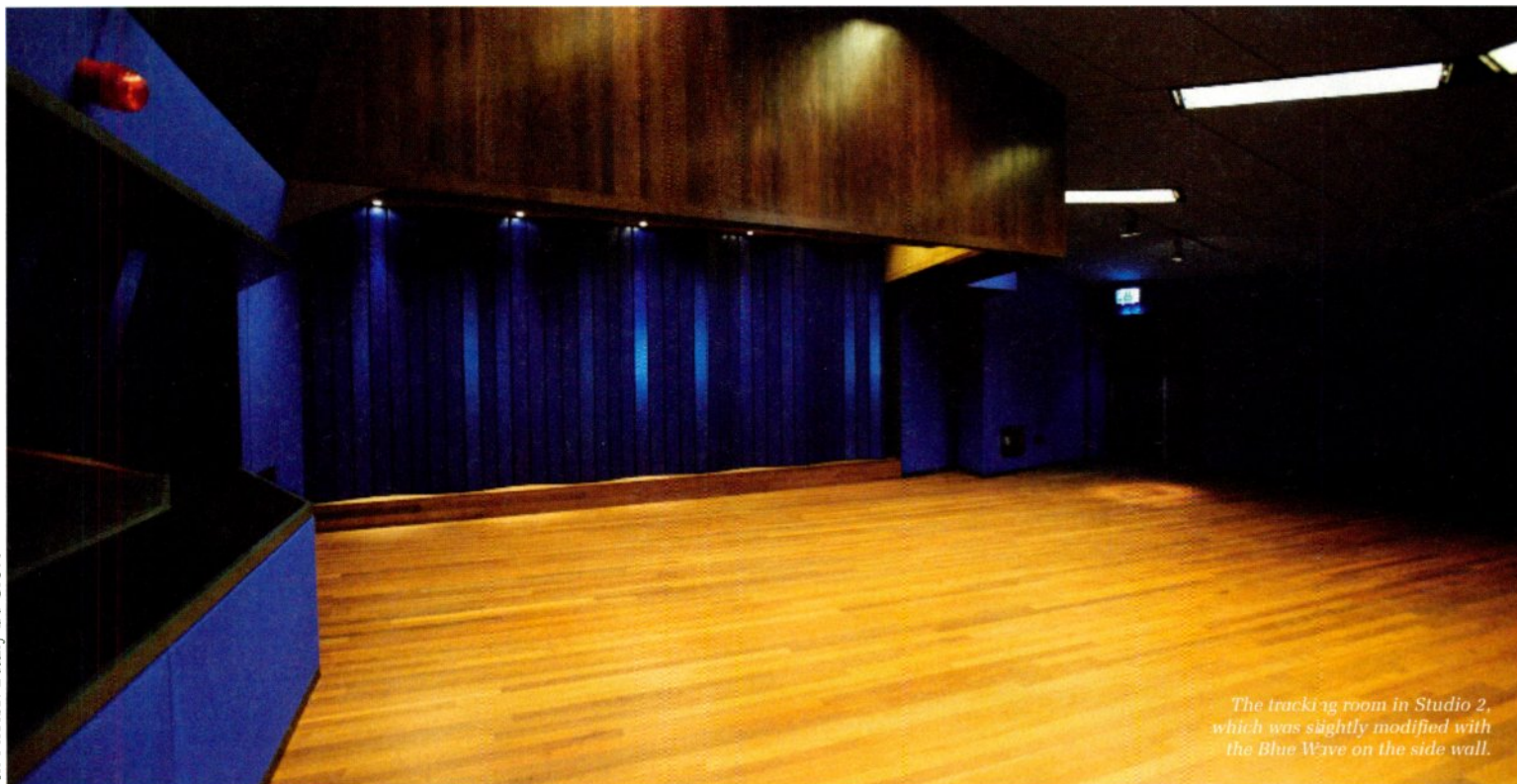


On the Cover

By Tom Kenny

WISSELOORD STUDIOS

CLASSIC FACILITY RETOOLS FOR THE NEW MUSIC BUSINESS



All Photos: Benny De Grove

The tracking room in Studio 2, which was slightly modified with the Blue Wave on the side wall.

Reboot, reinvention, makeover, rejuvenation, 2.0. These are words that get tossed around so much these days that it's sometimes easy to lose sight of real transformation, the kind that involves a company embracing its heritage and simultaneously reimagining its future, and then really making the change. Two years ago at the San Francisco AES, the principals of Wisseloord Studios, the world-renowned facility in the Netherlands, announced the beginning of their transformation. This month we're back in San Francisco for AES, and the new Wisseloord Studios is up and running and booking time; that's Studio 2 on our cover.

Considering the challenges facing today's commercial studio market, the Wisseloord story seems rather improbable. The brief version: Opens in 1979,

owned by Polydor/Polygram; creates a legacy and mystique with clients like the Rolling Stones, Elton John, the Scorpions, U2 and hundreds of others; changes ownership a few times over the ensuing decades, fails to maintain equipment, loses some key people, loses its luster; enters first stage of bankruptcy in 2009, with rumors of pending equipment liquidation. For all practical purposes, that should have been the end of the story. This was 2009, after all.

At the time, Ronald Prent, who began as an assistant at Wisseloord in 1981, and Darcy Proper were lead mixer and mastering engineer, respectively, at Galaxy Studios in Belgium. For a few years, Prent had been conceptualizing a new studio business model. Not drastically new, but built for the new music industry and involving everything from artist management to media delivery, picture and sound.

It had to be a full-service, track-to-distribution facility, and it had to involve business development, both for emerging artists and emerging technologies/formats. It had to offer the highest-quality equipment, and it had to be a place where people want to be creative.

Then, he and Proper hooked up with Paul Reynolds, a man with a creative mind, solid business sense, a nose for financing, and a track record for developing cutting-edge formats and facilities. Within a year, the three partners had their plan and the financial backing, and soon after, Prent contacted Jochen Veith, a Munich-based designer/acoustician whose work he had admired throughout Europe.

Continued on p. 84

MUSIC

THE WALLFLOWERS

By Blair Jackson 13

IRIS DEMENT

By Barbara Schultz 14

NEWS AND NOTES

By Mix Editors 16

CLASSIC TRACKS:

EDDIE MONEY

By Blair Jackson 18

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L to R: Jakob Dylan, Greg Richling, Jack Irons, Stuart Mathis, Rami Jaffee

THE WALLFLOWERS

Jakob Dylan & Co. Come Roaring Back With *Glad All Over*

By Blair Jackson

It's been seven years since The Wallflowers put out an album of new material. During the interim, leader Jakob Dylan made acclaimed solo projects with Rick Rubin (*Seeing Things*) and T Bone Burnett (*Women + Country*), and there were Wallflowers tours in 2007 and 2009, but Dylan acknowledges, "I was anxious to be back with the guys and make a Wallflowers record. I felt if I was going to make more of a rock 'n' roll record, there was no purpose for me to do that except with The Wallflowers. We were getting along during our

break, and there was no reason to replace them with another band—I'd probably try to make them sound like The Wallflowers."

Founding keyboardist Rami Jaffee returned to the fold after his own several-year hiatus, and bassist Greg Richling, who'd been with the band since their first tour in 1992, was also onboard. Guitarist Stuart Mathis was with the group on its last couple of tours and is now a full-fledged member. The only new addition is drummer Jack Irons, who was the original drummer in the Red Hot Chili Peppers, and also has played with Pearl

Jam, Eleven, Les Claypool's Frog Brigade, Joe Strummer and others.

The group's superb new album, *Glad All Over*, was recorded in a month at Dan Auerbach's Easy Eye Studios in Nashville, with Collin Dupuis engineering and Jay Joyce producing. Rich Costey mixed the album. Joyce already had a connection to the band—the much in-demand musician/producer/composer/engineer played guitar on The Wallflowers' multi-Platinum 1996 album, *Bringing Down the Horse*, and the follow-up, *Breach*, and had stayed in touch with Dylan.

THE WALLFLOWERS GLAD ALL OVER



“When we were starting this record and talking about who to work with, his name kept coming up,” Dylan says. “His name is on the top of a lot of people’s lists. If that’s going to satisfy record company people and I know I can work with him, that’s great—I don’t have to break in somebody new. And he’s actually a part of our sound. [The Wallflowers’ hit] ‘One Headlight’—that’s Jay Joyce. He’s a killer guitar player. He and Stuart Mathis really bounced off one another so well. They hadn’t played together before and they play wildly different styles, but we could tell that they were going to have something together that was going to become quite a bit of the foundation of the record.”

Though the album was ultimately tracked almost entirely live through Easy Eye’s 16-channel Quad Eight board, getting to that point wasn’t so easy. Joyce remembers, “Jakob came to Nashville and we sat down and I asked him to play me a song, but instead he pulled out this 2-inch-thick notebook. ‘This is what I’ve got. Let’s play some grooves and throw it around.’ I thought, ‘Wow, that’s kind of scary, but it’s exciting.’ So we didn’t really know going in what we were going to do.

We had no songs, no demos. It was all developed in the studio. I think Jakob always has some songs floating around up there, but there was nothing written in stone. And the process was crazy because we didn’t have a lot of time—a month! A week into it was I like, ‘Oh, my God, we’ve got nothing!’ So there was a lot of waiting and trusting that it was going to come, and then things started falling together.”

“It was a hunch,” Dylan adds. “Musically, I didn’t want to spend a lot of time stretching out looking for interesting chord patterns. I thought the band knew what they were doing. I wanted to create these songs together. In the past,

I might bring in 15 songs already completed with intros and outros and bridges. I’ve done so much of that work on my own, which I was cool with doing, but it also denies the band a lot of opportunities. One of the things we all agreed upon was let’s do it the way we did it when we started out in 1992, which is: We had a rehearsal space and we got in there and made songs.”

Joyce: “It started out as just jamming on grooves, pretty much, and some songs evolved from jam sessions that we would speed up or slow down—‘Oh, that’s the right pocket for that lyric.’ A lot of it was in-the-moment working on the right canvas for Jakob to try lyrics out on. He was bouncing around trying lyrics from different songs. We’d find a hook and build from there. Once we had the song together, it sometimes would take a day or two to get the right take, but once we did, most of the work was done.”

The producer describes Easy Eye as “an old-school studio designed for live recording—lots of bleed, lots of bass in the kick drum mic, drums in the bass mic, guitar everywhere, organ everywhere. It’s a great rock ‘n’ roll room and basically we made a record the way people used to make records.”

The result is the band’s best work since *Bringing Down the Horse*. *Glad All Over* contains some of Dylan’s most evocative mood pieces and character studies, and the band—with Joyce right in there with them—rocks harder than ever, but also brilliantly conveys the dark mystery at the heart of so many of their finest songs. ■

IRIS DEMENT'S SING THE DELTA



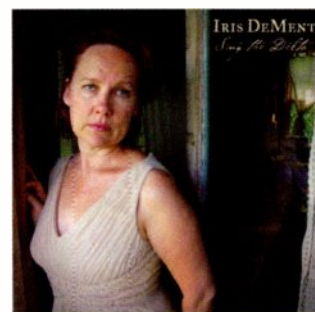
Iris Dement says that after 16 years without making an album of her own songs, she wasn’t sure it would happen again. “Songs would come along here and there, and I’d go out and sing them for people, but for a long time I just didn’t know what would become of any

of them,” she says. “Then last year, a door kinda opened up, and a handful of songs walked through and a few unfinished ones came together and I knew I had a record.”

Sing the Delta is the result, and it’s as strong and beautiful as any of the other albums this unique country/gospel artist has made.

“As they say, she brought it,” says engineer Richard McLaurin, who tracked most of the songs on *Delta* at House of David in Nashville (a few were recorded by Adam Bednarik). “She tracked mainly on piano, and I would say 98 percent of what’s on the record is what went down live.”

McLaurin used a couple of different vocal mics on Dement: “It was probably 50/50 between the [Shure] SM7 and [AKG] C12,” he says. “Sometimes she wanted the freedom to move around, and the C12 allowed her to throw her head back and wail. If a song was more intimate, she stayed right on the mic, which you would have to do with an SM7.”



Both mics went to a pre in the 1972 API console, and to a UREI 1176 and a vintage LA2A. Co-producing with Dement were guitarists Bo Ramsey and Richard Bennett, both of whom also played on the sessions. McLaurin recorded to Pro Tools and mixed to half-inch analog via the vintage API.

“I’ve got some homemade Neve line amps that I made that are such a good complement to the API,” McLaurin says. “When I’m mixing, I’m almost always inserting those into the stereo bus.”

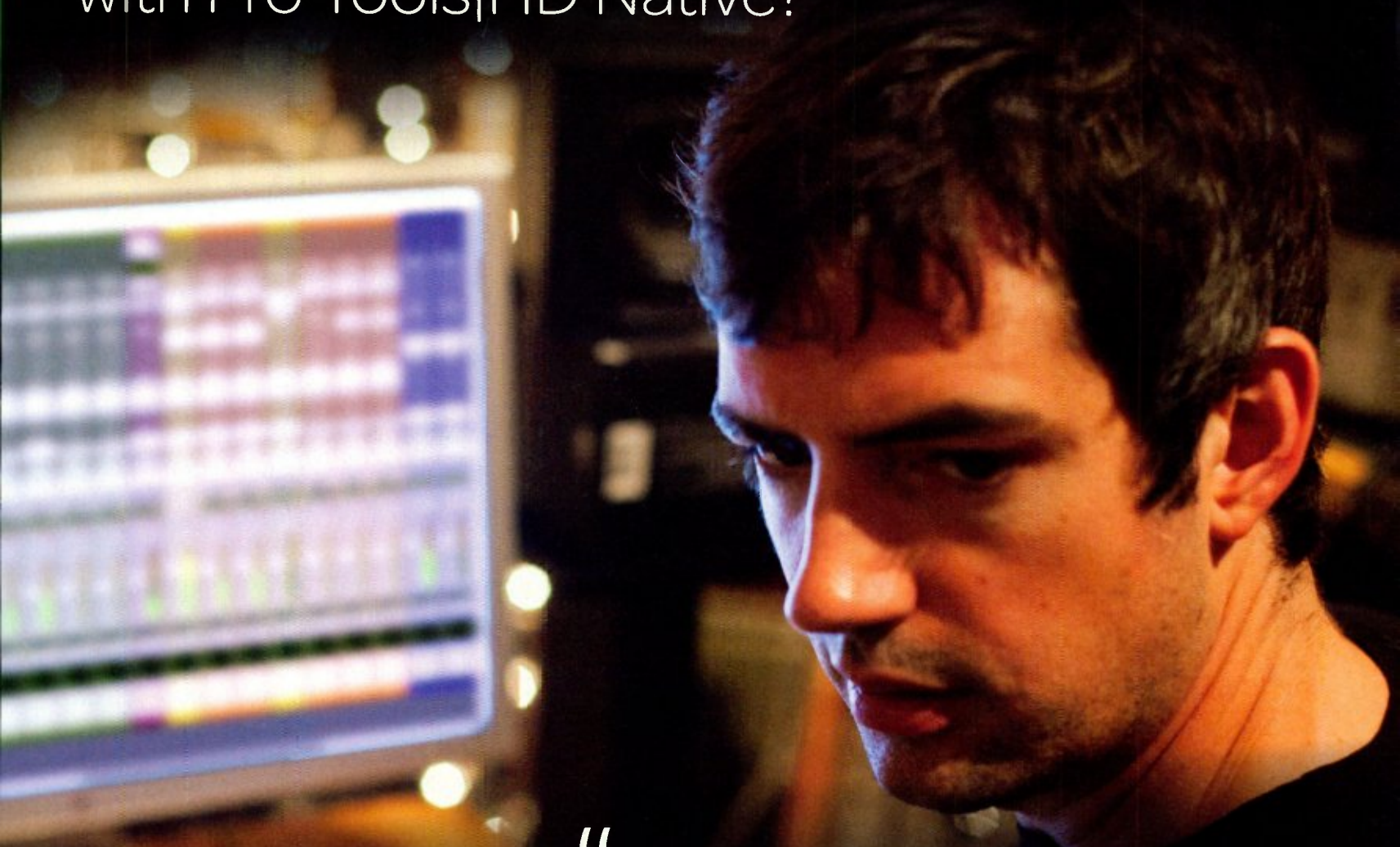
—Barbara Schultz

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Read more from Jakob Dylan and producer Jay Joyce at mixonline.com.

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PRESERVATION HALL JAZZ BAND'S 50TH ANNIVERSARY

Ben Jaffe grew up listening to the soulful sounds of the Preservation Hall Jazz Band. Today, Jaffe—the son of the Hall's co-founders Allan and Sandra Jaffe—carries on his parents' legacy as creative director, performer and a co-producer of the *Preservation Hall Jazz Band 50th Anniversary Collection* (Sony Legacy). Working with engineer Earl Scioneaux III and mastering engineer Bruce Barielle, Jaffe and co-producer Michael Cuscuna (Mosaic Records) selected, restored and remastered four discs of music, including five previously unreleased tracks that were discovered in the aftermath of Hurricane Katrina.

"Several months after the storm, I went to Sea-Saint Studios, which is where my father recorded four Preservation Hall albums for Columbia," Jaffe says. "The studio itself was destroyed. A wave of water had literally come through and washed the studio into the street. I found the Preservation Hall masters in the tape vault. Amazingly, they were two inches above the water line. The only damage they had was from not being temperature-controlled for a long period of time. We baked the masters and dumped them down to Pro Tools sessions."

All of the source material—2-inch 16-track tapes, ¼-inch 2-tracks, DATs



and digital files—were transferred to Pro Tools, and mixed and mastered for level and clarity. "My thought was this collection should be the ultimate Preservation Hall mix tape," says Jaffe, who also appears on a live concert album celebrating the group's 50th, *St. Peter & 57th Street*. "I wanted every disc to touch on every decade, and each song to lead the listener into something else. That presented a challenge when we were mastering—getting it sonically to a place where it wouldn't be jarring to go from track to track—but that's how we approached it, and I think listeners will appreciate that they're going to get a really enjoyable four-and-a-half hours of music, which to me is the length of a great dinner party."

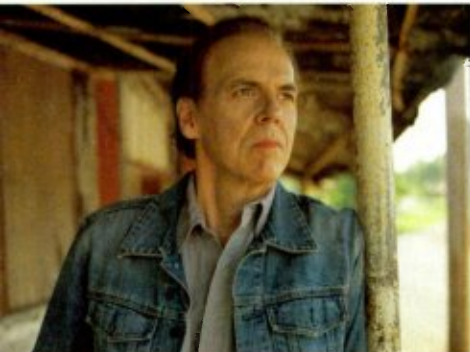
—Barbara Schultz

JOHN HIATT PLAYS MYSTIC PINBALL

John Hiatt's latest, *Mystic Pinball*, was recorded by engineer Leslie Richter in Ben's Place, Ben Folds' Nashville studio, the former RCA Studio A. Revered rock producer/engineer Kevin Shirley (Aerosmith, Joe Bonnamassa, Iron Maiden) led the live-in-the-studio

band sessions. At the core of the sound were hard rocking electric guitars by Hiatt and Doug L a n c i o , w h i c h Richter says Shirley captured with a

custom guitar amp mic designed to his specs. Hiatt's vocal went to a Shure SM5, which Richter says is "an old broadcast mic; it's like SM7 with a little bit more excitement. Sometimes when John would play acoustic and sing, we would put mics around him as if they were standing there listening to him play—not really a direct vocal mic and a direct acoustic mic, but more like mics around him, as if the mics are the listeners."—Barbara Schultz



AUTUMN OWLS TAKE FLIGHT

Ireland's atmospheric indie-rock trio Autumn Owls are set to release their first full-length album, *Between Buildings, Toward the Sea* October 23 on Epitonic. Gary McFarlane (vocals/guitar), Adam Browne (bass) and Will Purtill (drums) enlisted producer Brian Deck and mixing engineer Ciaran Bradshaw to help create the rich textures and sometimes soothing, sometimes haunting sounds of their debut LP.

Deck, working at Engine Studio in Chicago, recorded the band to Pro Tools 24-bit, 88.2kHz. "I'm done with tape," Deck says. "I haven't heard any tape that sounds as good as 456 used to. And really, anyone who romanticizes the 'sound' of tape didn't spend the first 12 years of their career trying to get it to give back what you put in."

The album opens with "Semaphores," delivering spacey, haunting vocals. "In the intro of the song, we treated the vocal with the same processing that the band used on their demo," Deck says. "The distortion comes from the SansAmp plug-in and the ambience comes from the DigiRack Non-Lin Reverb. I used two reverse reverbs: One short mono plate and one longer stereo hall, both made with AltiVerb by reversing the vocal track, printing the reverb and then reversing the reverb and lining it up with the original vocal track. The process is really exactly the same as what we used to do with reels of tape."

Bradshaw adds, "For the start of the track, we distorted the vocal track quite heavily and then filtered it through an MS-20 synth before recording it back in to Pro Tools. This track stays in for the whole song at various levels. When the drums kick in, a cleaner vocal comes in over the top."

With regard to the song's eerie tone, McFarlane adds, "We got the sound for the intro by jamming a small mic inside my 12-string guitar," McFarlane adds. "One of us held the chord and the other struck the body of the guitar with a mallet. The guitar has a big jumbo body so the hum really resonates. We then slowed down the sound and lowered the pitch. The result is a really eerie organ-like sound that runs right through the song."—Lori Kennedy



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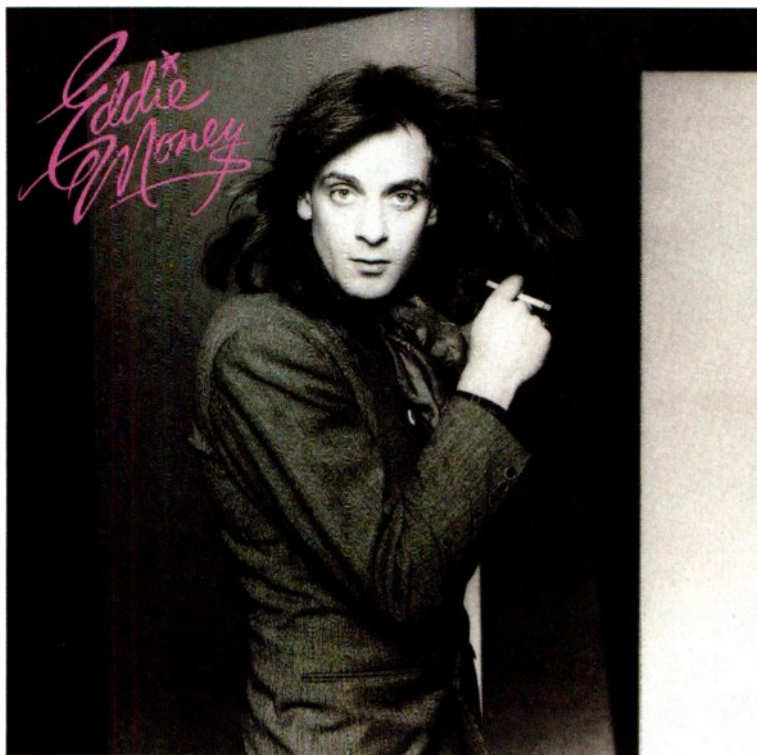
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Classic Tracks

By Blair Jackson



EDDIE MONEY “Two Tickets to Paradise”

Eddie Money burst onto the scene at an interesting time. The new wave was in full flower, with countless bands drawing on '50s rock 'n' roll, the British Invasion and various strains of R&B, mixing them with punk energy. At the same time—late 1977, early '78—commercial juggernauts such as Fleetwood Mac and The Eagles were sometimes combining bright melodies with slashing guitars more identified with hard rock. A third popular strain was the blue-collar rock of Bruce Springsteen, John Cougar Mellencamp and Bob Seger. Eddie Money drew from all those worlds.

The Brooklyn-born son of a New York City policeman, Eddie Mahoney was on the road to becoming a cop himself when his love of music and his embrace of the countercultural lifestyle prevalent in the late '60s, led him to leave the East Coast and relocate in Berkeley in 1968. It wasn't long before he'd become “Eddie Money” and was fronting a succession of groups who plied their trade at long-gone nightclubs such as the Longbranch Saloon and the Keystone Berkeley. Eddie was a natural—confident and charismatic, with a classic, slightly raspy voice perfect for rock

and soul tunes, but which he could also smooth out to sound vulnerable for ballads. He grew up digging the Beatles, Stones, Kinks, Motown, Otis Redding, James Brown and the blue-eyed soul of the Young Rascals, and he brought traces of each of them to the stage as he developed his sound.

He was “discovered,” if that's the word, at one of Bill Graham's Tuesday night Sounds of the City local band showcase concerts at Winterland in San Francisco in the fall of 1976. He signed with Graham's newly formed management company, Wolfgang Productions, which also handled Santana, then signed a deal with Columbia Records, and in the summer of 1977 was shipped down to Los Angeles' Record Plant to cut his first album.

“I waited a year—we had a lot of trouble with it,” Eddie told *BAM* magazine in the fall of '77. “Bill Graham said it was like the Hundred Years War getting a record out of me, but I wasn't ready to go with whoever they felt like putting me with. I think it was just fate from God that I got [producer] Bruce Botnick.”

