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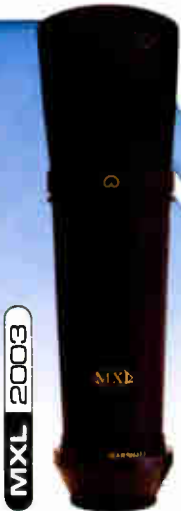




Studio photo courtesy of Solid State Logic Inc.



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World Radio History

MIX

PROFESSIONAL AUDIO AND MUSIC PRODUCTION
November 2004, VOLUME 28, NUMBER 12

features

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While you stroll through the 117th AES Convention in our fair city of San Francisco, *Mix* takes you back to the early days of San Francisco sound, when ideas were forming, groundbreaking records were produced in local studios and "invention" became the word of the day.

39 Living on the Faultline

40 San Francisco Through the Decades

Pre-1960: S.F. Symphony, San Francisco Opera, jazz and blues clubs.

1960-1970: Bill Graham, Francis Ford Coppola, Wally Heider Studios.

1970-1980: Record Plant opens, Fantasy Records, The Automatt.

1980-1990: Collaborations, the decade of excess.

1990-2000: Studios close, the dotcom bust, home studios rising.

The '00s: D.I.Y., DAWs, hip hop and remixes.

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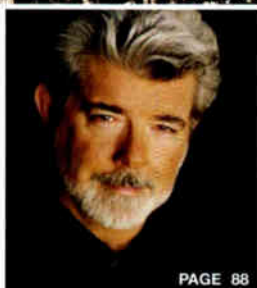
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On the Cover: Recent expansions at Skywalker Sound, amid the rolling hills of West Marin County, have all been made to accommodate George Lucas' original all-digital post-production vision. The archway text, in Italian, translates as "walker of the sky."
Photo: Steve Jennings.



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Check Out Mix Online! <http://www.mixonline.com>

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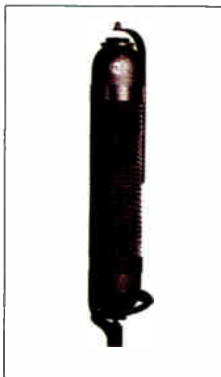
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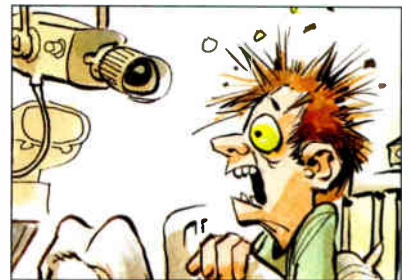
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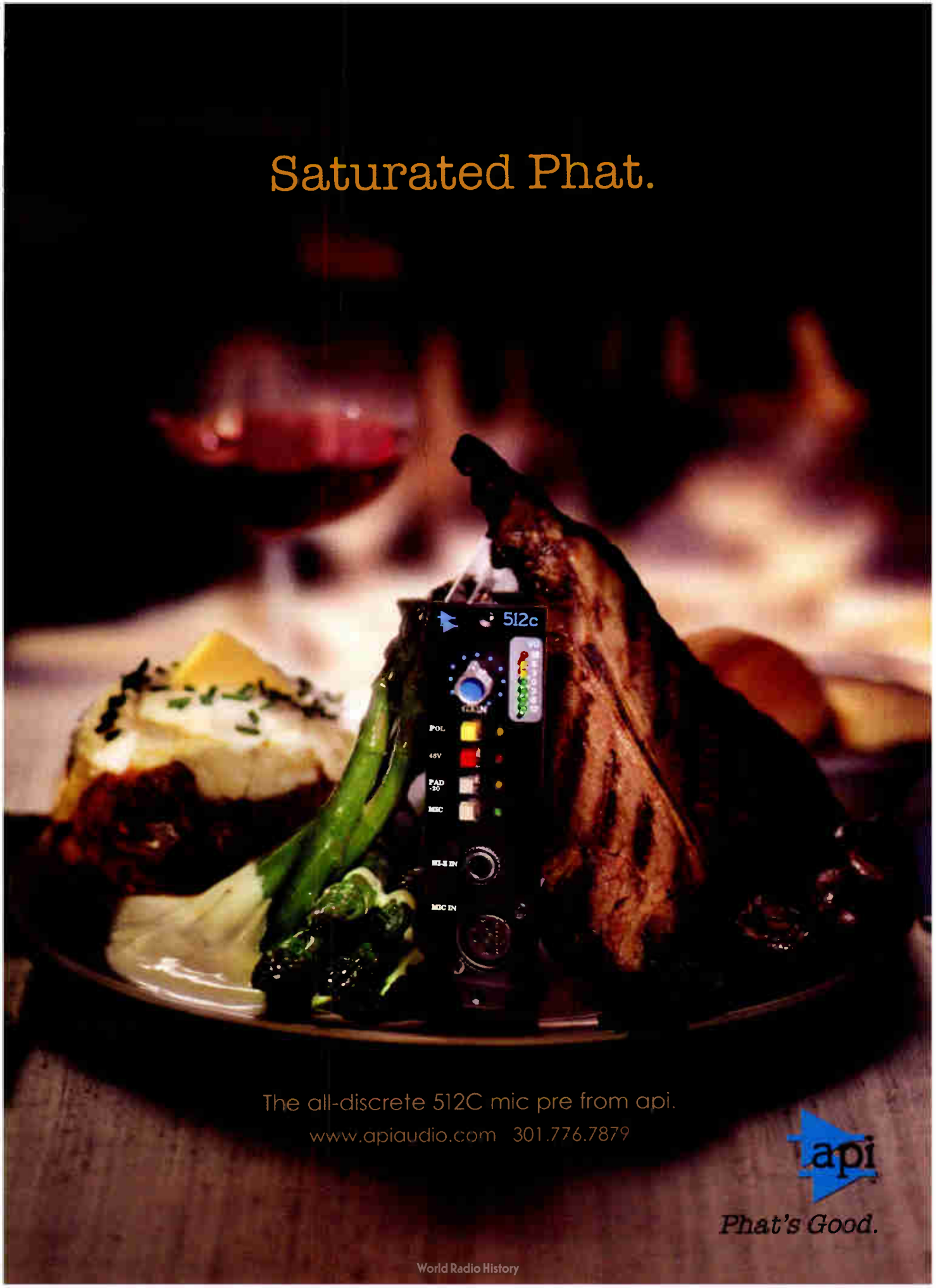
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Welcome to AES!

It's been six years since AES came to San Francisco, nearly an eternity in the technological timeframe. That was the show where Studer unveiled its 24-track ADAT system and Digidesign debuted Pro Tools|24 Mix and entered the world of Windows, while the ribbon mic renaissance began with AEA's R44C RCA reissue and newcomer Royer Labs' R-121. Meanwhile, that year's beige 333MHz Apple G3 would set you back \$3,000—once you were on the waiting list. In terms of both pro audio and the world at large, much has changed since 1998.

Fortunately, much about San Francisco—this place we call home—has not changed. In what we refer to as "The City" (and its surrounding environs, from Silicon Valley to Napa Valley), some 10 million people live in the coolest place on Earth. This is a city with a vibe, a feel, a pulse and—dare we say—a soul. It's a walking town, a shopping town, an eating town and a place that's always catered to the arts and entertainment—a statement just as true today as in the Gold Rush/Barbary Coast days of 1849 or Haight-Ashbury of the swinging '60s.

With that in mind, we present a focus on the creative force that has always been part of the San Francisco sound—then and now. That live rock 'n' roll sound was borne out of names like McCune and Meyer and Bill Graham and the Grateful Dead. A fiercely independent, non-Hollywood film movement rose from the likes of Coppola, Lucas, Zaentz and Murch, while Dolby Stereo forever changed the movie-going experience.

Springing out of the San Francisco peninsula, a technology revolution gave rise to Ampex, HP, Apple, Digidesign, CCRMA, SGI, Sun, Adobe, Intel, Google, Yahoo and eBay. On the studio side, artists were attracted to the world-class facilities of Wally Heider, The Automatt, the Record Plant, Music Annex, Fantasy and now flock to newcomers such as SF Soundworks and Studio 880. There's so much to say that we ran out of space—go to www.mixonline.com for "Online Extras" and bonus materials.

Also in this issue, *Mix's* Larry Blake chats with 2004 TEC Hall of Fame recipient George Lucas about his years of pushing the envelope in image and sound creation. *American Graffiti* wove multiple narratives backed by contemporary music, all played via onscreen sources—a cinema first. As the rest of the industry moved toward electronic scores, *Star Wars* revived the popularity of the large symphonic score, while the film jumpstarted Dolby Stereo, leading thousands of theaters to upgrade with multichannel sound. Lucas founded THX to provide performance standards for home and cinema playback. Other Lucas-driven innovations include SoundDroid, which—10 years before Pro Tools—offered picture interlock, multitrack recording, synthesis, editing and mixing via touch-sensitive screens and moving faders. Lucas continues to invest in Lucasfilm divisions such as ILM, Skywalker Sound and the Letterman Digital Arts Center, a new 23-acre production complex going online in 2005 in San Francisco's Presidio.

There is lots more, including our not-to-be-missed annual AES New Products Guide, spotlighting hundreds of debuts you'll see at the show. For those who can't make it, we'll provide complete AES coverage next month.

See you at AES!

George Petersen
Editorial Director

MIX

A PRIMEDIA Publication

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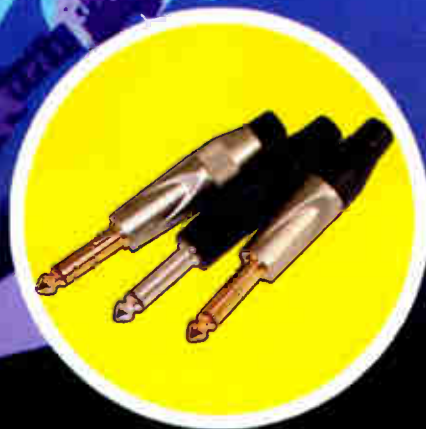
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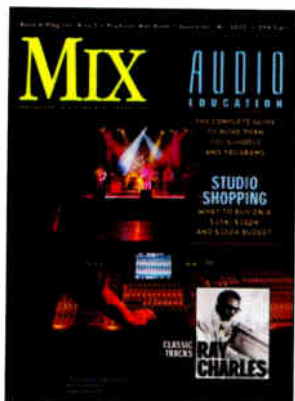
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Letters to Mix



FACTOR REALITY IN THE FANTASY

I was psyched when I saw your "Fantasy Studio Shopping Spree" [October 2004]. What a cool idea: gear recommendations to outfit a complete studio for three different budgets. My [excitement] turned to dismay when I read the article and saw that acoustic treatment has again been slighted. The author assumed that all this fabulous gear has "an awaiting, ideal environment." In my experience, the vast majority of studios have anything but an ideal environment. What control rooms need most isn't more gear but acoustic treatment and bass traps.

The acoustic quality of the room you record in is arguably more important than which microphones or preamps you use. In a control room, having bass traps will help you get an accurate and portable mix more easily than any brand of monitor or outboard gear. Yet all I see are reviews of microphones, preamps, monitors and outboard gear.

The growing number of companies that provide acoustic treatment to enlightened audio pros proves the worth of these products. *Mix* should do its best to educate readers rather than dismiss an entire class of products that offer great benefit.

Ethan Winer
RealTraps

PROPER ACOUSTICS, PROPER MIX

I have noticed that in the past two years, there has not been an article on the importance of room acoustics. After getting my new issue yesterday and seeing "Studio Shopping" and there being not one mention of acoustics or acoustic products in the budget, I was alarmed. People are forgetting how important the room is!

Anyone can go out and buy gear from Guitar Center or Sam Ash, but without a proper room, the mix is never going to be right anyway! I propose that *Mix* write an article on

the importance of acoustics and proper studios for tracking and especially mixing!

Michael Helpern
UrbanGroove, NYC

[For our latest coverage on room acoustics, please refer to Mix's two-part series, published in June and July 2004. Bob Hodas' "Homeward Bound: The Move to the Small Studio" addresses acoustics issues that arise when building and tuning a project studio. These articles can be found on www.mixonline.com. —Eds.]

PAIN OR PLEASURE?

Part two of [Stephen St.Croix's] three-part series, "I Can See for Miles and Miles" [August 2004], makes me feel much better about my frustration with the Yamaha Motif Series of keyboards. I mistakenly purchased a Motif 6 last year.

I should have known better: Recollections of trying to navigate the programming in the last Yamaha keyboard that I used regularly, the venerable DX7, should have steered me clear. I turned my back on Yamaha for decades [after enduring] nights bleary-eyed and thumbing through the manual spread open over the DX's cover. I became an Ensoniq devotee, owning several of its keyboards and I still appreciate the ease of programming both sounds and sequences with Ensoniq as compared to "modern" computer-based sequencing programs. It is sad to me that they really are no longer a force in the market, even [under] the guise of E-mu.

But as fate would have it, I was wooed and coaxed by the siren song of the Motif. What heavenly sounds come forth from the Motif, but what devils lie in wait in the corners of the logic of this torture device! Unfortunately, history does repeat itself and fools do not learn from their own mistakes.

Your article was affirming to me that I am not crazy—that I might still be able to understand newer keyboard technology. I had given up hope. Perhaps the future is not so dim and I can look forward to the day of buying a new workstation keyboard and be able to actually use it for more than a masochistic experience.

Scott Lake

NAMING THE NEW GUARD

I have been a *Mix* reader for about 15 years now. I engineer all types of music: country/western, rock, R&B, gospel and hip hop. I appreciate your coverage on the different engineers in music.

I feel that you have missed one engineer in particular whose successes are just as good as some of the household names we are all

familiar with: Elliot Scheiner, Jimmy Douglass, Mick Guzauski, Bruce Swedien.

The records Steve Hodge has recorded and mixed for Jimmy Jam and Terry Lewis at Flyte Tyme definitely should earn him the praise of *Mix* magazine. I am sure that they would echo this sentiment. I think it would be fair enough to say that it's time to provide some coverage to the great recordings this man has provided to the music industry.

The sound of Jam and Lewis' records over the years has been brilliant, and I think it is due to incredible writing and the abilities of engineer Steve Hodge. I would love to see a story on the techniques that he uses as an audio engineer.

Kelvin D. Grimble
*P.A.R. Audio Recording
Springfield, Ill.*

BANDING TOGETHER

[I'm] from the band The Rosenbergs in New York City. I read your piece on promoters and concert tickets and couldn't agree more ["There's a New Trend in Town," May 2004]. However, I do think there's one other main factor: Clear Channel. A few weeks ago, the *Dennis Miller Show* asked me to put together a three-person panel to discuss media consolidation, so I brought along Art Alexakis of Everclear and Rah Digga from Busta Rhymes' band. We had fun with it, but our message was serious: Clear Channel is quickly becoming the "OPEC" of the concert industry. By owning companies such as SFX and every major radio station from here to Mars, they're free to charge what they want for tickets, play the six artists they deem worthy and make off with the lion's share of the profits.

I used to work for Delsener/Slater before they were bought out by SFX, and the things I saw then were nothing compared to the way it is now with regard to "Let's charge what we want and who cares about the consumer."

A friend of mine, Henry Gomez, at Crain's Business just did a piece on Clear Channel reducing its commercial time across Ohio, which will allow them to charge advertisers more for the few remaining coveted spots—not to mention the lucky listeners who get to hear the same six artists three more times in a day—and everyone wonders why the business is in the state it's in?

David Fagin

Send Feedback to *Mix*
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ARGOSY TURNS 10

In 1993, Argosy (www.argosyconsole.com) founder David Atkins was the third-generation manager of his family's chain of retail fashion stores. He had recently returned home (Osage Beach, Mo.) after five years as a touring rock guitarist and was settling down to raise a family. That year, when Mackie introduced its 8-bus mixer, Atkins decided to build a home studio around the new board. Concerned with aesthetics and performance, he was determined that the desk be attractive and serviceable.



The Argosy clan

Soon, he had researched and drafted a business plan to manufacture consoles for the Mackie board. He then called *Recording Magazine* to inquire about a classified ad and was asked for a photo of the prototype. Needing to quickly come up with a company name, Atkins mind raced around the idea of a nest of cables endemic to recording studios and turned to Greek mythology: Argos, who had defeated snake-haired Medusa. Soon, the switchboard at Atkins' clothing store was receiving calls for Argosy consoles. One such call was from Tim Thompson, his new son-in-law, who was looking for a job. Ten years later, Thompson is the company's VP/CFO.

According to Atkins, when the company began building consoles, the focus was on aesthetics and be accessible for pieces of gear from different manufacturers. Today, with the trend toward computer-based recording, the company's designs are focused on the "cockpit feeling," allowing the user to have all gear accessible at an arm's length. The company is also finding its products pop up in non-audio environments, such as dispatch centers, hospitals, nuclear power plants—"anything that requires an operator," according to Atkins. "We realize that we're a specialty technical furniture manufacturer that offers our clients customized products and a one-to-one working relationship. Our clients are buying a service, not just a product."

PHOTOMAG SOUND & IMAGE RELAUNCHES

Joe Caterini, president of Photomag Sound & Image (www.pmag.com), announced the completion of an extensive round of facility updates, all of which stemmed from the company's 2003 purchase by PostWorks, New York.

Photomag has added two video editing suites (each with complete Avid Symphony systems), in addition to extensive remodeling and re-engineering, allowing for seamless integration of audio, video finishing and graphics capabilities. Each of the company's six sound mixing studios has its own voice-over room and Pro Tools systems.



In other company news, PostWorks, New York, has completed two surround Dolby-approved mix rooms: Mix 1 is a broadcast and DVD mix suite, and Mix 2 is a film print mastering mix stage. "To give our mixers and our clients the greatest options in the realm of 5.1 mixing, our chief audio engineer, Brian Dorfman, gathered the latest input on acoustic design and equipment specs from Dolby Labs' engineers and then designed our two new rooms from the ground up," explained Caterini.



ON THE MOVE



On the Move: Ron Fair, keynote speaker at AES S.F.

Previous Lives:

- President, A&M Records, 2000-present
- Senior VP of A&R/staff producer, RCA Records, 1993-2000
- Senior VP of A&R, EMI Records, 1990-1993
- Head of international A&R/staff producer, Island Records, UK, 1988-1990
- Director of A&R West Coast, Chrysalis Records, 1983-1988
- Manager of West Coast A&R, RCA Records, 1981-1983

The most exciting recording session I was a part of was...the soundtrack to *Rocky* in 1976. Bill Conti was my mentor and my teacher. I was by his side as we recorded the entire score and entire soundtrack in three hours, including "Gonna Fly Now."

The best thing about being a part of NARAS is...NARAS has become a hipper, cooler, more vibrant group of industry professionals from across a wide spectrum who care about the award, the integrity of the process, the TV show and recognizing achievement in our field.

The last great movie I saw was...*Gilda* with Rita Hayworth and Glenn Ford.

When I'm not at work you'll often find me...Trail running, swimming, hiking or sleeping.

MARGARITA MIX BRINGS IN NEW GM

The L.A. Studios' Westside facility, Margarita Mix de Santa Monica, has tapped veteran producer Jonathan Whitehead as its new general manager, operations and sales. Whitehead most recently worked as a freelance producer for ad agencies, production, post and visual FX companies.

"As the market for audio post has evolved over the past 10 years, Margarita Mix de Santa Monica has been consistent in maintaining its leadership position by offering top mixers and the latest technology," said Whitehead. "I look forward to continuing that tradition of success."



AUTOGRAPH CELEBRATES 30 YEARS, ADDS NEW FACILITY

Celebrating its 30th anniversary, theater sound design specialists Autograph Sound Recording (London) unlocked its new recording studio and post-production facility. Studio design consultant White Mark transformed, refitted and extended the original studio facility, which was built 12 years ago, to include an adjoining sound booth and a second room. Studio 2 is now available for recording and post projects, product demos or seminars. For the company's sound designers, the refit brings enhancements to scoring music and creating sound effects with an extensive online library, a 24-channel Pro Tools control surface and a 43-inch plasma display.

According to Autograph's man-



aging director, Terry Jardine, "The in-house team with White Mark have designed a very classy, functional and inspirational space in which to work." Company sound designer Simon Baker, who assisted in the redesign, founder Andrew Bruce and other personnel have been putting the studio through its paces on projects such as *Jailhouse Rock* and the upcoming *Mary Poppins* and *The Lord of the Rings* DVDs.

TOM LORD-ALGE HITS THE SOUTH BEACH

Indie artist Sylvia Tosun booked time at South Beach Studios (Miami) with mixer Tom Lord-Alge (Avril Lavigne, Peter Dinklage, Faith Hill) and producer Miklos Malek (Celine Dion, Jennifer Lopez, Anastacia), to work on her upcoming album, *All This Time*. Lord-Alge, who mixed half of the album, said, "I loved [Tosun's] music and was impressed by the fact that she is putting this together all on her own, and I wanted to be a part of helping her achieve her vision. Aside from being extremely talented, she definitely has the magic to make things happen." Tosun returned the compliment, saying of Lord-Alge: "He makes the process seem so effortless be-

cause he is so connected to music that it's as if he channels his work, making the songs come alive in a whole new way." Tom Coyne of Sterling Sound put the final touches on the record.



L-R: Tom Lord-Alge, Sylvia Tosun, Miklos Malek

TELEFUNKEN HITS TUBE JACKPOT

Telefunken North America has acquired what may be the last large stock of vintage NOS (New Old Stock) 6072A General Electric tubes, which were used in Telefunken NA's line of new microphones that re-create the vintage Telefunken sound. "After exhaustive searching, we were able to purchase 4,000 of the 6072A tubes," explained Toni Fishman (pictured), CEO of Telefunken NA. "They were labeled by GE in 1983 but were probably manufactured 10 years earlier. There is a supply of new tubes coming out of Eastern Europe and Asia, but we don't feel they come close to the performance of the vintage 6072A and they don't last as long."



PHOTO: DAVID BOGZGA

INDUSTRY NEWS

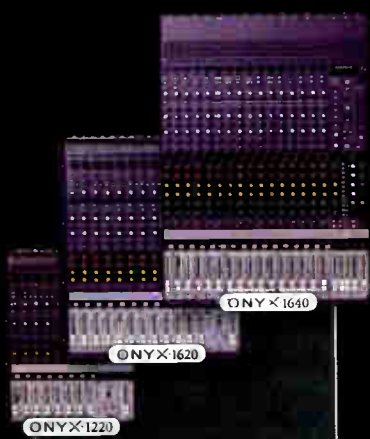
Sonic Distribution (Somerville, MA), exclusive distributor for SE Electronics, has brought in **Bob Reardon** to build its new U.S. operations and become a partner...**Mark Karnes** is the new general manager of **Shure's** (Niles, IL) Personal Audio Business Unit...Music production company **Endless Noise** (Santa Monica, CA) named **Roxanne Morganstern** associate producer...**Duane Paulson** has joined **Gibson Audio** (Washington, D.C., a division of Gibson Guitar Corp.) as VP of technology strategy; Paulson's office will be based in Minneapolis...**Montbonnot**, France-based **Digigram** hired U.S.-based **Jimmy Kawalek** as worldwide business development manager for the licensing programming of the company's **EtherSound** technology...**Yamaha** (Buena Park, CA) appointed **Paul Furtkamp** as national sales manager of its Commercial Audio Systems Division...**Synth** manufacturer **Dave Smith Instruments** (St. Helena, CA) has brought in **Dave Bryce** as its new national sales manager and marketing consultant...**Matthew H. Shein** is **Community's** (Chester, PA) new marketing and advertising manager. In other marketing news, **Inter-M Americas** (Chester, PA) hired **Grace Paoli** as marketing services manager...**FiberPlex's** (Annapolis Junction, MD) new national sales and marketing director is **Sam Spennacchio**...**Tascam** (Montebello, CA) updated its management team with **Marsh Gooch**, national marketing manager...Updated distributor lists: **Communication Resources** (St. Louis) will represent **TC Electronic** (Westlake Village, CA) in Missouri, Kansas, Nebraska, Iowa and southern Illinois; **Universal Audio** (Santa Cruz, CA) added **Neil Ziesing** of Group 55 Technology Consulting (New Jersey) to its roster of field sales reps. Ziesing will manage the Northeast region; **Midas** and **Klark Teknik** (Worcestershire, England) appointed **D and D** (Tel Aviv) as exclusive distributor in Israel; **SLS Loudspeakers** (Springfield, MO) will be handled in Italy by **Kennell SAS** (Torino, Italy); **Stardraw** (NYC) resellers now include **Simply Reliable Software** (Brookline Village, MA) and **AudioSales** (Austria).



Mark Karnes



Marsh Gooch



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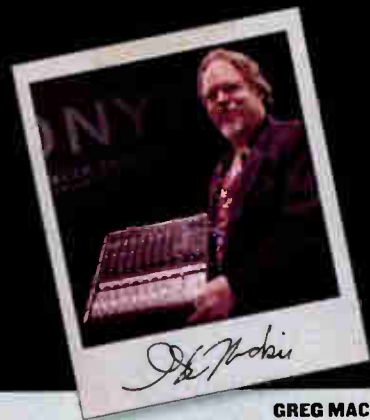


Sure, you could opt to spend your cash on dedicated FireWire I/O boxes, outboard studio mic preamps, outboard British-style EQ processing, a mixer and recording software. Or you can just visit your local Mackie dealer and check out an Onyx mixer.

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GREG MACKIE, our founding father, shows off a killer shirt and an Onyx 1220.

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NOTES FROM THE NET



Heart's new album, *Jupiter's Darling*, was released over the Trusty-Files (www.TrustyFiles.com) P2P file-sharing software, which distributes to most major P2P sharing networks, including KaZaa, Gnutella and eDonkey. "Ann and Nancy Wilson of Heart have always been an innovative force in music", said Paul

Angles, director of Internet marketing at Sovereign Artists. "Their first concern is reaching out to the fans they love. That's why they made *Jupiter's Darling* and that's why we're distributing over P2P, where they can reach the most people." Fans can download the tracks in Windows Media format and play them on most major media player software and portable music player devices. The songs are packaged as Weed files, which provide five free Heart songs for new users.

SunSpot Productions (www.SunSpotsProductions.com) launched ezCAST, where ad agencies and others can search through more than 500 voice talent auditions in 50 languages and thousands of audio/video clips; 20 to 50 clips are added each day. Visitors can search by keyword or voice style and add voice talent to a "Talent Cart"; audio delivery is via SunSpots FileZap. Users can e-mail links of the talent A/V clips to clients or to themselves. At the end of each visit, users can "Checkout" and schedule a session online. The company uses terabytes of storage for instant retrieval of sessions by clients, a 20-Gigabit network, multiple T1 lines and 11 high-end servers in its in-house data center. The company's high-speed network allows audio engineers to download gigs of session files in moments and quickly preview/retrieve more than 14,000 effects via its Sound Effects server.

Relive the Abbey Road days online. At www.abbeyroadshop.com, the studio has launched a new range of T-shirts and souvenir items online. The line will be expanded in the near future with new products and special limited-edition collector's items.

Berkleemusic.com's September 2004 semester is now in full swing, with the school providing courses for college credit and 17 certificate programs in studio production music theory, songwriting, arranging, electronic music production and music business. Certificate programs in Music Production include courses in mixing, mastering, producing with Pro Tools, MIDI sequencing, sound design and desktop music production. Winter semester online classes start January 10, 2005; enrollment deadline is January 6. For more info, visit www.berkleemusic.com.



NYC GETS BIONIC POST BOOST

Keyframe Post-turned-Bionic Media (New York City, www.bionic.tv) has expanded its space to include nine edit suites with Avid Media Composer, Symphony and Xpress Pro; three audio mix suites (all with dedicated voice-over booths and surround/HD-ready); and a large live recording room. Each audio room offers Digidesign's ICON, making Bionic Media one of the first to purchase the console after the product's NAB 2004 debut.

"At NAB, I wanted to walk out of the convention center with ICON under my arm," said Bionic senior audio engineer Tim Wagner with a laugh. "It's amazing that they were able to wrap so much functionality and technology in such an attractive package. This is a piece of hardware that is going to change the way everyone mixes." One day after ICON was installed, senior engineer Brian Rund mixed a half-hour show for ESPN.



"I Switched"

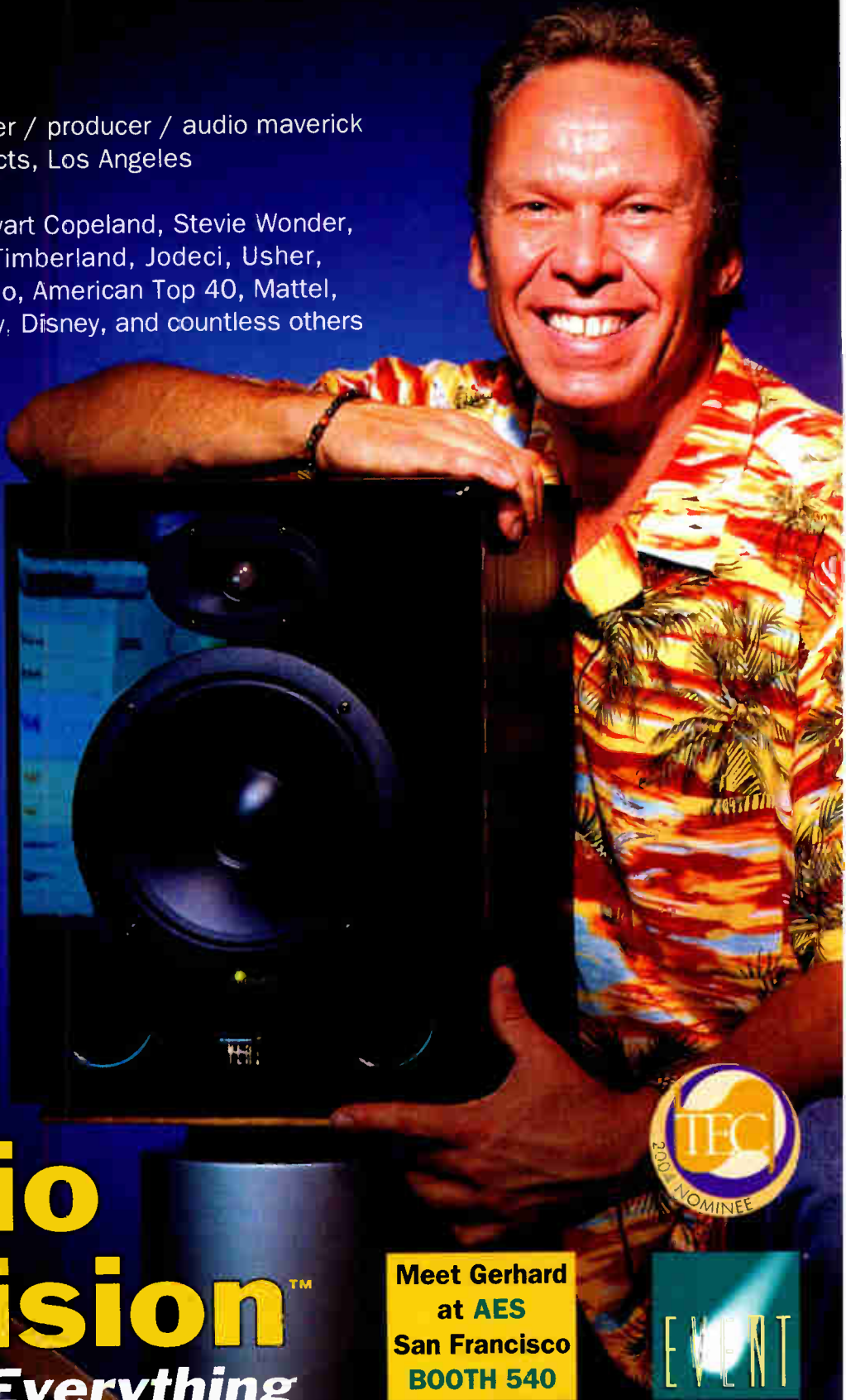
Who: Gerhard P. Joost II

Occupation: Engineer / mixer / producer / audio maverick
Chief Engineer, Groove Addicts, Los Angeles

Clients: Danny Elfman, Stewart Copeland, Stevie Wonder, Teddy Riley, Missy Elliott, Timberland, Jodeci, Usher, Salt 'N Pepa, Silk, BBC Radio, American Top 40, Mattel, McDonalds, Budweiser, Sony, Disney, and countless others

Why He Switched to Studio Precision 8 Bi-amplified Direct Field Monitors:

"Sonic environments change, and so do the demands of my work. The one thing that can't change is my ability to rely on my ears and my monitors. That's why I chose Studio Precision 8s. They stand up to the demands of all monitoring requirements, from tracking a rhythm section to mixing a full orchestra. And since switching, I've received so many compliments on 'the sound of the room.' I've never enjoyed the ride so much."



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Skywalker Sound

By Tom Kenny

We tend to give a lot of ink to Skywalker Sound, and with good reason. First, it's Skywalker Sound, and the mystique generated by the name itself has reached beyond our industry into the worldwide vernacular; sort of like Abbey Road. Second, its independence is anathema in this age of consolidation, with companies like Ascent and Technicolor challenging the studio lots with new economies of scale. And third, the people at Skywalker have quite simply set the standards for feature film sound, both technically and creatively.

Star Wars, *Indiana Jones*, *Terminator 2*, *Jurassic Park*, *Fight Club*, *Contact*, *Saving Private Ryan*, *Titanic*, *Finding Nemo*—these are the types of films that have pushed the proverbial envelope of film sound over the past 25 years, and all were edited and mixed at Skywalker Sound, along with countless others. On the day *Mix* visited this fall, Pixar's *The Incredibles* had just wrapped, Randy Thom was finishing up the final on *Polar Express* and Christopher Boyes was nearly done with the dark and moody effects pre-mix on the new Gore Verbinski picture, *The Weather Man*.

So the rooms are full, at least for now, and on the horizon is *Star Wars Episode III*, so the Technical Building will remain lively. But even the top facilities are under pressure to fill rooms these days—and it's not easy. With fewer films in production, the UK tax credit leading to offshore mixes and the ongoing consolidation among post facilities, it's tougher than ever to bring in moneymaking projects for any length of time. Consequently, everybody in post, Skywalker included, is looking for new opportunities.

Toward that end, Skywalker recently underwent a major expansion and renovation of its famed Technical Building. Two of the larger mix stages, G and D, have been rebuilt to include large client lounges and producer areas, with large glass windows opening onto the dub stage. Nine new 6.1 sound design/premix rooms, all tied to the various stages, are coming online. Also, a Hitachi 9980V central storage server was added, along with Apple Xserve and Xraid, bringing machine room FibreChannel storage to 38 terabytes. And a new Skylink service, developed with codec manufacturer APT Technologies, has been implemented for remote work.



Glenn Kiser

"We were handed this pretty big mandate from George [Lucas] in anticipation of *Episode III*," says VP/general manager Glenn Kiser. "Basically, we want to minimize our need to be on an expensive mixing stage for pre-dubbing. So everything on *Star Wars* is to be pre-dubbed in the workstations in a 6.1 environment, and we only go to the dub stage for the final mix. We've used that approach successfully in the past on some lower-budget features, but never on a movie of the scope and complexity of *Star Wars*. We're changing the physical space, but we're changing it to match a working style that we've been developing over the course of many years, one where we blur the lines between the edit and the mix."

"We're finally able to reach the vision that George had for digital post back in 1984 when he built this place," adds Tim McGovern, director of engineering.

So what's good for *Star Wars* should be good for outside clients. Over the past few years, Skywalker has continued to get its share of blockbuster sound jobs, but, reflecting the industry at large, they've also seen a rise in the number of budget-challenged independent projects. The new facility, according to Kiser, will allow clients to take advantage of the edit/mix talent, make use of the world-renowned library and provide scheduling/budget flexibility.

At the same time, it's no secret that Skywalker will be making a bigger push into television sound. By making use of its remote APT services, the facility recently contracted with

Fuji Television in Japan for a feature film called *Lorelei*. The mix is done at Skywalker, then encoded and sent "store and forward" to a local hard drive in Japan for approval. Using this new remote collaboration technology, they also have started work on *Nightmare on Elm Street*, a New Line TV series. Mixes are done in Northern California, then sent directly into the cutting room in L.A. for playback.

"TV has always been a difficult market for us because of geography," Kiser explains. "But using our remote collaboration tools, we can send mixes directly to the picture editing rooms in L.A., and it's actually easier than having people drive across town. So we can do TV, documentaries, short form and long form. If you listen to these shows, the gap between feature film sound and television sound is narrowing. And as HBO and those types of groups move more into HD broadcasting, the bar will only get higher in terms of sound expectations."

This new working model, housed in one of the world's leading post-production facilities, both reflects what's going on in the industry at large and establishes a benchmark for smooth, flexible operation at the top end. Yes, Ascent, Technicolor, Universal, Sony and others are incorporating similar creative/technical methodologies, and people have been mixing in Pro Tools for years, but as one of the last of the independents, Skywalker has once again put its stamp on the creative use of technology. ■

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Brie New Life

Into Your Rock Recordings

I woke up this morning and went directly down to the little bay in Antibes. That used to mean I would fry in the sun, drink beer and eat olives, chat up the locals and splash around in the Med until well after dark. (Night-time waterskiing is a big deal here.) Pretty disgusting.

But since my left arm doesn't really move above mid-chest and I have done nothing to test my swimming abilities since the crash, I climbed down the rocks into the living, surging emerald weightlessness. No beers, no fears—time to try to swim. As soon as I hit the water, a solid rip pulled me away from my friendly protective boulder and I found myself quietly, if not voluntarily, moving offshore.

Under other conditions, this would have been a peaceful, relaxing, possibly dozing experience, but as it is quite late in the year and water temps are off their peaks, my little swim turned out to be an invigorating envelopment that promised no accidental napping.

