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World Radio History

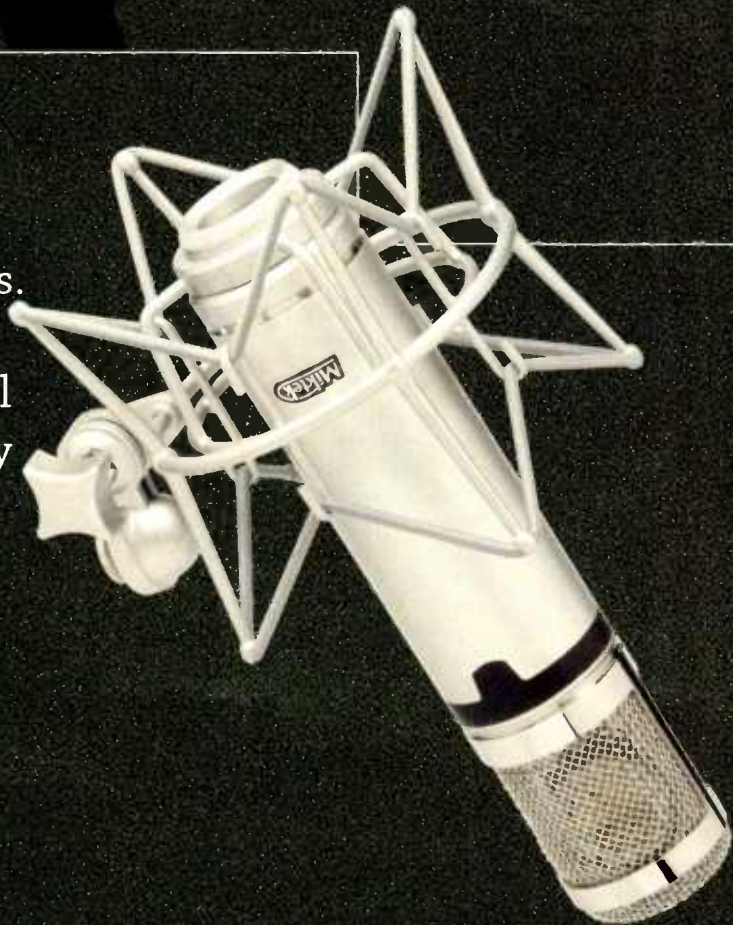
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Audio. Anytime. Anywhere.

In today's ever-increasing, multitasking life, file exchange and workflow have become part of the vernacular. And talk of "the cloud" is everywhere. The way projects are put together as a whole is changing—and quickly. Likewise, in the SR world, providing streams over the Web in real time is becoming more commonplace. To find out how your peers are using this new means of production, read on, starting on page 16:

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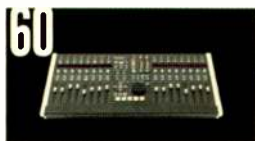
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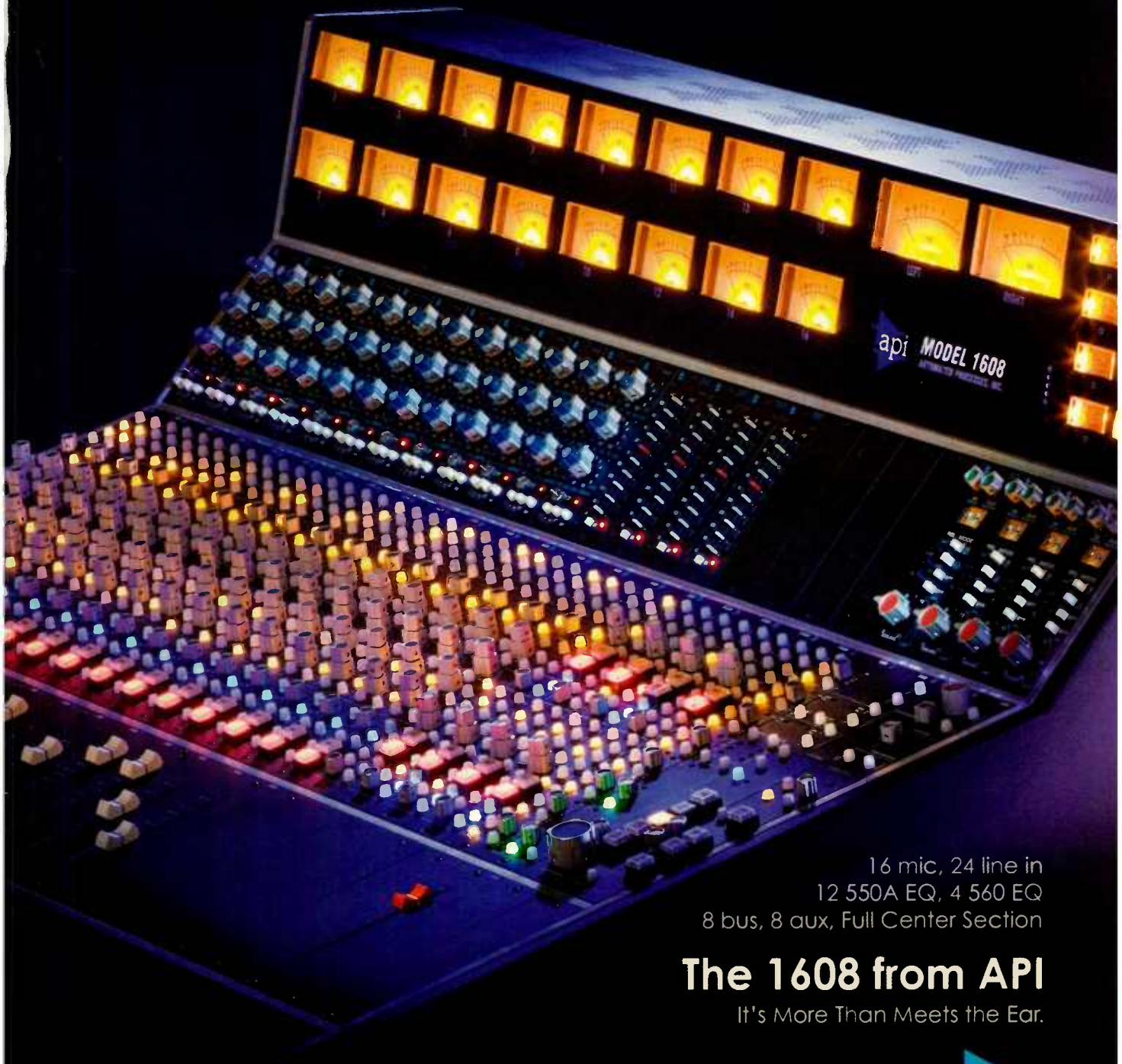
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On the Cover: Manifold Recording, near Chapel Hill, N.C., was designed by Wes Lachot in the Frank Lloyd Wright tradition of organic architecture and features a 64-channel API Vision console with Dynaudio M4S monitoring. For more, go to page 12. **Photo:** Ed Freeman. **Inset Photo:** Steve Jennings.



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Are You in the Cloud?

You can't avoid "The Cloud" these days. The phrase is everywhere, from billboards advertising online banking to Amazon's recently announced and highly publicized music locker. It's become one of those terms that is in danger of being genericized, like organic, and enters the vernacular with a meaning that strays from the reality. As Wikipedia makes clear, if you are using your local Outlook email, you're not in the cloud; you're sending email over the Internet. If you are accessing your Gmail or Yahoo account, you're in the cloud. Or to paraphrase Larry Ellison of Oracle from a few years ago, the cloud is what they do, but they used to call it the Internet. Maybe they should just change some words in their ads.

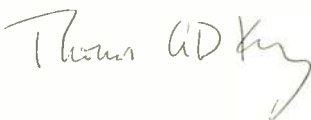
The term "Cloud Computing" actually owes its lineage to the telephony industry and the conversion from point-to-point data circuits to VPN services. The concept has been around since the 1960s, and it's been talked about in academic circles since the mid-'90s. But it's steamrolling through the consumer entertainment space, and its tentacles have reached into professional audio.

When we started researching The Cloud for our annual May special issue, we found that most of what's going on is more accurately labeled cloud-based file exchange and storage. There are musician-based sites that include rudimentary mixers and effects in their browser-based apps, allowing artists to collaborate in something approaching real time, but on the professional recording end, we're still some bandwidth-increases away from true cloud-based recording.

But it is definitely coming. It's not hard to imagine in the not-too-distant future that a software company, large or small, makes its application available with the download of a track-in-progress, without requiring the app be resident on each host machine. When I walked the NAB floor a few weeks ago and talked up this notion with a few manufacturers, I got the sense from more than one that they, too, have been thinking about it. But their lips were sealed. It will require more bandwidth, and it will require new business models. But it will soon be a viable option. You can count on it.

In the meantime, we found a number of producers and engineers who are using cloud-based services like Dropbox, YouSendIt and Mozy to streamline their workflow and change the way they interact around the world. It's gone beyond simply leaving a hard drive at home or loading a mix for client approval, and you can read about some of the more compelling services out there in Mike Levine's feature. And be sure to check out Nashville producer Robert Venable's approach to songwriting in Google Docs and updating files in Dropbox. It's inventive, and it's in the here and now.

And as we consider this an ongoing and ever-improving new means of production, we're always interested in hearing how you incorporate cloud-based services into your own productions. We will definitely be listening and looking for the next big steps. Email us your cloud-computing techniques at mixeditorial@mixonline.com.



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A photograph of two Shure KSM microphones mounted on stands in a recording studio. The microphones are silver and have a distinctive spider-like shock mount. They are positioned vertically, one above the other. The background is a warm, dimly lit studio with wood-paneled walls and a cello visible in the shadows.

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World Radio History

In Memoriam

Sidney Harman

1919-2011

Sidney Harman died April 12, 2011, in Washington, D.C., of complications from leukemia. In 1953, Harman and Bernard Kardon founded Harman/Kardon Inc.; Kardon was a fellow engineer with whom Harman worked with at a New York electronics firm that specialized in P.A.s. Their quest for high-fidelity sound brought them to creating the firm, which pioneered the concept of putting an amplifier, preamp and radio tuner into a single unit that was aesthetically pleasing in home decors. In 1956, Kardon retired and Harman took sole control of the company, which became a world leader in manufacturing audio systems.

Meanwhile, Harman found time for philanthropy, including funding Washington, D.C. popular performance space Sidney Harman Hall. Last year, he bought *Newsweek* to help resuscitate the property.



Bill Varney

1934-2011

Retired re-recording sound mixer Bill Varney, CAS, passed away in Fairhope, Ala., of congestive heart failure. A veteran of more than 80 feature films, his sound work won him two Oscars in 1981 and 1982 for the films *Star Wars: Episode V—The Empire Strikes Back* and *Raiders of the Lost Ark*. He was also nominated for *Dune* and *Back to the Future*. His work on *Roots* secured him an Emmy nomination. Varney was a past president of the Cinema Audio Society and in 1990 received the Cinema Audio Society's highest honor, the Career Achievement Award.

Varney worked 30 years as a re-recording mixer and joined Universal Pictures as VP of sound operations, where he was responsible for the remodel and upgrade of the studio's sound facilities. He also spent 14 years at Goldwyn Studios as supervising re-recording mixer.



Roger Nichols

1945-2011

Engineer/producer/innovator Roger Nichols passed away because of pancreatic cancer on April 9, 2011. Nichols worked on multiple Grammy-winning projects—most notably with Steely Dan and John Denver—and is the recipient of a Recording Academy Lifetime Achievement Award. Please turn to page 78 for more on Nichols' storied career.



Ron Fair (left) with Tal Herzberg

Tal Herzberg

1971-2011

Grammy Award-winning and eight-time nominee Tal Herzberg passed away on April 7, reportedly due to illness. The Israeli-born pop engineer/producer was often seen working side-by-side with producer/record exec Ron Fair for a plethora of rock and pop acts such as U2, Black Eyed Peas, Green Day, Lady Gaga, Queen Latifah and many others.

In Israel, Herzberg played bass for numerous local artists including the late Ofra Haza before emigrating to The States in 1992, where he settled in L.A., working for Waves, demo'ing the company's plug-ins before moving into an engineering role at local studios. Recently, he served on the Advisory Council to the Recording Academy's Producers & Engineers Wing.

Dennis L. Maitland Sr.

1931-2011

Production sound mixer Dennis L. Maitland Sr., CAS, passed away in New York City April 1, the day after his 80th birthday. He received the Cinema Audio Society's Career

Achievement Award in 2009. Among some of his numerous credits are *The Prince of Tides*, *Three Days of the Condor*, *The Husbands*, *The Pawnbroker*, *Lenny*, *Gloria*, ...*And Justice for All* and *Moonstruck*. Maitland began his career



L. R. Tod Maitland, Dennis L. Maitland Sr. and Norman Jewison

Berlin, Philadelphia and Montreal. On Broadway, he was the sound designer for *Prisoner of Second Avenue*.

Contributions to his memory may be sent to Hospice Care Network, 99 Sunnyside Blvd., Woodbury, NY 11797-9834



Stan Ross

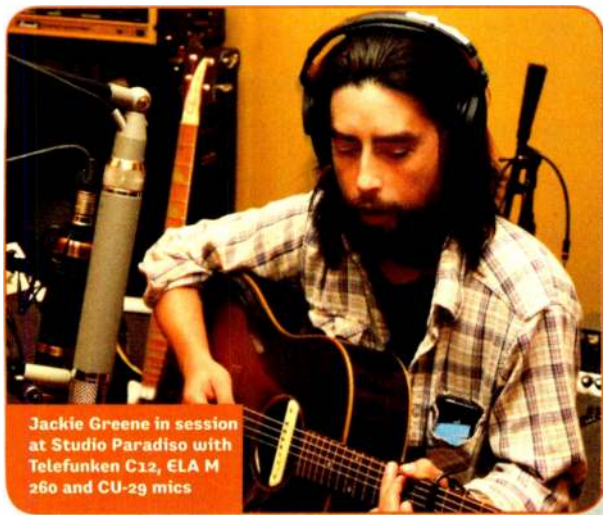
1929-2011

Co-founder of Hollywood's Gold Star Recording Studio, producer/engineer Stan Ross died of complications following surgery for aneurysms. The studio, founded in 1950, was best-known as the home of Phil Spector's famous "Wall of Sound" recordings, which took advantage of the sound of the room and co-founder/engineer David Gold's pioneering recording console designs. Gold not only designed the chamber, but also hand-crafted the acoustical wall coating. The legendary Gold Star "perfect" echo chamber was the result of years of painstaking experimentation and actually survived the March 1984 fire that destroyed the studio.

While in high school, Ross worked at recording studio Electro-Vox, learning from recording guru Bert B. Gottschalk. A disagreement over a pay increase forced Ross to quit and build Gold Star with friend Gold, who would build all of the equipment. Modern-day recording techniques such as phasing, flanging, automatic double-tracking and others were pioneered inside those storied walls. Gold Star closed in 1984; in 2002, the two rekindled interest in the studio through an online presence at goldstarrecordingstudios.com.

on *The Ed Sullivan Show* and later *The Jackie Gleason Show*.

As a music mixer, Maitland worked with Miles Davis, Frank Sinatra, Count Basie, The Beatles, Duke Ellington, Ella Fitzgerald, Sarah Vaughn and the Philharmonic Orchestras of New York, Boston,



Jackie Greene in session at Studio Paradiso with Telefunken C12, ELA M 260 and CU-29 mics

Get Those Files

Telefunken Elektroakustik is now offering multitrack session files with numerous musical artists—each miked with a plethora of the company's mics. Each file includes a description of the recording session, including

photos of the microphone placement, and preamps used for each channel. All audio files are presented in WAV format and were recorded at 24-bit/44.1kHz. Recorded tracks can be downloaded and imported into the listener's DAW. During the next few months, Telefunken will release more multitrack sessions. Check out the files at telefunken-elektroakustik.com/download/multi-track-session.php.

Music In The Cloud



Amazon's new Amazon Cloud Drive, Amazon Cloud Player for Web and Amazon Cloud Player for Android allow music lovers to store more in "the cloud" and play it on any Android phone, Android tablet, Mac or PC. Users upload their music library to Amazon Cloud Drive and can save any new Amazon MP3 purchases directly to their drive for free.

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As of press time, Google was rumored to be unveiling its own cloud music service (under the guise of a music app created for smartphones running Android). As yet to be determined will be licensing issues stemming from the labels—large and small. Stay tuned to this space and at mixonline.com or more news about this emerging trend.

Soundworks Collection: Zack Hemsey

To describe the work and success of 27-year-old composer and music producer Zack Hemsey is to describe the current state of music. Inventive. Dedicated. Original. He represents the up-and-coming talent who are working "in the box" using software like Apple Logic. Also as an independent artist, Hemsey has been releasing his own studio albums online, which combine elements of film score, hip-hop and world instrumentation. Last year, Hemsey composed the original track "Mind Heist" for the trailer of Oscar-winning film *Inception*. He has continued to create memorable musical themes for such as trailers Ridley Scott's *Robin Hood*, Ben Affleck's *The Town* and David Schwimmer's *Trust*.



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Studio Unknown Update

Singer Darlene Love—who was recently inducted into the Rock and Roll Hall of Fame—has had a long and storied career, including a Number One record, *He's a Rebel*, and a string of label hits, including "Da Doo Ron Ron" with producer Phil Spector. Today, at age 68, Love just finished playing the role of Ms. Sherman in the Australian touring production of *Fame: The Musical*. Find out what keeps Love pushing forward in this latest installment, available at mixonline.com/studio_unknown.



Manifold Recording

IAN SCHREIER



Manifold Recording co-owner Michael Tiemann, left, with studio designer Wes Lachot at the 1983 Yamaha C3 grand in the Music Room.

Projects like Manifold Recording don't come around often in a studio designer's life. A client with knowledge and passion for the way music works in a space and the way every bit of detail contributes to the whole. A proposal for a carbon-neutral, ground-up facility that starts with the sweet spot in the control room and the musician in the live room and develops from there. A request for drawings that include 24-foot ceilings and visual continuity from control room to music room to three iso booths and two sound locks, through windows onto the 16-acre property in the hills south of Chapel Hill, N.C. A budget that was comfortable—not unlimited, but better than most. It did, however, grow over five-and-a-half years while other projects started and finished. And studio designer Wes Lachot had no idea what he was getting into.

"When I got the call in February 2006, I had three or four other projects in development and told him that I was too busy, but if he called back in four to six months, I could sit down with him," recalls Lachot. "I had no idea what this was about, and I almost blew it! But right at six months, he called back, told me what he had in mind, and it has turned into one of the most rewarding professional experiences of my career."

Michael Tiemann, co-owner of Manifold Re-

coding (manifoldrecording.com) with his wife, Amy, laughs at the memory. "I went to Google and put in 'Frank Lloyd Wright Recording Studio Chapel Hill,' and Wes Lachot pops up out of nowhere. I looked at some of his designs and projects and could see that he had the kind of sensibilities I wanted to work with. I sent him an email and said I wanted to build a recording studio, and he said he was too busy! But I waited the six months, called him and convinced him that I was willing to go all the way to achieve an aesthetic and a creative vision."

The creative vision Tiemann proposed was based around the musician and an environment where the Music Room would function as an extension of the instrument, be it solo or ensemble, voice or piano, guitars or drums. The aesthetic was very much influenced by Wright, based on an organic approach to architecture where you start with a seed, the sweet spot, and build out so that the building grows into the world around it, and every piece is part of the whole.

"It is certainly a luxury to not be constrained by walls at the outset," Lachot says. "The physics of sound don't do well with rectilinear geometry but behave more like a sphere. And we as designers are often forced to fit these round pegs into square holes, and it's our job to take away some of the awkwardness. With Manifold, we were able to

start with an equilateral triangle at the listening position, then work outward from there and develop this hexagonal type of geometry, meaning there are three axes of symmetry rather than two [see floor plan diagram]. It has more in common with a beehive than the block you played with as a child. Everything else is an expression of that, down to the ways that the terraces flow into the land."

Concept to Reality

Michael Tiemann is a highly intelligent man, and this is no case of an outsider buying his way into the recording industry. He knows why he wants a flat response down to 25 Hz and is equally animated discussing the performance of the glass diffusors circling the control room wall as he is in explaining his personal conversion to an analog/digital hybrid model. In conversation, you get the sense that he is opening Act Two of his life, and in some manner he is returning from a detour in high-tech back home to his love of music.

As a 10-year-old in Manhattan, he appeared on his first record as part of the renowned St. Thomas Choir. Four more would follow. His mother was involved in professional music, as was his grandmother, and he was exposed to opera, symphonies, jazz and sometimes string quartets in the living room. His godfather, Russ Payne, was one of

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the engineers on a number of Miles Davis Columbia sessions of the late '60s/early '70s, and at some point drove home to young Michael the concept of layers in music and the magic of the recording/mixing/mastering process.

He wound up in the San Francisco Bay Area and was instrumental in the founding of the open-source software movement. It was an exciting time, he says humbly, and one gets the sense that by creating and selling a few companies, he was allowed the opportunity to pursue his original passion: the musical experience.

"While in Silicon Valley, I met up with this musician, Drew Youngs, who was at the time playing Latin jazz, who was incredibly talented," he says. "I offered to fund his album and he recorded it, then brought it to Greenstreet Records, now Polarity Post in San Francisco. I was present for mixing and mastering, and it was an amazing process for me—to sit down and listen to how a record comes together. And it opened many more questions in my mind, including, 'How is it that we can make an amazing-sounding record that the intended audience never really gets to hear?'"