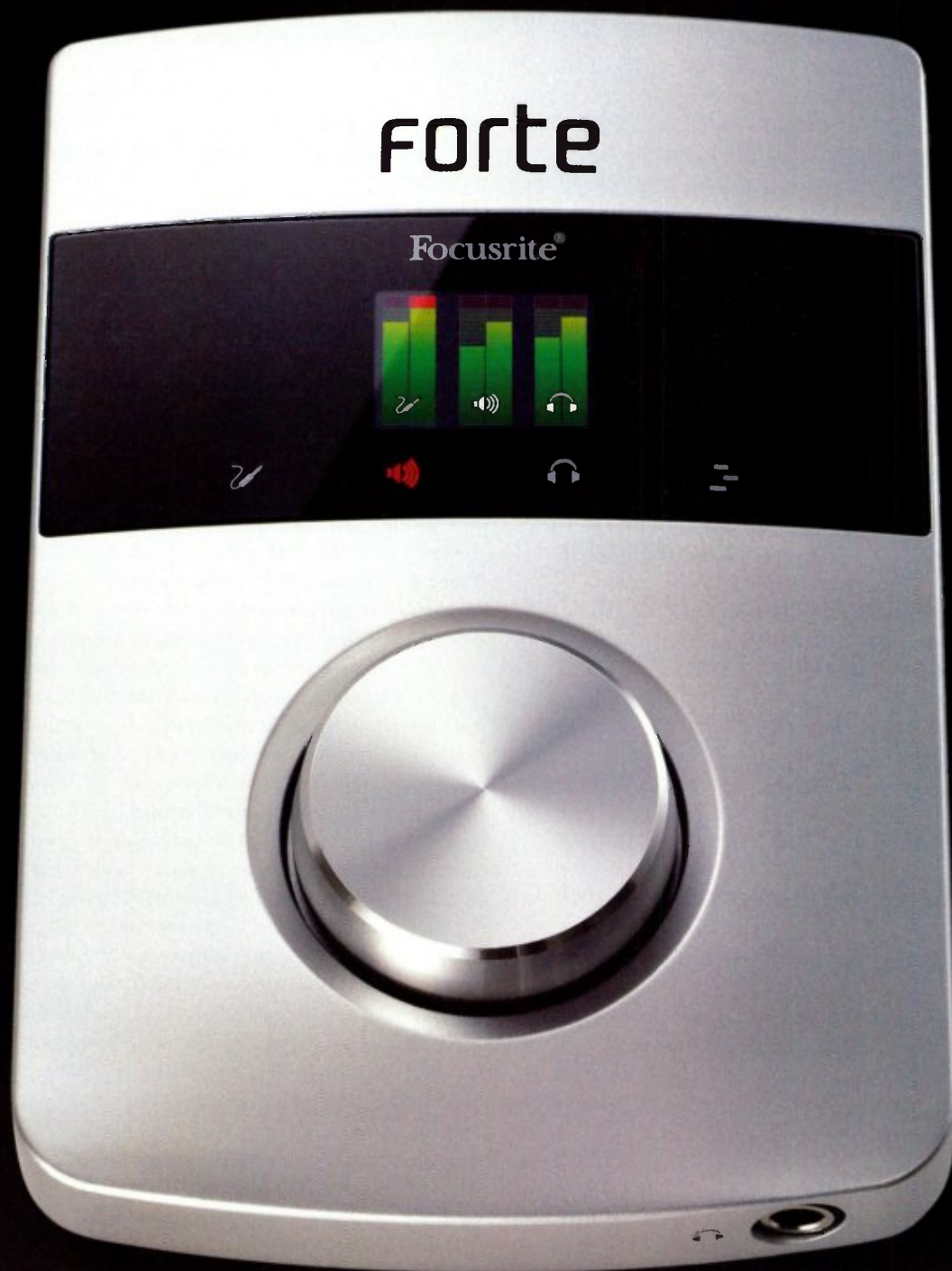
Or the intervention of Columbia's A&R department working in conjunction with Wolfgang Management's Mick Brigden. Botnick already had amassed stellar credentials during many years working at Sunset Sound and other L.A. studios—he was an engineer on the Beach Boys' *Pet Sounds*, all The Doors' albums (he also produced *L.A. Woman*), and acts as varied as Dave Mason, Weather Report, John Sebastian and the Paul Butterfield Blues Band. In 1977, he was working as a staff engineer for Columbia in L.A.

“Right next to my office at Columbia was Ellen Bernstein [A&R], and Eddie was her artist,” Botnick remembers. “One day she said, ‘I've got this great new artist—why don't you listen to it and see if you're interested.’ I immediately heard ‘Two Tickets to Paradise’ ‘Baby Hold On’ and ‘I Wanna Be a Rock and Roll Star,’ and I thought it was really good. I went up to San Francisco and met with him and we talked about style and the music he liked and the sounds he related to. With that in mind, I said, ‘How about Andy Johns [to engineer]? He's been recording Led Zeppelin and he's living in L.A. and he's a wild and crazy guy.’”

What a score for an up-and-coming artist! Besides engineering several Led Zeppelin albums (yes, he recorded “Stairway to Heaven”), the transplanted Englishman's incredible credit list also included Blind Faith, Free's early records, Ten Years After's best albums, Jethro Tull's *Stand Up and Living in the Past*, Traffic's *John Barleycorn Must Die*, the Stones' *Exile on Main Street* and even Television's extraordinary 1977 debut, *Marquee Moon*. Asked if he had any trouble deferring to Johns on engineering matters on the album, Botnick laughs and notes, “He's Andy Johns! I wanted Andy to be Andy. That's why you hire someone like that.”

“The only thing I had a problem with is Andy likes to listen incredibly loud, and I had to have him constantly turn it down, which irked

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him—he thought I was cramping his style. He was used to blasting it. Those Hidley Record Plant monitors could handle quite a bit, but even so, I think we blew up a few.”

Though Eddie had a solid bar band backing him at the time, Botnick decided to record him with other players, calling up drummer Gary Mallaber and bassist Lonnie Turner from Steve Miller’s red-hot group, along with keyboard ace Alan Pasqua (“from my Tony Williams jazz fusion days,” Botnick says) and another fine bassist, Robert “Pops” Popswell of The Crusaders. In the lead guitar slot, however, Botnick stuck with Eddie’s main foil, Jimmy Lyon: “He was half of Eddie,” Botnick says, “a phenomenal guitarist and a very interesting and intelligent guy. I really think he was one of the best of that era, with great sounds and great ideas. He was very modest, very focused, and also a really good arranger.”

The repertoire for the album was the cream of the originals Eddie and his band had been playing in Bay Area clubs night after night (including a couple that dated back to his first major band, the Rockets), plus a soulful version of Smokey Robinson’s “You Really Got a Hold on Me.” Once the core band was assembled in L.A., “we went in for two or

“The only thing I had a problem with is Andy [Johns] likes to listen incredibly loud, and I had to have him constantly turn it down, which irked him—he thought I was cramping his style. He was used to blasting it. Those Hidley Record Plant monitors could handle quite a bit, but even so, I think we blew up a few.”—Bruce Botnick

three days of rehearsal to work out the charts, and then went right into the Record Plant and recorded almost everything live,” Botnick says. “Everybody set up together in one room, with Eddie in a little iso booth we made, singing and directing the band.”

In those days the Record Plant was still in its original location at 3rd and La Cienega in L.A. and was owned by Chris Stone and Gary Kellgren. The Eddie Money sessions took place in Studio C, the biggest room in the complex, which had a 20-foot ceiling “and was great for rock ‘n’ roll, with a black tile floor and brick wall,” recalls assistant engineer Mike Clink, who would go on to become a major engineer and producer himself. “We had Gary’s drums set up about three-quarters of the way out to the back end of the room. We gobo’d off the bass in the room, and Lonnie sat in a folding chair being Lonnie, pretty close to Gary.” The board in Studio C was a classic 24-input API, and the album was recorded to a 3M-79 24-track.

Both Botnick and Clink marvel at the simplicity of Andy Johns’ sonic

approach, which used relatively few well-placed microphones. Botnick notes, “On the drums, I remember he took two [Neumann] U87s and placed them about ten feet behind the drums, and we used a compressor on it that really sucked it, and then you carried that on two of the tracks and mixed that into the drums, so you get the drums to have power and space to them.” Besides the 87s behind the drums, Johns also used a pair of 87s for drum overheads.

“He was a little intimidating because he was 6-foot-4 or so,” Clink says, “very English, polished but gruff at the same time; very loud. And he had these American flag clogs that he wore on that particular session, and when he would run out to the studio from the control room, he would leave his clogs off at the door and he would run and he would slide across the floor in his socks, right to the overheads, move them a couple of inches, and then run back into the control room.”

Another essential element in the Johns approach was “he used lots of limiters on the instruments,” Botnick says. “He had lots of 1176s, some Pultec EQs and, of course, what was in the API board. It was so straight-ahead it was ridiculous! There wasn’t a thing that wasn’t limited.” Clink also remembers, “We used a [British-made] Pye limiter that had been sitting on a shelf at the Record Plant for years until Andy came in and used it.”

Another memory from Clink about those album sessions: “Jimmy [Lyon] had something wrong with his hand. His hand was swollen to twice its regular size—I guess he had some kind of infection. Still, he made it through those rhythm tracks, and by the time we got to the solos, the swelling had gone down from the antibiotics or whatever.”

All of Eddie’s keeper vocals and most of Lyon’s guitar solos—including the blistering coda to “Two Tickets to Paradise”—were recorded after the live tracking dates. (Eddie sang into a Neumann U47; Lyon had a single Shure 57 on his amp, plus a compressor.) “Most of what’s on the album are full takes, with a few overdubs,” Clink says. “There was some editing on the 24-track, but not much.”

The album was mixed on the larger API console in Record Plant Studio D. There wasn’t too much post processing added; mostly reverb from EMT 140 plates and “and old [EMT 250] digital reverb that looked like R2-D2,” Botnick laughs. “Andy started the mix and got maybe 20 percent through it before he had to leave. Rod Stewart called [for Johns to work on the *Blondes Have More Fun* album], and there was nothing I could do to stop him. So I used some of the very good rough mixes that Andy had done and tweaked them up a bit and it came out really well.”

Botnick also worked on the single version of “Two Tickets to Paradise,” editing more than a minute out of it and also adding some harmony guitars and new vocals “to give it a little more radio,” as he puts it. “In hindsight, I’m not sure I did the right thing.”

The anthemic “Two Tickets,” released in the early summer of ’78, was actually the second single from the best-selling *Eddie Money* album—the first, “Baby Hold On,” had made it all the way to Number 11 in the winter, while “Two Tickets” stalled at Number 22. But it’s the better song, and it quickly became his signature tune—indeed, he has even written a musical with that title based on his life story.

And though Eddie hasn’t had any big hits since “Take Me Home Tonight” and “I Wanna Go Back” in 1986, he still tours incessantly, bringing down the house at every stop. “I wouldn’t be at all surprised if someday, somehow he came up with another big hit,” Botnick says. “He’s really a Top 40 guy.” ■

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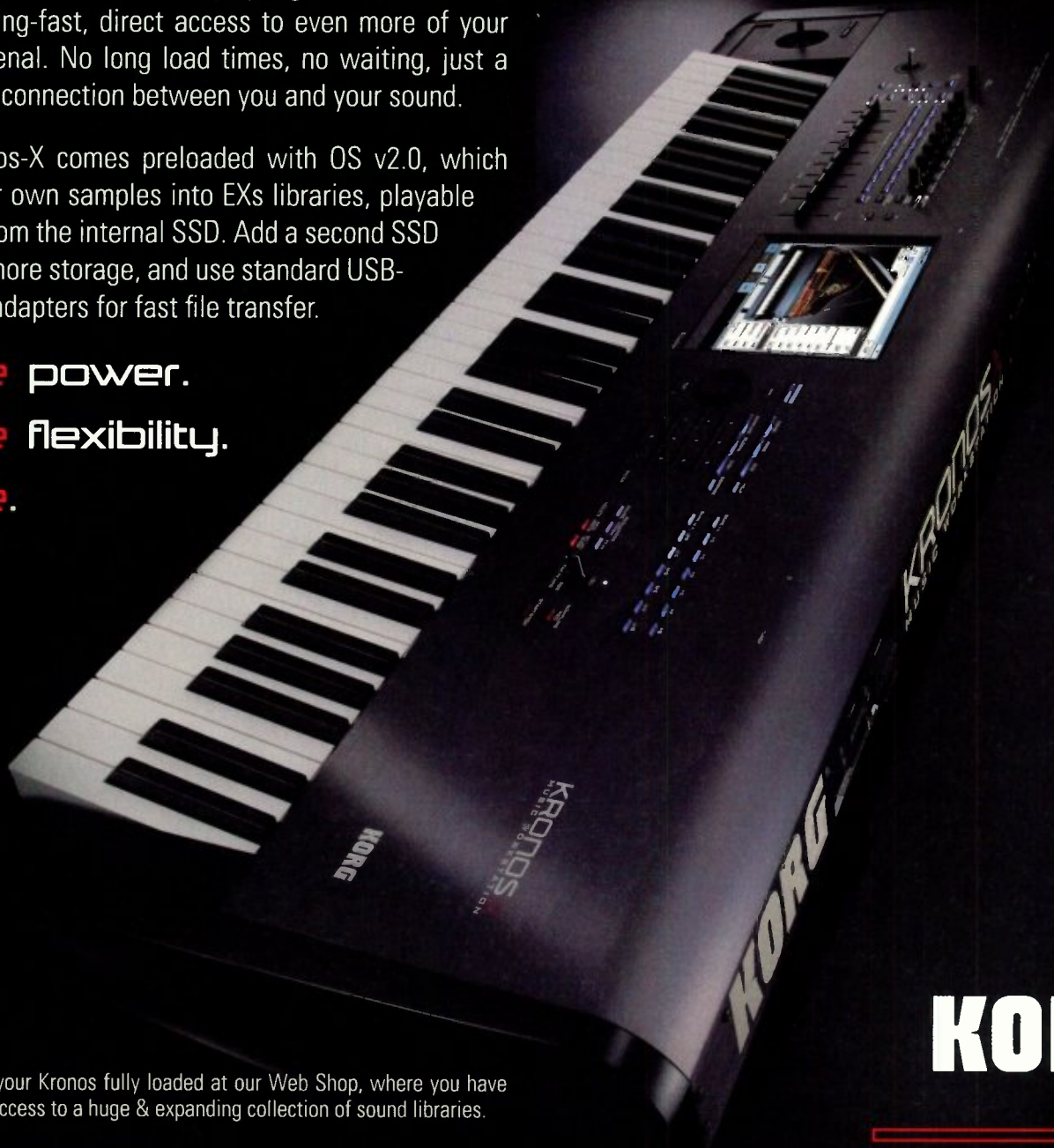
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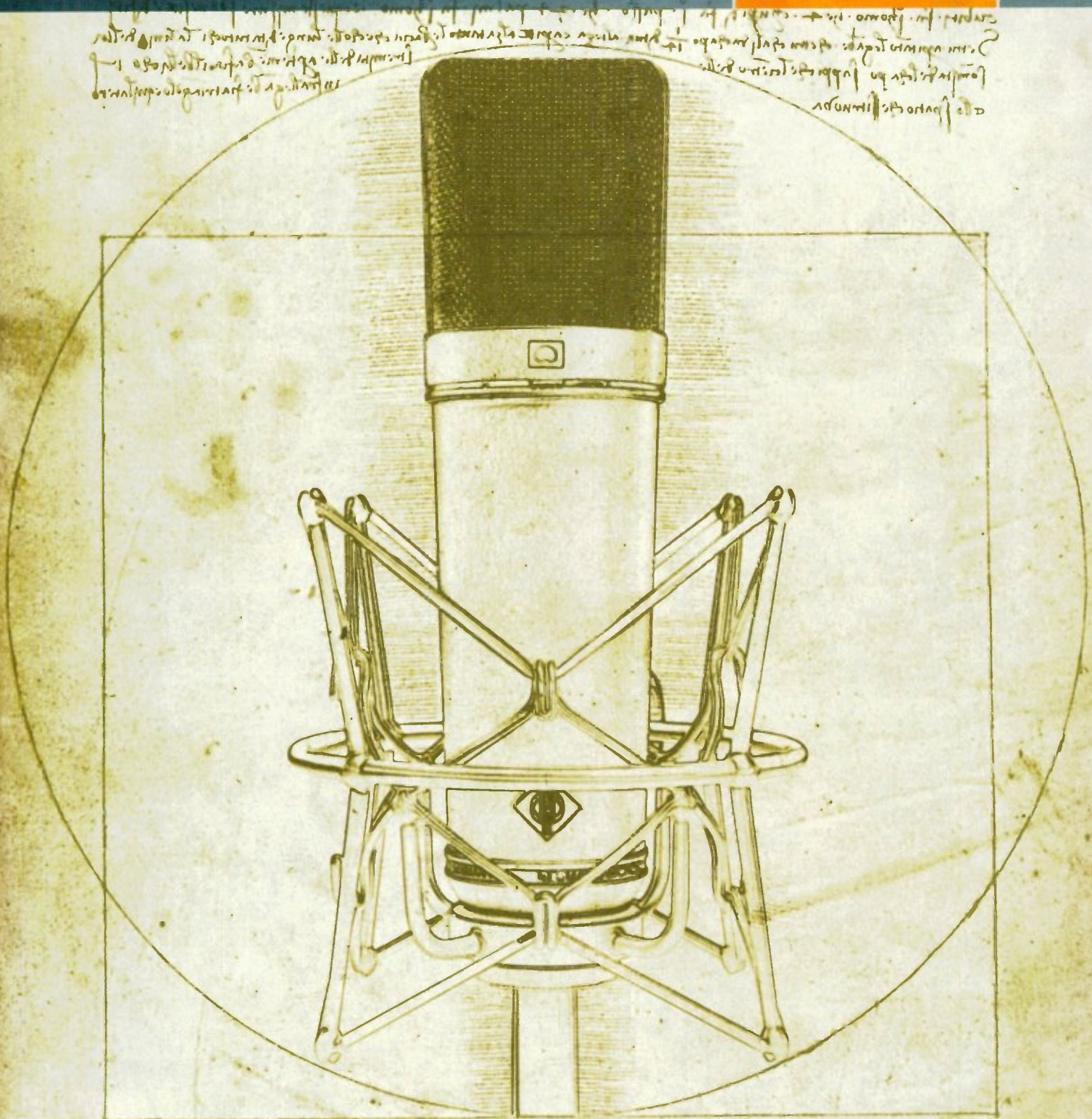
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By Barbara Schultz 23

NEWS AND NOTES

By Mix Editors 24

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By Steve Jennings 26

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MISSY HIGGINS

Making Adjustments By Barbara Schultz

Alt-rock singer/songwriter Missy Higgins and band are touring the U.S., spreading the word about her latest album, *The 'Ol Razzle Dazzle* (Eleven). The Australian-born artist is playing her own dates and frequently opening for Gotye (see "Gotye Live at Red Rocks" on p. 34). This means the musicians and four-man audio crew—monitor mixer Nathan Davis, backline tech/production manager Casey Hilliard, audio tech Gordon Droitcour, and front-of-house mixer Gavin Tempany—must adjust to different P.A.s nightly, and to venues that range in size from 750-capacity clubs to 10,000-seat sheds.

"Nightly, we're incorporating what we're traveling with, with whatever the venue or headliner provides," Tempany says. "This would have been diffi-

cult for bands to get used to in the old days when everyone was on wedges, as this band were until Nathan Davis joined the tour recently. There would be different slapback from the back wall, different sounding boxes. But now with people on in-ears [Higgins' monitors are Future Sonics IEs], it's easier to keep things consistent for the musicians.

"For myself out front, being a support act on Gotye's tour means that I don't really get to tune the P.A. each day," Tempany continues. "I just get what I'm given, but luckily it's always good. For the club shows, it's just a matter of going in and making sure all the bits and pieces are there as far as stacks and racks, but we are carrying our own monitor desk and a front-of-house desk."

Davis mixes on an Avid SC48. Tempany handles the house sound via a Midas Pro2. "It's quite

a nifty little machine," he says. "I think it's the best-sounding digital board I've heard; it's a clever system and the preamps and converters all sound really good. Like all things, if you keep things pure the whole way through the signal chain, you end up doing less to it at the end of it."

Higgins' tour is also carrying a microphone package of mostly Sennheiser and Neumann models. Her vocal mic is a Neumann KMS105. "In general, I've found that with female singers, especially when they back off the microphone, the proximity effect is accentuated, so they get thinner and also shriller," Tempany says. "Having said that, the KMS105 is far better than the mic I was previously using at dealing with that. It's far more consistent left to right as well as front to back, which is strange but definitely true of this mic." ■

Joel Lonky at the Midos Pro9 at Hartman Arena in Wichita, Kan., on May 15, 2012

FIXIT | ROB ZOMBIE FRONT-OF-HOUSE ENGINEER JOEL LONKY

Rob Zombie's FOH engineer for the past seven years, Joel Lonky, discusses capturing the Zombie growl and shriek: "We vary the vocal mic. We've used Sennheisers, E-Vs, Shures. Right now we're on B58 capsule, but the way I set his vocal, it doesn't really matter what capsule it is, because it's so processed. It's all wet; there's no dry vocal. I run [the mic signal] into a channel and compress it with the Midas [Pro9] onboard 'vintage' compressor, and I EQ it there. I send it pre-fade to the [Eventide] H3000 and then the actual channel I mix is the H3000 return line, which has its own EQ and compressor. It's a very controlled vocal line. He walks in front of the [Adanson Energia] P.A. and I don't have to panic. It doesn't ring. Even at volume levels of 105, 107, the P.A. is that smooth and that controlled."



TOUR: RUPA & THE APRIL FISHES

Global-alternative band Rupa & the April Fishes blend elements of reggae with European folk, Indian music and more. "We have a core of drums, bass, cello, trumpet and Rupa," explains front-of-house engineer/tour manager Sebastian Poux. "Depending on where we are, she might reach out to local musicians, and we might go up to 10 people onstage, including a full horn section, background singers, fiddle."

Poux carries only one vocal mic—a Heil PR22—and he carefully tweaks his input list as needed. "Rupa is the core, and the rest is coloring the mix with whatever interesting instruments she brings to me, painting the soundscape," he says.

"Ideally I work on Avid digital consoles," Poux continues. "I [can trigger] different sounds and filters for bandmembers who sing; they do chants, yippies, and that stuff is cool when distorted. The band produces sounds like weird foghorns and radio-tone voices. When I'm well equipped, I can play with those. Sometimes I'm limited by not being able to travel with our console, but there is joy in traveling without big pieces of gear." —Barbara Schultz



FOH engineer/tour manager Sebastian Poux

INDEPENDENT ARTISTS CREATE EPIC PROPORTIONS TOUR

Singer/songwriter Gabe Kubanda (pictured) co-founded the Epic Proportions Tour with fellow unsigned artists Lost In Atlantis and School Boy Humor, and played 15 dates at military bases, high schools and colleges throughout the summer. "Instead of getting a dozen or so people to see us in a club, we play free shows for large crowds," Kubanda says. "Kids love to hear new bands, and this is a great way to start a buzz, meeting them after the show, getting social media connections. Everybody gets paid, and it also enables us to partner with charities like the Keep A Breast Foundation." Kubanda says the new Line 6 StageSource L3t loudspeakers played a key role in the tour. "We bought three of them—two for main P.A. and one for use as a monitor. We can't afford to bring a full-fledged sound engineer with us. They're smaller and lighter, and have plenty of output, so we could play to crowds up to 2,000 with no problem."



TOM PETTY AND THE HEARTBREAKERS 2012

Tom Petty and The Heartbreakers hit the road again in 2012 for a tour that included their first run of European shows in 20 years, using an L-Acoustics K1 loudspeaker system specified by the band's longtime FOH engineer, Robert Scovill. Sound Image, based in Escondido, Calif., served as the primary tour sound provider for both the domestic and international legs. Shipping FOH/monitor control systems and backline overseas for the UK, European and Scandinavian run, Sound Image called upon fellow network provider Adlib Audio of Liverpool, UK, to supply the loudspeakers, amplifiers and some additional crew for the three-week jaunt. To accommodate several 360-degree shows, Petty's typical arena rig comprised left and right arrays of 14 K1 plus three KARA downfills per side, each paired with an adjacent hang of eight K1-SB subs for LF. A center array of 12 KUDO was flown between the K1s for true L/C/R reinforcement, with up to 40 additional KUDO deployed as auxiliary arrays to expand horizontal coverage to the 270-degree mark and beyond.



Photo: Andy Tennille



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ESPERANZA SPALDING



She's been a professor at Berklee College of Music and won a Grammy Award for Best New Artist, and she's not yet 30. Now, Esperanza Spalding is in the midst of a U.S. tour that continues through mid-October. *Mix* caught up with the charismatic, soulful and intimate performer at the 1,600-seat Wells Fargo Center for the Arts in Santa Rosa, Calif.



"I've been mixing Esperanza off and on since 2007," says **front-of-house engineer Jaime Armengol**. "Basically I try to work with the dynamic of the music paired with the sound system. We're not carrying much production, so when it comes to rentals my preferred digital console is the Midas. For P.A., in general I like the Meyer Milo, or the CQs for smaller gigs. I also like the Adamson Y-Axis Series and the new Energia and E15 that I just tried out this summer for a couple of shows. I just try to combine whatever gear I have with the natural acoustics of the venue. In my opinion it is important to have the general mix very clear using very minimal channel equalization. For the Santa Rosa gig I had an old Lexicon 480L. For her voice I like a quality compressor; in Santa Rosa, I got an Avalon."

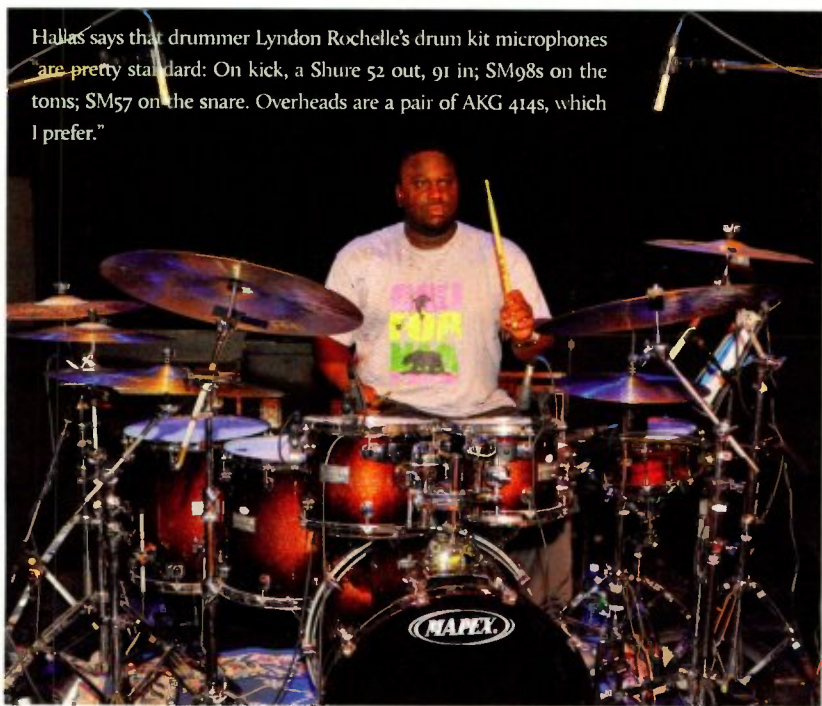


"I've recently moved to monitors after years of mixing FOH, and I really enjoy it," says **Dan Hallas, pictured at left with production manager Paul Boothe**. "I'm mixing a combination of wedges and IEMs. Mixing wedges, I tend to use whatever the onboard compressors are. Of course, mixing IEMs is a different story and that's where the fun is. I'm carrying my own Shure PSM1000s, and they sound amazing. On one tour I decided to advance IEMs in-house. We weren't carrying any real production, and to lighten my load I left the PSM1000s at home. I won't do that again. Now I carry those and some mics, and just ask for standard reverbs. Other than that, I stay in the box."