As this really was my first swimming experience since having 39 bones snapped (new count—my shoulder and parts of my back remain happily broken and will not fuse without additional surgery), I set a modest initial goal for myself: to swim a modified (half-assed) side-stroke to the first breakwater about 500 meters into the bay. This type of sidestroke was of course chosen because only my right side works, but it had an interesting side effect. It is totally noiseless, and if paced properly can be done for a very long time.

As I swam further from the shore, I became very much aware of what was happening acoustically. First, the obscured, rambling French wafting from the pretentious little slabs of concrete sold as private beaches began to transform into distinct conversations—several clear, identifiable interactions that sadly remained meaningless noise to me as I don't speak French. But other conversations reached out to me, as well, in German and Dutch. Traffic noises all but vanished, and I was left floating in an undulating azure gel as the world unknowingly told me exactly what it thought of itself.

Then I made the targeted breakwater, and it seemed that there might be a reasonable chance of making it across the entire bay if I kept a steady pace and didn't mind missing lunch, so I swam on.

Halfway across, all voices faded as the city's noises had long before. I found myself with only my own



The cove that Stephen swam up to, photographed here just before sunset

PHOTO: STEPHEN ST. CROIX

breathing to listen to. Remember, I was swimming in a way that never breaks the surface of the water. There was no splashing at all, save an occasional curious fish.

Then, realizing that the fastest I could make landfall was about 45 minutes, I gave up and headed out for a large point three bays away. If you are having trouble following this leap of logic, don't worry—I'm not too sure why it made sense to me at the time, either. Maybe that's the point. I wasn't sure it was doable, so it had to be done.

Anyway, I did in fact make landfall about three hours later and climbed up onto a craggy, razor-sharp bluff surrounded on three sides by the Mediterranean and bathed in the rose light of a now setting sun. And just as I turned to discover that I couldn't even see the bay from which I had disembarked, I realized that the tune in my head wasn't in fact in my head at all, but was being provided by a rather beat-up-looking guy sitting on a rock above me playing "Hotel California" on the remnants of an acoustic guitar. Simply, beautifully and in-tune.

The acoustic environment on this point of 3- to 20-meter vertical stone shards jutting 300 meters into a cool, salty, undulating acoustic reflector produced a sound that was fresh, alive, honest and startling.

I never said a word to him; he never stopped playing. I quietly slipped back into the ocean and began my silent race against darkness. And as I swam, I couldn't stop thinking about what I had just heard, and about acoustics and the art of recording. Hell, if I were to stop thinking about that, I'd start thinking about how damned fast it was getting dark.

During my night swim home, I thought about some of my more obscure acoustic guitar recording habits—aberrations in technique that have yielded good results

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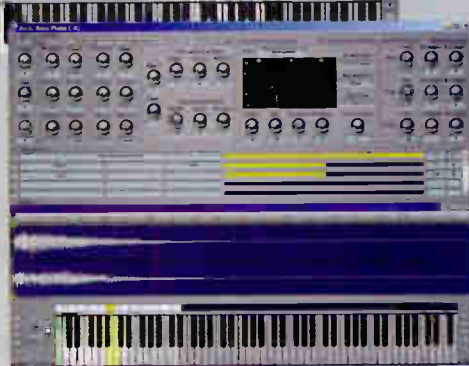
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for me, though they be a bit unorthodox.

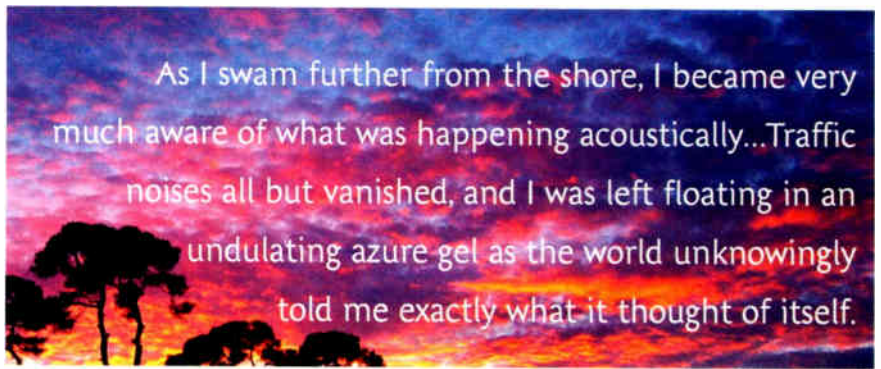
And so as I am now reasonably dry, though a bit cold and salty, I present to you these most useful experiments.

The acoustic guitar is an instrument that is almost always abused, perhaps because it is not in much demand in today's financially successful musical offerings. I personally (though accidentally) listened to several hip hop pieces recently and found very little acoustic guitar and almost no acoustic guitar solos.

And though this does not bode well for the rumored upcoming Peter, Paul and Eminem CD, it is an instrument that deserves a place in our modern music. So what to do to gain serious control and develop new sounds that are still organic and acoustic? If the acoustic guitar has been relegated to almost cliché level, then it is time to think outside the sound box. The only good cliché is an altered one.

To start with, mike the sound hole—right-hand normally. This is pretty much inescapable. You know what mics you like by now.

But try miking the skin with a piezo or other contact mic at the same time. Place-



ment is everything. Tack it on with that blue rubber goo you can get at Home Depot or Staples for temporarily sticking pictures on walls—it won't leave any marks. Experiment. Experiment again. You will find places to tack this mic that will give you an amazing edge, a sort of superpresence that you can mix back in to add a sharp intimacy without boosting 10k or other lame tricks.

Placement determines the relationship of pick transients to note body, HF to LF, resonances and endless other things. I generally go for maximum transients from the piezo and forget body. I then mix it in (af-

ter delaying it acoustic about 1 ms to re-align with the acoustic mic).

This trick allows you to choose mics and mic placement for warmth and body without concern for crispness and transients, as the piezo will be providing those. This flexibility allows a significantly expanded range of options, and I have achieved sounds that are unique and, well, superior.

I believe in far-miking over reverb if you have the room. I always have at least one other mic three meters out. Try insane angles. More often than you would think, you can get a nice ambience from way off-

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Still got extra disk space? Add yet another mic real close to the soundboard's lower right area and roll off the low end to pull up the lighter-gauge strings.

And if you don't get what you want by

mixing these tracks back in, send them to your reverb. I have always been a fan of sending almost any other feed from an acoustic instrument to a reverb instead of the main feed when I want a special accent or feeling but don't want to resort to a crude and overused special effect. I believe in the subtleties of a 600 HP V8 and a subliminal acoustic effect, but I don't personally have much interest in predictable and clearly audible effects used to mask a boring performance or mic job. Give me either extreme and forget the middle. Everybody else will fill that in for you.

So. With all this and tricks like compressing the fingerboard accents while expanding the primary mic's signal, you can treat an acoustic guitar like a multi-layer, velocity-crossfaded sample. You can easily exaggerate the transition from light and intimate to strong and powerful with an absolute minimum of overall level shift. This is a unique sound, to say the least. If done properly, it sounds entirely natural and correct, yet hauntingly alive and mysterious.

POSTSCRIPT: ELECTRIC GUITAR

I just thought it would be healthy to take the leading actual mechanical instrument and reduce it to a post script.

If you have ever been unlucky enough to play an Ovation Breadwinner or lucky enough to play a Fly, you know that the piezo trick works very well for electric guitars, as well. If you go to the trouble to learn how to mix in that clean, sharp acoustic attack with a meaty, thick electric guitar, you will expand your toolkit more than you can imagine. A hint of clean acoustic-like clarity can add a strange and appealing edge to slinky blues and even general-purpose leads.


And of course I always set pickup heights as close to the strings as I can get away with—you can always take away that bite and dynamic range, but you can't add it. Not to mention the significantly hotter signal and reduced hum.

For the last several years I have only played through a THD amp with a Hot Plate. I can beat the hell out of every tube in there and saturate the poor transformer until melted iron starts to drip out, and still have total control of exactly how much the speaker itself is breaking up. I originally got the Hot Plate to keep my self-expression down to a non-deafening level, but after a few weeks I discovered that I was not as enamored with actual cone breakup as I thought.

And to close on the most extreme and ridiculous suggestion of all, mike the neck of an electric—if you can get the talent to place his cabinet in another room and wear tight, enclosed earphones so you don't get playback track leakage. Amazing effects can be had by all with some of that mixed in.

Or take a break and come visit me here. We'll swim up to that rock point and listen to that guy play. Sometimes you just have to step away a bit for fresh inspiration. ■

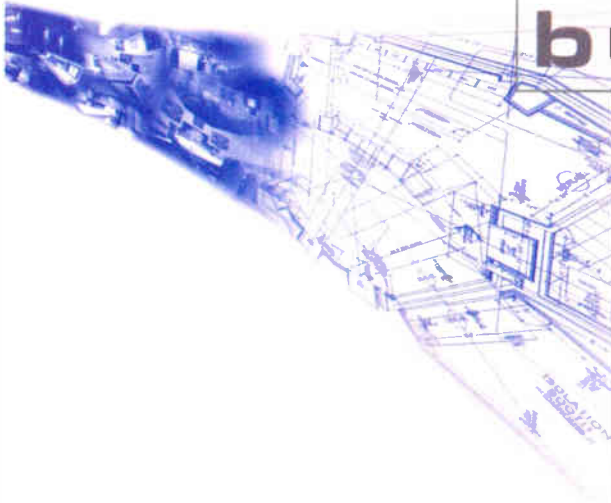
SSC is basking in the warmth of a rejuvenated appreciation of simple acoustics and instruments. So if you do go visit, wake him gently.




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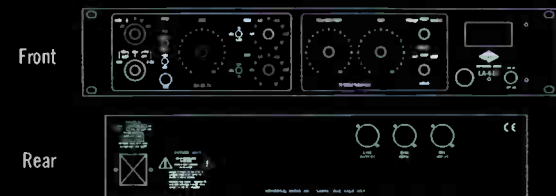
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Looking Backward

Four More Years?



ILLUSTRATION JACK DAVIS

So there I was, ambling around the floor at the San Francisco AES, minding everybody else's business but my own, when I came across a new company from a former Soviet Republic that was showing a really cool-looking tube preamp. I walked around the back and gently poked my finger at it, and that's the last thing I remember.

"Good morning," said the strangely familiar voice above me as I struggled into consciousness. "It's October 29, 2008, and you're in the Sacramento-by-the-Sea Center for Extended Life." I blinked a few times and looked up at the man in the white coat. "Yes, you've been out for four years. After the first six months, a lot of your readers wanted to just let you expire, but I thought you might be a good candidate for revival so I had you brought here. You'll notice you're in good company." I slowly turned my head and could make out in glass cases on marble slabs around me the frozen body of a fat guy with a huge black pompadour wearing a rhinestone jacket and clutching a Shure 55, another body with wild hair and a left-handed Stratocaster sticking up between his legs and an

androgynous being who might once have been Michael Jackson—or perhaps Joan Rivers.

"Big electric shock, right?" I managed to mumble. "Right," he said as he made some notes on a clipboard-sized PDA. "That preamp you were looking at? The country where it was made never signed any international agreements on electrical safety. Since the U.S. was pulling out of all its treaties, they didn't see why they should have to. No one told them they shouldn't put 1,800 volts DC on the chassis. It not only knocked you out, but it also took down the power grid in four states—not that that's so unusual these days."

The speaker slowly came into focus and I recognized him with a start. "Grump!" I gasped. "Yes," he smiled, "but they call me Dr. Grump now. After the record biz collapsed, I answered one of those e-mail diploma offers and I got myself a medical degree from the University of Western New Caledonia. I'm a licensed and board-certified re-vivificationologist. Since my kid and I did so well for a while digging up old music, I figured it might be fun to dig up old musicians. Welcome to the future!"

Music Technology E-Tail

In most cases, convenience isn't without a price.



The Internet has revolutionized the way we buy things, from music to medication and everything in between. Music technology is no different; in fact, technology savvy musicians, producers and engineers are even more comfortable buying online than the average consumer. However, for most Internet retailers, or “e-tailers,” the concept of having an online presence amounts to little more than offering a consumer the option of placing an order any time of the day or night. While the level of convenience in placing an order at 2 a.m. might be nice, it’s often gained at the expense of customer service. Music retailers, most of whom are not exactly known for customer service in the first place, don’t ever have to interface directly with their online customers who, in turn, are left to fend for themselves when trying to decide what to buy or how to use the gear they’ve ordered.

ONLINE EASE PLUS THE PERSONAL TOUCH

Sweetwater is one music technology retailer that sees the Internet as a means to expand the level of support they offer to their clients rather than simply an automated 24/7 order taker. In fact, every single order placed at [sweetwater.com](http://www.sweetwater.com) is confirmed by a phone call from a sales engineer. Rather than replace competent salespeople, [sweetwater.com](http://www.sweetwater.com) acts as the virtual gateway to an entire staff of music technology experts, all of whom are willing to engage in a one-on-one discussion of your equipment needs.

Nearly a decade ago, Sweetwater was the first music retailer to go live with a website, and over the years, the company has consistently managed to stay a step ahead of their competition in taking advantage of the value that the web is capable of providing to their customers. What started as purely a content-based site branched out to include a full e-commerce section, weekly e-mail newsletters chock full of information about using the gear they sell,

an active community of music technology forums moderated by industry pros, and the most comprehensive tech support database anywhere.

CUSTOMER EDUCATION IS THE KEY

When the site first went live, the company saw the Internet as a way to help educate customers about the products available, providing not only manufacturer spec sheets but also product reviews and buying advice from their staff of expert sales engineers. “We realized pretty early on the reach that the internet had and that we could use it to keep our customers informed about all sorts of industry related news, including product release dates, price changes, and more,” says Chuck Surack, Sweetwater’s founder and President. These days, the site offers comprehensive information on thousands of music technology products, including everything from product manuals to audio and video demos.

One of Sweetwater’s earliest online innovations was *inSync*, launched in early ’97. Long before the concept of “blogging” became popular, *inSync* established itself as a section of the Sweetwater site, updated daily, where the company provides technical tips, music technology glossary terms, assorted industry news and product information. Seven years later, *inSync* is still going strong, updated daily on sweetwater.com and sent out in digest form once a week free of charge to thousands of subscribers. In 2002, Sweetwater added *GearNet*, a weekly e-mail newsletter that specifically addresses price reductions, special deals and new product releases, among other things.

SUPPORT BEYOND THE ORDINARY

Often, the evolution of sweetwater.com has happened as a function of customer feedback. Sweetwater customers have come to expect a high level of after-the-sale support and want access to that resource online. As a result, there’s an entire section of the site devoted to customer support. Dubbed “Sweetcare,” it’s a comprehensive approach to online support, including the ability to track orders online, searchable technical tip and glossary archives, and the largest music technology support database anywhere. Looking for the hard reset procedure for your old Korg M1? You can find it in the Sweetwater technical support *Knowledge Base*, along with thousands of other tidbits of useful information. The *Knowledge Base* is updated several times a week, based on the research of Sweetwater’s award-winning technical support staff.

The innovation at sweetwater.com continues even today. Recently, the company added the *Virtual Guitar Gallery*, where visitors can get an up close and personal look at many of the guitars Sweetwater has in stock and select by serial number the exact instrument they would like to buy.

When asked what the future holds for sweetwater.com, Surack simply smiles. “We’ve got a few more things up our sleeve,” he says. If the past is any indication, the online future for Sweetwater looks pretty bright. If you’d like to know more, give them a call at (800) 222-4700, or visit www.sweetwater.com for yourself.



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I pondered the loss of four years of my life. When I was able to talk again, I croaked, "How did the record industry collapse? Did all that downloading finally take its toll?"

"Heck no, downloading's all that's left. Apple's making way more money on music than they ever did on hardware and even Wal-Mart's gotten into the game with their Wal-Man player and Wal-Muse Store. It's particularly cool because it not only keeps track of each song you download, it also knows exactly where you are when you listen to it. CD prices had gone up to \$24.99, so naturally, the record stores just dried up and blew away."

"And the RIAA just let this happen?"

"Are you kidding? The RIAA *loves* it. No manufacturing, no shipping, no inventory, just electrons flowing out and cash flowing in. And they've got friends in big places. Once they finally got their heads out of the sand and figured out what was happening, they bought off enough members of Congress and created their own cabinet-level agency, the Department of Information Security: DIS. Then they got the FCC to put a mandatory surcharge on everyone's cell phone and Internet bill to offset piracy. Of course, they're not telling where any of that money goes. Then they got the length of copyright extended to death of the creator's last descendant plus 200 years and doubled the statutory mechanical royalty—but only for master recordings, not for composing or publishing.

"Now they can just keep charging over and over again for stuff they already own and it doesn't cost them anything. There's no point in making any new recordings—there was always that risk that something might not sell a million units—so they just stopped."

"How do they protect themselves against file sharing?" I wondered. "Didn't the courts decide that Grokster and those guys weren't illegal last summer...I mean," I gulped, "in the summer of '04?"

"You betcha. So the President made a speech condemning 'judicial activism' and Congress went ahead and passed the Ronald Reagan Inducement of Copyright Infringement Act, which made it illegal to make anything that could possibly be used to get around any type of copy protection. All of a sudden, CD-Rs, DVD-Rs, VCRs, TiVo and Toast all went away. Remember that kid you knew who wrote Audio Hijack? Well, they put him under a restraining order, and last I heard, he was doing data-entry for H&R Block."

"But what about people making their

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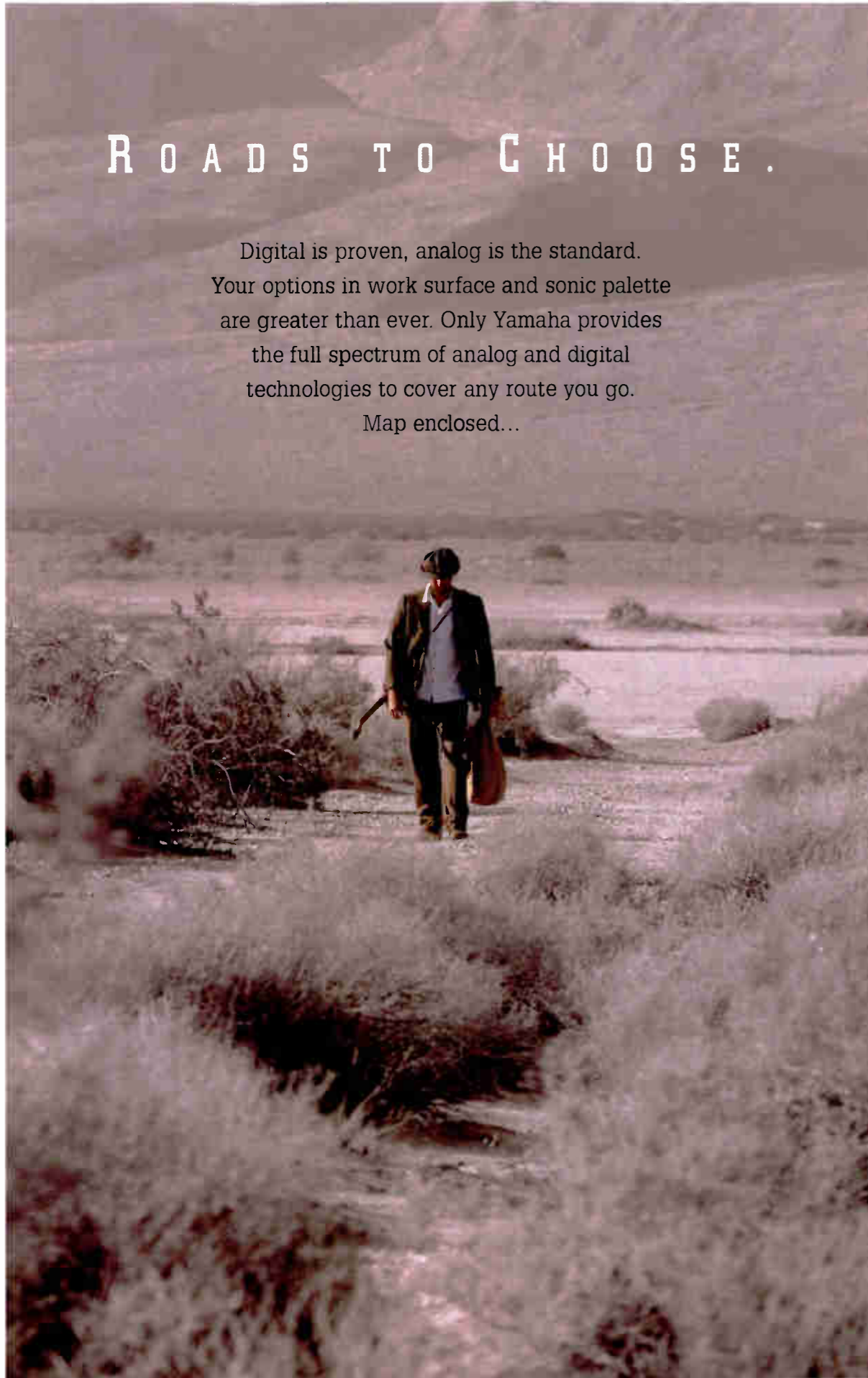
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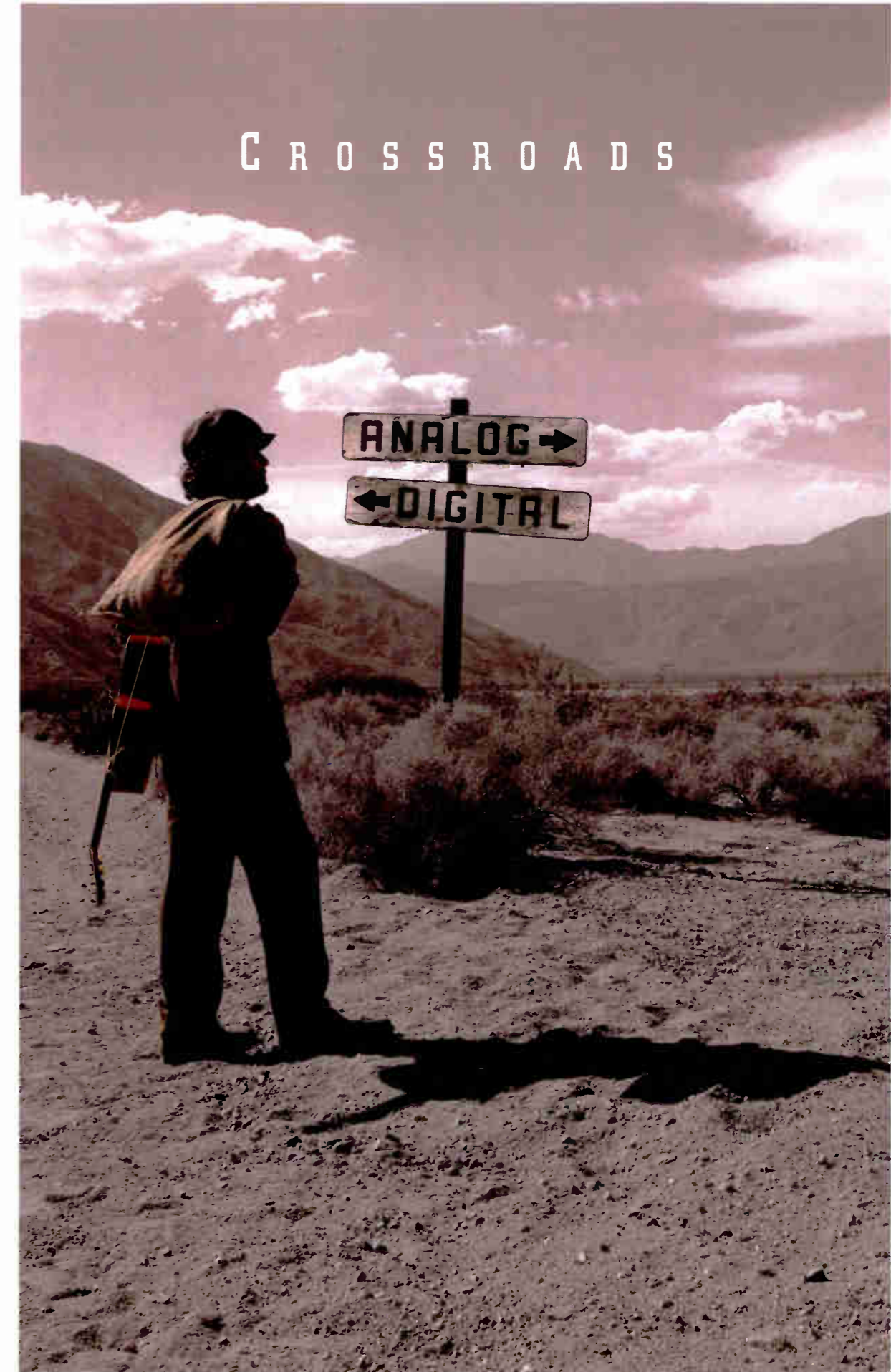
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own music and selling it on the Web?"

"You can still do that, but after the invasion of Iran, some pissed-off script kiddies hacked into a couple of top-secret DIS directories—they were running the new supersecure WIndows DEbugged OPerational ENgine—and now you can't put up a Web-commerce site and have it last for more than three days before all your customers' credit card numbers get snatched and the site turns into an ad for penis pills."

"Yuck! Did they find those guys?"

"They found them, but they claimed to be under contract to some secret private intelligence service run by Halliburton, and said they were hunting for Osama bin Laden by triangulating his cell phone and his dialysis machine. So now they're in a federal protection program in a secure, undisclosed location. In the Cayman Islands."

"But Hollywood is still making movies, right? Don't they need music?"

"Sure, but the new copyright law says that once a piece of music is used by any corporation, it becomes a 'work for hire': You get paid once, if you're lucky, and then your music doesn't belong to you any more. Who's going to work under those conditions? I'll tell you who: high school students with Garageband Xtreme churning out music by the truckload. The studios pay 'em off in Jolt Cola and movie passes. All they need to do is hire an editor with enough experience to know which 3 percent of the output not to throw in the garbage. If they need a singer, they just look in their own proprietary libraries of vocal-tract impulse responses of everyone from Stevie Wonder to Stevie Nicks, write some lyrics and YamaSony's VocalDroid 6 does the rest."

"How about concerts? You can't put a computer onstage and make people pay to see it, right?"

"When the FCC completely got rid of media ownership limits, Clear Channel bought up all the radio stations they didn't already have. Since anyone giving a concert in a venue that Clear Channel didn't own couldn't get an ad or even any of their songs on the air, not to mention a billboard, the promoters and venue owners all gave up and sold Clear Channel their businesses. So then they put in place a 'no-play' list of musicians whose songs they thought were dangerous, and that was the end of those guys' performing careers."

"There was all that talk about new music technology getting into the schools. In fact, I think we started putting out a magazine about that. Did that work out?"

"Well, after they lowered the highest-

est income tax rate to 9 percent, and the price of electricity went up a few-hundred percent, most public school systems started running bake sales so they could afford to keep the power on, which meant there wasn't a whole lot left over for frills like art, music, foreign languages and erasers. The parents still push the kids to take lessons, so a lot of them are doing it online. They figure if a kid is doing this, then he's probably not downloading porn or buying drugs. But most computers still come with speaker systems that you wouldn't put in an old pickup truck, so kids never learn what real music is supposed to sound like."

I swallowed hard. "Hey!" I exclaimed. "Is there still an AES conference?"

"Well, that's a sad story. Travel is hard,

stem-cell research, that whole community got up and moved to Denmark. Pretty soon, a company in Copenhagen came out with a really effective pill for obesity, but if you want to buy it here, it costs \$1,200 a month to make up for all the marketing costs. None of the insurance companies will pay for it—not that anybody has insurance any more—so you oughta see the busloads of fat folks heading to Vancouver and Montréal every other Tuesday."

I pondered this for a moment. "Yeah, but lots of people come up with cool stuff on their own. How about the guy in his basement who's designing the next new mic or MIDI doohickey or guitar gizmo?"

"The problem with that is as soon you show a prototype, someone in Indonesia is

The new copyright law says that once a piece of music is used by any corporation, it becomes a 'work for hire': You get paid once, and then your music doesn't belong to you any more. Who's going to work under those conditions? High school students. The studios pay 'em off in Jolt Cola and movie passes.

—Dr. Grump

even if you can afford the gas. With all the extra security, it was taking longer to get onto an airplane than to fly wherever you were going. Airlines cut their fares and tried to hire non-union pilots. The government helped by de-funding the National Labor Relations Board and declaring that any union threatening to strike was a terrorist organization. But after the first couple of mid-air collisions, everyone stopped flying altogether. Amtrak was cut up into little pieces, and each one was told to make a profit or die. But no one had any money to maintain the railbeds, so you couldn't get from here to there. AES merged with SMPTE and NARAS and NAMM, and now there's only one combined show every two years at the Jolly Roger Motel in Anaheim. Of course, NAB still brings them in to Vegas."

"So how do new products get introduced? How does anybody get to kick the tires and hobnob with the developer?"

"What developers? All the decent scientists and engineers have left the country or are working at Starbucks. It started with biotech: After the National Science Foundation announced that they wouldn't fund any

going to reverse-engineer it. They'll have it on the market at one-third the price it would cost you to make it before you can even locate a vendor for your on/off switches. What's left of the Customs Service is spending all their time looking for terrorists in barrels of falafel mix, so there's nothing keeping these knockoffs from getting into the country."

"But what about software? Anybody can write software and it costs next to nothing to produce and sell it."

"Yeah, but who's going to write it? Anyone considering a career as a software engineer is going to be up against millions of people being trained in Asia who are thrilled to work for a tenth of what you need to live on. American companies keep lobbying for tax breaks to hire in India and Pakistan, and for some reason, they keep getting them so that their margins can be even better. American kids see this and figure, what's the point in learning how to write code? A few of them still do anyway, mostly to hack video games, but even if they come up with something that's marketable, there's no way to protect it."

"What do you mean? Don't they still enforce copyrights and patents?"

"The DIS is supposed to, but they're not interested in *your* copyright unless you can convince them it's a matter of national security, which means you have to be Disney or Warner Bros. or Fox. So you're on your own, and that means suing. Since the Federal courts have been packed by double-digit IQs, they're clogged up for years. And the patent office hasn't been any help since they moved out of Washington."

"Out of Washington? Where the heck did they go?"

"The federal budget office found out they could save a few bucks by outsourcing it, so they turned the whole operation over to a company in Uzbekistan as a way of thanking them for being part of that Coalition of the Willing. 'Course, no one reads English there, but that didn't matter since the examiners here had stopped reading patent applications years ago. So now it's all automated.

"Turns out, though, that the Uzbeks have been trying to make a little extra on the side by giving every applicant's contact info to their spam and phishing divisions. It kind of puts a damper on things when after each time

you file a patent application, you have to cancel your e-mail and bank accounts. Some senators are trying to push through a bill, the Secure Computing and Registration Undertaking, or SCRUCR, that would cancel the Uzbeks' contract if they don't stop it, but the President says he's going to veto the bill since it would constitute unwarranted interference with global free trade. Besides, no one even wants American technology any more."

"They don't?"

"No, the whole world has gotten so pissed off at us that they've been boycotting everything from Chevrolets to cheddar cheese. And they especially don't want our music any more."

I was dumbfounded. "But the America I know wouldn't put up with this," I finally managed to blurt. "Isn't anybody protesting? What happened to Michael Moore and Al Franken and all those musicians and actors who were so good at getting people riled up?"

"The same week that Mike won his six Academy Awards, Congress revived the Sedition Act of 1798. The President made this inspiring speech in which he called it 'one of the great achievements of our revolutionary forebearers' and a 'long-deglected

piece of our national compassionate conservationist heritage,' and they gave him a standing ovation and went ahead and passed it, even though no one had actually read it. It turned out that it made any statements of any kind against the government or any of its officials or their actions a felony with a mandatory sentence of 20 years.

"The first person they went after was Bruce, but they let him plead to misdemeanor treason as long as he agreed to record 'Born In the USA' without any of the verses and sell the exclusive rights to Rupert Murdoch so he could use it as his theme song. After that, Franken went back to writing jokes for *Saturday Night Live*, Steve Earle and the Dixie Chicks learned Chinese and took off on a five-year tour, Tim Robbins got into soft-core and Moore ended up in France making Euro-anime."

I closed my eyes and lay back on my slab, wishing I had never woken up. "How could this have happened?" I whimpered. "How could such a great country let itself get into this state?"

Paul Lebrman would like to thank Jock Gil and David Battino for their ideas and inspiration. And please don't forget to vote.

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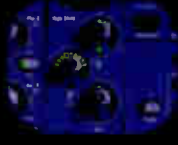
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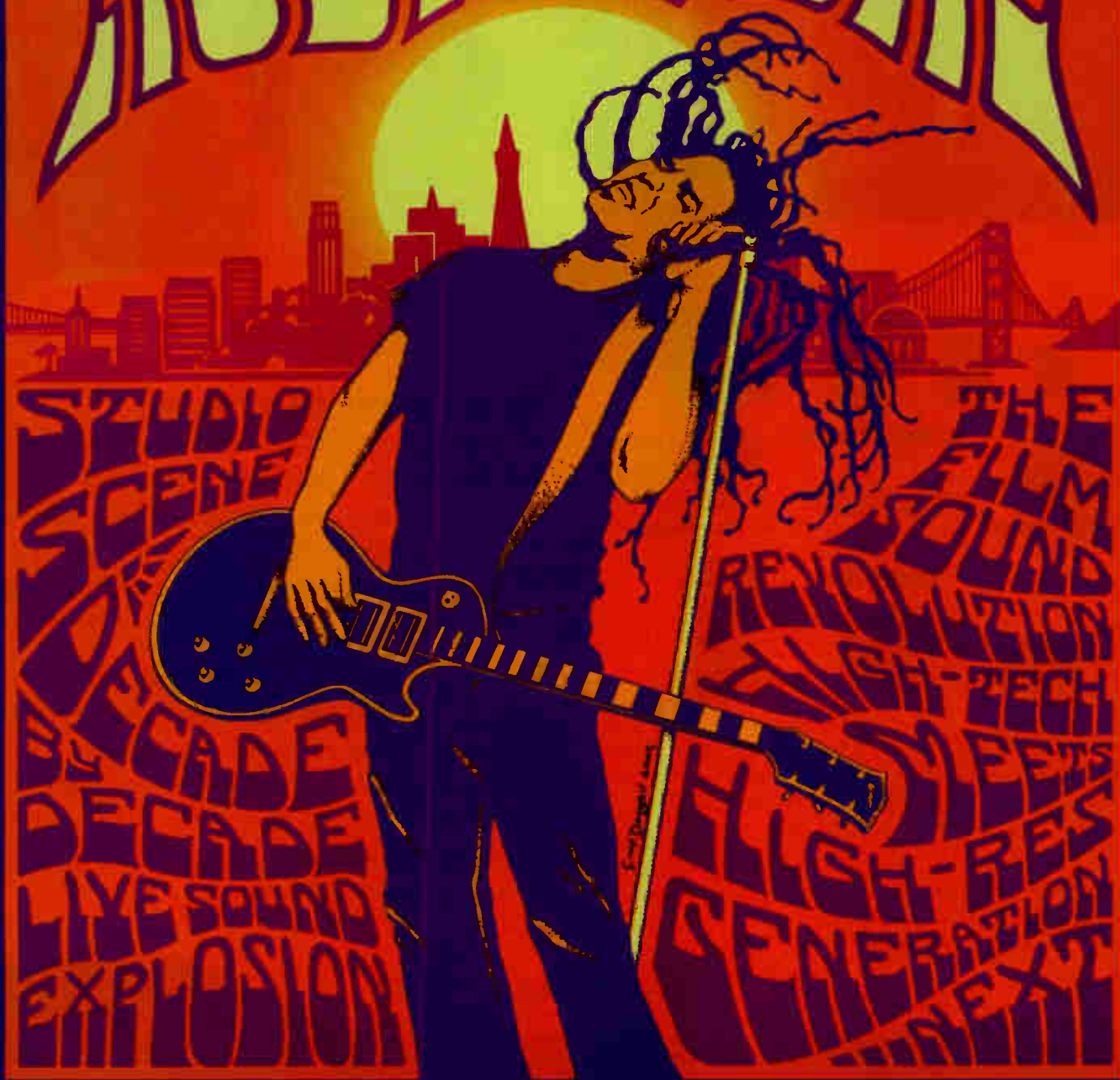


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Living on the Faultline

Okay, let's cut to the chase. We don't have room in our beautiful San Francisco Bay Area for *all* of you AES attendees to move here, much as you'd like to. Look, the housing prices here are ridiculous. We pay more for gas than freakin' Hawaii does. And what's with that "summer" weather? Don't forget to pack your parka. Swimming in the ocean? *Fuggedaboutit!* The Bay Area *invented* political correctness, so keep that attitude of yours at home, buddy. What do you mean you don't like arugula or goat cheese? Heard any good jokes about L.A. lately? Gavin Newsom for president in 2012! Don't call it Frisco—unless you're a Hell's Angel. And you might as well stay over through Halloween and enjoy the big night on Castro Street: That Judy Garland costume you have will be perfect!

Why is it that the Bay Area has always been a magnet for nonconformists, eccentrics and wackos? Or, put more nicely—for artists, visionaries and trendsetters? Is it the fact that we are on the edge of the American mainland, separated from the East by mountains and desert, and perched on the limitless expanse of the Pacific Ocean? Does our hedonism stem from the knowledge that in less than a minute, the carefree life we've built here could be reduced to heaps of rubble by the Big One so we might as well have fun until that moment? (Just a little something to think about in your high-rise hotel tonight!)