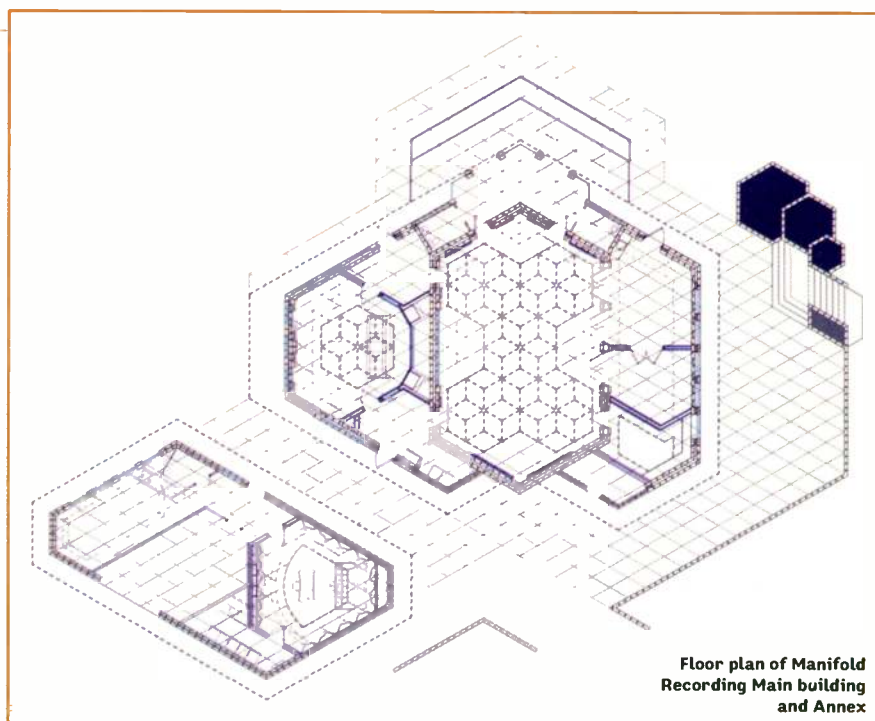
A few years later, he bought the 17 acres outside of Chapel Hill, called Lachot and is now all set to open Manifold Recording this month.

Building Out the Reality

"The concept and the wiring and equipment and outboard and mic locker is very old-school analog," Lachot says. "And it's on a pretty large scale. But Michael was insistent from the beginning that the entire space was to be designed for musicians. So within the 24-foot-high music room, we were able to create these places of intimacy. We worked with Peter D'Antonio and incorporated an extensive amount of RPG acoustic products that in some cases bring areas of the rooms down and make it feel more human in scale."

In the 21-inch-thick concrete walls, Lachot worked with RPG DiffusorBlox, which act as both diffusors and bass traps, having slotted Helmholtz resonators within them, tuned to different frequencies. RPG TopAkustik wood, highly absorptive, is used extensively throughout, in the side walls of the control room and in the cloud that fills the ceiling in the Music Room. The cloud is further defined by the RPG Bad Panels, a combo reflective-absorptive material. The reverb time is variable via reversible panels and sits roughly between 0.75 and 1.75 seconds.

The front wall of the control room incorporates an 11-foot broadband bass trap with a 4-foot air gap. Tiemann is particularly proud of calming the low end; he has an aversion to "glop." Those colored-glass devices pictured on the cover are



Floor plan of Manifold Recording Main building and Annex

diffusors that change color depending on location and complement the Quadratic Residue Diffusor back wall. The room is modeled on the concepts of a Reflection-Free Zone. The entire structure was built, as all Lachot projects are, by Tony Brett of Brett Acoustics in Durham Hill, N.C.

Tiemann freely admits that the API console wasn't part of his original plan—he was leaning toward digital—and he was convinced, in part, by Lachot to look at the Vision. "What API did, whether by accident or design, is they produced a topology, a circuitry and a quality that you can listen to, and say, 'That is the sound,'" he says. "And if you look at the picture of the Vision in the control room, my gosh, it fits well." [Laughs]

The Vision has 48 channels of 550L EQ and 16 channels of 560 L EQ, with two 12-slot penthouses above the patchbay to house current and future 500 Series modules. Sixty-four channels of Harrison analog I/O feed the faders, with an additional 48 channels of Harrison analog I/O integrated with the aux, cue and effects systems. Eighty more channels of digital I/O are available for video and additional effects systems.

Like the API Vision, which presents stereo and surround mixes as two different entities, the control room offers soffit-mounted Dynaudio M4s to provide stereo monitoring while surround monitoring is separate, with mid-fields or near-fields on telescoping Sound Anchor stands. The Annex is a 5.1 room, completely digital, based around a Harrison Trion console, with monitoring yet to be determined.

Chief engineer Ian Schreier selected much of the outboard gear, and the facility is stocked with D.W. Fearn, Manley, Tube-Tech, Millennia, Lavry

and Avalon. The mic locker includes models from Neumann, AKG, DPA, Earthworks, Coles, Royer and Sennheiser, among others.

Tiemann is both a visionary and a realist, and is fully aware of the economics of today's recording industry. He realizes that he will not make his investment back by booking time at an hourly rate. His dream is much bigger, and admittedly bolder, and it centers around the participation of the audience as a co-producer on any and all projects.

"For the past 20 years, I've felt that the music industry is headed in the wrong direction when it comes to recorded music," he says. "Especially when you look at the loudness wars. Then in live music, with larger venues and moving the audience further away, you're selling less and less music to more and more people. We've finally begun to see the limits of what people will tolerate. I believe the best remedy to this problem is to reboot the expectation of an artistic performance and go back to the fundamental of people sharing space in a room. There are a lot of people who want to participate and produce that kind of experience. Miles Davis used to bring 30 or 40 of his nearest and dearest and play to them in the studio. We find what it means to become a co-producer of the performance they witness; this will create an apostolic revolution. They will tell people they have again found meaning in music.

"To me, music is a story," he concludes. "When you do not invite the audience to be producers, they do not engage in the story. We're creating an environment where what we are recording is a story told to those present and then shared. We want to reconceptualize what a musical production is." III

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Cloud Collaboration

IT'S NEVER BEEN EASIER TO WORK TOGETHER REMOTELY ON PROJECTS

By Blair Jackson



It's more than just a buzzword. Use of what is colloquially known as "the cloud" as a resource in producing audio seems to increase as its economic and practical benefits become more obvious to engineers, producers and musicians. It's changing how people share information and collaborate on projects large and small, and we're just beginning to realize the enormous potential of what really is a new way of working.

On its most basic level, "the cloud" is a metaphor for the way independent computers can be networked on the Internet so files can be conveniently viewed and worked on by multiple users, utilizing third-party servers and mirror sites as neutral storage and retrieval locales for exchanging and updating information. Though "the cloud," as a term, has only been in vogue for the past couple of years, the concept is not new. For instance, since 2003, YouSendIt has provided a secure medium for users to send and receive digital files of varying sizes, bypassing conventional email. What are relatively new, however, are Web-based file-synchronization and storage services such as Dropbox, Box.net, ZumoDrive and others, which facilitate much more complex means of networking.

In the Cloud

Nashville producer/mixer Robert Venable says, "The majority of the time, I'm using [the cloud] for file management or distribution. I can upload

MP3s, WAVs, lyric sheets, song samples, my song demo reel, and distribute those links to those I think might benefit from them. I got hired to produce a record for a female pop singer from Switzerland. I'm based in Nashville and the label flew me to L.A. to do a pre-pro and writing session with her for a week. We met at a studio with some label people and writers, and I took the lyrics that she had sent me a few weeks back, put them in my Google Docs folder in the cloud, and I brought my iPad and MacBook, and the others brought their laptops. In the writing session, there were two or three writers, two label people, the artist and her friend, myself and an assistant engineer, so we could demo the songs. We all shared the same Google Docs file, which was hosted online. We were on a network and we were all able to view changes in real time as we made them to the lyrics and production notes.

"We'd track a vocal melody we liked on a synth and we'd quickly record it, and we uploaded it to my Dropbox folder—everyone on this project had access to a shared folder with a password. We also had my session guys in Nashville tracking strings and guitar melodies over these synth loops I'd produced, and they'd send them back that night so we could all pull them down from the same Dropbox folder

and talk about them and send the notes back via Google Docs. Same with mixes: I send roughs back and forth between the artist and the labels and management all the time and get their comments, and I've had engineers send files to me for final mixes.

"I can also use my iPhone or iPad to access WAVs or MP3 files or lyrics in my Dropbox. So if I'm driving or flying somewhere, or wherever I have Wi-Fi or cell phone service, I can pull them off onto my phone and put headphones on and take a listen—let it buffer for a few minutes on a cell phone and you're good. I actually did that with five mixes in the airport yesterday on a two-hour lay-over in Houston. I listened, and said [to the client], 'Hey, I'm listening on earphones—not exactly ideal, but here are a few things I hear already.'"

Tones, Sherlock Tones

Dropbox was also an essential tool in helping electro pop/hip-hop group Sherlock Tones create their new album, *LEO* ("Love Every Opportunity") simultaneously in Atlanta, where principal producer/musician Steven Vasiliou lives and works, and the San Francisco Bay Area, where vocalist Khattab McIntosh, keyboardist Elliot Peltzman, mix engineer Chris Fletcher and producer Rei Tracks reside.



Producer/mixer Robert Venable uses "the cloud" for file management and distribution of music files.

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"The big benefit is that you can treat the files as if it's just another folder on your computer," Tracks says. "We'll literally place sessions in our Dropbox folder on our computer and work on it. When you're all done, there's no need to take any other additional steps because everything automatically gets uploaded to your Dropbox instantly. So you can work on the session, hit the Save button, close it up and walk away, and as long as your computer is online, it's going to upload. It's almost like we're in the same studio working on the sessions."

"The musical idea will be from me, then I might send it over to Elliot to add keys," Vasiliou notes. "I don't need to be with the other players to come up with the song concepts, and then when the music is together, the vocalists have setups at their houses. Khattab has a Pro Tools rig, so I'll upload the file, he'll record his vocals right in the Dropbox. I'll go in and clean it up, then we'll email Fletch [mixer Chris Fletcher] to let him know they're ready for mixing. He can open the session on his Pro Tools rig, and then he'll send us back a WAV stereo file; he doesn't need to send the whole session back."

The last song on the album, "My Sister Remix," took an even more circuitous route to completion, Vasiliou says. "That was a track that Khattab and I had originally recorded and Rei went in to remix it." Rei Tracks adds, "Once Steve uploaded the original session, I worked on it directly from Dropbox and started remixing it, and then Steve would go in every now and then and make his changes. Then we gave Dropbox folder access to a mixer in Florida—he goes by 'X144'—and he mixed it directly from the folder." Vasiliou is in charge of the master Pro Tools sessions.

"This has really allowed me to work with people all over," Vasiliou notes. "I have a vocalist in Portland I work with and one in Los Angeles, and it's made the whole process a lot easier."

Old New School

Brian Deck, the much-in-demand Chicago-based indie producer who has worked on the last several Iron & Wine (Sam Beam) albums, says, "Depending on the level of audiophile that I'm working with, I'm actually pretty happy to be sending mixes as MP3s, usually just in email. If the MP3 is too big for somebody's inbox, I'll use YouSendIt. I ask them to live with it for a day and get me some notes, we'll talk about it a little on the phone and then I get them a revision, and in most instances we're 98 percent of the way there."



Sherlock Tones used Dropbox to send files back and forth between bandmembers and audio production crew.

In the case of the latest album from Iron & Wine, *Kiss Each Other Clean*, the pregnancy of Beam's wife prevented him from going to Chicago for the in-the-box mixing sessions so Deck used YouSendIt to have the artist check the mixes. "I'll text them right after I send it and let them know it's waiting for them, and then there's always something else I can work on while I'm waiting for their comments," Deck says. "It's the beauty of digital recall."

Do the sonic limitations of MP3 affect the sort of mix decisions that are made? "Not usually," Deck says. "You lose a measure of three-dimensionality, which is hard to put your finger on in the first place. I think you also lose a small measure of stereo imaging. But I find that when I'm discussing this with people and I've made fairly small corrections from one mix to the next, in terms of imaging, the astute listener can hear it—especially when they're listening on ear buds, which more and more people find to be a relevant mix reference. And MP3 is also part of so many people's listening experience."

Le Nuage C'est Chic

"Nuage" is French for "cloud" and "Chic" is, in this case, English for one of the great R&B/dance bands this country produced in the late-20th century—and which is still going strong in the second decade of the 21st under the leadership of the joyous funkician Nile Rodgers. Rodgers has a third-floor studio in his beautiful home in Westport, Conn., and he and his keyboardist/engi-

neer/right-hand man for the past 23 years, Richard Hilton, have been cloud denizens for some time now.

Hilton notes, "With respect to files like mixes—split-stereo WAV files at various sample rates—those always get delivered via some form of FTP or cloud. YouSendIt is very popular. We just finished a mix that was a collaboration between Chic and Kool & The Gang, and it went back and forth numerous times over the Internet as Pro Tools sessions. It started with them, it came to us, we kind of re-wrote it, sent it back to them, they worked on it for a few months, it came back to me and I ended up having to add to and clean up some things.

"Coming in my direction, Kool & The Gang would use YouSendIt. I tend to use, up to the limits of my storage, MobileMe—Apple's cloud thing. The cloud-sharing aspects are really good and I use it all the time in that kind of work, and for distributing materials to other [Chic] bandmembers. A good example is just yesterday, a singer whom we've worked with many times before is coming with us on this tour of Japan, and she hasn't heard the show in probably two or three years, and a lot of things have changed. So there were a number of materials I needed to make available to her so she could do the research she needed to show up for rehearsals prepared. They were already up there in my MobileMe files so I could send her links, the downloads come immediately, they unpack immediately, and it's very, very easy at the user end.

"MobileMe also offers a lot of other features related to synchronizing all of your Mac-related or subscribed hardware to a single server. You can sync all sorts of cool stuff either automatically or on demand, and you can do screen sharing easily without somebody at the remote end. So I can sit here at home and look at my computer at Nile's studio and do whatever I want on it basically."

Much as he loves working in the Apple cloud, Hilton is aware that the new methodologies have come with a price: "We signed up for a business that was very social, where people would get together in rooms and make music, and other people would be in the control room recording them. We'd all have lunch together and it was a very social business. We now work in an extremely isolated business, so if there's a downside it's that the cloud-computing aspect facilitates something that's a symptomatic by-product of what is the problem, which is that we no longer work in a social business." III

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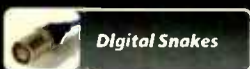


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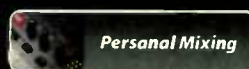
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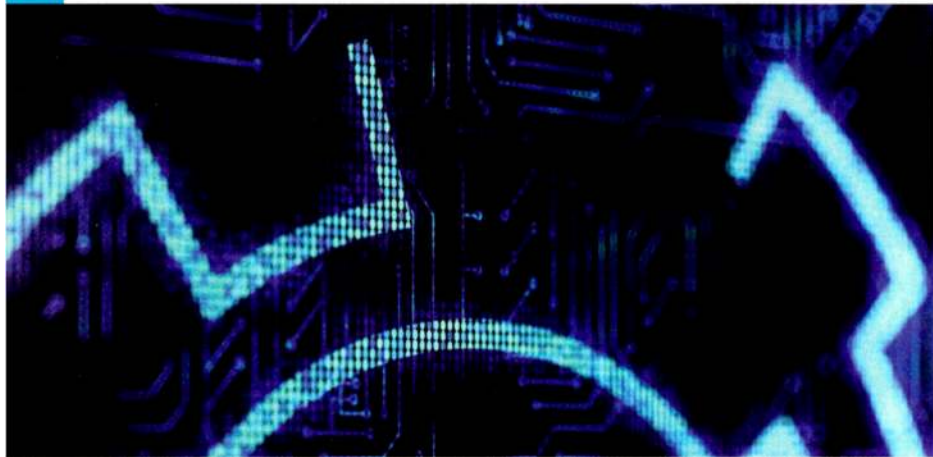
Recording

World Radio History

Share and Share Alike

PROFESSIONAL OPTIONS FOR CLOUD-BASED STORAGE AND FILE EXCHANGE

By Mike Levine



Ever since broadband made it possible to send audio files at a reasonable speed over the Internet, musicians, engineers and producers have taken advantage of this capability to adopt decentralized workflows. In the early days of remote sessions, files were often exchanged by dropping them into Apple iChat or AOL Instant Messenger on the home end, or using satellite or T1-based services like EDNet on the ultra-high end. But in the past few years, the increased data transfer and storage capabilities that have allowed for the development of cloud computing have spawned a bevy of remote file-sharing services that make sending session files or stems to a collaborator across the country or the world almost as easy as “sneaker-net” to the engineer in the next studio.

What are engineers, producers and musicians using for their file exchange? Well, the answer is many different things and often combinations of services. The price of entry for file-sharing services is so minimal that it’s possible to use a variety of them without spending a lot of money.

Another wrinkle to this whole issue is the imminent end of DigiDelivery, Avid’s file-transfer system, which has been used by many studios and producers to send large session files. DigiDelivery works with any data, not just Pro Tools files. It combines dedicated servers and software, and requires a fairly substantial investment but allows

for sending of very large files, securely, including complete sessions. It was bought by Aspera (asperasoftware.com) in 2007, and will be discontinued in favor of Aspera’s own system. “Aspera will stop providing support, maintenance and extended warranty services on DigiDelivery products on December 31, 2011,” says a message on that company’s Website. Aspera will be offering upgrades to DigiDelivery owners.

Who’s Doing What

A small sampling of engineers I spoke with reflected the “still-in-progress” nature of today’s music-file sharing in pro audio. “I actually use YouSendIt and [Apple’s Mobile Me] iDisk to send and receive,” says engineer/producer Jimmy Douglass, adding that he does take precautions. “I hide all labels inside folders so the messages and top folders never read WAV, AIFF or MP3. So if you happen to be surfing, you probably won’t stop there.” However, he says, some clients insist that he use their private FTP sites for security reasons.

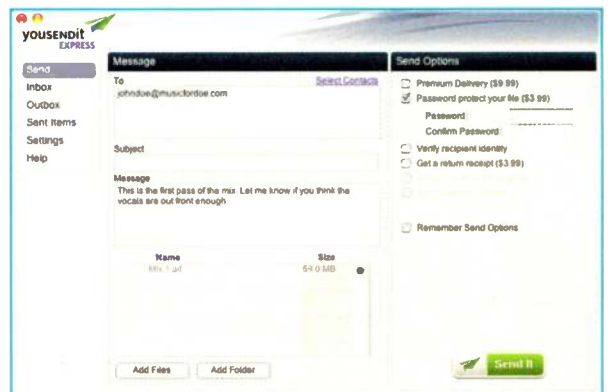
Also taking a mix-and-match approach is Nashville engineer Chuck Ainlay, who

won Engineer of the Year honors at last month’s Academy of Country Music Awards. “I’m using DigiDelivery, YouSendIt and sometimes [sending] through a client’s FTP site,” he says. “DigiDelivery requires the recipient to download the client software to use it, but otherwise can handle large-sized file transfers. YouSendIt and Dropbox are great for no hassle, small-sized file transfers.”

Producer/engineer/mixer Dave O’Donnell says he’s been using YouSendIt. “It’s fast and I’ve had no problems,” he says. “You can upload files or a folder of up to 2 Gigs at a time, and you can give your client the Web address to your ‘drop box’ so they can upload files right to that. I’ve also used iDisk and always had problems; I guess Apple doesn’t care about it. I’ve used my own FTP site, but clients who don’t use a program like Fetch or aren’t very Web savvy are a little unsure of it.”

Producer/engineer/mixer Bob Power has found the same thing regarding FTP. “The biggest problem with it is that many folks don’t know how to use FTP-access software,” says Power, who, in addition to FTP, also sends files with YouSendIt.

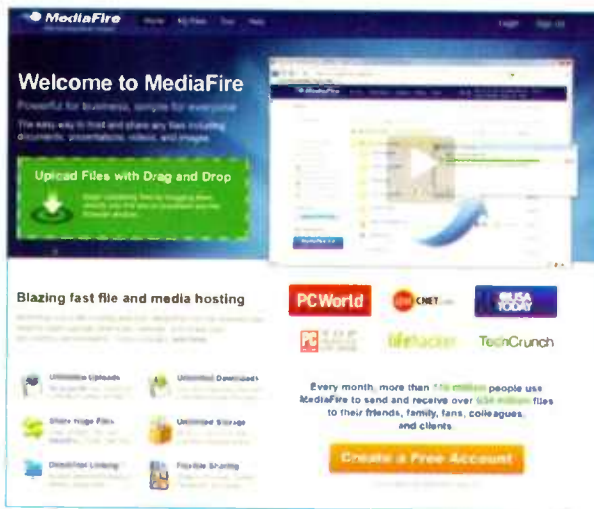
Woodstock, New York-based engineer D. James Goodwin has found a solution for file sharing that allows him to host the files rather than sending to the cloud. “In my place,” Goodwin says, “I have a dedicated server set up for my clients. I use a software called Rumpus [from Maxum De-



YouSendIt is perhaps the best known of the file-delivery sites and makes it really easy to share files under 2 GB. This shows YouSendIt Express, its software helper application, which makes sending files easy and fast.

velopment, maxum.com], and I run it on a dedicated Mac Mini with FireWire 800. It's been really great as I can set up client accounts and they can upload, download, et cetera. I've used other file-sharing things in the past like YouSendIt or my iDisk, but my primary concern was security and not allowing other clients to see each other's files. Rumpus allows me to have discrete, separate accounts for all my clients, with full sharing ability, over a Web-based protocol."

There are a number of different ways to go, so how do you decide what's best for the way you work? Are you sending complete sessions or stems, or just mixes and reference tracks? Will your clients allow you to use a file-sharing service (most send their files using robust encryption methods, but many are still concerned about how secure they are), or require that you use a private system like an FTP site or DigiDelivery? Some large facilities have their own proprietary file-sharing systems that use custom software to securely send and receive folders from clients.



MediaFire allows you to send individual files of up to 10 GB.

What You Need

Most of these businesses are structured around what's often called a "freemium" model: They offer free basic services, but give you the option to pay either a small monthly fee or a discounted annual fee for more full-featured and robust options. Although some users might be tempted to go with

the free services, you'll soon find that for professional uses, it's more than worth it to pony up the \$10 or so a month to move up to at least the first tier, if not a bit higher. Moving to the paid tier typically provides you with larger file sizes, additional security measures and options for tracking the receipt of your files.

Another incentive to move to the paid tier is that on many services, if you use the free version, your recipients will have to wade through a jungle of advertising to find their download link. On many sites, for example SendSpace and MediaFire, the recipient's screen is so cluttered that it makes it hard to figure out which is the actual download button.

Often there are larger buttons that say "Download," but actually bring you to downloads of the advertisers' offerings. This is not something you'd want to subject a client or collaborator to.