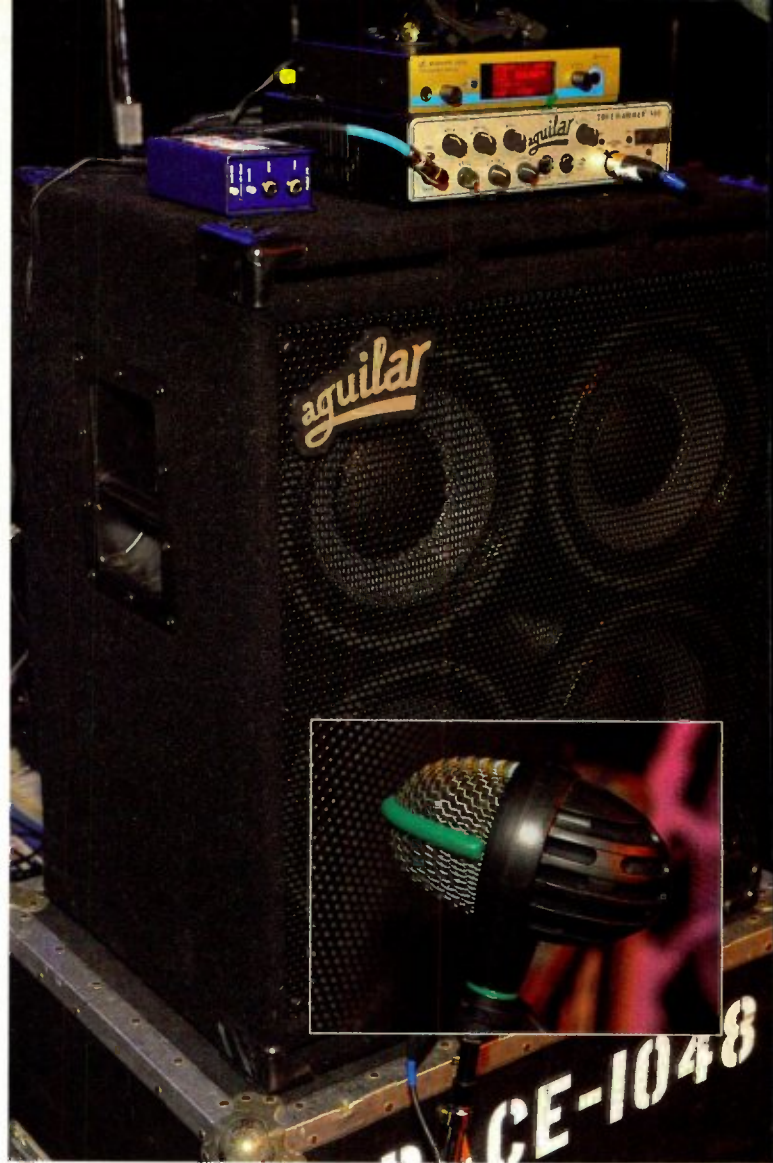
"I advance wedges on a daily basis, so as a rule I ask for 12-inch boxes for everyone except the drummer," Hallas continues. "There's a lot of upright bass going around the stage, and the smaller speaker helps to keep the stage tight and improve clarity for every one. There are also 12 people onstage and anything to cut down on real estate consumption is your friend."



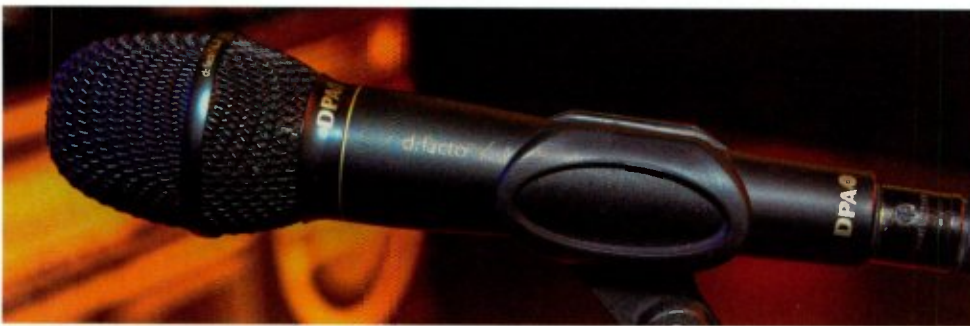
"The background vocalists are both on Shure Beta 58s," Hallas says. "They're quite close to the horn section, and they stay right on the mic so it works well for them. The horns are broken up a bit. Saxes are all on DPA D:Facto 4099s—super clean and clip-on, so it makes it easy on us in terms of the reach. Flute is on an AKG 535, trombones are on Electro-Voice RE20's and the trumpets are on AKG 414's. It's a lot of open mics but they're excellent players and know how to use them dynamically. Did you know you can fit an entire RE20 inside a trombone? Definitely some compression going on there!"



Hallas says that drummer Lyndon Rochelle's drum kit microphones are pretty standard: On kick, a Shure 52 out, 91 in; SM98s on the toms; SM57 on the snare. Overheads are a pair of AKG 414s, which I prefer."



"My brother put me in touch with Stuart Morgan, bass tech for Adam Clayton [U2], and he had been using Aguilar amps for a while," Hallas says. "I ended up with the Tone Hammer and the SL112s. Great punch and clean growl. Esperanza dials it in and always leave lots of voice in it—midrange clarity without the attack. We take the DI out right off the amp and mike the cab with a beyerdynamic M88. [In Santa Rosa, Hallas used an AKG D112.] I see the DI in the wedges and the mic in the IEMs and the drum mix. That's her electric. For her upright bass I use a Realist Pickup under the E bridge into a J48 Radial DI and a DPA D:Facto 4099 mounted just below the strings at the bridge. The DI goes to the wedges and the mic blends in for the ears."



"I'm a big fan of DPA microphones and this new D:Facto vocal mic has exceeded my expectations," Armengol says, adding that the audio crew is also using D:Facto 4099s on piano and upright bass. "I already knew the legendary 4011, and this is in the same league. The polar pattern appears to be very even with a very good off-axis response, as well as clarity without feedback or pop. Very good optimized proximity effect."

Photo: Danny Clinch



NEIL YOUNG'S MOONLIT SESSIONS

REUNION WITH CRAZY HORSE YIELDS TWO POWERFUL ALBUMS

BY BARBARA SCHULTZ

W

ORKING WITH NEIL YOUNG CAN BE A WILD CARD, FOR SURE, BUT IT'S PROBABLY ONE OF THE MOST EXCITING GIGS A STUDIO ENGINEER CAN HAVE.

John Hanlon has been producing, recording and mixing Young for about 17 years, and to say it never gets boring would be a gross understatement. It's a thrill. It's musical genius live on the floor. It's awesome power on the fly, by the light of the full moon...

Hanlon's relationship with Young started in 1983, when he and David Briggs, Young's longtime producer, were working on *Trans* remixes. Hanlon joined Briggs again in 1990, engineering and mixing Neil Young and Crazy Horse's magnificent *Ragged Glory*, and Young has been calling upon Hanlon's talents ever since.

"When Neil calls me, it's always out of the blue," Hanlon says. "His manager, Elliot Roberts, and Neil will call together and say, 'We need you yesterday.' Then I just drop everything to go, because I'm working with a real artistic visionary."

In August 2011, Hanlon got the call to head up from his home in Malibu to Young's ranch in Northern California. "They told me we'd be working with Crazy Horse and Mark Humphreys," Hanlon explains. "Mark is Neil's monitor engineer onstage; he runs the P.A. in the studio. We record everything live, with no headphones. There's some overdubbing later, but he always goes for the live performance feel. It's always about the performance with him."

Hanlon didn't know in August that the sessions would result in two albums: a heavy, hard-rocking batch of folk songs called *Americana*, and *Psychedellic Pill*, a collection of new originals. Hanlon was simply told that the first order of business would be to install a studio that could serve as a working clubhouse for the musicians and a small crew.

"I was to build a studio in one of the houses on the ranch where David Briggs and Tim Mulligan had done *American Stars 'n Bars* with Neil back in the '80s," Hanlon says. "And he wanted to do it 8-track analog, which meant we'd also snapshot to Pro Tools, but he wanted an 8-track setup, in the building they call the 'white house.'"

"First I went up for some preliminary meetings with my assistant engineer, John Hausmann, to lay out the space and check out the acoustics. I purposely didn't ask how they had set up the room for *American Stars 'n Bars*. I wanted to feel the vibe in the room without any preconceived notions of copying what they did. That was the 1980s; sounds and amplifiers, and where people's heads were, would have affected the sound coming off of the instruments and from

their souls at that time, anyway. Everything changes.

"Neil's other directive was, he wanted to record during full-moon weeks," Hanlon continues. "That's when he happens to get creative. That doesn't mean if he writes a song three weeks after that, I wouldn't get another call. But this was the gathering point for when and where he wanted to start."

Young obviously wanted to work in a homey atmosphere; he has a high-end, fully equipped studio, Redwood Digital, on the other side of his ranch, but he chose to track in a furnished house. So, Hanlon set about judiciously paring down the decor in the white house, making enough room in the 35x25x8-foot living room for the musicians and their rigs, but keeping a sofa, stuffed chairs and warm lighting.



Recording/mixing engineer John Hanlon at the 12-input Universal Audio "Green Board" and Neve BCM 10 sidecar, in the control room he built in Neil Young's "white house."

Photo: Ben Johnson; courtesy Shaky Pictures

"I knew where the moon rose, and the way the house is oriented there's a huge ceiling-to-floor, wall-to-wall glass window at one end of the room where you could see all the moonlight," Hanlon says. "I tried putting the drum riser by the glass because there's also a wooden-slat diffuser there—not an acoustically designed diffuser, but something to keep pool cues from hitting the picture window because there's normally a pool table in there. But the drums happened to sound best on the far wall opposite that glass wall."

Hanlon then positioned the rest of the band in relation to the kit, approximating their onstage setup as near as possible. "That's how they're most comfortable," Hanlon says. "That means that from [drummer] Ralph Molina's perspective, Neil's rig—which was a '50s [Fender] Vibralux and '50s [Fender] Tweed Deluxe—is 'stage left.' At stage right is Billy Talbot's Showman bass cabinet. Normally, to Billy's right is Frank [Poncho] Sampedro's rhythm guitar rig, but that wall was not wide enough to accommodate that. So, instead, I put him in this little alcove off the right side of the living room where the original house entrance used to be; that had a little tiled area where the carpet stops. It worked well because I was able to get a little bit of room ambience on him without having bass and everything else build up into his close mics."

Hanlon installed a control room in the master bedroom of the house, bringing in a 12-input Universal Audio "green board" tube console with a

Neve BCM10 sidcar, and a 16-input UA “brass board” mixing desk as well as a Baby Neve monitor board. The 8-track tape machine was an analog 2-inch Studer 827. Hanlon rented a Pro Tools 192/24 system for backup, and as a safety to cover any tracks he might need beyond the 8-track mandate. All of the mics and rack gear in Redwood Digital were made available to Hanlon for the sessions, with one exception:

“On kick drum, I wanted a [Neumann] U47 tube mic,” Hanlon says. “I wanted to record the kit Glyn Johns-style. That means two mics on the kit, and a third in front of the kick drum. I asked for a particular U47 to use on the kick; Neil happens to own two. But it turns out that the one I was asking for happens to be the vocal mic that Neil used on background vocals with Nicolette Larson, Linda Ronstadt and Emmylou Harris as well as his own vocals in his studio acoustic setup. John Nowland, the studio manager over at Redwood Digital, politely informed me that it was not to be used in front of the kick. I ended up settling for a 47 FET that worked well.”

Hanlon placed a pair of U67s over the rest of Molina’s kit. “There was a 90-degree angle between the two capsules that coincide over the snare. Each of those 67s sat on its own track,” Hanlon says.

On bass, he took a DI and placed another 47 FET; these were combined to one track on the Studer and in Pro Tools. That’s four tracks.

“On guitars—Poncho and Neil, tracks 5 and 6—I mike in a style similar to what I learned from Andy Johns,” Hanlon says. “Andy is one of the greatest engineers in the world. He could get a great sound out of anything. He used to put two Shure 57s or 56s on each guitar cabinet. One would be straight on, and one would be angled to the cone. I find I can get mids and highs from the straight-on mic, and all the bottom end from the side mic.”

On Sampedro’s guitar rig, Hanlon used two Shure SM57s, plus an AKG C12A to capture the ambience of that tiled alcove. “The microphones on Neil’s rig were the same type of setup,” Hanlon says. “I had two 57s on each of his two guitar amps. I could use whichever amp I wanted, or both.”

Hanlon put up Neumann KMS140 vocal mics for Young (track 7), as well as for Talbot and Sampedro, and a KMS150 for Molina. Track 8 shared the room mics and Ralph Molina’s vocal mic. But for those who are keeping score, at this point Hanlon went over the 8-track limit. “Poncho and Billy’s vocals had to go strictly to



Pro Tools,” Hanlon says. “I had a few other Pro Tools-only tracks. One is what I call the subkick. I sent the kick drum mic, the 47 FET, to a small subwoofer that I had miked with an 87 with a foam pad over it; it reinforces the kick drum into the room. This is very low-frequency, but it helps modulate the mids and highs into the room mics for a better room sound, and it helps Billy Talbot, the bass player, stay in sync with the drums. Since we don’t use headphones, the tighter I can get the drummer and bass player to play together, the better the whole room’s going to sound.”

Another Pro Tools-only track was what Hanlon calls the “Briggs compressor,” after Young’s former producer: “This was David Briggs’ old RCA mono compressor, to which I sent a combination of the kick and the two U67 mics on the drums via a bus on the BCM10 Neve,” he says. “You get a single track of this mono, smashed, compressed, fat drum sound.

“So, everything we absolutely had to have—the core band sounds—was on those eight analog tracks. I kept the subkick and the Briggs compressor separate, because if Neil decided less is more and he didn’t want me to use them during mixdown, I could leave them out.”

Still, after all the care and wisdom that went into the studio plan, Hanlon did not know what music he was going to hear by the light of an October 2011 full moon when the sessions began: “Neil may have talked to the band about the material, but if he did I wasn’t present. I didn’t know we were doing folk songs until we got in there.”

But even if he had been prepped about the *Americana* sessions, it would have been hard for the producer/engineer to envision Young and Crazy Horse’s gorgeous and brutal interpretations of chestnuts like “Oh Susannah,” “Clementine” and “Jesus’ Chariot (She’ll Be Comin’ Round the Mountain).” The screaming guitars, the thunderous drums, Young’s plaintive voice... on songs we all sang in grade school. It’s unsettling, in a good way.

The *Americana* sessions took place in those full-moon weeks, October through December 2011. By December, Hanlon was recording some overdubs for the record, including children’s choir sessions at EastWest Studios (Hollywood). After Christmas, he began mixing *Americana* on the Neve 8078 in Redwood Digital. Then in January, he was asked to be ready for more recording. Full-moon weeks during the next few months would see the band tracking songs with massive instrumental jams that would be edited down into brand-new songs—though some were edited more than others.

The first track on the album, “Drifting Back,” for example, started as a 32-minute take. “That performance happened on a Saturday,” Hanlon recalls. “I got up early Sunday morning and called Neil and said, ‘I think you have something here,’ and went over and played it for him on a CD. We mapped all this stuff out in terms of structure—identifiable choruses and verses and B sections—while listening to these parts on a little blaster, sitting in the entranceway of his home, and marveled at what he had.”

“Drifting Back” got edited down for the release, but only by about six minutes. There are also a couple of 16-plus-minute songs on the album, as well as several more concise tunes. The nine tracks on *Pill* fill two discs; they’re very different in shape and intent from *Americana*, and sonically somewhat different as well.

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From left: Drummer Ralph Molina, guitarist Frank "Poncho" Sampiero, Neil Young, and bass player Billy Talbot.

Photo: Julie Gauthier

"There were important differences between the *Americana* sessions and the *Psychedelic Pill* sessions," Hanlon says. "On *Americana*, Billy Talbot had a Daking direct box that had gain available in it; we were using that as a preamp to his Showman bass amp. With that DI, even when no

gain was selected on the pot on the front, it still affected the sound, and it was a pleasant sound. On *Psychedelic Pill*, he switched to a Sal Trentino active direct box.

"Another change was, Neil stopped using the amp setup he'd had; he went to a modified

'50s Tweed Deluxe with 6L6 tubes and an old Magnatone—the same setup he uses with Crazy Horse on the road. The SPL being thrown into that living room studio was probably 10 to 15 dB louder than what I was dealing with on *Americana*."

The sounds that were laid down for *Psychedelic Pill* are probably closer to what fans will expect from Neil Young and Crazy Horse. But for Hanlon's part, he's happy never knowing what to expect from Young—happy with the way the "white house" functioned as a studio; even happy with the limitations imposed by 8-track.

"To me, some of the greatest records are the ones done with the fewest amount of microphones," Hanlon says. "The sound I like is orchestral. A classical engineer reading this might cringe, but I approach Neil Young and Crazy Horse orchestrally. Musicians playing live together—what a concept."

Barbara Schultz is a contributing editor to *Mix*.



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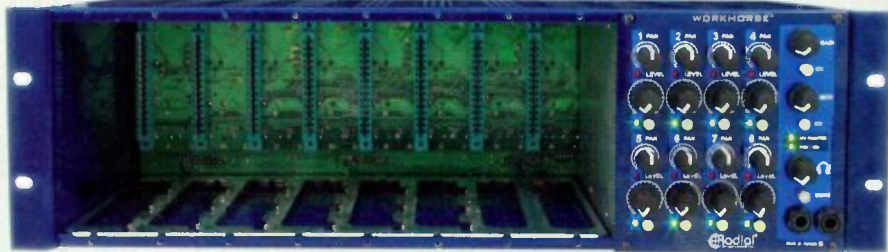
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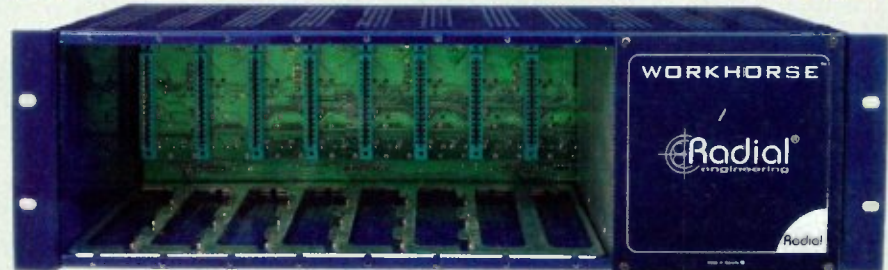
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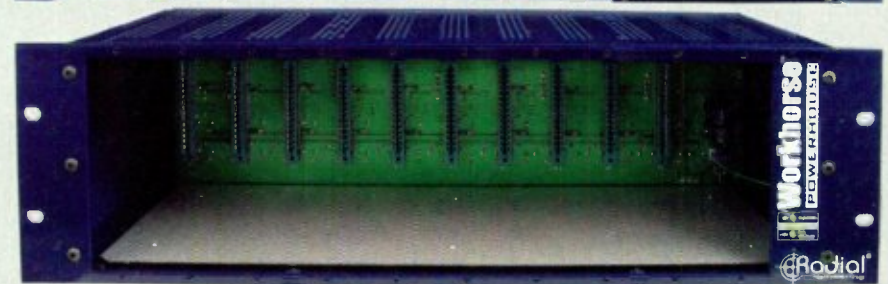
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GOTYE LIVE AT RED ROCKS



DYNAMIC, ACTIVE MIX FOR DYNAMIC, ACTIVE PERFORMANCE

TEXT AND PHOTOS BY CANDACE HORGAN

AS LATE AS LAST FALL, GOTYE WAS RELATIVELY UNKNOWN IN THE U.S. AND EUROPE. TOILING AWAY IN HIS NATIVE AUSTRALIA SINCE 2001, HE HAD SOME MINOR SUCCESS WITH THE SONG "HEART'S A MESS" LOCALLY AND IN PARTS OF EUROPE, BUT NOTHING WOULD HAVE INDICATED THAT WALLY DE BACKER WOULD EXPLODE IN 2012. RIDING THE SONG "SOMEBODY THAT I USED TO KNOW," WHICH WAS RELEASED IN THE SUMMER OF 2011 ON YOUTUBE. AS OF SEPTEMBER 1, THE VIDEO HAD BEEN VIEWED MORE THAN 311 MILLION TIMES.

Even that mind-boggling number doesn't tell the story of how much the song has embedded itself into the world's musical consciousness. Check out "Somebodies: A YouTube Orchestra," on Gotye's YouTube video channel. It's a video mashup of hundreds of different cover versions of the song, from the well known like Walk Off The Earth's version around a single guitar (which has generated its own parodies) to other, totally obscure versions.

Riding the wave of the song's popularity, Gotye embarked on an amphitheater tour of the States in late summer, starting at Red Rocks in Morrison, Colo., after flying in from Japan.

Running sound on the tour is Lachlan Carrick, who started his career as a teenager and has now been mixing for more than 20 years. The summer swing is Carrick's second tour with Gotye.

"My dad was a musician and I would go to his gigs, and often the only place I could sit was the sound booth, so I got interested in audio that way; I've never had a real job," Carrick laughs. "I also work in other areas—some experimental theater, for example—and I spend a lot of time in the studio. It's somewhat of a rarity to come out on a long tour like this, but I am really enjoying it."

Gotye is running a full production rig for the tour. At front of house, Carrick sits at an Avid Venue Profile. "Eighth Day Sound is supplying the gear for this run in the States, so it's my first night out with it here at Red Rocks," says Carrick. "The Avid console suits the way I like to work very well. I can make a



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whole bunch of different sounds with it, then easily automate them, which sounds simple, but the Venue platform takes automation to a whole new level above other digital consoles I've used. And obviously, everyone says it, but the TDM plug-ins sound amazing, and are fully integrated. When you're used to using them in the studio, and the artist is used to using them in the studio, it's great to be able to apply them in this situation."

Carrick uses roughly 48 inputs at FOH and employs many different plug-ins out front, preferring them at this point to outboard gear. "The latest thing I've been getting into is the Waves Non-Linear Summer, which is a pair of tools that emulate classic console channels and their master buses," he explains. "They have an SSL, an EMI and a Neve; all these channels are modeled individually from particular consoles. The Drive function is outstanding. I have the NLS channels running on subgroups, and then also the NLS bus over my L/R mix. I mainly use the EMI-style drive on this show, but it just feels like a really nice way to add some extra level and some subtle juice to bring things forward. You can sculpt the way the midrange dynamic works in particular. Great stuff!"

Gotye likes to use a lot of samples in his songs, triggering them: onstage in Ableton Live using three Novation Launchpad 64-button controllers and an Alternate Mode MalletKat Pro MIDI percussion controller. Carrick mixes in stereo with a general stage representation, but the soundstage gets more

detailed attention because of all the samples.

"Keeping up with Wally is the most challenging part of the gig, for sure," Carrick says. "He's extremely detailed in what he does in the studio, and he applies that to his live shows. He'll often come out front and have a look at mixes during soundcheck. I use a lot of snapshots tune by tune, and they are all tempo-mapped. The delays I use [Waves H-Delay] are set to follow the tempo, so I then work with them as measure rather than milliseconds. I really like the way you can do tempo-guided release time with the H-Compressor. So with kicks and stuff, you might have an eighth-note release time on the compressor, which is quite a musical sound. So then I don't have to fine-tune the release times like I would in the studio.

"I use a heap of Waves stuff, actually, like the SSL Master Bus Compressor, the C6 multiband and the L3 Limiter, but I don't slam the mix very hard, and I don't mix super-loud, either. I try to mix with a lot of dynamics, so there can be loud parts of the show, and when they

kick in it's quite dramatic—hopefully. Wally's vocals can be extremely quiet, right through to very loud belting; he's sort of a chameleon of a vocalist, so working the dynamic of the show around that is paramount."

Eighth Day also provided the P.A. system, a d&b audiotechnik J Series, and Eighth Day's Dave Ely was out on the road to help Carrick with system tuning.

"We are using 10 of the J8s, which is the nine-degree box, and then four of the J12, the 20-degree box, on the bottom, to fill in," Ely explains. "The subs are the d&b B2, a nice punchy box. We have what we call a Q box, a smaller version of the J, and we use the Q for side hangs. We don't have them up here [at Red Rocks], but I have three of them stacked on top of the subs. We use those for in-fill. The nice thing about d&b is all their boxes work well with each other. It's not like you have a really good box and then the other doesn't fit with it. We use the D12 amps, and then we have a Lake Controller just for EQ, basically. Either myself or Lachlan will do the system tuning. There's quite a lot you can do with the d&b software. It lets you monitor the amps, but you can really fine tune things with it. We can do the timing with either the Lake or the d&b."

Gotye sings into a Sennheiser 935 head on the latest Sennheiser transmitter. The other microphones were mainly a combination of Earthworks, Sennheiser and AKGs, with a sprinkling of Radial DIs for the computers and the keyboards and a Radial JDX box on the bass amp. The guitar amps are miked with Sennheiser e609s.

"I do like to use a dynamic on the vocal; it seems to keep it sounding tighter, especially at



Front-of-house engineer Lachlan Carrick is on his second tour with Gotye.

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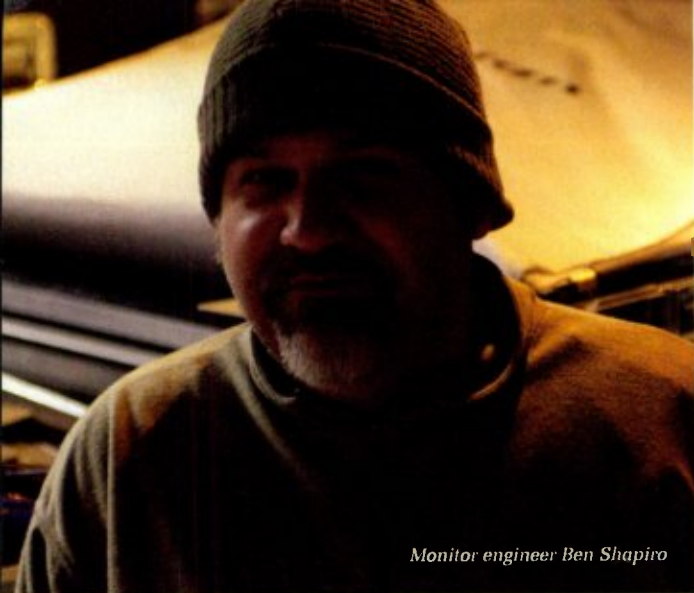
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Monitor engineer Ben Shapiro

by tune. Other than that, there are some AKG 414s doing cymbals and hats on Wally's kit. Because there are two kits in the show, Wally's kit and the main kit, I try to keep the microphone selection different to help me make each kit sound more distinctive. The main kit, for example, has Sennheiser e904s on the toms, whereas Wally has the Earthworks condensers, so right away there's a different tone."

Handling monitors on the tour is Ben Shapiro, with the assistance of monitor rigger Matt Delia. Shapiro has also been doing sound for more than 20 years, and had previously been at Red Rocks with the John Butler Trio. Shapiro has also worked with a variety of Australian bands, including Crowded House and Midnight Oil, but this is his first tour with Gotye.

The entire band works on in-ear monitors, using a standard Sennheiser ew 300 IEM G3 wireless in-ear system. Like Carrick, Shapiro is mixing on an Avid Venue Profile and using a lot of

Waves plug-ins."I use the Classic Console package, the C6 multiband compressor, Maxx Bass, and then the L3 on the master output along with the NLS bus," he explains. "Then I use a bunch of H-EQs dedicated for automation. We also run some Buzz Audio hardware channel strips on the front end of Wally's vocal. They sound great, and they're extremely flexible.