Whatever the case, this is an area that has always reveled in its diversity—racial and social—and its stubbornly independent spirit. It's not a coincidence that the Beat movement flourished in San Francisco's bohemian coffee houses and art galleries in the '50s; that the Free Speech Movement got its start across the bay in Berkeley exactly 40 years ago; that the seeds of the hippie counterculture were sown in Haight-Ashbury. Down the San Francisco peninsula a ways, a bunch of iconoclastic guys wearing goofy glasses and pocket protectors changed the world—changed the way *all* of us work—in an area that became known as Silicon Valley. Punk was huge here. So was speed metal. Gay rights, women's rights, the environmental movement—everyone finds their niche here; *hakuna matata!*

It was the late Grateful Dead guitarist Jerry Garcia—a Bay Area native—who once referred to the appeal of San Francisco as "The call of the weird." And who are we to argue? The current *Mix* editorial staff is populated by folks from Indiana, Tennessee, Illinois, Massachusetts, New York and San Diego, with only the redoubtable George Petersen being a local product. Each of us was drawn here for different reasons, but we've all stayed because, somehow, miraculously...we *can!* How else can you explain why so many musicians, filmmakers, recording engineers, producers, writers, actors, poets and artisans of every stripe stick it out here when the safer career path would take them to New York, Los Angeles or some other higher-profile area?

The fact is the Bay Area has always been a secondary market. We just don't have the numbers—our geography won't permit it. So many people, particularly in the arts (and I include our business, which is really "arts technology," in that group), have to work a little harder sometimes to scrape up clients and make ends meet, and I guarantee you there isn't one among us who hasn't thought, "I could live in a *palace* in most places for what I'm paying for my rent (or mortgage) out here." But at the end of the day, here we are, in what is unquestionably one of the most beautiful and enlightened places on Planet Earth. Admit it—you're a little jealous.

Mix was born here 27 years ago and we've always been proud of our roots, even as we've been accused (fairly) of being a bit provincial from time to time. Now that AES has returned to our fair city for the first time in six years, we thought it would be fun to take you all on a Magical History Tour: to look at how our local industry has evolved through the years, highlighting some of the personalities and facilities that have thrived (or in some cases, fallen by the wayside) and investigating the current state of things. We're starting right on the next page, with our journey down memory lane in our look at the San Francisco studio scene over the decades.

Beautiful place, cool history. But remember...(you are getting sleepy, verrrry sleepy...look into my eyes...)...you *do not* want to live here.

Ciao, baby!

Blair Jackson
Senior Editor

Out of the Ashes, Into the '60s

One of many interesting footnotes about the great earthquake and fire that leveled much of San Francisco in 1906 is that the great Italian tenor, Enrico Caruso, was in the city at the time of the catastrophe. On April 17, he had given a brilliant performance in a production of Bizet's *Carmen* at the Mission Opera House. Early the next morning, he was rattled out of bed by the 'quake, and he and others in the traveling opera company were forced to escape the city as fires consumed building after building—including the Opera House.

The San Francisco that grew up out of the ashes of that fire was a city of contrasts. Wealthy bankers, industrialists and shipping magnates populated the nicer neighborhoods, while most of the city was made up of working-class folks of every stripe and teeming with immigrants: Chinese who'd come over beginning with the Gold Rush, and then waves of Irish, Italian and Spanish. Like any major city, San Francisco was home to many kinds of music. The San Francisco Symphony was

heard in saloons and brothels. (Jelly Roll Morton played S.F. in the teens.) Jazz bands popped up in the area during the '30s. Local orchestras (including one fronted by José Garcia, father of future Grateful Dead guitarist Jerry Garcia) played at dances around the city.

In the Fillmore and Tenderloin districts, particularly after the Second World War when there was a large influx of African Americans, there was an explosion of jazz and blues clubs: Ella Fitzgerald might be at the Long Bar, while Slim Gaillard held court at the Booker T. Washington Hotel. There was the Dawn Club, Club Alabam, Club Sullivan, The Blue Mirror, The Dragon Lady (in Chinatown) and for those after-midnight jam sessions, Jimbo's Bop City. There was also a major revival of traditional jazz spurred by some white players: Lu Watters, who led the Yerba Buena Jazz band, and Turk Murphy, who settled into a bar called Earthquake McGoon's and was a fixture in the city for decades. In the late '50s and early '60s, the place to hear great jazz was a dive called the Blackhawk. Miles and Monk both released albums recorded there, and West Coast jazz titans such as Cal Tjader, Stan Getz, Art Pepper and Gerry Mulligan were regulars. Bigger shows by the likes of Duke Ellington, Louis Armstrong and Ray Charles would more likely be at the Longshoremen's Hall. South of San Francisco, the Monterey Jazz Festival started in 1958 and became the biggest annual gathering of its kind on the West Coast.

I WANT TO TAKE YOU HIGHER

There wasn't much of a recording scene in San Francisco until the end of the '60s. Los Angeles was already well established as the West Coast's recording center. Most of the work done in San Francisco's few, mostly small, fa-

cilities was radio and television commercials for Bay Area stations and occasional music recording for local record companies. In the early and mid-'60s, much of the business in town went to three studios.

Musicians Lloyd Pratt and Steve Atkins started Commercial Recording in a former firehouse on Natoma Street. "It still had the pole," recalls Dan Healy, who got his first engineering job there in 1963 and later went on to work with the Grateful Dead, Quicksilver and other top S.F. bands. "The studio was on the second floor and there were live echo chambers in the basement. Virtually all of the commercials made in San Francisco came out of that studio. Later, when the rock scene was happening, I used to sneak in bands after hours and record them there. We'd be up all night with the Dead or Steve Miller, and we'd clean the place up as much as we could so they could do their regular work during the day."

In the basement of the historic Sentinel Building at the corner of Kearny and Columbus in North Beach was Columbus Recorders, which began its life in the late '50s as Trident Productions, owned by the manager of the locally based Kingston Trio, Frank Werber. The studio had a Langevin console and later was the first in the city to get a 3M 8-track. Many jazz and folk groups recorded there.

Over on Bush Street was Coast Recorders, where engineers Walt Payne, Mel Tanner and others did a wide variety of music and commercial work. Coast was the San Francisco base of audio pioneer Bill Putnam's United Studio Group, which also included United and Western studios in L.A.

Much funkier, but still historically important, was Golden State Recorders. It was there in 1964 that the Beau Brummels recorded the first rock hit to



PHOTO: COURTESY UNIVERSAL AUDIO ARCHIVES/DAVID AULICA

Inside Coast Recording Studios

established in 1911. The San Francisco Opera was formed in 1923, with its magnificent War Memorial Opera House completed in 1932. Around the rest of the city, the music reflected the times: Ragtime and stride piano could

come out of the Bay Area: "Laugh Laugh" for Autumn Records, a label owned by KYA radio DJs Tom Donahue and Bobby Mitchell. Always looking for talent, Donahue brought in all sorts of groups to record demos at Golden State, including, in 1965, the Emergency Crew, the *nom du jour* of the band that was about to become the Grateful Dead. Sylvester Stewart was an engineer there. A few years later as Sly Stone, he would become a superstar.

FEED YOUR HEAD

The San Francisco music explosion of the mid- and late '60s was caused by a confluence of events: the formation of a zillion bands in the wake of the British Invasion; the arrival of copious amounts of marijuana from Mexico and locally produced LSD (which was legal until October 1966); and the rise of a bohemian counterculture—in part inspired by the Beatniks, who thrived in S.F. in the '50s—united in its rejection of straight Madison Avenue society, its opposition to the growing War in Vietnam and its embrace of community, expanded consciousness and rock 'n' roll.

Haight-Ashbury was Ground Zero for the psychedelic movement, and it wasn't long before record company scouts were turning up at the various dances where the local bands played—the Fillmore Auditorium and the Avalon Ballroom being the most famous—hoping to sign the best of them. It's interesting to note that the first albums by every major San Francisco group were recorded outside of the Bay Area at studios run by their record labels: Jefferson Airplane made its first *four* records at RCA Studios in L.A. The Grateful Dead's first disc was cut at Warner Bros.' studio in L.A. Quicksilver Messenger Service's debut came out of Capitol in L.A. Big Brother & The Holding Company and Moby Grape were brought to Columbia Records' studio in New York. Of the great bands of the first wave, only Country Joe & The Fish stayed local, cutting their fantastic first album at Sierra Sound in their native Berkeley.

Coast and Columbus Recorders both thrived during this period, too, though not because of business with major labels. But where else were lesser bands like the Mojo Men and Sopwith Camel going to record?

Back in New York, producer David Rubinson, who'd worked with Moby Grape, tried to convince his bosses at Columbia to open a studio in S.F., but they weren't interested. So Rubinson left the label and, with his main engineer Fred Catero in tow, he moved to the Bay Area, initially hooking up with another transplant from New York, Bill Graham, who by the middle of 1967 had become the biggest promoter in San Francisco. "They were two *double-A*' personalities," Catero says with a laugh. Though the Graham/Rubinson business partnership did not work out, they remained friends and Rubinson quickly became a major player in the recording scene, setting up shop at Pacific Recording in San Mateo, a little south of San Francisco. Pacific had previously been operated by Jim Curcio and it was the first studio in the area to receive the ground-breaking MM1000 16-track made by the Ampex Corporation, whose headquarters was just down the road a ways. "It was fun and funky," Catero recalls of Pacific. "There was no glitz at all, but there were some great records made there." The first two Santana albums came out of Pacific, as did albums by Linda Ronstadt, Taj Mahal and many others.

Meanwhile, Paul Wesson and Sandy Jacobs, who'd run a small studio in the picturesque Marin County town of Sausalito, opened Pacific High Recording in a former plastics factory on Brady Alley in downtown San Francisco in 1969. Wesson designed the studio's console himself, mostly from Electrodyne parts, and the large 50x60 main room quickly became a magnet



Engineer Fred Catero and producer David Rubinson relocated to San Francisco from New York to open Pacific Recording.

for local bands. The Dead finished their third album, *Aoxoxoxoa*, (begun at Pacific) there and in early 1970, cut *Workingman's Dead* at Pacific High.

In June of '69, Coast Recorders moved into expansive new facilities on Folsom at Fourth Street, a sign of United Studio Group's commitment to San Francisco, which it dubbed "the new Nashville" in its newsletter.

As the '60s came to a close, however, one of the most famous and influential studios the city would ever know was built by an "invader" from L.A.: Wally Heider Studios was constructed in a building on Hyde Street that once housed screening rooms and a soundstage for 20th Century Fox. Heider's reputation preceded him from his exceptional facility in L.A., and in no time, the San Francisco studio eclipsed all others to become the bustling nerve center of the local recording scene. The studios—by 1971 there were four—boasted Ampex 16-tracks, the latest consoles (by Frank de Medio) and superb microphones. By year's end, Jefferson Airplane had recorded their *Volunteers* album at Heider's; Creedence Clearwater Revival had booked the first of many sessions there; and Crosby, Stills, Nash & Young were busy working on *Déjà Vu*. That was just the beginning for Heider's, and as a new decade arrived, there would be many more changes in the Bay Area recording scene. ■



The '70s

ONE TOKE OVER THE LINE

At the dawn of the '70s, three years down the line from the Summer of Love, the Bay Area music scene was strong and diverse. The Grateful Dead, Jefferson Airplane, Janis Joplin, Quicksilver Messenger Service, Santana, It's a Beautiful Day and other groups were successfully touring and selling a lot of records. No longer bound by the requirements of their record labels to record at in-house studios in New York and L.A., they mostly worked in Bay Area studios. All of the major labels set up offices in San Francisco, but only one, the relatively weak Mercury Records, actually had a studio there. There was a vital jazz scene that drew the best out-of-town groups and nurtured locals like John Handy, Vince Guaraldi and recent transplant Bobby Hutcherson. Indian sarod master Ali Akbar Kahn was one of a number of great musicians from around the world who



PHOTO: LESTER COHEN

Studio owner Wally Heider

found the Bay Area a hospitable place to showcase his talents and he moved there. Innovative programs at Mills College, Stanford and San Francisco State in the '50s and '60s had created a climate conducive to less commercial strains of experimental music. And the concert production business had Bill Graham firmly in control, promoting concerts at the Fillmore West on Market

Street and the much larger Winterland (former home of the Ice Follies) in the Fillmore district. Beginning in 1974, too, he held multi-act Day on the Green extravaganzas at Oakland Stadium.

With Wally Heider's San Francisco operation going strong and Coast Recorders' recent move to new Folsom Street digs also bearing fruit, it's no surprise that people outside of the Bay Area suddenly decided that there was money to be made from the Northern California music scene.

After rejecting the overtures of staff producer David Rubinson to set up a Columbia Records studio in San Francisco in the late '60s, the company had a change of heart in September 1970 and bought out Coast Recorders' new facility, bringing in a trio of top engineers from New York: Roy Halee (who ran the operation), Roy Segal and Glenn Kolotkin. A considerably diminished Coast operation moved elsewhere and never regained its strong local foothold. At first, it seemed as though CBS/Columbia's move was a winner. Paul Simon (who was one of Halee's acts), Santana and Blood, Sweat & Tears were among the acts who worked there in the first year, and there seemed to be a steady stream of acts moving in and out of the studio.

However, engineer Fred Catero, a one-time employee of Columbia in New York who'd moved out to California with Rubinson as independents, had his doubts about the long-term viability of a CBS-owned studio in San Francisco. "At that time, Columbia was a very conservative company," he says. "It was all-union and everything was done by the clock. There were very strict rules about how long sessions could go and, of course, about drugs and things like that. But the San Francisco scene was really very loose—*que será será* and good vibes and 'flower power' and all that, and Rubinson told them, 'Look, if you open a studio out

here with your corporate image the way you're doing it in New York, you're not going to get many people recording there.'"

Over at Heider's, they could barely keep up with the demand for studio time; by 1971, they had four rooms going most of the time. The Dead cut their classic album *American Beauty* there with a young staff engineer named Steve Barncard. Heider's was also a training ground for engineers such as Jim Gaines, Steve Jarvis, Malory Earl and Jeffrey Norman, and Rubinson and Catero took up a residency there following their tenure at Pacific Recording in San Mateo. Among the many notable acts to record there in the early '70s were Brewer & Shipley ("One Toke Over the Line"), Oakland's Pointer Sisters (who were "discovered" by Rubinson), Herbie Hancock (another Rubinson act), Seals & Crofts, Creedence Clearwater Revival, David Crosby, Graham Nash, Neil Young, Paul Kantner and Grace Slick of Jefferson Airplane, Hot Tuna, Van Morrison (who lived in the Bay Area during much of the '70s) and many others.

Meanwhile, over in sunny Sausalito, across the Golden Gate Bridge from San Francisco, a couple of recording big-wigs—Chris Stone and Gary Kellgren of the famed Record Plant studios in New York and Los Angeles—were building a new state-of-the-art studio in a quiet, out-of-the-way location close to the Bay. If the atmosphere in most Bay Area studios at that time was casual and funky, the Record Plant was Marin County elegant, which is to say that it was still totally casual, but very tastefully appointed with first-class materials and design and the best recording equipment. At first there were two identical studios with API consoles and Ampex 16-tracks. Later, other studios, including "The Pit," were added. Noted engineer Tom Flye was brought in as

technical director and chief engineer. Artists using the studio could stay at two beautifully furnished guest houses or on one of the nearby houseboats. They could also avail themselves of Gary Kellgren's purple Rolls Royce (license plate: GREED)—a bit ostentatious, maybe, but fun! The official christening was Halloween 1972; John Lennon and Yoko (dressed as trees) and much local rock royalty were in attendance for the festivities.

Like Heider's before it, the Record Plant was an instant success, attracting a wide variety of first-tier acts including Sly Stone, Van Morrison, Al Kooper and Mike Bloomfield, and by the end of its first decade, it had hosted such notables as Stevie Wonder (*Songs In the Key of Life*), Fleetwood Mac (*Rumours*), Grateful Dead (*Wake of the Flood*), Journey, Jefferson Starship, George Harrison, Pablo Cruise, Aretha Franklin, Rick James, Joe Walsh, The Eagles and many others. The studio was also the setting for progressive FM radio station KSAN's beloved *Live From the Record Plant* series of intimate concerts with the likes of Bob Marley & The Wailers, Bonnie Raitt, Jerry Garcia, Nils Lofgren and many others. In 1980, two years after the death of Gary Kellgren, Chris Stone sold the Record Plant to Arne Frager, who has enjoyed success with the studio ever since.

Another New Yorker who came into the San Francisco recording world in the '70s (after a stint in Nashville) was Elliot Mazer, who took over the Brady Street facility known as Pacific High Recording (see preceding article) and re-named it His Master's Wheels. Besides attracting name acts such as Journey, Jerry Garcia and Frankie Miller, Mazer headed a highly successful remote recording operation; indeed, he was the chief engineer on the *The Last Waltz* at Winterland on Thanksgiving night in 1976.

PASTIME PARADISE

Across the bay in Berkeley, Fantasy Records—which began life in 1949 as a small jazz label headed by brothers Sol and Max Weiss, and had been bought in 1968 by an investment group



PHOTO: KAZ TSURUTA PHOTOGRAPHY

Jim Gaines and Herbie Hancock get down to details at *The Automatt*.

led by the company's sales manager, Saul Zaentz—struck gold with Creedence Clearwater Revival and built a first-class facility in the East Bay in 1971. Nicknamed "The House That Creedence Built," Fantasy Studios was exclusively an in-house facility for Fantasy artists until 1980, when it opened to outside acts.

Patrick Gleeson, a one-time English professor at San Francisco State, was an early champion of synthesizers and electronic music and in late 1971, opened his own studio, initially called the Different Fur Trading Company (later just Different Fur) as a place to work on his own projects. He had a Moog and an 8-track and a good relationship with Herbie Hancock, whose music was increasingly headed in an electronic direction. He helped Hancock (and, later, his fusion band *Headhunters*) make several albums, and as his studio environment solidified, he began to attract other clients, Brian Eno and the local Kronos Quartet among them. Different Fur would remain a strong presence in San Francisco recording for three decades.

Over at Columbia, Fred Catero's prediction turned out to be prophetic and CBS decided to divest itself of its San Francisco property. Rubinson, who had been renting a studio space—dubbed *The Automatt*—on the second floor of the building with great success since the fall of 1976, managed to convince CBS to turn the lease over to him, and in late 1978, he took over the former Columbia Studios to make *The Automatt* a three-studio operation. The *Automatt* was certainly the toniest studio in the city proper—with Rubinson's gorgeous collection of vintage juke-

boxes spread around the building—and also the best equipped in that era, with Harrison and Trident TSM consoles, MCI 24-track recorders and a crack engineering staff that started with Catero and went on to include Ken Kessie, Leslie Ann Jones, current *Mix* L.A. editor Maureen Dronney and others during its eight-year history.

Catero describes the studio's '70s hey-day as "the beautiful days. David ran the studio in a very hip way. He was really into the music—we all were—and that's what drove us more than making money. So many great acts came through there," including Santana, the Pointer Sisters, Herbie Hancock, Journey and many others.

By the end of the '70s, the Bay Area had become a hot-bed for punk and new wave music rivaling New York and Los Angeles, with its own home-grown heroes—Crime, The Nuns, The Avengers, Dead Kennedys, Tuxedo Moon, The Dils, et al. There was a thriving club scene (based around The Mabuhay Gardens on Broadway in North Beach) to support all the action, and smaller inexpensive studios around the Bay Area got much of the recording work in that genre. Between the new wave and the rise of a number of fine acoustic music groups (the best being the David Grisman Quintet), country-oriented artists (Norton Buffalo, High Country, etc.) and R&B acts ranging from Larry Graham to Stoneground to Lady Bianca, there was lots of energy at many different levels of the music industry, which led to a proliferation of budget and midrange studios in the second half of the '70s. It also led to the birth of this magazine in 1977: *Huzzab!* ■

THE SEVENTIES

The '80s

THE HEART OF ROCK 'N' ROLL'S STILL BEATING

What many consider the “golden age” of recording gradually dimmed in the decade of excess—10 years marked by jelly shoes and new wave, Rubik's Cubes and the Material Girl—as engineers and artists became increasingly fascinated by all things digi and MIDI.

Much like the '70s, real musicians, real instruments and heavy analog tape machines filled Bay Area recording studios, but at the same time, consoles (and hairdos) got bigger, expensive black boxes replaced EMT plates and echo chambers, and clunky CRT monitors and synthesizers occupied serious control room space. But despite the gradual infiltration of ones and zeroes, studios still reeked of cigarette smoke (among other substances), shards of 2-inch tape still hung from the ceiling and clients still locked out rooms for weeks—sometimes months—at a time to do pre-production, track, overdub, mix *and* master their albums, usually in commercial studios.

“There was a spontaneity in the early '80s,” says producer/engineer Howard Johnston, who co-owned Different Fur with VP/general manager Susan Skaggs for almost 20 years. “Every-

body involved knew what pieces of gear, mics and audio formats they were going to record and mix down to. Because of that, the '80s were more collaborative. People needed each other to do sessions. There was a simplicity to that time.”

When musician/studio owner Patrick Gleeson sold Different Fur to Johnston and Skaggs in 1985, many assumed its demise. But proving the naysayers wrong, the studio stayed busy as ever with national and local clients such as Too Short, Bobby Brown, Devo, Bobby McFerrin, numerous Windham Hill projects (attracted by the studio's Yamaha C7 Grand piano), Van Morrison, Gene Clark and Huey Lewis and the News, who recorded their demo there. “Patrick's wife got him the [record] deal,” Johnston recalls. “She drove to Marin and put a 'loaded' cassette player on the band's [now] manager's desk.”

This is but one example of camaraderie taking place among the fake stone-covered walls, heavy baffles and high ceilings of the '80s recording studio. “High-quality home recording equipment was only a fantasy—think TEAC PortaStudios,” says producer/engineer Ken Kessie, whose '80s credits include Herbie Hancock, En Vogue, Santana, The Tubes, Sister Sledge and Until December (on S.F. new wave label 415 Records). “Great engineers were revered because they were the only ones who could operate all the equipment. Things weren't corrected on a flat screen; they were done over and over until right. But then again, we would have killed for some of today's preamps and modern mics.”

The vintage preamps and other gear at Different Fur played a role in great-sounding records by Gene Clark, Phil Collins, Bill Summers, Pablo Cruise, Stevie Wonder (with B.B. King), Bay Area guitarist/songwriter Jonathan Richman, Con Funk Shun, Hawkins Family and

The Whispers, among others. Skaggs recalls grabbing drinks at a neighboring Mission District bar, The Chatterbox, with clients such as Tom Lord-Alge and members of The Starship. “Over the bar hung a petrified cat,” she recalls—as in rigor mortis, not taxidermy. “It was everyone's favorite cat and bar.”

Over in Berkeley, Fantasy Studios kept busy with En Vogue, Journey, Aerosmith, Creedence Clearwater Revival and others on the Fantasy Records roster, while The Plant kept its vibe-y rooms booked with Kenny G, Aretha Franklin and locals John Lee Hooker, John Fogerty, Journey, Jefferson Starship and Van Morrison. In fact, it was at The Plant where producers Deniz Foster and Tommy McElroy first heard Kessie's work and later asked him to commute to Richmond, Calif., to mix Tony Toni Toné's successful debut, *Who?*, at Starlight Studios.

“They had heard me mixing a Con Funk Shun track and were impressed by this geeky white guy,” says Kessie. “At first, they acted thuggish. I had to push them out of the way to get the mix done. But I passed the test, and they were actually two of the nicest guys you'd ever meet—the polar opposite of thugs—and I continued to work with them for years.”

One of the most significant Foster/McElroy projects Kessie layed his hands on was En Vogue's breakthrough, *Born to Sing*; again, recorded at Starlight Studios. “My career peaked with this band,” Kessie recalls of the female trio. “The console was mushy, the room and mics mediocre, but the talent and songwriting won out.”

CALIFORNIA ÜBER ALLES

Downtown in the Tenderloin District, Dan Alexander, Tom Sharples and Michael Ward purchased Filmways/Heiders in 1980 and named it Hyde Street Studios. Engineer John Cuniberti, who previously engineered at Alexan-



Good times at Studio D (l to r, seated): Anita Porter and Earth, Wind and Fire's Phillip Bailey; (standing) co-owner Joel Jaffe, producer Preston Glass and co-owner Dan Godfrey

der's Tewksbury Sound Recorders in Richmond in 1978, became their studio manager/chief engineer. At night, while the homeless slept, the drug dealers hustled and prostitutes roamed the streets outside this nondescript building near Turk and Hyde, Cuniberti co-produced and engineered several albums for Joe Satriani, including his 1988 success, *Surfing With the Alien*, as well as three Dead Kennedy albums: *Plastic Surgery Disasters*, *Frankenchrist* and *Bedtime for Democracy*. "The way those D.K. records were recorded and mixed created an ambience that was atypical of other punk bands of that time," says Cuniberti, who now runs The Plant's mastering studio. "They were enamored with reverbs and delays—anything to make them *not* sound like the Sex Pistols." The albums came out on frontman Jello Biafra's Alternative Tentacles label (launched in 1979 in San Francisco and now based in nearby Emeryville), one of the most significant underground labels to date. Around the same time, clients such as Blue Oyster Cult, Leon Redbone and Ronnie Montrose occupied Hyde Street's remaining rooms.

The Heider/Hyde Street legacy aligns closely with The Automatt, which remained a recording hotspot until 1984. Mastering engineer Paul Stubblebine, who would later open a mastering facility at Hyde Street, got his start at CBS, which later became The Automatt, honing projects for Herbie Hancock, Chick Corea, Con Funk Shun and U.S. releases on Rough Trade and Factory Records, including Joy Division and New Order.

In 1986, Alexander leased Hyde Street's Studio C to producer Sandy Pearlman, who ran it as Alpha & Omega until 1991. In 1988, Alexander left Hyde Street to launch Coast Recorders on Mission Street.

DON'T STOP BELIEVIN'

While the "old guard" remained solidly booked in the '80s, newer facilities such as the Music Annex, Russian Hill Recording, Studio D and Skywalker Sound, among others, began cutting deep grooves on the San Francisco scene.



Programmer Bob Smith, percussionist Greg Gonaway and Narada Michael Walden work out rhythm tracks at Tarpan Studios, formerly Tres Virgos, in 1987. Note ancient E-mu SP12.

Jack Leahy and Bob Shotland opened Russian Hill Recording in 1980 as a two-room facility, handling everything from advertising spots and independent film work to books on tape and music dates.

Partners Joel Jaffe and Dan Godfrey opened Studio D in 1983 as a way to fill a need for a *live*-sounding tracking room. "The Plant had three rooms at the time—A, B and C—and they were all pretty dead-sounding," recalls producer/engineer Jaffe, also a session guitarist who has performed and recorded with several Bay Area bands since the 1970s. "As a joke, we named our facility Studio D—and it survived."

Opening the doors on their Sausalito space with a Trident A Range console, Studio D became known as one of the area's premier tracking rooms, hosting sessions for Earth, Wind & Fire, Bruce Hornsby, locals Chris Isaak and Anita Porter, and a host of others to come. "It was a really cool time," Jaffe recalls. "We were the new kids on the block, so everybody wanted to hear the new room. There was a great scene here. Major labels were coming up to work so business was good."

Business also boomed down in Menlo Park, where Dave Porter, Russell Bond, Roger Wiersema and Harn Soper opened The Music Annex in 1976 after launching similarly named ventures in San Francisco and Palo Alto. "We played a fairly different role," says Bond, longtime chief engineer and now owner of The Annex. "Our clients were always split between music and high-tech." The five-room studio attracted such local artists as The Tubes, Ronnie Montrose and Journey, with Bay Area-based Windham Hill and its founder, Will Ackerman, as one of its

biggest clients. Its Silicon Valley location also made The Annex a popular test site for high-tech companies such as Apple and Opcode. In the late '80s, Porter opened the San Francisco-based post facility Annex Digital, which is now owned by Wiersema under the name Polarity Post.

The Bay Area's recording scene flourished in the 1980s. In addition to more well-known facilities, others opened their doors in and around S.F. In 1985, Dave Nelson opened Poolside Studios, which later morphed into Outpost Recording, now located on Folsom Street. That same year, musician/producer Narada Michael Walden opened Tarpan Studios, where he produced mega-hits for Aretha Franklin, Whitney Houston and Mariah Carey, among others. Producer/engineer Cookie Marenco's home base, OTR Records, opened in Belmont in the late 1980s, as did her second home, The Site, in San Rafael. Prairie Sun hit *The Wine Country* (Coati) in 1977 and continues to flourish. Other active San Francisco sites included T&B Audiolabs, Beggar's Banquet, Phil Edwards Recording, Independent Sound and many more.

As the number of studios rose during the 1980s, so did competition and the demand for more inputs and more expensive outboard gear. "It was the hey-day of recording studios in many ways," says Cuniberti. "Sessions started taking longer because there were more options. Studios were selling more time, which was the greatest thing in the world for them, but they still had to purchase these huge consoles and tape recorders. So studios became bigger and more expensive, which eventually led to some of their demise." ■

The '90s

WHAT A WICKED GAME WE PLAY

"And then...the '90s came," Studio D co-owner Joel Jaffe says with a sigh. Like many other recording industry vets, when probed about the era of flannel shirts and grunge, of "Tell Me What You Want" and the new Silicon Valley swear word, *dotcom*, his usual joyful grin fades—his voice drops by at least a fifth as he recalls one erratic, problematic, darkly humorous decade.

It wasn't easy, but Jaffe's place survived the tumultuous 1990s; however, many of the less fortunate did not. Coast Recorders, Brilliant Studios, Rocket Lab Mastering and Russian Hill all closed their doors in the late '90s—unable to survive the rise of the home studio, electronica and the ridiculously soaring San Francisco rents.

"I had a studio on 20th Street called 3030 Recording," says producer/engineer Mark Needham (Chris Isaak, Taj

and burst like a hot-air balloon at Macy's Thanksgiving Day Parade, the recording industry maintained a subdued business as usual regime. Cigarette smokers got pushed outside, studio managers discovered more empty water bottles than liquor bottles and those shreds of analog tape mysteriously disappeared. Digital 32- and 48-tracks were in, and new blood came on the scene to use them.

Different Fur's clientele diversified to include everyone from Phil Collins and Gene Clark to Robert Cray, Kronos Quartet, Charlie Hunter and Neurosis. "We were sort of a holdover because we were a full-service studio," says co-owner Howard Johnston. "In the '80s, people would start and finish records at Fur and then we'd have playback parties. In the '90s, as technology got more advanced and Pro Tools came in, it got more difficult. We remained a full-service studio but the needs changed."

On Mission Street in S.F.'s South of Market (SOMA) neighborhood, acts such as Faith No More, The Breeders, Black Lab and the Red House Painters passed by run-down flats and industrial warehouses to enter Coast Recorders, which featured one of the last remaining Bill Putnam-designed rooms. In 1995, Alexander moved this operation to the former Golden State Recorders space on Harrison. "It was a classic large-room facility," says Cuniberti, who managed Coast from 1996 to 1998. "Chris Isaak recorded two records there, including *Baja Sessions*, live-to-tape. Galactic, Cake, Tower of Power and Joe Satriani also made records there. Coast on Harrison had a huge playing room and a vintage Neve. But, sadly, due to rising rents during the dotcom boom, the studio was forced to close."

When the Mission Street building became available, engineer Craig Silvey and producer/remixer Philip Steir

pounced, installed a Neve 8026 in Studio A, a Trident TSM in Studio B and opened under the name Toast. During their first year of business, radio-friendly locals Third Eye Blind recorded their sophomore release, *Blue*, produced and partially mixed by Jason Carmer. Carmer later mixed and/or produced projects for Run-DM.C., Korn and the Butthole Surfers at Toast, while other top-name producers kept the studio booked with R.E.M., Nine Inch Nails, Sheryl Crow, Rage Against the Machine, Live and Lucy Pearl, among others.

Producer/engineer Matt Wallace moved to Los Angeles in 1988 but continued to work frequently at studios all over S.F., including his own, Dangerous Rhythm, which was home to many Lookout Records demos. In addition to working with The Replacements, John Hiatt and Train in the 1990s, Wallace produced several albums for Faith No More, including groundbreaking albums such as *The Real Thing* (1988) and *Angel Dust* (1992), both of which influenced the next rap/rock generation. "Of all the bands I've worked with, those five guys had the truest democracy," Wallace says. "*Angel Dust* was a tumultuous time for them, but in spite of that, the core group pulled together and made things work."

YOU WANT IT ALL

While most of the higher-profile rock acts flocked to The Plant, Studio D, Different Fur, Coast and Toast, Hyde Street became a downtown destination for punk, metal, rap, R&B and hip hop. Engineer Matt Kelley began working at Hyde Street in the late 1980s, mainly as Needham's assistant before his first "big break" came in 1990. According to Kelley, Digital Underground was frantically searching for studio time after a tape machine at Starlight Studios broke mid-session. Not many local facilities were eager to book a then-unknown



Producer/engineer Matt Wallace (left) and Paul Westerberg at Toast

Mahal), who owned studios all over the city during his two-plus decades here. "But with not being able to park on the street and rents going through the roof, [we moved out]."

SEMI-CHARMED LIFE

Before the dotcom hubbly blew up

hip hop group from Oakland who wanted to work the midnight shift. But Hyde Street took them in, and Kelley got a sweet firsting gig. "We were ready and waiting at midnight for the group to show up," he recalls from his current Hyde Street space. "By 2:30 a.m., they still weren't here, so I decided if they didn't show up by three, we'd call it off. At like 2:59 they walked in, we did the session and we got some really great tracks. Next thing you know, the album [*Sex Packets*] went Platinum and they went on to great success. My phone didn't stop ringing after that."

Kelley's hot streak continued through the '90s and beyond, engineering albums for Del the Funky Homosapien, Spice 1, Tupac Shakur, Souls of Mischief and George Clinton, who, ironically, is the source of many Digital Underground samples.

FREE YOUR MIND

Bookings at the high-end studios with the large-format consoles started to dwindle in the mid-1990s as recording equipment became cheaper and items such as the ADAT arrived on the market. Suddenly, bedroom demos could sound pretty good, and for a little more money, artists could open up studios of their own.

Hundreds of project studios infiltrated the market in the 1990s, though many shuttered just as quickly. Engineer Greg Freeman opened Lowdown Studio, but it was crushed to make room for the S.F. Giants' stadium, SBC Park. Engineer Tom Mallon, who produced literally hundreds of demos and albums, including the first four for American Music Club, owned a few studios around town—one in the Haight (evicted) and two in SOMA, the last of which he owned until 1998, "when my second child of three was born and the final milliliter of bodily fluid was wrung out of me by the death-to-small-business combination of the newly built Pac Bell Park and the 'dot-zombies,'" he says.

Counting Crows guitarist David Bryson opened and closed Dancing Dog; however, he sold some mic



Digital Underground's Shock-G (left) and engineer Matt Kelley kick back at the Neve 8048 in Hyde Street's Studio A, circa 1998.

stands and cables to musician John Vanderslice, who brought them to his new project studio, Tiny Telephone, which officially opened in 1997. Rather than grab the latest digital gear, Vanderslice remained analog-faithful, arming his Bob Hodas-tuned control room with an automated, discrete Neve 5316 and a Studer 827 tape machine. As a result of his vintage gear, \$350-a-day rate (no sliding scale, ever) and good street cred, Tiny Telephone has remained steadily booked with a mix of local acts such as Beulah, Chuck Prophet, Erase Errata, the Stratford 4 and Vanderslice's own solo work, and out-of-towners such as On the Speakers, Death Cab for Cutie, Preston School of Industry, Nada Surf and X's John Doe, among others.

The same year Vanderslice opened Tiny Telephone, Paul Stubblebine launched his mastering facility (after a seven-year stint at RocketLab, a mastering studio launched by Nancy and Fred Baysinger and David Haynes in 1990). From his original location inside Hyde Street Studios, Stubblebine kept his Sonic Solutions workstations humming with projects for David Grisman, John Lee Hooker, Roy Rogers, Charlie Musselwhite and Richard Thompson, as well as a long list of unsigned local acts. "We've always been involved with local labels and upcoming bands. They make up a substantial part of our work and we're happy to see them succeed," he says.

Unfortunately, many of those indie artists skipped town in the late 1990s, scared off by soaring rents and pushed out when landlords turned their rehearsal studios into offices for the dotcommers. "A lot of money was blasted into this town in the late '90s and so many musicians and artists left

because they couldn't afford it anymore," says Carmer. "It's sad because there was a long strain of artists who came out of the Bay Area who were making a major contribution to the art of music."

Despite the artistic exodus, a large number of Bay Area acts realized commercial success and/or cult figure status throughout the 1990s. Chris Isaak, American Music Club, Four Non Blondes, Counting Crows, Faith No More, Metallica (and to a lesser extent, fellow speed demons Slayer and Exodus), Primus, Mr. Bungle, Tracy Chapman, Third Eye Blind and Train all reaped commercial success. Tom Waits and the Grateful Dead carried on, and Santana released their multi-multi-Platinum album, *Supernatural*.

Meanwhile, the Bay Area punk scene re-exploded in the mid-1990s due to the remarkable success of Berkeley-based Green Day and their record label, Lookout Records, and city dwellers NOFX and frontman Fat Mike's label, Fat Wreck Chords. "I had a little studio on Divis [Divisadero] that was booked eight months in advance," says producer/engineer Ryan Greene, who now co-owns Motor Studios with Fat Mike. [See page 60.] "The studio was running no less than 16 hours a day, seven days a week. I worked every day for a year-and-a-half."

The area also produced some hot R&B and hip hop during this time, most notably from Digital Underground and The Hieroglyphics collective (comprising Del the Funky Homosapien, Casual, Pep Love, Domino and the group Souls of Mischief), Too Short, E-40, M.C. Hammer, Raphael Saadiq (formerly of Tony Toni Toné and Lucy Pearl) and Bobby Brown, among others. ■

Beyond 2000

CALLING ALL ANGELS

San Francisco's motley music community doesn't have a genre-specific scene like Seattle, Nashville or Minneapolis; however, the city known for diversity and self-expression claims talented acts of many styles, from hard rock to jazz to avant-garde instrumental music. "San Francisco is more open to creating wilder things, where L.A. is about getting work done," says producer/engineer Matt Wallace. "There's more of a *joie de vivre* in S.F.—anything can happen."