Yet another annoyance on some services' free layer is a delay imposed before sending the file. For instance, RapidShare (rapidshare.com), a Swiss-based service that's particularly big in

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Sync the Host

Dropbox (dropbox.com) is perhaps the best known of the hosting/syncing sites. Its free service gives you 2 GB of storage. Paid versions start at \$9.99/month for 50 GB, and \$19.99/month for 100 GB of storage. After you install Dropbox's software, you have a Dropbox folder, which you can access from any computer, via the Web or through a mobile device using the free Dropbox app. Any changes you make from any location will be synced to your Dropbox folder. If you want to revert after the shared folder has changed, you can go back 30 days. Dropbox lets you share both files and folders with others. You can generate links from individual files in your Public Folder and send to others to download, as well as create links for media files that let recipients stream them—a very handy feature.

Unfortunately, you can't password-protect files you send with links in Dropbox. If security is an issue, you might be better off using the folder-sharing function, for which you have to invite somebody via their email address to access the folder. They then have to sign up and log in to gain access. If you share a folder, the recipient must have a Dropbox account with enough space to handle the folder. If not, he/she will need to purchase more. All Dropbox files are encrypted on both the upload and download.

SugarSync (sugarsync.com) functions similarly to Dropbox, letting you share folders and files (the latter by sending links), store files and sync between computers. Like Dropbox, you can access files through its mobile apps. There's no file-size limitation for sharing in SugarSync, as long as you don't exceed your storage amount. SugarSync lets you assign any folder on your computer for syncing rather than having to move it into a designated folder, as Dropbox requires. In addition to encryption for all file transfers, SugarSync has a nice security feature when sharing folders, allowing you to designate them as read-only if you want, and letting you password-protect them. (Like Dropbox, you can't password-protect individual files that you send using the linking feature.)

Another advantage is that SugarSync's free site gives you 5 GB of storage, as compared to Dropbox's 2 GB. Its interface isn't as graphically slick as Dropbox, but it's easy to use and its Help documents are better. Although it does require the people you share folders with to sign up, they

don't need to have equivalent storage in their account to accommodate the folder being shared, like with Dropbox. Instead, they only need a free account. Storage plans include 30 GB (\$4.99/month), 60 GB (\$9.99/month), 100 GB (\$14.99/month), 250 GB (\$24.99/month) and 500 GB (\$39.99/month). Business plans, which let you designate official users other than yourself, are available starting at \$29.99/month for 100 GB and up to three users.

Apple's iDisk (Mac) feature in its MobileMe (apple.com/mobileme) service is another popular option. It costs \$99 a year, and iDisk functionality—which gives you a cloud-based hard drive—is included. You get 20 GB of space (which also needs to cover storage for your email, but can be expanded) and 200 GB of monthly transfers. You

will start with its lowest tier at \$8.95/month. Until then, you get 50 GB of free storage.

Gobbler runs through a free software application that you download. It scans your drives looking for music projects created in most major DAWs (MOTU Digital Performer isn't currently supported, but Kantrowitz says it should be by May), and once it finishes, lets you designate which ones to back up to the cloud. Gobbler uses a lossless FLAC compression on the audio that compresses locally on your computer as it uploads to Gobbler's servers. It decompresses automatically, again on your computer, when you download the file. The reason the local compression/decompression is a big deal is that the smaller file size lets Gobber transfer more quickly when uploading and downloading. It also allows for reduced

file sizes (up 60-percent smaller, according to Kantrowitz) on Gobbler's server, thus allowing you to fit more in your allotted file space. Gobbler lets you share files or folders, and it will only let the designated recipient download the file. The recipient has to sign up for Gobbler (no payment is required) to retrieve what you send. If this person chooses not to download the Gobbler software, he/she will still be able to retrieve files through a Web browser, but transfer will be slower.

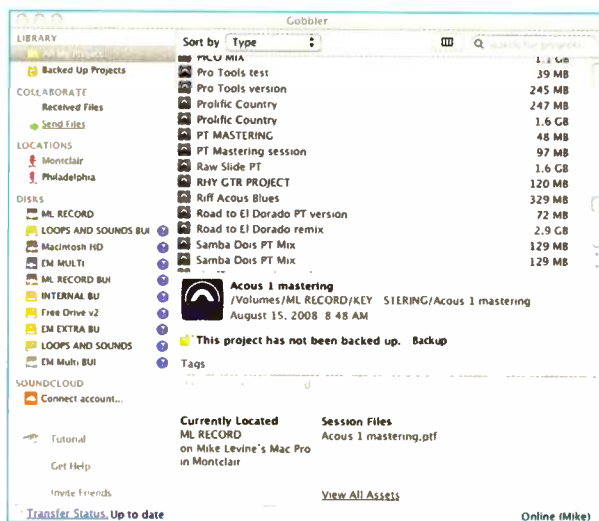
Gobbler also lets you go back to previously saved versions of your file in case you want to revert. In addition, it has a feature called deduplication, which means that if you upload multiple versions of a file, it's smart enough to only upload the files that

have changed since your original upload, which potentially can save a great deal of space and transfer time.

Download

There is undoubtedly a lot of hype about "the cloud," and marketers love to talk as if it's some magic puff of vapor that floats above the Earth rather than what it really is: servers on the Internet. That being said, sharing and storing your files remotely has never been easier, cheaper or more convenient. With all the options available online and perhaps a touch of old-fashioned FTP or DigiDelivery (or Aspera's replacement for it), you should be able to put together a file-sharing solution that's customized for your studio's particular needs. ■

Mike Levine (mikelevine.com) is a New York-based music journalist, producer and multi-instrumentalist, and is the former editor of EM.



Gobbler goes through your hard drive, looking for music files. You can then choose which ones to back up from the list.

can share files from your iDisk with password-protected links that you email to recipients. According to Apple, if you're running OS 10.6.5 or later, iDisk transfers are encrypted. As with Dropbox and SugarSync, iDisk files can be accessed and shared with a free iOS app (MobileMe iDisk). Your iDisk files will be synced between your various computers and iOS devices.

Gobbler Gobbler

Recent startup Gobbler (Mac only, but Windows support is coming; getgobbler.com) is the only one of the cloud-based file sites designed specifically for use in music-production projects. It works somewhat differently from either the file-delivery or hosting/sharing sites, but allows you to back up and share your projects. It's still in beta but is fully functional. Gobbler is free until the beta period ends, which company CEO Chris Kantrowitz says should be in August 2011, at which point it



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Get It Live Over the Web

SXSW SHOWS STREAMED LIVE IN HD

By Sarah Benzuly



T rue, many mid-level bands find themselves on 200-plus-dates-a-year tours, finding that ticket sales and merch provide the majority of their income. But with ever-increasing ticket prices—not to mention the soaring cost of fuel—is this traditional touring model really able to keep the cash flow coming in? Factor in that an artist just can't hit all of the spots across the map on their tour; it's just not feasible. So why not tackle both issues with one fell swoop—stream your concert, online, in high-resolution audio and video to a much larger, global audience.

This trend is in no way going to replace the physical tour; fans still want to experience that live feel, that excitement that only comes from waiting in line, checking out the opening act and then—finally—their favorite band hits the stage. But, especially in a festival situation, streaming a concert online sure does make financial sense.

We recently spoke with XI Media's (Austin, ximediaproductions.com) owner/producer Dusty Kraatz and audio director John Riddle about their

massive undertaking of live audio and video streaming from six different stages—Fader Fort tent, streams for NPR and those for *Rolling Stone*—at the recent four-day SXSW. The Fader Fort stream alone saw 1.6 million views managed through MySpace, which has a relationship with content delivery network Akamai to handle any bandwidth issues.

The Setup

While Kraatz and Riddle would prefer to have a clean view of the stage or front-of-house to craft the live mix, at SXSW they found themselves in less-than-ideal locales. "We were always set up away from the stages," Riddle says. "At the Fader Fort, we were in a production trailer behind the stage. At the *Rolling Stone* shows, we were in a separate hallway with partitions. For the NPR shows, we were located with all of the NPR staff, where we actually had a view from front of house."

And while close proximity to FOH is optimum, they are quick to point out that they are relatively "invisible" to the show's live sound en-

gineers. To ensure that they are getting everything they need to put out a high-quality stream, the team works closely with the location house crew, particularly when they are charged with multi-tracking the shows. "We would have to interface with their patch engineer and their monitor engineer to make sure that we were getting the correct patching," explains Riddle.

For the Fader Fort shows, they received separate stems from the FOH Avid console so that Riddle's engineer could mix the stereo drums, stereo guitars, stereo instruments, bass, mono vocal and stereo audience or house mics for the live stream. "Then those would also be processed in the box on our end," Riddle says. "We were using Metric Halo ULN-2 and 2882 interfaces to take those stems and the house mics, and then mix them all together and do some post-processing that would be used to tailor it to the broadcast feed. Then we would send a stereo feed to the Tricaster broadcast switcher and we'd also be recording all of the individual stems



Audio director John Riddle mixing during *Matador* at 21 in Las Vegas in October 2010.



and the broadcast stereo feed to hard disk." Monitoring was via ADAM A5X and Etymotic in-ears so they could do some sound separation.

"At the *Rolling Stone* shows, we were running a full split with multitracking. We took the split [from the stage] into PreSonus Digimax LT pre's and then ADAT out of those into an Alesis HD24XR recorder. We then ran analog out of the HD24 into a Midas Verona 24-channel console for mixing and sent the stereo out to broadcast. We also backed up that stereo mix with a Zoom H4 recorder." Monitoring was via Sony 7506 and Etymotic headphones.

Down the Line

For each stream, the engineers continually "patch in" to different portions to ensure that the audio is of the highest quality possible. On some gigs, there are just two audio crewmembers—an engineer and a tech—handling the many quality checkpoints. "On the video end, a lot of people have the misconception that there's automatically going to be an audio sync issue and that has yet to happen," Kraatz says. "As far as drop-outs [occurring], as long as we're managing our workflow and all the cables are plugged in, we've never had an issue.

"Our engineers are checking audio down the line," he continues. "At that point where we were recording our full HD master, the engineer basically has to be mobile because they're managing the mix, but they're also making sure that it's going all the way through the line and out to the stream. So we had them checking at different reference points to make sure that the audio was not getting

squished. And then we'd also have the stream up on a laptop for our director to monitor; we'd have the engineer plug into that laptop to check, as well."

Riddle adds: "You want to build as much redundancy as possible into your signal flow. But there's always a balance there between client budget and what we're able to support with equipment because our client base is in that middle ground where they don't necessarily have the budget to bring out a full broadcast audio truck that has full redundancy. We're able to bring a really high-quality product to them at a lower budget, but some of the tradeoff has been reduced redundancy."

But what XI Media won't allow a trade-off on is audio quality. Despite the fact that the stream is going over the Web, they're pushing out 128 kilobytes/second, audio-wise. At the SXSW shows, XI Media partnered with Kulabyte to use its XStreamLive video encoders and Hyperstream, a cloud-based video-transcoding technology. Hyperstream allowed XI Media to take any connection—2 MB/second and up—so that they could send one full HD stream with the audio embedded. In this way, they were able to do a 900 or 1,200k stream, plus the audio at 128. Hyperstream would then take that one feed and split it up as many ways as possible [to support multiple end-user devices]. "That enabled us to take the NPR feed—at least a 2MB upload speed for all of our connections—and we pumped out one feed," Kraatz says. "We could do a full-range dynamic setting for our end-users and

offer the highest-quality possible."

"One of the challenges there," adds Riddle, "is that you're mixing so that it will translate to a much lower bit rate. You may get your 128, but you may only get 64. There's plenty of times where I'm monitoring off my iPhone, watching the stream, just to see how it's sounding for that audience."

Building a Better Stream

This growing field is truly interdisciplinary as the engineers are doing location recording and live mixing, and as such, Riddle finds that he's building a hybrid system to meet his require-



Justin McKee directing one of more than 30 acts at the Fader Fort.

ments. As of today, the gear he needs to make his job easier is more skewed to the install broadcast market. Ideally, he says, if manufacturers were to keep their eyes toward this growing market, he'd like to see a piece of equipment that would

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combine multitrack recording along with internal processing and mixing capabilities. "When I'm running a show," he says, "the closest thing that I've found is the Metric Halo equipment. The only 'gotcha' there is the software mixing; It's great that it has all of the processing on-board, but as far as being able to mix with all of those boxes, it's a little bit cumbersome because they don't communicate with each other and you're still relying on a computer-based system.



Ryan McLain mixing during a Rolling Stone event. Also featured are crew members Adam Rothlein, Robert Caulder and Lauren Schall King.

So anytime you can get a dedicated product that doesn't rely on a multipurpose operation system, it's going to be more reliable generally. I'd like to see something that has hardware controlling with DSP and the recording capability—all in one box—that doesn't rely on interfacing into a computer, which is usually the most unreliable part of the equation."

And manufacturers should be looking toward this burgeoning market as there are dollars to be found, especially when these concerts and streams are funded by a corporation. Say a concert is held at a venue that holds 500 people. Now with the live streaming capabilities, that number can easily jump up to 50,000 and upward—or 1.6 million viewers for the Fader Fort streams alone. That many eyeballs viewing the artist, viewing the corporate brand. "That will help grow the market and then the manufacturers will follow as there is more and more demand," Kraatz says. "Every different event I do is a laundry list of ideal equip-



ment for that show, but it is not feasible as a purchaser or a renter to get all of it. This is one of the avenues where there will be some money involved in the equation to bring music to people—in live sound and now live sound with streaming. The streaming events create excitement and buzz. All those fans [watching the stream] become a global unit sharing the same experience. Being able to see the global scope and scale, and knowing that not only are those eyeballs seeing and ears hearing what we're doing, but also knowing that that many people all across the globe are able to participate with their favorite band—that'll never go away; it'll only grow." III

Sarah Benzuly is Mix's managing editor.

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The Age of the '6-Word Email'

TOP ENGINEERS ON COLLABORATIVE MASTERING

By Barbara Schultz



Mastering is possibly the most solitary job in the music-production chain. An engineer with a pair of golden ears and a collection of singular equipment works alone in a pristine room, turning mixes of all sorts into dynamic, polished records. However, mastering pros, like recording engineers and mixers, are in a service business; pleasing clients remains their ultimate goal, and collaboration is a crucial part of their process.

We talked to three mastering professionals—all Grammy winners and all at the top of their craft—about the ways they collaborate fruitfully with clients, whether or not they ever meet those clients in person, share the same time zone or even speak the same language.

When we phoned Gateway Mastering's (gatewaymastering.com) Adam Ayan, he was in the thick of a week when four of five days were booked with attended sessions. "But that's not typical at all," Ayan says. "It's usually the opposite. I would say that 90 percent of the time I'm working unattended."

This is not too surprising, as Gateway is situated in Portland, Maine—not exactly a mu-

sic-recording hub. When founder and mastering legend Bob Ludwig opened Gateway in the mid-'90s, most of his projects arrived via FedEx. Now, Ayan makes a point of FTP'ing one or two tracks of an album to his remote clients before he gets too far into a project. "If I'm working with a new client, especially in these days of tighter budgets, I'll call, and say, 'Are you available the morning of the session if I send you the very first track I cut that day?' to try to get on the same page right away," he says. "I'll say, 'Listen to it and see if that's the direction you want to go.' In that rare case when somebody wants to take the whole thing in a radically different direction, I want to respect their musical vision and get them there, but you definitely don't want to find that out at the end of the project and have to start over; it's all billable hours. I never want to be

in a position where a client feels like their artistic vision hasn't been met, but they have to live with it because they're on a budget.

"Everybody's so wired in these days," Ayan continues. "In a way, it's so easy to have lines of communication, but the communication itself is different. What might in the past have been a 5-minute phone call is now only a 6-word email, and you need to sift through those things and make a point of getting enough information. This is a collaborative process, and even when—or maybe especially when—you're working with remote clients, people skills can be just as important as technical skills."

Stephen Marcussen's studio in Hollywood (marcussenmastering.com) sees a lot more client foot-traffic. "It's a surprising amount of people who show up," he says. "And as the field broadens, there are a lot more people making music outside of the traditional record-company model and they're far more engaged in their work. We have more artists attending now, which is great. You're right at the source, and it doesn't get any better than that: I make suggestions, they make suggestions. The dismant-

ling of the traditional label model has made my work more engaging on a human level because I see more people."

However, Marcussen also has a substantial base of clients who send work from Europe, Australia and the Far East; note the Japanese-language icon on his Website. He says that despite the miracle



Gateway Mastering's Adam Ayan FTPs a couple tracks to remote clients for their once-over.

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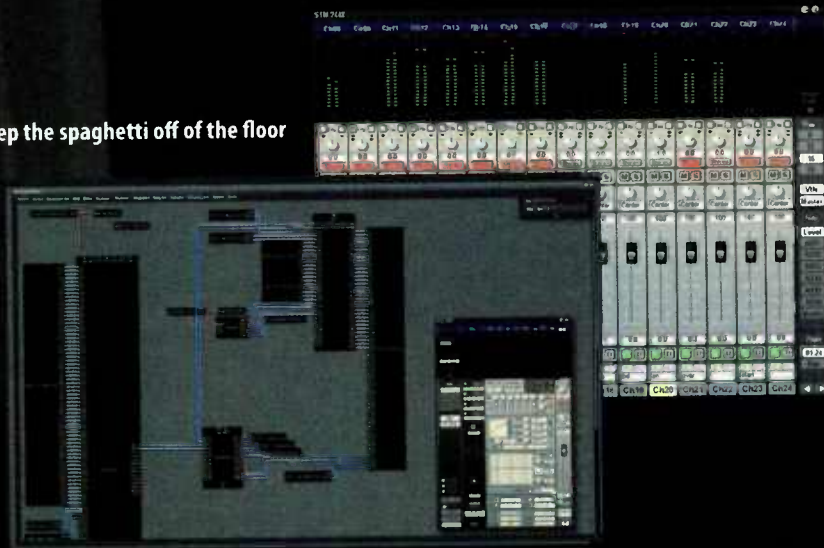
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of FTP and the Web in general, true collaboration with foreign clients is often challenging because of the time difference. He carefully plans his schedule to make sure he can connect: "We see both sides of the dateline," he says. "I'll communicate with Australia late in the day and Europe early in the day. If they're in Europe, they're largely sleeping while we're working. They'll wake up, download the project we did, and then email or phone if they want me to make a change. But if there's a hiccup on their end, with whoever the client contracts with for their Web access, that can shift a project by another day."

Marcussen says that some of his Japanese clients do visit him in California. The band Spitz, for example, who are on their 13th album with Marcussen, came over last year with their producer and engineer. "There's usually somebody who comes over with a band like Spitz who speaks English, but if not, there are project coordinators in America who will help artists like this get set up, get comfortable, get to their recording or mastering sessions, and work with the band on getting their points across."

For Andrew Mendelson, who heads up Georgetown Masters (georgetownmasters.com) in Nashville, the art of collaboration begins at home, in the relationship he has with his assistants. "Most of my credits will read, 'Mastered by Andrew Mendelson,' but I was probably assisted by two or three people," he says. "Like other assistants, they do all the setup and production work, but they also do all of my loads, all of my doc'ing and most of the editing. It's very much a team effort. If people come back for a tweak in editing of spacing, for example, they don't always have to come to me for that. A lot of mastering engineers do work alone, and a lot of the ones I know who use assistants use them more to set up and do the production end, but here they help oversee an entire product, front to back. All of them do their own projects here as well, and that's a way we can get people into our facility who can't necessarily afford my rates, which is important as record label budgets keep coming down."

Mendelson says about 50 percent of his sessions are attended and comprise local Nashville

clients and those who come from as far as Europe and the Middle East. For those who can't be there in person, he says, "We talk on the phone, we email, we use Skype. I think there's a future in setting up real-time participation in sessions that way as bandwidth gets better, but I do like it when people are here. To me, it's the difference between being a solo artist and being part of a band. I like that band dynamic, that back-and-forth. I've heard stories of other guys who don't want anyone else sitting in their chairs; it's bizarre to me. Why would someone screw up their own project?"

Mendelson acknowledges that a lot of the "family vibe," as he calls it—the collaborative spirit he shares with his colleagues and his clients—



Andrew Mendelson prefers when clients are there for the mastering sessions.

began under the previous president of Georgetown, the late Denny Purcell. "Denny created an environment that people wanted to come to," Mendelson says. "He was a master of people skills. He knew how to put clients at ease, how to deliver a great product and conduct a session where he'd do great work but have fun while doing it. That's a legacy we're trying our best to live up to."

Ayan also sees his mentor, Ludwig, as an important collaborator. The two engineers rarely combine forces on an album, but they do work on identical setups, and sharing information can save some of those all-important billable hours. "We have the advantage of shared knowledge and experiences," Ayan says. "We'll see each other at lunch or in the hallway, and say, 'Oh, I just found a bug in this program; look out for this.' If we're both unattended and I find something important, I will buzz Bob's studio or run down there, and say, 'I found this wrong with this piece of equipment,' and he does the same for me."

Along the lines of the collaborative spirit,



Stephen Marcussen sees more foot-traffic coming in, allowing back-and-forth talks with the artist.

it's also worth noting that Ayan founded the Portland Music Foundation, a nonprofit that sponsors educational workshops and events designed to unify the local music community. "You get this feeling of folks working in their own project studios now," Ayan explains. "They can work when the moment strikes them, spend as much time as they want without being on the clock—all of those good things. But the negative side is they don't have anybody to bounce ideas off of. They don't collaborate even in the minimal way that Bob and I do. We're off the beaten path, but we have a pretty cool, thriving music community here, and the Portland Music Foundation is a way to bring that community together, anchor and strengthen it."

For most mastering engineers, the new normal of working alone in a project room may not represent a radical shift as it has for the recording community, but the era of the "6-word email" has made the opportunity to collaborate with real live clients a rare treat.

"It's nice to work with somebody here because I enjoy the company," Marcussen says. "And there's more [to collaborating] than just words. There's body language, facial expression, the look of, 'Wow, that's great!' or, 'I'm not sure I'm getting that.' It's much more immediate, and working with people is still my ideal scenario, but if they're not able to attend, you can still accomplish quite a bit." III

Barbara Schultz is a freelance journalist and editor.

"I think there's a future in setting up real-time participation in sessions as bandwidth gets better."

—Andrew Mendelson



music

PHOTO: DAVID BARTOLOMI



Madeleine Peyroux

EVOCATIVE SINGER EXPLORES NEW GROOVES ON *STANDIN' ON THE ROOFTOP*

By Blair Jackson

She will never completely escape the Billie Holiday comparisons. She will still have her albums categorized as “jazz” despite a multitude of compelling evidence to the contrary. Madeleine Peyroux’s large and devoted fan base doesn’t see stylistic limitations, but rather appreciates the tremendous *breadth* of her repertoire, which seamlessly incorporates pop standards, deep blues, country, folk, French classics, distinctive and imaginative takes on songs by some of the great writers of the modern era, and, increas-

ingly in the past few years, her own songs, which span many of those genres.