"The mixes change dramatically from song to song," Shapiro continues. "Everyone in the band is a multi-instrumentalist, and they all change around quite a lot. Wally has up to three or four changes per song, because he likes different vocal tones and levels as the song progresses. He also plays all sorts of samples and percussion, literally running around the stage and bashing various things. For the band members, I take a more standard approach. Obviously whatever they're playing is on top, and the bass player and guitar player basically have a more organic drum and bass mix with the computers and tracks and things quite low. Wally is the complete opposite. He has the samples and things he can pitch and lock in—from quiet to quite loud."

high gain," says Carrick. "The backing vocals are wired versions of the same. For drums and percussion, we have a bunch of Earthworks High Definition Microphones, which I love. We use the SR40s on main kit for kick drum, hi-hats and overheads. Then for Wally's standup kit, we use DP30Cs on snare and toms. We also use the P30C periscopes. They hover around all sorts of different percussion he plays; they come on and off and get pointed at different things tune

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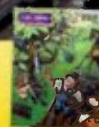
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AN OPEN LETTER TO STUDENTS

A Recent Grad on What He's Learned From the Real World

By Ryan Terrell

Photo: TrueMuse Photography



Personal skills vastly outweigh technical skills in the real world, and employers are more impressed by work ethic than gear knowledge—they expect the latter. A client pays a lot of money to see you, and when the talent is alone in the booth, there's nothing like a quick quip and a can-do attitude to set the tone for the session. Being yourself is paramount to success. If “yourself” isn't outgoing, friendly, polite, and exuding confidence, then don't be yourself, be Don Draper. You fake it till you make it.

You are the conductor. How you present yourself and how confident you seem to be to the client and the talent is how confident they will be in your abilities. I have walked into sessions that I had literally no experience working on—Spanish radio broadcast mixing, for example. I had two choices: Say, “I've never done this before, I don't know Spanish, I've never worked on radio, I'm not quite sure what I'm doing, we're patching to a studio in L.A. so I can't even see the talent—so bear with me.” Or, “Let's rock this out and be done in time for lunch.” Which option would make everyone feel better? Of course, then you still have to rock it out.

This doesn't just begin when you enter the workforce. This starts now. Be the student with whom other students feel confident working. You never know who's going to get hired at your dream job and who will suggest to their boss that they hire you (as happened in my case). If I had not been industrious from the start while still in school, I would have never gotten my foot in the door.

Regarding academic performance, I made a big mistake in school. I was on the wrong side of several instructors because I was too cool for school. I spent the last half of my school time doing damage control on my relationships with my instructors (just ask *Mix* columnist Eddie Ciletti). How your instructors view you is important. They may be all smiles and full of accolades in class with you, but if you show up to class with a piss-poor attitude or don't show up at all, they will never speak highly of you in private with others, and that can be, and often is, the difference between getting a gig and not getting a gig.

Having a holistic understanding of sound—what sound is, how it works, how it travels through time and space, and how to capture and manipulate it—is far more important than the specific DAW or console or piece of gear you're geeking out about right now. It's akin to knowing every nuance of the English language and having literally nothing intelligent to say. What good does that do anyone?

Remember that times change. The specific skillsets you have may be nearly obsolete in one or two years. To prepare yourself for this inevitability, keep the basic principles of sound in the forefront of your mind. It will allow you to make better decisions in every situation you come across.

Understand that you will likely not get hired to do what you're the best at, or what you like doing the most. I got a job mixing. I hate mixing. I loathe it. I suck at it. I felt completely unprepared. It was easily the dullest tool in my toolbox. I did not say to my employer, “No thank you, the offer is nice, but I'm no good at mixing.” I said, “Let's fricking do this!” (Okay, I used different words.) Say, “Yes.” You're vastly more capable than 98 percent of the other schmucks out there and you probably undervalue your own knowledge because you're surrounded by people at school who know as much or more than you do.

If you get hired in a pond like Minneapolis, you will likely not be respected because of your age and probably because of your education. Most everyone in our industry did not go to school for this. Most everyone in the industry is considerably older and way more experienced. Remain humble and teachable. No one likes a know-it-all, and I had to relearn 80 percent of my skills on the job.

When I showed up to work, I had my resume and cover letter in one hand and a flash drive with my reel on it in the other. You know what my boss said? “Oh, that's cool, maybe we can look at that later. Why don't you just watch me for now?” After the day was done I was given an assignment, a full three-minute video of Foley and sound design, and I had a day to do it. It became clear that I must sink or swim. To this day, they have never looked at my resume or reel.

And another thing—you will never have four weeks to work on a two-minute song or video. Never. This is one of my biggest gripes with our educational institutions in town. I understand that we're learning in school, but you don't have time to deliberate and procrastinate in the workforce. You will never have the luxury of that time, so make the most of it in school. Finish early, show it to your instructors or classmates whom you respect, and be prepared to revise heavily.

There is no lab staff on the job. If something breaks, you have to fix it or you have to stop the session and ask for help. If no help is to be found, you have to stop working and everyone goes home, except you. You stay at the board crying. This remains the most stressful part of my job. Know your equipment inside and out and perform dry runs before sessions to prevent these crisis moments.

Finally, take pride in everything you do. Look good and you'll feel good. Feel confident and you'll look confident. Act deliberately and you'll see results. Enjoy mundane tasks, as your job may boil down to that. And seek comfort when doing thankless jobs that you are doing them to the best of your ability. People notice that.

Born and raised in Iowa, Ryan Terrell graduated from IPR in Minneapolis in 2011 and was hired by BWN Music, the premier commercial music and mix house in town. He spends his time designing sounds, composing electronic music under the pseudonym Eskimo Spy, and playing far too much Xbox.



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WHERE THE JOBS ARE

New Opportunities in Live Sound Show Production

By Barbara Schultz

By the time this issue of *Mix* reaches subscribers, the election-year rhetoric about unemployment will have reached a fever pitch. But anyone coming out of audio school knows that job scarcity isn't news. For the scores of new engineers who enter the market every year, it's a fact of life to be faced and conquered.

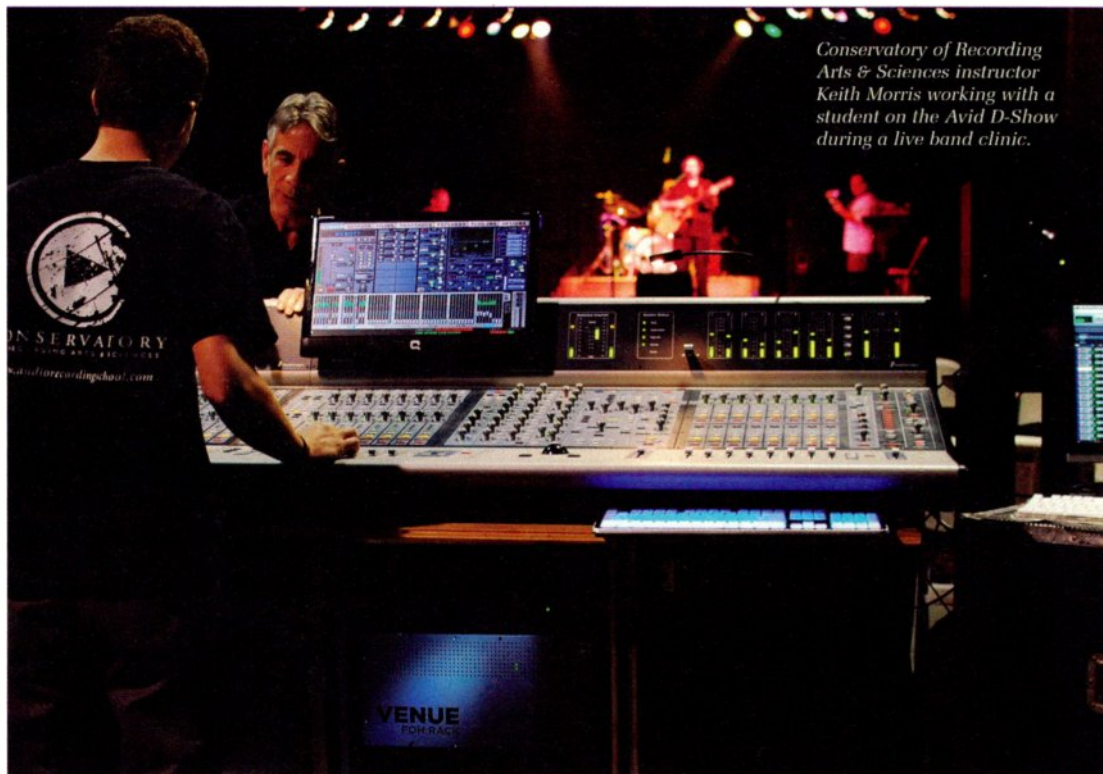
Which begs the question: What do students need to succeed at school and beyond? Where are the jobs for all those grads? Well, with many in the music industry saying the old financial model has turned upside-down—that touring is the new revenue source and physical product is now largely a marketing tool—it seems high time to talk about career and educational opportunities in live sound.

We talked at length with representatives of four of the top U.S. audio education programs that offer a live sound curriculum, asking how they prepare students for careers in show production. Our panel of experts includes **Greg Stefus**, director of student services and internship coordinator at the Conservatory of Recording Arts & Sciences (cras.edu); **Dana Roun** (director of audio arts) and **Mark Johnson** (live sound program manager) from Full Sail University (fullsail.edu); **John Scanlon**, program director, sound arts and interactive audio, at Ex'pression College for Digital Arts (expression.edu); and **John Krogh**, chair of music production and contemporary writing at McNally Smith College of Music (mcnallysmith.edu). They offer future live sound engineers an idea of the skills they'll need in the field, the likelihood of finding gainful employment, and insights into whether or not they're really cut out for a career on the road.

CAN YOU GET ME A JOB?

How likely is a student entering your program to find employment in his or her field upon graduation?

Stefus: Live sound is one of the more stable areas where there are jobs available for our interns and graduates. In a recording studio, you start as an unpaid intern. You have to serve a lot of coffee before you start any kind of paying career in studio work. In live sound, the economic infrastructure is such that you can go straight from school into a paying job, whether you're



Conservatory of Recording Arts & Sciences instructor Keith Morris working with a student on the Avid D-Show during a live band clinic.

doing corporate audio-visual, working on a sports broadcast or for a club.

Roun: At Full Sail, we take a large amount of job leads for live production. That's a very broad term—that's everything from houses of worship to cruise lines to large-scale touring or theaters—but it's been a growth area for us. Over the past five years, our Show Production graduates have maintained a strong initial employment percentage, ranging from 81 to 90 percent, depending on the year. That's in part because the live sound industry has a good way of responding to economic challenges. A couple of years ago when things began to flatten out, a lot of major audio providers got more into areas like corporate or boardroom installs or the house-of-worship market. This is an industry that's been really flexible.

Scanlon: I think there's so much opportunity in live sound because the live production element has branched out so much. You've got presentations with laptops, Bluetoothing iPads, PowerPoint presentations that have audio elements. Not to mention, I've never seen as many bands on tour as I do right now. We teach our students to be technically capable of handling almost anything in terms of live audio and visual content so they'll be sharp when they get out there.

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McNally Smith alumnus Veronica Rodriguez (at right) engineers a remote broadcast for radio station Cities 97. She is part of a 5-person team that's responsible for all of the audio engineering and IT needs for the ClearChannel office in Minneapolis.



find work in AV installation, on a cruise ship, in corporate boardrooms.

JACK-OF-ALL-TRADES

Given the premise that job functions in the industry aren't as segmented as they used to be—front-of-house engineers do remote recording, and audio and video co-exist in so many applications, for example—how do you teach students to be ready for everything?

ue, where they'll mix live performances and record remotely into Pro Tools.

Johnson: By the nature of the industry we serve, we have to teach a broad range. You're talking about everything from hotel A/V up to large-scale touring and installs, so our courses reflect that. We start with basic audio and electronics, and then introduce show production systems. They learn the corporate and sports broadcasting. Installation technology, audio measurement systems, advanced show production... By the time students get out of here, they definitely have enough experience to start somewhere.

Krogh: In recording studios, there is a culture of apprenticeship where you learn the ropes and come up through the ranks, usually starting with an unpaid internship. But with live sound, there are opportunities to find paid work right out of school. It's essential that students have a broad view of what those opportunities look like: You might go into mixing front-of-house for bands playing in clubs, but you might also

Stefus: In our program, everyone learns everything. Even the student who comes here to make rock 'n' roll records, at the end of their 30-week program and internship, is also trained in sound reinforcement. We start with a lot of trouble-shooting and maintenance—a firm understanding of electricity and electronics. They take soldering classes. They create and fix gear on the spot. Later, they will be part of productions in our 6,000-square-foot ven-

Scanlon: Our Sound Arts program begins with 16 weeks of studio maintenance—everything from wiring to power to digital and analog circuitry to reading schematics. They learn recording engineering in the studio before they get into live sound, where they'll really be tested in ways they might not be in the studio. In a commercial studio, if something goes wrong, you go get the studio tech. In the live sound world, you're both. You

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need to be firm on Ohm's Law, power requirements, how to pull out cables that aren't necessarily designed to operate with your speakers and make them work. You have to be a little more of a MacGyver.

Krogh: All of our students learn fundamental engineering skills that help them troubleshoot and work in a variety of situations. The more practice students get with different technologies and facilities, the more confident they are and capable of dealing with whatever they encounter when they leave here. They work on a variety of consoles—Midas, Trident, ICON, SSL—so they're building a foundation of understanding: "I know that this is how this type of device is supposed to work, so even though this is a brand-new board I haven't worked with, I intuitively know there should be a way to recall mix settings per song, for example. I can figure that out."

HANDS-ON EXPERIENCE

What type of hands-on experience should students expect to get in school as part of their

coursework or an internship?

Stefus: Live sound interns usually start off checking in gear. They're the ones who unload the trucks, clean equipment, check it to make sure it's operating properly. Even if they're not operating gear right away, they're learning how gear operates, and this is the type of work they'll do at the entry level if they were hired at that facility. We're training students to be as employable as possible.

Johnson: We have something here called Show Pro Club that's open to all students in the Show Production degree program. Students sign up to crew different events on campus, as well as off-campus shows at places like the Hard Rock or the House of Blues. Another example of what we offer: Last week we held a live mixing seminar in our live production facility, Full Sail Live, hosted

by Meyer Sound and featuring Buford Jones, who's mixed so many big tours [David Bowie, Eric Clapton, Pink Floyd, Faith Hill, etc.]. Not only did he go over mixing concepts, it was also a chance for students to be part of a production staff—manning spots, camera positions, technical director, assisting at the monitor mix position. Students work production on every event we have here on campus.

Photo courtesy of Full Sail University



Students in Full Sail's Show Production program learn to design, engineer and manage multimedia productions at Full Sail Live, with the use of equipment including a DiGiCo SD8 mixing console, Meyer Sound Mica line array system and UM1P stage monitors and a Shure wireless mic system.

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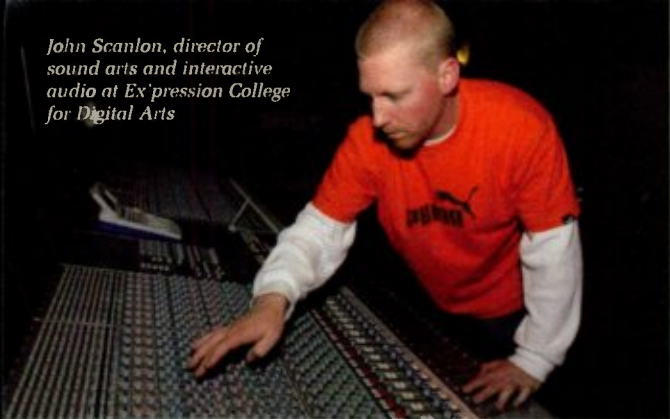
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John Scanlon, director of sound arts and interactive audio at Ex'pression College for Digital Arts



Scanlon: We always want to give the expectation students will be in entry-level positions when they leave here, so in an internship they'll start off as stagehands. We also have faculty that work in the industry. One of our main lab instructors

works for Third Ear Sound. So when Third Ear does sound for the Monterey Blues Festival, for example, they'll bring eight students down to help on the show, and those students will really feel the heat of what it is to work a live show. We also have our Ex'pression Sessions here, where [radio stations] KFOG or Live 105 bring artists in to perform on the



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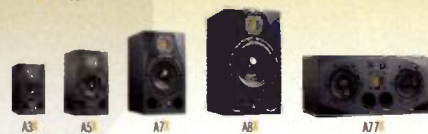
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Success Story

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Coming out of Full Sail, I got hired by Clair Showco, starting as a P.A. tech. My day-to-day responsibilities at first were bringing gear in, running power cable, plugging speakers in, placing amplifiers, learning how to repair amplifiers, learning how to repair speakers and electrical cable. You start with the most basic functions. From P.A. tech, normally you become an A2, or what we call a monitor assist. Then you start to work with electronics and computers a little bit more—learning how to actually operate consoles, so you need a lot of computer skills. You also now have the added responsibility of taking care of a monitor engineer, and helping to take care of the artist. After that, you move to the A1 position, which is system engineer. As a system engineer, I now have crewmembers reporting to me. I split the majority of my time between being a system engineer and a monitor engineer.

When I went to Full Sail, I had already been running a small production company, but I wanted to learn how to do my job correctly. When you're learning in the clubs, you get a lot of information, but not all of it is going to be right. Full Sail corrected what I needed to know about signal flow, electronics, and proper day-to-day functions of audio gear.

Since coming to Clair, one of the things I'm very proud of is, I was system engineer and crew chief on the U2 360 tour. I also really loved working for Lionel Richie. I mixed monitors for System of a Down for quite some time. I was system engineer for Prince. In live sound, you need to be open to how diverse the industry is, and to the different cultures that go along with that. I once literally went from monitor assistant for Godsmack for 23 months right into mixing monitors for the Moody Blues. I was of average age on Godsmack, and I was the youngest person on the Moody Blues gig. You have to be open to that, and be willing to do anything that needs to be done. The more skills you have, the more you're going to work.



An Ex'pression student works on a Soundcraft SM20 monitor console during an Ex'pression Session with artist The Temper Trap in Meyer Hall at Ex'pression College for Digital Arts.

air. Students who work those shows have to get over being star-struck; they see their favorite artists walk through the door and they have to be professional, calm, attentive, and keep their focus on the artist's needs.

Krogh: There's a 2-credit intern component in our four-year bachelor's program. For our live sound diploma, because it's shorter and very hands-on by design, many students get field experience on and around campus. In any given week, there are probably at least half a dozen live performances in three different venues on campus that need sound reinforcement. Students are constantly being brought into service for those events. Across the street from our campus is Minnesota Public Radio. Students intern there, and we get job postings from them and other regional venues as well. The Twin Cities has a thriving music and theater scene, so students end up with a lot of opportunities.

THE INTANGIBLES

In the recording community, there's a lot of talk about "studio etiquette." Is there touring etiquette? What kinds of people skills or personal qualities make students well suited for a career in live sound?

Stefus: In live sound, there are no re-dos, so you have to be able to handle stress. You have to be

mentally tough enough to deal with problems, and humble enough to brush yourself off and keep moving when things don't go as planned. You also have to be physically capable of the job. It's not sitting at a desk. You have to be strong enough to lift, move and work on equipment, and you have to have a technician's mindset. Gear nuts are great for live sound—people who have the excitement and interest in equipment, and technical capability.

Roun: I can say this because I toured for more than 15 years: The most successful live sound engineers, the ones who endure, are solution makers. They're positive and willing to work with everyone to make the entire production a success. They go with the flow and know how to work as a team. I'm known for telling students, "You have two ears and one mouth." That means, listen twice as much as you talk. When you're in school, you're being served by a school, but out there you're serving your client.

Scanlon: I always tell my students that they're in the service industry, like a waiter or waitress. You want to make sure the people you serve have a good experience, no matter what. In live sound, we especially focus on students being calm under pressure. If you're having technical difficulties, how do you calm the artist? Maybe put the artist on a different

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A McNally Smith student mixes a performance in the McNally Smith Auditorium on a Midas Legend 3000 console.

task so they're not focused on technical issues, and you quickly solve those problems. You need to have confidence in yourself to assure them that nothing's wrong.

Krogh: There's a core of soft skills that successful engineers need to have, whether they're working in the studio or in a live setting. Recognizing that you're providing a service is a big part of that. Check your ego at the door, because you're part of a collaborative effort. And if something goes wrong, stay calm and try to find a solution. I've seen situations where something's not going right, and everyone starts pointing fingers. It's not productive. Those are the people who don't get asked back for the next tour. The engineers who are successful are the ones who are natural problem solvers—they're people who just can't leave some nonfunctioning piece of software or hardware down. They can't rest until they figure out what the problem is and fix it. ■

(Turn the page for a Success Story.)

Barbara Schultz is a contributing editor to Mix.



Photo courtesy: Newmastering Studio, Milano - Italy

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Success Story

Adam Parrish,
CRAS Class of 2004

Operations Manager, Production Resource Group



Through Keith Morris, a teacher at the Conservatory, I ended up coming on at PRG. I started here as an intern, about 18 weeks into my program. I started out wrapping cable and labeling rigging parts. Then I moved up to lacing and building racks for tours. From there I went to work on different projects, learning more about crossovers and systems layout, and what's required to make a full system function. I guess I impressed my supervisors to the point where they started having me put the systems into their inventory system, and booking equipment. This progressed into taking over as Audio Operations Manager. Then our company merged all its different disciplines into one. We provide audio, lighting, rigging and video. Over time I was re-promoted to Operations Manager again, but now under the whole umbrella instead of just audio.

I think knowing digital recording played a large role in my moving up. It's a daily integration for live sound now, where you're also recording a multitrack every night. Through experience and schooling I learned Logic, Nuendo, Cubase, Digital Performer and Pro Tools, so I walked in knowing they could put almost anything in front of me and I could navigate it and get along.

Now, when I meet with students, I tell them that the person who will get hired is someone who's open and optimistic, willing to learn and willing to change directions, because one thing you get in live sound is it's different every day.



~ Kevin Becka,
Mix magazine

"The PowerPre is a must hear. I used it for recording vocals, guitar amps and drums with great results. It is particularly good in high transient, high SPL situations where you can drive it hard for more transformer color. I bought one."



~ Paul Vnuk Jr.,
Recording magazine

"I would call the PowerPre full, solid and clean with a classic vintage sound. If you think of the sound of deep rich vintage radio announcers, you will be in the ballpark. This is a stellar and unique sounding preamp"



~ Andy Hong,
TapeOp magazine

"The PowerPre celebrates its own individuality by offering a carefully conceived set of controls that let you extract an expansive range of character. In practice, I found it to be very quiet at all settings. It should be on your short list."



~ George Shilling,
Resolution magazine

"Vox Control is used for tonal shaping: when linear, the PowerPre has plenty of detail and nothing harsh or unpleasant. Breath adds air and clarity, punch boosts the low end. Very usable and quick to audition."



~ Craig Anderton,
Electronic Musician

"The PowerPre is a fine example of a well designed, low-noise mic preamp that can give a bit of 'meat' or 'air' to a signal thanks to the transformer output and Vox voicing EQ. It may well be your preamp of choice."

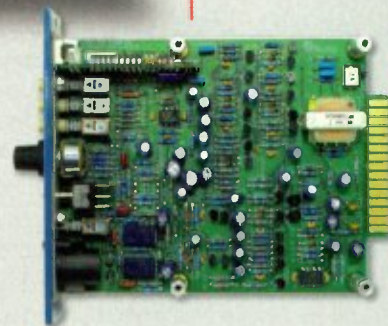
After a year, I'm still impressed... and occasionally startled.

~ Andy Hong, TapeOp

The Radial PowerPre is a high performance mic preamp that combines 100% discrete electronics with a vintage style Hammond™ broadcast transformer to deliver warmth, character and detail. Accustate™ gain control ensures quiet performance at any level while driving it into the red adds harmonics. Switch in the Vox control for high-end sparkle or extra meat when you need it. Easy-access front panel XLR, recessed 48V phantom switch and a 10 segment LED for accurate monitoring.



- ✓ Compatible with older 500 series power racks and all Radial Workhorse™ racks.
- ✓ Full scale 10-segment LED meter for accurate signal monitoring.
- ✓ 15dB pad lets you use the PowerPre with high output devices.
- ✓ 180° polarity reverse lets you match the phase between two mics.
- ✓ High pass filter cuts low frequency resonance from acoustic instruments and cleans up bass tracks.
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- ✓ 48V phantom switch is recessed to prevent accidental switching.
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NEW STUDIOS FOR STUDENTS

With the increased pressure to get students in the door, audio programs around the country have been updating their facilities to provide some kind of “differentiator,” something that shows they remain on the cutting-edge of the industry and are educating students for the future. And with students in need of, and desiring, more hands-on education, the access to the latest gear in an accurate control room is of paramount importance. Much like we do each June in our “Class of” feature, *Mix* now takes a look at some of the high-profile studios to open recently at North American recording programs.



← Middle Tennessee State University Murfreesboro, Tenn.

Renovation of the Middle Tennessee State University (mtsu.edu) Studio E control room—which is one of two “project rooms” where students traditionally begin their first recording projects—was handled by Nashville designer/acoustician Carl Tatz and features a custom application of the new Carl Tatz Signature Series by Auralex, a family of high-quality control room acoustic modules. Each of the two rooms (Studio D is the other) features the Carl Tatz Design PhantomFocus System monitor tuning protocol. An SSL AWS924 console, Pro Tools HD 10 and Genelec monitoring system form the base of the equipment package. Studios D and E opened in summer 2012.

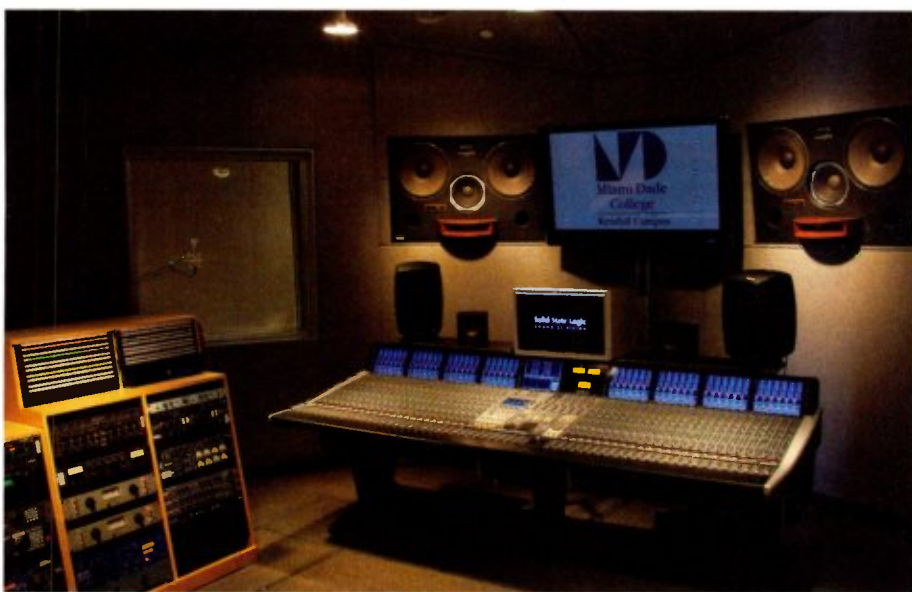
Berklee College of Music → Valencia, Spain; Boston, Mass.