Certainly, anything can happen in the music biz, including a major bout of housecleaning. If a studio was gasping for air during the late '90s dotcom madness, the ensuing September 11, 2001, terrorist attacks suffocated it. With less big label money floating around, artists retreated further into their home studios and pondered life as a D.I.Y. artist. Meanwhile, studios determined to survive hunkered down and found new ways to accommodate their clients.

Hyde Street has turned every inch of available space—lounges, bathrooms, you name it—into Pro Tools editing suites. On a related note, Paul Stubblebine moved out of his Hyde Street space and into the former Coast Recorders building in 2002, retrieving its

original name after Philip Steir and Craig Silvey put the last slab of butter on Toast. "Coast is run by several people now and there's sessions every day back there," Stubblebine says.

Over in Sausalito, Studio D replaced its Amek 9098i with a Digidesign Pro-Control and Pro Tools|HD system this year. "As music changed over the years, so did the demands of the room," says co-owner Joel Jaffe. Producer/Talking Head Jerry Harrison, for example, often visits Studio D and The Plant to track and then returns to his own nearby studio, Sausalito Sound, to overdub and mix.

On day one of 2000, The Plant's facility expanded to include The Plant Mastering, which is run by John Cuniberti. Clients include major-label acts such as Tracy Chapman, the Neville Brothers and the Funky Meters, and locals such as Essence, DJ Shadow, Lyrics Born and others for local hip hop label Quannum Records. In an effort to woo artists out of their home studios, The Plant also redesigned its Studio A for live tracking and added an SSL 9000 J.

In 2001, Carmer teamed with Third Eye Blind to open Morningwood Studios. He's also finishing up his Berkeley home studio, designed by Chris Pelonis with Rick Ruzzamenti and Bullseye Builders, and armed, like Morningwood, with a Helios console.

Feeling the effects of the more remote, workstation-driven recording process, Howard Johnston and Susan Skaggs sold Different Fur to indie label Klepto Records. "A band could come in and I wouldn't hear a lick of music," says Skaggs of her reason to sell. "The job just didn't seem that creative anymore." Skaggs says she was "never happier" than during her years in the studio biz, but recently moved into a new home in San Diego, Calif., and is pursuing a real estate license. Johnston, who now works as an independent engineer, works mostly at SF Soundworks, which opened its doors last year.

As the recording industry dusts itself off and gets used to new business models, San Francisco shows promising signs of growth. The Donnas caught mainstream attention with their Plant/Fantasy-recorded, Jason Carmer-produced album, *Spend the Night*, on Lookout Records. John Vanderslice praises 21-year-old harpist Joanna Newsom, while Cuniberti compliments singer/songwriters Beth Waters and Michael Joy. Other local luminaries include Soulsides offshoots Lyrics Born, Latyxx and Blackalicious, alternative act Essence and mainstays such as Chris von Sneider and Chuck Prophet, both 20-year vets of the S.F. scene who continue to release good work.

Mark Needham and former 415 Records founder Jeff Saltzman opened a new East Bay studio this year and have developed acts such as The Killers, The Lovemakers (Interscope) and Drama (Fierce Panda). Carmer just finished a couple of songs for The Peels for Dim-Mak/Capitol. SF Soundworks president Tony Espinoza works closely with local bands such as Rogue Wave (SubPop) and Strata (Windup Records). On a broader level, the Recording Academy's San Francisco chapter regularly hosts special events to educate, grow and unite the local music community.

Just as importantly, as electronic and urban music finds its way further into the mainstream, some of the world's best DJs either live in or make regular visits to San Francisco, with electronic collectives such as Naked Music, Asphodel Records, Invisibl Skratch Piklz, DJs Dan the Automator and DJ Shadow, and "future music" label Om Records calling the city home.

"People just have to find new ways to express themselves," Carmer says. "The Bay Area is a special place. It's real conducive to creativity. I fully expect some 17-year-old kids who've got something to say to pop out of the woodwork and say it. And hopefully I'll be here to record them." ■



PHOTO: GREG WATERMAN

Mudvayne and crew take a break at The Plant. Front row from left: John Eaton, Ryan Martinie, Jonathan Cahen and assistant engineer Mike Boden. Back row: Chad Gray, Greg Tribbett, studio owner Arne Frazer, producer Dave Fortman, engineer Jeremy Parker and Matt McDonough



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It seems like dot.com wunderkind Tony Espinoza came out of nowhere last year to launch SF Soundworks; at least, nowhere in the recording industry, anyway. But in reality, the sharp 32-year-old who helped build the first PDA, the Apple Newton; who designed the first MP3 player called Rio; who co-founded When.com and helped build and launch Web calendars for AOL, Netscape and CompuServe; who sold said company to AOL for a reported \$200 million and became VP of AOL Music Services; and who invested a few bucks in a little startup called Napster played in bands and ran studios out of his bedroom long before the Web dominated his career.

Now, with a successful 10 years of bit-and-byte maneuvering behind him, Espinoza turns his attention to another kind of high-tech—the kind that's involved in manning a console, navigating a Pro Tools rig and running and maintaining a full-service, multiroom studio. At the same time, he's rekindling an old flame—music—by engineering sessions for Alanis Morissette, The Cardigans, John Cale and Vanessa Carlton, and by nurturing local and independent acts to revive San Francisco's local music scene.

Espinoza, a Texas native who arrived to the Bay Area via Stanford University, and who participated in their prestigious Center for Computer Research in Music and Acoustics (CCRMA) program, found the South of Market space, which formerly housed Focused Audio (provider of audio for the *Gumby* television shows) in 2000. "When I first looked at the space, it was pretty clear that all my ideas would fit nicely here," he says from the studio's sleek chrome kitchen table. "It had concurrency, multiple rooms and a machine room that could be accessed from all the studios. It was built in the high '80s and was really well done."

Espinoza promptly purchased the building with earnings accrued from the When.com sale and set about turning the one-level post house into a four-story structure with four control rooms, five recording spaces (one of which doubles as an edit bay), a lounge/edit suite, one guest apartment and Espinoza's adjoining flat. "First, we had to build the infrastructure that would allow us

to build up three stories and then get the studios wired and tuned and add live spaces to record things like drums and strings."

With the three-year construction phase nearly complete, Espinoza installed an SSL 9072 J Series in Studio A. The SSL and a hot-rodded Pro Tools|HD3 workstation (one of five in the building) make up Studio A's "common operating system," as Espinoza calls it, with vintage gear from Neve, API, Pultec, GML, Tube-Tech and UREI, as well as additional pieces from Chandler, Pendulum, Thermionic Culture and Crane Song brought in for warmth. Clients can listen on Dynaudio BM15A near-fields, Tannoy Eclipse 8 and 10s, Mackie HRM824s and the popular Yamaha NS10 monitors, as well as a pair of soffit-mounted dual 18-inch JBLs. A 19x14-foot live room containing a Yamaha C7 Grand Piano brought over from Different Fur sits to the engineer's left.

Studio B contains a Digidesign Pro-Control, another HD3 rig, Apple Logic 6 Platinum, Digidesign 192 and Apogee AD8000 digital converters, and such accessories as a pair of Neve 1095 (1081) mic pre/EQs, an Avalon 2022 stereo and Telefunken V72 dual-tube mic pre's, and a laundry list of other EQs and effects. A loudspeaker system courtesy of Dynaudio, JBL, Mackie and Yamaha brings volume to the small overdub/single instrument-tracking room. The control room connects to a 20x17-foot, ultrareverberant concrete drum room designed by Charles Salter and Associates, as well as the two other isolated spaces on the main floor.

Studio C features another Pro Tools system and iso booth, not to mention access to Soundworks' extensive mic



PHOTO: TONY ESPINOZA

Studio A offers a wealth of new, old and rare vintage outboard gear in addition to the SSL 9000 J.

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collection, which includes several AKG and Neumann tube mics, Royer R121 and SF12 ribbon mics and others from Sennheiser, Shure, Schoeps and Soundelux. Studio D, a bare-bones room that can be used as either an iso booth or an edit station, rounds out Soundworks' lower level.

Another option that works especially well for the D.I.Y. artist funding an album with Mastercard is the upstairs Pro Tools Café (think Internet café for musicians), which is essentially an open lounge with comfy red sofas and chairs, a couple of Mac computers and two more Pro Tools rigs where artists can plug in and play for \$10 an hour. "A major artist can stay in Studio A and track, edit, overdub and mix their whole record," Espinoza says. "An indie artist might only get a few days in A, but do pre-production in C, overdub in D and might even come up [to the Pro Tools Café] to do editing."

Many studios can accommodate a wide range of budgets, but Soundworks naturally attracts the cream of the crop while actively recruiting bands still on the ground floor. "The strongest areas for us to focus on in the market are the very top and the very bottom," Espinoza says, "which is contrary to most people's business ideas. If you were going to build a high-end place, you'd go all out and wouldn't want to charge low rates. But I've found that it is possible to build a really high-end facility and do both."

"If you want to make a crafted record you can do it there—hi-fi or low-fi," says producer/engineer Howard Johnston, an SF Soundworks client and former co-owner of Different Fur. "I have always felt that people are as important as equipment—of course, it doesn't hurt to have both—but I like that Soundworks is giving support to a fine group of local producers, engineers and artists and keeping them at home."

"The local musicians are part of what studios can draw on to differentiate what can be done in San Francisco," Espinoza continues. "So how do you embrace that community? You've got to help it with the whole range of products; not just the big ones, but the independent ones, as well. In almost all cases, the successful independent ones grow up to be the big ones. We can charge market rates and be really good at high-end client services, but at the



A summer day in S.F.: The Cardigans chill out on the balcony with owner Tony Espinoza (right).

same time, we cultivate independent artists and give them a chance to move up the ladder. Big artists are naturally attracted to big studios, but being a part of establishing an artist's career is more challenging and important for San Francisco. It's the missing link for the city."

In addition to offering sliding-scale rates (an ongoing topic of debate in studio circles), the studio provides artists with a comfortable environment in which to work. There are no offices and no receptionist. The facility is ultra-modern and beautifully designed, but you can set down your drinking glass without a coaster and there won't be a studio manager chasing you with a bottle of Windex—or an invoice. "We were able to build a facility that has a lot of space to spread out and have multiple things happening at once," Espinoza says. "It's important to have a good control room and tracking space, but what allows the creative process to really work is to have a place to be creative that doesn't feel like you're on the clock—that doesn't feel like you're in an institution or you're in somebody else's idea of a studio. It's a little bit more like campus. The idea was to build an adaptable place that artists can make into their own super-studio without having to go through millions of dollars of investment."



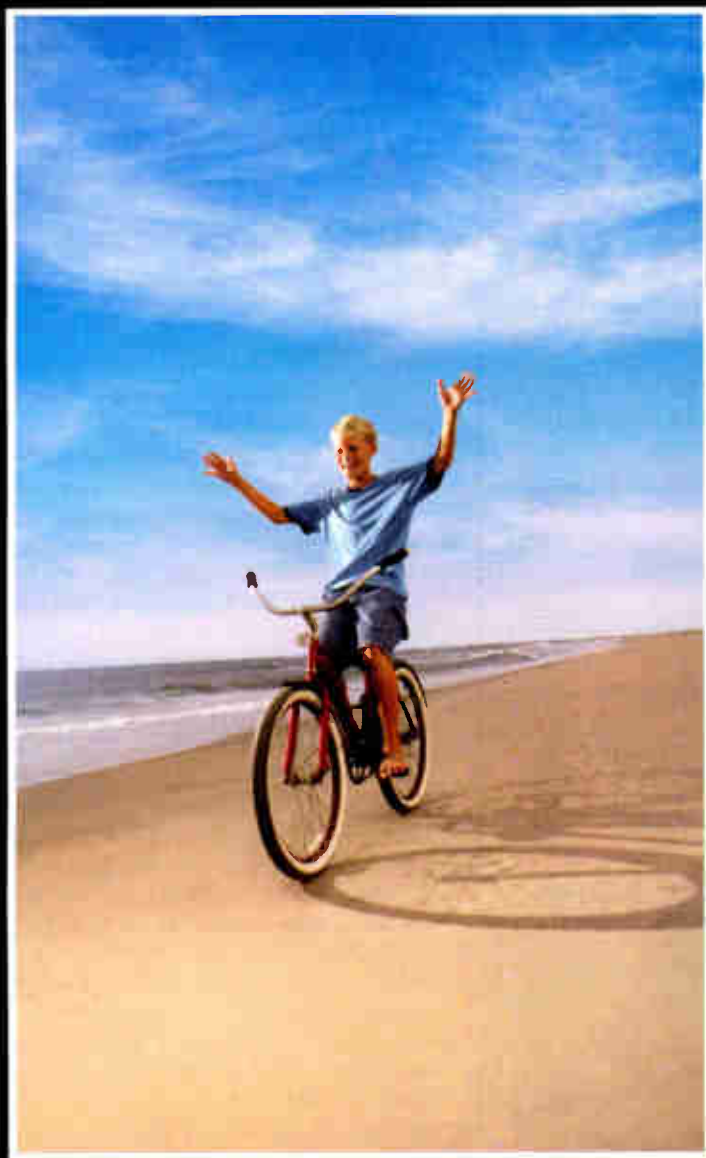
SF Soundworks' mic collection, atop their Yamaha C7

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The SF Soundworks kitchen and Pro Tools Café (above)

PHOTO: TONY ESPINOZA

That "superstudio" is equipped with more gear and instruments than most artists could ever get at home (and if they did, they wouldn't need a cut rate anyway) and Espinoza's own engineering services, often at no extra charge. He also takes his artist involvement one step further by setting up record label showcases, seeking promotion on iTunes, securing local radio airplay and even consulting on image and stage presence. As a result of his and his clients' hard work, acts such as Beth Waters, The Stratford 4, Elephone, Thistle, Jacore Baptiste and Jeff Black are either signed to or "in discussions" with major and top-notch independent labels.

Not only will Espinoza's efforts pay off for Soundworks if these acts return with label dollars behind them, but the local music community also benefits. "The independent acts are the real talent; they're the goldmine in the scene," he says. "We don't have enough of an industry here yet, but we do have the artists and a lot of them are stuck in probably 2,000 studios across the Bay Area, working in tiny little places and not talking to each other. But here, we have the same bass player showing up for different sessions. So there's a little connection happening, and that's starting to happen more and more. That's one of the functions that a studio can serve. There's not much of an exchange of ideas or techniques in the home studio environment—not much critique or input. A studio's a place where people spend a lot more time listening to music and to each other."



Mix assistant editor Heather Johnson and her kitten moved from Nashville to S.F. on April Fool's Day 2003. No joke.

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World Radio History



By Breean Lingle

Studio 880

OAKLAND'S HIGHWAY-BOUND STUDIO BRINGS MUSICIANS TOGETHER LIKE FAMILY

In-between San Jose and San Francisco, next to the freeway for which it was named, musical journeys have taken place at Oakland's Studio 880 (www.studio880.net) since 1998. Owned and operated by East Bay native John Lucasey, the studio caters to regional artists and was Lucasey's first step toward his overall goal: creating a comprehensive production group, 880 Entertainment.

A longtime musician himself, Lucasey has produced bands since high school and worked as a stunt man for film and television in Hollywood. Creating Studio 880 was a natural extension of his love for music, entertainment and risk-taking.

Lucasey has had the privilege of tending to a very busy studio, thanks to the diverse range of production services he offers—including audio, video and feature film work—and his strong ties with the Bay Area music community. It helps, too, that he's cre-



Tiki Bob welcomes you to Studio 880.

hip bar glow under hand-painted phosphorescent stars, a tempting place to linger after late-night sessions.

Studio 880's setup also encourages tenants like R&B singer/songwriter Goapele. Goapele, who hails from Oakland and recently signed with Sony (representing her own label, Skyblaze Recordings; www.goapele.com), is currently working on her third CD, due out in early 2005. Goapele's suite features its own iso booth for tracking vocals and is a comfortable space for her to work in privacy. Says Goapele, "For [sophomore record] *Even Closer*, each song was recorded somewhere different. We're starting to move into a second stage where we can combine more live music [into the recording]. It's been good for just me tracking my vocals, not having a huge space, but a space that's just mine. We have access to a lot more vintage sounds, and if there's something that we're really looking for, we can seek it out. We can actually use a B3 on a recording." Her room features a Command 8 controller and Pro Tools|HD with Dynaudio monitors, a Summit Audio DCL-200

dual compressor limiter and Wunder Audio's PEQ1R pre and CM7 mic that engineer Jason Moss calls "top-notch."

Studios A, B and C have been rented out for long blocks of time by the likes of Green Day, who were in tracking, mixing and rehearsing for their past three albums (including the recently released punk opera, *American Idiot*); bluesman Robert Cray; Iggy Pop; Smashmouth; and Bay Area acts such as Chris Isaak and Kronos Quartet.

According to Lucasey, Studio A, with its floated floor, comprises "a big live room and an iso room [and a control room] with an SSL [4056 G+] with Ultimation. It's a darker, more mysterious room and it has a gym upstairs, a bar and a game room that we just added in." Also in the control room are two Otari MTR 90 II 24-track machines, ATR102, Pro Tools 24 Mix|Plus (HD coming soon) and a vintage Neve BCM10 sidecar with Neve 1073s. At 45x35x17 feet, Studio A also includes a drum room. A Yamaha C7 piano with Disklavier Pro sits in one corner, while the mic closet houses Neumann, AKG and many other models.



The SSL 4056 in Studio A

ated a studio vibe that balances comfort and creativity with the raucous and bohemian: For example, Lucasey's been known to roll go-carts out of storage for clients to ride in his parking lot, and at night, the red walls in Studio A's

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Studio B is leased to Chris Dugan and Willie Samuels' operation, Nu-Tone Studios (www.nu-tone-studios.com), which is dedicated to local artists, including Sabrina Stewart, Divit and Green Day. Gear includes an Amek console; Genelec 1038-A, Dynaudio BM15A, Yamaha NS-10 and JBL 4311 monitors; Focusrite and Manley mic pre's; Neumann and Coles mics; and instruments ranging from a Hammond B3 to a vintage Les Paul.

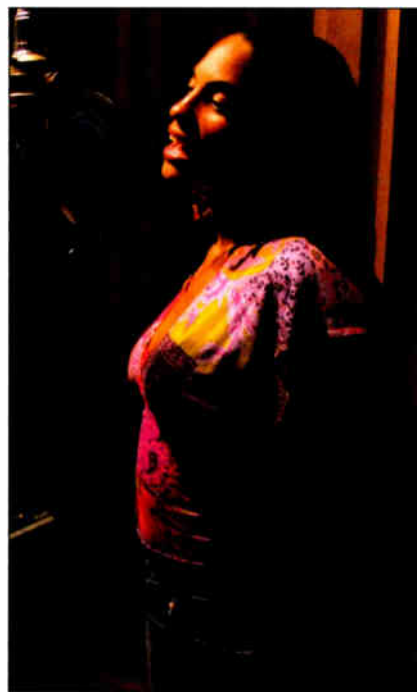
Studio C is centered on a Pro Tools|HD

system with Control24 and has been locked out for a year by Quannum Projects, a record company developing projects by DJ Chief Xcel and Blackalicious. Light wood and natural light complement the bright-sounding live room and two iso booths.

So far, Lucasey's creativity and business acumen have allowed the studio to survive downturns in the local market. He and his staff take pride in turning out a raw, "East Bay" sound using vintage instruments. As he says, "In [the Bay Area], we have a chance to shine. [As an engineer and producer], you've got to make it sound really f***ing good, you've got to make it sound different, you've got to make sure it sounds like *you*. Really, I just want to work with musicians who have been through it all—I love to see the ones who have been to heaven and hell and back. They're like a piece of old vintage gear—all f***ed up, but they sound so good."

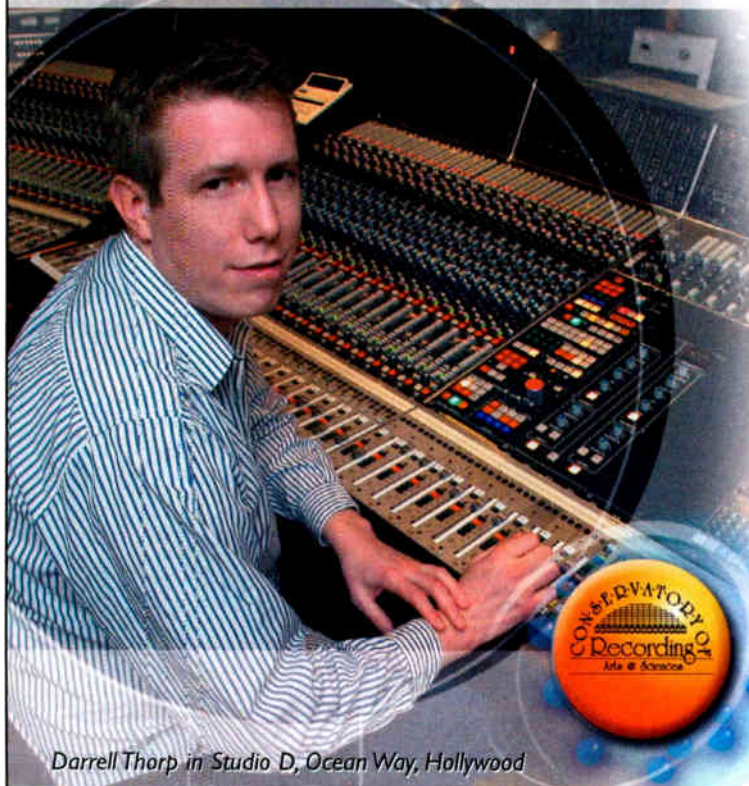


The 880 lineup: Nu-Tone Studios' Willie Samuels and Chris Dugan, owner John Lucasey, manager Brad Kobylczak and support crew Reto Peter and Peter DeLeon



After successfully selling her debut CD, *Closer*, out of the trunk of her car, singer Goapele and her family started their label, Skyblaze Recordings.

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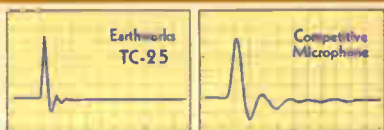
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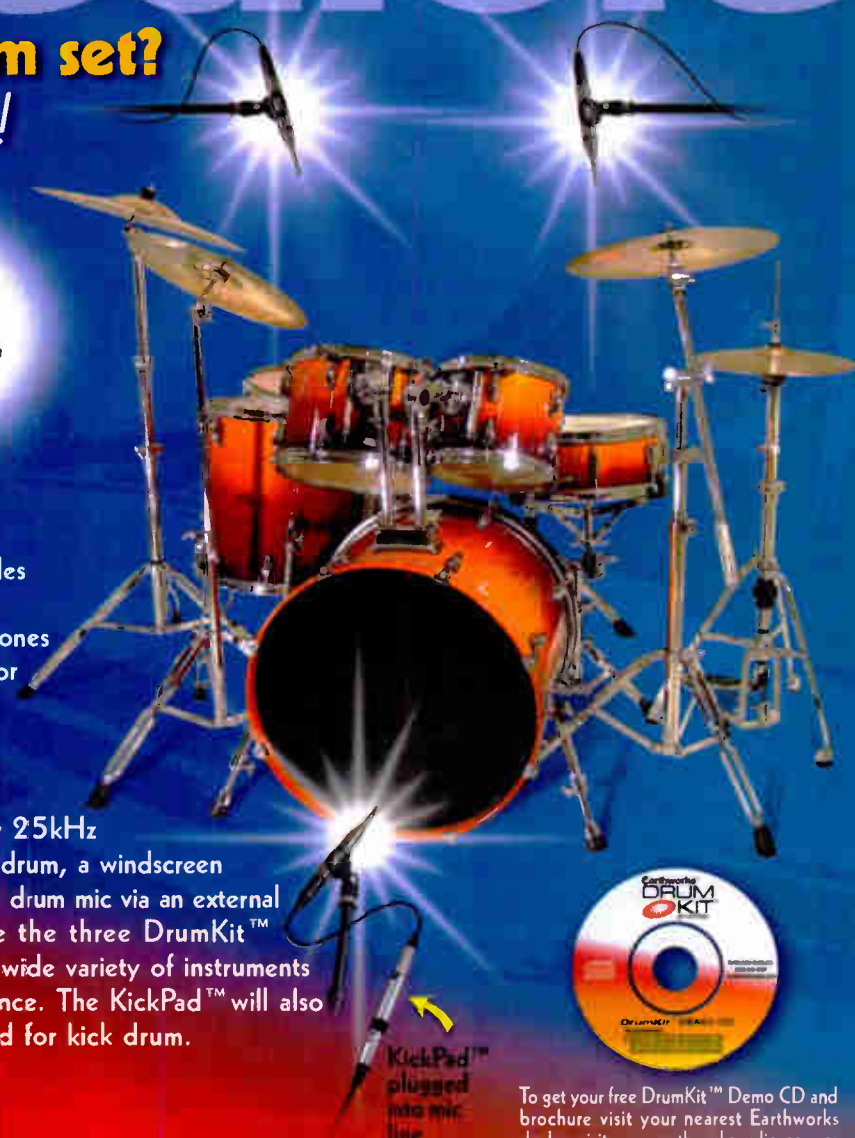
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World Radio History



By Heather Johnson

Ryan Greene

PRODUCING POP-PUNK MUSIC IN DOUBLE-TIME

Ryan Greene doesn't produce punk rock. "It's just pop music played twice as fast," he says with a grin, referring to bands such as NOFX, Lagwagon, No Use for a Name, Nerf Herder and The Dickies, among others. Fittingly, the producer/engineer for most of Fat Wreck Chords' catalog and co-owner (with NOFX vocalist/bassist Fat Mike) of Motor Studios in San Francisco works twice as fast in the studio.

A drummer-turned-live engineer at age 15, Greene later became L.A.-based MCA Music Publishing's youngest engineer, promoted from tape duplicator at age 19. "I couldn't even go to a bar and I was engineering!" he recalls. "I was able to work with Glen Ballard, Diane Warren, Desmond Child...the best songwriters and now, some of the best producers in the world. You work with these people and things start to sink in."

Three-and-a-half years later, Greene moved to EMI Music, where he served as chief engineer for eight years. While there, he engineered one especially killer demo for Bad Religion frontman and Epitaph Records founder, Brett Gurewitz, that propelled him out of publishing and into a flurry of indie-label work. "We knocked out three songs in about eight hours," Greene recalls of a

session that included "Stranger Than Fiction," "Incomplete" and "Infected." "Brett then went out to the car to listen to the cassette copy and 10 minutes later, he comes back and says, 'This is the best-sounding thing we've ever done—including all of our records. I'm definitely going to call you.' A week later, he hooked me up with NOFX and three weeks later I'm doing *Punk in Drublic*." That album, released on Epitaph in 1994, is considered one of the San Francisco-based band's best, was certified Gold and pulled the band, albeit unwillingly, into a mainstream spotlight shared by Berkeley, Calif.'s Green Day and So-Cal pop-punks The Offspring.

Greene has produced five albums for NOFX thus far, and in 1997, moved to San Francisco to open Motor Studios with frontman Fat Mike. After a brief stint operating out of a house on Divisadero, Motor Studios moved into a freestanding building in San Francisco's Bernal Heights neighborhood. The 1,900-square-foot space features an SSL 4064E Series console with Total Recall; a Pro Tools |HD 192 workstation; Tannoy, Dynaudio and Yamaha monitors (Genelecs for the

mains); and an outboard collection that includes Neve 1073, Pultec and Calrec EQs, UREI 1176 and Behringer compressors, Yamaha SPX-90II and REV-7, and Lexicon PCM 70 and PCM 41 reverbs. The studio also includes Greene's drum kit and instrument collection, various Roland synth gear, an ample mic list and an Otari MTR-90 24-track, which apparently doesn't get used much these days. "Over the last two years, 100 percent of everything I've done has been right to Pro Tools," Greene says. "At a time, I was mixing down to ½-inch and then I started to do data files. It's sad in a way, but it's technology. We move forward."

Working digitally allows Greene to produce great-sounding albums in less time and for less money than most full-length projects, a concept carried over from his publishing demo days. "We're talking about three weeks to do a full record," Greene says of the Fat Wreck Chords albums. "The thing is to make it sound great and do it for the least amount of money. If we do a record for 20 or 30 grand and it turns around and sells 100,000 copies, then everybody's making money."

Although he can produce an album in less time than it takes some engineers to get drum sounds, that doesn't mean he rushes his artists—ever. For Greene, patience is key, especially in the studio. "If somebody's having a problem with [a part]," Greene says, "I just reassure them that, 'You will get this. We're not going to just let it go. So just relax! Take it easy. We'll move on, we'll come back to it, but you will get it. So don't worry about it.' That's how I approach everything. We're making music. I mean, come on! It's not brain surgery!"

Lately, Greene's taken his patience and some of his equipment to Scottsdale, Ariz., where he's producing, engineering and mixing the debut album for F5, the new band formed by Megadeth bassist Dave Ellefson. He is also producing five songs for Dishwalla's forthcoming album—a far cry stylistically, you'd think, from punk bands such as Authority Zero and Me First and the Gimme Gimmes, but really, it's all pop music, just some songs are played faster than others. ■



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GOING LIVE

IN SAN FRANCISCO

Jefferson Airplane lead singer Grace Slick is credited with the quote: "Anyone who says they remember San Francisco in the '60s wasn't really there." That's also true of a large portion of the '70s. The '80s and '90s, of course, have their own legends and hyperbole. However, there's no debating the fact that the Bay Area was a gestation hotbed for new ideas in music and concert sound. From the wild inventions of the Grateful Dead and Bill Graham's rollicking Days on the Green, to the innovation of Ultra Sound, Meyer Sound Labs and more, the Bay Area sound community has long showed uncommon imagination and skill. The following is a microversion of the long strange trip that is San Francisco's sonic memory lane.

Sound on Stage has been providing sound reinforcement since 1972 (its current clientele includes Jackson Browne, Neil Young, Journey and private gigs for artists such as Sheryl Crow and Sting), but long before that, owner Jerry Pfeffer was part of the local music scene, playing in bands and attending concerts. "There wasn't much in the way of sound systems back then," he says with a laugh. "You might have four or five Voice of the Theater and JBL 4560 boxes and some horns—that was it. No monitors to speak of; at first, no monitors at all."

A bass player working in a hi-fi store, Pfeffer began assembling sound systems for shows. The criteria for landing a gig doing sound was simple: Did you have enough gear? "When somebody called up, they'd ask, 'How many of this? How many of that? How much power

you got?' I started out using hi-fi speakers and amps off the showroom floor and taking them to gigs. Then for years, I built my own speakers out of JBL components. You could buy all sorts of raw components, but you couldn't just buy a *system*."

At the time, S.F.'s biggest sound vendor was Harry McCune Sound Services. Founded in 1932 by Harry McCune Sr. and now called McCune Sound, Lighting & Video, McCune is still an independent family business run by McCune's grandson, Allan McCune. It was McCune Sound Services that provided sound reinforcement for the 1967 seminal Monterey Pop Festival and, even before that, The Beatles' last-ever live performance, held at S.F.'s Candlestick Park. According to Allan McCune, the McCune log book entry for that historic 1965 show reads: "Bring everything you can find!"

When Harry McCune Sr. began renting sound systems to big bands in the '30s and '40s, the company developed a wide client base, servicing everything from school productions to corporate events, theatrical musicals and rock concerts. McCune was one of the very first companies to provide touring sound systems, beginning in 1965 with Herb Alpert & The Tijuana Brass and progressing to such diversity as Andy Williams, Creedence Clearwater Revival and *Beatlemania*.

"With the rock bands, the demands on sound equipment grew more quickly than the available systems," explains Allan McCune. "People were modifying Altec A7 Voice of the Theater speakers or Shure Vocalmasters and playing with all sorts of different horn combinations. When shows got big, people stacked 20 or 30 cabinets. My father [Harry McCune Jr.] wanted

reliability, so he started looking for someone to build a better [speaker] box. He went around to all the manufacturers, but nobody would listen. We just weren't buying enough to convince manufacturers to build what we needed."

Meanwhile, other Bay Area sound people were struggling with the same issues. A major player at the time, also still in business today, was Oakland-based Swanson Sound, founded in 1926 by Art Swanson and purchased in 1952 by Donald A. Nielson. Swanson was one of the first companies to use bi-amplification, with active electronic crossovers feeding separate amplifiers for woofers and tweeters, an innovative concept for the time. Lumiere Productions, owned by Bob Cohen, was another original player. Tired of the show grind, Cohen ended up developing, with Charles Butten, ClearCom communications systems: the original gold standard for headset communication.

"I remember the first time Bob Cohen told me he had someone onstage just to run monitors," says Pfeffer. "I couldn't believe it—a guy just for that?! Bob wanted out of the biz, and he kind of handed his business off to me. Elvin Bishop and Tower of Power were my first big accounts. Elvin hit it big with 'Fooled Around and Fell in Love.' Then there were all kinds of bands: Journey, Pablo Cruise, Huey Lewis and The News, Starship, The Tubes."

CHANGES IN THE WIND

In 1967, Berkeley-ite John Meyer was also working in a hi-fi store doing custom installs when Steve Miller dropped in looking to outfit his band for the Monterey Pop Festival. The Monterey Pop Festival and the subsequent film about it helped spread the rock gospel



to the world, showcasing The Who, Jimi Hendrix, The Mamas & The Papas, The Byrds and the elite of San Francisco-based bands including Jefferson Airplane, Big Brother & The Holding Company featuring Janis Joplin, Quicksilver Messenger Service and the Grateful Dead. Meyer pitched in, providing Miller's bass player with a custom hi-fi setup. Soon after, inspired by the music and its sonic challenges, he formed a company, dubbed Glyph, to build sound systems to service the exploding scene. Glyph's first installation (in quadraphonic sound!) was at a San Rafael club called Pepperland and included three giant horns, each measuring 8x8 feet with 30-inch drivers. Pink Floyd, Janis Joplin and the Steve Miller Band played Pepperland, Frank Zappa visited and word got out. Soon, McCune Sound offered Meyer a job.

"At the time," Meyer recalls, "all the equipment was either from the movie industry or hi-fi stores and it just wasn't powerful enough. At shows, the equipment was literally burning up. You have to realize, 50 percent of the shows at that time never made it to the end! People were losing huge amounts of drivers per show. [Laughs] Everyone was in the re-coning business! So one of my main goals at McCune was to be able to make it to the end of the show."

Another McCune priority was to design speakers that could travel. "When my father met with John," relates Allan McCune, "he pulled out an Altec 604 [coaxial 15-inch driver] and said, 'I want a speaker 10 times as loud as this with dimensions that will fit into a Boeing 727's cargo area,' because we were touring, doing Creedence, Hendrix and Peter Paul and Mary. John said, 'I can do that,' and [in 1972] came up with the JM3, the first real tri-amped box, an enclosed speaker cabinet with built-in crossovers and all the technology that's evolved from that point forward."

"It was basically a tri-amped, horn-loaded box," Meyer elaborates, "with three amps built into a box in a rack that would drive two speakers. It had 4-pin connector cables that plugged in between the amp and the speaker. There were no controls. In the begin-

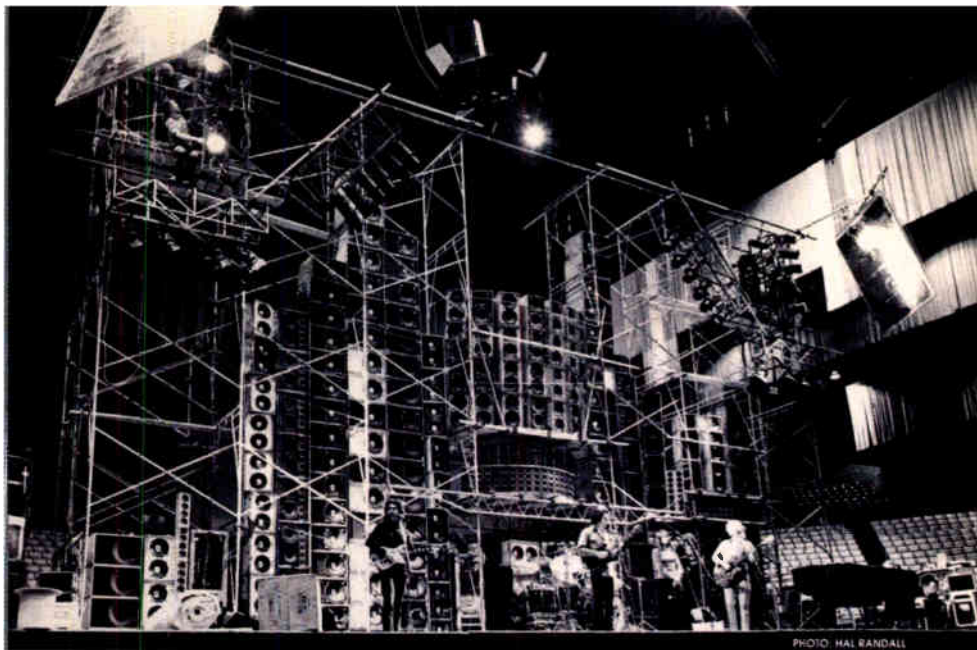


PHOTO: HAL RANDALL

The Grateful Dead's infamous Wall of Sound

ning, I didn't even have an on/off switch: Plug it in the wall, it came on; unplug, it was off. Finally, after a lot of hassling, I relented and had them add two level controls. That was a huge concession on my part because I was trying to eliminate level controls. There were so many in the way everywhere, I figured we didn't need more."