Peyroux’s latest effort, *Standin’ on the Rooftop*—just her fifth full-length album since her stunning 1996 debut, *Dreamland*—should surprise and delight her longtime followers, and may also have enough creative twists and wrinkles to attract new listeners. After three albums working with producer/bassist Larry Klein and his fine stable of L.A. players, Peyroux enlisted Craig Street (well known for his extraordi-

nary work with such singers as Cassandra Wilson, MeShell Ndegeocello, k.d. lang, Norah Jones and John Legend) and a handful of that producer’s favorite musicians to cut the new disc entirely in New York City, tracking primarily at Sear Sound. (The album comes out June 7 on the Decca label.) Peyroux’s previous album, *Bare Bones* (2009), consisted of songs written or co-written by Peyroux and various others (Klein, Walter Becker, Julian Coryell, et al). *Standin’ on the Rooftop* finds Peyroux once again writing most of the songs, but there are also three covers: The Beatles’ “Martha, My Dear,” Robert Johnson’s “Love in Vain” and Dylan’s lovely “I Threw It All Away.”

According to Street, people had been suggesting that he and Peyroux work together for some time, and the two first got together three years ago at a diner in upstate New York. “We hung out for a while, and then we went in her pickup truck and she played me some demos she’d been working on with her sister that were just amazing. She ended up making another record with Larry [*Bare Bones*], but we stayed in touch, and every few months, I’d say, ‘You know, if you ever want to make a record with me.’ Then, toward the end of [2010], it coincided with when she wanted to make a new record.” Did Street go back and listen to Peyroux’s earlier albums to chart a course forward? “No. I was aware of her first album and I’d heard some other things and I’d seen her play live, but I almost never listen to what anybody’s done before I work with them. I’m listening for what somebody tells me they want to do; that’s what I look for.”

Adds Peyroux, “I really loved the songwriting I was doing last year and I was very excited about it. I got to a place where I had a handful of songs I really liked and was ready to record—not enough for a full record yet. But I had some specific desires, such as I wanted

it to be in New York City. I also wanted the experience of working with another producer. Larry and I talked about it and he was aware of what was going on. I wanted to see what it would be like. Craig and I started talking a lot about the songs and possible directions and about all these other things—records we loved, sounds we loved—and things moved on from there.”

Both were surprised to learn that they shared a love for early '70s soul music, such as Charles Wright's Watts 103rd Street Rhythm Band, Bill Withers, Stevie Wonder and, most of all, Sly Stone's groundbreaking *There's a Riot Goin' On* album. "I'd never heard any of that get referenced in her work, even in a subtle way," Street says with a chuckle. "I wouldn't have guessed she was really into funk rhythm guitar, wah-wah pedals, James Brown or Sly. But she is!"

"The fact that Sly Stone became a big part of our discussions and the approach to some of this record is pretty far out of the box I'm comfortable in," Peyroux acknowledges. "I idolize the way Sly approached the song. Hearing him do 'Que Sera, Sera,' it's not actually that far away from the world of song that I live in. So he became a bible reference when we were deciding to go for something that was halfway between a very ethereal, dreamy world and the complete opposite of that: There's a part you recognize, there's a melody you recognize, there's an obvious rhythm that you can dance to. That's where Craig and I settled: What's in between those two extremes?"

"On one song, 'Standin' on the Rooftop,' I even take advantage of more modern classical music, like Steve Reich. And on the other hand, I've got some funky tunes that could go in any direction on the R&B side. I'm coming out of the blues and jazz idiom basically, so I stretched myself in terms of what sounds and approaches we used. As far as the singing, I think I did what I normally do, which is trying to focus on the lyric and make a dramatic delivery of the story."

Peyroux worked up guitar-and-voice demos of the new songs using GarageBand and her laptop at home, but also, "I tried to experiment with some sounds to give Craig an idea of what kind of production I was thinking of. I might try something with the MIDI keyboard and put on a pass of strings or pads, or do some effected whirly sounds. For instance, I was aware that I was going to be looking for a really big low-end bass drum sound, and we talked about [drummer] Charley Drayton and I tried to make a little demo that enunciated some of those percussive sounds on one of those songs. Apparently, Craig sent it off to Charley and Charley said he liked it—these terrible, funky demos." [Laughs]

In addition to Drayton, the small core band for the tracking sessions included guitarists Marc Ribot and Chris Bruce, bassist Ndegeocello and (for two days) keyboardist John Kirby, all veterans of other Street projects. Street says, "Chris came into town a few days before the sessions, and he and Madeleine and I sat down in her apartment and went over the structure of songs, and we double-checked things for keys. Everybody else we sent the guitar-vocal demos so they could get a sense of what the song structures were like. The keys might have changed here and there, or the tempos, but the actual structure didn't." Street's M.O., though, is never to suggest parts, but "allow the musicians to be who they are. They're

I've got some funky tunes that could go in any direction on the R&B side. I'm coming out of the blues and jazz idiom basically, so I stretched myself in terms of what sounds and approaches we used.

—Madeleine Peyroux

all amazing players and they worked so well as a group, which gave Madeleine the freedom to experiment. It's critical when someone's working outside of their perceived norm that their collaborators are generous, open and kind."

The sessions took place in Sear Sound's Studio A, which, in the post-Walter Sear era (he died in April 2010), is still a magnificent recording space and repository for some of the finest equipment ever built. "It's a really comfortable place to work," Street says. "You know you're in a studio, but it doesn't feel like a sterile, shiny studio. Everything was cut live. We cut 14 songs in four days. On average we would do a song every two or three hours—that was having a refresher listen to the demo, maybe having a rough discussion of what we might do, but essentially just playing. There would be a period of experimentation and something would form out of that. We usually did a few takes and then we would do the primary overdubs at the time. We were looking to capture performances. When it feels great, you go for it and you commit to it."

The sessions were engineered by Matthew

Cullen, formerly of Allaire Studios in upstate New York, where Street often worked before that studio closed a few years ago. They put Peyroux and her guitar in an iso booth, Drayton's drums isolated in another, and then guitarists Bruce and Ribot and bassist Ndegeocello in the larger part of the main room, with baffles between them but still with quite a bit of bleed. Recording was to Pro Tools HD through the room's custom Neve 8038 console. "I used very little reverb or EQ," Cullen comments, "in fact, not much in the way of processing. Everything is pretty much as it went down—there's a little delay on the vocal, but all the guitar sounds are amp sounds or pedals."

For the guitarists' amps, Cullen used a Coles ribbon mic and an AKG 451: "I like the Coles for its 'wooliness' and the 451 because it's really bright and gives a lot of low end at the same time." Bass was recorded direct and occasionally augmented by re-amping the signal through a B-15. For Drayton's kit (which included a huge vintage bass drum he found in the basement of Radio City Music Hall), Cullen used a pair of Coles ribbons and a Neumann U47 between them for overheads, an AKG D 12 on the kick, a Shure 57 on the snare, a Sennheiser 441 "as a kit mic over the bass drum, pointing down at the snare," and Sennheiser 421s on the toms.

Peyroux's vocal mic on most tracks was a Neumann 67, with a Sony C-37A and a Cloud JRS-34 ribbon mic on a couple of tunes, at times with a Pultec or one of Street's Tim de Paravicini-designed EAR valve preamps.

Although many of the overdubs were done on the spot, and what we hear on the finished album are complete performances with no editing between takes, there was some minor additional instrumental and vocal work done subsequently in four smaller New York-area rooms: Mother Brain, Vel Records, Downtown and Wild Arctic. There were also additional keyboards by Glenn Patscha in New York and Patrick Warren in L.A. The mixes were split among three engineers: Cullen, Tony Maserati and Kevin Killen. None strayed too far from what was on the tracks, with the great unifying element being Peyroux's evocative and soulful vocals.

"This record has been a different process all around," Peyroux says, "and it's not just the musicians and the producer. It's the songs. There's a little bit more of a rock influence and an R&B influence. I don't feel like I'm boxed into a jazz setting with the material, and on top of that I think we really explored a different type of band sound underneath the songs. I wanted to see how far I could push things out of the box that I've become comfortable living in." III

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SESSIONS

Craig Marks Scores 'Iron Chef America', 'Next Iron Chef'

The Food Network's *Iron Chef America* and *Next Iron Chef* have successfully re-packaged Japan's cult-classic cooking-competition series for North American audiences, offering pressure-filled, suspenseful hourlong cook-offs between the Iron Chefs of America and world-class challengers on the battleground of Kitchen Stadium. Throughout these series' runs (nine seasons and three seasons, respectively), Los Angeles-based composer Craig Marks has scored each culinary showdown. He describes his signature musical cues as "a magic recipe of samples and live instruments."

Marks notes that in adapting Japan's *Iron Chef*, the Food Network's producers "adjusted some of the [competitions] to appeal more to an American palate. On the musical side, it wasn't much of a stretch for me. All that theme music [in] the original Japanese version of *Iron Chef* was from *Backdraft* and *Glory*. I kept those scores in mind, but my direction from the production company was, 'Like that, but 100 times bigger.' We're trying to create the equivalent of Julia Child meets world-wrestling meets *American Gladiator* [laughs]. The cues are enormous; they are over the top. Musically, it's great fun."

Marks' home studio in the San Fernando Val-



Craig Marks (right) works with cellist Tina Guo on Marks' soundtrack album for *Iron Chef America*.

ley, CineMedia Music (cinemediamusic.com), serves as his base of operations; it is where he also scores ESPN's *SportsCenter*, A&E TV's *Intervention*, ABC's *SuperNanny*, and other TV and film projects. "It's mainly a writing and production space," he says. "The living room is the studio and the dining room is the lounge. Generally I'm doing overdubs or small-ensemble work. When I need big ensembles, I'll go out to any of the rooms here in town. I've got a high ceiling, but it's plaster and wallboard. When I'm recording it sounds great with the [mic] capsules in omni, so why mess with something that sounds good?"

CineMedia Music is based around MOTU Digital Performer, Marks' primary DAW, and Pro Tools.

He uses another three PCs and a Mac to host his sample libraries, and calls on software instruments from Spectrasonics and Native Instruments, among others, as well as hardware synths. "I will treat the entire sampled orchestra as if it was recorded as a live session, to blur the line between synthetic and authentic instruments," he explains. "I'll use 16 to 17 [instances of Audio Ease] Altiverb [plug-ins] to help me place all of the instruments in the sound spectrum." Marks notes that he uses live instruments in his productions

"about 80 percent of the time. I have a network of colleagues who perform and play, and a growing collection of world instruments." His microphone collection comprises models from RØDE, Shure, and others, and he says his favorites are a pair of Blue Kiwis. He monitors with Equator Q10s using Equator Control software.

Regarding his *Iron Chef* workflow, Marks says that producers will first give him advance notes on a season's worth of episodes: "Because the turnaround times are so short, I do pre-score so the editors can cut as much as possible with music in place, then score critical scenes and big moments to picture."

—Matt Gallagher

Yes Master Rises Above

After 10 months, Nashville's Yes Master Studios is up and running. In the aftermath of the devastating flood that deluged most of Nashville last May, the studio had to be de-molded, carpet, drywall and insulation removed; and the stud walls sprayed down with anti-mold solution so that studio owner Jim DeMain could bring the room back to spec. Part of the restoration included rebuilding the mastering suite's floating floor and sub enclosures, replacing the drywall iso layers and more. The lounge was moved to accommodate Studio B's expansion. "We were able to make improvements, bumping up the seven-year-old design by modifying the front wall acoustically and aesthetically," says studio designer Carl Tatz. "By far the single biggest event was re-

placing the early design PhantomFocus System with the latest technology. It's absolutely stunning."

DeMain says, "I took the new Vince Gill CD I've been working on in my temporary space and put it up on Carl's new system. I was able to hear details and nuances that I never knew existed, and the low-end definition and extension are insane. I took those new tweaks out to the car, and I'm convinced that this is the best work I've ever done."

Adds Tatz, "While virtually no one else had flood insurance, Jim had Joe Monterello's Studio Insurance Program, which has a special provision for any type of water damage to cover the restoration and gear loss costs."

—Sarah Benzuly



Before and after: above: the studio in May 2010; below, March 2011.





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UNIVERSAL AUDIO

CLASSIC TRACKS



The Spinners

"MIGHTY LOVE"

By Blair Jackson

Philadelphia was certainly hoppin' in the early '70s, thanks in large part to the music scene that revolved around owner/engineer Joe Tarsia's Sigma Sound Studios. Tarsia's roots actually go back to the Philly teen-pop of late-'50s/early '60s acts like Bobby Rydell and Chubby Checker, but by the time he opened Sigma on North 12th Street in August 1968, there was an exciting new brand of Philadelphia soul music taking root: The song-writing/production team of Kenny Gamble and Leon Huff, as well as producer/arranger Thom Bell, started churning out an incredible parade of hits, most of them recorded at Sigma by Tarsia. Acts associated with those producers—such as Jerry Butler, Wilson Pickett, The Delfonics, The Stylistics, Harold Melvin & The Blue Notes and The O'Jays—made Sigma one of the top recording studios

in the country and helped Philadelphia surpass Detroit (still reeling from the relocation of Motown to L.A. in the early '70s) as the nation's soul music headquarters.

And then there were The Spinners, who were, ironically, from Detroit; their roots go back to the mid-'50s when a group of friends formed a vocal group called The Domingoes. By 1961, a core foursome of tenors Bobbie Smith and Billy Henderson, baritone Henry Fambrough and bass Pervis Jackson (plus tenor George Dixon, whose spot changed a few times) had solidified into a unit called The Spinners, and they enjoyed a couple of minor hits for Harvey Fuqua's Tri-Phi Records label, which was later bought out by Motown's Berry Gordy. The Spinners did not fare well at Motown, and by the late '60s, the group had mostly been reduced to menial tasks with the company. In 1970, however, The Spinners

moved to a new Motown imprint called V.I.P. Records and made it into the Top 20 with a Stevie Wonder-written/produced tune called "It's a Shame."

At the suggestion of Aretha Franklin, The Spinners left the Motown stable and signed with Atlantic Records in early 1972. Along the way, they brought in Philippe Wynne to be their new co-lead tenor (along with Smith) and went to Philadelphia to see if Thom Bell could work his magic with the group at Sigma Sound. It worked. With Bell choosing the songs, writing the arrangements and handling the production, and Tarsia engineering, The Spinners had their first million-selling single with "I'll Be Around," followed by hits "Could It Be I'm Falling in Love," "One of a Kind (Love Affair)" and "Ghetto Child."

This month's "Classic Track," "Mighty Love," was another Bell triumph for The Spinners. It was recorded at Sigma in 1973 by engineer Don Murray, who had been Tarsia's assistant beginning in 1970, but had graduated to helming Bell sessions while Tarsia devoted most of his time to working on Gamble & Huff productions. "When I first started at Sigma, I had to come up to speed pretty fast because my background was in music, not engineering," says Murray, whose four-decade, multiple Grammy-winning career has included hundreds of albums in different genres. "I knew the studio from working there [as a musician]. On my first day at work, I was assisting Joe on a big Gamble & Huff rhythm section. There was no such thing as a training period. I was setting up the studio and running the tape machine from day one. It was great watching Joe and learning from him—he's a brilliant engineer.

"The first two years I was assisting and doing a lot of smaller sessions that didn't bring in as much money," Murray continues. "But they were hard sessions because a lot of them were direct-to-2-track—a gospel choir with a rhythm section would come in and rent the studio for three hours and they wanted to walk out with a mix, so it was live to 2-track or live-to-mono. I really learned quickly working on those types of sessions."

Murray describes Sigma's main recording room as "good-sized, but not huge; big enough for what we were doing. It had a high ceiling and it sounded really good. It had that old-style acoustic tile all over the walls and linoleum floors." At the time, Sigma's control room was equipped with a custom 32-input Electrodyne console and

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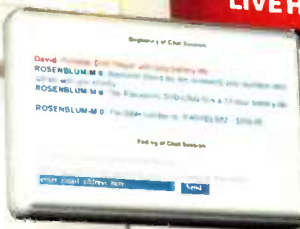
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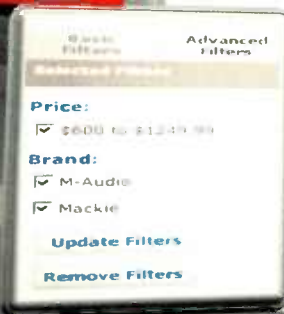
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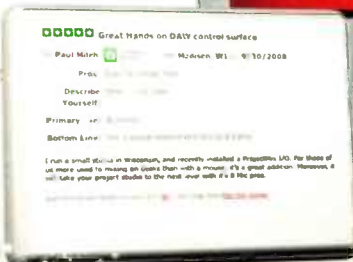
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a Scully 16-track recorder. The engineers mainly used outboard API and Orban EQs. A 40x6x12-foot echo chamber was situated right next to the control room, and Tarsia pioneered mixing a chamber signal with a mono EMT plate to create stereo reverbs. ("Then stereo plates came in," Murray notes.) For microphones, the workhorses at Sigma were multiple Neumann U87s used on everything from vocals to strings. Additionally, Tarsia and Murray employed RCA 77s on brass, vibes and B-3 Leslies; an Altec "salt shaker" on snare; an RCA BK5 on the kick; and AKG 451s on toms and guitar amps.

Typically, both Bell and Gamble & Huff sessions would be broken into different days of emphasis. Day one (and sometimes two) would be capturing the "rhythm section" live in the studio; rather than just rhythm guitar, bass and drums, it usually included *three* guitarists, a keyboardist and percussionists playing congas and vibes or marimba.

"It was like a factory," Murray says. "We would do a rhythm section day, 10 to 6; we would never go much more than eight hours cutting tracks. It might take a couple of days to get your basics on everything for an album."

Once the tracks were down, the vocal group would come in, with the lead vocal put on first and then backing vocals. Another day might find a small horn section added in the morning and strings in the afternoon. Typically, the string section included eight violins, two violas and one cello (with four mics—two on the violin section, one each for violas and cello), doubled. "The string players didn't use headphones back then," Murray recalls. "They used a little speaker [for reference], and when they doubled the strings we flipped them out of phase so it would cancel out the speaker noise. So those strings would be out of phase—maybe that contributed to the sound of those records; I don't know. Around that time, Thom started experimenting with bigger string sections."

Mixing was on the Electrodyne with the engineer and producer(s) riding the faders. "I loved manual mixing in those days," Murray says. "It was like a performance; very exciting and also very satisfying when you got it right."

Murray says admiringly of producer Bell, "I've never seen anyone else quite like him. Gamble and Huff had a big production machine, and they used a lot of people, a lot of arrangers, writers. Thom Bell was a one-man operation. He co-wrote a lot of the songs, played the keyboards, wrote all of the arrangements, sang backgrounds

and told the singers exactly what to sing. He did everything. And he was a real 'up' guy, very energetic. He comes into the room, and it's *electric*. That was quite an experience for me. I've worked with a lot of people through the years, and he's definitely up there with the best—genius category. He was amazing."

It helped that Bell and Gamble & Huff had a spectacular group of musicians to work with. Though (still) not as well known as Motown's players, they were every bit as good. On The Spinners' "Mighty Love," a tune written by "Philly Sound" favorites Joseph Jefferson, Bruce Hawes and Charles Simmons, the studio band was comprised of the usual Sigma suspects: drummer Earl Young, bassist Ronnie Baker, Bell on keys, Larry Washington on congas, Vince

I loved manual mixing in those days. It was like a performance; very exciting and also very satisfying when you got it right.

—Don Murray

Montana on vibes and, on guitars, Murray says, "Norman Harris would always play the [Gibson] L5-type guitar part—he'd play the melody and chords—Bobby Eli would play the backbeat rhythmic part and Roland Chambers would play anything that had to do with little fuzz lines or wah-wah; more effect-y parts. This band could play anything so tracking was always fairly easy."

Unlike most of The Spinners' Atlantic hits, which feature either Phillippe Wynne or Bobbie Smith on lead vocals, "Mighty Love" has the two alternating on lead tenor, until about the midway point in the 5-minute song when Wynne takes over and ad-libs over the "out" for more than two minutes—not uncommon for soul tunes in this era when dance numbers were beginning to stretch out (in anticipation of the imminent arrival of disco, perhaps). "Thom usually told everyone exactly what to sing, but he didn't do that with Phillippe, at least not on that song. That incredible ad-lib thing at the end was a first take—he just went in there and did it. That was

an amazing thing to be in the same room for." The backing vocal session included both lead singers; group vocalists Jackson, Henderson and Fambrough; and four women backups: Linda Creed (Bell's frequent co-writer), Barbara Ingram, Carla Benson and Yvette Benton.

Asked how involved The Spinners were with other phases of their music's creation or production in that era, Murray replies, "Not much at all. It was totally the 'Thom Bell Show.' The group wouldn't come in until it was their vocal session. That was the way Thom liked to work."

With its big main riff dominated by stirring strings and horns, its bright vocals and optimistic message, "Mighty Love" was firmly from the classic Philadelphia soul mold, and the song soared to Number One on the *Billboard* Soul Singles chart (and got as high as Number 20 on the "Hot 100" Pop Singles chart) in the winter of 1974. Actually, the "hit" was an edit of the album track—dubbed "Mighty Love, Pt. 1," the song faded at about the 3:15 mark, eliminating Wynne's long ad-lib section. (The B-side of the single was "Pt. 2.")

The *Mighty Love* album peaked at Number 16 on the *Billboard* Albums chart and produced two other smash singles: "Coming Home" (written by Bell and Linda Creed) and "Love Don't Love Nobody" (by Jefferson and Simmons). Bell also won the Grammy for Producer of the Year at the 1975 ceremonies. That year, Bell moved to Seattle and Murray relocated to Los Angeles. "I would go up to Seattle and he'd bring in the Philly musicians and we'd do Spinners albums [at Kaye-Smith Studios] and other groups. He did the Elton John EP [*The Thom Bell Sessions*, cut in 1977] up there. We'd still go do the string and horn arrangements back in Philly and then he'd mix mostly in Seattle. We also did some recording and mixing in L.A., too."