Berklee College of Music (berklee.edu) has embarked on a significant expansion program, opening an entirely new campus in Valencia, Spain, this past January, and starting work on a new ground-up building near its current Boston home. The Walters-Storyk Design Group was commissioned to create the audio education studios for both complexes. The 18,000 square-foot East Technical Wing in Valencia features a 1,360-square-foot recording studio and an 850-square-foot live room, four project/production studios and multiple classroom/tech support environments. The main recording studio, rendered here, opened this past summer, with graduate programs beginning September 2012.



Dallas Baptist University Dallas, Texas

At the heart of the new Joan and Andy Horner Hall, a new 12,000-square-foot performance space on the campus of Dallas Baptist University (dbu.edu), is a 2,400-square-foot recording studio designed by Russ Berger Design Group. Designed to augment the university's bachelor of arts and science degrees in music business, the control room houses an Avid D-Command 24 console and Pro Tools 10 system. Two smaller control rooms allow students to mix projects independently from the main studio. Storage and a central equipment room complete the facility.



Miami Dade College Miami, Fla.

Big upgrades in Miami. The School of Entertainment & Design Technology at Miami Dade College (mdc.edu) installed two Solid State Logic Duality SE Consoles for the film and recording degree programs at its North and Kendall Campus studios. The Duality at the North Campus is the centerpiece of a new hybrid, dual-control room studio built for the film program. The larger Duality room shares a soundstage that doubles as a classroom, with the other, smaller, DAW controller-based control room. The complex includes a complete Foley stage, an overdub booth and a piano booth that are acoustically isolated from the main stage so that the studio complex can be used for two projects simultaneously. The second Duality resides in the recently upgraded, high-end music-recording studio at the Kendall Campus.

Harris Institute for the Arts Toronto, Ontario

World-renowned studio designer and Harris Institute alumni and faculty member Martin Pilchner has worked with the school throughout the past decade, including the design of Control Room A a few years back, featuring an SSL AWS900-Plus SE console, XLogic X Rack and Pro Tools HD. Also pictured is the newest addition, the Pro Tools HD Lab, which opened in July of this year.





EDUCATION GUIDE 2012

In each issue, we profile established and up-and-coming producers, engineers and the like, but they didn't just "fall" into their job. Each one of them followed a required course curriculum, garnering knowledge at each step of the way. And so, the editors at *Mix* are happy to present our long-standing "Audio Education Directory." Whether looking to start their career in the recording/post/live sound industry or researching for a certificate course to boost your knowledge, this must-read directory is geared for you. Listed alphabetically by state, you'll find the school closest to you to get you on your way.

> ARIZONA

ARIZONA MUSIC PROJECT
260 E Comstock Dr., Ste
Chandler, AZ 8522
602/819-8700
azmusicproject.com



CONSERVATORY OF RECORDING ARTS & SCIENCES

2300 East Broadway Rd.
Tempe, Arizona 85282
866/343-0749
audiorecordingschool.com

Degree/Certification Offered: Master
Recording Program II (MRP II)

The Conservatory of Recording Arts and Sciences (CRAS) is the premier audio recording, engineering and production school. If you're looking for an education that can give you the knowledge and skills to record and "live-mix" music, design game sounds and movie soundtracks, then CRAS is the place for you. CRAS graduates are certified in a broad range of technologies encompassing all aspects of the recording process, giving them a significant advantage in the workplace. At CRAS, we don't offer online courses because we know that a hands-on recording education is needed to develop a student's self-confidence and overall mastery. Our certification process means students gain full competence in the basic operation of the hardware and software systems they will use after graduation. Learn the art of audio recording, quickly and without a mountain of debt. If you love sound, make it your career, and BE CRAS!

MESA COMMUNITY COLLEGE
1833 W. Southern Ave.
Mesa, AZ 85202
480/461-7575 (Music Office)
480/461-7450 (Keith Heffner,
program director)
mesacc.edu/programs/

audio-production-technologies

Degree/Certification Offered: Associate of
Science in Audio Production Technologies,
Certificate of Completion in Audio
Production Technologies, Certificate of
Completion in Sound Design.

SCOTTSDALE COMMUNITY COLLEGE

Department of Music
9000 East Chaparral Rd.
Scottsdale, AZ 85256
480/423-6333
scottsdalecc.edu/academics/departments/
fine-arts/music
Degree/Certification Offered: A.A.

STUDIOCAT PRODUCTIONS

Jamison Weddle, multi-Platinum
award-winning engineer
Address given upon request
Central Phoenix, AZ 85015
602/332-4506
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UNIVERSITY OF ARIZONA

School of Music
Tucson, AZ
520/621-1341
arts.arizona.edu/studio/default.html

> CALIFORNIA

ACADEMY OF ART UNIVERSITY
79 New Montgomery Street, 4th Floor
San Francisco, CA 94105-3410
800.544.2787 | 415/274-2200
academyart.edu

THE ART INSTITUTE OF CALIFORNIA - INLAND EMPIRE, A CAMPUS OF ARGOSY UNIVERSITY

674 E. Brier Dr.
San Bernardino, CA 2408
800/353-0812 | 909/915-2100
artinstitutes.edu/inlandempire
Degree/Certification Offered: Bachelor of
Science in Audio Production.

THE ART INSTITUTE OF CALIFORNIA - LOS ANGELES, A CAMPUS OF ARGOSY UNIVERSITY

2900 31st St.
Santa Monica, CA 90405-3035
888/646-4610 | 310/752-4700
artinstitutes.edu/losangeles
Degree/Certification Offered: Bachelor of
Science in Audio Production.

THE ART INSTITUTE OF CALIFORNIA - SAN DIEGO, A CAMPUS OF ARGOSY UNIVERSITY

7650 Mission Valley Rd.
San Diego, CA 92108-4423
866/275-2422 | 858/589-1200
artinstitutes.edu/sandiego
Degree/Certification Offered: Bachelor of
Science in Audio Production.

THE ART INSTITUTE OF CALIFORNIA - SAN FRANCISCO, A CAMPUS OF ARGOSY UNIVERSITY

1170 Market St.
San Francisco, CA 94102
888/493-3261 | 415/865-0198
artinstitutes.edu/san-francisco
Degree/Certification Offered: Bachelor of
Science in Audio Production.

AUDIO INSTITUTE OF AMERICA

PO Box 15427
San Francisco, CA 94115
415/752-0701
audioinstitute.com
Degree/Certification Offered: Degree in Sound
Engineering and Music Production.

AUDIOGRAPH INTERNATIONAL

2103 Main St.
Santa Monica, CA 90405
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audiographintl.com
Degree/Certification Offered: Pro Tools
Operator Certificate for Music and Post
in English and Spanish; Pro Tools Expert
Certificate for Music and Post in English
and Spanish.

CALIFORNIA POLYTECHNIC STATE UNIVERSITY MUSIC DEPARTMENT

1 Grand Ave.
San Luis Obispo, CA 93407-0326
805/756-2406
calpoly.edu/~mu/
Degree/Certification Offered: Bachelor of
Arts in Music.

CALIFORNIA STATE UNIVERSITY, CHICO

Department of Music
400 West First St.
Chico, CA 95929-805
530/898-5152
csuchico.edu/mus/programs/undergraduate/
ba_industry_tech_record_art.shtml
Degree/Certification Offered: BA in Music
Industry and Technology, option in
Recording Arts.

CALIFORNIA STATE UNIVERSITY DOMINGUEZ HILLS

Music Department
1000 E. Victoria St. LCH E 303, LCH A349
Carson, CA 90747
310/243-3543
cah.csudh.edu/music

CITRUS COLLEGE

1000 W Foothill Blvd.
Glendora, CA 91741
626/914.8580
citrusarts.org/ra
Degree/Certification Offered: A.S. in Recording
Technology, Certificate in Audio Recording
Technology, A.A. in Music, Certificate in
Emerging Theatre Technologies.

CITY COLLEGE OF SAN FRANCISCO

Broadcast Electronic Media Arts Dept.
50 Phelan Ave., Box A6
San Francisco, CA 94112
415/239-3000
ccsf.edu/NEW/en/educational-programs/
school-and-departments/school-of-liberal-
arts/broadcast-electronic-media-arts.html
Degree/Certification Offered: Certifications in
Sound Recording Arts, Sound Design, Live
Sound, Digital Radio, Broadcast Journalism,
Broadcast Motion Graphics, Television
Production, Video Post-Production, Sound
Reinforcement, and Pro Tools.

COGSWELL COLLEGE

1175 Bordeaux Dr.
Sunnyvale, CA 94089
800/264-7955
cogswell.edu
Degree/Certification Offered: B.S. in Digital
Audio Technology.

COLLEGE OF MARIN

Performing Arts, Music Department
835 College Ave.
Kentfield, C 94904
415/457-8811
marin.edu/departments/PerformingArts/Music

CUESTA COLLEGE

Audio Technology Program
P.O. Box 8106
San Luis Obispo, CA 93403
805/546-3100, x2792
academic.cuesta.edu/performingarts
Degree/Certification Offered: Certificate of
Specialization in Audio Technology/
Recording.



EXPRESSION COLLEGE FOR DIGITAL ARTS

601 Shellmound St.
Emeryville, CA 94608
877/833/8800
expression.edu

EXPRESSION COLLEGE FOR DIGITAL ARTS

1751 Fox Dr.
San Jose, CA 95131
855/217/7300
expression.edu/sanjose
Degree/Certification Offered: Bachelor's
in Interactive Audio and Sound Arts
(Emeryville only).

Founded in 1999 by the late (2008)
Dutch entrepreneur Eckart Wintzen and
audio engineer and educator Gary Platt,
Expression College for Digital Arts (www.
expression.edu) teaches and grants
Bachelor's Degrees in six programs:
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Filmmaking, Game Art & Design, Motion
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can earn their degree in just under three
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hands-on learning, instructor attention, and
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learn and work with professional-grade
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FULLERTON COLLEGE

321 E Chapman Ave.
Fullerton, CA 92832
714/992-7276
music.fullcoll.edu
Degree/Certification Offered: Please view music.
fullcoll.edu/degrees/recording.shtml.

GLOBE INSTITUTE OF RECORDING AND PRODUCTION

739 Bryant St.
San Francisco, CA 94107
415/777-2486
californiarecording.com/overview.html
Degree/Certification Offered: Certificates, associate's degree.

INDIGITAL INSTITUTE OF RECORDING ARTS

1305 Fair Ave.
Santa Cruz, CA 95060
831/419.6070 | 855/Record-Today
TheIRA.com
Degree/Certification Offered: Year-long certified audio engineering program, fully accredited through the National Private Schools Association.

LA SIERRA UNIVERSITY

Department of Music
4500 Riverwalk Parkway
Riverside, CA 92515
951/785-2036
lasierra.edu
Degree/Certification Offered: B.S. in Music Technology.

LEARN PRO RECORDING

Burbank, CA
818/505-1007
learnprorecording.com
Degree/Certification Offered: Basic Audio Engineering and Master Engineering Certificate.

LONG BEACH CITY COLLEGE

Building G
4901 East Carson St.
Long Beach, CA 90808
562/938-4517
lbcc.edu/mrtv
Degree/Certification Offered: A.A.

LOS ANGELES RECORDING SCHOOL

6690 Sunset Blvd.
Hollywood, CA 90028
888/688-LARS
recordingcareer.com

LOS MEDANOS COLLEGE

Recording Arts
2700 East Leland Rd.
Pittsburg, CA 94565
925/439-2181 x3327
osmedanos.edu/recarts/default.asp
Degrees/Certification Offered: AA, College Skills certificate, Certificate of Achievement.

MEDIATECH INSTITUTE

302 Oceanside Blvd.
Oceanside, CA 92054
760/231-5368
mediatech.edu
Degrees/Certification Offered: Recording Arts Degree, Digital Film & Video Arts Degree.

MINA ENTERTAINMENT

Santa Monica, CA 90404
310/402-6497
cubaseclasses.com

MIRACOSTA COLLEGE

1 Barnard Dr.
Oceanside, CA 92056
760/757-2121
miracosta.edu/instruction/music/index.html
Degree/Certification Offered: A.A. in Music Performance, A.A. in Digital Audio Production, A.A. in Recording Arts/Record Production; certificates of achievement in Business of Music, Digital Audio Production, Recording Arts/Record Production, Sound Reinforcement; certificates of proficiency in Digital Audio, Music Technology, Performance Technician.

MUSICIANS INSTITUTE

6752 Hollywood Blvd.
Hollywood, CA 90028
800/255-7529
mi.edu
Degree/Certification Offered: Bachelor of Music in Performance/Minor in Audio Production, A.A., certificates in audio engineering.



PYRAMIND

Music Production School
880/832 Folsom St.
San Francisco, CA 94107
415/896-9800
pyramind.com
Degree/Certification Offered: Associate of Arts (AA) in Recording Arts, Certificate of Achievement in Recording Arts.

Pyramind is a multi-faceted music production company offering training programs for music producers as well as services for audio production clients. Pyramind has been a leader in music production training for over 15 years in San Francisco and was amongst the first in the world to offer Pro Tools, Logic and Ableton Live certifications. Only Pyramind is both a world-class music production school as well as a thriving audio production company serving the who's who in the video game and post production industry. Pyramind enrolls students year-round at our ground campus in San Francisco. We also offer a wide range of online classes where aspiring producers can learn the art of music production anywhere on the planet. Head to our website to learn more about our course offerings and genre specific packages.

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858/592-0556
tracsd.com

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RECORDING CONNECTION AUDIO INSTITUTE

Local studios in your neighborhood
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recordingconnection.com
Degree/Certification Offered: Certificate.

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SAE Institute has more than 55 schools in over 25 countries around the world. Our

curriculums provide hands-on training with industry-standard equipment, taught by experienced instructors. SAE USA campuses are located in Atlanta, Chicago, Los Angeles, Miami, Nashville, New York and San Francisco.

SAN FRANCISCO STATE UNIVERSITY

Broadcast and Electronic Communication Arts
1600 Holloway Ave.
San Francisco, CA 94132
415/338-1787
beca.sfsu.edu
Degree/Certification Offered: B.A. in Broadcast and Electronic Communication Arts, M.A. in Broadcast and Electronic Communication Arts.

UCLA EXTENSION

10995 Le Conte Ave.
Los Angeles, CA 90024
310/825-9971
uclaextension.edu/r/default.aspx

UNIVERSITY OF SOUTHERN CALIFORNIA

Thornton School of Music
Los Angeles, CA 90089
213/740-6935
usc.edu/schools/music/

UTOPIA PARKWAY MUSIC

Los Angeles, CA 91203
213/744-1487
utopiaparkwaymusic.com/index.html
Degree/Certification Offered: Tutorials.

WEST VALLEY COLLEGE

14000 Fruitvale Ave.
Saratoga, CA 95070
408/741-2520
westvalley.edu/academics/fine_arts/music
Degree/Certification Offered: Associate of Arts (AA) in Recording Arts, Certificate of Achievement in Recording Arts.

WOMEN'S AUDIO MISSION

1890 Bryant St., Ste. 312
San Francisco, CA 94110
415/558-9200
womensaudiomission.org
Degree/Certification Offered: Classes offered for young women and girls in pro audio and the recording arts. Online courses also available (to men and women) via WAM's Sound Channel program.

> COLORADO

ASPEN MUSIC FESTIVAL & SCHOOL

Edgar Stanton Audio Recording Institute
2 Music School Rd.
Aspen, CO 81611
970/925-3254
aspenmusicfestival.com

COLORADO CHRISTIAN UNIVERSITY

School of Music
8787 W Alameda Ave.
Lakewood, CO 80226
303/963-3130
ccu.edu/music

COLORADO SOUND

3100 West 71st Ave.
Westminster, CO 80030
303/430-8811
coloradosound.com/lessons.html
Degree/Certification Offered: Personal recording lessons.

UNIVERSITY OF COLORADO DENVER

College of Arts & Media
Campus Box 162
P.O. Box 173364
Denver, CO 80217-3364
303/556-2279
camarts.org/#explore/by-departments
Degree/Certification Offered: B.S. in Music Business, B.S. in Recording Arts.

> CONNECTICUT

THE HARTT SCHOOL UNIVERSITY OF HARTFORD

200 Bloomfield Ave.
West Hartford, CT 06117
860/768-4465
harttweb.hartford.edu/undergraduate/music/production.aspx
Degree/Certification Offered: B.S. in Engineering-Acoustical Engineering and Music, B.M. in Music Production & Technology.

UNIVERSITY OF HARTFORD ACOUSTICS

200 Bloomfield Ave.
West Hartford, CT 06117
860/768-4100
uhaweb.hartford.edu/celmer/
Degree/Certification Offered: Acoustical Engineer and Music B.S.E., B.S.M.E. with Acoustics concentration.

UNIVERSITY OF NEW HAVEN

300 Boston Post Rd.
West Haven, CT 06516
203/932-7101
newhaven.edu
Degree/Certification Offered: BA in Music, BA in Music & Sound Recording, BS in Music & Sound Recording, BA in Music Industry.

YALE UNIVERSITY

Department of Music
PO Box 208310
New Haven, CT 06520
203/432-2985
yale.edu/yalemus

YALE UNIVERSITY

Graduate School of Drama
P.O. Box 208244
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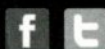
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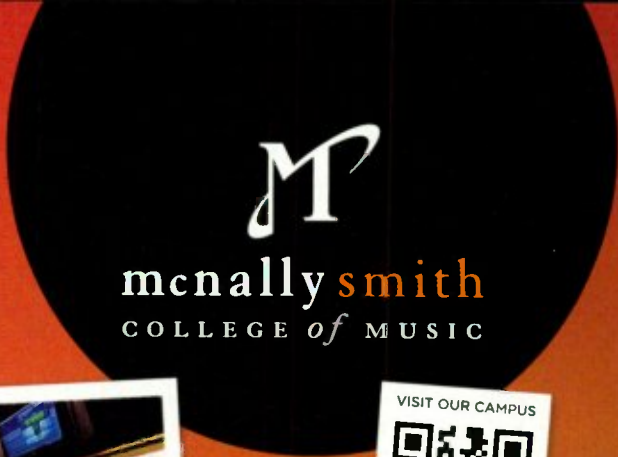
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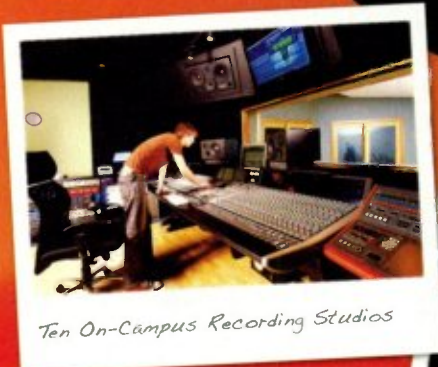
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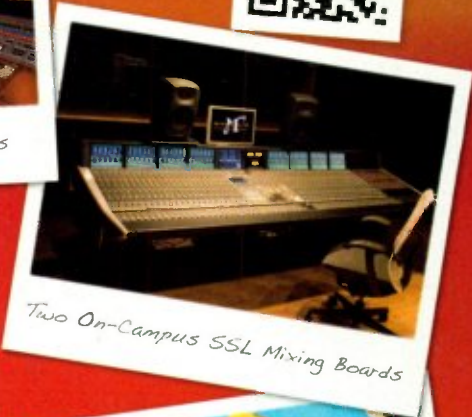
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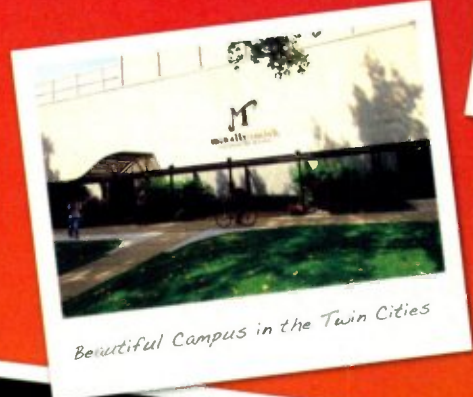
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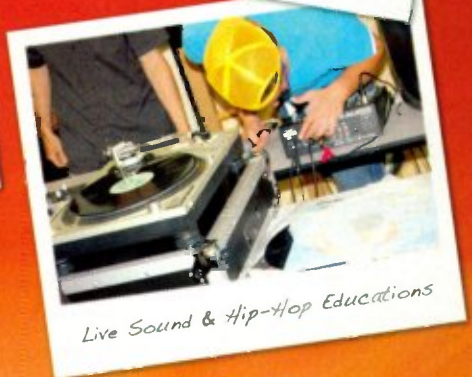
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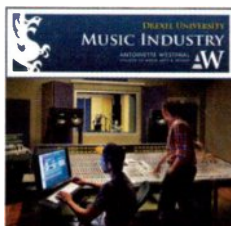
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SONIC FUEL

CHRIS LENNERTZ/TIM WYNN

By Matt Hurwitz

Composer Christopher Lennertz, left, engineer/mixer Jeff Vaughn and composer Timothy Wynn listen to a playback through Sonic Fuel's re-vamped Avid System 5 console.



PHOTO: Courtesy Sonic Fuel

Film and TV composer Christopher Lennertz wraps up a cello overdub for a recent project and then announces the next track, a guitar overdub. But instead of sorting through contact lists and contractor recommendations, he takes a shortcut: upstairs at his studio at Sonic Fuel to knock on the door of a colleague, Aaron Kaplan, also an accomplished studio guitarist, to ask him to play on the track. Much easier.

The approach isn't one either he or partner Tim Wynn could have taken even a few months ago, prior to the June opening of their new facility in El Segundo. The new Sonic Fuel, unlike its predecessor in Marina del Rey, has nine composing rooms, mostly occupied by talented cohorts with whom they've crossed paths on previous projects. "This facility has enabled us to bring in other people who have their own specialties who are also able to rent the studio space," Lennertz says. "We're really able to help each other out."

He and Wynn, who met while studying music at USC with the legendary Elmer Bernstein, founded the company 10 years ago, after working separately for five years alone at home. "We both realized we were sick of not talking to anybody, of being solitary. Plus, we would do sessions late at night, and that's just not feasible with home and family life."

The two then built their own studio in an industrial part of Marina del Rey, with space for two composing rooms and a 13x18-foot recording room. "We could get about 12 people in there," says their longtime engineer/mixer, Jeff Vaughn. "It was sort of tight. It had a sound lock, so you could put a guy out in the hall and leave the door open, if you needed."

Lennertz recorded seven seasons of score for the TV show *Supernatural* there, video games (including *The Simpsons*) and many other projects, as did Wynn, for nine years. But after three three-year leases, they decided to buy their own building and create an environment that would better fit their needs. "We wanted to make sure we had the space to do what we were really getting asked to do a lot, which was multi-stem 5.1 mixes for film, TV and video games," Lennertz says.

With both composers living in the South Bay area of Los Angeles, they looked for a 5,000-10,000 square-foot site in that region, eventually settling on a two-story building, three times their previous studio's size, in Smokey Hollow, an industrial section of El Segundo just south of LAX. "Aircraft noise isn't a problem," says Vaughn. "The runways are east-west and a half-mile north of us. To be honest, we were more worried about trucks outside. Thankfully, none of our neighbors are running any big stamping machines!"

Vaughn helped lay out the building, having worked with Lennertz and



Wynn since 1995. “He’s been around the film and TV world for much longer than we have,” Lennertz says. “We trusted him and his experience.” The engineer worked closely with Frank Glynn, AIA, of El Segundo-based Saga Architecture. “We wanted a local architect, first, because we wanted to support the community we were moving into, and, two, because he already had established relationships with the city’s building department, which helped streamline the process.”

Lennertz wanted a live room that could hold 30 to 40 people, for a typical rhythm section or even a string section. “If you get any bigger than that, then you’re talking about a full orchestra, and we weren’t looking to compete with a Fox or a Warner Bros.,” Lennertz says. The team does record separates, when needed, such as for Lennertz’s score for the pilot for NBC’s new *Revolution*.

The studio, constructed by studio builder Progressive Design, features loads of eco-friendly materials, including reclaimed scrap, light tubes and reclaimed carbonized bamboo flooring in the live room and two iso booths. “We call it ‘Industrial Zen,’” notes Lennertz. For additional protection from noise intrusion, the studio floor is built up on 4-inch rubber isolators, and its walls are stud-separated from the exterior walls.

As in the studio, Lennertz wanted a control room that could comfortably handle a larger group—directors, producers and the like—who often visit a composer at work. “There’s sometimes 13 or 14 people that need to be there to watch and make comments,” the composer explains. “Plus, we knew we were going to be there 24/7, so it needed to be a place we would want to spend weeks on end.”

The team opted for a used Avid System 5 recording console, recondi-

tioned by the company to include the latest operational system. “We looked at buying an old Neve or SSL, but the heat and power issues associated with those were prohibitive,” Lennertz explains. “Plus, we’re not making records. We’re doing film scores that are sometimes 64 tracks wide with multiple stems, so the Euphonix was the best fit.”

The team records to a Pro Tools 10 HDX rig, using Euphonix MAD1 A/D converters, as well as a Euphonix 727 format converter. The studio’s collection of microphones, including Neumanns, Sennheisers, Josephsons and Coles, are fed through a range of high-quality preamps—Avid’s own, as well as units from Grace, Millennia and Neve—to produce as warm an orchestral recording as possible. “We wanted to make sure we have a mic closet and

rack of gear that other mixers and composers are used to using and will feel comfortable with when recording here,” says Lennertz.

While not yet fully implemented, the composing rooms (six upstairs, three downstairs) will eventually be connected via tielines to one of the studio’s two iso booths, which will operate at times as a secondary control room. “You’ll be able to record to any room in the building, recording from any of the live spaces downstairs,” Vaughn explains. “We’ll be able to be mixing in the control room while recording’s going on on the other side of the glass.”

Besides the expansive new recording and control room capabilities of his new studio, Lennertz is already enjoying the camaraderie of additional artists to bounce things off of or get advice, if desired. “Everybody thinks composers like to be sequestered and alone, and that’s not the case,” he concludes. “It’s really nice, after working for three or four hours, to open your door, get a cup of coffee, and be able to play a piece for someone and get a reaction. It’s a nice change.” ■



The live room can hold 30-40 musicians.

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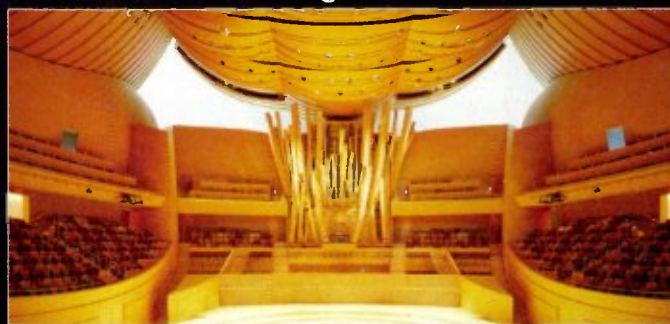
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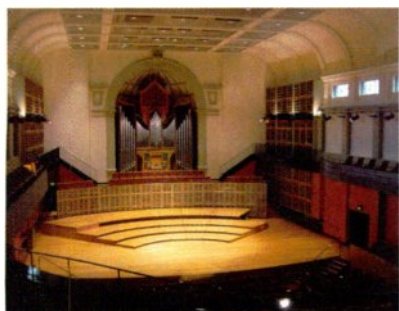


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HERB TUCMANDL, VSL FOUNDER AND CEO, ON VIENNA DIMENSION STRINGS



What was the main reason for creating another string sample library?