When it became apparent that EQ was needed on a per-channel basis, McCune started building consoles, as well. "I wanted to get the EQ all in one place," says Meyer, "so that the mixers would stop playing with the other components. When they did that, it changed the way the systems behaved. It also could damage parts. Again, we were trying to protect the equipment and make it through the show."

"What John did, which was unheard of," adds McCune, "was to make a complete designated system where the amp package was designed to match the speaker. Everything fit together; it didn't have a variable crossover or amplifiers you could fuss with. Today, that sounds normal, but at the time, nobody thought it would work. Sound guys are notorious in that they want to touch everything. John's idea was to allow the mixers to just mix without worrying about everything else."

The new designs were innovative and successful; cost-effective, they were not. Building small runs of systems turned out to be prohibitively expensive. Says McCune, "It almost killed us. Fortunately, the rest of the sound world started wanting the same things.

When John built his boxes, he forced everyone else to catch up. He applied science and technology in a way that forced the big manufacturers to pay attention. It shook them out of their comfort zone."

THE BIG KAHUNA

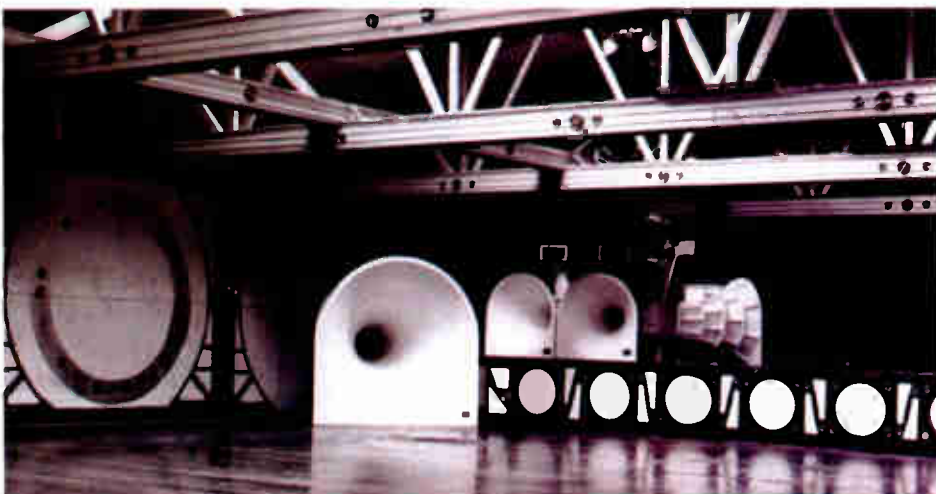
When it came to concert production in the '60s, '70s—and '80s—the biggest game in town was, of course, Bill Graham Presents. So it just made sense—at least for a while—for BGP to take charge of its own sound. Bob Barsotti started working for BGP in 1970, progressing through the box office and booking and becoming, ultimately, VP, a position he held until 2000 when the company was acquired by Clear Channel. "FM Productions was the company Bill started to provide the technical assistance he needed for his shows," Barsotti explains. "Originally, bands didn't have good setups of their own; the local promoter had to provide production to their specs. We weren't happy with what we were able to rent, so we began developing sound and lighting to the specifications we were comfortable with."

By the mid-'70s, BGP was promoting big outdoor stadium shows, for which available systems were completely inadequate. "We started spending money on new technology," Barsotti continues. "We hired a sound wiz named Steve Gagne who developed things like long-throw bass horns: boxes that were giant Fiberglas horns, 10 or 12 feet in diameter. They were

attached to giant bass speakers and we put them high up on scaffolds beside the stage. When you sat in the back row, it was incredible; it was the first time you could really feel the bass in a stadium."

Most people have forgotten that in the early '70s, speakers were hand-stacked. The art of stage rigging, with chain motors and scissor lifts, was nonexistent. "For example," says Jim Downey, hired as a carpenter by FM in the early '70s, "we had speakers called 'salt bins' where the box alone weighed about 300 pounds and it had an 8-foot Fiberglass extension horn attached to it. These things had to be stacked on platforms 30 feet or so in the air. We'd go 20 to 30 feet in the air, put sub platforms in and stack more cabinets on the platforms.

"At FM, we pioneered hanging baskets, where you could stack the sound system in a big basket, then lift it up with a chain motor. Systems today lock together and it all goes up on chain motors, but in the '70s, there were individual cabinets for low, medium and high, all different sizes, and not made to be put together. We just stacked them on sound wings on the sides of the



An early Meyer rig—quadraphonic!—at Pepperland in San Rafael

stage until Jay Drovers, who ran the carpentry shop, came up with the basket idea.

"Scissor lifts are taken for granted today; what we had was an early hydraulic experiment called Galloways. You'd put the sound on the platform, then you'd take it up and you could hang more sound underneath the platform. We only used it for a couple of

tours, but it was innovative; no one had done it before. That was something great about FM. People thought outside the box."

The last sound system designed by FM was a uniquely memorable vocal cluster built for Santana. "It was a sphere," Downey describes, "with a half-section cut out that was then filled with 60 Meyer 12-inch speak-

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ers. It hung in the center of the stage, with the main low and midrange handled by speakers stacked off on the sides. It was very cool-looking and one of the first sound systems that needed three-phase power. It sucked a lot of juice!"

THE TRAIL OF THE DEAD

Up in Marin County, the Grateful Dead was following its own path; legendary Dead soundman Dan Healy was with them from almost the very beginning. Already a record-

ing engineer when he first heard the band—circa 1965 at the pre-Bill Graham Fillmore—he soon found himself immersed in the sonic experiments that culminated in the fabled Wall of Sound.

"I knew what good sound was and what was coming off that stage was not good," he says with a laugh. "Pigpen would be singing and there was just this gurgling stuff coming out of the speakers. The instruments totally drowned out the P.A."

Healy soon discovered that he and Dead

bandleader Jerry Garcia shared a similar vision for the band's sound: to unite the music with the sound reinforcement electronics in a coherent way. At first, Healy and the others involved built systems out of commercially available equipment. But by the end of the '60s, he notes, "We knew that much of the old design theory, done in the '20s for talking pictures, no longer worked for us. Simply increasing the size of the package wasn't physically practical. We needed the same size box, but 10 times louder and cleaner."

The famed Wall of Sound was, in reality, an ever-changing conceptual vehicle, more a theory than actual pieces of equipment. "All of us involved—myself, Ron Wickersham, Owsley Stanley, John Curl and the others," comments Healy, "had opinions and knowledge. The concept was that the sound designed the music and the music designed the sound, from the fingertips of the player to the ears of the audience."

The apex of the Wall was reached sometime in 1974, when, according to Healy, "just looking at it was a spectacle." It also took days to set up. For touring, one set of equipment and two sets of scaffolding leapfrogged the country, with installations tailor-made to the acoustic environment of each 2,000 to 6,000-seat venue.

One of the features was, according to Healy, the virtual elimination of intermodulation distortion; no two instruments went through any one speaker. And, perhaps most amazing, the Wall was musician-controlled: Each singer had a volume control on his microphone. Healy's overall level control was limited to, he says laughing, "making suggestions. Of course, it turns out that you can't stand onstage and play and have any idea what's going on in the audience. Remember, nobody had done any of this before! There were a lot of things that didn't work. To be honest, a lot of times it didn't sound all that good!"

"Ultimately," he reflects, "the Wall of Sound either verified theories or debunked them. We learned a lot about rock-solid speaker cabinet design, which today is fundamental. The cabinets, which we built in our woodshop, became a standard of the industry for truly fine cabinets, built out of the 14-ply birch, which to this day, many manufacturers use. The Wall also vastly advanced speaker configuration: how to array speakers to gain maximum audio quality with minimum distortion."

By 1974, the Dead and their crew were working 11-plus months a year, largely to

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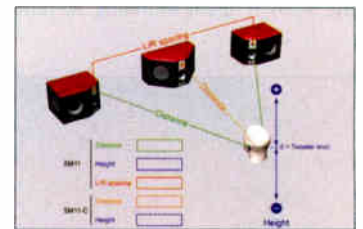
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support the Wall of Sound. "It was eating us alive," says Healy. "Costs were skyrocketing, promoters were pissed at the extravagant setup time and we were so exhausted that we often had a difficult time remembering we were having fun."

ULTRA-SOUND

As it turned out, for the grand experimenters, even the best rental systems didn't suffice. For the Dead's 1979 New Years Eve show at Oakland Auditorium, Healy and Starship soundman Don Pearson pooled their favorite components. The resulting five-way stereo system took days to assemble. Among other features, it had specially welded frames that held giant tweeter arrays. Horseshoe magnets served as air-motion [ribbon] transformers that were assembled in long vertical arrays and hung from scaffolding. Pearson says, "We built custom crossovers so we could align the individual components in time. It was, actually, the first-ever Time-Aligned" live sound system." [Eds. note: *Time-Aligned* is a trademark of E.M. Long and Associates.] It was also, according to Healy, such a great-sounding system that

"we decided to get back into the business."

"It was probably the best-sounding P.A. we ever did—to date!" adds Pearson. "It's interesting to note that back then we were working on a technology design that just now is becoming very in vogue. We're currently seeing the advent of ribbon speakers, something we were using in 1978!"

The system put together that night evolved into a company owned by Pearson and Howard Danchik that serviced both the Dead and Starship. In 1979, Meyer's newly patented ACD studio monitors caught the ears of Starship and their monitor mixer, Owsley Stanley; the reaction was immediate. "Owsley went out and raised capital for us to build the first Ultra Monitors for Starship," says Pearson. "They were John Meyer's first official product. Then we built Starship a P.A. and then the Dead had to have one."

Today's widely used SIA Smaart software systems analyzer is another legacy born out of the Dead's technological stew. "In the mid-'80s, Grateful Dead Productions purchased a Brüel and Kjaer 2032 dual-channel FFT analyzer," explains Pearson, "which Healy and I used to develop a method for

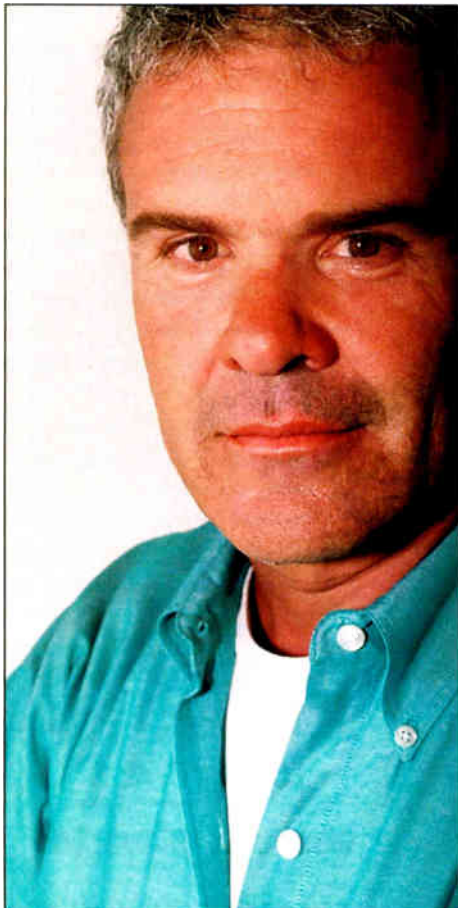
adjusting the interaction between a sound system and its environment. This technology, along with techniques developed by others, became the basis for Smaart."

Pearson and Ultra Sound continued to provide sound reinforcement for the Dead until Garcia's death in 1995. In 1999, Ultra Sound was sold to Pro Media, and its current clients include, among others, Dave Matthews Band, Primus, the Dead and Andrea Bocelli. Pearson stayed on as head engineer until this year; he currently works with Bocelli and consults on system installation/optimization for such high-profile facilities as the American Airlines Center in Dallas, Shoreline Amphitheatre (Mountain View, Calif.) and Davies Symphony Hall (S.F.).

With the perspective of 30 years as a Bay Area sound person, Pearson looks back and says, "We were always coming up with new and better ideas to make the sound more thrilling for the audience. We saw the sound system as part of the whole experience, and we pushed the bar, even for today."



Maureen Droney is Mix's L.A. editor.



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By Linda Jacobson

Silicon Audio

WHEN THE COMPUTER INDUSTRY MET THE AUDIO INDUSTRY

Northern California boasts beautiful vistas, but the view from Highway 101 in Santa Clara Valley is not one of them. "Silicon Valley" doesn't sound pretty—and it's not. It's drab and sprawling, usually drenched in harsh sunlight. The Stanford campus is lovely, but that's about it. Otherwise, it's a hash of countless, nondescript business "parks," uninspiring strip malls, million-dollar three-bedroom tract homes and god-awful traffic. Bland it may be, but the 4,000 or so tech companies located along Highway 101 from San Francisco to San Jose generate a very spicy \$200 billion in annual revenues.

Although most people associate the place and its environs with native sons Adobe, Apple, eBay, Google, HP, Intel, Macromedia, Oracle, SGI, Sun, *Wired*, Yahoo, et al, *Mix* readers likely recognize Silicon Valley as one of the country's hotbeds of digital audio. Far from the N.Y., L.A. and Nashville music biz scenes, it's here—in and around

the Bay Area—where ILM, Dolby Labs, Pixar, Euphonix, Digidesign, Sonic Solutions, BIAS, E-mu, Roger Linn Design and the come-and-gone Opcode, OSC, Passport Designs, IMS, Studer Editech, etc., chose to set up shop.

These are—or were—entrepreneur-led companies whose product development costs (heavily weighted on the front end with R&D and programming) resemble those of the computer industry rather than the traditional pro sound field, in which

development expenses primarily involve fabrication and manufacturing costs.

COMPUTERS AND AUDIO—SEPARATED AT BIRTH?

If the audio industry—like the rest of the free world—has embraced and adopted the technology created in Silicon Valley, have we also adopted the Valley's product development approaches, working style and organizing principles?

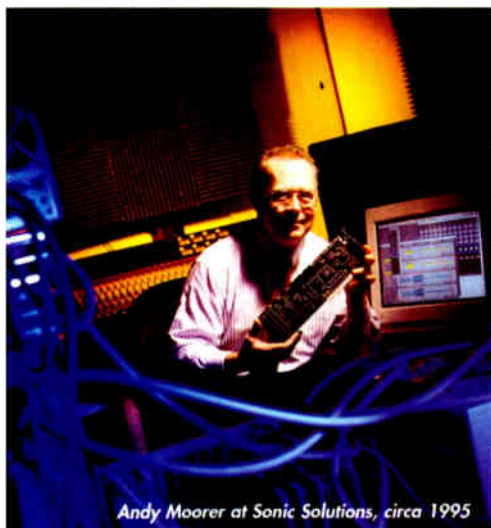
"The culture of Silicon Valley was always about being able to do it yourself, or providing the tools to enable people to do it themselves, and that influence has seeped into the recording industry as it moved from monolithic record-

ing facilities to the current home studio paradigm," computer music pioneer John Dalton says. For example, in the audio industry, "You also see the trend from specific hardware boxes to software emulations of those boxes in general-purpose computing hardware, and more of an emphasis on decentralized work environments. *And* the breakdown of the old distribution networks for the end-product of the recording industry—records, tapes, CDs—to a more fluid software market with music downloads and file-sharing." Industry vet Andy Moorer agrees. "There is a relation [between the computer industry and the music industry], at least in Silicon Valley, on two different axes: the intense technological development there and the open, experimental atmosphere of 'anything goes.'"

In 1968, when Moorer moved from MIT to Stanford University in Palo Alto (where he fell in with the other long-haired electrical engineering geeks at the Artificial Intelligence Lab), "It felt like a breath of fresh air," he recalls. "Stanford was a much more free and open atmosphere—everyone talking about their work. The thing that knocked me out was the breadth and the creativity allowed. No idea was too wacky to be raised and discussed"—including ideas such as FM synthesis, which Moorer collaborated on with inventor John Chowning. Moorer's work helped lead Yamaha to developing the DX7, the first large-scale digital synthesizer.

Ironically, it was the audio industry that first influenced the electronics industry in the Bay Area. The Silicon Valley legacy began in 1939 when two earlier Stanford grads, Bill Hewlett and David Packard, founded HP in Packard's Palo Alto garage. Their first product was an audio oscillator for sound engineers; Walt Disney Studios bought eight to develop a sound system for the film *Fantasia*. Hewlett and Packard started their company with \$538 and paved the way for the transformation of Silicon Valley from a bunch of fruit orchards to a place where dedicated, spirited entrepreneurs could raise some cash to create huge companies and implement decentralized management structures with innovation-oriented corporate cultures.

Some 45 years later, Silicon Valley was the locale chosen by the late, great, concert impresario, Bill Graham, to build Shoreline Amphitheater, which opened in 1986. By then, most rock and pop musicians and engineers had caught up with the avant-garde (Cage, Eno) in their embrace of digital technology. "The use of electronic technology became very important in much of the music in the '60s and '70s, reflecting both the scientific optimism of the era of manned space flight and cynicism with regard to the faith placed in the mass media," wrote Andy Mackay in his 1981 coffee table book,



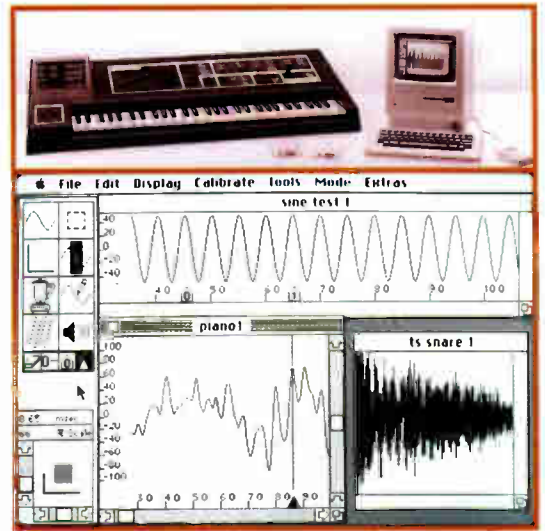
Electronic Music. One major innovation of '60s psychedelic rock (which itself sprung from San Francisco and New York) was the introduction of new electronic instruments, specifically synthesizers. Naturally, the Bay Area had its own synthesizer inventor, Don Buchla. In those days, the Bay Area also boasted plenty of counter-cultural cynicism and space flight junkies (the NASA Ames research center is just two Highway 101 exits past Shoreline Amphitheater), so it was only natural that the Bay Area music scene would go deeply digital.

BIRTH OF THE MAC

A few miles southwest of NASA Ames in Cupertino, a skull-and-crossbones flag was flown above the Apple Computer building in 1983. The reason became clear during that now-infamous 1984 Super Bowl commercial. Yes sir, it was 20 years ago today that the Mac taught the geeks to really play. The first computer platform to integrate stereo sound with heavy duty data processing, Macintosh "has always been a creative tool, developed for creative professionals, visual or musical," says Apple Computer senior director of applications marketing, Richard Kerris. "The Mac has audio as part

of its DNA. Those creative professionals influenced what Apple is today. The audio industry is part of that."

By the time the Mac debuted in San Francisco at Macy's, when ties were skinny, hair big and MTV VJs hot, Bay Area musician Paul de Benedictis was already using his Rhodes Chroma synth as the basis of an electronic music studio. One day in '84, De Benedictis went over to his friend Dave Oppenheim's house to help create MIDI Sync for the Mac software sequencer that Oppenheim (a musician, electrical engineer, computer scientist and a Stanford graduate) had written. "When Dave made his Mac sequencer and drum machine sync together, it was a thrilling moment," De Benedictis remembers. "That day was the beginning of my working in the computer music industry. Gary Briber, Dave's partner in Opcode, had talked Dave into selling the software and MIDI interface—Dave had been planning to give the software away! It was just the two of them when I started. We



E-mu Emulator II (top) connected to a Mac 512 running Digidesign's 1985 Sound Designer (inset) sample editing program

sat around Dave's house, hand-assembling MIDI interfaces, trying not to get peanut butter on the nice aluminum cases, copying 400k floppy disks one at a time, hand-writing serial numbers on them."

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Silicon Audio

the Bay Area—such as John Dalton, who co-wrote the first multi-channel, hard disk audio recording software, Deck, and became a successful San Francisco entrepreneur who recently moved to a mountain home in Hawaii, where he runs Synthetik Software. "The dawn of the MIDI era and the dawn of the digital audio era were happening in the Bay Area at the same time as the initial growth of the personal computer industry," Dalton says. "You were suddenly able to do things that were just not possible before, or at least not affordable to the average person."

Not quite "average," Silicon Valley is a Mecca for tech-savvy, eccentric over-achievers from every corner of the world, who come to where Type-A corporate culture reigns supreme and the mantra is: Stay competitive; anything is possible. The essence of life in Silicon Valley involves high-stakes risk-taking, long working hours and consumption of espresso and Red Bull, Snickers and power bars, ginseng and guarana, in cluttered office cubicles crammed with water guns and bobble heads. Silicon Valley's aggressive, risk-taking style matches a revolutionary mindset that enables its denizens to believe that a small number of people can change the world through technology.

Scott Silfvast had that attitude when he founded Euphonix in a Palo Alto garage in 1988. Then 25, he thought "starting a company was no big deal. Venture capitalists and reps from the semiconductor companies would come to call on a couple of 20-some-



Dave Smith (in plaid) demos a Sequential Circuits Prophet 600 controlling a Roland Jupiter-6 at the 1983 NAMM show.

things in shorts and T-shirts in our run-down garage and say, 'You guys are just like HP, how can we help you?' We knew people involved in local audio startups like Opcode, Digidesign, E-mu and Sonic Solutions, so it didn't occur to us that we were doing anything out of the ordinary. At that time, if you wanted technology to solve a problem, you built it yourself and there was always the possibility that if enough people wanted the same technology, you could be rewarded for all your hard work."

If you knew what you were doing. "Part of what's important about working with computer technology is being able to make the right choices because you can choose to do so many things with a computer, most of them useless," according to David Zicarelli, Stanford CCRMA graduate and interactive music and audio software developer since 1984 (such as the classic interactive composition program, M) who now works on Max/MSP, the real-time audio development



Opcode company portrait, with founder/programmer Dave Oppenheim (bearded, center)

environment sold by his company Cycling '74. "In the Bay Area, we are surrounded by so many people who provide, from technical and sociological points of view, the information needed to figure out what you should do next."

Could Zicarelli have created his groundbreaking software anywhere else? He acknowledges that "knowing what work to do and when, it was essential to be here then, although it's less essential now because the culture of Silicon Valley has been diffused into the larger culture."

DAYS (AND NIGHTS) OF COFFEE AND COLA

Like their computer industry counterparts, the entrepreneurial risk-takers in the audio industry worked feverishly, compulsively and sometimes obsessively, until they turned their ideas into reality. They knew the rush of being a bootstrap start-up thrill-seeker financed by serial credit cards.

"People worked insane hours at Opcode and Euphonix," De Benedictis, who worked at both companies, fondly recalls. "The seven-day, work-as-many-hours-as-possible was definitely a part of Opcode's culture. There was an unstated mantra: 'The more hours you work, the better.' Some people slept at the office when crunch-time came; Opcode provided couches. At the time, the rewards seemed worth it. Some of the best music of the day, from Cyndi Lauper to Nine Inch Nails, was created using Opcode products. Creating them was so much cooler than building a widget for the tech industry."

When Moorer left LucasFilm's The Droid Works in 1987 to co-found Sonic Solutions, "The big difference between the two was that at Sonic Solutions, we didn't have much financial resource, so we had to focus fairly narrowly on what we could bootstrap on our own. We started Sonic Solutions with a little over \$400,000 in private capital. That took us through the first 18 months or so, which is what it took to break even." The early years of Sonic Solutions were very spartan. "There were a few of us who pulled all-nighters. It was very much a start-up environment with a lot of intense work. It was a lot of fun."

THE PLATFORM CONNECTION

All of the computer music pioneers with whom we spoke mentioned the benefits of physical proximity to Apple headquarters. Indeed, Moorer observes that at Sonic Solutions, "We were more synergistic with the computer industry than we were with other audio software companies. Digital audio on computers migrated toward the Mac because

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of the user interface, and Apple helped us out quite a bit. We got the first releases of the Mac II. It was easy for us to drive down to Apple, nose around there and make presentations. To some extent, my personal connections with Silicon Valley helped; I knew Allan Kay, who was a Fellow at Apple then, and he helped us get in the doors at Apple. It's as much the Silicon Valley network as much as the intellectual climate" that helped Sonic Solutions succeed.

folks, but you had to live with it. Apple always made the best host for music, and whatever they changed in their hardware or software, we just had to adapt."

THE DARK SIDE?

Silicon Valley culture rewards the practice of sustained heroic efforts that disregard the need for relaxation, exercise, sleep and personal lives. Some people see the place as cold and soulless, a bastion of greed run by the elitist high priests of technology. They speak of Silicon Valley's paranoia, selfishness, sexism, racism and ageism. This article's author worked for seven years in a post-IPO Silicon Valley computer company and can attest to the nasty aspects that undercut the thrills, adrenaline rushes and brain jolts gained from working with totally brilliant people doing super-creative things.

On the other hand, dependency had its consequences. "One lesson of Silicon Valley is to know when the hardware is capable of keeping up with the software you want to create," Zicarelli says. The costs and performance of even the most basic computer hardware—RAM chips, hard disks, processors—directly affected the software products that digital audio companies could make, and how much they could charge for them.

"Add in USB and FireWire and many new products emerged and changed," De Benedictis notes. "When Apple took a standard serial port off the computer, when Opcode's product line relied on that port, it came as a surprise and created radical change. Opcode had to change all our serial port-based MIDI interfaces to USB. That made more work for

In true Silicon Valley fashion, Dolby Labs respectfully declined to wax poetic about the links between the computer and audio industries, being cautious about the federal government's strict guidelines on the sharing of information by pre-IPO companies (i.e., Dolby Labs). The decision to keep mum was no doubt influenced by the

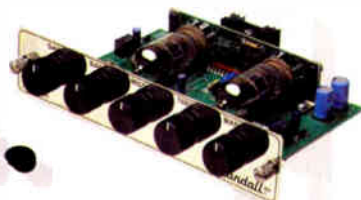


LucasFilm's *The Droid Works SoundDroid* digital audio workstation, circa 1985

brouhaha that erupted when nearby giant Google's founders granted a *Playboy* interview a week before they filed their initial public stock offering, which some critics said would violate the "quiet period" provision in the run up to the IPO. This provision is in place to prevent companies from influencing the market before the IPO and restricts any information coming from the company other than material facts.

A long-time Bay Area audio industry insider, who spoke on condition of anonymity,

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asserts, "People in Silicon Valley may seem cool and hip because they wear shorts to work and have beer bashes on Friday afternoons, but the work environment is conservative, anti-environment and dehumanizing. People go to work when they're sick and infect other people because you're looked down upon as weak if you call in sick. CEOs are paid 10 times more than workers. The goal is not to make an interesting product that does good things for people, but to make money—even in the music technology industry. Some [companies] go through millions before declaring bankruptcy and never

delivering a working product. Or, when a company does go public and/or gets bought by a larger corporation, it's the executive staff and founders who profit, not the guys who worked in tech support for 15 years."

To be fair, "It's unclear if you can run a business with the same kind of intense, artistic vision after a start-up gets beyond a certain size," Dalton says. "It's why a lot of businesses make decisions that might not be in the best interest of their customers—decisions ultimately based on maximizing profit or growth, which is a very different thing from artistic integrity of vision."

AND SO IT GOES...AND GOES....


The "typical" recording/production studio, then and now, shares much in common with the pioneers of digital audio: The business is the realization of an entrepreneur's dream. Few studio personnel are unfamiliar with the practices of working long, caffeine-fueled hours and aiming for greatness. Today, studios worldwide are getting things done in ways previously impossible, using new digital technologies that are the evolutionary outgrowth of what happened in Silicon Valley in the past.

The Silicon Valley spirit continues to live on, in the relatively small, creative companies thriving throughout Northern California, from Euphonix to Spectrasonics, from Universal Audio to Cycling '74, and in the sequential business dreams of visionaries such as whiz-kid engineer/musician Scott Silvestro and Dave Smith (the electronic music innovator who designed the Sequential Circuits Prophet-5, laid the foundation for MIDI and developed Reality, the first virtual synth for the PC, and now runs Dave Smith Instruments). The fruits aren't hangin' as low these days. Entrepreneurs must adapt to tougher market forces. As Cycling '74 founder Zicarelli points out, "The cost of living in the Bay Area makes it difficult for individual entrepreneurs to start companies here in marginal industries such as audio software. Cycling '74 continues here, although a majority of our employees actually live outside the Bay Area. But Apple and Digidesign will stay here and act as consolidators of technical innovation."

Silicon Valley is only part of the reason that so many digital audio product manufacturers start up and thrive in the San Francisco Bay Area. The world-class academic institutions here, along with San Francisco's legendary, experimental music and arts and literary traditions, are all part of the mix.

"The Bay Area continues to be a unique place," Dalton says. "It has a mad energy from its mix of engineering and artistic cultures, and its focus on futurism, lingering hippie past, personal expression, creativity and getting things done. Hopefully, the business dynamics in this country will continue to foster a climate where a small group of people with a cool idea can take that idea and run with it. We all win when that happens." ■

Linda Jacobson (lindaj@glasshousestudio.com) is a digital media marketing consultant, writer and event producer who recently hung out the freelance shingle after serving for seven years as SGI's virtual reality evangelist. Back in the day, she was an editor at Mix, EQ and Wired magazines.



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By Blair Jackson

A Long Time Ago

IN A GALAXY FAR FROM L.A....

BAY AREA FILM POST: A HISTORY, PART ONE

With its infinite scenic vistas, colorful neighborhoods and rich history, San Francisco has always been a magnet for filmmakers. It's the city The Thin Man called home. Where Sam Spade hung his shingle. It was nearly destroyed by a giant octopus in the 1955 film, *It Came From Beneath the Sea*. It's where things turned weird for Kim Novak in *Vertigo* and where Dirty Harry chased down a psychotic killer. Steve McQueen couldn't be tamed by its notorious hills in *Bullitt*, and it took a superhero's intervention to save the Golden Gate Bridge from destruction in *Superman II*. *The Invasion of the Body Snatchers* (V2) found aliens beginning their quest for world domination there, and Mrs. Doubtfire singed her falsies on a stove in a San Francisco Victorian.

Yes, plenty of films (and television shows) have been shot in the Bay Area through the years, but more often than not, they've been posted elsewhere—usually in L.A., 400 miles to the south. Still, there has been a vibrant and important film post scene in the Bay Area for more than three decades now, and a number of film



sound innovations and new work methods have emanated from editors and mixers working on projects by the Bay. While the region may never become "Hollywood North" (as some once suggested), it continues to attract many interesting and important films, and to be a creative locus point for some of the industry's most creative and independent talents.

Before we take a whirlwind look at the history of film sound in the Bay Area—from Coppola to Pixar—we should acknowledge that this region has long been a thriving and highly supportive center for the documentary film commu-

nity, as well as for makers of avant-garde and experimental "art" films. Canyon Cinema, formed in 1961 and still going strong today, has nurtured the careers of many fringe filmmakers and has done vital work in preserving rare prints of experimental films dating back to the '30s. On the documentary front, the Bay Area has produced scores of significant films—several of them Oscar winners—through the years. This is an area known for its evolved social consciousness and liberal-to-radical political leanings, and many of the documentaries made by local filmmakers have reflected those concerns. For a number of years, too, San Francisco's public television outlet, KQED, was active in funding local documentarians and experimental filmmakers. From 1967 to 1975, that station's Experimental TV Project (later renamed the National Center for Ex-



Apocalypse Now's mix crew, led by, front row, from left: Walter Murch, Mark Berger and Richard Beggs

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periments in Television) was a fearless advocate for alternative filmmakers, and KQED's *Newsroom* show kept documentary crews buzzing and 16mm post specialists busy year-round.

On the feature film front, however, our story begins with Francis Coppola, a former New Yorker, UCLA film school student and a product of director Roger Corman's famous Hollywood B-movie mill. In 1967, Coppola was hired to direct the big-budget musical *Finian's Rainbow*, and it was on the set of that film where he met a promising USC film school student named George Lucas, who had won a scholarship from Warner Bros. that allowed him to watch Coppola in action. The following year, Lucas worked as an assistant on Coppola's next film, *The Rain People*, and lensed a documentary about the making of that movie called *Film Maker*. By the time *Rain People* was ready for posting, Coppola, Lucas and Lucas' film school friend Walter Murch (who'd been the runner-up for the Warner Bros. scholarship) had left L.A. and moved north to the Bay Area to set up what they hoped would be a new style of film production company called American Zoetrope. Lucas, a native of the central California city of Modesto, had lived in San Francisco previously and, as he noted in a 1999 interview with the Academy of Achievement, after college, "I was interested in going back to San Francisco and making experimental films or maybe documentaries...Everybody said, 'Why are you going to San Francisco?' I said, 'That's where I live.' They said, 'You can't possibly work in the film business living in San Francisco.' And I said, 'I want to live where I want to live, and I will make films because I love to make films.'"

"The first item on our agenda," Murch wrote (*New York Times*, 2000) of the early days of American Zoetrope, "was the mix of *The Rain People* in the unfinished basement of an old warehouse on Folsom Street." That basement would soon become the new home of San Francisco's premier recording studio of that time—Coast Recorders—and Zoetrope moved upstairs to the mezzanine and second floor. The facility was stocked with equipment Coppola had purchased on a trip to Eastern Europe: "We had a KEM mixing setup, which was transports and a mixing board that had 20 inputs and four outputs," Murch remembers. "We had eight 35mm transports. One of them was used for picture, one was used for the 3-track recorder and the other six were used for playback: Two of them were 3-track playbacks and the other four were [for] striped playback.

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"From Zoetrope's beginning," Murch wrote, "the idea was to try to avoid the departmentalism that was sometimes the byproduct of sound's technical complexity,



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George Lucas (left) and Ben Burt, mid-'80s

and that tended too often to set mixers, who came mostly from engineering, against the people who created the sounds...We felt there was now no reason—given the equipment that was becoming available in 1968—that the person who designed the sound-track shouldn't also be able to mix it, and that the director would be able to talk to one person—the sound designer—about the sound of the film the way he was able to talk to the production designer about the look of the film."

Zoetrope's Folsom Street facility was even more important in the making of Lucas' *THX 1138*, a feature-length adaptation of an award-winning student film he'd made at USC and re-released in September of this year. Murch co-wrote the screenplay and was credited with "sound montage." Coppola was executive producer.

By 1971, Coppola had won his first Oscar for co-writing the screenplay of *Patton*, and that helped him land the plum assignment of directing and co-writing the film adaptation of Mario Puzo's then-unreleased novel, *The Godfather*, for Paramount, a gig that would change his fortunes forever. While picture editing and some sound editing and premixing work for *The Godfather* was done at Zoetrope, according to Murch, "Bob Evans of Paramount got frustrated and said, 'I want that film down at Paramount,' so sometime in October, the film left San Francisco and we went down to L.A. and the mix was done at Goldwyn Studios—what is now Warner Hollywood. We started just before Christmas [1971] and finished toward the end of February." Noted Hollywood mixer Richard Portman was part of the team that worked on that mix. The film would be a smashing success and lauded as one of the great films of all-time, earning Coppola a

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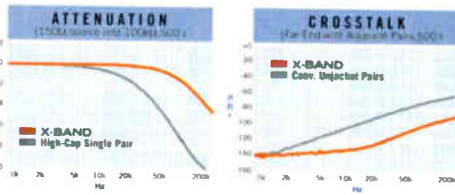
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level of independence for future projects that allowed him to insist that post work on his films remain in Northern California.

Meanwhile, Lucas started his own production company, Lucasfilm Ltd., spent many months writing a screenplay of his own—*American Graffiti*—and landed a modest budget of \$750,000 and a chance to direct his creation. Working at Zoetrope, Murch deftly handled the film's mix of nearly constant rock 'n' roll songs as score with the action of the film. Coppola produced the film, which went on to be one of the highest-grossing films of 1973 and established Lucas as a filmmaking force.

Murch's next challenge was a film *about* sound in a sense. *The Conversation*, directed by Coppola, gave the budding sound designer a marvelous canvas on which to be creative; it remains a masterpiece of evocative sound work, an important touchstone in the modern history of the art form. By comparison, Coppola's *The Godfather: Part II* seems like a more "conventional" film, but it, too, is filled with wondrous film sound moments. These two films together—both released in 1974 and both nominated for Best Picture (*Godfather II* won)—helped cement Coppola's reputation among film's elite directors, and proved that great sound jobs did not have to originate in Hollywood or New York.

A pair of important Bay Area film sound figures entered the picture (so to speak) on *Godfather II*. Mark Berger was a UCLA film school graduate living in the Bay Area and doing sound for documentaries when he met Murch. "There was a screening of a documentary I'd done at Francis' studio at Coast [Recorders], and Walter saw it and liked it," Berger says. "He asked me if I wanted to work on *The Conversation* with him, but it was delayed and delayed and I ended up not doing it. Instead, I went to Cuba for a documentary about Castro. By the time I came back, they'd done *Conversation*, so Walter said, 'Let's do *Godfather II*.'" Working with Murch (as "sound montage associate") was Berger's feature-film break.

Richard Beggs had a background in painting and hi-fi before he started recording concerts for Berkeley's listener-sponsored radio station KPFA in the mid-'60s. Once he found that he could actually make money doing recordings, he set up a small studio of his own and eventually moved into the North Beach space once occupied by Columbus Recorders. There, he successfully toiled away on commercials and music demos until the fateful day when Coppola bought the building "and started to use my studio as a screening room on *Godfather II*," Beggs says. "They would

screen dailies there. The screen came down on the wall where my glass was, so I'd be working in there on some commercial for PSA or Pacific Telephone or Foster Farms chicken and I had this huge image four feet in front of me—I could see this movie playing out in reverse. It was pretty claustrophobic. Anyway, Francis was very courteous. Even though he owned the building, I had my lease and he

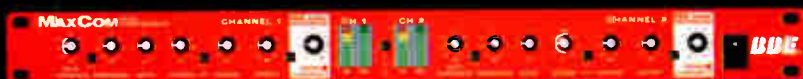


Ben Burt, at Skywalker Sound

was respectful of that. But slowly I became integrated into that organization. There were odd jobs that needed to be done from an audio point of view. I had a good live space for voice overs. Someone would come in to do some sound effects. I did a lot of drips and drabs—nothing that would ever deserve a screen credit. But by the next one—*Apocalypse Now*—I'd been sucked in." Beggs has worked on Zoetrope projects (and many others) ever since.