As for The Spinners, they had a couple more big hits before Wynne left the group in early 1977 (replaced by John Edwards), and their association with Bell ended two years after that. Still, they continued to turn out hits into the early '80s and nurtured a huge following in England. There has been tremendous turnover within the group in the years since then, but The Spinners have managed to thrive on the oldies/nostalgia circuit. Bobbie Smith and Henry Fambrough are the sole remaining original members.

"We got spoiled with every song being a hit for Gamble, Huff and Bell," Murray says today of that golden time. "I look back on it now and I can't believe I was a part of it!" ■■■

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World Radio History

Lady Gaga

PERFORMANCE RINGS TRUE FOR HER LITTLE MONSTERS

By Sarah Benzuly

Lady Gaga is an experience. The performer. The artist. The musician. The fashion icon. The brand. And when “Mama Monster” hits the stage, all her little monsters in the Oakland Arena (Oakland, Calif.) eagerly pumped their paws to the sky in time with her chart-topping hits such as “Telephone,” “Paparazzi” and “Poker Face.” In part evoking a dance club atmosphere while quieting down for softer moments where she tickles the ivories for “You and I,” the Lady Gaga Monster tour is part visual spectacle—replete with numerous costume changes, each more interesting than the previous—and part true musicianship of Gaga and her 12-piece band.

But for front-of-house engineer Horace Ward, he humbly says that his role in the concert’s production is more “invisible.” “A concert is a feel,” he explains. “When you go to a club, you feel the music. It’s the same thing here. There are visuals that take your eye, but you still

Full Lady Gaga audio crew, from left: audio crew chief/monitor tech Dan Klocker, monitor engineer Ramon Morales, P.A. tech Wayne Bacon, FOH engineer Horace Ward, RF tech Bill Flugan, P.A. tech Kevin Szafraniec, FOH tech/system engineer Tony Smith, and P.A. techs James La Marca and James Allen



PHOTOS: STEVE JENNINGS



feel the music. It’s supposed to be that enhancement. It brings you closer to the stage, closer to the artist. The better the sound, the closer the artist seems to you. If you go away and say that guitar kind of hurt, you’re distracted by the sound; there should be no distractions like that. When you look at the P.A. and wonder what’s going on up there, then you’re taking your eyes away from the stage. I’ve got to be as loud as I can because it’s that club-type feel—big low end—but your eyes are supposed to be wander-

ing around the stage. When you look at an instrument, you're supposed to hear it. That visual thing is what it's all about."

While Ward may be taking a backseat role in the concert's experience, it's his deft mixing—coupled with that of monitor engineer Ramon Morales—that truly makes a Lady Gaga show exciting and great-sounding.

A Pre-Owned Rig

Both Ward and Morales came onto the tour later on the run (the arena dates are an offshoot of the previous theater gigs) and adopted their respective setups from the previous FOH and monitor crew. Ward is mixing on an Avid VENUE Profile, a board he consulted on with the company. (For more on that collaboration, see the sidebar, "VENUE Input.") Prior to setting foot on the tour, Ward was emailing desk files with the previous engineer to adapt the setup to his way of mixing, though those changes were limited. "You can't redo the console without redoing a lot of other things," Ward explains. "All of my effects would have changed, and I would have had to sit down for two days and really go through it, but I don't have that time" as he started on the second show of the tour.

Morales is mixing on a DiGiCo SD7, a first for him. He's using the board's 80 inputs, with band effects and audience mics (four 414s and two shotgun mics strategically placed around the lip of the main and B stages) taking up the majority of that number; he works with wireless tech Bill Flugan to ensure that all wireless signals are



Above: monitor engineer Ramon Morales mans the DiGiCo SD7. Below: front-of-house engineer Horace Ward at the Avid VENUE Profile.



up and running. The band is on Sensaphonics in-ears, while Gaga wears JH Audio; all mixes are straightforward. However, when Gaga takes to an instrument, Morales brings that instrument up in

her ears enough for her to hear it, but at the same time, "I have to make sure it does not overpower everything else in her mix," he says. "Her voice is her main instrument, and I have to make sure that she can always hear herself, the instrument that she is playing and the rest of the band onstage with her."

For effects, he's going the onboard route, and using Waves MultiRack (taken MADI through the desk) on vocals. He also uses a TC Electronic System 6000 for Gaga's vocals and drums. "We have Gaga's mic inputs going through UA 2-610 preamps, just to warm it up a little," Morales says.

Ward is also using all onboard plug-ins (Waves, McDSP, Sony Oxford); because the board is Pro Tools-based, he is able to mix the show in a similar fashion as to how they did tracks in the studio. Granted, Ward was not present during those recording dates, but he takes a similar approach to his live mix. "Nowadays, you have to plan the mix like you're doing an album. For example, the vocal chain, where you're using compressors and various dynamic compressors within the chain, EQ, et cetera. [With a digital console,] a lot of stuff that you couldn't compress

VENUE Input

When Avid was designing its VENUE Profile live sound console, they asked Ward to visit and give his thoughts on the design. Here's his tale:

"The company said, 'We're bringing out a new console, can you look it over?' And I looked at it, and said, 'This is too big,' and, 'What's this?' My thing were the gates and compressors they had on it—I didn't like it. But they started using their same workings as their plug-in gates and compressors, so that was beautiful. Also, the knobs on the console, they used the same ones they use on their studio consoles—the D-Control. I tried to change the knobs, but they kept the D-Control-type knobs. This was the original VENUE.

"Different things like we wanted the playback from Pro Tools. When the console first came out, it didn't have it, but it was one of those things they planned to do and it was cool. The Rehearse mode: It's one of those things where it's a tool you can use after the band's finished and go back and refine your mix. It's always good to go back and sort out an effect. Same thing you do in the studio: You'll stay in the mix and sort out what suits the mix. Before, we were limited in what we had and you just had certain things you knew worked; certain reverbs you'd use for vocal, for drums, maybe an instrument one and that's all you'd do. But now, because the way the board's set up and how many sends you have, you can add atmosphere to individual things. And you can change all that per song; you can't change the actual unit, but you can change textures and the times per snapshot."

because you didn't have enough compressors, you can now compress; it's all about control. With live, you can't overcompress stuff like you do in the studio, but you can control everything. You can control the dynamics to where you want it to be, but you do have to get to that studio technique so the quality shines through. I'm working with a sequencer that's pumping, a full band that's pumping, string instruments, violin and the harp [which is featured on "Telephone," as it's the lead instrument]. I've got to be able to let [the harp] shine through. Balancing the drums with the sequenced drums and everything else—it's all about control."

Amplifying A and B Stages

The Eighth Day Sound—supplied d&b P.A. comprises four flown J8 sidefills ("light, but efficient," Ward says), and on the B stage are four M4 wedges. Both the sidefills and wedges run digitally through Dolby Lake processing. When the dancers perform on the B stage, that's where the M4 wedges really kick in, says Morales.

The 12-piece band—which includes background vocals, guitarists, harpist, bassist, drums, etc.—sees a plethora of mic options. Drums take Audio-Technica AE2500 on kick, AT 5100 on bottom snare, and AT 3000s on top snare and the three toms, as well as Neumann KM184s on hi-hat and ride. All other instruments are taken DI. For guitars, Ward places AT4050 on the amps and then adds DI. "I have to put a slight, maybe 0.4 millisecond, delay between the DI and the mic because they don't match up time-wise," Ward says. "Harp is DI'd. It's got contact pickups on every string that sums."

Gaga uses a Shure Beta 54 headset and switches to a Sennheiser SKM 5200 with 5235 capsule for a couple of songs. The three background vocalists use Sennheiser SKM 5200 with 5235 capsules for the entire show.

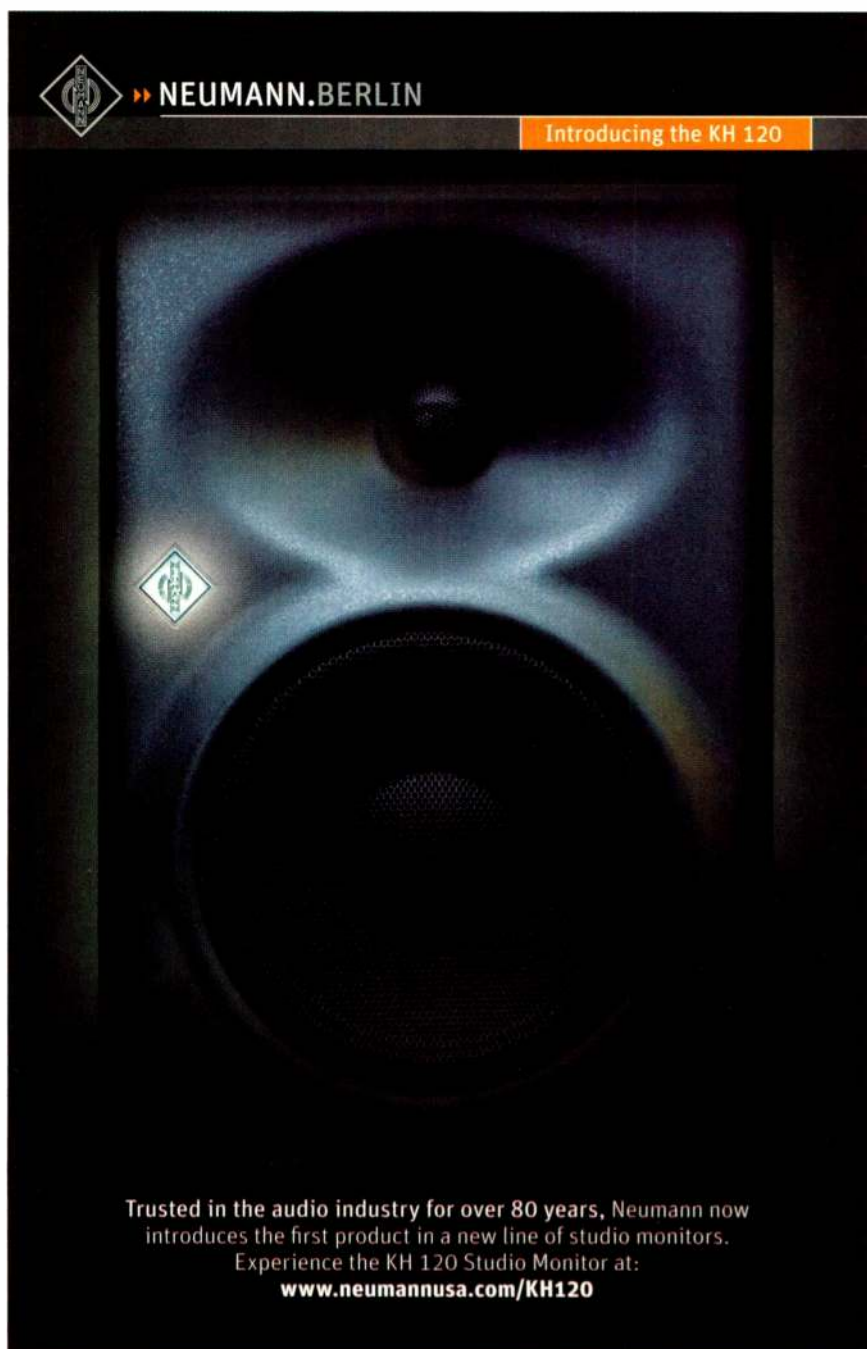
"I'm not fond of the Shure headset myself," Ward says. "It was one of the things I have to work with and I've tried other mics. It's got this midrange in it that really kills me, but I've learned to work with it. But everybody loves the sound of it. It's one of the better-fitting mics, that's the thing. Proportion-wise, it's a fantastic mic. It fits real well, the capsules are unobtrusive. This is a small capsule and it's just a good size, but the midrange on it just wears me out; it's so excessive. I'm using the C4 to hit that midrange when she talks. You set the bandwidth by ducking it and EQ in the chain. It's more the C4 dynamically that's controlling how much of the midrange and low end come out."

And it is that low profile that really helps both Ward and Morales during their mix as there are some costume headpieces that cover her entire face. Despite how close the cloth is to Gaga's mic, Ward is able to send out a clean sound and Morales doesn't have to change the mix going to her in-ears. Morales adds that there is a Shure Beta 54 for one of the dancers who speaks during one of the songs.

"You have to translate each song to what's happening onstage," Ward says. "The dynamics in her vocal when she plays the piano is she can go

to a whisper to talking to singing out. So that vocal when she's talking quietly, you've got to enhance that to come over the music and be clear. It changes all the time. It's more dramatic than a song that's pumping all the way through because it's from one end of the scale with quiet piano, voice—not screaming but talking so everybody can hear her—to a voice where there's a full band, so you enhance [the instruments] so they cut through and the vocal has to cut through, as well." III

Sarah Benzuly is Mix's managing editor.



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SOUNDCHECK



Daniel Nickleski, left, and Eric Lindholm

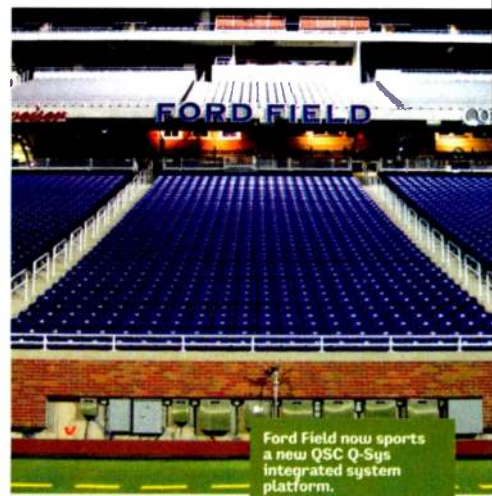
Local Crew: Sound Works Productions

A pair of young, daring entrepreneurs (Eric Lindholm, then 19, now 25; and Daniel Nickleski, then 17, now 23) found themselves vying for similar SR gigs. "Both of us had bands in which we ran and owned the P.A.," Nickleski recalls. "At a young age, we both had a drive to work hard at doing what we love, but we quickly found out it is not easy to make it in the music industry. What did seem to come easy were sound gigs." Lindholm and Nickleski joined forces, and for the past five years they have been operating as Sound Works Productions (Frankfort, Ill.; soundworkspro.com), which provides audio and lighting services for a number of different gigs—anything from a corporate meeting to a wedding to a rock show. "We have become a go-to company for festival work in the past few years," says Nickleski. "In the busy months of May to August, you can find us providing for around 25 events a week."

In the past year alone, the company has been employed by Naughty By Nature, The Romantics, Everclear, The Temptations, Digital Underground

and many others.

While customers have a wide selection of gear from which to choose, some of the company's larger packages include Avid SC48, Yamaha M7CL and LS9, and Soundcraft MH3 consoles. In terms of P.A., there are 24 boxes of Electro-Voice X-Array powered by E-V P3000 amps and XTA DSP; 18 boxes of E-V QRX powered by Crest Audio Prog200s and XTA DSP; eight RS18s; and, the company's latest purchase, 16 NEXO GEO S12s. Commenting on the new NEXO boxes, Nickleski says, "Last summer, we decided that we needed to purchase a medium-format line array. We demoed a lot of systems, but the one that spoke to us the most was the NEXO rig. We also realized with NEXO we not only would get a great-sounding system, but we also would have incredible support from the staff. I have never had a rep as great as ours, Mike Eiseman. We hope to keep building the company at the same rate we have in the past five years. We have managed to make a name for ourselves in the regional market and have hopes of one day breaking into the national market."



QSC Control of Stadium Audio

Home of the NFL Detroit Lions, Ford Field recently installed a QSC Q-Sys integrated system platform (two Q-Sys Core 3000 main frames and 27 Q-Sys I/O frames) to replace the original system, which was a mixture of analog and networked digital audio using a variety of processors and technology. Durrell Sports Audio handled the system redesign, which occurred just three weeks prior to the 2010 National College Hockey League Playoffs.

According to Durrell audio consultant/integrator John W. Horrell, "Q-Sys is a single point-to-point type of technology that allows the routing of audio inputs to any specific point, which offered us a huge improvement over the series-connected DSP boxes in the old system." The system can be controlled and monitored via a networked computer system. "[We] provide our national clients with links to their computerized audio systems from our offices here in Nashville. During the NFL season, we have engineers monitoring all the games being played each Sunday. With Q-Sys, we were able to set up management parameters that alert us if there is something that should be looked at."

Ford Field had a number of QSC PowerLight 4 and 6 amps, which were still serving reliably. As Q-Sys is backward-compatible with these DataPort-equipped amplifiers, Durrell fully integrated those amps into the Q-Sys design, and can control and monitor them just like the newer PL3 and CX models that were added to the inventory.

fix it

Thames Audio's Pete Cox on Wireless Lord Mayor's Show



The system could be viewed as three separate areas. First, we needed a signal path from the floating stage to the control position onboard the HMS Wellington. From here, we needed to distribute the audio to the speaker pontoons, which were up to 400 meters away on the opposite side of the river. This meant that traditional cable runs were simply not an option. Shure equipped us with a pair of PSM-900 IEM systems to act as a main and backup transmitter. One of the features of the PSM-900 is that you can perform point-to-

point link-up with a UHF-R receiver. So at each speaker position, we located an amplifier rack with a Shure UR4D receiver, which gave us the ability to distribute the signal across the site without worrying about cabling. In addition, all of the system controllers could be accessed via a wireless network, which allowed us to position engineers at key listening points with direct control over the system's gain, EQ, delay and so on.

New York City Theater Goes 5.1



Last year, The Victory Theater's audio system (originally installed in 1995) began to show its age. The theater's director of production, David Jensen, consulted with Anthony Nittoli (principal designer with Akustiks, LLC), who had supervised the '95 install. Says Jensen, "Anthony maintained his consultant relationship with the theater over the years, and I was fortunate to 'inherit' him when I came onboard in 2001. In addition to performing annual systems service, he has also used the new Victory as a lab for systems testing. He knows this venue better than anyone."

The two, in addition to theater technical director Rob Leach, hashed out a new 5.1 surround system that focuses on superior sound quality in line with the venue's not-for-profit status, which limited the budget. In the end,

a d&b system was selected: 19 D6 and D12 amps driving the combo line array/full-range speaker system. The R1 system control was implemented to provide overall control over all speaker arrays. A Midas Pro3-IP digital mixing console and three XTA DP 448 processors drive the 26-speaker house system. Also included in the upgrade was a Shure UR4D wireless package.

Upgrading to a 5.1 surround system literally doubled the existing number of speaker placements. According to Masque Sound project manager Matthew Peskie, "A primary issue was mounting the subs at a lower level, which provided literally no room for anchors. We worked with Philadelphia-based Sapsis Rigging to design and build custom cantilevers to locate the speakers in the desired locations."

load in



Some of the crew at Eurohire Sound and Light stand in front of their recent addition: an EAW KF470 three-way line array module.

Yamaha Stagmix software for the M7CL iPad app was recently installed at concert venue Viper Alley (Lincolnshire, Ill.). "The new iPad app for the M7CL-48 allows me to adjust monitor mixes from onstage while the band is playing and walk the room to adjust the various zones in the concert seating area," says tech Aaron Patkin of install company Gand Sound Installations...Hosting concert and comedy productions, among others, the 1,000-capacity Pano Hall at Thunder Valley Casino Resort is equipped with a mobile L-Acoustics amplifier and loudspeaker package supplied by Las Vegas-based Audio Video Design-Build (AVDB) Group...John Teer of Teer Engineering selected JBL CBS Series column speakers for St. James Cathedral's (Orlando) new system...L.A.-based House of Music handled nightclub El Rodeo's new sound system, which includes a D.A.S. Audio Aero Series 2 line array.

road-worthy gear

Electro-Voice Live X

These portable loudspeakers comprise three powered and four passive models. The powered full-range loudspeakers (ELX112P 12-inch/two-way; ELX115P 15-inch/two-way) and ELX118P 18-inch sub are optimized for use with the integrated, high-efficiency 1,000W and 700W Class-D amplifiers. Both systems may be pole-mounted or stacked. The four passive configurations (ELX112 12-inch/two-way, ELX115 15-inch/two-way, ELX215 dual-15-inch/two-way and ELX118 18-inch sub) can be used with a wide range of amplifiers.

electrovoice.com/livex



EAW KF200NT

The KF200NT module features a 10-inch woofer with 2.5-inch voice coil; a coaxial mid-high driver comprising 8-inch cone MF with 2-inch voice coil; and 1.75-inch voice coil compression driver powered by a 1,500W amp. Features include EAW Focusing™ processing, software-accessible DSP and the U-Net™ network. The KF2000NT can be either portable or installed; accessories include trim plates that hide handles, adjustable U-brackets, quick-release flytrack segments and adjustable legs for use as a stage monitor.

eaw.com



Turbosound 20000DP

Based on the Lab.gruppen PLM 20000Q platform and designed for use with Turbosound's Flashline touring loudspeaker system, the 20000DP provides four discrete output channels (each 4,400W @ 4 ohms) and Lake Processor modules. Turbosound's Flashline and Flex Array preset libraries make full use of the processing's FIR capabilities. Audinate's Dante™ provides sample-accurate, low-latency audio distribution over Ethernet.

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- Alan Silverman, Pro Audio Review

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Photos and text by Steve Jennings



After rescheduling some shows, DEVO is back on the road in support of their new album, *Something for Everybody*, the band's first studio release in 20 years. Songs such as "Fresh" and "Please Baby Please" have all the hooks, rhythms and beats of past classic DEVO hits. The band's performance at San Francisco's Warfield Theater was energetic and tight, covering the band's hits and favorites.



Front-of-house engineer Van Coppock is relying on house-provided gear. His first choice in a board is a Yamaha PM5D, "mainly because we have an opening act traveling with us and many places can't accommodate both boards," Coppock says. He has files for most digital boards, but finds that the 5D is usually the easiest to get and is simple to use. "I would still prefer a big fat analog desk any day of the week," he adds. "The Midas H3000 is my first choice."

Coppock uses whatever processing is onboard. If mixing on an Avid VENUE, he'll activate the desk's Bomb Factory, 1176 and LA-2A for compression, and delays and reverbs. If working on an analog board, he'll use Drawmer 201 gates on drums, dbx 160X comps for bass/vocals, a compressor across the keys, Yamaha SPX-90s or SPX-990s, TC Electronic D2 delay and Roland SDE 3000 delay.

P.A. is also du jour, with Coppock preferring an L-Acoustics V-DOSC or a Meyer Sound system. "Regardless of the size of the venue, I treat the P.A. like a huge set of studio monitors. I know how DEVO is supposed to sound having worked with them in the studio for many years, and that sound is always my goal."