The main goal was to provide a string library that, for the first time, allowed for individual access to each single player within an ensemble. Especially with ensembles of four or more musicians, many little mistakes occur during a real recording, such as sloppy and even wrong notes, hesitant or delayed starts, and so on. Not with all musicians, but very likely with one or two players. As a useful "side-effect," this approach is perfectly suited for divisi writing as well.

Are these "mistakes" not possible to capture when sampling a group as one?

Basically they are, but they would sound unnatural, since it's not an easy task to ask musicians to play with mistakes. They either happen or they don't. Also, it's extremely an-

noying to hear the same mistakes over and over again. You'd need to record so many variations that the efforts would exceed any practical limits. With Vienna Dimension Strings it is possible, for example, to designate one or two "weak" players in the group and then play the piece freely, without having to worry about sounding authentic. With the automatic Humanize feature, all kinds of nuances and variations are possible while simply playing, which makes the final result sound very lively.

So does this mean that imperfection was the main concept behind Vienna Dimension Strings?

If you'd like to exaggerate, yes. But primarily it was all about singling out the musicians. For example, we addressed the changes in dynamic levels that can be achieved with velocity crossfades or expression. In reality, musicians never react in perfect unison; one makes a change a little slower, another faster, but maybe with a bigger change in dynamics, and so on. The same with vibrato. All this wouldn't be possible if the group had been recorded as one. But it is very easy if you have access to each individual player; the timbral difference in the final result is absolutely striking.

Why did you record the players together and not individually, one at a time? To achieve isolated signals with individual miking in an ensemble setting must have been difficult.

True, the challenge of miking is higher, but the essential point is that it is simply impossible to achieve a homogenous ensemble sound when mixing a couple of soloists after the fact. When playing as a group, musicians continually adapt, matching timbre, intensity, vibrato, intonation, bow speed and more. All these interactions happen automatically in a good ensemble with a good conductor. This is what you call the "magic" of a live performance. If you recorded eight soloists independently, that interplay is missing and the result will not be a realistic ensemble sound.



The size of the library, with more than 300,000 violin samples alone, and an estimated one million for the full Dimension Strings library, is enormous. Does this amount result solely from the number of individually recorded players?

The amount of players multiplies the number of samples, of course. But another reason for the huge data size is that we've recorded each individual string of each player in its full range,

approximately one octave plus a fifth. This increases the data size by yet another multiple. So we compromised nothing in the creation of Vienna Dimension Strings.



Vienna Dimension Strings opens a new chapter in the history of sampling technology. With a total of more than 300,000 violin samples alone, and an estimated one million for the full library, it is by far the most ambitious and intensive production in the history of the Vienna Symphonic Library.

The 24 string players of Vienna Dimension Strings were recorded in homogenous groups, capturing all of the human interactions and slight imperfections of a live performance, but this time we've used individual microphones for each player, which allows you to access each voice individually. Imagine a glorious ensemble sound with individual control over each musician! That's Vienna Dimension Strings.

FEATURES:

- Four string sections of eight violins, six violas, six cellos, and four double basses.
- Over 300,000 violin samples—up to one million samples for all four sections.
- Ensemble recording, but with isolated microphones on each player.
- Full play range of each single string (one octave plus a fifth), with ready-made presets for "force strings" (all notes performed on the selected string), "avoid open strings" and "use open strings."
- Divisi sections, e.g., four desks with two players each, or two groups with four players each for the violin section.
- Human Performance Control—Timing and intonation of each player can be adjusted individually.

See these and more features in Vienna's video tutorials.

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- Vienna Dimension Strings Full Library now just \$825! (Normal price is \$1,430!)
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- Viola, Cello and Bass Sections will become available in 2013.

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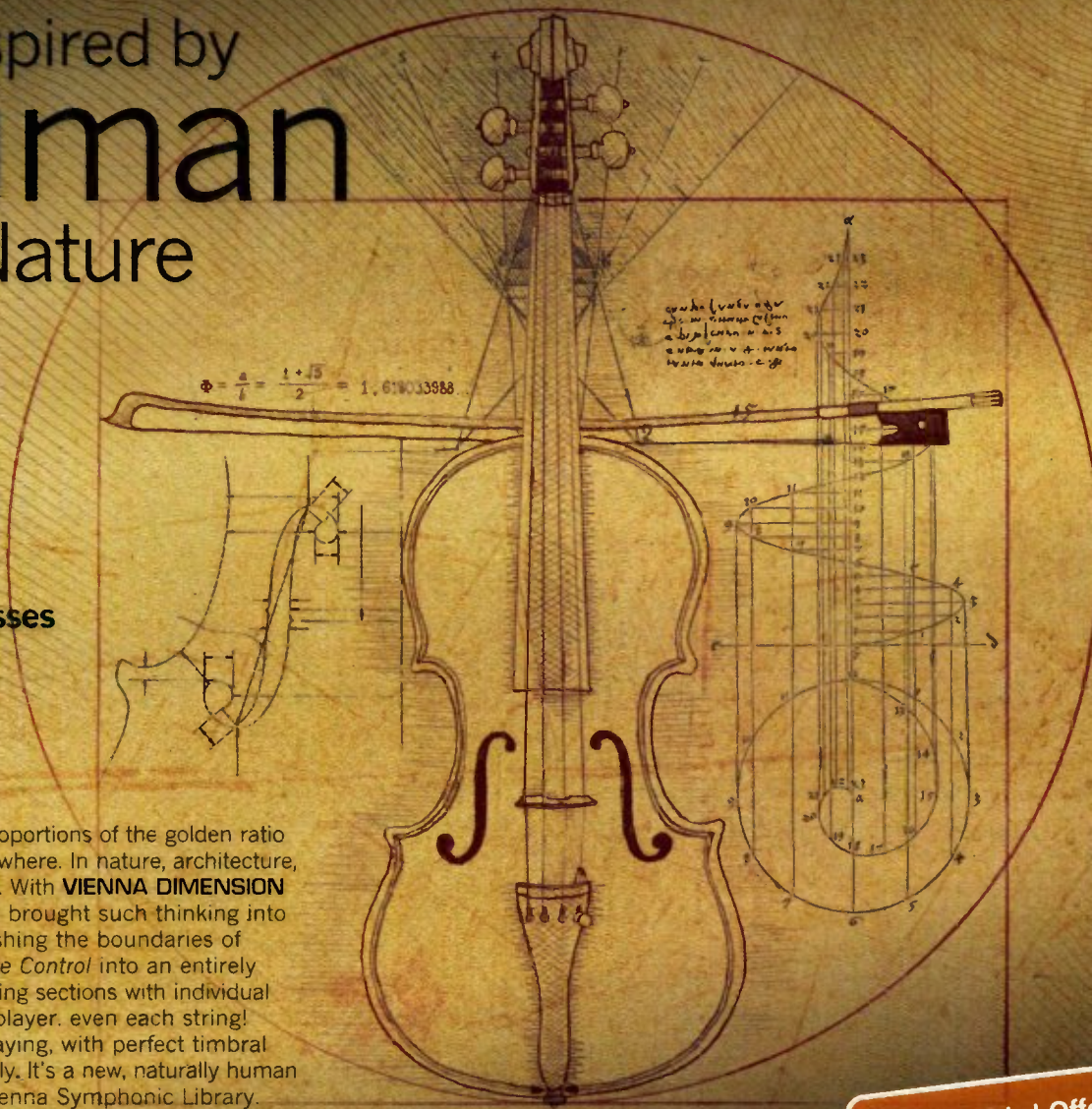
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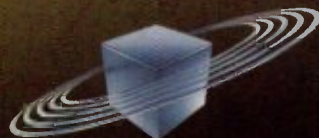
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NEW TOOLS AND NEW WORKFLOWS FOR COMPOSERS



Chris Bolitho,
Head of VK Post

It's not long ago that having a creative palette of sounds for composition meant owning racks and racks of gear. In our composers' studios, we would see multiple Roland JV-1080s, each loaded with different cards, Akai and E-mu samplers, keyboard stands bowing under the weight of every manufacturer's workstation, analog synths crammed into every corner of the room, and anywhere from one to 20 PCs in various states of disrepair, each running GigaStudio and serving up just a few instruments from a giant virtual orchestra (that's on the days when they worked right).

Purchasing all these tools was a gamble, to a large extent. Maybe you would hear through the grapevine that a specific expansion card or sound library was used on a certain movie or TV show, and hope that, by purchasing the same, you could reproduce the awesome sounds that you've been seeking. For the most part, however, making a purchase was a step into the unknown.

NEW WAYS TO CONNECT IT ALL TOGETHER

Connecting yesterday's conglomeration of digital and analog sound sources together required multiple audio and MIDI interfaces, mixers, miles of analog cables, digital cables, and a large degree of good luck and good planning.

"When I started putting my rig together in the '80s I remember spending between \$1,000 to \$5,000 each, per mono timbral instrument, in addition to expensive analog signal paths, mixing consoles, tape decks, outboard signal processors, etc. Now, everything can easily be achieved 'in the box' starting at a fraction of these numbers."—Pat Woodland, composer for television

Modern digital audio transports like MADI, and the various audio- and MIDI-over-Ethernet protocols, allow a composer to connect a couple of computers running DAWs, host software and virtual instruments together, with minimal cabling and simple routing options. Many of our composers are replacing power-hungry and unreliable racks of synths and GigaStudios they used to rely on with a Mac Pro or even Mac Mini, connected to a network, and managed with a remote desktop or KVM client system.

"Composers no longer need racks and racks of samplers and GigaStudios. It's possible to have a tremendous creative palette with just a couple

of computers and some software, even on laptops. The only limits are your ideas!"—Nathan Whitehead, composer

HEAR YOUR GEAR, AND YOUR SOUNDS

It's amazing how many people purchase expensive pro audio gear without ever hearing it, based solely on online research and hearsay. Even if you do find a dealer who will loan you a demo to test in your own studio, you might miss a whole range of other equipment that you could have chosen, had you listened to a wider variety.

VKLA SHOWROOM & DEMO STUDIOS

VKLA, a brand new multi-million-dollar showroom in Los Angeles, has been constructed by Vintage King Audio, dedicated to redefining the pro audio retail experience. They have assembled the largest and best selection of high-end pro audio anywhere. From mic pres to converters to microphones to consoles, monitors, and more, you'll find everything on your wishlist, plugged in and ready to demonstrate. Additionally, VK Post, Vintage King's new nationwide team specializing in sound-for-picture, broadcast and DAW systems, has built the definitive digital post-production audio workstation. Loaded with a massive selection of sound libraries and virtual instruments, it is a system that a composer can sit down at and choose the sounds for his own personalized creative palette.

"What it boils down to for me? Dramatically reduced production times, period. For us with killer deadlines, that is priceless. Every single soft-synth, VI, sampler, etc. that I have bought has paid for itself just because of the time I save."—Pepe Perez Rivero, StudioSonica

DON'T THROW IT ALL AWAY...

There's still room in today's simplified, computerized, in-the-box composer studio for those few pieces of choice gear. Now that the whirring fans of the GigaStudios have gone, and the rope-like audio cables are consigned to the scrap heap, keeping a favorite synth from yesteryear, investing in a classic piece of outboard gear or two, or rolling the piano back in to the studio can often provide a little creative stimulation that a completely computerized workflow may lack.

"I've hankered for outboard devices such as mono synths to provide a more hands-on approach to sound modeling. It's all well and good manipulating virtual knobs and faders but it's great to be able to reach out and turn a real pot to tweak resonance or sustain. My personal system is a Mac-based Pro Tools HD system with a Dave Smith Mopho and a Nord Rack. My main work is scoring for animation and, with Kontakt as my main software sampler and its extensive library, I have a world of sounds at my fingertips."—Paul K. Jocye, animation composer



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VK Post is a team of experienced and specialized pro audio consultants — expert in sound for picture, post production, and digital audio workstations. Offering comprehensive services for the audio professional, we help clients all over the world with digital audio workstation packages, complete recording solutions, custom installations, and everything in between.

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TAPE EMULATION

Plug-ins for Adding Saturation, Warmth

By the Mix Editors

Remember when “tube” was all the rage? The underlying drive was to get digital to sound more analog by introducing a tube into the signal chain. Not to be outdone, software manufacturers over the years have done their part with versions of tape emulators like the Massey Tapehead, Ferric TDS or Digidesign’s Reel Tape. Avid moved it into the next generation with the Pro Tools HD-specific HEAT feature, which is not really a plug-in but gets to the same point. Console manufacturer Harrison even offers another DAW-specific tape emulator in their Mixbus DAW.

In the past couple of years, there have been releases making emulation choices a head-spinning experience, in ever widening market niches, from amplifiers to channel strips. For the *Mix* roundup this month, we dive into the deep end and make sense of the most recent tape emulation software.



UAD Studer A800, ATR-102

For use within the UAD-2 platform only and slickly modeled after the Studer A800, this plug-in gives users all the tweaks you’d expect from the real thing. You can dial in four magnetic tape formulas, play with calibration levels, three tape speeds and more under the hood. Users can dig deeper to adjust EQ controls (NAB or CCIR), HF Bias calibration, Sync and Repro HF and LF calibration, and

separate controls for Hiss, Hum and global noise bypass.

Also for UAD-2 users, the UAD Ampex ATR-102 plug-in allows you to

choose between Input, Sync and Repro signal paths, different tape speeds, bias, emphasis EQs (NAB, CCIR, AES) and tape formulas, even including consumer/home brands. You can saturate “tape” with record gain knobs, switch in/out noise, crosstalk and wow and flutter and even use the plug-in as a fully adjustable tape delay.



Waves MPX—Kramer Master Tape

Developed in collaboration with engineer Eddie Kramer, the Kramer Master Tape plug-in is modeled on a vintage ¼-inch reel-to-reel machine.

Adjustments include tape speed, bias, flux, wow and flutter, and noise parameters. There’s also a flexible slap and feedback delay. The plug operates at up to 96kHz/24-bit and supports TDM, RTAS, AU, VST and Audiosuite, across Mac and PC platforms.

Slate Digital VTM

The VTM from Slate Digital offers two tape machine types, a 2-inch, 16-track and ½-inch mastering recorder.

Users can choose between two tape formulations, 15 and 30 ips tape speeds, noise reduction, auto mute, and wow and flutter and bass alignment controls. Other features include normal, low and high bias controls, and level calibration plus GUI controls like VU ballistics and grouped operation of parameters. AU, RTAS and VST formats are supported.



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URS Saturation Plug-In

URS offers a hybrid plug-in that offers console and

tape machine algorithms for preamps (6), tape saturation (2), transformer core saturation (2), tube and discrete analog saturation, soft clipping and even/odd ordered harmonic distortion. Tape emulation features include tape head algorithms (2) and choices for 15 or 30 ips. All major DAWs are supported including full Avid ICON and ProControl support.

Crane Song Phoenix II



Phoenix II is an update of Crane Song's suite of TDM plug-ins designed to emulate the unique properties of a magnetic tape machine. The five control categories are grouped by personality. Luminescent is the most neutral-sounding process of the five; Irides-

cent has a similar magnetic character, but with a fatter bottom and midrange; Radiant is characterized by a more aggressive compression curve; Dark Essence is even more aggressive, and Luster starts more gently than the other four processes but becomes as aggressive as Dark Essence when the process is at full-scale. Phoenix II runs both Native and DSP on Avid's Pro Tools 10 AAX format.

McDSP Analog Channel



The Analog Channel from McDSP is two plugins,

AC101 emulates channel amplifier circuits, while the AC202 features standard tape machine parameters such as bias, playback speed, and IEC½ equalization plus adjustable low frequency roll off and head bump - independent of playback speed. Users can select from several playback head types, tape formulations, and even control the tape saturation recovery time. Supported formats include TDM, RTAS, Audiosuite and AU formats, Mac or PC up to 192 kHz.



MAGNETIC II Reel-to-Reel Audio Tape Warmer

Nomad Factory's MAGNETIC II features controls for tape speeds, tape/tube saturation and tape color effects, as well as a dedicated vintage style EQ and a built in Boost mastering section. There are nine tape machine models from Otari, Ampex, Tascam, Studer and MCI. Other controls include wow and flutter, fully variable tape speeds (1 to 30), magnetic tape color, saturation, low- and high-frequency control, gain and a brickwall output ceiling. Supported formats include AU, RTAS, VST, 32- or 64-bit Mac or PC.

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Virsyn VTape

VTape is a set comprising three plug-ins—Saturator, Delay and Flanger—that are based on a thorough simulation of the sound of analog tape machines.

VTape Saturator simulates the recording and playback on an analog mastering machine. VTape Delay combines the Saturator sound with a modern, step sequenc-

er-like tapped delay engine. VTAPE Flanger simulates the legendary “tape flanging” effect, simulating playback of two tape machines running at slightly different speeds. New for Version 2: Delay adds optional triplet and dotted notes; Flanger adds LFO Modulation. For VST3/VST2.4: 64-bit version for Windows 7 and Windows Vista.

DUY Software DaD Tape

DaD Tape models four of the most representative tape recorders on the market: a vintage machine with valve circuitry, a transistor-based machine of the late '60s, an op amp-based machine of the '70s and a current machine. There's also simulation of the three most common noise reduction systems, plus a proprietary noiseless-tape mode. Switchable tape speed (7.5/15/30 ips) permits unusual combinations of tape recorders and speeds. For TDM, it

Pro-Codec Version 2

Real Time Codec Auditioning

CODEC LIST	MON	BITSTREAM LEVELS	TRIM	COMP
Apple AAC - iTunes+ (MFT)			0.0	
AAC-LC - 256kbps - VBR		-0.28	0.0	
mp3 - 128kbps - CBR		-0.38	0.0	
HE-AAC - 96kbps - CBR		-0.86	2.45	
HE-AACv2 - 32kbps - CBR		+2.77	0.0	
		+3.31	0.0	

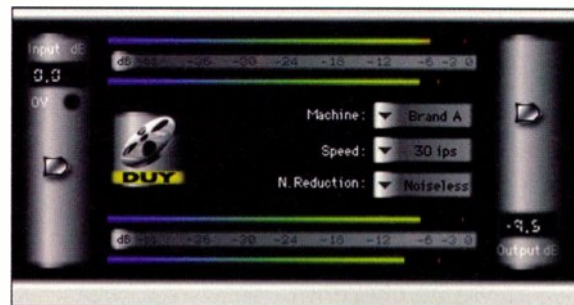
Master directly for iTunes
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The revolutionary Sonnox Fraunhofer Pro-Codec plug-in enables the auditioning, encoding and decoding of audio with codecs such as mp3 and AAC, making it possible to produce online-ready mixes in real time!

Now with the inclusion of Apple's iTunes Plus codec you can mix directly for the "Mastered for iTunes" programme, monitoring the same clip behaviour as the iTunes encoding chain – saving you time and ensuring high quality output during the mixing process.

Also new in Version 2:

- 64-bit compatibility
- Additional codec – Fraunhofer MPEG Surround
- Additional codec – Apple AAC iTunes Plus (Mac only)
- AAC-LC support for 256kbps VBR
- AAC-LC and HE-AAC support for 96kHz sample rate
- HD-AAC support for 16-bit files



can be purchased as part of the Analog Bundle. For RTAS (Mac and Windows), Audio Units, VST (Mac) or MAS/MOTU-based computers, DaD Tape Native can be purchased individually.



Yamaha Vintage Open Deck

Based on the company's Virtual Circuitry Modeling technology, the Vintage Open Deck offers four machine types—Swiss '70, Swiss '78, Swiss '85 and American '70—and each type can be applied to the record and playback deck — independently. Typical parameters such as tape speed, bias and EQ settings, distortion and saturation characteristics are adjustable the type of tape can be selected. Vintage Open Deck is available in VST 3, VST 2.4 and AU plug-in format, allowing for multi-instance use with DAWs such as Cubase, Nuendo, WaveLab and Logic ■.

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Continued from p. 12

STUDIOS 1 & 2

“Wisseloord was a four-studio complex, and we wanted to make it two mixing rooms and two mastering,” says Prent, a pioneer in both surround sound and high-resolution recording/mastering. “But we didn’t want to touch the walls more than we had to in Studios 1 and 2 because their sound is part of what made Wisseloord so great. The studios were more of a restoration, while the control rooms and mastering rooms are completely redone. A bit of the old and the new.”

In fact, while the wood was in decent shape, the tracking rooms were in disrepair. Traps had to be replaced, two new booths were added in the larger Studio 1, a “blue wave” was added to a wall in Studio 2, and high windows were installed to let in just a bit of natural light. They even found the original plans and the right wood wax. But the larger issue was the need for greater isolation.

“I knew they wanted to keep the studio’s vibe, but we also needed greater

separation,” Veith says. “That’s why we had to jack up the whole recording room in Studio 2, including the room-within-a-room construction, in one piece—all together 38 tons—to get a new decoupled floor and footing in. We really did everything to keep the flair, but at the same time match today’s highest requirements.”

The control rooms, in retrospect, seemed much easier to work with. After Veith proposed turning them 90 degrees to open up space, they removed the compression ceilings and gained height, then went into the walls, “down to the sand,” and started rebuilding. Except for the 48-fader Avid System 5 in Studio 1 and the 64-channel API Vision in Studio 2, they are geometrically and acoustically identical.

Prent was in charge of equipment selection, and other than the consoles, he wanted identical packages so that projects could move comfortably between rooms. Recording is to tape or Pro Tools HDX. Converters throughout the facility are Prism ADA-8XR—19 in all, the largest single order the manufacturer has received. Throughout the facility, the analog lines are run using 55 kilometers of ultra-high-quality Grimm cable, a product the Dutch company developed for this project and now sells worldwide.

“Thanks to clean power and great cabling, it’s dead-quiet throughout,” Prent says. “The whole facility. Even when recording and listening at high sample rates, with inserts and cuts and everything in the audio path. It’s astonishing.”

The PMC 5.1 active monitoring system, powered by Bryston amps, was recommended by Veith and heartily endorsed by the partners. It comprises three BB5-XBD-A speakers across the front, a pair of MB2S-XBDs for the rear surrounds, and a set of the smaller AML2s for reference. There is no EQ across the front, just a tweak on the rears.

Prent and Proper have each been involved in award-winning surround projects, and Prent was an early tester/quasi-developer for Philips and Sony with SACD/DSD. They built for 10.1, knowing that they often live in stereo. They wanted volume in the rooms, and they asked for a wide sweet spot.

“The goal is to build control rooms with the best



Roneld Prent



Darcy Proper



Paul Reynolds

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performance in stereo and 5.1," Veith says. "We were able to soffit mount the front speakers, freeing up space. The stereo image width, then, is connected with the room dimensions—the listening position in the modal field—and this leads to the shape of the side walls with the window and its pendant on the other side, and further to the treatment of the rear wall. The rear speakers are placed a little bit closer together than in the standard specs, based on the experiences of everybody involved. The big thing is, it's all in balance."

L.A.-based producer/engineer Csaba Petocz, who has spent the last two months at Wisseloord, working with Ilse DeLange, says, "Working here has been a wonderful experience. The people are great, the API console sounds amazing and the monitoring is beautifully accurate." Similar feedback on the physical space has been regular these past six months.

MASTERING

The plan wouldn't really be complete, or all that new, if Wisseloord hadn't added mastering/authoring capability. "All of the spaces and all of the elements have to work together," Reynolds says. "That is the core of our business model. It starts with the creative team, and we consider the creative process in the widest sense—writer, artist, engineer, producer, video director, graphic artists. They all play a role. Then that creative process is supported by the technical and service elements."

Mastering may be the last link in the recording process, but it's the first step in the delivery chain. With the team's experience in high-resolution format development, and looking ahead to alternate means of distribution, it was deemed crucial that mastering be kept in-house. So when they knocked down Studio 3 and its control room, they put in two spacious mastering rooms, well-equipped and well-positioned for a multiformat world, from vinyl to mobile.



One of the new mastering rooms, spacious and fully loaded with SPL Mastering Console, EgglestonWorks Savoy monitors and Krell 400e mono-block amps.

"We did have the luxury of space," says Proper, "which is fantastic for the sound, especially the lower frequencies. Jochen's treatment of the rooms is very even and non-modal as you walk around and listen. That's more important than you might think when you're with a client."

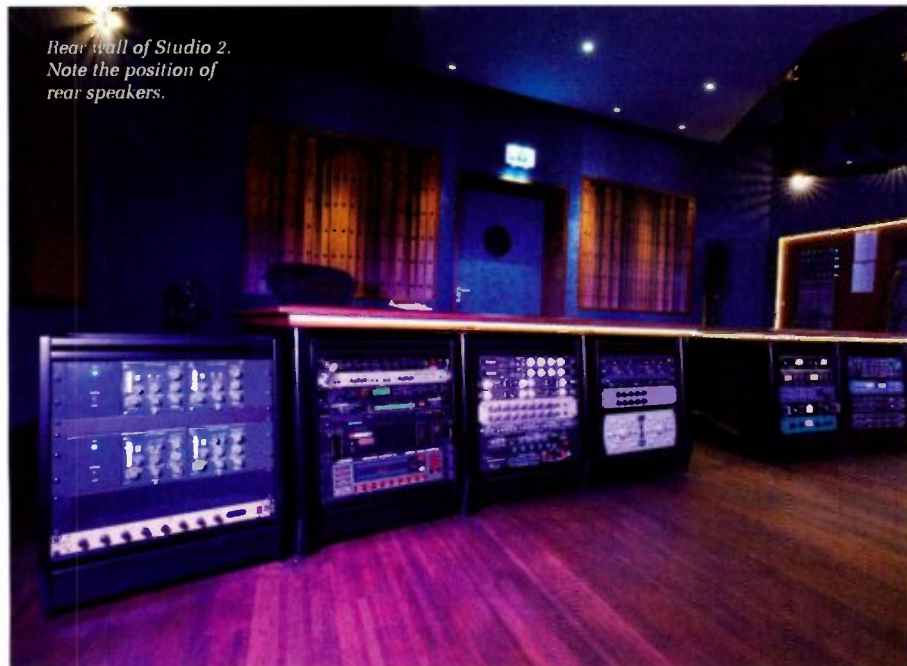
Mastering 1 is larger (roughly 32x20 feet with 10-foot ceiling) with a slightly bigger console and more outboard gear to accommodate 5.1 mastering in analog. Mastering 2 will handle stereo analog and the more DAW-oriented surround projects; it also has the two cutting lathes for vinyl and DMM.

As in the recording rooms, the equipment packages are essentially identical and based around a few key manufacturers: SPL mastering consoles and EQs; EgglestonWorks Savoy monitors, powered by Krell 400e mono-block amps; PMC AML 2 reference/height monitors; PrismSound converters; Lavry converters; Antelope sync and clocking; and all-Grimm cabling.

AND NOW, THE FUN PART

Well, the facilities are in place, so the real transformation at Wisseloord Studios can officially begin. The plan to create a new model is ambitious, reaching far beyond the physical studios and into production and distribution. It won't always be easy, as the partners well know, but they seem well-positioned for the unlimited-bandwidth, high-res delivery systems that are coming soon.