Across the Bay in Berkeley, Saul Zaentz was making the move from head of Fantasy Records—a jazz label that lucked into a sizable fortune after it signed Creedence Clearwater Revival, which included one-time Fantasy shipping clerk Tom Fogerty—to movie producer. The first film he financed was the critically acclaimed, low-budget *Payday* in 1972. Two years later, Michael Douglas, who owned the rights to Ken Kesey's novel, *One Flew Over the Cuckoo's Nest*, approached Zaentz about making a film of that best-selling book. Always a maverick himself, Zaentz hired Milos Forman to direct and Jack

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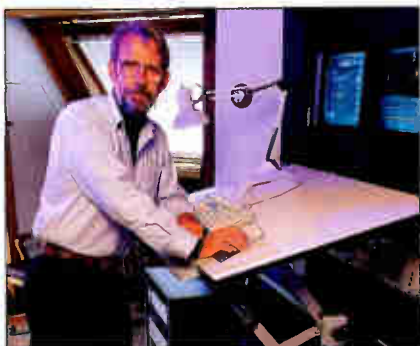
Nicholson, red-hot after a number of triumphs in the early '70s, was brought in to play the lead; quite a coup. Although *Payday* had posted in L.A., this time, Zantz wanted the work to stay local, and Fantasy already had a fine recording facility in Berkeley that had been largely financed by Creedence's success. Mark Berger was brought in to be post supervisor on the film.

"What defined you as a player [in the film business] was having your own mix studio," Berger says. "This showed independence from L.A. So we built a mix studio in what was a recording studio—Studio A at Fantasy. We cut some holes in the rear wall for projectors, and that's where we mixed *One Flew Over the Cuckoo's Nest*. We had a 16-channel API console on a platform that we'd roll in and plug into the wall. We'd lower the screen and we had four or five dubbers and a 3-track recorder and it was done that way. The small studio building was 'The House That Creedence Built.' The big [seven-story] building that was put up above the studio after *Cuckoo's Nest* that was such a success is 'The House That Jack Built,'" he says with a chuckle. "After the big building went up, we built a larger studio with a bigger board, a Harrison PP1 with automation."

After *American Graffiti*, Lucas turned his attention to a very different kind of idea: a futuristic space saga he had conceived. This, of course, was *Star Wars*. 20th Century Fox gambled on the young writer/director and by the middle of 1975, Lucas was well on the road to assembling his team to make the film. That was the year when Lucas formed the soon-to-be-legendary visual effects group Industrial Light & Magic (ILM) and his film sound offshoot, Sprocket Systems (which would later morph into Skywalker Sound). At the time, Lucas noted that he wanted to find an "audio director" for the film who could fill the sort of all-encompassing supervisory role that Murch had occupied for Coppola's films (and for *American Graffiti*), and this led him to another young USC film school graduate, Ben Burt. While Lucas was shooting the film on soundstages in London and the desert of Tunisia, Burt was back in California developing sounds for the characters and events in the film.

When it came time to post the film, Lucas kept the job in L.A. Mike Minkler and Les Fresholtz handled most of the premixing—quite a chore because there were literally hundreds of tracks to deal with; an anomaly for that time. The main mix was done by Bob Minkler (uncle of Mike), Ray West and Don MacDougall at Goldwyn Studios. The film won a Best Sound Oscar for those three

re-recording mixers in 1978 (and for production sound mixer Derek Ball), and a Special Achievement Oscar went to Burt for his work creating alien, creature and robot voices. The film was also notable for being among the first Dolby Stereo films and for the 6-track mix devised in part by Dolby consultant Steve Katz, who conceived of using two tracks for low-frequency information—what Minkler called “baby boom” channels. At the time, only about 150 the-



Walter Murch, at his home Avid suite

aters in the U.S. were equipped to show Dolby Stereo; after *Star Wars* (and Spielberg's *Close Encounters of the Third Kind*, released the following year), the floodgates opened for Dolby as more and more theaters became conscious of the importance of good sound to this new generation of effects-driven spectaculars.

Star Wars would become the highest-grossing film of all time (for a period) and, because he had negotiated for the ancillary rights (such as merchandising, which was basically not done at that time, outside of Disney), Lucas became a very wealthy man. During the late '70s, Lucasfilm expanded considerably as work began on *The Empire Strikes Back* and *Raiders of the Lost Ark*.

Meanwhile, Coppola was going through an assortment of high crises and catharses as he struggled to complete his Vietnam War opus, *Apocalypse Now*. Production in the Philippines had gone way over schedule (and budget) and now, the post-production was shaping up as a potential quagmire. Before it was over, *Apocalypse Now* would employ many of the Bay Area's best sound and post people, use several of its top studios and drive more than a few technical types a little crazy on its way to becoming an acknowledged sonic and visual masterpiece.

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Blair Jackson is Mix's senior editor.

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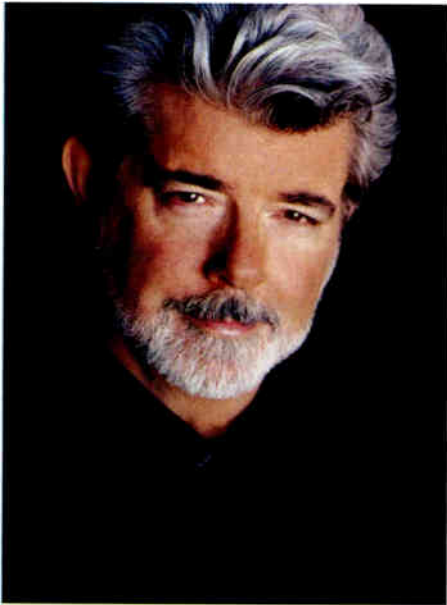
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By Larry Blake

George Lucas

TECHNOLOGY AND THE ART OF FILMMAKING



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Never before—or since—has there been such a concentrated group of influential filmmakers as there was in San Francisco during the late 1960s. The founding of Francis Coppola's Zoetrope Studios saw the beginning of the careers of director George Lucas and sound designer/editor Walter Murch, among many others. Starting from scratch in 1969, the Bay Area film community would—in less than two decades—become the virtual center of the film sound world.

Lucas himself, of course, would go on to direct *American Graffiti* and *Star Wars*, as well as to create and produce the *Indiana Jones* features for his friend Steven Spielberg to direct. He is now finishing the last episode of his six-part *Star Wars* saga, scheduled to open next May. Just weeks before his induction into the TEC Hall of Fame at AES San Francisco, *Mix* spoke to Lucas about his deep and genuine pas-

sion for all aspects of the cinema experience: audio, picture, presentation and preservation.

I just saw THX 1138 at the Arclight in Hollywood in digital projection and it looked amazing.

This is a good example of why we're really fighting hard for digital projection. We showed *THX* in its new digital restoration. The fact that it's digital means that it will look and sound the same in five years as it does today. They were also doing a Marlon Brando retrospective at the festival and they showed *The Godfather* with one of the best prints they could come up with. It was horrible, just embarrassing—all scratched and dirty. You see one film that's 35 years old and it looks beautiful. Another film that's a few years younger, and was also restored recently, but in a totally photochemical process. A lot of people don't understand that a week after you put a movie in the theaters [on a film print], it's starting to disintegrate.

You moved to the Bay Area in 1968 when Zoetrope was founded. In your wildest dreams, could you jump years later to see what would be happening not only with Zoetrope but also with Lucasfilm and companies like Dolby Labs that are based in the Bay Area?

Well, not really. Obviously when we came up here, Walter [Murch] and I were right out of film school, and Francis [Coppola] was in the middle of shooting his third movie [*The Rain People*]. He was *not* your hot filmmaker at that point. So we just said, "Look. We're going to establish a facility and a little world up here that is based on the love of movies, not necessarily on the corporate culture that was taking over Los Angeles."

We realized very quickly that you don't need to build a studio [with shooting soundstages]. What we needed to do was focus on post-production because that's what takes a long time. And since I started out as an editor, I was extremely interested in post-production. We assumed we would shoot our films in the street or we'd go on location. If we needed stages, we'd go rent a warehouse or a studio. But instead of investing in those facilities, that money would go to the highest-quality finish on the films. That's where you really make or break a movie—I feel that sound is half the experience. Filmmakers should focus on making sure the soundtracks are really the best they can possibly be because in terms of an investment, sound is where you get the most bang for your buck. Starting in film school, Walter and I were very focused on sound and very interested in its power. So that's really where the centerpoint of Zoetrope came from. The first real investment at Zoetrope was in mixing equipment.

And on those early films like THX and American Graffiti, your involvement was very hands-on in post-production sound. Didn't you actually do the worldizing [Murch's concept of recording sounds in real-world environments] on Graffiti together with Walter?

Yeah. In those days, really it was just the two of us and a couple of assistants. The whole post-production staff was about four or five people. And that was everything—sound editing, mixing, the whole thing. We did all of it. I sat on the board—I was Walter's third hand—and we did it ourselves. That was the way we used to do things in those days, although I think it's still true of low-budget filmmaking today.

In the days when punch-in recording

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and high-speed rewind were on the leading edge, you went from being a user to becoming involved in the development of high technology, such as the EditDroid and SoundDroid systems in the early '80s. Could you talk about that transition?

The first thing you learn in film school is that editing sound is pretty cumbersome. The picture medium was developed in the 19th century and sound in the early 20th century. At that point [in the '70s and early '80s], it hadn't changed much. At USC, we had mag-

netic recording [which was developed in the '50s], but there was a controversy about which was the better way to do cut sound: mag or optical. We had people there who were talking about the advantages of cutting optical tracks! I grew up under the tutelage of Verna Fields at USC, who was a sound editor [and later picture editor of *American Graffiti* and *Jaws*], and Kay Rose who was a dialog editor. So I came out of a world where understanding the history of how film was developed was very important.



Years ahead of its time, the Lucasfilm/Droid Works EditDroid system offered fast, laserdisc-based picture editing in 1985.



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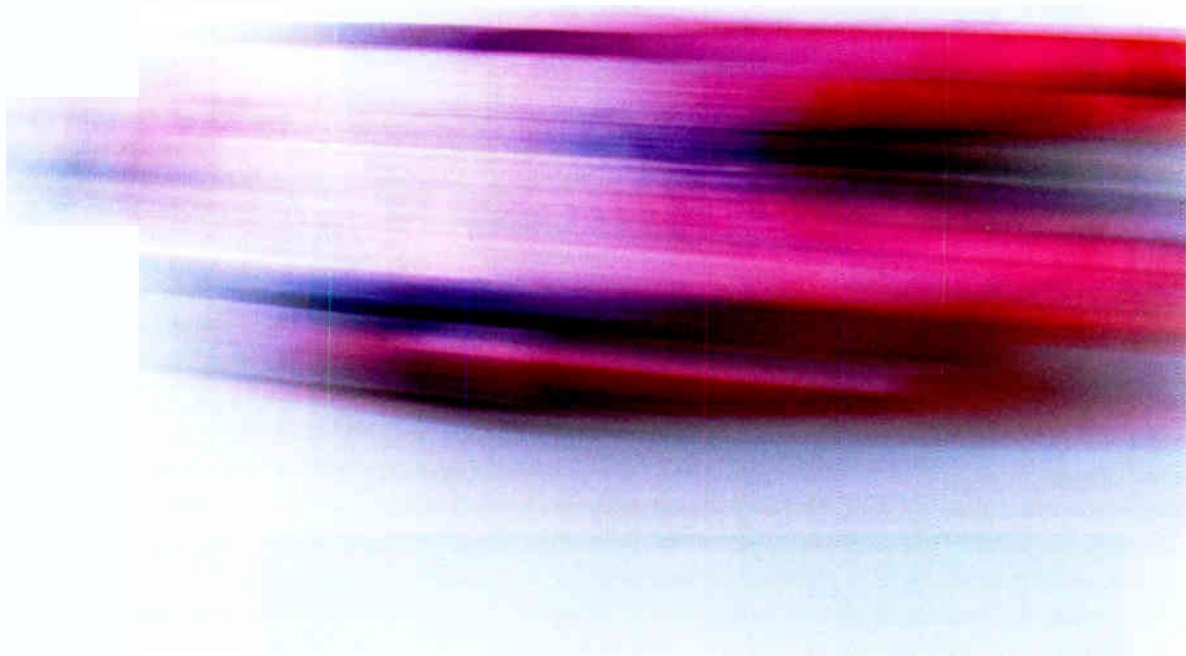
I used a Moviola when I was doing student films and 16mm films in my career as an editor, but at Zoetrope with Francis, we moved into using Steenbecks and Kems and the European [flatbed] methodology, which was far more sophisticated. But it still lacked a lot of the flexibility and malleability that an editor wants, especially because half of editing is archiving and retrieving material, which really falls on the assistant in terms of finding what box a shot is in. It's a practical, physical reality that you have to deal with. And living with a lot of frustration, I started saying, "I think we can do this better."

I started putting together a computer division right after *Star Wars* and as one of the centerpieces of that division, I wanted to build a new [picture] editing system that was nonlinear and disk-based. It was not done like the CMX and other systems that were out at that time, which were simply designed around the offline/online [tape-based] television post process. I wanted to build something that actually included and focused on the art of editing as I learned it in school. When we did the SoundDroid, one of the things we included was the ability to see the striations [waveforms] of everything just like an optical track so that we could use some of the advantages that optical cutting had. You can see where the words are and see where the sounds are and cut accordingly, which a lot of the older editors really thought was great.

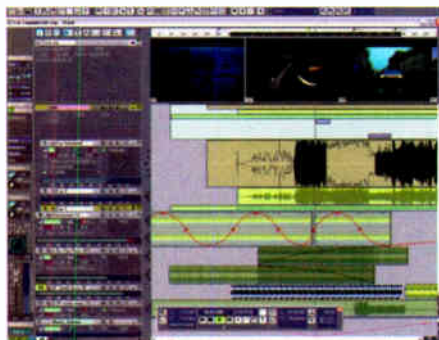
How about the transition to actually manufacturing EditDroid and SoundDroid?

When we were about to go to the next level, I realized I didn't want to be in the hardware business and run a company that built machines and things. We decided to sell EditDroid to Avid and have its ideas incorporated into the Media Composer [picture editing system]. I was very focused on want-

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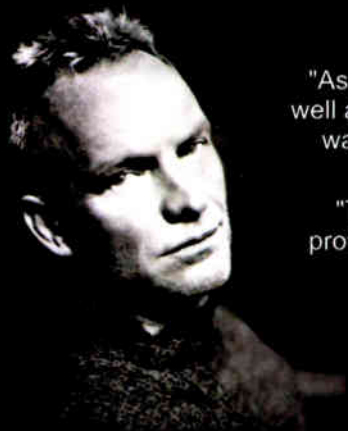
ing to have an integrated sound system so that the sound editing and the picture editing could be integrated. Unfortunately, I'm still fighting that fight. [Laughs.]

It's somewhat ironic that even after Avid bought Digidesign, the two platforms—Film Composer and Pro Tools—are still completely different pieces of software and link only peripherally via OMF.

That's my last real battle, so that when you're cutting picture, someone can be cutting sound simultaneously and the two systems are compatible, meaning you don't have to learn two different systems. I have always hired the sound editor the same day I hired the picture editor. I've always had the sound editor working alongside the picture editor so that when we're looking at cuts, we're looking at things with [proper] sound, so we don't look at it in isolation. We can incorporate sound editing into the picture editing work and actually look at the cuts with those ideas intact so we can say, "That works." So when you get down to the end and you have a fine cut of the picture, you usually have your soundtrack cut. You still have to do some of the ADR and Foley and fix some things, but basically, it's finished. What you see is pretty much the way the movie is going to be rather than, "This will all be great once we get it into the mix."

Let's talk about Episode III and the use of Pro Tools in the mix. You have recently expanded the Tech Building at the Ranch adding nine sound design/premixing suites. Can you talk about that and how you envision virtual mixing with Pro Tools and following that through to the final mix of the movie?

The Tech Building was built 20 years ago now and was designed to be a digital post-production building. Unfortunately, it was way ahead of its time, so what we had intended to be computer rooms were used as mag transfer rooms and machine rooms. There were a lot of things going on that the building wasn't really designed for; we had to accommodate what the rest of the industry was doing. But over the last few years, I've been able to push them and with the new remodel, we've taken the focus off pre-mixes. We'll do the pre-mixes on Pro Tools in sound design rooms because they are of equal quality. It's way beyond just a digital board. There is no such thing as making commitments, which is a huge advantage, especially for a director, because now you don't have to be there during the whole mix. I simply have to let them—the creative people who I have a great deal of faith in—do their job. You don't have to live through the



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George Lucas and composer John Williams relax between takes during the orchestral recording of *Star Wars Episode I* at London's Abbey Road studios.

agony of it. And you go through the reel and say, "I want that little cricket down a little bit there and I want this dialog cleaned up here." They can just go in and surgically carve out that particular element and work on it separately without having committed yourself in a pre-mix.

On *Star Wars [Episode IV]*, there wasn't an automated board at Goldwyn [Stage D, now Warner Hollywood] and you couldn't punch in on the stereo mix. The mix was a performance. You literally had that 10-minute reel [in real time] and if anything was wrong, your only option was to go back and do it over. And that's scary. Everything has kind of been designed that way, for that reality, but that reality doesn't exist anymore. So with those two things, you don't have to commit in quite the same way with quite the same high stakes that we were playing with before. And that's a huge thing with everybody. I can remember mixers getting down to about 875 feet and everybody starts really sweating. Inevitably, the hardest part is right in the last 100 feet of the reel and if you screw that up, you're dead! [Laughs.] You could feel the tension in the room.

If you were to play a 70mm print of the original Star Wars in the theater today, I would think that its sound levels would be downright tame compared to what's expected of stereo films today. Could you talk about issues of loudness in movies and how digital has maybe given us too wide of a leash with regards to loudness?

As with everything in technology, once the new technology comes in, then people abuse it because they can do things they could never do before. I think we're getting

to a point now where we realize that loud is not better. Everything used to be squeezed into this very narrow bandwidth, which meant the quietest and the loudest sounds were not very far apart. Now we can bring them far apart, but what's happened, instead of doing that, everybody just pushed everything up to be very loud. I am very conscious of what the audience is going through and you don't want to have the dynamic range so great that when something else comes on, it jumps out at you. You can build toward it.

When everything is loud, two things happen: One, your ears get tired and it creates a kind of energy that maybe you don't want in your movie. You don't realize that when you turn it off, there's a relief, because you're agitated emotionally just because it's such a loud sound, like being in a steel factory or something. Two, Walter Murch has a theory that I think is extremely accurate. The moviegoing experience is a *social* experience, and if the sound is so loud that you can't hear the other people in the audience—you can't hear them sigh and moan and jump and laugh and those kinds of things—you're missing out on the communal experience, which is why people go to the theater in the first place. And so it needs to be at a level where you can just get a sense of the other people around you. You shouldn't drown out their presence with a lot of overproduced sound.

We've been going through a problem on our trailers. We mix them and put them in the theater and you can hardly hear them because everybody else is mixing [trailers] to such a high level. So we're caught in a quandary of doing it the right way and be-

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ing drowned out or going on with the program. It's not a pleasant experience; it's like a rock concert.

You've worked with some of the great talents of the modern film sound era. I'm sure they've learned a lot from you, but what have you learned from working with them over the years?

I've learned a lot. These are people who are extremely talented in various ways. I'm very good friends with Walter. He is very intellectual, very thoughtful about the way he puts sound together. Ben [Burt] is like a historian. I mean, he is like a walking library in terms of sound. Gary [Rydstrom] is an artist in his own right, especially in mixing. They all came up through the sound designer school of the holistic soundtrack. I'm a very strong believer in the approach that one hands-on person should be in charge of the soundtrack from the very beginning to the very end of the picture. We've had very vigorous conversations and debates about things, where something is placed in the track and how loud it should be and how it blends into the backgrounds and whether it should be a sparse track or a



The familiar hum and Doppler shift of a light saber is just one of hundreds of Star Wars sounds that have forever been imprinted into the minds of moviegoers.

very complicated track in the area of music and sound effects and dialog. It's very good to have those kinds of discussions about how this works in the real world and how people respond to it. I still think there's a lot to learn about the aesthetics of

sound in the context of a motion picture. ■

Mix film sound editor Larry Blake is currently immersed in sound editing and recording on Ocean's Twelve, due out December 10.

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First-Person Pseudo-Reality of *Halo 2*

Making the Most of Surround for the Xbox

By Blair Jackson

“The fun thing about interactive media and games is that it’s still a relatively new medium,” says Marty O’Donnell, audio director of Bungie Studios, developers of the popular *Halo* Series of first-person shooter science-fiction video games. “Not only are there all sorts of technological [developments] advancing the field almost on a monthly basis, the aesthetics of the medium haven’t really been established yet. It’s sort of like being at the beginning of the film industry, where people are realizing, ‘Hey, we can move the camera around,’ or, ‘We can put on this zoom lens to go in and out.’ All that kind of cool stuff is happening in the gaming industry right now, where new things are constantly being invented that will change how games look, sound and feel to the player.”

O’Donnell, who works on both sound design and music for Bungie titles, has a long background in audio. After receiving his master’s degree in music composition from USC, he spent nearly two decades in commercial music production in the Chicago area. He always enjoyed video games as a hobby, “but the production values, particularly the audio, really seemed to be lacking; they were so constricted,” he says. “Then in 1993, the son of a friend of



PHOTO: COURTESY OF MICROSOFT

mine saw my studio and he said, ‘I see you’re interested in computer games. I have friends who make computer games.’ This is an 18-year-old kid. So that night he brought a beta version of a new game to my house—it turned out to be *Myst*; no one had seen it yet. And it was, of course, really, really cool. So I told him I needed to meet his friends, who were in Spokane [Wash.], and I did. I met Robin and Rand Miller [developers of the game], and I eventually got to work on the sequel to *Myst*—*Riven*.

“In those games, they were really doing something new,” he continues. “They seemed to understand that you could create a much more immersive experience in interactive entertainment by *not* relying on some of the conventions that had been built up in games up to that point—electronic-y, nonstop looping music. Suddenly, you had this very cinematic and surreal experience and excellent production values. It was clear that that was the direction games were headed, so I decided to make the jump.”

O’Donnell took a job with Bungie in 1996 and has worked on most of the company’s big games, including *Myth* (1 and 2), *Oni* and the *Halo* franchise. The hotly anticipated *Halo 2* is being released early this month. (In 2000, Bungie was acquired by Microsoft in what game industry analysts agree was an

attempt to lock up one of the more sophisticated game developers to create product for the company’s proprietary Xbox system. Bungie’s offices are located in Microsoft’s headquarters in Redmond, Wash.)

The *Halo* games are set in the distant future, when mankind is being threatened by various unsavory alien-types known collectively as The Covenant, which includes such sub-groups as Grunts, Jackals and The Elite—all gnarly dudes. Our character is known as the Master Chief, and basically it’s up to us to blast away the alien scum over the course of a number of different game levels using all sorts of advanced weaponry and assorted vehicles. According to O’Donnell, the graphics and the audio in *Halo 2* have taken a huge leap over their mega-popular predecessor: For the first time, he’s been able to utilize the Xbox’s discrete 5.1 capabilities to the fullest.

“I think surround sound works better in a first-person game than it does in movies because you *are* that person in the game,” O’Donnell says. “They have a field of view, but they’re also moving through space, so things are behind them all the time and all they have to do is turn around and they can look at and hear them. Audio is one of the best ways to bring that to life, and we can do so much more crazy surround sound

—CONTINUED ON PAGE 100

Marty O’Donnell is audio director of Bungie Studios, creators of the *Halo* franchise.



M. Night Shyamalan

Building a New Tradition of Sound and Picture

By Tom Kenny

M Night Shyamalan is something of a throwback. In today's Hollywood, where CGI runs rampant and blockbuster translates as huge action effects, Shyamalan remains meticulously attached to the intricacies of story. His scripts are worked and reworked, his storyboards are beyond thorough and his shooting ratio is low by anyone's standards, save perhaps Hitchcock. He has said on more than one occasion that he doesn't want to make movies in post-production.

And yet, this self-described technophobe, the writer/director/human force behind *The Sixth Sense*, *Unbreakable*, *Signs* and *The Village*, has built a state-of-the-art picture and sound editing facility in a working 200-year-old barn on his 75-acre homestead outside of Philadelphia. In doing so, he has placed himself squarely at the forefront of a new style of film production, alongside directors such as David Lynch, Robert Rodriguez and Jonathan Demme, who have all brought the initial stages of post-production home where they can work on picture and sound editing simultaneously.

"This model made sense to me because I still feel very much like an independent

filmmaker," Shyamalan says, making it clear that he will continue to perform final mixes at major facilities, taking advantage of mixers' expertise. "This stays in the spirit of making a home-crafted product, which we then put out for everybody. It's homemade, and you can see the humanity on the screen. Even though my films may be perceived as blockbusters, their strength comes from the fact that you can see the human imperfections."

In that independent spirit, Shyamalan shot *The Village* about 30 minutes from his home in the hills of Pennsylvania. He then brought picture editor Christopher Tellefsen and co-supervising sound editors Steve Boeddeker and Frank Eulner to his facility, where they literally worked days in the Avid/Pro Tools room and spent nights in the main house.

"This setup allowed it to stay very personal for me, with no compromise," Shyamalan says. "If I needed to figure out a sequence in editing, I wouldn't have to

leave the city to check the sound. We could do it right here. And we spent an enormous amount of time together discussing the sound and then watching it in the theater and coming back here [to the Avid/Pro Tools room] and walking through the sound design scene by scene."

"Coming back here" simply involves walking across a central atrium-like lounge area, from screening room to workspace. Visitors enter the barn through an oversized period second-floor door (the working horse stable occupies the first floor) and are greeted by an open, exposed-beam, two-story pitched ceiling. To the right is the Avid/Pro Tools room, with iso booth, machine room and low ceiling. (Film cutting rooms sit above it, on the third floor.) To the left is the screening room, which takes advantage of the building's ceiling height. Each of the rooms has identical audio playback equipment. Each room can be tied to the other; each can play back any format. Various common areas, kitchens, lounges and the like fill out the facility.

THE BARN WITHIN A BARN

After Shyamalan acquired the property four years ago, he brought in Toronto-

—CONTINUED ON PAGE 101



Shyamalan insisted on maintaining the authentic barn feel, as seen in the screening room.

PHOTOS COURTESY PICTURER-SCHUSTAL



The Pro Tools/ProControl room, with iso booth at left. Three feet up and behind is the four-seat Avid bay

Multi-Platform Integration at HSR

Post Facility Continues to Grow With Mac and PC

By Gary Eskow

Actors' strike. Economic downturn. Rate-cutting. Big studios closing. If there's one thing you can count on in the New York post community—no matter the climate, no matter the current market—it's likely that Howard Schwartz will survive them all. Howard Schwartz Recording alumni have opened and closed countless shops during the more than 25 years that Schwartz has operated above Penn Station.

Like another historical figure, Schwartz has always made a point of stocking his ark with two pieces of any equipment his staff deems necessary. HSR recently took delivery of a pair of computers specifically designed to house Steinberg's Nuendo. How easily do these DAWs—on a PC and a Mac—integrate with the Fairlight and Pro Tools workstations that HSR owns?

"The audio post business has changed in fundamental ways over the last several years," says VP and chief engineer Marty Newman. "Networking a variety of digital equipment is a fact of life. It's no longer about handing someone a piece of tape with a mix on it. Every day we have to take in audio, video and media assets in a variety of file formats. When interoperability works easily, it's great! When there are problems, we have to solve them quickly. Fortunately, we have tools that let us convert files and make sure the job gets done as easily as possible.

"Glenn Navia, one of our mixers, and Andrew Knox, who works on music and sound design, were both very impressed with Nuendo," he adds. "Our philosophy is to put tools into the hands of a staff that they feel will help them get the job done to the highest standards."

Knox installed Nuendo on a 2GHz, dual-processor Mac G5 himself. Once the decision was made to place Nuendo on a PC in the suite Navia uses, HSR started looking around for a vendor. "We wanted to establish a relationship with a company that we felt could handle all installation issues and provide us with good support," Knox says. "Of course, we could have installed the software and hardware ourselves, but there are a number of manufacturers building audio for video computers and we decided that it would be better to go with one of them.

"Our research told us that the best platform to run Nuendo on is a PC built on an AMD processor," he continues. "Steinberg put us in touch with the East Coast Music Mall in Connecticut, and we had them put together a system that includes Nuendo. We also had them put Pro Tools LE and [Sonic Foundry] Vegas Video on the workstation. Glenn will basically be using Nuendo to run audio tracks only, so we had Chris Ludwig of the East Coast Music Mall build him a single-processor Athlon workstation. We've been very impressed with Ludwig's knowledge and the service we've gotten from the store."

"I've been using Nuendo ever since they came out with Version 1.0," says Navia, who has been an editor/mixer at HSR for three years. "If I were mixing albums and needed tons of tracks and lots of plug-ins, I'd have to have a dual-processor machine, but I tend to work with about 32 tracks of audio and just a few plug-ins—Waves included—so the single-processor machine that Chris built is fine.

"I also work on a Fairlight," he says, "and interfacing the two workstations was critical. I had been using analog outputs from the Fairlight, but we recently bought an RME ADI-8 interface that lets me Lightpipe between the two systems. I'm a huge RME fan. Their converters sound great, and for the money, there's nothing better, in my view.

"We've had good results passing OMF files between Nuendo and our Pro Tools and Fairlight stations," Navia adds. "Nuendo opens OMF files with no problem, but it's important to have these files prepped properly. The biggest issue that I've seen is that when you're saving an OMF file, you have a series of choices to make, including whether you want the file to be read in .WAV or .AIFF format. You can also choose to have the audio files included in the same folder with the OMF data itself or in a separate file that OMF points to when it's opened up on the second system. We like to include the audio files with the OMF data in one folder. Otherwise, if one audio file is missing or can't be easily found for some



Mixer Glenn Navia (left) and composer/sound designer Andrew Knox in front of one of HSR's Nuendo systems

reason, the OMF session might not open at all. That's a disaster!

"The A/V transfer program we use handles AES-31 files and I prefer it," he continues. "It works like an updated version of OMF; fades tend to come out better, for example. But AES-31 hasn't become the standard yet, so we'll use it to pass files between systems in house [with the exception of Pro Tools, and OMF to send out and receive files from the outside world.]"

Knox has composed music, created sound design and sweetened video at HSR for the past three years. A longtime MOTU Digital Performer user, Knox recently switched over to Nuendo. "Digital Performer is very user-friendly on the MIDI side of things," says Knox, "but not on the audio side. The opposite is true with Nuendo—at least that's how I compare the two platforms.

"Nuendo has some features that work perfectly in audio-for-video applications. I particularly like the fact that the user is able to map out different viewing formats in whatever way is most suitable," Knox continues. "DP and the other digital audio sequencers do give you access to this information, but I think Nuendo has the best interface for viewing various timelines, for example. I like to use VST instruments, and there's no question that these plug-ins work best with Steinberg software. Sonically, both Nuendo and Digital Performer impress me.

"Being able to integrate different digital equipment, including our two Nuendo workstations, into a seamless whole, without a client's work process ever being disrupted, is a big challenge," Knox concludes. "We like to think we're up to it." ■

Gary Eskow is a contributing editor to Mix.

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Xbox

—FROM PAGE 96

stuff because of that first-person camera perspective.

"Everything has been turned up to '11' on *Halo 2*," he continues. "There's more detail and more surround sound. I'm actually doing music that I've created in 5.1. I didn't have any of that in *Halo*. I think we went from about 8,000 lines of dialog to about 17,000. The story is more complex and there are more characters. There are also more weapons, more vehicles and it's a much richer experience. For example, if you're driving the warthog [vehicle], the engine is in surround and the wheels are actually contacting whatever surface you're on, so it knows if you're in water, on sand or gravel, and when you skid on that, you get the right sounds. When you do damage to the vehicle, fenders fall off and you hear metal hitting sand or whatever. All those little details have been fleshed out. It's just more realistic all the way around."

O'Donnell and his two fellow sound designers, C. Paul Johnson and Jay Weinland, do most of their sound work using a combination of Pro Tools and BIAS Peak, a 2-track editing program for the Mac. "We do all of our dialog work in Pro Tools," O'Donnell says, "and I do all my music in Digital Performer and Pro Tools. Production-wise, I do all the normal stuff: I record live orchestra or I do a bunch of cool MIDI tracks and record them in Digital Performer and mix them in Pro Tools."

At this point, all of the game audio is 16-bit/44k, "quite a change from when I started working in the game industry in 1996 and the sound was all 8-bit and everybody sounded like they were talking through a cheap radio because there was so much distortion," O'Donnell recalls. "But I wanted, and the guys at Cyan [makers of *Myst*] wanted, to do things better, so [on *Riven*] we did it 16-bit stereo, 22k, and we used the new ADPCM compression, which was a way of compressing the sounds about four-to-one; that really helped the quality. In *Halo*, the compression is pretty much the same. Xbox has really good compression algorithms built-in, so it doesn't cause the CPU to work to decompress sounds.

"We're throwing hundreds and thousands of files at the engine," he continues. "The mono files can be something as simple as a shell casing dropping on concrete or bouncing on dirt. And the game engine itself is keeping track of where this audio is happening in 3-D space, so every piece of audio is essentially on its own track with its own joystick, but it's automatic. Once you have an

object in the X/Y/Z space of a 3-D environment, not only is it being kept track of as an object visually in 3-D space, but we can aurally keep track of it, too, so the audio is being sent to the proper speakers based on where it is existing in space. So when something blows up and a rock flies from the front left to the rear right, the game engine is actually keeping track of that rock and its position and adjusting accordingly to the proper sound perspective. Really, as the player, *you're making the surround happen.*"

For mixing, O'Donnell will sometimes go to Studio X in Seattle and work on its SSL console. "If I'm in Chicago, my friend Mike Salvatore still has a couple of studios there that I'll use, including a ProControl studio that's really nice. Then we also did some work in L.A. on an O2R, and my studio here has a Mackie HUI. Mine is a project studio that wraps around me as I sit in my chair. I've got Pro Tools, a HUI and a Kurzweil, and Genelec monitors—I'm ready to go!"

The actual implementation of the sound into the game is facilitated by "tools given to us by [Microsoft] DirectSound and the Xbox, because they work with Dolby and have the Dolby chip in there that allows the game engine to control where the sound goes. The key is that there is real-time Dolby encoding and decoding, which I didn't even think was possible a few years ago. You're throwing all the sounds at the engine and it's spitting it out in real time, with no delay, to six discrete channels. That's an amazing accomplishment. I have to hand it to the guys at Microsoft and Dolby: They worked together and figured out how to do that with a chip. It makes it so much easier."

Still, O'Donnell is aware that many people playing *Halo 2* won't have a full 5.1 setup, "so when I'm mixing, I'm constantly switching from 5.1 to stereo to see how it's changing. And we do some cheating [for the surround mix], too: I'll take some stereo ambient sounds and stereo music and force -6 dB or -8 dB of the same signal into the rears, so it sets up this nice [audio] environment where all speakers are humming, and then we'll also have lots of discrete sounds happening all around you."

"But the Xbox has automatic fold-down if I tell it that I'm playing stereo. And, hopefully, not too much of the detail is lost; obviously, the perspective isn't quite the same. Otherwise, if you do have the 5.1 [setup], we just have to hope that you've got them plugged in correctly. Otherwise, it's going to be pretty disorienting." ■

Blair Jackson is Mix's senior editor.

Shyamalan

—FROM PAGE 97

based architectural/acoustics firm Pilchner-Schoustal to see if a facility was feasible. From the beginning, the mandate was to rip out the inside of the barn and then...make it look like a barn again.

"We got a call when they first started looking at the property," recalls designer Martin Pilchner. "We took a drive out to this nice farm setting and, well, it was a bit of a mess. [Laughs.] Hay bales and tractors, gaps in the floors where you could see the horses, a lot of cross-bracing. I had this idea that it might be cool to have this intersection of the modern and the old colliding. Well, Night threw that right out [Laughs], so our approach turned to, 'How can we be as contextual as possible? Be as true to the period of the building and the intent of a barn.' That began the process, and we always sought to achieve authenticity."

It simply became a different design game for Pilchner, one that his team tackled with a passion. Windows were "chipped" out of the 2-foot-thick rock walls and custom-manufactured in the original style. Door hinges were custom-made to resemble a blacksmith-type door strap. Old-style theater seats harken back to the 1920s. The oak wood was all cut from raw stock on a band saw right at the mill and delivered from Canada; off-the-shelf oak was too refined. The oak was then treated to match the 12x12 original beams, complete with pegs.

"We had to turn back the clock and ask, 'If we had studios back then, what would they look like?'" Pilchner says with a laugh. "Marks were left in the wood like it would have been at the time. When we put in floorboards, we could have sanded and put on a nice finish, but that wasn't the idea. The more distressed and imperfect it looked, the more contextual it turned out, like an original barn floor. At the same time, we have a high-tech environment, with sealed doors and double-pane glazing. The structure is more thermally efficient than the house."

THE AVID/PRO TOOLS ROOM

Though the firm has done high-end home theaters, large multimedia facilities, tour buses and countless recording control rooms over the years, Shyamalan's project brought them a new challenge: combining picture *and* sound editorial in a single, relatively long and narrow workspace. In a sense, they had to serve two masters.