Gerry Casale's (bass, synths, vocals) Steinberger runs through a Line 6 Bass Pod mixed with a DI signal.



Monitor engineer Neil Taylor also prefers a Yamaha PM5D, but has manned an Avid Profile, Soundcraft VI and a Yamaha M7CL. "I'm using onboard software. The EQ, dynamics and processing work fine, but with the 5D, an external clock makes an incredible difference to the sound and performance of that desk. An Apogee Big Ben is your best friend if you find yourself on a 5D."

Taylor runs 12 mixes: five downstage wedges, left and right sidefills, drum fill, mono ear for click and three upstage wedge fills that act as guitar cabinets. Guitars and bass are DI, so Taylor sets up a wedge behind Gerry Casale, Bob Mothersbaugh and Bob Casale facing downstage and fed to their guitars. They each also have downstage wedges, and Gerry Casale has a considerable amount of kick and snare in his fill.



Mark Mothersbaugh (vocals and keys) and Gerry Casale sing through Shure UHF8Rs with 87A capsules. On "What We Do," Gerry Casale sings through an RF mic. Hardwired vocals are Shure 58s: One when Gerry Casale plays bass and one on Bob Mothersbaugh and Bob Casale, and a spare coiled downstage by Mark Mothersbaugh's wedges.



According to bass/drum tech Nick Rowe (above), Josh Freese's kit has the following mics: Beta 52, kick; SM57s, top and bottom snare; 81s, hi-hat and overheads; and Sennheiser 604s, toms. "We use a hardwired Shure ear pack for Josh," Rowe adds. "It is a home-run mix send from the monitor desk, and all that's in it is the click track from Pro Tools. Everything else he gets in his drum fill."



Bob Casale's keys/synth gear includes a Korg TR-61 and a Boss SP-404 sampler for noise elements. For guitar, he uses a Line 6 Pod-XT on the floor and has the three guitar sounds programmed; he switches them onstage. Guitar tech Ed Marshall runs an XLR from his guitar wireless to a line transformer, then into the Pod-XT, then mono out of the pod to a DI.



Bob Mothersbaugh (guitars, vocals) uses a Fractal Audio axe effects preamp, and can choose which amp model and stomp box combo. It fits in a rack and sits on top of guitar tech Ed Marshall's (above) workbox. "We rely on stage monitors to hear instruments onstage. We go direct to the split. He has a footswitch to change from rhythm to lead channels onstage. I have an Ibanez Tube Screamer that I switch for him on 'Mr. DNA' and other control settings for some songs."

Mark Mothersbaugh's keyboard rig comprises a Korg microKORG synth, a Moog Voyager and his original Minimoog. Keyboard tech Cris Callans (below) breaks down the signal flow: "The Korg micro outputs a stereo signal to a stereo direct box. The Voyager and Minimoog output is mono into a Whirlwind A/B box. Output of that is routed to a Dunlop Dimebag Crybaby From Hell wah to Boss DS-1 distortion pedal to Boss DD-20 delay. Output of the delay is inputted to a Whirlwind DI.

"A few of the songs from the new album have certain noise elements that need to be present in their performance," he continues. "We added a Pro Tools track to play these elements."



Tech

NEW PRODUCTS

Dual-Duty Woofers

ADAM A77X Monitors

The A77X monitor (\$1,400 each) from ADAM (adam-audio.com) is equipped with the same advanced technologies as its counterpart, the A7X, but promises much higher, compression-free maximum sound pressure levels and dynamics. It features the company's proprietary X-ART tweeter, which now extends up to 50 kHz, and two 7-inch woofers featuring 1.5-inch large voice coils. The woofers cover different frequency bands, with one handling the bass frequencies to approximately 400 Hz while the other reproduces most of the midrange.



Sonic and Scenic Upgrades

Apogee Duet 2

The new Duet 2 (\$595) desktop interface from Apogee (apogee-digital.com) features redesigned mic preamps and converters (44.1 to 192 kHz) and a full-color OLED. Duet 2 offers independent speaker and headphone outputs, configurable touchpads and a redesigned breakout cable. Other features include the ability to dim or sum-to-mono the speaker,

headphone or all outputs; selectable phantom power; soft limit; and polarity invert. The Duet 2 also adds balanced speaker outputs and an optional breakout box accessory, which features two ¼-inch instrument inputs and two XLR microphone inputs. The Duet 2 comes bundled with Apogee's redesigned Maestro 2 control software.



Classic Signal Shaper

AMS Neve

1073LBEQ 500 Series EQ

Built in the image of the Neve 1073 console, the 1073LBEQ (\$1,295) 500 Series EQ module from AMS-Neve (ams-neve.com) retains the unique sonic characteristics of its original predecessor by using the same architecture, matching components and 3-band EQ design. Features include a signal-presence LED and Neve's Audio Processing Insert design, which allows the audio to/from the EQ module to be inserted into the audio path of an existing 1073LB, the 500 Series mic preamp that AMS-Neve released this past fall.

16 Ways to Love Your DAW

Benchmark ADC16 Converter

The ADC 16 (\$3,995) from Benchmark (benchmarkmedia.com) offers 16-channels of transformerless, balanced analog inputs with a 20dB gain range via a trim pot. At 0 dB of gain, it can accept 28 dBu at the input without clipping, while at maximum gain an 8dB input signal will drive the converters to full-scale. The unit's rear panel I/O includes analog, AES/EBU, S/PDIF (RCA), optical (x8), word clock in/out and optional FireWire (x2). The control panel allows the user to dictate the source (A/D or DAW) for each of the AES, coaxial and optical digital outputs. The eight optical outputs can be operated in S/PDIF or ADAT mode at sample-rates up to 192 kHz. (ADAT has SMUX2 and SMUX4 functionality.) Other features include Benchmark's jitter-immune UltraLockDDS™ clock system and 9-segment metering for each channel.



100x Better

Image-Line FL Studio 10

Along with extensive audio editing and advanced processing—including pitch correction, pitch shifting, harmonization, time-stretching, beat-detection and slicing, and audio warping—Image Line's (image-line.com) FL Studio 10 (\$399, boxed; \$299, download) includes hundreds of improvements, additions and bug fixes. Version 10 offers 64-bit plug-in support, improved memory management, improved ASIO performance, a larger Mixer view and waveform metering, and optional new plug-ins, including the "pay what you'd like" Newtone and Pitch processors.



Triple Threat

Genelec

1238CF Tri-Amplified Monitor

Designed in response to customer requests for mid-range/high-frequency performance in a more-compact package, Genelec's (genelec.com) 1238CF (\$7,800) is a three-way DSP monitoring loudspeaker with a slim enclosure, two 8-inch (210mm) long-throw bass drivers, a 5-inch (130mm) proprietary Genelec midrange driver and a 1-inch (25mm) metal-dome tweeter, multiple power amplifiers, DSP circuitry and active, low-level crossovers. The 1238CF is compatible with the company's

GLM™ control software, V. 1.4, and users can combine it with Genelec 8200/7200 Series products in the same control network. The 1238CF features a bass response down to 57 Hz as the focus is on mid/high-directivity characteristics. The system can optionally be used with a subwoofer in either stereo or multichannel applications.



EZ GUI

Waves

OneKnob Plug-Ins

Waves (waves.com) has released the new OneKnob Series, a set of seven plug-ins, each of which provides a particular effect controlled by a single knob. OneKnob plug-ins promise high-quality, quick results, providing outstanding go-to solutions for studio and live sound work. Processors include OneKnob Brighter EQ, OneKnob Phatter bass booster, OneKnob Filter, OneKnob Pressure dynamics processor, OneKnob Louder peak limiter/compressor with auto-makeup gain, OneKnob Driver overdrive/distortion processor and OneKnob Wetter ambience/reverb. OneKnob plug-ins can be bought as a bundle (\$400) or individually (\$80 each).

IN THE CLOUD

SmartSound Software (smartsound.com) introduces an innovative Cloud-based music-customization service. The first Web service to provide music track customization online, Quicktracks gives SmartSound users complete creative control over the company's extensive royalty-free music library directly from the Website. Any user can quickly and easily adjust the length, arrangement and mix of the music to fit their needs in just seconds, right at the Website, and then simply download the finished track for their project.

Offering a production, collaboration and back-end sales pipeline, Indaba Music (indabamusic.com) is an all-in solution featuring the Mantis online DAW, a library comprising 10,000 clips and networked sessions. The Website's social-networking component offers connectivity for individuals, groups and artists-in-residence who may be contacted for collaboration across a range of projects and contests. Pricing is free for limited features and storage; \$5 per month for the Pro level, which gives you your own iTunes store, 5GB storage, partner discounts and unlimited contests and opportunities; or \$25 per month for the Platinum level, which includes 50 songs on iTunes, 50GB storage and more.

Burn Studios (burn-studios.com) features a simple drag-and-drop online production interface called Audiotool. It offers the ability to create a studio environment with mixers, drums, synths, effects and processors. Users can browse and collaborate with other registered creators who have dropped their compositions on the site or post their own tracks from scratch. Social-networking components include Burn-Studios Radio and a blog, plus Twitter and Facebook sites.

Soundnation (soundnation.com) is an online music-creation application featuring a loop library, virtual instruments, real-time effects, automation, and audio recording and editing. Users can upload personal sounds into their Soundnation "cloud account" and network with others via the blog, Facebook, YouTube and Twitter. Prices range from free to \$99 per year.



Impressive I/O Package

Focusrite Scarlett 18i6 Interface

The Focusrite (focusrite.com) Scarlett 18i6 (\$399) is an 18-input, 6-output, 24-bit/96kHz USB 2 audio interface featuring two preamps, six line inputs, ADAT optical input, stereo S/PDIF and MIDI I/O. Included with the Scarlett 18i6 is Scarlett MixControl, an 18x6 DSP mixer offering the ability to create six low-latency mixes that can be easily routed and recalled. Other features include a dedicated headphone bus with level control, LED analog input metering and bundled Scarlett plug-ins including EQ, compression, reverb and gating processors. Also included are a host of royalty-free loops and samples, a full-fledged soft-synth and Ableton Live Lite 8, which provides an affordable upgrade path to Ableton Live.

High End I/O

MOTU Express Audio Interface

The new MOTU (motu.com) Express (\$449) is a 6x6 hybrid FireWire/USB 2 audio interface and mixer offering front panel control of four stereo mix buses, stand-alone mixing, digitally controlled analog trim, DDS (Direct Digital Synthesis) audio clocking for low-jitter performance and an instrument tuner. Other features include two XLR/TRS combo jacks, individual 48V phantom power for each input, two additional ¼-inch (TRS) analog hi-Z inputs and four ¼-inch (TRS) analog outputs for powered monitors, stage wedges or other destinations. All ¼-inch analog connectors are balanced, while other rear panel connections include S/PDIF digital I/O, MIDI I/O and a footswitch port for hands-free punch-in recording.



Game On

Audiokinetic Wwise 2011.1

Audiokinetic (audiokinetic.com) has released the latest version of Wwise (2011.1; free to registered users of Wwise), which focuses on performance and offers workflow enhancements, new features and bug fixes. The update supports portable systems such as iOS (iPhone and iPad) and the previously announced Nintendo 3DS™. Other features include an enhanced voice-limiting system, the addition of Solo and Mute buttons, convolution reverb EQ, multi-editor improvements, List view, configurable sound-bank log severities, runtime authoring and more. III



Chuck Leavell

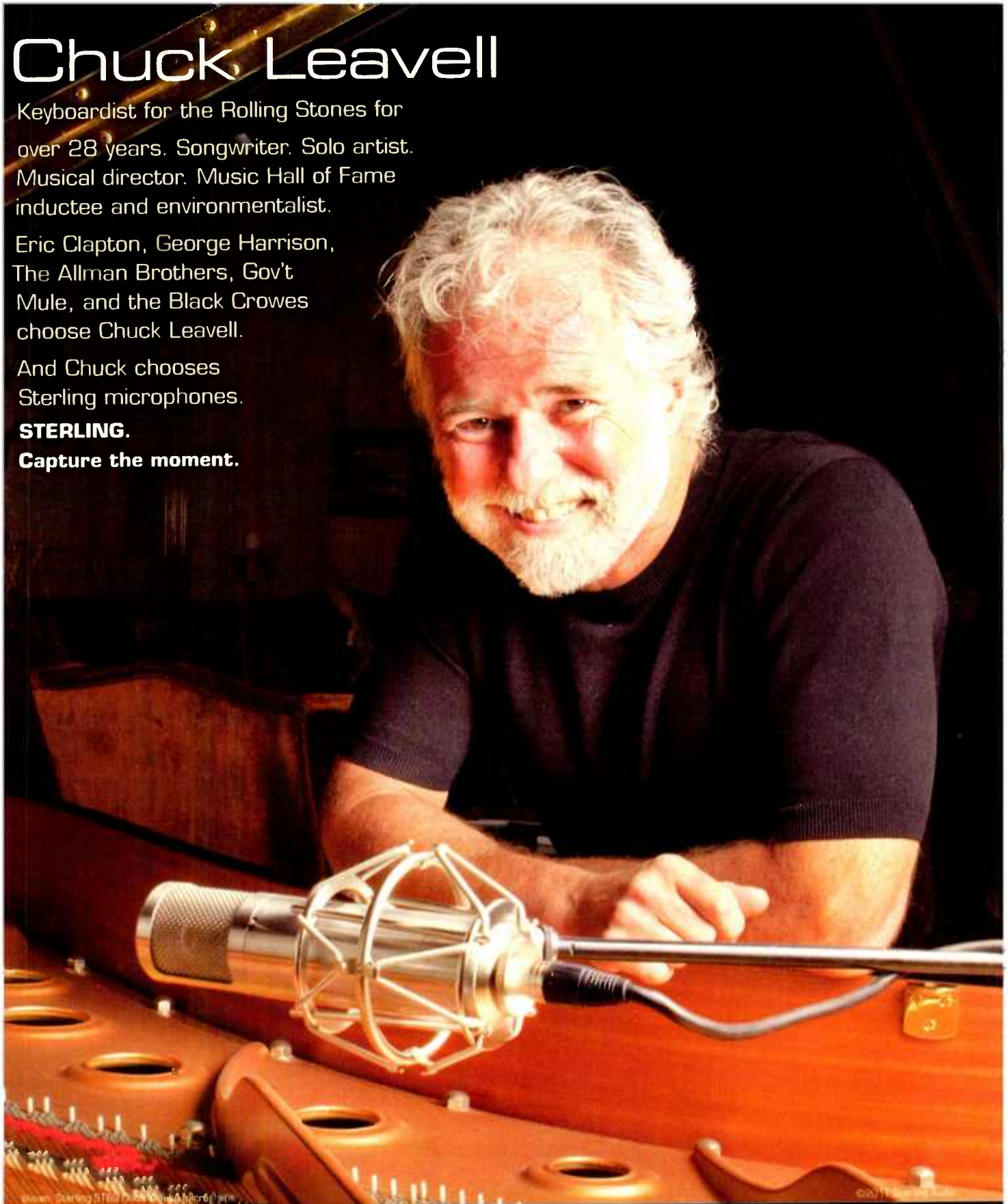
Keyboardist for the Rolling Stones for over 28 years. Songwriter. Solo artist. Musical director. Music Hall of Fame inductee and environmentalist.

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Top row, from left: Avid Mbox Pro, MOTU 896mk3, Grace Design M802. Second row: Mackie Onyx Blackbird (left) and AMS Neve 4081. Third row, from left: Universal Audio 4-710D, Prism Orpheus, Focusrite Saffire Mix Control. Bottom row, from left: RME Micstasy, Millennia Media HV-3R and Tascam US-2000.

FABULOUS FRONT ENDS

MULTICHANNEL RECORDING PREAMPS WITH DIGITAL OUTPUTS

By George Petersen

Assembling the perfect digital audio workstation system used to be a fairly complex procedure—especially if you wanted to choose gear from different manufacturers. Once you settled on your DAW/platform, you needed to select your preamps, find the right interface for your software, track down drivers and hope everything worked out.

Thankfully, the situation is a lot simpler these days. Overall, the driver dilemma is far less convoluted—and many DAW combinations require no drivers at all. The native processing on most platforms—including the new open-architecture approach of Pro Tools 9—opens the field to new possibilities and opportunities for third-party suppliers of converters and interfaces.

A Different Path

Make no mistake—the more traditional à la carte approach of mixing/matching preamps with separate outboard A/D converter sets is most definitely a viable option. But with a number of interesting new and existing units on the market, we decided to explore the one-stop alternative—that of multichannel mic preamps with onboard digital output sections.

From those two basic prerequisites, we encountered dozens of units ranging from basic, no-frills mic amps combined with ADAT Light-

pipe or AES outputs, to more complex designs that incorporate onboard DSP effects, FireWire or USB interfacing with control room monitoring, cue mixing, headphone amplifiers, software-emulation models of classic gear, mid/side mic matrixing, remote control of operational parameters and more. Most units also included the expected highpass filters, phase (polarity) reverse, input attenuation pads and onboard DI inputs for high-impedance instrument pickups.

In compiling this, we avoided mentioning the oft-quoted marketing hype of the proverbial single-rack-space box hailed as a “64x64” (or similar number) recording interface. In such cases, the manufacturer emphasizes the total number of ways a signal might enter or exit a device if all the possible permutations of inputs and outputs, including headphones, are used simultaneously. In our experience, it’s a rare session that employs every digital port at the same time—say, two 8-channel ADAT inputs, an 8-channel AES, two RCA S/PDIF stereo pairs, with eight analog mic preamps and eight analog line feeds—for an impressive-sounding 44 inputs.

That said, there are times when one might merge those same 16 analog inputs with another eight coming from a separate ADAT or AES output device into a single 24-channel FireWire output stream, but using everything at once is

unlikely. With that in mind, the accompanying chart on page 58 spotlights the total number of simultaneous A/D inputs (from line and mic sources), as well as the total number of preamp channels.

We should mention that all the products surveyed here offer switchable 48VDC phantom powering, and a few featured the ability to supply 130 volts for the line-level outputs and ultrahigh-SPL handling capability of DPA’s specialized Type 4003, 4004 and 4012 Series of high-voltage condenser microphones.

Diversity Abounds

All in all, we found dozens of entries featuring digital interfacing with four or more onboard mic preamps—in almost every price point, ranging from several hundred to thousands of dollars. The point in common is that all provide a simple, compact solution for many DAW requirements. Whether you go with a single one-box unit such as those listed or combine separate components is an individual decision based on your needs and requirements. But either way, you’ll find plenty of available choices for your system. III

George Petersen is the director of the TECnology Hall of Fame.

Next Generation Digital Mixing

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

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

An Entire Studio

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

PC and Mac Recording

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

Digital Circuitry

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

Powerful and Versatile

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

• FEATURES •

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



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Multichannel Preamps With Digital Outputs, At a Glance

Manufacturer Web	Model	A/D Input Channels	Preamp Channels	Preamp Type	Phase	High-pass	Pad	Digital Outs	Max Sample Rate	Analog Outs
AMS/Neve	442	4	4	solid-state	yes	no	20dB	Optional AES & FireWire	96kHz (optional DSD)	8 XLR, D25 sub
Aphex	1788A-1	8	8	solid-state	yes	75Hz	20dB	Optional AES, ADAT, TDIF	96kHz	8 XLR, D25 sub
	158	2	2	solid-state	yes	80Hz	20dB	ADAT, SMUX	96kHz	1 TRS
Apogee Electronics	Ensemble	8	4	solid-state	yes	no	no	ADAT, S/PDIF, FireWire	96kHz	8 TRS
ART	Tubedocta 8	8	8	tube	yes	80Hz	20dB	ADAT	48kHz	8 TRS
Audient	ASP08	8	8	solid-state	yes	25-250Hz	20dB	Optional AES, ADAT, SMUX	96kHz	D25 sub
Avid	003 Rack	8	4	solid-state	no	75Hz	no	S/PDIF, ADAT, FireWire	96kHz	8 TRS
	003 Rack + Factory	8	8	solid-state	no	75Hz	20dB	S/PDIF, ADAT, FireWire	96kHz	8 XLR
	Mini Pre	2	2	solid-state	no	no	20dB	S/PDIF, FireWire	200kHz	4 TRS
Crane Song	Spider	8	8	solid-state	yes	80Hz	no	AES, ADAT, TDIF	192kHz	2 master bus inserts
Crookwood	PRC	200/32	200/32	solid-state	yes	no	20dB	AES, MADI (optional)	192kHz (optional)	10x sub
Focusrite	ISA828	8	8	solid-state	yes	75Hz	no	Optional S/PDIF, AES, ADAT, SMUX	192kHz	D25 sub
	ISA412	4	2	solid-state	yes	75Hz	no	Optional S/PDIF, AES, ADAT, SMUX	192kHz	4 XLR
	Liquid Saffire 56	8	8	solid-state	yes	yes	9dB	FireWire, ADAT, SMUX, S/PDIF	192kHz	8 TRS
	Saffire Pro 48	8	8	solid-state	no	no	9dB	FireWire, ADAT, SMUX, S/PDIF	96kHz	16 TRS
	OctaPre Mk II	8	8	solid-state	no	no	9dB	ADAT, SMUX	96kHz	8 TRS
	OctaPre Mk II Dynamic	8	8	solid-state	no	no	no	ADAT, SMUX	96kHz	8 TRS
	RedNet4	8	8	solid-state	yes	yes	8dB	Dante Ethernet	192kHz	none
Grace Design	Mono	2	2	solid-state	yes	no	no	Optional AES, AES 1/8, ADAT, SMUX	192kHz	8 XLR, D25 sub
Mackie	Onyx Blackbird	8	8	solid-state	no	75Hz	no	FireWire, ADAT, SMUX	96kHz	6 (main/monitor/alt out)
M-Audio	ProFire 828E	8	8	solid-state	no	no	20dB	FireWire, ADAT	96kHz	8 TRS
	Octane	8	8	solid-state	yes	80Hz	20dB	ADAT	48kHz	8 TRS
Metric Halo	ULN-8	8	8	solid-state	yes	no	no	FireWire, AES	192kHz	D25 sub
Millennia Media	HV-8R	8	8	solid-state	yes	no	14dB	Optional AES	96kHz	8 XLR, 2 D25 sub
	HV-8DB	8	8	solid-state	no	no	no	Optional AES	96kHz	8 XLR
	HV-3D (4)	4	2	solid-state	no	no	no	Optional AES	96kHz	4 XLR
MOTU	828mk3	8	8	solid-state	no	no	20dB	FireWire, AES, ADAT, SMUX, S/PDIF	192kHz	8 XLR
	Traveler mk3	4	8	solid-state	no	no	no	FireWire, AES, ADAT, SMUX, S/PDIF	192kHz	8 TRS
	808	8	8	solid-state	no	no	20dB	FireWire, ADAT, SMUX	96kHz	2 TRS
PreSonus	FireStudio Project	8	8	solid-state	no	no	no	FireWire, S/PDIF	96kHz	8 TRS
	DigMax DP	8	8	solid-state	no	no	20dB	ADAT	48kHz	8 TRS
Prism	Orpheus	8	4	solid-state	no	no	no	FireWire, ADAT, SMUX, S/PDIF	192kHz	8 TRS
RME	Mextory	8	11	solid-state	yes	80Hz	no	AES, ADAT, SMUX, MADI (optional)	192kHz	8 XLR
	Octamic II	8	8	solid-state	yes	80Hz	no	AES, ADAT, SMUX	192kHz	8 TRS
Rotand	Octa-Capture	8	8	solid-state	no	no	no	USB, S/PDIF	192kHz	8 TRS
SM Pro Audio	EP84	8	8	solid-state	yes	80Hz	yes	Optional ADAT	48kHz	8 XLR, 8 TS
Tascam	US-2000	14	8	solid-state	no	no	no	USB, S/PDIF	96kHz	4 TRS
	US-1800	14	8	solid-state	no	no	no	USB, S/PDIF	96kHz	4 TRS
TC Electronic	Studio Project 28	12	4	solid-state	no	no	20dB	FireWire, ADAT, SMUX, S/PDIF	192kHz	8 TRS
TL Audio	Ivory 5001	4	4	tube	yes	90Hz	30dB	Optional S/PDIF (dual-stereo RCA)	48kHz	4 XLR, 4 TS
Universal Audio	828	8	4	solid-state	yes	75Hz	10dB	AES, ADAT, SMUX	192kHz	4 XLR