"The essential elements will always still be: finding new talent, having the money and skills to develop it, making enough money to feed everybody, and then keep the cycle running," Reynolds concludes. "That does not change, but the elements that make up the process are continually changing, so we have to change, too."



Rear wall of Studio 2. Note the position of rear speakers.



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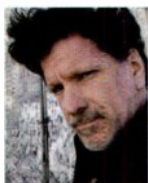
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STRIVING TO BECOME "READY NOW"



By Gino Robair

Teaching classes at the city-college level is some of the most satisfying work I've ever done. The real payoff is at the end of each semester, when I'm often amazed at the high quality of the final projects. But it's not just the singer/songwriters, rappers and beat makers that impress me. The proficiency shown by the budding sound-designers and engineers is notable, and I marvel at how the most talented ones can easily transition between audio apps, video editors and loop sequencers. By the time they finish the certificate program, these students have a solid foundation in technology that will serve them well in the real world, only...

"Don't these kids know there are no jobs out there?"

Or so the old-timers like to say. It turns out that the work is definitely out there if one persists. A California state audit revealed that 100 percent of the students in our certificate program find work in their field of study (not just flipping burgers). You read that correctly: 100 percent. Yes, it's hard to believe, even for those of us who view the glass half-full.

Consider how pervasive audio is in our everyday lives: Somebody has to create the sounds that accompany cable TV ads, video games and smartphone apps. I've been fortunate to see students from our program find gigs at Electronic Arts, Activision and a host of small startups that create sound for game consoles and mobile devices. It's grueling work that involves insane hours, often for moderate wages, but it's work within the Industry. And my ex-students thrive on both the pressure and the rewards.

Unfortunately, it can also be tenuous work. Sound designers are the first to go if a product doesn't sell or if the company has a bad quarter. Few, if any, of these companies seem to have long-term plans that involve their audio teams. Consequently, audio creators must learn to roll with the punches and keep their contacts and reels up to date because, with few exceptions, it's a freelance world.

But that's not necessarily a bad thing. While freelancers must continually be on the lookout for gigs, they don't have all of their eggs in one basket, either. Of course it's glamorous to work for a major production company, but that thrill quickly fades after you've been laid off. And as product lifecycles become shorter and shorter, the developers also come and go with increasing speed. Those who want to be successful in the biz need to embrace this and keep an open mind about the industry, because it is continually changing.

IT'S NEVER ABOUT YOU

A few months ago in this column, I noted how internships remain an important part of the learning process for up-and-coming audio professionals. However, a mastery over technology shouldn't be the only goal of an extra-curricular education. The curriculum in the School of Hard Knocks involves learning professional behaviors. While we do our best to help students develop the interpersonal skills required in the real world, it's something they will only master outside the classroom.

Recently, a student asked me for advice before his interview for an internship at a well-known studio. I told him that the most important things a second engineer can do—any audio professional, really—is to listen and be humble. As engineer/producer Dave Hampton recently noted in an interview, ours is a service-oriented business, and it's never about you. Engineers must remove their ego and put the project first, especially in situations when they know they're right and the client is wrong. Learn to deal gracefully with situations like that, and you'll go far.

LEARN TO RELEARN

This student also was worried that he wouldn't have the chops to land the internship. I explained that the studio wouldn't expect him to know everything. And besides, the speed with which technology changes means he will always be learning on the job.

In his *New York Times* article dated September 8, 2012, Thomas L. Friedman quoted the vice chancellor for work force and economic development at the California Community Colleges System, who noted that prospective job seekers typically have one of "four basic skill sets": "ready now," where they have the exact skills needed by an employer; "ready soon," where it's clear they can be trained easily for a particular gig; "work ready," where they have a solid educational background and can eventually be trained for a job; and "far from ready," where they're not prepared for the tasks required in the modern workforce.

All of the recording arts programs I know of strive to graduate students who, at the very least, will fall into the "ready soon" category, if not in the "ready now." Because our industry has such a wide variety of skill requirements—recording, editing, production, scoring, coding, etc.—and numerous production systems in use, it's nearly impossible for students to be completely ready for everything they might encounter.

Consequently, among the most important qualities that successful audio professionals must have are the abilities to adapt to changing situations and to learn new skills quickly. And they must always remember that the client comes first. ■

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AUDIO EDUCATION

My Eight-Year Report



October marks my eighth year as an audio educator, an experience that has been more rewarding than I could have ever imagined. It's not just the flow of information to receptive minds, but how each student's unique interpretation reflects back that has helped me fine-tune each of my classes.

Throw in a dash of eye-opening, a pinch of frustration and lots of repetition, and you have plenty of food for thought, or at least time for reflection.

REAL-WORLD PERSPECTIVE

When I told my friend Steve Marcantonio about what it is like to teach recording techniques, he was emphatic that mixing cannot be taught. At first I was taken aback by his certainty, but the point was driven home when two exceptional students were mixing a class project as an extracurricular assignment. When the initial results did not meet my expectations, each student got eight hours of "guidance."

Grading a mixing assignment to see what students will do—and providing them with real feedback—is much different than "playing producer" and expecting very specific results. Mixing skills take more time to perfect than a two-year—or even a four-year—program allows. It's a lifelong process. Recording projects begin with musicianship, and the biggest initial challenge for young mixers is to lay off the signal processing just a bit and learn to take advantage of automation. But when production decisions rely on solving performance issues—click, one-track-at-a-time, grid editing, vocal tuning—well, it can and does get better with experience.

PAPERWORK

As professionals, we often take our hard-earned skills for granted, skills that have taken years to polish. From the start of a project to its completion, we may not all take the same path or have the same technical skills, but the resulting sonic diversity makes listening more fun! That said, it's no small task to convert years worth of information into digestible nuggets.

Traditional educator responsibilities include the need to create and modify the syllabus, provide a punch list of class goals, establish rules and expectations. Then there's the testing and grading that provides essential, first-level feedback. If the goal is DAW Certification or technical details, multiple-choice tests are easy to grade. But the larger artistic goal can only be evaluated and guided in the traditional, time-honored way: by listening, providing feedback and trying again and again to get closer to the

goal. In the classroom, meanwhile, what might seem unique to me, an approach that worked with one group, might not work as well with another. I have learned to pace for each specific group and allow room for students to drive the class.

EDUCATION IS BIDIRECTIONAL

The recording and mixing process is both art and science. The *art* of the process is each engineer's unique vision, while the *science* is more like the Pirate Code, guidelines to keep things from getting out of hand. An experienced mixing engineer brings a fine-tuned ear, a musical sense and a keen awareness of playback system limitations. It is important for students to realize the investment that must be made to achieve the goal.

Recording and mixing is a bi-directional process—a servo loop if you will—one that requires constant comparison, feedback analysis and considerable trial and error. It's what I like to call the practice of "successive approximation." Repetition not only helps students achieve knowledge, it also improves an instructor's fluency. I'm continually surprised that I learn something about recording and electronics in nearly every session. I use math more regularly in class than I previously did in the shop. Now I do more "in-shop math," and it improves my problem-solving efficiency.

BRAIN WIRING

More important than what we learn is how we learn—and how we continue to learn. Each of us begins life as a gem in the rough, with each facet representing our talents and gifts. At least one of these facets will reveal itself early, our easy gift, while repetition polishes the facets that are outside our normal comfort zone.

Within electronics are many disciplines that reveal both strengths and weaknesses. Those with artistic/aesthetic inclinations draw the best schematics. The visual/photographic brains can recall astonishing details. And then there are math and verbal brains. Some students have the fine motor skills required for building and taking stuff apart. Others are bold and courageous, which is essential for letting me know when they are struggling (and taking stuff apart). We all learn differently. I've sure learned that.

My analog recording classes emphasize musicianship and teamwork. The old-school hierarchy of Producer, engineer and assistant is still valid because each person can focus on their specific task. Communication skills are essential, so that when the musicians want to know how the take was, the person responsible for listening can respond in an appropriate, hopefully supportive fashion. Students are encouraged to build their own teams when working outside of class.

BANG FOR THE BUCK

If you want to know if education is worth the price, the answer lies primarily with the students. I once calculated that 1-in-60 had the drive, determination, aptitude and attitude required for success. Those 1.66667 percenters will succeed no matter what their career path. I don't really need to worry about them. But I can nudge and reward people who try, who communicate, who push me to do better, who let me know when they are struggling and take advantage when I can give them extra time.

My friend and fellow educator Steve Alm teaches guitar and music theory. His ratio was more extreme, but he emphasized that even those who choose a non-musical career benefit from studying music. They gain useful skills like self-discipline, self-confidence, perseverance and aesthetic appreciation.

My 1-in-60 list has grown over the past eight years. There are dozens of names I can easily recall, and everyone on that list demonstrated raw talent, drive and the tenacity to stick out the tough times to emerge stronger and more determined. They never asked how much they had to do or write; they just made themselves available and kept asking for something to keep them busy. These young people—and so many more, for many different reasons—stand out and have made me proud. They are proof of my favorite expressions: Luck favors the over-prepared, and luck is when preparation meets destiny.

See, I've learned a few things from my students.

CODA: CREATIVE BLUES

Almost as if to prove the point, this column got sent back by my edi-

RECORDING AND MIXING IS A BI-DIRECTIONAL PROCESS—A SERVO LOOP IF YOU WILL—ONE THAT REQUIRES CONSTANT COMPARISON, FEEDBACK ANALYSIS AND CONSIDERABLE TRIAL AND ERROR. IT'S WHAT I LIKE TO CALL THE PRACTICE OF "SUCCESSIVE APPROXIMATION."

tor 'for clarification' after several of my own rewrites. Feedback is good. I had simply tried to cover too many angles. It's not possible to distill every facet of teaching into 1,200 words. I'd love to talk about "education" in a more global sense, because K-12 shapes the students we all get.

And then there is the cost of education in the U.S. of A. Consider just one facet—that while Made in China allows us to have more stuff, it also clouds the bigger issue—that our dollar buys less and that makes amenities that can't be out-sourced, like health care and education, seem prohibitively expensive.

Eddie Ciletti teaches at two Minneapolis-St Paul schools: The Minneapolis Media Institute (MMI.edu) and The Institute of Production and Recording (IPR.edu), both founded by the late Tom Tucker.

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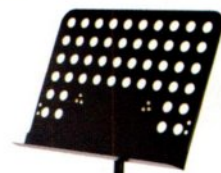
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GREAT RIVER MIXMASTER 20

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The MixMaster 20 (\$7,000) from Great River (greweb.com) offers tracking, editing, and mixing functions in a single no-corners-cut unit. The MixMaster 20 includes four transformer-coupled, low-noise microphone preamplifiers with balanced insert point as well as four auxiliary output mix sends. Each channel may also be fed to the main stereo mix bus. Each

of the 16 transformerless input channels has fully controllable level and pan settings to the stereo mix bus. Mix settings can be stored and recalled via the USB port, and a GUI that is compatible with most digital recording programs is in development to make the MixMaster 20 an automated analog mixer. Summing is done passively with gain provided by transformer-coupled mixing amplifiers. The balanced output stage (with inserts) feeds the Penny & Giles stereo fader and output line amplifier, which is also transformer-coupled. Control room monitoring functions include a solo system, multiple speaker system selector and level control, mix replay monitoring, and talkback.

SONNOX OXFORD EQ PLUG-IN

Four Types for UAD-2 Platform

Developed by Sonnox for the UAD-2 platform, the Oxford EQ plug-in (uaudio.com, \$299) incorporates the same algorithms from the console, with four selectable EQ types. Type 1 is a multi-purpose fixative tool; the peak of the boost and cut curves remains constant according to the Q setting. In Type 2, the cut Q curves are three times sharper than the boost curve; Type 3 exhibits broad curves at lower boost/cut settings, becoming progressively sharper with increased boost or cut. Type 4 has the greatest gain versus Q dependency; its characteristics are very soft and gentle—great for mastering.



HARRISON MIXBUS VERSION 2.1 UPGRADE

Educational Pricing and Features

Harrison (harrisonconsoles.com) is introducing a new version of its Mixbus software with special features and pricing for educational facilities. Mixbus 2.1 features optimization for cloud computing, a dialog for storing metadata inside the audio session, a real mixer console window for teaching basic signal flow, and use for computer-only curriculums to introduce students to analog console operation. Other features include best-in-class DAW concepts such as Playlists, Ripple Edit, Transient Detection and "Smart" tools. The new "Freesound" import allows students to search a massive online database for royalty-free sounds that can be used in sessions. Purchase plans include \$49 plus a subscription rate of \$9 per month, a \$999 site license (10 seats), or \$9 for each student (with a \$49 fee waiver).



FOCUSRITE FORTE

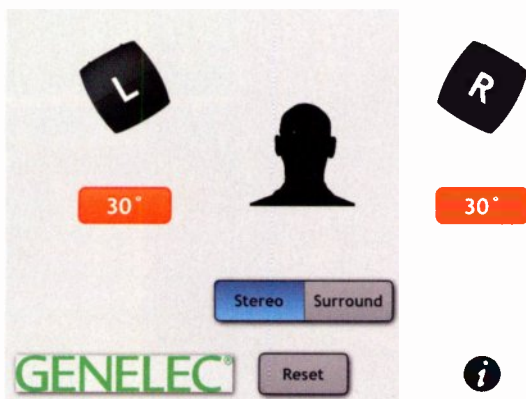
USB I/O for Mac and PC

Focusrite Forte (us.focusrite.com, \$749.99 MSRP) is a portable 2-input, 4-output USB audio interface for Mac and Windows featuring two of Focusrite's latest designs for remote-controlled microphone preamps. Forte includes a color OLED display for mic, line in, line out and headphone levels, gain structure, and more. Other features include a breakout cable for I/O, and a large, rotating control knob that operates in conjunction with a series of touch-sensitive icons to provide access to many functions, including remote control for DAW software. Extras include the Focusrite Midnight plug-in suite, which models the classic ISA110 EQ and ISA130 compressor from the original Focusrite Forté console.

GENELEC SPEAKER ANGLE APP

Bargain Positioning Tool

The Genelec SpeakerAngle app for iOS devices (apple.itunes.com, \$0.99) allows anyone to correctly set and match the angling ("toe-in") of both stereo and 7.1 surround sound speakers, helping to ensure optimum audio fidelity. Dedicated onscreen speaker icons move as each unit is rotated, while boxes below each speaker icon continuously display the angle. The number boxes also change color to let users know when a speaker is angled within industry recommendations, and when it is angled to the same degree as the other one in the pair.



NOMAD FACTORY MAGMA

Plug-In Rack FX

Comprising 65 new plug-in rack effects, MAGMA (nomadfactory.com, \$199) uses Virtual Studio Rack Technology to allow for new levels of creativity and flexibility. Processing categories include: Amplifier, Analysis, Cabinet, Delays, Distortion, Dynamics, EQs, Filters, Reverbs, Harmonic, and more. Features include stackable effects in an infinite number of combinations, all in one easy-to-use plug-in; mixing and matching of effects in unique, recallable chains; and the ability to freely interchange racks and use MAGMA's flexible routing matrix to build custom effects chains.



RND 5059 16X2X2 SUMMING MIXER

Adding the Rupert Touch

The Rupert Neve Designs (rupertneve.com) 5059 summing mixer (\$3,995) features 16 channels with individual level, pan, inserts, stereo sends and master texture controls. The unit provides easy integration with outboard equipment, complete control for two separate stem mixes, and the ability to dial in analog flavor with the Silk and Silk+ texture modes. The Silk mode accentuates the transformer saturation in the high frequencies to add a "sparkle" to tracks, while the Silk+ mode accentuates the saturation of the low frequencies to add thickness and density to any source.



APOGEE QUARTET

Desktop Mac I/O

The Quartet (\$1,295) audio interface from Apogee (apogeedigital.com) connects to any Mac using USB 2 and offers sampling rates from 44.1 to 192 kHz. Quartet's four mic/line/instrument inputs offer 75 dB of gain while its eight digital inputs create the option of connecting an external interface, such as the Apogee Ensemble. Six balanced outs make the unit surround capable or, by using Apogee's Maestro software, the out-

puts will split into three stereo pairs for connecting to different stereo speaker sets. Other features include USB/MIDI I/O, Word Clock output, six touchpads, three assignable touchpads, a controller knob, and two top panel OLED displays.

New Sound Reinforcement Products



LINE 6 STAGESCAPE M20D

Visual Live Mixer

The StageScape M20d (\$2,499.99 estimated street price) from Line 6 (line6.com) streamlines and accelerates the process of live sound mixing via a touchscreen visual mixing environment. The

M20d's DSP delivers fully parametric EQs, multiband compressors, feedback suppression on every channel, plus multiband feedback suppression. The unit also features multichannel recording, remote control capabilities via one or more iPads, and four master stereo effects engines offering reverbs, delays and vocal doubling. Equipped with the L6 LINK digital networking protocol, StageScape M20d allows users to easily configure and control P.A. systems of any scale. I/O includes 12 auto-sensing mic/line inputs, four additional line inputs, two digital inputs (USB or SD card), and four balanced-monitor plus two balanced-main outs (XLR).

SOUNDCRAFT SI PERFORMER CONSOLES

Two for the Road

The Si Performer 2 and 3 consoles from Soundcraft (soundcraft.com) feature, respectively, 24 mic and eight line inputs, and 32 mic and eight line inputs, plus four FX return channels. Two option card slots allow I/O expansion via any of the Soundcraft stageboxes and option cards from the Soundcraft ViSi Connect range, or from CobraNet, AVIOM or AES inputs via the appropriate cards. Other features include fully parametric 4-band EQ on all input channels, and BSS graphic EQs on all bus outputs. Also standard are filters, gates, compressors and delays on all inputs; compressors and delays on all outputs; and a DMX512 port for core lighting control. The Si Performer will be controllable from the Soundcraft ViSi Remote iPad app along with the Soundcraft Vi Series, Vi1 and Si Compact consoles.



ANTARES AUTO-TUNE LIVE

Real-Time Pitch Correction

Software pitch correction in real-time is now available with the Auto-Tune Live plug-in (antarestech.com, \$249). Features include ultra-low latency performance, real-time MIDI control of performance parameters, a humanize function, natural vibrato control, automatic formant correction and superior pitch tracking. Auto-Tune Live is available in RTAS, VST3 and Audio Units versions for Macintosh and RTAS and VST3 for PC. The VST3 and AU versions are 64-bit compatible. Macintosh versions require an Intel processor.

AVID VENUEPACK 4 PLUG-INS

Processing Galore

Avid's VENUEPack 4 (avid.com, \$249.50 to \$449.50) is new suite of professional plug-ins and utilities that will come bundled with all VENUE digital console systems. VENUEPack 4 includes 30 plug-ins from Avid and third-party partners including Flux::, Focusrite, Joemeek, Line 6 and many others. The plug-ins run natively on all VENUE systems—no external plug-in runner or separate laptop required. They offer high-quality sound, reliable performance, exceptionally low latency, and automatic delay compensation support, and can be controlled right from the console surface.



AVIOM C4DIO CARD

I/O for AllFrame

Designed for use with Aviom's Pro64 AllFrame Multi-Modular I/O System, the C4dio Digital I/O Card (aviom.com) offers 4x4 AES3 I/O with BNC Word Clock Out, In, and In with Termination options. Six C4dio Digital I/O Cards installed in an F6 Modular I/O Frame allow the AllFrame to be configured as a 24x24 AES3 digital audio interface. When at least one C4dio Digital I/O Card is installed, the AllFrame can support external clocks.

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Tech // reviews

UNIVERSAL AUDIO APOLLO

Audio Interface With a Twist, Real-Time DSP



Apollo lets you choose to commit to the sounds of the plug-ins while you record with almost no recognizable latency.

Bill Putnam founded Universal Audio with the idea that his designs would be synonymous with technical and sonic quality, and the UA design team has forged Putnam's ideas into their latest offering, the Apollo High Resolution Interface with UAD-2 processing. Apollo offers many features, including mic/line inputs, a range of outputs, monitoring, a software console and more. The QUAD version reviewed here has four processors, while the DUO has two. UA gear has been a part of my studio and projects since I started working, so I looked forward to recording and mixing with Apollo.

INSIDE AND OUT

The Apollo is a single-rackspace unit with an external global power supply (110 /240 volts, 50 /60 Hz) that connects via a multipin XLR connector, then an IEC cable into the wall. It comes with 32- and 64-bit device drivers for use with the latest DAW software. I loaded the software on both my Mac Pro tower and MacBook Pro laptop and was quickly up and running using the dual FireWire 800 ports on the back of the unit. Should you not have a FireWire 800 port, UA suggests several manufacturers that make affordable cards that integrate well with Apollo.

There are eight analog inputs (four XLR mic, eight TRS ¼-inch line, the first four are shared), eight analog outs (TRS ¼-inch) and eight digital optical I/Os via ADAT. S/MUX provides eight I/Os at sample rates up to 96 kHz and four I/Os at 176.4 and 192k. Two S/PDIF coaxial ins and outs will do automatic sample-rate conversion if the source isn't matching. The Apollo has no MIDI connections.

The front panel controls the four XLR analog inputs: a simple push on the knob switches from one mic input to the next. The control knob will boost gain up to 65 dB, making it ribbon

friendly, and the first two analog inputs can also be purposed for instruments. Other features include a highpass filter button, reverse polarity, phantom power and a linking option for the mic preamps. There is also monitor control for the stereo and headphone outs and 10-step LED meters for the eight analog inputs and stereo outs.

Looking inside Apollo QUAD reveals four SHARC processors, which are the same chips offered in the other UAD-2 products. Apollo can be combined with other UAD-2 devices for even more DSP. All plug-ins are available in RTAS, VST and Audio Units formats.

APOLLO SOFTWARE

Apollo is able to run all UAD-2 plug-ins that are authorized in your personal UA account—no iLoks or dongles are required. It comes with a software console that looks very similar to one of Putnam's early designs. The console's recall feature allows you to save favorite channel settings, tracking setups and monitoring situations and quickly pull them into a new session. You can then choose to commit to the sounds of the plug-ins or simply monitor them when recording with almost no recognizable latency. Yes, I said record through the plug-ins! After installing the software on the MacBook Pro, I pulled up a new session in Pro Tools and it quickly recognized the hardware unit. I opened the console and was ready to record.

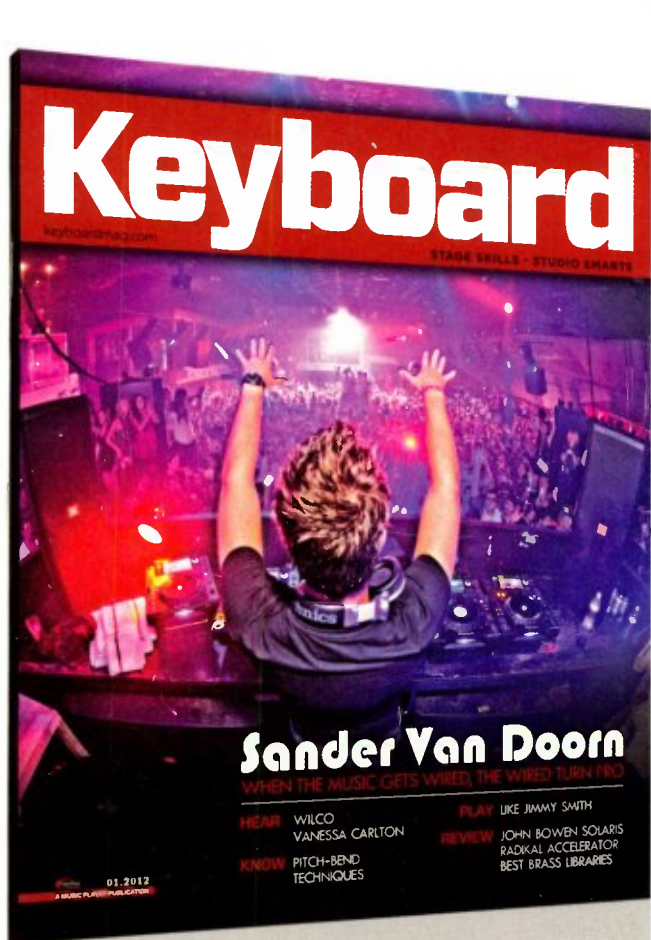
Pro Tools has long been my DAW of

TRY THIS

Record a drum set through Apollo's mic pre's alone or through various plug-ins to get the sound you desire. Then send a stereo mix of the tracks out of the Apollo using the TRS ¼-inch I/O on the back, then back into Apollo to record them onto two new tracks. Apply an 1176 of your choice to the new tracks and set it to an aggressive setting from the presets. Mix this new track into your original kit to achieve a bigger sound than you had before.

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choice, but Apollo worked well with Logic and Ableton Live. I asked two mixer/DJ friends how Apollo would help their workflow, and they both commented that they love the idea of having a stable, separate unit for processing and monitoring in a live setting that is not reliant on the computer. They also liked the idea of being able to process tracks in real-time and recall console settings in the studio or at a gig—all within a single-space unit. Their only complaint was that the Apollo lacks MIDI connections.

RECORDING WITH APOLLO

My first session involved recording and mixing everything on a laptop. I recently started a new record with Nashville's Kyle Andrews where we wanted to blend live performance and retro sounds with modern synths and production. We recorded drums, bass, acoustic and nylon string guitars, organ, percussion and vocals all through the Apollo's preamps with stunning results. The quieter sound sources were no problem for Apollo's preamps, which offered plenty of clean gain. Kyle commented that he loved being able to set up his own mix against what I was hearing, using the aux sends on the console.

We recorded the tracks once with no processing, then a second time with plug-ins for comparison. I have access to all of UA's plug-ins, but users can also demo any of them for a short time to find favorites. Decisions, de-

PRODUCT SUMMARY

COMPANY: Universal Audio
PRODUCT: Apollo
WEBSITE: uaudio.com
PRICE: QUAD \$2,999; DUO \$2,499
PROS: Real-time processing. Easy-to-use console interface.
CONS: No MIDI input.

isions: Drums through a Neve 1073, Harrison 32 or Helios 69 pre? An 1176 on every channel? SSL processors to mix? The EMT 140 and 250 plates are easily my favorite reverb replications, and Kyle was going bananas tinkering with the Roland Space Echo. We even did some processing of the drums through a Fairchild and sent them back into two channels through the TRS outputs and inputs on the back of the unit. I found myself wishing for a quick command to drag and drop a plug-in or setting, which would be a real time-saver. The recording went quickly

and flawlessly, and we were inspired to start mixing right away. Monitoring through the Apollo was very accurate and I was able to quickly put together a concise mix. The only thing I felt was missing was a master bus insert to get the mix exactly the way I wanted, but UA points out that this would add latency to the output so the company recommends using a master plug-in in the DAW.

I then used Apollo with my Pro Tools|HD system and Mac Pro tower rig, which increased my processing power. I mixed a project for Dave Matthews Band saxophonist Jeff Coffin, who wanted it to sound "analog," like an old '50s or '60s Blue Note recording. I employed several tape machine emulation plug-ins across different parts of the mix and the EMT 140 plate on his sax. Jeff responded with, "Sounds great, print it!" Even the mastering engineer commented on how the mixes sounded very warm and analog.