"As far as the physical layout of the room, with an upper and lower tier, the

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room was built for picture editing," Pilchner explains. "As far as the sound system was concerned, audio obviously took on importance. The throw from the front speakers is consistent for the film mix position and it's the exact same sound system we have in the screening room, though the screen is a little smaller. And, of course, we have trapping cleverly concealed along the ceilings, side walls, back corner and some in front."

Visitors enter in the back of the room, where custom furniture has been installed to house four Avid edit bays in an L-shape.

The room then steps down (roughly three feet in building dimensions) to a ProControl/Pro Tools area, with outboard rack and full 5.1 Apogee monitoring with QSC amps. To the left of the screen is a small iso room for ADR work; it doubled as a Pro Tools editing room at times on *The Village*. To the right is the machine room, which also holds the tielines to the screening room and the rest of the building. Windows line the outside rock wall, as Shyamalan was insistent that editors be able to look out on the hills and not feel like they were "trapped in a warehouse."

THE SCREENING ROOM

Building a multiformat screening room proved slightly more challenging, as the slope of the roof (the building is a designated landmark and the footprint could not change) was fixed and Shyamalan wanted to retain the high ceiling, though it didn't fit neatly into the optimum geometry. The room is not quite as long as the Avid space, as the projection booth occupies the back, but it is taller, as there is no editing room above it.

"Our first question was, 'How are we going to make this all make sense?'" Pilchner recalls. "So we created a whole separate box that followed the outside envelope of the building. Then we came in with details and tiered it. We then started laying out the acoustic treatments and the speaker locations—we couldn't expose any mechanical elements at all. Then we had to bring down a fairly heavily isolated ceiling and add the acoustic treatments, again with some trapping up front. Then it was all structure." The Stewart screen was custom-built within a $\frac{1}{8}$ -inch tolerance—it proved *that* tight.

"Our biggest issue, really, became the visual challenge," Pilchner adds. "Everything seems to be happening up above the screen height, so we dropped some big chandeliers up there. We searched eight months for those."

Virtually anything you can think of to deliver a mix on can be played back from the projection booth. Two 35mm Kinoton projectors are set up for Dolby and DTS 5.1 playback. A Runco DLP projector handles video playback from virtually any source—tape-based, hard disk-based—including the Avid output from across the hall.

"This was a complete departure from our normal approach to design, which is usually very modern," Pilchner sums up. "Here we made something high-tech within a period environment. And it always boiled down to the littlest details. We could have easily thrown up fake elements that would have had the effect but not the integrity. You tend to get into it after a while: Here's the easy way to do it and here is the appropriate way to do it."

"You can have an automated house that can do everything you could ever imagine," Shyamalan adds, "but it ends up that the only thing that means anything to you is the little sketch that your son drew with a pencil on paper. And that's what scares me about technology. All this is convenience and wonder, but in the end, all you need is a piece of lead and paper to create an emotion." ■

Tom Kenny is the editor of Mix.

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The Cure



The Cure vocalist Robert Smith is using a Shure Beta 58A.

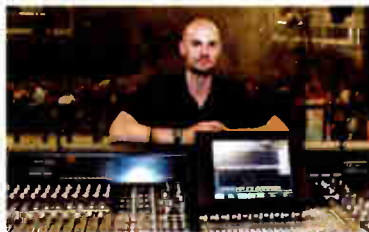
Text and Photos by Steve Jennings

The Cure's Curiosa shows at San Francisco's SBC Park brought the band and support acts Interpol, The Rapture and Mogwai together on one action-packed stage. *Mix* spoke with The Cure's FOH engineer, Craig Overbay.

This is the first tour that Overbay's using a digital console—a Yamaha PMID. "One of the many things that I like are the onboard, insertable $\frac{1}{2}$ -octave EQs with notch filters, which we assigned to eight of the matrix outputs for controlling various zones of the P.A.," he says. "I also used the compressors and gates on the desk, which work very well for the band."

All of the control and monitor systems were provided by Firehouse Productions, with racks and stacks from Rat Sound. The P.A. comprised two V-DOSC hangs per side—with nine V-DOSC and three dV-DOSC on the inside hang and six V-DOSC and three V-DOSC on the outside hang. Four-box dV-DOSC center-fill clusters were flown from the front lighting truss. According to Overbay, "One of the

best things that was accomplished on this tour was better coverage of all the seats in sheds by hanging two stacks of V-DOSC per side in a R.L.R.L. configuration." The sub configuration comprises a flown stack of eight Rat subs that were landed: three subs were stacked on either side of the column. "It worked well for horizontal dispersion of the bottom end while still giving you enough thump in the middle at mix position to keep all the engineers happy."



Front-of-house engineer Craig Overbay

FixIt

Devine Evans

Devine Evans is the Pro Tools engineer/programmer for Mary J. Blige, Musiq Soulchild and R&B crooner Lloyd. Check out some of his work at www.allstarr-entertainment.com.

With 50,000 screaming fans, system crashes are *not* an option! My trick for fail-safe operation is set up two Pro Tools rigs with a perfect mirror of your session, with LTC recorded onto an available track in Pro Tools. Send one TC track out to the input of your sync L/O, USD, etc., so both CPUs act as a master. (This also works using Digi 001s or 002s by connecting the MIDI L/O ports of both rigs to each other.) Now open Session Set Up on both CPUs and go to Timecode Settings. Under Freewheel, choose Jam Sync (if you're using MTC, check the MTC to Port box under Generator), telling Pro Tools to ignore the absence of timecode due to a system malfunction so your backup CPU keeps going. Close Session Set Up, open Transport and click on the image of the clock so both rigs act as a master and slave. Just use an A/B switcher to handle all of your L/O when you switch between the CPUs. If the CPU takes a dive, just switch and your slave becomes the master.



inside

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News

Yamaha PM5D consoles have been purchased by sound reinforcement companies nationwide, including Acoustech (Hollywood, FL) for use at the Republican National Convention in New York... R&R Sound (Lodi, CA) was recently out with acts from the California Mid-State Fair, including Clint Black, LeAnn Rimes, Blink-182, the Goo Goo Dolls, Tim McGraw and others. Its L' Acoustics rig comprised 36 V-DOSC, 4-dV-DOSC (downfill), three arcs (frontfill) and 24 SB-218 subs. Front of house featured a Midas Heritage console and Yamaha PM4000M for monitors... On the other coast, New York City's Central Park-based Summer Stage Series attracted more than 5 million people. The 48-channel ATI Paragon II Production console, new to the program this year, was brought in by acoustical consultants SIA Acoustics (NYC) and manned by partner/FOH engineer Steve Sockey.

Sockey reports that, "The city has very strict sound level requirements. In the past, it was difficult to get a mix that would fit into that pocket. The dynamics on the console allow us to make things fit right there, and the concerns over sound level violations have been minimized."...

The historic Greek Theater in Los Angeles has completed an \$8 million renovation project, including a new state-of-the-art sound system, in time for its 75th anniversary season. The theater opened in late April with a performance by David Bowie. Schubert Systems Group, a locally based sales, installation and rental sound services company, specified and installed the equipment, which includes a JBL VerTec line array, Crown amps and Lake Contour digital loudspeaker processors.



Sockey at the helm with Summer Stage's new ATI Paragon console

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S E R I E S





On the Road

Scott Steiner

Scott Steiner, currently handling FOH duties for Sonia Dada, recently completed mixing the band's *Test Pattern 5.1 CD/DVD* release, which was finished at The Plant (Sausalito, Calif.).

How much gear are you carrying?

We carry the entire stage setup (two full guitar setups, a bass rig, two drum kits, a percussion outfit, a large keyboard rig nicknamed "starship enterprise" played by "Hambone") and a full monitor rig. The three singers and percussionist use in-ears while four instrumentalists each have separate mixes with wedges. The drummer has a wedge mix with an extra mix for a "thumper" drum throne. We also have a Pro Tools HD rig to record every show to FireWire hard drives. I recently used a Yamaha PM5D at the Fillmore (San Francisco) thanks to a random run-in with Ralph Tolson and Louis Adamo of Hi-Tech Audio and Joseph Lopez, Yamaha's application specialist. They loaned me a PM5D and came out to soundcheck to get me up and running. I am looking forward to getting more shows under my belt with it.

What is the most challenging element in working with a large ensemble?

Getting the important moments of each song out front while maintaining a musical balance, which means having my fingers on faders the entire show.

What is your "must have" piece of gear?

My old dbx 160s are a big part of controlling the show, but my mountain bike single-handedly keeps me healthy on the road.

What do you do when you're not on tour?

I try to spend as much time as I can in the studio. I also mix FOH for actor Gary Sinise's Lt. Dan Band. When I do take time off, I like to travel. Besides visits to the family cabin in the north woods of Wisconsin, I like to travel to Peru, Kenya, Mexico and the Czech Republic. I also try to play in a soccer league, though it has been a couple of years—go figure.

Now Playing

Steven Curtis Chapman

Sound Company: CTS Audio, Nashville
FOH Engineer/Console: Russ Long/Yamaha PM1D
Monitor Engineer/Console: Tim Farris/Yamaha PM1D

P.A./Amps: 24 JBL 4888 VerTec, 12 JBL 4887 VerTec, eight JBL 4880 subs, four Nexo PS 8 low-profile speakers (front-fills)/QSC PowerLight 6.0, 236

Monitors: six Shure PSM700 ears, four Sennheiser IEMs, six Shure U4D wireless with Beta 87 capsules

Outboard Gear: Focusrite ISA430mkII, 4x Empirical Labs Distressors, Lexicon PCM-90, Eventide H3000

Microphones: Audio-Technica AT2500 (kick), AT3031 (snare bottom, hi-hat), AT3035 (overheads), ATM35 (toms), ATM25 (bass), AT4050 (guitar), AE3300 (vocals), AEW-4230D (vocal), ATM63HE (B3); Shure SM57 (snare top)

Additional crew: Dave Albro and Mike Taylor, system techs

The Deftones

Sound Company: DB Sound, Chicago
FOH Engineer/Console: Billy Head/Midas Heritage
Monitor Engineer/Console: Pete Roberts/Midas XL250

P.A./Amps: House systems

Monitors/Amps: Firehouse F15 monitor speaker/Crown 36X12

Outboard Gear: TC Electronic 2290s, M1, M2; Eventide H3500; Lexicon; DBX; Yamaha

Microphones: Shure Beta 58, Beta 52, SM91, Beta 56, Beta 98, SM57, KSM 32, Beta 81, Beta 58 Wireless



PHOTO: NEALE HAMILTON/ROCK & ROLL HALL OF FAME MUSEUM

PHOTO: LANCE DALGART

Allen & Heath Celebrates 35 in Style

At the recent PLASA show (London), Allen & Heath hosted an anniversary party on the walkway of London's Tower Bridge to celebrate 35 years in the pro audio business. Guests from the company's network of overseas distributors attended a dinner with special guest speakers from the original management team—Andrew Sterling and Ivor Taylor—who joined the company in 1969.

Allen & Heath managing director Glenn Rogers said, "For anyone in the manufacturing industry to survive 35 years and still be continually expanding is a phenomenal success. Allen & Heath has an extraordinarily innovative past,



A customized Allen & Heath MOD1 console, used by Pink Floyd on their *Dark Side of the Moon* tour in 1973

and we're heading toward a bright and exciting future. Here's to the next 35 years!"

"let there be light..."

LightViper • Digital Fiber Optic Audio Snake System

LightViper...

Introducing LightViper - the ONLY digital fiber-optic snake system that's light enough to be a carry-on! One that gives you limitless lossless splitting and routing options, built-in phantom power on every channel, 24bit/96kHz sampling, balanced/unbalanced analog and AES/EBU digital outputs on every channel and no need for DI's - ever!

LightViper is as transparent and easy to use as any snake you've ever used - plug and play - that COSTS FAR LESS than other digital snake systems. One that lets you focus on your show - not the snake.

Its 1/4" fiber optic cable can be run more than 1.25 miles with no loss and no ground loops, while standing up to tough military standards. Now, the only way you'll encounter that scenario is on a USO tour, but the point is, LightViper can handle ANYTHING that's thrown its way and still come out shining.

Who Is Fiberplex?

Experts in fiber optics for more than 35 years, FiberPlex pioneered some of the first commercial fiber optic devices. Our work in audio and data communications products is known in US government applications worldwide. With LightViper, we combine the technology we pioneered with our expertise in audio engineering.

Why fiber optics?

Fiber transmits light rather than electrons, permitting digital transmission over much greater distances (more than 1.25 miles without attenuation problems). Optical fiber provides complete electrical isolation, immunity to radio frequency interference (RFI) and electromagnetic interference (EMI) and eliminates ground loop problems. Plus, it can be easily routed overhead, around obstacles, through walls, or underground.



The cable's small diameter and extended range allow for routings that avoid foot traffic yet maintain the aesthetics of the venue. A 32 x 8 channel copper snake of 300 feet weighs more than 200 pounds, whereas 300 feet of the LightViper's fiber weighs less than 6 pounds. Built to "ruggedized" military standards, the LightViper 1832 will outlast copper snakes by many years.

How does it work?

The Light Viper has two main components: a stage box, the size and form of a traditional



snake box, and a 1U rack unit at the mixer. The stage end features 32 Neutrik XLR / 1/4" TRS combo connectors going into high-quality pre-amps for each input, and eight Neutrik XLR male connectors on the returns. All inputs accept balanced or unbalanced signals, eliminating the need for costly direct boxes. When using the digital i/o the unit can be slave or master using either Word Clock or Super Clock via BNC connectors. Each input has three gain level adjustments; 0 dB (line), 26 dB and 46 dB (mic) as well as 48V phantom power. The outputs of the ultra-high quality pre-amps are sampled at 24bit/96 KHz for pure and rich audio before being multiplexed and sent to the mixer on a single fiber pair. The stage box also offers the option of two additional fiber outputs.

providing lossless digital splitting of all 32 inputs for use in monitor mixes and/or broadcast/record-



ing mixes. The mixer end is a 1U rear- or front-mount rack unit with DB-25 connectors utilizing Tascam DA-88 balanced pin-outs; five connectors, eight channels per connector. There are also three DB-25 connectors with simultaneous AES3 digital inputs/outputs (for direct feeds to peripheral digital equipment such as recording, broadcast or archiving feeds).

The best answer to the question "How does it work?" can only be "It works brilliantly!"

The LightViper Advantage...

- 32 x 8 fiber optic snake
- Cable runs over 1.25 miles with no loss
- Rugged fiber cable smaller in diameter than standard mic cable!!
- 24 bit/96 KHz sampling
- Phantom power on every channel
- Every channel accepts balanced or unbalanced connections... No need for DI's!
- Flat frequency response and better than 100 dB dynamic range - delivers true, crystal clear sound
- High quality Neutrik® connectors
- Optional lossless 3-way split of all 32 channels on stage end
- Simultaneous analog/AES3 digital outputs on all 32 channels
- Extended range and flexibility means limitless routing options
- Heavy-gauge steel construction
- Rack mount and wall panel options available
- Perfect for installations of all kinds (Houses of Worship, Clubs, Corporate), broadcast and for touring sound



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World Radio History

Touring San Francisco's PREMIER VENUES

Every month in this section, *Mix* gets an "All Access" pass to go backstage on today's hottest tours. To help celebrate the AES Convention coming to San Francisco, this month, we've pulled a few strings to go behind-the-scenes of the city's hottest venues.

By Sarah Benzuly

Photos by Steve Jennings



At the Fillmore, from left: Sound techs Mary Alafetich, Bobby Mack, Nathan Harlow and Zombie

THE FILLMORE

What once hosted Wednesday night social and masquerade balls (1912), was a dance hall (up through the 1930s) and a roller rink (1940s), The Fillmore has been through numerous incarnations as a music venue: It hosted James Brown and other R&B greats in the late '50s and early '60s, then was the center of the San Francisco psychedelic renaissance under Bill Graham from late '65 to 1968. It lay dormant for many years and then came back as a first-call venue run by Graham's company in the late '80s and then again from 1994 on. For a complete history, visit www.thefillmore.com.

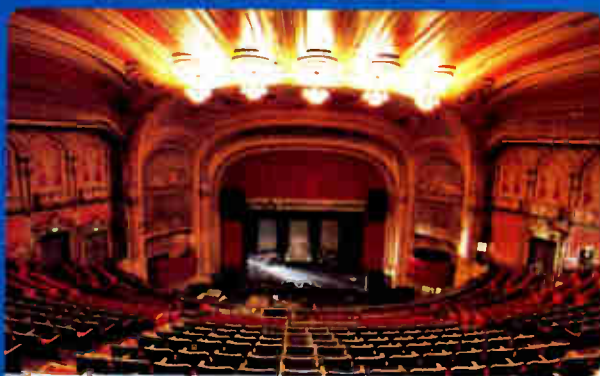
At FOH is a Crest Century X VCA 48x8x2, while monitors get a Crest Century LMX (40x20) at stage-right. The P.A. comprises three Meyer M3D powered line array (flown) per side, three Meyer M3D powered line array subs per side, a Meyer DF-4 powered in-fill per side (underhung) and one flown Meyer CQ-2 for center-fill. Monitors include Meyer wedges and sidefills with BSS EQ, Aphex and Klark-Teknik gates, and Crest amps. Outboard gear includes models from TC Electronic, Yamaha, dbx, Summit, XTA, BSS and more.



Great American Music Hall's Lee Brenkman, senior sound tech

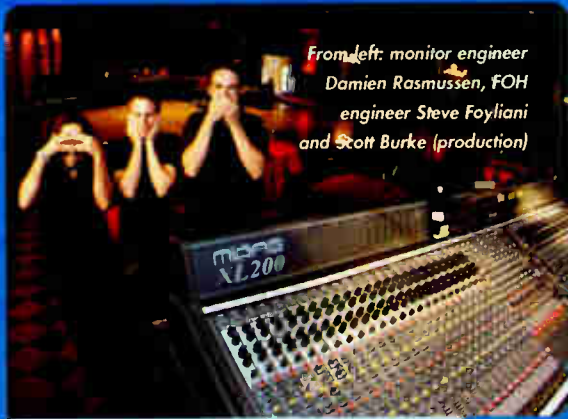
GREAT AMERICAN MUSIC HALL

Looking back to a more elegant time period, this 50,000-square-foot mid-sized club—with its ornate balconies, soaring marble columns and elaborate ceiling frescoes—opened in 1907 as Blanco's during the height of San Francisco's Barbary Coast era. Thirty years later, Sally Rand brought new life to the building—renaming it Music Box—until it turned out its lights at the end of World War II. Blanco's reopened in 1948 as a jazz club, and in the 1950s, the Moose Lodge took over management. In 1972, the Great American Music Hall opened as it stands now. The venue's main speaker system (JBL Array Series and Crest amps) has been in place since 1989/90; the owners are contemplating an upgrade. Other gear includes a Soundcraft K2 40-channel FOH board, JBL processors, a Soundcraft Delta Monitor 32x10, McCauley wedges, a plethora of outboard gear and mics from Audix, Audio-Technica, AKG, Shure, Sennheiser and Countryman.



THE WARFIELD

Named for veteran actor David Warfield, this theater is one of the last surviving vaudeville palaces of the 1920s. Its Victorian heritage can still be seen today with its ornate ceiling designs, elegant chandeliers and wrought-iron balustrades. Gold-leafed opera boxes (unused today) overlook the stage and the period mural over the proscenium. After recent renovations, the Warfield has become a must-play destination for national acts such as Ryan Adams, PJ Harvey, Interpol and many other up-and-coming bands. While the venue does not offer an in-house system (typically, most bands playing the venue are carrying their own rig), audio tech riders can be met via rentals from local companies such as UltraSound/Promedia and Sound on Stage.



From left: monitor engineer Damien Rasmussen, FOH engineer Steve Foyliani and Scott Burke (production)

BIMBO'S 365 CLUB

Bimbo's 365 Club co-founder Agostino Giuntoli left Tuscany in 1922, sailed to America and began working as a janitor and then a cook in San Francisco's Palace Hotel. His boss, Monk Young, was unable to pronounce his name and referred to him as "Bimbo," the Italian word for boy. The name stuck. In the midst of the Great Depression, he and Young opened the 365 Club, moving to the present locale in 1951.

A Midas XL-200 takes centerstage at FOH with processing via Klark-Teknik DN360 and DN410, BSS OmniDrive and DPR-402, dbx 1046 and 166, and a Summit stereo tube compressor. Monitor engineers can take stock of the Soundcraft M3 board, Audio Logic graphics, 10 Sound on Stage wedges with JBL drivers and woofers (UREI crossovers at 1,200 Hz and time-offset correction) and Crest power amps. The P.A. is a Nexo system comprising two M3/two B1 (left, flown), two PS15 (center, flown), two M3/two B1 (right, flown), two B1/S2 (left and right, ground) and Meyer UPAs for rear and mid-room delays. Bimbo's mic closet is stocked with models from Beyer, Sennheiser, Audio-Technica, Shure and AKG. A six-foot Kawai baby grand is also on-hand.

THE POUND

The Pound is currently expanding into an indoor/outdoor venue, with the upgrade including a new 8-channel Crest X-Eight for FOH. The production for the outside venue (2,000 capacity) will at first be covered by rentals with plans to purchase a house-owned system. The Pound offers Soundcraft Spirit LX-7 boards (FOH, 32-input; monitors, 24-input located at FOH) for incoming audio engineers. Mains are provided by Apogee AE-9s (one per side), double-18s (one per side) and single-18s (two at center), with Apogee digital processor amps matched to speakers. Monitors are via four Yamaha SM 15-IV with Crest and QSC amps, a self-powered Mackie SR 1530 (drumfill) and two Apogee AE-5 sidefills. Outboard gear includes models from Ashly, dbx, Drawmer, PreSonus, TC Electronic and Lexicon, while the mic closet is stocked with Shures, Sennheisers and AKGs.



Audio engineer Thilo Fehlinger (left) and Gabe Nahshen, sound tech



Slim's audio department manager Tigi Coyle

SLIM'S

Opened in 1988 by R&B artist Boz Scaggs, Slim's attracts all types of music, nationally and internationally. The premises comprise an open floor on the main level with a performance stage on one end, a small balcony with table seating at the other end and a full bar running

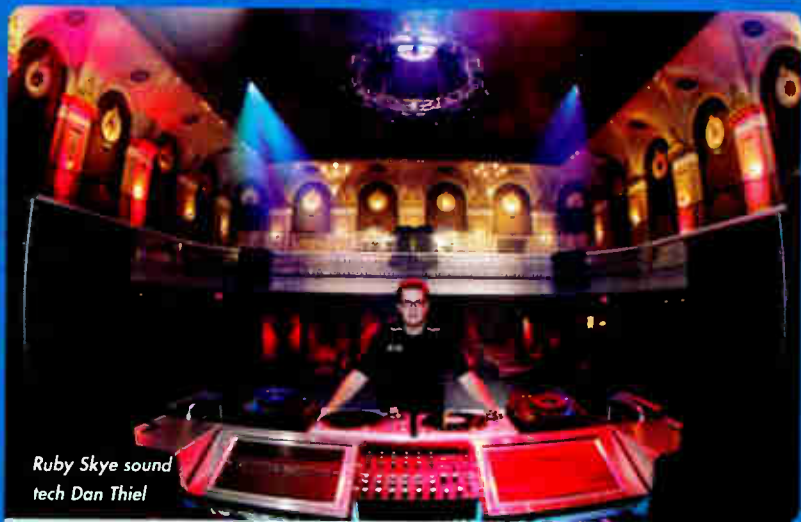
the length of the room. House specs include Soundcraft Vienna 40-channel FOH board and a Yamaha 3210 at monitor world. Processing includes BSS Omnidrive with BSS FDS 388 Omnidrive and Klark-Teknik DN360 graphic EQ (FOH) and BSS FDS 334 Minidrive and eight BSS FCS 960 (monitors). The JBL array system comprises four 4894s (two per side, flown; each box loaded with 2x14s and 1x½), with two sub boxes per side (each box loaded with dual-18s) ground-stacked—all JBL powered—and JBL wedges. Microphones run the gamut from Sennheiser, AKG, Shure and Audio-Technica.

BOTTOM OF THE HILL

Presenting live music shows seven days a week, the Bottom of the Hill has hosted top-notch acts including Bad Religion, Nashville Pussy, Fu Manchu and The Donnas, while spotlighting up-and-coming local bands. Artists can be heard through EAW ASR 695 bi-amped mains, which have recently been upgraded with 1,000-watt woofers, all powered by Crest 7001 amps. Front-of-house engineers can use the venue's Allen & Heath GL3000 24-channel board; outboard gear comprises TC Electronic M1, Yamaha Rev-500, Roland SDE-100G, dbx 266 compressor/gates, Drawmer 241 compressor/gates, Symetrix compressor and AL gates. For monitoring, the venue provides four discrete mixes (three front, one drumfill) of Community boxes powered by Crest amps, as well as two Community VBS415 subs powered by a Crown MacroTech 5000 amp.



Bottom of the Hill's sound techs, from left: Ben Tuttle, Lars Savage and Kim Griess



Ruby Skye sound tech Dan Thiel

RUBY SKYE

Located in the heart of the theater district, Ruby Skye offers live shows and DJ music every Friday and Saturday with special events held on Wednesday, Thursday and Sunday nights. Built in the 1890s, Ruby Skye is a historical landmark (a turn-of-the-century Victorian playhouse) that formerly housed The Stage Door Theatre. San Francisco-based JK Sound recently installed a new BSS SoundWeb system, which is set up in a four-corner configuration, in which the two left and right rear speakers are facing the stage. In Live mode, the rear speakers are muted and the equalization of the front speakers is changed so that the vocals are better projected. The Live setting also allows the engineer to send a mono mix to a center cluster that functions as the balcony fill, as well as redirect the inputs to a pair of stagefill speakers that can then be used as sidefill monitors. Additionally, the Live setting switches the input to the subs from a stereo sum of the Rane MP2016 DJ mixer to a line that can be fed by an aux from the mixing board; the subs are built into the front of the stage. The main dancefloor's five-way system has four JBL VS3215-9 speakers, four JBL SPL125 speakers, two JK Sound quad 18-inch subs with JBL 2242 drivers—all driven by QSC CX502/702/1102 and PL 4.0 and 6.0 amps.

THE INDEPENDENT

The Independent (formerly the Justice League) is a 500-capacity club that's been completely renovated to handle everything from hip hop superstars to blaring indie rockers. Its state-of-the-art sound system features a Midas Legend 3000 FOH console and a digitally optimized Electro-Voice X-Array P.A. system (including P3000RL remote-controlled amps with digital speaker management). The FOH console and lighting console are located in a dedicated 15x9-foot "tech space," located directly between the mains and approximately 50 feet from the front of the stage. The stage-level monitor area hosts a Soundcraft 500B 32x12 console with custom 6dB momentary feedback kill switch. Monitors are brand-new Electro-Voice XW15 wedges driven by CP2200 precision amps and tuned via a Klark-Teknik DN8948 speaker-management system and dual 1/2-octave EQs. A monitor patch system includes a 12-channel snake from the Soundcraft's outputs to a panel mounted on the front of the monitor amp rack, allowing the engineer to assign any mix to any amp channel. As the venue is located in a residential area, a 105dB SPL limit on the mixes (measured from FOH) is enforced.



The Independent's FOH engineer, John Karr

DNA LOUNGE

The crew at DNA Lounge recently spent a year remodeling (including soundproofing to code) what was essentially a dive bar with a nice stage. The DNA Lounge's main room has a brand-new, state-of-the-art DJ/live music 17,000-watt sound system that is controlled and routed via a pair of BSS SoundWeb 9088 MKII 8x8 digital processors. The DJ station, FOH board and lighting station are located on a raised platform above the dance floor, with a clear view of

the main room. A second sound system located upstairs can run as an independent system or slaved to the main room. The main room's FOH system

includes EAW speakers, Crest amps, a Soundcraft 32-channel Series II board and a plethora of outboard gear. Stage and monitoring duties are handled by a 32-channel Soundcraft Spirit 8 board, dbx 2231 EQs, EAW wedges and sidefills, Community

drumfills, and Crown Macrotech and Crest amps. Microphones include models from Sennheiser, Shure and BSS. As part of the retrofit, audio (streaming MP3) and video (RealVideo) Webcasts are beamed over the Net every night.



DNA Lounge's mix board and DJ setup

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-Tim Hauser, Vocalist, Manhattan Transfer

"I've now used the ADK Model "S" on almost everything including vocals, guitars, and drums. They remind me of very expensive German mics I have tracked with before."

-Adam Kasper, Producer/Engineer, Cat Power, REM, Pearl Jam, Soundgarden, Foo Fighters

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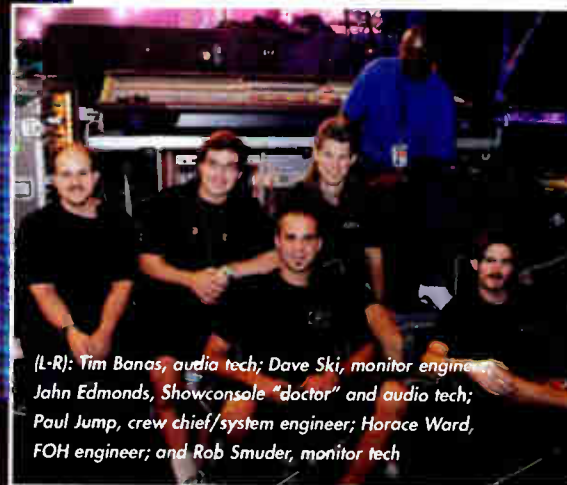


Photos by Steve Jennings

It's halfway through Usher's second show at the Oakland Arena (Oakland, Calif.) in early September when front-of-house engineer Horace Ward checks the SIA Smart Live and moves to adjust the Prism I/O system. "There are just some frequencies that are bugging me," he explains, "so I'm taking some stuff out." Considering the rapt attention paid to Usher, Ward might be the only person in the entire venue who notices the offending frequencies.

Yet Ward continues to tinker with the system that only a few hours before he had set while checking it with Sting's "When We Dance." The song is not a random pick for Ward. "It's a very nice, soft, mellow-sounding record with reverb, big low end, a sparkling snare and legible vocals," he reports. "It's got everything in there and it's very cleanly recorded. I always use that song and I drive the crew mad." [Laughs]

Not only is Ward charged with mixing one of the current top acts in R&B, the FOH engineer must manage the sound of four musicians—drummer Aaron Spears, keyboardist Rudolfo "Valdez" Brantley, guitarist Juan "Johnny" Najera and keyboardist Arthur "Buddy" Strong—who play alongside loops and background vocals triggered via an Akai MPC4000 and Mackie hard drive.



(L-R): Tim Banas, audio tech; Dave Ski, monitor engineer; Jahn Edmonds, Showconsole "doctor" and audio tech; Paul Jump, crew chief/system engineer; Horace Ward, FOH engineer; and Rob Smuder, monitor tech

WORKING THE BOARD

What makes these shows a bit easier for Ward is the 80-channel digitally controlled analog ShowCo Showconsole. "The interface that I have out in front looks like a mixing console, [but] it's actually like a big digital remote control," he explains. "Under the stage is a huge rack that has all the audio cards, so all the audio comes from the stage, goes into the audio cards and I manipulate it with this control surface." The console en-



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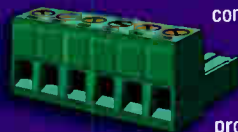


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ables him to set up the show so that each song is a scene with an individual mix. "I usually set those scenes and do little manipulations on top of it during the show. The lead vocal is always isolated from the mixes because it varies, depending on the venue. This interfaces with the Prism system through the I/O interface. For me, it's invaluable.

"I needed a console that gave me smooth cuts and I use the bandwidth a lot," he continues. "Instead of going plus or minus, I will narrow a bandwidth and take out a frequency. I use it as a parametric. If you don't utilize a bandwidth when you're EQ'ing, you're not using it right. You have to know what gap within the frequency spectrum you want to get rid of or you want to add."

Ward has turned to an Avalon AD 2044

compressor and an Apogee 6-band parametric EQ for Usher's vocals. "But that's only because I'm using the EQ for the tone of the vocal and using the parametric to get rid of the erroneous sounds that kick back off the stage. I'm using the EQ on the board to shape the vocal," he says. As for delays, Ward uses a TC Electronic 2290 and a pair of D2s. A TC M5000 multiprocessing unit gets tapped for drum reverb and the Eventide Ultra-Harmonizer DSP 4000 comes in handy to fatten up pre-programmed Usher and background vocals. The main reverb on Usher is TC's Reverb 6000. A pair of Yamaha SPX-1000s are used for dual-delay guitar effects and a reverse gate on the drums.

As for microphone selection, Usher switches between a Crown CM-311 headset

and a Sennheiser handheld with an Evolution body and 935 capsule. Keyboards and acoustic guitar are DI; the guitar amp is miked with Audio-Technica 4055s. The majority of the microphones used on the drum kit are Audio-Technica models, except for a Neumann KSM I for the ride cymbal.

FINDING THE RIGHT P.A.

Ward says that the Prism system works best for his arena shows. "This is a system that whatever you get [at FOH], you'll get all around," he explains. "The coverage is tremendous. Right now, everybody is line array-oriented and I love some of the line array systems, but for me, it lacks coverage once you get past 180 degrees. I can get 270-degree seamless coverage now." Likewise,

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the Prism system enables him to hang more cabinets per side—40 on this tour—than he could with a line array system. Ward has the Prism II subs out with him.

Ward explains that the Prism is an older system that's been revamped. "It's still a workhorse," he says, "and it's been out for a while, but you could put it alongside a lot of systems that are five years old and it sounds just as good. When I set up a system, I go from the crossovers up. I balance the system out. Most engineers could work this system flat, others like to pick and poke with EQs. I could [fine-tune with EQs] all day

and still have a lot of power." The system is powered by 60 Crown Macro-Tech 3600VZs.

MONITOR WORLD

Monitor engineer Dave "Ski" Lagodzinski jumped on the tour's U.S. leg after working with Justin Timberlake. This tour offers him a number of challenges, including that the band is located 10 feet above the main stage and use wedges for monitors, while Usher has Sensaphonics in-ear monitors. Also, Ski had to find the right type of monitor mix. "The R&B thing is a little different than the regular full pop show because there's a lot

more feel and emotion going on."

"It's a really dynamic show so when you mix the slow stuff, you've really got to ease things in," Ski explains. "It's almost like a massaged-in kind of thing. But then there's the hard, dancier, poppier stuff that you can crank. The dynamics of his vocals are amazing. At the beginning of the song, he'll almost be at a whisper, and at the end of the song, I'll be compressing it with everything I've got.

"The crowd is part of the show, so I have audience mics up the whole time and I'm riding the audience," he continues. "Usher can feel their reactions as well as hear them sing along."

Across stage-front, Ski has laid out eight Clair Bros. 12 AM wedges and has flown sidefills and subs on the deck. On the upper deck, the band is also using the 12 AMs. Ski put Usher's vocals into two channels "so that I can EQ it for wedges and EQ it separately for ears," he says. "The biggest thing about mixing ears is consistency. No matter how much the room changes, you have to keep a similar mix nightly. This way, an artist can walk into any room and still feel as comfortable as they did the night before. How they perceive themselves to sound is directly correlated with how they will perform."

CONTAINING THE NOISE

Obviously, acoustics change when the crowd enters the venue, but for Ward, the sound "steadies itself and it becomes real clean and big. I'm trying to interpret what I see and it's a huge stage with a lot of things going on with dynamics and we play to crowds that are really loud." While he pushes up to around 105 dB at FOH, Ward doesn't believe it's loud enough to do damage. "I sit through this every day and believe me, I don't like things that are untoward. I don't like erroneous frequencies that are edgy, the frequencies that annoy. I'm trying to paint a picture that's crystal. I'm trying to bring to life whatever is coming off the stage.

"I always make this statement: 'It's not just about hearing it, it's about seeing it.' As an engineer, I depend on a great lighting guy as much as I depend on me doing my job because I need to see what I'm mixing," he says. "It's just one sense helping the other sense. I always tell people that if you go to a concert and you're sitting far away from the stage and the performers look as if they are really close to you, then the sound is good. The sound helps you get that visual." ■

David John Farinella is a San Francisco-based writer.