Extras	Style	Retail MSRP	Notes
Two apps can link into an 8-channel rack unit	2U rack	\$3,999	Remote control (see via Mac/PC software that integrates with Pro Tools sessions)
Switchable MidLim limiting, remote control of all parameters via RS-232/MIDI/MIDI	2U rack	\$4,995	Jensen input transformers, up to 20 units cascade with full remote control, BNC word clock, optional interface for Pro Tools, Avid or Yamaha mixer control
Ethernet or MIDI control via PC/Mac software, opt. hardware remote control from Pro Tools, Avid or Yamaha mixer	1U rack	\$4,495	Transformer-coupled inputs, BNC word clock, rear panel LAN control input
SoftLimit, UV2aHR dithering, Intellidock clocking	1U rack	\$1,995	Maestro Mac OS X software for remote preamp control, 1/4-inch DI inputs on channels 2 & 4, analog inserts on mic inputs 1 & 2, headphone monitoring, BNC word clock out
ADAT input routes to analog outputs	1U rack	\$559	Class-A tube mic preamps, BNC word clock input, DI inputs on channels 1 & 2
"SoftStart" phantom avoids power on thumps	1U rack	\$1,750	Discrete Class-A transistor design, variable impedance switching on all inputs
Four DI inputs, MIDI I/O	1U rack	\$1,299	Ships with Pro Tools LE software (Pro Tools 9 upgrade available), main and alternate monitor output level control, headphone outputs
Eight DI inputs, MIDI I/O	2U rack	\$1,895	Ships with Pro Tools LE software (Pro Tools 9 upgrade available), main and alternate monitor output level control, headphone outputs
Two DI inputs, soft clip limiters, onboard guitar tuner, MIDI I/O	desktop	\$799	ASIO Core Audio, UDMA and HME drivers supports most DAIs, including Pro Tools 9 and LE, headphone and monitor controls, DSP engine for dithering with reverb
Fat switches add even harmonic boost, inserts on input channels	4U rack	\$8,000	Selectable dithering, DSP analog tape emulation, onboard 8x2 mixer, switchable peak limiters
Mic input impedance switching, hardware remote controller	1U rack (full remote)	\$4,050	Modular system offers many options in terms of channel numbers, analog/digital outputs, 48V mic powering, DC analog bus for remote control, 800mA for typical configuration with extra 1U 8-channel rack
DI on inputs 1 to 4, inserts available on every channel	2U rack	\$3,299	Price includes A/D converter option, variable impedance select on mic inputs, BNC word clock I/O
DI on inputs 1 to 4, inserts available on every channel	2U rack	\$3,899	Price includes A/D converter option, variable impedance select on mic inputs, BNC word clock I/O, four pre-inputs/line converter channels 5-8
Two DI inputs, SoftLine Mix Control software 18x35 mixer/poster, MIDI I/O	2U rack	\$1,299	Preamp inputs 1 & 2 offer liquid emulations of classic studio preamps, includes VST/AU-compatible Focusrite compression/reverb/delay/EQ plugins, onboard headphone and control room monitor bus sections
Two DI inputs, MIDI I/O, SoftLine RHO 20 Control mixing software	1U rack	\$699	Ships with VST/AU-compatible Focusrite compression/reverb/delay/EQ plugins, onboard headphone and control room monitor bus sections
Two DI inputs	1U rack	\$599	BNC word clock input
Two DI inputs	1U rack	\$799	Focusrite single-knob, soft-knee compressor on every input, BNC word clock I/O
DI inputs on channels 1 & 2, includes RedNet control software	2U rack	\$5,000	Includes RedNet PCI Express card for low latency interfacing, scalable to 128 input/outputs
Controllable from Pro Tools HD systems and MIDI devices	2U rack	\$4,999	Optional hardware remote controller, option for DPA 130V mic powering
Two DI inputs, control room and headphone bus monitoring	1U rack	\$629	Blackbird Control DSP Matrix Mixer software, inputs 1 & 2 offer direct zero-latency monitoring, 8x8 ADAT I/O for 16-trk capacity, ships with Tracktion 3 recording app
Two DI inputs, control room and headphone bus monitoring	1U rack	\$699	Compatible with Pro Tools 9 or Pro Tools M-Powered apps, breakout cabin for MIDI, SMPTE, word clock I/O, onboard DSP mixer
Two DI inputs	2U rack	\$749	Matrix control for M/S mics, BNC word clock I/O
Two DI inputs, MIDI, LTC, SMPTE and word clock I/O	1U rack	\$5,995	Backend sends for onboard splitting, integrated digital console with mono to 1/8 bus support, stereo 2 sum and monitor mix outputs, M/A capable for side, DSP includes 6000-sample 24-bit delay/treatment processing, restrictive character
Remote control of all functions of 99 units via MIDI or Ethernet	2U rack	\$5,559	Optional DPA 130V and 190V powering, transformer-less design, three isolated analog outputs per channel
Option for two D15 sub isolated analog outputs	2U rack	\$4,459	Optional DPA 130V mic powering
Option for two D15 sub isolated analog outputs	2U rack	\$3,379	Optional 4- to 8-channel upgrade is \$1,000, optional DPA 130V powering
Eight DI inputs, stereo XLR out, headphone bus, BNC word clock I/O	2U rack	\$3,495	Onboard digital mixing, hardware 5-band on mic inputs, soft-clip protection, comprehensive effects include reverb, mod-aided stereo dynamics and EQ, selectable HP/LP filters, CueMix monitor mixing, includes AudioDesk (DAU) software
Four DI inputs, BNC word clock I/O	1U rack	\$895	AC/DC or Fireline bus powerable for portable use, hardware V-mic on mic inputs, slaves to SMPTE timecode, CueMix FX mixing with DSP effects, includes AudioDesk DMU software
Eight DI inputs, MIDI I/O	1U rack	\$595	Control room volume and headphone bus outputs, onboard CueMix DSP mixing
Two DI inputs, inserts on inputs 1 & 2, MIDI I/O	1U rack	\$699	FireControl software for 18x35 mix routing with DSP, stereo return for control room monitoring and low-latency headphone bus, includes ProSeries Studio One Artist, DAU recording software
Two DI inputs	1U rack	\$459	BNC word clock input
Two DI inputs, word clock and MIDI I/O	1U rack	\$4,985	Master volume knob can be assigned to control room (uses through 9.1 monitoring), choice of four Prism SMS noise-shaping dither curves, dual headphone monitoring, M/S mixing available on mic inputs
Eight DI inputs, word clock and MIDI I/O	2U rack	\$4,799	All functions remote controllable via MIDI (and MIDI over MIDI) (optional MIDI output version)
BNC word clock input	1U rack	\$1,599	RME SteadyClock clock circuit
Two DI inputs, MIDI I/O	desktop	\$699	Onboard DSP mixing for creating four independent stereo cue mixes
Insert jacks on all mic inputs	2U rack	\$379	All discrete mic preamp design
2 DI inputs, inserts on channels 7 & 8	1U rack	\$649	180 LED mixer bridge, stereo outputs for control room monitoring, zero-latency headphone monitoring
2 DI inputs, MIDI I/O	1U rack	\$499	Stereo outputs for control room monitoring, zero-latency headphone monitoring
Four DI inputs, MIDI I/O, BNC word clock I/O	1U rack	\$3,445	XLR stereo out to control room monitoring, onboard DSP effects include Fairchild C-3000, Fairchild 117 and algorithms based on TC Electronic analog vintage units with 16-bit 48KHz
Four DI inputs, BNC word clock input	2U rack	\$1,249	Tube ECC82 12AX7 preamp stage
Four DI inputs, BNC word clock I/O, inserts on all mic preamps	2U rack	\$6,499	TwinFinity™ design lets users blend output from each preamp from Class-A tube and 100% impedance solid state circuits, 12th style compressor available on each preamp, 8-channel soft limiter selectable on all channels

Solid State Logic Nucleus

Multi-DAW Controller with SSL Preamps and Monitor Section



Nucleus offers DAW control via 16 faders, rotary encoders, buttons and transport controls.

Solid State Logic has a stellar reputation as a manufacturer of some of the recording industry's most popular large-format mixing consoles, but in recent years, the company has offered products targeted toward personal studios. With its first few releases in this regard, SSL seemed to struggle to find a way to offer an SSL analog signal path with DAW-centric controls while keeping the price tag appropriate to the target market. With the Nucleus, SSL has nearly perfected the recipe for the ultimate cocktail of those ingredients. Trimming out the excess and boiling functionality down to the essentials has left the best of all results: an affordable moving-fad-

er control surface with a pair of high-quality mic preamps and a great-sounding analog monitor section.

Desktop Dynamo

The Nucleus stands tall among control surfaces, offering 16 100mm touch-sensitive motorized faders. The glide of the faders feels comfortably smooth while providing enough resistance for making accurate stops. Automation written with faders was respectably smooth. Even with multiple faders writing simultaneously, the Nucleus was able to accurately convey my fader moves. Five hearty, illuminated buttons provide professional-feeling transport controls while the jog wheel offers control of zooming, scrubbing and more.

On each channel, you'll find dedicated Solo, Cut and Select buttons, which respond quickly and illuminate when active. I tested the Nucleus along with Pro Tools and Logic, and found that the corresponding track names are displayed on one of the two rows of a brightly lit scribble strip. Both rows of the

scribble strip are repurposed when it is necessary to display other operational information.

Each channel also has an endless rotary encoder/button (which SSL refers to as "V-Select" buttons and "V-Pots") that allows you to determine operability in a number of ways. Dedicated function keys across the unit's top-left apply default settings specific to the control protocol being employed. For example, with Pro Tools I could quickly toggle the V-Pots to control send values for sends A through E, or pan controls. Those controls would then map to all 16 of the rotary encoders across the Nucleus. Alternative layers of functionality for the V-Pots and V-Selects are accessible through Mode buttons in the center of the desk.

DAW Differences

When operating Nucleus, specifically with Pro Tools 9 and Logic Pro 9, the experience couldn't be more different. In short, Pro Tools operation through HUI is clunky, while operating Logic through the Mackie Control unit protocol is much improved.

PRODUCT SUMMARY

COMPANY: Solid State Logic
PRODUCT: Nucleus
WEBSITE: solidstatellogic.com
PRICES: \$4,999

PROS: Good "console-like" feel. Great-sounding preamps and monitor section.

CONS: Quirky operation with Pro Tools via HUI.

With Pro Tools, the controls for some plug-ins were problematic, if not downright spotty. For instance, I was unable to access the controls for Drumagog at all, and adjusting the amplifier settings on a Line 6 Pod Farm crashed Pro Tools repeatedly, but only when controlling the plug-in from the Nucleus. Adjusting the frequency of the first band of a Waves REQ from its default value of 30 Hz up to 250 Hz required five complete rotations of the rotary encoder. Panning with the V-Pots from hard-left to hard-right required approximately 540 degrees of rotation, so writing this pan smoothly in real time required the use of two hands.

All of these problems disappeared with Logic. The resolution of the V-Pot was much more usable, I had access to all plug-ins and there were no crashes. Generally speaking, in Logic the controls were more responsive, so dialing through a list of plug-ins was faster

and more practical than in Pro Tools. Panners similarly improved by providing a more reasonable resolution. Instead of paging through settings with a rotary encoder, dedicated arrow buttons in the center section came into play. The Left and Right buttons flipped through pages of parameters, while the Up and Down buttons let you choose between different insert positions. Best of all, you can flip anything from plug-ins to sends from the rotary encoders to the faders, which is not the case with Pro Tools.

I was very impressed by the way that once each DAW was configured with Nucleus, switching between them was a snap. I had Pro Tools and Logic running simultaneously for the purpose of comparison. With one button, I could toggle from one DAW to the other. This functionality could be incredibly convenient for using a ReWire app with a primary DAW.

Additional Controls

I was also impressed with the additional layers of functionality that were offered through SSL's Nucleus Remote software. It seems that this "SSL Logictivity" software is common throughout the company's control surface family. Using Nucleus Remote, you can remap the default functions of any physical button to a new DAW function. Eight extra buttons are also provided specifically for custom mapping that you want to do. Nucleus speaks to the DAW through a high-speed Ethernet connection for typical control surface functionality, as well as through USB as a virtual keyboard, so any button may also transmit a message that is equivalent to any combination of keystrokes. Thus, any task that can be performed with a keyboard shortcut can also be made to happen at the touch of a button on the Nucleus controller. For example, opening and closing windows, engag-

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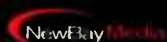
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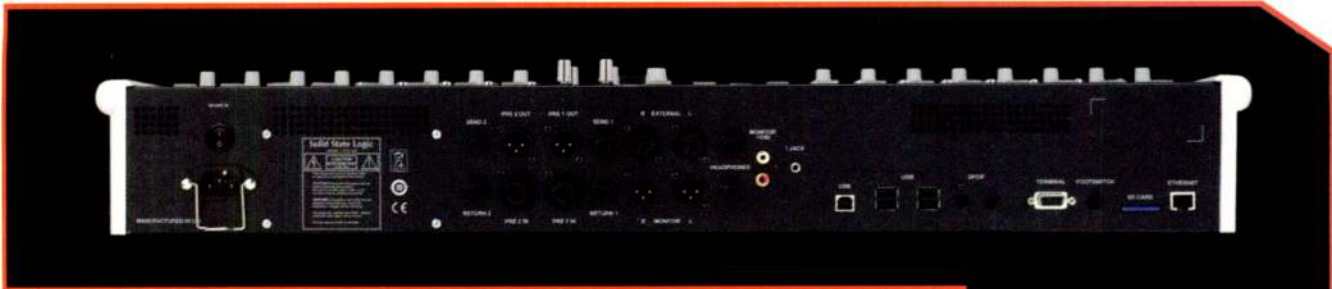
ing and disabling automation parameters and managing groups were all accessible through buttons using the included default layouts, or by assigning buttons. Altogether, three different layers of functions could be assigned to each button using this software protocol. Set-ups can also be saved and brought into another Nucleus by storing them to an SD card.

Conversely, the Nucleus USB Control Panel software for controlling the monitoring hardware, which controls zero-latency monitoring before the DAW, was a step down from the Nucleus Remote software. In USB Control Panel, the controllers were confusingly named and lacked the rich graphic design of the Remote software. Overall, this section could use a redesign.

Impressive Analog Performer

For the analog section of the desk, SSL kept it simple, providing two great-sounding preamps and high-quality analog monitoring outputs, as well as clean, transparent AD/DA conversion. Nucleus offers a tasteful complement of connections that accommodate a variety of workflows. Each preamp has an insert point and direct output so you can use the console's analog section with a different interface. Also, different types of aux inputs are provided to connect additional devices to the onboard monitor section. A pair of headphone outputs are inconveniently located on the rear, with an input/output blend control for zero-latency input monitoring in the monitor section. S/PDIF inputs and outputs are provided through optical connections.

By avoiding the usual pitfalls of including countless preamps, a summing mixer and analog EQs for a high price tag, Nucleus instead provides a quality USB interface at a reasonable price. The SSL SuperAnalogue™ mic pre's use the same circuit employed by the SSL Duality console. The product literature describes these preamps as "transparent," but in testing them against other less-colorful pre's, I found this assessment to be a bit of an undersell, which was disappointing. I was pleased to find that they have a character that is more consistent with other SSL front ends that I've used: A pronounced bottom end provided warmth without sacrificing clarity, with an honest, balanced midrange and sweet highs whose detail was laced with a little extra sparkle as the preamp enriched their harmonic content. If you could have only one set of pre's around with



The rear of the Nucleus offers analog and digital connections, an SD card slot, footswitch port and more.

which to build your project studio, you'd be hard-pressed to find a stronger contender. The monitoring outputs were similarly pleasant—plenty of gain was offered without any considerable noise through either the main control room out or the headphone amps.

Is It Your Everything?

The overall installation and configuration of Nucleus was a breeze. However, in using Nucleus with my MacBook Pro, I was unable to use the controller connected to my Ethernet port while simultaneously getting Internet access through the Mac's AirPort utility. Aside from that, when connecting my MacBook to an Ethernet network using DHCP and then reconnecting to Nucleus with its default settings, the Pro Tools software found Nucleus and mapped its controls quickly. Other control surfaces would require power cycling, restarting the computer or otherwise.

All things considered—including overall performance, features and price—I see Nucleus as an essential buy. I did experience some buggy operation with Pro Tools, but any control surface that attempts to be universal across multiple DAWs is going to give you tradeoffs. Yes, Avid's control surfaces control Pro Tools very well, but I would take these SSL pre's over the C|24's preamps any day. And if you only need two of them, you're set. As far as ergonomics, the in-line mentality of Nucleus' channel strips is favorable. The transport and general layout of the center section is spot-on, and the build quality is sturdy and professional.

I'm interested to see SSL's next step in this direction. This is clearly a sign that the company understands what smaller studios need and want, with an execution that hits closer to the mark than any of its previous efforts. III

Brandon Hickey as a freelance engineer and audio educator.

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Dave Hill Designs RA Plug-In

Software Offers Unique, Precision Control Over Distortion



RA emulates amplifier overload, giving control over even harmonics, compression of low-level audio and peak level.

RA is a TDM (only) plug-in from Crane Song's Dave Hill that allows for the manipulation of the ideal linear-transfer function of a virtual amplifier. Running in Mac (and coming to PC soon) Pro Tools hosts only, RA provides four different sections to precisely add generated even and odd harmonics and other distortion artifacts typically brought on by an amplifier overdriven into nonlinear operation.

Four Ways to RA

Starting from the left side of the GUI, the Drive control's ± 6 dB range matches the plug-in to the incoming track's level. RA's distortion production and amount are dependent upon incoming level, and Drive sets the plug-in's aggressiveness. Corre-

sponding to the right side is the Trim control, which sets RA's output level over a ± 6 dB range. In general, I found RA requires constant A/B'ing to the original sound because all of the controls interact and affect the final throughput audio level—it is easy to fool yourself. Drive and especially Trim allow you to match levels.

The next section generates second harmonics. The Top Peak knob sets the amount of harmonic generation coming from the loudest, higher-level moments in the audio while, conversely, Bottom Peak controls harmonics coming from lower-level signals.

The Low Level control lifts low-level signals with little effect on higher-level audio. Low Level offers the sound of an overdriven amp when bringing up lower-level portions of the audio, yet all but ignores high-level sounds that, in a conventional amp, become totally distorted and "blown up" sounding. Low Level also produces third-harmonic distortion as you increase it.

The Peak Control section allows low-level signals to pass unaffected and produces third-harmonic content. It acts like a soft clipper but with control over exactly how and

when it saturates. The Peak control sets the amount at which the peaks are rounded off and Hardness limits peak levels anywhere from -3 dBfs to -10 dBfs.

RA and Me

Once I wrapped my head conceptually around what RA does, I was ready to try it on everything. When making parameter adjustments, the linear-transfer function line—shown graphically as a straight line of output vs. input on the right side of GUI—contorts and changes shape. Checking this graph when winding up/down on any control is extremely helpful when setting up and refining distortion effects. Somehow, I wish it were bigger, more detailed and calibrated.

For lead vocals, RA is for the distortion connoisseur. Using RA in this way is like playing a sonic sommelier—you can select any or all of the plug-in's three sections to add just the right blend of grit, grunge or "hair" to a singer's voice.

For my male rock singer, I found it better to start with the Top and Bottom Peak controls because even harmonics are so pleas-

PRODUCT SUMMARY

COMPANY: Dave Hill Designs
PRODUCT: RA
WEB: davehilldesigns.com/RA.html
PRICE: \$550

PROS: The most precise and subtle distortion plug-in yet.

CONS: Presets of modeled classic analog processor's needed.

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ing that they can be hard to discern in small amounts; plus, adding odd-ordered harmonics later tends to overpower them.

My singer has a very clean and pure tenor voice with an occasional and wonderful gravelly, hoarse quality at the low-level beginnings and endings of words and phrases. Adding Top Peak brings only those moments out by distorting them more. My

ear went to them immediately, but not as if they were now a huge, standout effect. Adding too much of second-harmonic distortion can sound like a loose microphone part ringing sympathetically at the octave above the predominant pitch sung. The Bottom Peak control seems to round out the vocal sound in a "tubey" way that you'd get from a vintage mic pre.

I then used the Low Level control as a kind of low-level expander. This changed the singer's dynamics, but not like a compressor as the loud bits stayed loud. You can think of Low Level as a "detail" control that enhances only quieter moments. The overall level through the plug increases so, again, I level-matched by clicking the Bypass button and adjusting the Trim control downward.