Next, I mixed a project for legendary songsmith JD Souther. This was a live project, and JD wanted to feel like he was sitting in the room while listening back. He loved the flexibility of Apollo and being able to compare plug-ins' effects on the overall mix.

The Apollo compared nicely to my UA 2192 converters when recording drums, percussion, and electric guitars at different sample rates. At higher sampling rates I heard bit of a difference in vocals and top-end transients from instruments, and preferred the 2192. When converting audio through Apollo, it sounded great, but when bouncing mixes, the 2192 still felt a little bigger, wider and punchier.

COMPLETE PACKAGE

My expectations for Apollo were very high, but after recording, mixing and monitoring through the unit, UA's introduction to the audio interface market proved worthy of the brand. The unit is powerful and flexible, and it sounds fantastic. It allows the user to get up and running quickly and focus on making inspired recordings. That's what I look for in any piece of gear, and Apollo offers that and more. If you're looking to expand your processing power, simplify your workflow or have a super portable interface that sounds great, look no further than Apollo. ■

Chris Grainger (itsgrainger.com) is a producer/mixer/en-

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FOCAL SM9 STUDIO MONITORS

Mid-Size Speaker With Switchable EQ, Plenty of SPL and a Secret

Focal Professional has been making studio monitors for only a short time, but Focal/JMLab has been around for more than 30 years. Besides making pro audio monitors, the company manufactures home and car audio products, headphones and public address systems. They've also been the OEM for other companies such as L-Acoustics and KRK, and recently penned a deal to collaborate with Fender Guitar on some soon-to-be-released products.

No matter what they make, Focal is about quality, manufacturing every part on-site down to the screws. I first heard the SM9s at AES in San Francisco in 2010, but only recently has the company released the product in mass quantity.

CUTTING-EDGE TECH

The SM9 uniquely offers both a two-way and three-way experience—it is literally two systems in one box, with the Focus button on the side of each monitor providing instant switchover. In full-range mode, the 11-inch passive radiator at the top, 8-inch woofer, 6.5-inch mid and 1-inch inverted dome beryllium tweeter work as a single unit. Push the Focus button and the radiator and woofer go dormant, while the mid and tweeter become the new full-range option using a reconfigured crossover. The experience during switching is smooth and sounds right. If I had a genie, I'd wish for a Focus and Direct Input (EQ in/out) remote for speakers mounted far from the listener. I'm close enough to reach the buttons in my setup, but I could see this being a great option for SM9s mounted on a meter bridge.

No review of a high-end product would be complete without numbers, and there are plenty here. The SM9 gives the user numerous switchable EQ options, plus plenty of SPL (106 dB two-way; 116 dB three-way) using lots of clean power to get there. The bass is powered by a 400-watt amp while the mid and tweeter each get 100 W, all Class-A/B. The five boost/cut EQ options (all +/- 3dB in 0.5dB steps) include a low shelf from 30 to 250 Hz; high shelf from 4.5 to 40 kHz; LF at 50 Hz (Q2), LMF at 160 Hz (Q1), and MF at 160 Hz (Q 0.6). These five are in/out switchable as a group using the Direct Input button on the side of each speaker.



The SM9s offer five bands of EQ plus a three-stage highpass filter for use with a sub.

Remaining tweaks include a highpass crossover for use with a sub (full range/45/60/90 Hz at -6dB, not switchable) and a -10 dBv/+4 dbu input switch. Other extras include a Power On, clipping and default front panel LED, and a standby switch.

IN MY EARS

I installed the SM9s in my personal mix room, which is 9x12 with an 8-foot ceiling. I'm using Vovox speaker cables from a Dangerous Monitor ST for audio, and feeding balanced power to the SM9s using ESP MusicCord power cables from Monster AVS 2000 Pro and Pro 7000 power units. The speakers are mounted on adjustable Sound Anchor stands and I would recommend nothing less—each box weighs 77 pounds. When power is first applied, the SM9s go through a boot

TRY THIS

Playing with the orientation of your speakers will give you more ways to make sure your listening experience is at its best. Speakers on their sides or upright? Tweeters in? Tweeters out? EQ options? It's all okay and different for every listener and room. Get a couple of friends involved, make the switches quickly, and then get everyone's impressions across a wide range of listening sources. You may be surprised that something you thought was against the rules turns out to be your best bet.

sequence that includes a relay clearing routine. The relays in each box quickly click on/off for a few seconds to make sure they're running as they should. After that, the LED on the front of each cabinet goes green and you're good to go.

I've been monitoring on Focal Twin6 Be monitors and love them. Right off the bat, my experience with the SM9s revealed the bottom octave that I was missing with my Twins. Not to say that the Twins were lacking, just that they don't have the dexterity at low frequencies that the SM9s have, and should have at nearly twice the price.

The SM9s can get loud. For career longevity, you have to be careful not to go there too often. Because of the exceptionally quiet amplifiers and how even they sound across the frequency range, they beg to be turned up. The speakers are marked specifically as L and R on the back, as Focal recommends the tweeters ride on the inside. However, it depends on how far back you are from the monitors; my sweet spot is close so I have them in the recommended orientation.

I was in the middle of a mix project when I put up the SM9s and it changed how I mixed the rest of the songs—so much so that when I went back and remixed a song based on my experience with the SM9s, I found that I had missed making some key moves when listening with my old setup. The new speakers changed how I work and listen.

Focal is the only company that holds the patent for the manufacture of 100-percent pure Beryllium tweeters, and they sound fantastic. Some reviewers have dissed Beryllium as being too hyped at the top but I don't find this to be the case. I find Beryllium-based to be very smooth—I love the sound of cymbals, transients, the air I get on vocals, accuracy of room reflections and the incredible stereo field. The aural picture is so solid that you forget the boxes are there and concentrate more on the phantom image that takes on a life of its own. You'd swear center-panned elements are coming right out of the wall.

DIALING THEM IN

Because of the sheer power and size, I first thought the SM9s would be too much speaker for my small room, but I was so wrong. It's the perfect speaker for any space that can't support a midrange and near-field monitor. The EQ options give you many ways to tune the monitors to your space. I could tell that much thought went into the frequency choices and Q widths—they are very musical. At first I ran the SM9s flat and there was some tubbiness due to wall proximity and the size of my room. My sweet spot is very small, but the EQs on the SM9s made it simple to fine-tune that golden area.

After talking with Simon Cote from Audio Plus Services, I employed the 160Hz cut option. He recommended that I kick it down a dB and I instantly A/B'd the choices using Direct Input. This was a definite improvement. It took me a few mixes to feel confident with my EQ choices,

PRODUCT SUMMARY

COMPANY: Focal Professional
PRODUCT: SM9 Monitors
WEBSITE: focalprofessional.com
PRICE: \$3,595 each
PROS: Sonically excellent; Focus Mode, switchable EQ.
CONS: May be too pricey for some.

but now I'm mostly using the Focus button, especially near the end of a mix when I'm trying to gauge how much bottom is too much and whether I've gotten off track.

THE PRICE OF TRUST

As a reviewer, one of my tenets is to ignore the \$\$ until the end of the process. It's too easy to discount something as too cheap or too expensive and confuse the difference between money and value. During this review I've had more than one friend say, "Yeah, but they're so

much!" Yes, the price is dear, but you're not buying just a monitor. It's two systems. Focal is the first company to put a two- and three-way in one box, so there's a bit of early adopter pricing at play here. There are obvious R&D costs, but more important, you're buying trust, the confidence that your listening decisions are beyond question. Frankly, that's worth whatever you can afford. Once you hear them, you can't ignore the SM9s' sonic superiority, clean quiet power, and unique features like Focus and Direct Input mode. The sum of all these qualities makes the Focal SM9 the smart choice for anyone looking to improve their monitoring experience, thereby improving their mixes. ■

Kevin Becka is Mix's technical editor.

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APHEX CHANNEL

Tube and Solid-State Preamp With Seven Processors



The ApheX Channel combines the company's Aural Exciter and Big Bottom into a single-rackspace recording channel.

ApheX has made a name for itself with its unique brands of processors, preamps, converters, instrument pedals and accessories. Whether helping a particular element poke through the fog of a dense mix, or adding extra luster to an entire mix, patented processes like the Aural Exciter and Big Bottom are welcome additions to any signal flow. The ApheX Channel reviewed here features a fixed signal flow including up to seven different signal processors. It also has a good number of inputs and outputs, both analog and digital, making it a DAW-friendly front end.

GETTING CONNECTED

The Channel features strictly analog input, with only one available at any time. A microphone can be connected to the rear panel using a balanced XLR connector, or this input is bypassed when an instrument is connected to the ¼-inch TS input on the front panel. Neither input is designed to accept a line-level signal, but users can purpose the 0dBu balanced insertion point between the dynamics processor and the equalizer section for line-level inputs. This provides access to the tone processors, skipping the compressor, gate and de-esser.

The output connections provide something for everyone. Balanced output at +4 dBu feeds either an XLR connector, or a ¼-inch TRS connector, and the ¼-inch can be switched to -10 dBV for unbalanced operation. Digital output is available through an XLR connector for AES/EBU, or S/PDIF can pass through an RCA type connector or optical TOSLINK connector. Sample rate and clock source selections are done on the front panel with visual feedback from an illuminated display. When syncing to external word clock, the Channel automatically sets up the A/D converter accordingly.

If there is a next generation, I would like to see a dedicated unprocessed line-level input to the second channel of the A/D;

a similar feature is found on Focusrite's ISA One or Universal Audio's 4-710d. With that, you could chain together two Channels and feed them through one digital pipeline into a 2-channel digital interface.

RACK IN THE BOX

The ApheX-patented RPA Preamp kicks it off at the input stage. This hybrid circuit features a solid-state front end and a tube-based back end, and is designed for a wide dynamic range and lower noise floor than a typical tube preamp. In a shootout against the Universal Audio Twin-Finity 710 the Channel's character was similar, but the Channel seemed to push a bit more bottom end, even with all processors bypassed. This was very apparent when recording an acoustic guitar, although the 710 had better top-end detail. For voice-over, on the other hand, the Channel gave the track a big broadcast-style sound.

The mic preamp provides toggle buttons for a 75Hz highpass filter, -20 dB pad, polarity-invert switch, 48-volt phantom power, and a unique "phase rotator." While the name suggests something akin to the Little Labs IBP, that is not really the case at all. This circuit is more closely related to classic FM radio processors designed to correct problems related to asymmetrical waveforms. We've all seen waveforms wherein the top is taller than the bottom, or vice versa. When the shorter portion ends up being positive, a compressor may fail to respond correctly. The phase rotator cues the compressor's threshold to trigger based on the positive and negative peaks in order to improve its response.

TRY THIS

With tube pre's like the Channel, even someone who is inexperienced in modifying electronic circuits can try out some different flavors by simply swapping out the tube, which isn't recommended by the manufacturer. Pulling a socketed tube and replacing it requires no soldering, and is easily reversed. I swapped the stock (unlabeled) 12AT7 for a Groove Tubes 12AT7, and found slightly less noise and a bit of improved detail in the top end. For use as a bass DI, popping in a high-gain 12AX7 might provide a little extra grind.

Listening and visually analyzing waveforms recorded into a DAW, it was hard to predict the outcome. Depending on the nature of the voice, mic and proximity, sometimes the Channel produced the desired effect, and sometimes it didn't seem to do much at all. However, when it was audible, it was a nice added bonus.

After the preamp comes the Easyrider compressor, whose attack, threshold and gain reduction all automatically adjust relative to the nature of the input signal. In other words: Driving the preamp harder results in more gain reduction, prior to an automatic make-up gain. When recording speech in a post-production session, it was easy to dial in a great sound with either a smooth natural character or hard compressed sound. When recording a bass, I found it challenging to find the right sound. After much tweaking, I would find a good sound, but seemed to clip the A/D converter too often. Compromising would mean a sound that is overly compressed, too thin, or unable to cut

PRODUCT SUMMARY

COMPANY: Aphex
PRODUCT: Channel
WEBSITE: www.aphex.com
PRICE: \$999 street
PROS: Easy to sculpt great vocal sounds.
CONS: Fixed-order processors make some workflows difficult.

The de-esser worked very well and was musical and transparent. As I started cranking the single knob that controls the effect, I was second-guessing whether it was bypassed; the overall sound is very transparent.

SCULPTING TONES

The last section before the output gain control is the tone-shaping section—which features the Big Bottom circuit—and a single-band,

The single band of parametric EQ sounds good but limits your options. When recording voice, and even more so when recording acoustic guitar, I missed the option of bumping upper midrange while scooping the low-mids. I tried addressing the low-mids with the EQ and hitting the highs with the Aural Exciter, but it wound up just sounding grainy and artificial. It was easier to get this right when recording voice. I found that by boosting upper-mids with the EQ and adding the Big Bottom and Aural Exciter, I was able to effectively punch a hole in the low-mids and get the vocal sound I wanted.

IS IT YOUR EVERYTHING?

My experience with the Aphex Channel was positive, especially when recording voice. Using the combination of processors to sculpt a usable tone from any vocal subject couldn't have been more convenient and pleasant. With the compressor and gate holding the voice steady in a comfortable dynamic range,



through the mix. While I was eventually able to muster up a pleasant sound for bass, the process wasn't nearly as intuitive as my experience with speech. It seems that the preset attack and knee are geared more toward vocals than other instruments.

Next comes the Logic-Assisted Gate, which is designed to work with the compressor and inhibit the compressor's release when the gate is trying to close. This clever design produced very useful results, and I was really impressed on all sources. The response was very natural, especially when allowing a small amount of room tone to pass through by setting the Depth control a little shy of the maximum attenuation setting. The gate's attack and release characteristics felt more universally suited to both voice and instruments than those found in the compressor. A Release control would have come in handy in a few instances, but it was still one of the most versatile gates I've used.

midrange-frequency parametric EQ, followed by the Aural Exciter. Given the fact that the Aural Exciter is designed to create artificial upper harmonics, the common misconception of the Big Bottom is that it is a sub-harmonic generator, but it is not. Instead, it is a circuit that separates existing bass frequencies and compresses them, which adds weight and sustain, and then selectively adds them back into the signal. When recording voice-over or ADR, I was able to clean up the sound using HPF, the gate, and then the Big Bottom, creating something like a selective proximity effect. Even with a distant shotgun mic, I was able to pull the sound forward or push it back into the scene. Creating the ultimate announcer's voice was a snap using a close mic and adding some Big Bottom. It was important not to overdo it, because sometimes the bass would sustain beyond the rest of the voice, sounding unnatural.

and a few tweaks of the output control, I was able to quickly park the voice at a steady -23 LKFS referencing a meter compliant with ITU-BS.1770-2. I never had a chance to use the Channel to record hip-hop vocals, but this processing chain would have been perfect for that, too.

Getting so much processing in a small box and in a fixed order sometimes compromises the Channel's ability to be the perfect box for every situation. For instance, getting the perfect electric bass sound took some experimenting, but certainly this device is capable of producing some unique bass tones. The Aphex Channel's design makes it better at some uses than others. If you are looking for an "it" vocal chain to add to your setup, I would certainly recommend this one. ■

Brandon Hickey is a freelance engineer and audio educator.

MXL CR30 MICROPHONE

Solidly Built, Affordable Performer

Due to the boom in home and personal recording, a wide range of manufacturers offer value-based options from the beginning to end of the signal chain. Microphones in particular have seen a surge in affordable products that look a lot like their higher-priced cousins. The problem is in figuring out which of these can live up to the billing and deliver the goods.

Forums are filled with posts touting various mics as the secret weapon for this or that, but true value isn't endemic to a mic that does one thing really well. If a microphone is going to earn a prominent spot in the locker, it needs to be well-constructed and possess the versatility to capture a wide variety of sources. To that end, MXL has consistently been at the forefront of creating quality microphones that are accessible to a broad base of users. I remember the first time I saw a v67 and how shocked I was when the guy told me what he had paid for it. The quality vocals we tracked that day only added to my surprise. The large-diaphragm, cardioid condenser CR30 is the latest addition to MXL's family of microphones, and it proudly carries on the tradition of providing top-line performance without crushing the bottom line.

OUT OF THE BOX

The CR30 comes in a hard-shell case that holds the microphone, shock-mount and a microfiber cloth for polishing the attractive mirrored finish. The mic itself has a solid, weighty feel that inspires confidence in its ability to survive the toils of consistent use. The one switch for the onboard -20db/-10dB pad is firmly mounted and has a very positive transition from one position to the next. The robust windscreen shares the mirrored finish of the body and seems like it would also hold up well to use. The shock-mount is a typical MXL design that uses a metal frame with elastic cords provid-



ing suspension. A pair of wire handles release the tension of the cuff that holds the microphone in place. This feature makes it very easy to slip the CR30 in and out of the mount while maintaining a solid grip. Although the mount is functional, it doesn't represent the same level of quality as the mic itself. The frame doesn't seem like it would take much abuse, and the elastic is easily dislodged. Also the mount's swiveling thread point is not as robust as I would like.

INTO THE STUDIO

The CR30 proved to be a willing partner in a number of applications. I first used it for a voice-over session with a corporate client. Not exciting work, but a good baseline test to see what the CR30 had to offer. The talent's voice left much to be desired (okay, it was me) but the CR30 did not. I don't possess a classic radio voice and could certainly use any help the mic had to offer. While the fairly transparent nature of the MXL didn't miraculously transform me into VO star, its smooth and detailed response did create a workable version of my voice that was responsive to EQ and dynamics.

A percussion session for a children's record seemed like a great opportunity to stretch the legs on this wide-bodied transducer. I decided to use the CR30 on ev-

erything we tracked to see how it would deal with the assortment of drums and toys. First up was a big metal snare drum being played with brushes. The CR30 accurately captured every detail of the swirling strokes and light brush hits. It also reached well beyond top head,

TRY THIS

There are certainly situations where an SM57 is the perfect mic. However, just as often, we select mics based on how we have always done it. Snares, kicks, electric guitars—these are all applications for which dynamic mics have typically been the go-to solution. However, a condenser could be just what the doctor ordered when the old favorites aren't delivering the goods. Condenser microphones will generally have faster and more detailed response with different accentuations based on the specific model. So whether you're looking for a little more depth and texture, or trying to get an out-of-the-box result that you hadn't thought possible, the answer could be as close as your mic locker.

PRODUCT SUMMARY

COMPANY: MXL Microphones

PRODUCT: CR30

WEBSITE: mxlmicrophones.com

PRICE: \$239

PROS: Excellent build quality.
Versatile performer.

CONS: Quality of shock-mount. No LF roll-off.

pulling out the subtle sounds of the brass shell and gently excited snares. One thing the CR30 did lack was an airy top end. It wasn't that it sounded flat or constricted, but it was missing some fairy dust that you get with world-class microphones.

As the day went on, we also tracked washboards, spoons, bottles and anything else that was sitting around the studio. The CR30 continually performed well, creating realistic renderings of everything that was placed in front of it. It should be noted that the mic was very lively and picked up a good bit of the room. This can be either positive or negative depending on the source, the space you're recording in, and what you want out of the track. I found the lush reverberation of the snare to be a welcome addition while the sharp reflections of the washboard made it seem a touch distant. Like I said, this characteristic is neither good nor bad, but it should be understood and accounted for.

As I was wrapping up the evaluation process for the CR30, a friend called and asked if I could track some demos for him. Thinking that this would be a perfect test for the CR30, I set up a simple recording rig in my back room similar to the setups found in bedrooms and rehearsal spaces all over the world. The session began with the CR30 sitting in front of a beautiful Gibson Hummingbird. Resting over the 12th fret, the CR30 produced a well-balanced and lifelike image, capturing the warmth and subtle details of this fine instrument. The mic did exhibit a slight exaggeration in the low-midrange, but it wasn't demonstrative or unpleasant. Like the snare, it was also missing some shimmer on the very top end but the track didn't sound incomplete.

As we continued, the CR30 proved to be equally competent with vocals. This particular singer had a notably intricate voice with unique characteristics, a challenge for any microphone. The quick, detailed response and three-dimensional nature of the mic really made the vocal shine. It jumped out of the speakers and avoided the boxy feeling that is so common with less expensive microphones. As with the guitar, the low-midrange seemed a touch elevated and the highs needed a little shelving, but overall the response was very good. At mixdown the layers of acoustic and vocal parts fit together into a realistic blend that made you feel like you were in the space.

COUNTLESS APPLICATIONS

It was refreshing to work with an affordable microphone

that can truly hold its own in a wide variety of applications. The CR30 proved to be a versatile tool that is both attractive and well-constructed. It would be nice to have a low-frequency roll-off, but it appears that MXL chose to focus on the quality of performance and construction instead of features, a concept that other manufacturers would do well to employ. Having roll-offs, multiple pickup patterns or other options can only benefit a user when the microphone sounds good and doesn't fall apart. The attractive appearance, quality build and excellent overall performance of the CR30 proved to be a winning combination. It would be a great addition to any studio that needs a flexible tool that can wear an assortment of hats and look good in all of them.

Matt Bishop is a staff engineer at Alford Media Services in Dallas.

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Photo by Peter Elenby

"Last year Tiny Telephone partnered with Minna Choi and her Magik*Magik Orchestra, a modular group of symphonic players that can be ordered up as needed, from a single bass clarinet, to a 60-piece ensemble.

The enormous amount of string and orchestral work we started doing revealed startling flaws in our vintage mic collection: between problems of self-noise, variations within pairs, and issues of fidelity, we just couldn't rely on 60 year-old microphones to get us through a live chamber ensemble.

Then I discovered Josephson Engineering. I was blown away. It was like summer love. After a decade of collecting tube mics, I quickly auctioned them off and bought everything Josephson Engineering made."

- John Vanderslice
(Owner, Tiny Telephone - recording studio)



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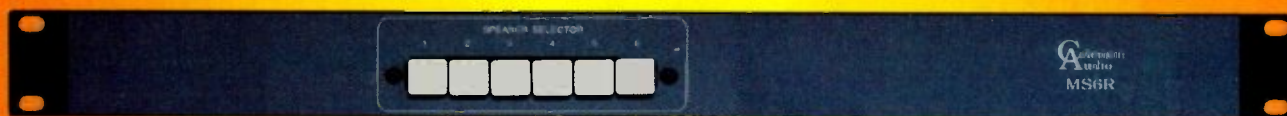


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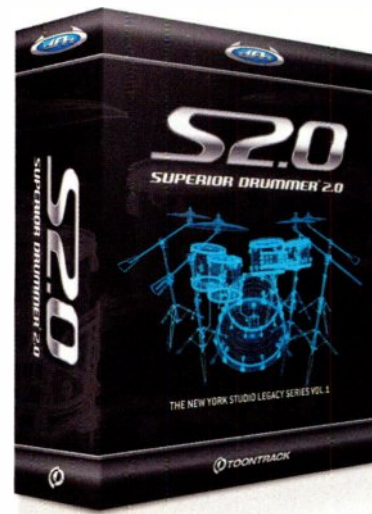
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YOUR CAREER BEGINS BEFORE SCHOOL



By Kevin Becka

Anyone with the drive and dollars can get an audio education today, and this is relatively new. There have been a handful of dedicated audio training programs around for 20 years or more, but the majority of them (and there are plenty) have popped up just recently. There are associate's, bachelor's and master's degrees from community colleges and four-year universities and trade and tech schools with or without a degree. There are intensive conservatory-types that integrate music curricula and there are studios that offer nighttime workshops. Some schools let you pick your classes or programs in a mix-and-match format, while others are all-in—no à la carte. While all schools have their Cinderella student stories, 99 percent of grads will start at entry level, and there is nothing wrong with that.

Over the years I've taught at three of the types of schools mentioned. I've been director of education and an instructor at the Conservatory of Recording Arts for more than 10 years (trade and tech); I have been an adjunct professor at Belmont University in Nashville (traditional college) and taught at the Danish Rhythmic Music Conservatory in Copenhagen (certificate/performance). My experience has made it clear to me that this business of audio education (and yes, it is a business) includes some truths that may be startling to prospective students and parents.

The most important factors in getting a job involve skills that you bring with you to school. This doesn't mean you have to know the difference between line, mic and instrument level or the quick key for consolidating audio in your DAW; you'll learn that in school. The chips you need to bring to this game are more basic. Can you perform a menial task without showing attitude? Do you smile often? Can you stay awake? Do you look people in the eye when you speak with them? Are you pleasant to be around? How's your appearance? Can you organize, study and learn complex material? Are you a chronic texter? Are you a self-starter, constantly looking for things to do when none have been assigned? Truth: Incompatible personality and lack of work ethic are the biggest complaints from both teachers and employers across the country.

Social media can kill your prospects. We've all read in the news about the Wall Street firm that rejected a potential employee because of a questionable party photo on Facebook. Well, a top studio in New York just passed on a student intern because of what they saw when they Googled him. Employers are going to check you

out. Count on it. Truth: If you want a job, clean up your e-trail; you won't get a second chance.

Your attitude is more important than your education. Sounds odd coming from a teacher, I know, but less often than I'd like, a student or students come along who make me think, "This person would be successful no matter what." I'm teaching two students now who are sharp, interesting to converse with, always willing to take on something new, and very smart. I'd hire them in a heartbeat. I wouldn't care if they knew anything at all about audio. I could train them and they'd be awesome. The best part? They don't act like they know what they know. They operate at a high level but are humble and willing to learn. Truth: You don't have to be a superhero to be successful, just engaged and easy to be around in a windowless room for eight hours or more.

You probably won't end up doing what you envision. Job availability, competition, the economy, changes in the industry—these are all things you have no control over. But you can start down the right path by having the basics covered that are under your control: Location, transportation, money to support yourself and a career plan, even a rough one. If this means having a non-audio job for a while, then do it. Truth: Not going where the work is will kill your career. You've just bought your education, now use it in a place where you can find work. If that means going back to your hometown, make sure there is opportunity; if there isn't, go where the work is!

Competition is fierce. All the schools are graduating people wanting the same job as you. You've moved to the place with the jobs, now what? If you want to compete, offer an employer more than is expected, make yourself valuable. Service and attitude first; they expect you to know technology. Have a plan to set yourself up for the long haul, and don't give up. Truth: I run across many students who have no plan for their end game or move to a city and give up because they're not doing what they want, even after a short time.

Arm yourself with the truth: Most of what you can do to build your career is under your control. Don't buy your own excuses. Business sucks? It sucks everywhere. No money? Get a job and network until your gig comes along. Life is tough? Everyone has challenges. This is a tech column and I've not mentioned technology at all. Of course it's important. Knowing gear, signal flow, computer and DAW operation and basic audio concepts are foundational. But frankly, at the entry level, attitude is more important. You've chosen a career with great possibilities and potential for creative freedom, now work it and don't give up. ■

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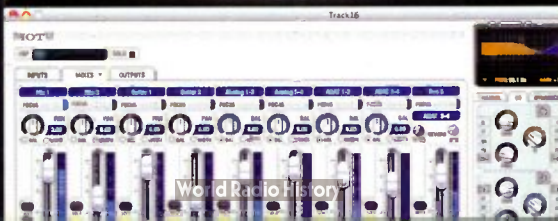
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