Adding the Peak Control section blends in more noticeable third-harmonic content. Odd harmonics can get nasty, and there is plenty of adjustment available to get just the right amount of this filth. On my vocal track, third-harmonic distortion shows up during the same vocal moments as the second-harmonic distortion I added. I had the Peak knob at about 2 to 3 p.m. and the Hardness control acted and sounded like a vicious limiter when turned up to 100. You can hear the vocal clamp down on loud peaks that softened up the overall sound and performance.

Superwell-recorded grand pianos get roughed up in a nice way. Setting the Peak control's knobs both on 100 and Low Level set to about 2 p.m. works like a transparent limiter with a slight softening of loud peaks. For pianos recorded with the treble and bass ends of the harp, and action panned left and right, I would unlink a stereo instance of RA so that I could use different settings appropriate to each side.

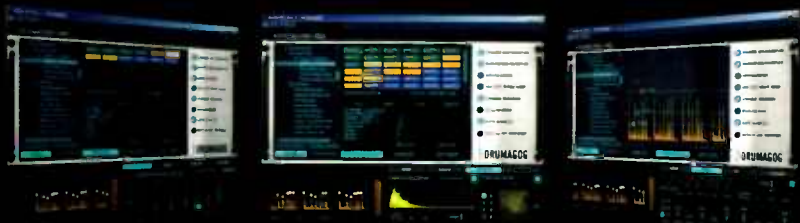
Direct basses often are too clean and "yo session player" sounding, but I was looking for something more interesting, especially for standouts and fills. With RA set as Top Peak at 100, Low Level about 3 p.m. and Hardness at 50, it produced a bass sound that remained round and thick, and only slightly distorted when playing higher up the neck—as if the bass amp was about to go up in smoke. Following RA with my usual compressor plug produced a better result than without it.

RA to the Rescue

Dave Hill's RA is a one-of-a-kind plug-in for distorting sounds in a very precise and controlled way. It's a sonic personality and vibe-builder in one, and will multiply the effect of any subsequent plug-in after it. ■

Barry Rudolph is an L.A.-based recording engineer. Visit him at www.barryrudolph.com.

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Universal Audio 4-710d Preamp/DIs

Four Tube/Solid-State Units With 8-Channel A/D Converter

I first had the opportunity to review Universal Audio's 710 Twin-Finity in the summer of 2009. I found it to be a versatile, affordable and innovative take on the tube vs. solid-state preamp. The only complaint I had at the time was that it didn't come in stereo. Well, I got my wish and more in the 4-710d. This 4-channel preamp offers all the features of the 710, but adds compressors on

each channel; switchable inserts; an 8-channel, digital A/D converter with ADAT optical and AES/EBU DB-25 outputs; an ultra-low-jitter clock subsystem; word clock I/O; soft limiting; and variable sample rates up to 192 kHz, 24 bits.

The 4-710d has all the bells and whistles of its single-channel predecessor. Each preamp has a DI input and six switches bookending the analog meter for phantom on/off, -15dB pad, mic/line, meter switching (output/GR/drive), low-cut (75 Hz) and polarity. Two switches below the meter engage the insert and compressor with either slow or fast attack/release. As on the 710, there are pots for input and output gain, and blend between solid-state and tube. The back panel carries XLR mic in, line in, line out and balanced insert send/returns on TRS plugs. There are also four extra TRS inputs for the extra line inputs. In my sessions, this offered a handy way to get other line inputs into the digital back end of the unit. The digital side of things has AES/EBU outs on a D-Sub connector, word clock I/O and twin ADAT outs that are mirrored at 44.1 and 48 kHz, 4+4 at 88.2 and 96 kHz, and 2+2 at 176.4 and 192 kHz.

All Around the Studio

I first used the 4-710d in a surround recording ses-

PRODUCT SUMMARY

COMPANY: Universal Audio
PRODUCT: 4-710d
WEB: www.uaudio.com
PRICE: \$2,499

PROS: Incredible value, solid-sounding preamps and digital back end.

CONS: Not your go-to preamp for every situation.



sion. As I needed five preamps, I brought a 710 Twin-Finity along and ran its output into one of the first of the four extra line-ins in the back of the 4-710d. My hookup to Pro Tools used the optical output of the 4-710d, which I ran into the optical input of an Avid 96 I/O interface. To lock the system's clocks, I ran a short 75-ohm BNC cable from the clock output of the 96 I/O to the word clock input of the 4-710d and the "lock" light on the front of the unit immediately confirmed all was good.

Five sE Electronics sE3 microphones were patched into the preamps, and Pro Tools saw all five on a single 5-channel track. Levels were set, and I used the rig to record acoustic guitar, conga and vocals. While I didn't use the individual compressors (because I only had four), I did use the soft-limiter option with great results. These are set at a threshold of -3 dBFS with an infinite ratio and attack time of 0.075 and release time of 100 ms. The manual states, "Although the limiter will help prevent 'digital overs' [A/D clipping] during conversion, it is not a 'brick wall' limiter. It is still possible to clip the A/D input." I'm usually conservative with my DAW levels anyway, but I did find that no matter where my levels went, they never showed red in Pro Tools, even when I tried to overload the input on purpose. All I know is that it sounded great when I set the limiter to "on" and I ran my levels moderately as usual.

What was most telling on this session was that I ran the same song and mic setup without the 4-710d earlier in the day. I used the preamps on the Avid C|24 and 192 I/O converters, and the difference was stark. The 4-710ds offered a much clearer picture of the high-end detail of the vocals and acoustic guitar. The sound of the player's fin-

gers on the strings sat higher in the track and the overall effect was more musical across all tracks. Vocals had more detail and hit the reverb better, but also had the body in the midrange that was needed to keep it from sounding thin. Whether it was the converters, preamps or a combination of both, it worked. Bravo on all fronts.

Next, the 4-710d was used to record a Yamaha C3 grand piano using a Royer SF-24 active ribbon microphone with the Trans/Tube adjustment set at 12 o'clock. It offered a sweet top end that cut through the mix with a solid midrange. Another preamp was used as a bass DI with the Tube setting all the way "on." This offered a nice bottom end—not quite as fat as the SSL 4000 preamps usually used in this room, but it still sounded great.

A Fender Guitar amp recorded with a Voodoo VR1 passive mic into preamp number 4 with Trans/Tube set at 12 o'clock had the strat cutting through the mix nicely, with plenty of body and a nice edge that wasn't strident.

Next, I used the preamps on different drum sessions. On the first, I used them for kick in and out, and snare top and bottom. In this case, I wasn't getting the thump and transient presence I'm used to when using SSL 4000 console preamps in this studio. After playing with the settings on the 4-710d a bit, I quickly swapped them for the SSLs and it was much better. Keep in mind that the price jump here is considerable and an A/B comparison is unfair. The point is to offer a reference to a different preamp.

In the next session, I used the 4-710d on toms 1, 2 and 3 top with Heil PR30, PR40 and a Sennheiser 421, and on tom 3 bottom powering



The back panel offers XLR mic in, line in and out, and balanced insert sent/returns on TRS plugs, as well as four extra TRS inputs for the extra line inputs.

an AKG D 112. This was just the ticket, offering plenty of stick-hit detail and bottom end from the low-tom bottom mic when I flipped it out of polarity with the top. I also used the 4-710d to power two Blue Bottle mics placed above the kit with great results. It offered nice detail, no brush cymbal wash and great stick detail. I did kick in the individual compressors in this application with a slow attack/release, and it was good but not what I needed in this application.

On the Bench

The 4-710d preamps showed impressive stats when put to the test with an Audio Precision APx525 test and measurement system (download the tests at www.mixonline.com). When testing analog in to analog out with the Tube option completely bypassed, inputs 1 and 2 showed very low distortion levels (0.001% and 0.005%). This was retested using the digital out at a 96kHz sample rate with the same two channels showing 0.002% and 0.004% (solid-state) and 1.408% and 1.621% (tube). The distortion figures jump considerably with the Tube, but that's to be expected. In all tests, the frequency response was razor flat from 20 Hz to 80k Hz (analog), while the same was true testing analog in to digital out at 96kHz sampling rate.

Four Is More

I found the UA 4-710d to be a versatile and worthy go-to set of preamps across a range of applications. The feature set is very good and urges you to experiment. The tube vs. solid-state option is a great way to play with nonlinear distortion in the signal path. The manual is well-written and goes beyond the usual "this and that" to offer deep insights into clocking, digital operations and more.

Although I found them to sound great on almost everything I recorded and loved the converters, they wouldn't be my first choice for kick and snare drum as I found them to lack the punch of higher-end preamps. However, for detail work like vocals, percussion, acoustic guitar,

horns and piano, they stand head and shoulders above anything in their price range.

The bottom line is that the value is incredible. Four solid preamp/DIs with compression and a great-sounding 8-channel digital back end with soft limiters is unheard of below \$2k (street). For the project studio owner looking for a versatile, affordable front end for a DAW, this is not only a must-hear, it's a must-buy. III

Kevin Becka is Mix's technical editor.

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Waves Aphex Vintage Aural Exciter

A Very Rare Signal Processor Is Reborn in Software

Originally introduced in the mid-'70s, the Model 402 Aphex Aural Exciter was an instant hit—but you couldn't buy one. The few units that were built could only be rented at considerable expense. The seminal tube-powered processor, which added musically related harmonics to audio signals, was used on select studio sessions for such icons as Paul McCartney, Fleetwood Mac, James Taylor, Jackson Browne and Linda Ronstadt. Its ability to add and enhance detail and presence on both individual tracks and complete mixes earned the august processor a devoted following. Aphex subsequently produced low-cost, solid-state versions of the Aural Exciter for retail sale, but the original tube-based units were lost in the mists of time. Or so we thought.

More than 30 years later, Waves obtained the original hardware unit from Aphex's storage and modeled its distinctive sonic character with the guidance of producer/engineer Val Garay, a high-profile Exciter user back in the day.

The cross-platform Waves plug-in is available singly in both TDM (TDM, RTAS, Audio Suite, AU and VST) and Native (all the foregoing formats except TDM) versions. It's also included in the Waves Mercury bundle. Mono and stereo configurations and resolution up to 24-bit/192kHz render the Aphex Vintage Aural Exciter ready for both mixing and mastering duties. I tested the AU version of the plug-in in MOTU Digital Performer 7.2.1 using an 8-core Mac Pro running Mac OS 10.5.8.

Excitement à La Mode

Due to its phase-related idiosyncrasies, the original Model 402 produced different sounds

PRODUCT SUMMARY

COMPANY: Waves

PRODUCT: Aphex Vintage Aural Exciter

WEBSITE: waves.com

PRICES: Native, \$250; TDM, \$500; Mercury Native, \$6,300; Mercury TDM, \$9,900 (on sale for \$6,300 for an indefinite period)

PROS: Enhances clarity, detail and intelligibility. Easy to use. Reasonably priced.

CONS: Can sound harsh on some sources or if overused.



The Waves Vintage Aural Exciter sports an uncomplicated GUI.

when used on a mixer's channel insert (MIX mode) vs. in an aux send/return path (AX mode, which was Garay's *modus operandi*). Waves modeled both sets of sonic characteristics and assigned them to two respective modes for the plug-in, dubbed MIX2 and AX. The company anticipated that DAW users would also want the convenience of generating the AX mode's response when the plug-in is used on a track's insert, so the company created an additional mode for the plug-in, tagged MIX1, which does just that.

The upshot is that you should use either MIX1 or MIX2 mode—both of which blend generated harmonics with the dry signal—when the plug-in is instantiated on an individual track's insert; you adjust the GUI's AX MIX control to set how much Exciter effect you want to add to the dry signal. MIX2 mode audibly changes the frequency response of the signal, especially when high AX MIX control settings are used, so it's most useful for coloring individual tracks. The more spectrally balanced MIX1 mode is suited to either mixing or mastering.

AX mode kills all dry sound at the plug-in's output, leaving only the Exciter effect. Use AX mode when the plug-in is placed on an aux to which you've bused your dry track. The AX

MIX control is disabled in AX mode, so adjust the level of excitation using the dry track's bus send. A fourth mode, BP, models the original hardware's BP (bypass) mode, which was not a pure bypass and sounds slightly colored.

No matter which of the three active modes you use, the sound of the plug-in changes as you drive it harder. A wide-ranging input level control provides up to 18 dB of boost or attenuation to achieve the desired sound and manage headroom. The output level control, likewise, has a ± 18 dB range. A VU meter (two meters for stereo configuration) shows either input, output or AX (harmonics) levels—selectable via a rotary switch—and sports a clip LED calibrated to 0 dBFS. You can recalibrate the meter's headroom, which is 18 dB by default.

Waves also modeled the 402's analog noise. You can adjust the noise level of the plug-in from -48 to 0 dB (0 dB is commensurate with the original hardware's noise level), or turn the noise off. You can also add 50- or 60Hz hum, modeled on the hardware unit's power supply, or disable hum altogether. A and B workspaces are provided to help compare different setups.

Taking Flight

Once I learned how best to use the Aphex

Vintage Aural Exciter's different modes, the rest was easy. The plug-in's frugal control set made it child's play to get great sounds.

Aural Exciter sounded awesome on male lead vocals, lending increased clarity and intelligibility. MIX1 mode sounded the warmest and most balanced. With moderate AX MIX settings, it brought the midrange slightly forward but also increased sibilance somewhat. MIX2 mode, on the other hand, virtually eliminated all sibilance while pulling the midrange dramatically forward—perfect for rock vocals.

MIX1 with high AX MIX settings tightened up flabby electric-bass guitar notes beautifully, making the instrument sing. However, I wasn't charmed by what the plug-in did to acoustic guitar: MIX1 sounded too tinselly and MIX2 too nasal. On kick drum, the plug-in made the beater slaps sound harsh and cutting. But Aural Exciter sounded outstanding on snare drum, as both MIX1 and MIX2 modes made it sound like a bottom mic had been added to this top-miked track, with

MIX1 simultaneously producing warmth and sizzle and MIX2 mode bringing a bright and slappy tone. One caveat: If there is heavy hi-hat spill on your snare track, high AX MIX settings will make your ears bleed.

Next, I bused a finished mix to an aux and instantiated Aural Exciter in AX mode on the aux's insert. This setup let me temper how hard I drove the plug-in's input (using the bus send) without reducing the dry mix's level. With a moderate amount of aural excitement applied to the mix, the plug-in enhanced detail and lent an open, airy quality. The downside was that some elements of the mix, such as arpeggiated acoustic guitar, sounded slightly glassy. I got similar results by placing the plug-in on the master channel's insert and using MIX1 mode with the AX MIX control set to around 5 (turned up halfway). Injudiciously goosing the AX MIX control a lot higher produced a cutting, almost transistorized sound, cautioning moderation. I appreciated that I could adjust the meters' headroom to 8 dB for mastering (while using MIX1 mode)

because the default calibration otherwise kept the meters almost constantly pinned during loud choruses.

With the plug-in still sitting on the master channel's insert, I auditioned AX mode just for grins (killing all dry sound). I was instantly enamored by how it evoked a band-limited, slightly distorted sound reminiscent of a poorly tuned radio, albeit with enhanced high frequencies. Serendipity!

Harmonics Redux

I got my best results using the Waves Vintage Aural Exciter on individual tracks. The plug-in sounds awesome on select lead vocals, snare drum and electric bass. But with judicious use, it can also transform a cloudy mix into an open canvas. This reasonably priced plug-in would make a great addition to any engineer's toolkit. III

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

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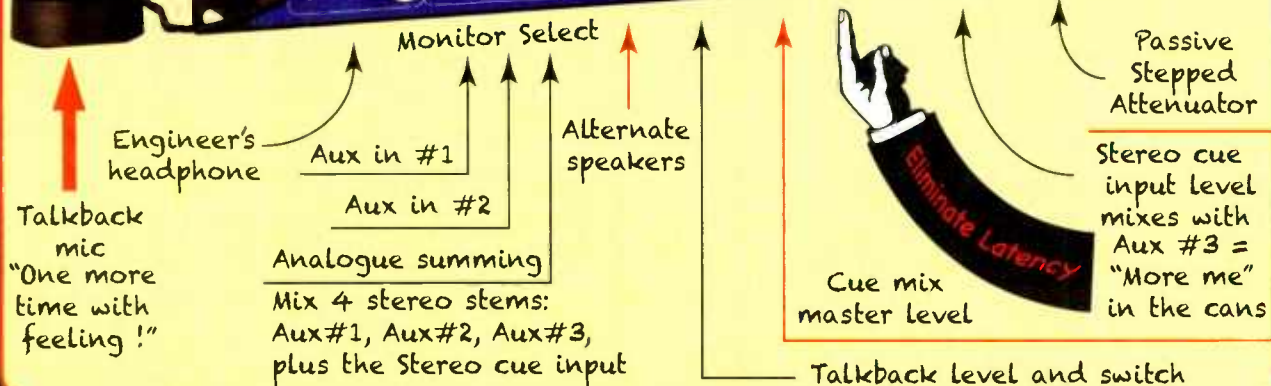
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●● In Memoriam

By Frank Wells

Remembering Roger Nichols

His indelible touch to our industry will forever be remembered, cherished

[Editors' Note: This remembrance is courtesy of sister publication Pro Sound News' editor Frank Wells.]

After a protracted battle, engineer/producer/innovator Roger Nichols succumbed to pancreatic cancer on April 9, 2011, at age 66. Roger is famously linked to the work of Steely Dan (and the solo works of Dan-mates Donald Fagen and Walter Becker) and to artist John Denver. Roger worked on multiple Grammy-winning projects over his career—six for his work with Steely Dan and another for a Denver project—and his discography includes a long list of other artists' projects. He is the recipient of a Recording Academy Lifetime Achievement Award.

Roger's audio pursuits date back to high school recordings (including schoolmate Frank Zappa). He studied nuclear physics in college and worked at a nuclear reactor after graduation. (He once quipped to me that they made him leave when he started glowing.) A hi-fi store and studio were side businesses post-college; shortly, recording became his full-time pursuit, leading to being hired by ABC as a technician and recording engineer, which by happenstance led to his recording Fagen and Becker's songwriting demos in 1971. As much, if not more, than traditional engineering chores, Roger's role was as the technical facilitator of Fagen and Becker's perfectionism and passion for quality.

He pioneered drum-replacement in recording, creating a pair of digital drum samplers (Wendel, first used on Gaucho, and Wendel II, used on The Nightfly, the latter with a custom digital interface for the early 3M digital 32-track recorders). The painstaking, slow and tedious process used for drum editing on these projects is the stuff of industry legend. Later, he developed the Wendel Jr., a stand-alone, cartridge-based, triggered drum-sample player that found its way into

studios worldwide. (From personal knowledge, if you listened to any amount of Nashville recordings from the late mid-'80s through the early '90s, you've heard the Wendel "CStick" cross-stick and "Heart Kick-Snare" samples more times than you would ever guess.) He earned the nickname "The Immortal" by surviving a particularly grueling cluster of parallel sessions that also involved a jolt from improperly grounded gear. (The gear suffered more than Roger.)

I first met Roger in the early '90s, just before he moved to Nashville. During his time in Twang Town, Roger spent a good deal of

Roger was an outspoken and highly visible member of the pro audio community. He had the kind of vibrant personality, perpetual enthusiasm and a ready openness that attracted legions of fans—something accomplished by very few on the engineer's side of the console.

time with us at my then-employer, Masterfonics, where he tracked and mixed Roseanne Cash, cut vocals on and mixed John Denver, and mastered Steely Dan projects. We'd sometimes end up in the shop as well, poking at some device with test gear, and the results provided fodder for Roger's EQ magazine columns. The folklore of Roger and Steely Dan include after his discovery that several gen-



erations of Steely Dan CDs were made from the wrong masters—Dolby-A-encoded, EQ'd for vinyl masters on tape as opposed to the original Sony 1610 digital masters, which had been lost—a vocal and public campaign that eventually forced the label to fund the retransfer and remastering of the entire catalog, done at Masterfonics by Glenn Meadows with Roger alongside.

Roger was an outspoken and highly visible member of the pro audio community. He had the kind of vibrant personality, perpetual enthusiasm and a ready openness that attracted legions of fans—something accomplished by very few on the engineer's side of the console. With wit and tenacity, Roger would fearlessly champion quality and good engineering practice, publically embarrassing many manufacturers who cut corners.

Roger will be remembered in many different ways: as a friend, as an inspiration, as a conspirator, as a mentor, as a leader. He'll be remembered for his contributions to music and technology. For me, it'll be for asking, "Why?" and for tilting windmills, and I'll always remember Roger as smiling ear-to-ear. Roger's Facebook page is awash with the memories of others today.

You can learn more about Roger's career at his homepage, rogernichols.com. Roger is survived by his wife, Connie, and two daughters. A fund has been established to help the family recover from the massive expense of Roger's cancer fight, and you can donate directly from the Website.

Roger, now there's "No Static At All" forever. Godspeed. III

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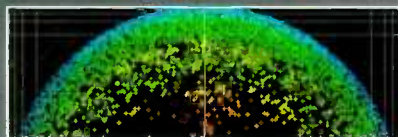
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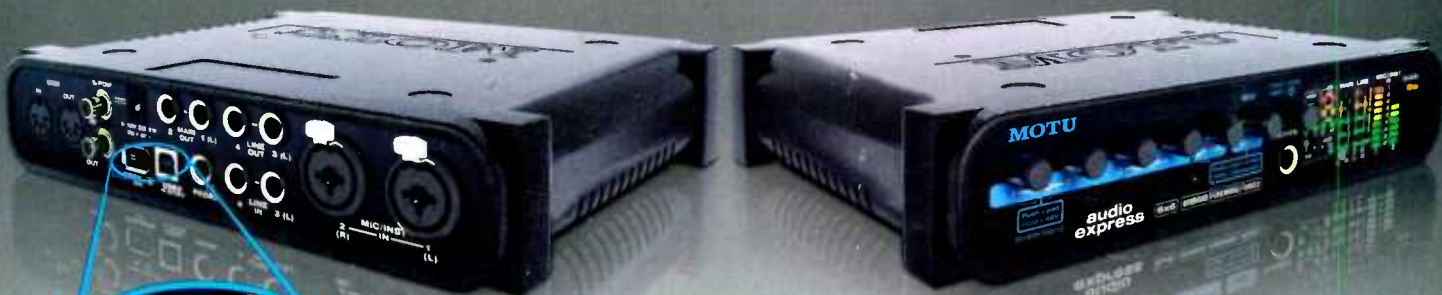
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