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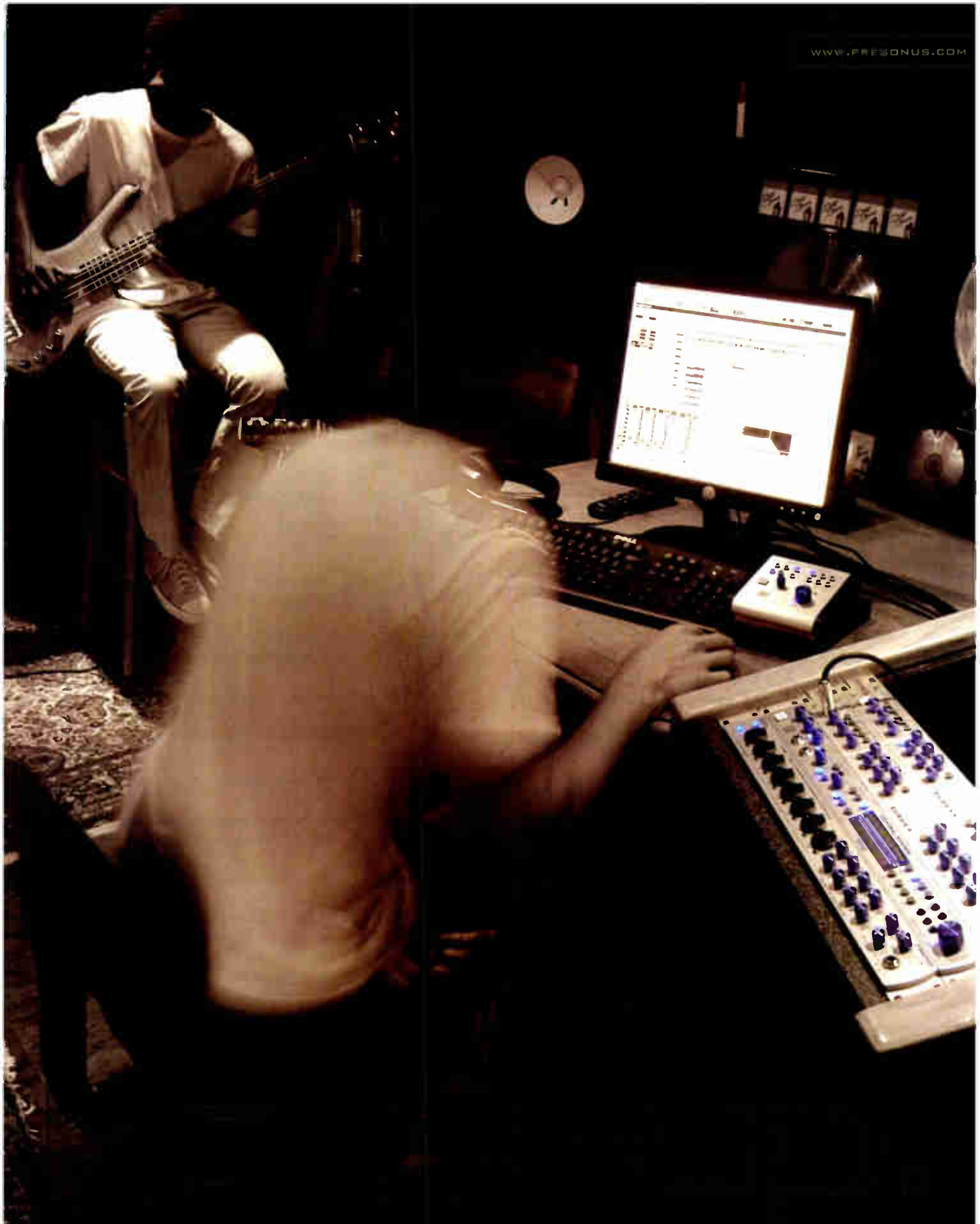
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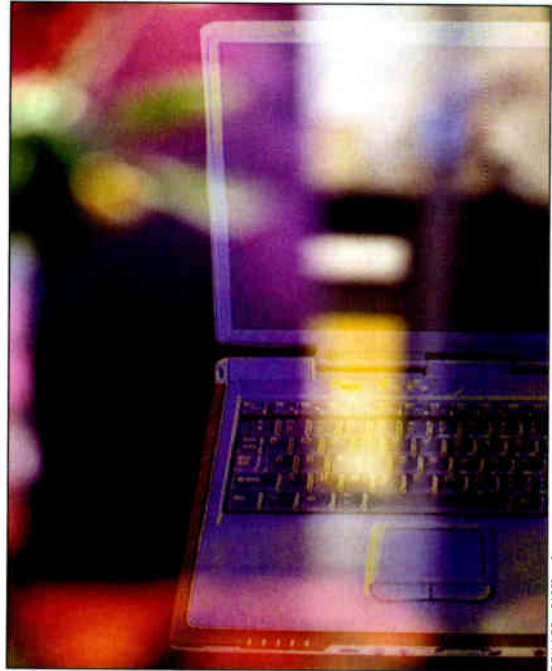
HD Audio Initiative to Supercharge PC Playback

While San Francisco is known for such prosaic schlock as the Golden Gate Bridge and Fisherman's Wharf, the former farmland to the south is where bellwether technology is born. The South Bay is home to numerous geeky pioneers, from the audio empire of Digidesign that emerged from sleepy Scotts Valley to Palo Alto's Hewlett Packard and Xerox PARC. None of these companies, however, has had as broad an impact on our lives as Intel.

There are few places in the world that haven't been touched by the fruits of Intel's labor. Founded in 1968 by Gordon Moore and Robert Noyce to exploit the then-new Large Scale Integration (LSI) technology, Intel started life as NM Electronics on Middlefield Road in Mountain View, Calif., about half-a-mile from Moffett Field. Noyce and Moore had left the pioneering Fairchild Semiconductor to try their hand at manufacturing solid-state memory. By the following year, sales of their RAM had topped half-a-million dollars, and by 1970, the fledgling company was already making \$4 million in sales. For us media geeks, 1971 is when things got really interesting: That's when the first microprocessor was born.

These days, microprocessors and their progeny have become the opposable thumb of media production and consumption. Not only is most of the pro and CE gear digital, but so is the content that we purchase. Forrester Research tells us that the number of North American households with home networks is expected to reach 46 million during the next five years. With the slow death of dial-up, VoIP (Voice over IP, or "phone calls over the Internet"), disk-based PVRs and DTV are about to pop over consumer's noticeability threshold. The convergence circle is nearly complete, and Intel, with its Grantsdale and Alderwood motherboards, has launched an HD Audio initiative, code-named Azalia, to capitalize on this trend.

The dominance of Wintel in the computing world has led some folks to predict the death of home entertainment as we know it. If you've ever tried to set up a home theater from scratch, then you may just agree that a pre-configured HTPC, or Home Theater PC, is a potentially better mousetrap. Kristopher Kubicki, senior editor at D.I.Y. tweek site AnandTech.com, says that 7.1-channel motherboards are set to arrive in Little Jenny's Christmas stocking from all of the major manufacturers. "HTPC is definitely making waves with Microsoft Media Center and Linux alternatives like MythTV," he says. "As more and more TiVo-like convergence devices show up with commercial backing from Microsoft, Dell, whoever, we will definitely see the low- to mid-fi sector take more advantage of the better audio codecs—things like picture-in-picture or split screen with two DVDs, or one DVD and




COLLAGE: LUZBETH HEAVEN

an HD cable feed are suddenly possible with the better [hardware] codecs."

To Intel, a codec is both hardware and software. Intel's *High-Definition Audio/AC '97 Programmer's Reference Manual* stipulates that "...a codec extracts one or more audio streams from the time multiplexed link protocol and converts them to an output stream through one or more converters. A converter typically converts a digital stream into an analog signal (or vice versa), but may also provide additional support functions of a modem and attach to a phone line, or it may simply de-multiplex a stream from the link and deliver it as a single (unmultiplexed) digital stream, as in the case of S/PDIF." This verbiage uncovers the codec's additional function as a replacement for the hardware modems of yore.

While the aging AC '97 audio specification could only support 96k/20-bit stereo and six channels at 48k/20-bit, HD Audio can handle up to eight channels at 192 kHz with 32-bit words. It also understands the concept of multiple isochronous streams, say a 6-channel 5.1 program out of one jack and a simultaneous stereo program out of another. This is a key enabler for upcoming PCs with DVD-Audio playback capabilities. (Ar, can you say "pirate"?) So as to make the multimedia PC experience as idiot-proof as possible, it also allows for "jack re-tasking," in which the computer recognizes and automatically configures microphones, headphones and speakers as they

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are connected to the motherboard.

The hardware aspect of a codec, really AD/DAs with some extra bells and whistles, are currently supplied to Intel by IHVs (independent hardware vendors), which are approved companies that provide sub-assemblies. SigmaTel, a newer small IHV, provides a good example of what's available to motherboard manufacturers. Its pin-compatible C-Major™ audio codec family lists the following features: jack re-tasking, automatic 6-channel speaker configuration, full parametric EQ, bass management, 2x50-watt integrated headphone amplifier, crystal elimination circuit and S/PDIF output.

I'm still not clear on that "automatic" speaker configuration thing, but other vendors such as market leaders Realtek and C-Media add features such as noise and echo canceling for voice command and VoIP applications. They also support what Intel calls "beam forming," which uses phased arrays of microphones to improve intelligibility and gain before feedback. All of these features simplify installation, improve stability and decrease support costs, which directly affects the bottom line. HD Audio is, after all, a consumer enterprise, so low cost of goods and support are paramount.

"So," you may ask, "what does this consumer push have to do with me?" Dan Snyder, audio segment manager at Intel's Consumer Solutions Group, says that HD Audio has the ability to do a lot of the things that quality-conscious recording folks want. "Though some of the hardcore guys are going to want to have dedicated audio [add-in] solutions...HD Audio does have the [tech-

nological] 'headroom' to satisfy the prosumer market."

Dolby Labs, Digidesign, Magix, Neumann, Native Instruments, TC Electronic and Steinberg have all worked closely with Intel to maximize the opportunity that Intel has provided. Tom Loza, Intel Technologies initiative manager who oversaw the HD Audio Working Group, adds that the spec is broad enough

One KVM That Crosses the Divide

In my world, at least, one computer is never enough and I'm wicked pleased to tell you I've found a crossplatform KVM product that actually works. The folks at IOGEAR have a new solution to the problem of too many computers and too little desk real estate. The company's MiniView™ Extreme Multimedia KVM and Peripheral Sharing Switch (easy for you to say) provides USB peripheral and audio I/O sharing, along with true multiplatform support for Windows, Mac and Sun systems. Although I *did* need to download Senlick's excellent shareware app, USB Overdrive, to fully map my IBM ScrollPoint III mouse's functionality onto Mac OS X, the MiniView Extreme

worked correctly right out of the box. Other KVMs I've tried do a great job with Windows but fall on their face when confronted with an alien Apple presence. Not so with the MiniView Extreme. The Big Blue peripherals that came with my NetVista now control and display my purple minitower and my good ol' blue-and-white OS X server. Additional peripherals, such as my Plantronics DSP-400 headset, can plug in to either of the two front panel USB convenience spigots when needed, while switching from one machine to the other is just a keyboard peck away. The MiniView Extreme is engineered so dam well, I bought one!
—OMas

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to allow for third-party upgrades. "The integrated audio architecture uses the CPU for all the signal processing, but what we have done is [allow you to] add a codec to the link inside the box." As a result, front panel retrofit kits should appear, exploiting that expandability for those who want to improve on what the motherboard vendors provide.

All of this discussion about Intel would be for naught if I didn't mention the 800-pound gorilla quietly guarding the door. Though HD Audio will benefit the microscopic production-on-Linux community, Intel's HD Audio Web pages tell us that Microsoft has chosen HD Audio as the main architecture for its new Universal Audio Architecture (UAA), which "...provides one driver that will support all Intel HD Audio controllers and codecs. While the Microsoft driver is expected to support basic Intel HD Audio functions, codec vendors are expected to differentiate their solutions by offering enhanced Intel HD Audio solutions. The result is high-quality PC-based audio that delivers a seamless convergence of digital entertainment between the PC and consumer electronic devices." The Microsoft Universal Audio Architecture initiative aims to create and maintain Windows audio drivers for HD Audio, as well as USB and 1394 audio technologies.

UAA is an appropriate name for both Intel and Microsoft's work. Their hope is for one driver, one architecture to rule them all. Standardization is key to that low-cost, higher reliability thing I mentioned earlier. Len Layton, senior VP at C-Media Electronics, told me that, with HD Audio, Intel is earnestly trying to improve audio quality while simultaneously attempting to keep parts costs as low as possible. They want to get their vendors into a standardized, plug-and-go state. "We [the IHVs] live and die by their standards," he said. Those standards, for us, mean better overall compatibility and stability on the Intel platform, greater portability for our production rigs and improved playback predictability for PC-based multimedia.

Frank Kara, president of Yukatech LLC and its Digital Audio Wave turnkey studio CPU division, thinks that the "end-user is the clear winner." He stresses that HD Audio is not designed to replace pro audio add-ons, but rather "complement the client's usage models" in today's continuously evolving production environment. Clients are one thing, but "having an in-built 7.1 system is certainly useful as a reference if you are mixing to surround formats," opines Robin Vincent, technical director at turnkey DAW hardware heavy-weight Carillon Audio Systems. "But until some sort of connection between recording software and onboard audio exists, you are

stuck with having to master to DVD before getting a chance to preview it."

John Atkinson, editor at *Stereophile* and believer in DAW-based audio production, told me that increasing the native audio capabilities of Wintel machines is generally a positive step. "The Mac world has been enjoying the benefits of OS X's Core Audio for almost two years now, and both [HD Audio and Core Audio] enable the migration of media onto the computer, resulting in an open-ended future for music reproduction." He's a bit less sanguine, however, about the bigger picture. "It will help Microsoft further its

plan for domestic media playback domination that started in earnest with WM9."

Though there's still progress to be made on the OS and driver front, as far as I'm concerned, this Azalia thing is all good! Next month, I'll wrap up my multi-volume IT glossary—stay tuned! ■

OMas, with a full dance card these days, has maintained sanity by contemplating the small-town sounds of big-city Hem's Rabbit Songs and dancing to the pop-y thump of Viva Voce's new The Heat Can Melt Your Brain out on Minty Fresh.

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dbx 162SL Stereo Compressor/Limiter

Purple Series Unit, Blue Series Pedigree

What good can come of crossing a blue-blooded compressor with an upstart? dbx knows! Its Purple Series 162SL Compressor/Limiter offers stellar performance at a substantially lower price than its Blue Series brother.

The elder statesman processors were originally created with a no-holds-barred approach to signal processing. For instance, the Blue Series 160SL compressor featured elaborate shielding for its proprietary toroidal power transformer, custom-wound Jensen transformers, an output stage capable of driving +30 dB into 1,000 feet of cable and it weighed in at roughly 40 pounds. dbx's Purple Series 162SL compressor employs essentially the same circuitry as the 160SL, save for the output (which uses standard Jensen transformers) and a more modest toroidal transformer that doesn't require the sophisticated shielding used in the 160SL. These design changes—along with surface-mount technology—have enabled dbx to bring in the 162SL at a retail price of \$2,500 (\$2,000 less than the 160SL) while maintaining the sonic virtues of the 160SL.

FEATURES FRONT AND BACK

Like the 160SL, the 162SL is a 2-channel unit packaged in a 2U-rack chassis. The channels may be operated independently or linked for stereo via the front panel couple switch. Each channel features rotary controls for threshold, ratio, output gain, attack and release times, and peak stop level for the unit's PeakStopPlus limiter. Pushbutton switches are provided for Overeasy operation, auto attack and release, PeakStopPlus in/out and bypass. Analog VU meters and peak LEDs can be switched to show input, output or gain reduction; the meters are backlit using LEDs so there will be no need for replacing burnt-out lamps. On the rear panel are TRS and locking XLR I/O jacks, 1/4-inch balanced sidechain send and return jacks, a +4/-10 operating level switch and an audio ground lift for each channel. A power switch and IEC receptacle complete the rear panel. A very useful manual is included. In addition to thorough explanations of compression, limiting and functions of the unit, it includes patch diagrams for I/O and sidechain applications.



DYNAMIC RESULTS

Because the attack of the 162SL can be set to a *very* fast 400 dB/ms, the unit is capable of altering transients if desired. In fact, the folks at dbx told us that setting the attack time too fast can actually “square off” a waveform, so attention should be paid to the attack time parameter. Setting the 162SL's attack time to its fastest removed quite a bit of a snare drum's *ubump*; slowing down the attack time allowed the drum to breathe and fattened it up. Applied to a kick drum, the unit (set with fastest attack, medium release, high ratio) is capable of turning a normal kick drum into a TR808-type hip hop kick. On overheads and vocals, setting the ratio to maximum with a fast attack, medium release and a threshold between -10 and -15 resulted in a smooth, saturated compression sound.

Fortunately, the 162SL is capable of way more than just creating cool compression effects. I used it with great success for lead and backing vocals. Applying 5 to 10 dB of compression to a lead male vocal using a slow attack allowed transients and breath to remain unchanged while providing transparent gain reduction. Cranking the ratio control to around 5:1 and increasing the attack time to its fastest kept backing vocal tracks firmly in their place. One difference between the 162SL and the Blue Series 160SL is in the throw of the ratio knob: The 12 o'clock position on the 162SL is 2:1 (as opposed to the Blue's 4:1). This gives the Purple a higher degree of motion in the critical 1:1 to 2:1 range, which proved extremely useful for easy fine-tuning of the compression ratio.

The 162SL quickly became a favorite for compressing a drum room mic (a RØDE Classic II into a Focusrite ISA110), bringing out the roundness of the toms and taming cymbal crashes. With a 5:1 or 6:1 ratio, auto

attack and release and Overeasy switched off, the toms exploded with a vintage, saturated transformer sound. When Overeasy was switched on, the bottom end of the toms seemed to suffer and the track had less overall character. Lowering the threshold from an initial setting of -2 dB added pop to the ride cymbal and hi-hat. With a ratio of 15:1, a fast manual attack and medium release, the drums could be made to pump. Backing down the ratio and slowing the attack yielded a less-processed sound that placed the cymbals upfront without dulling them.

According to dbx, the 162SL is basically a 160VU “wood side” when set to auto/hard knee, and its Overeasy character duplicates that of the company's classic 165. (It certainly sounded like it.) One of the things that surprised me is that the 162SL's auto attack and release setting was not only useful, but often sounded better than manual settings. The sidechain worked fine for ducking guitars keyed from a lead vocal track, and PeakStopPlus does exactly what it is supposed to do (although at higher gain reductions, you can hear it working).

MY TAKE?

The 162SL's transparent nature makes it one of the few compressors I would trust as a stereo bus compressor. As long as you follow your ears and use care in setting the attack time, the 162SL can increase apparent loudness and smooth peak levels without damaging the timbre of your mix or tracks. Its versatility and excellent sound quality will place the dbx 162SL on your list of “most often used” gear.

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Steve La Cerra is a freelance engineer, producer and writer based near New York City.

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AEA R88 Stereo Ribbon Microphone

Dual Transducer in a Unique Package

Tone junkies rejoice! There is a wonderful new way to get your fix and it's called the AEA R88. Looking like something from a '50s sci-fi film, this stealth-black microphone is a full 14 inches long, 2.5 inches in diameter and houses twin 2-inch ribbons oriented at 90 degrees. The outside of the mic is stamped with the AEA logo marking zero degrees, and a locator of the on-axis point for each capsule is laser-engraved at the top and bottom. The wind-screen is made of acoustic material that is heat-shrunk over a wire frame, giving it a look all its own. The mic also includes a sturdy padded case, locking angle adapter, an integrated shockmount and attached 12-foot cable that terminates to two male XLRs.

The mic starts to gradually roll off starting at 200 Hz, ending up about 5dB down at 8k and 10dB down at 18k. As you will read below, this is a good thing. Output impedance is set at 270 ohms, and the mic will take a whopping 165 dB at 1k.

AROUND THE STUDIO

I used the mic in stereo and Blumlein arrays on a variety of instruments. The setup for either is very easy due to the unique mounting system and excellent notation on the outside of the mic.

Because of the size and weight of the R88, your mic stand absolutely must be up to the

task. When fully extended, especially for horizontal applications, the R88 can be unstable on a shaky stand.

Over a drum kit, I tried the mic in both stereo and M/S configurations with excellent results. Cymbals sounded smooth and transient, and drum hits had that wonderfully round, slightly compressed sound. I also used it in front of the kit at varying heights with equally good results.

The R88 sounded absolutely delicious on upright bass, delivering a round, warm, fat bottom without being tubby. The roll-off on the top of the R88 fit perfectly with this instrument, making it sit nicely in the mix. The mic nicely rounds the attack consistently up the neck, providing great definition. On playback, the upright player was astonished at the sound.

Next, I used the mic on a Yamaha C5 grand piano. I mounted it vertically on a stand and pulled it back from the high-sticked lid about four feet. It sounded beautiful, capturing the slightest nuance and hardest attack with ease. Once again, the realism was unparalleled.

The mic shined when used to record a brass ensemble comprising a tuba, three trombones, a french horn, two soprano saxes and two trumpets. This group was placed



in two rows in a medium-sized studio, with the R88 placed about six feet high, facing the center of the ensemble. The stereo picture was huge and rendered the group wonderfully. This, recorded in two passes with a few spot mics for soloists, was enough to carry the mix.

Speaking of sax, the R88 on soprano is a beautiful thing. An instrument that can be annoying was turned to butter in the hands of this mic. It smoothed out the tone and sat it nicely in the mix. Another nice use for the mic was on a wooden Leslie cabinet. Pulled back in the room, it gave a complete picture of the complex phase and tone info without having to use a third mic.

SO WAS IT GOOD FOR YOU?

There's no other ribbon that duplicates what the R88 (\$1,895) does for bass, drums, percussion, brass and mallet instruments. It imparts warmth, has an appealing way of dealing with transients and, most importantly, has a knack for making things sound incredibly "real." At this price, it's a no-brainer.

The only stipulation is that you need lots of clean gain to boost it up to acceptable recording levels. In addition, the input impedance of your preamp should be high enough to handle the wildly fluctuating output impedance that ribbons produce. (Wes Dooley and David Royer agree that 5x the output impedance of the mic is nominal.)

Other than that, the R88 easily captures whatever you want in glorious ribbon-y stereo. If you don't have one of these in your locker, you're missing out on one of the best transducers that audio has to offer.

Audio Engineering Associates, 800/798-9127, www.wesdooley.com.



Kevin Becka is Mix's technical editor.

—Kevin Becka

Ribbon Mystique Revealed

In doing research for this review, I learned some very interesting things about ribbon mics from AEA's Matthew Ashman:

"Transient peaks contain lots of broadband energy. So when a microphone has high-Q resonances in highly audible frequency regions (in the case of some condensers, around 10 to 12 kHz), then a transient will start the mic ringing at that frequency. The 'roundness' that is perceived in a ribbon microphone is the sound of a truly clean and very well damped impulse response. The primary resonance of a ribbon mic is centered at a very low frequency and this seems to be less offensive to our ears.

"At high volumes the non-uniformity of the magnetic field in the ribbon gap applies a kind of natural compression effect. Basically, the field strength of any ribbon motor decreases away from the neutral point of the ribbon. With a large enough deflection, this could cause a kind of soft-knee compression on the transient, while still keeping the well-damped and neutral overall tone of the microphone. Keep in mind that this 'compression' would have attack and release times of zero, something that is tough to do with VCAs."

Eventide Octavox Harmonizer

Legacy Processor Gets Major Adaptation for Pro Tools

If you're a Pro Tools user, I'm certain one question has been on your mind: Why isn't there a good Harmonizer plug-in? Eventide has answered the question with the creation of Octavox, an 8-voice Harmonizer plug-in that uses the same algorithms as Eventide's flagship processor, Orville.

All eight voices (outputs) of Octavox are identical and provide time-based, diatonic pitch shifting. All notes are found in a user-designated major or minor key and scale, and each voice can be delayed up to 2.4 seconds. Diatonic shifts up to ± 2 octaves, micro-pitch-shifting, feedback effects, complex stacked harmonies, wide choirs and musical rhythmic sequences—all popular with the famed Eventide Harmonizer hardware units—are possible.

THE GUI VOICE MIXER

Octavox could be a complicated plug-in if it weren't for the excellent single-page GUI. The interface is broken down into a comprehensive voice mixer, master level and wet/dry mix faders, Pitch Setup and the Notation Grid. Also included is a Snapshot manager: a 32-slot patch memory in which you can click (or use MIDI Program Change) and instantly change your favorite factory or tweaked-up saved patches rather than searching and loading from the long list of the 64 included presets.

For control of each voice, the mixer offers level control, a Mute button, panpot, data-entry windows for voice delay time and feedback amount, voice pitch interval (expressed in musical intervals of \pm second, third, fourth, fifth, seventh or octave) and fine-tuning in cents. The input and output level faders have large meters and +12 dB of extra gain. All parameters and controls of Octavox are fully automatable.

PITCH SETUP

The Pitch Setup module determines the overall quality and performance of any pitch shifting. For starters, a user can pull down the Instrument window to determine the input source. Once the selection's been made, all of the parameters are optimized for that source. The parameters include Low Note, which helps pitch detection with fewer false notes from unwanted low frequencies;

Crossfade, which sets the window of splicing during the pitch-shift process; Randomize, which introduces, like the H969, a pseudo-random micro-pitch change to all voices; and Glide Speed, which sets the amount of time it takes to "slew" to a new output pitch after detecting a change in the incoming audio's pitch.

NOTATION GRID

The Notation Grid is a graphic of one bar of music notation containing treble and bass clefs. Song keys and time signatures automatically change to values entered in the setup boxes. There are boxes for the key of the song, the scale, master tune, tempo (or click Session Tempo to clock Octavox from Pro Tools Version 6.2 up) and the Meter box for setting time signatures.

On the Notation Grid, Octavox graphically represents all eight voices by color-coding and numbering them 1 through 8. You can click, grab and move any voice to any quantized note and any delay time quantized to the nearest 16th note. You can also elect to "go off the grid" by holding the Command key and dragging.

Loop Delay and Loop Feedback are for repeating a "sequence" of voices from any spot on the Notation Grid. This is Octavox's musical instrument side in which, for example, the user could set up eight notes in a harmony sequence to play out for the length of one measure. Setting Loop Delay to one measure and Loop Feedback to 100 percent will cause those eight notes to repeat endlessly.

IN THE STUDIO

After installing Octavox in a 933MHz G4 running OS 10.3.5 and Pro Tools V. 6.4, I went through the iLok dongle authorization using the supplied chip. It all worked the first time and checking DSP usage, I found Octavox uses 100 percent of a chip for each instance.

I immediately pulled up an electric guitar track in need of dire help. I set up two voices in unison, no delay, panned left and right and with +3 and -3 cents of micro-pitch change, and two more voices, panned clos-



The Notation Grid color-codes eight voices as notes on a staff.

er in with ± 5 cents each and 20 ms of delay. Adjusting the individual voice levels and the wet/dry with the track playing, I dialed in a very beautiful chorus effect. This is a "wet" sound that disguised the guitar's "pitchiness" without reverb—just perfect for the dreamy ballad I was mixing.

Bass guitar and kick drum tracks are excellent candidates for octave-down shifts. Octavox does this with as much subsonic as your mix and subwoofer can take. Guitar harmony parts, à la Queen's Brian May, are a lot of fun with Octavox. I set up four voices and generated simultaneous three-part harmonies including a high octave. Using automation, I changed the key, internal voice blend and panning to suit two different sections in the song.

I also tried Octavox on the reverb returns of an ordinary-sounding reverb. This created a very glamorous reverb for atonal instruments such as drums and percussion. I micro-pitch shifted all eight voices at unison and added a touch of feedback.

Octavox's sound quality is excellent—every bit as good as the Eventide hardware units. I found myself thinking more musically when editing in Octavox—the interface surely evokes the mathematical relationships in music, but without getting geeky about it. An upscale and very useful addition to any plug-in collection, Octavox is \$595 and works with TDM (V. 5.1.3 or later) systems, OS 9 or OS X and Windows PC.

Eventide, 201/641-1200, www.eventide.com.

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

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MIX

REMIX

World Radio History

Universal Audio 2-1176 Dual Limiting Amplifier

Two FET Compressors Are Better Than One

The 2-1176 Dual Limiting Amplifier is a 2-channel version of Universal Audio's '60s-era 1176 and uses the same FETs (for gain control elements) and output transformers.

The new unit employs metal-film resistors, which produce a lower noise floor than the carbon-film resistors used in the vintage 1176. The 2-1176 also uses rotary switches for ratio and meter functions in lieu of the familiar pushbutton switches for these functions, which appeared on all models of the 1176 (including the reissue in 2000).

AT THE CONTROLS

Each of the 2-1176's two channels sports continuously variable attack, release, input level and output level controls. Up to 40 dB of total gain is available from the level controls. Attack times range from a blazing fast 20 μ s to 800 μ s. Release times can be adjusted from 50 ms to 1.1 seconds. A 6-position rotary switch for each channel gives compression ratios of 1:1 (useful when you don't want compression but would like to use the 2-1176 as a tone device to color a track's sound), 4:1, 8:1, 12:1, 20:1 and All. The All setting duplicates the compression curve and added distortion produced on a vintage 1176 by pushing in all four ratio pushbuttons simultaneously. Each channel also provides a backlit VU meter and two-position meter function switch; the latter toggles the meter between readouts of gain reduction and output level. In the latter mode, the meters are calibrated to show 0 VU at +4dBm output level.

All rotary controls sport highly visible white hash marks on contrasting black plastic knobs. Values for settings of the attack, release, input level and output level controls are regrettably all represented by arbitrary numbers (vs. μ s, ms and decibel values), although extreme settings for time constants are also marked "slow" and "fast," respectively.

A single bypass switch deactivates compression on both channels simultaneously. Another switch toggles between dual-mono and stereo-linked operation modes. When



stereo-linked, the left channel's attack and release time settings are also applied to the right channel, but the channel producing the most gain reduction at any given moment also determines the amount of gain reduction for the other channel.

On the 2-1176's rear panel are balanced XLR I/Os for each channel. These can accommodate unbalanced lines by shunting the pin 3 (cold) signal to pin 1 (ground) on your cable's connectors. Each channel also sports a rear panel input-impedance switch that offers alternate 600-ohm and 15k-ohm settings; the latter setting produces a sound with more highs and greater depth. The 2-1176's AC power cord is detachable, and the unit's internal self-sensing power supply will automatically operate at any voltage ranging from 100 to 240 VAC and at 50 to 60 Hz.

SQUEEZE ME!

The 2-1176 excelled at most applications I threw at it. I routed mults of kick and snare drum tracks to the unit, sharpened their attacks and tightened their decays using the All ratio setting, and then combined the processed outputs with the original tracks to get positively slammin' drum tracks. The All setting also sounded incredible on drum mic overheads (using the 2-1176's stereo-link function), producing hyperventilating Led Zeppelin-style tracks.

Set to a 20:1 ratio and fast attack and release settings, the 2-1176 was an outstanding limiter for male vocals, providing a really firm lid without squashing the track's timbre or pumping. I used the same settings on a rock tune to record electric rhythm guitar played through a Roland Micro Cube amp and using a Royer R-121 ribbon mic and Universal Audio 2-610 tube preamp. The 2-1176 brought intentionally muted bass strings up in level and put a lid on the fully voiced and brighter upper strings, creating a wonderful-

ly chunky, in-your-face-sounding track.

On DI'd electric bass played through a Millennia TD-1, the 2-1176 made the track sound a little choked, even using a 4:1 ratio setting and the slowest possible attack time and with the VU meter showing less than 1dB gain reduction on peaks. You might like the 2-1176 on bass if you're shooting for a lean sound.

Using the stereo-linked 2-1176 as a stereo bus compressor (with a 4:1 ratio and fast attack) on a rock mix, the image was consistently stable. The trap drum's attack sounded gloriously slappy and the drum's decay envelopes were tightened up beautifully. Hard-panned, double-tracked power chords were firmly controlled in the compressed mix, creating a steady level wall of sound. However, I felt that the bass guitar lost a bit of body and sounded somewhat squashed. I could have brought it back to life by backing off on the 2-1176's attack time, but the drums lost their "spanked" sound. For the best results, I liked compressing stereo subgroups of drums and/or guitars with the 2-1176 and combining the processed output with other elements of the mix at the stereo bus.

A WINNER!

The 2-1176 is one of the best-sounding compressors available. And now that a close reproduction of the venerable 1176 is available in a true stereo/dual-mono configuration, processing stereo subgroups and drum overheads with classic FET compression is easier than ever. Selling for \$2,795 list, the 2-1176 gets my highest recommendation.

Universal Audio, 831/466-3737, www.uaudio.com.

Mix contributing editor Michael Cooper is the owner of Michael Cooper Recording, located in beautiful Sisters, Ore. Cooper's studio offers recording, mixing and mastering services.

The POWER BEHIND The MUSIC

Today's musician faces a multitude of challenges, ranging from limited CPU power to connecting random gear into one complete music production system. AMD, Steinberg and Yamaha have teamed together to offer potent solutions to your real-world problems.

MEET THE PLAYERS BEHIND THE PLAYERS



The world leader in PC processor innovation, AMD64 technology has energized the music world with the introduction of the world's first Windows®-compatible 64-bit processors, the AMD Opteron™ processor for workstations and servers and the AMD Athlon™ 64 family of processors for desktops and laptops.



steinberg
Creativity First

Celebrating 20 years of innovation in music software, Steinberg continues to put creativity first with its complete line of audio/MIDI sequencers such as Cubase SX3, post-production tools like Nuendo 2, editing and DVD-A mastering tools like WaveLab 5, and a full line of VST plug-ins, including Halion 3, Virtual Guitarist, Groove Agent, Hypersonic, The Grand and many others.



YAMAHA

Yamaha is not only the world's largest musical instrument company, it is also the world leader in digital mixer and synthesizer workstation technology. From the award-winning Motif ES to the new groundbreaking 01X mLAN Mixing Studio, Yamaha's products are designed to seamlessly integrate into the computer music environment.

Find out more about how these musicians have come to rely on technology and products from AMD, Steinberg and Yamaha, and how the very same products can help you achieve your dreams.

Why the pros rely on Integrated Solutions from AMD, Steinberg and Yamaha

MEET THE PLAYERS

Peter Frampton

From "humble" beginnings in England to becoming an international rock 'n' roll legend, Peter Frampton has done it all. He's the definition of an active musician who needs his gear to be reliable and mobile.



Tony V

New Yorker Tony Verderosa (aka VFX) is on a mission to devastate dancefloors, taking electronic music to new places by fusing immaculate drumming chops with unique samples and loops into a fusion of styles.

Alan Parsons

In landing perhaps the most esteemed engineering gig possible—working with the Beatles at Abbey Road—Alan Parsons achieved remarkable success at



a young age. He's still breaking ground with a new solo album (*A Valid Path*) out now.

The mobile MUSICIAN

Peter Frampton

How did you discover Steinberg and AMD?

Being a former analog guy, the various formats of digital recording I found all sounded very "crispy." Nothing that I tried along the way seemed to have the feel or capture the resonance, the bass—just the warmth. It was lacking. And everyone knew that. It wasn't a big secret.

Then one day I was working with Chuck Ainlay, one of my favorite engineers. We recorded some tracks on analog and wanted to do some overdubs, so he put it onto Nuendo. As he was transferring it, I couldn't hear the difference, for the first time. He looked up and said, "It's unbelievable, isn't it?" I mean, he was working with a PC! But we were having stability problems and speed issues [with the particular computer we were using].

Then I started to work with the AMD system. Everything worked so much quicker and it was so much more stable. It's ferociously fast. I have never had a situation where it crashed or anything like that. So I am totally in awe of this new system.

I'm just very lucky to be at the forefront of it. Call me a space monkey or whatever, but I love it. As long as I've got that speed, it can only get better from here. It's just pretty phenomenal. It enables me to get to what I really want to do, which is create the music, quicker.

What are the differences between "live" and studio recording?

Playing live is the payoff for me. I write the song. I record the song. But there's nothing quite as exhilarating as being out there on stage after all that work is done. As soon as I've put a foot on that stage, I'm in total control. There's no take two, basically. It's take one every night, with a different audience. So I find it a very freeing part of what I do.

How does a mobile system like an AMD64 laptop, Steinberg software and a Yamaha 01X help musicians?

An idea can be here today and gone later today, within a few seconds. The key is to capture it in the quickest possible way, and that's what this is all about for me: the speed. And the technology not getting in the way of the creative process is essential.

When you can do something like this [Steinberg/AMD64/Yamaha set-up] in your hotel room with headphones and small speakers, it's pretty phenomenal. And then I can take the files immediately off of this hard drive and put them on my system at home. Everything is standard.

I'm looking forward to taking a system on the road, as well. We can capture any little nuance or idea or whatever we come up with—a soundcheck or a great number that comes up live. I don't have to decide when I want to do anything live anymore. It'll always be there. By the time I leave the stage, we've got it.



Steinberg Software

Steinberg creates tools that put creativity first, and this is why Peter chooses Steinberg software. Steinberg has a complete line of software applications and plug-ins with something for every application and budget. Whether you are scoring a blockbuster film, sweetening a TV show, remixing the next dancefloor classic, recording a live album or just making music for fun, Steinberg has the tools that are just right for you and your budget.

Nuendo is our top-of-the-line professional recording and post-production product, featuring unlimited tracks, amazing MIDI and surround-sound implementation, extensive audio-for-video post-production features, and phenomenal sound quality. Perhaps that's why Nuendo is used by the world's greatest producers, recording artists (like Peter),



The 01X mLAN Mixing Studio

If you're looking for power and portability, the 01X combines everything you need for a complete computer studio into one integrated solution that you can carry under your arm (and connect to your laptop with a single FireWire cable). The 01X combines a moving-fader digital mixer, studio-quality DSP processing, multichannel 24-bit/96kHz I/O, multiport MIDI interfacing and full DAW remote control capabilities into one affordable unit.

Based on the same technology as Yamaha's larger-format digital consoles like the 02R96, the 01X can track up to 24 channels simultaneously. Each mixing channel gives you 4 bands of parametric EQ to shape your sound and dynamics processing on each channel to ensure clean, crisp signal levels.

But a great performance and a great recording are two different things, so the 01X also has six buses and two multi-effect processors onboard. You can finally record at home like the pros—drenching your zero-latency monitor mix in reverb while recording 24-bit signals completely dry to your hard disk. Simply put, the 01X's flexibility enhances your creativity.

Using the 01X's remote DAW mode, you have hands-on access to the power of Nuendo, Cubase SX or VSTs via moving faders, knobs and buttons. Control your hardware from your software, control your software from your hardware. It's the new paradigm for the computer recording environment—totally seamlessly, totally integrated and totally cool.



Of course software isn't of much use without a computer. The pros know that AMD64 processing is designed to meet the demands of today's challenging DAW and VST applications. Whether you are making music on the road with a laptop or work in the studio, make sure your music is fueled by AMD64.



Yamaha developed the mLAN FireWire Music

Networking system to solve the problem that every musician faces: How do you create a studio that will expand with your needs and be future-proof as new products and technologies become available?

The beauty of an mLAN system is its flexibility and scalability. Scalable means you can add new products to your studio's mLAN network. Flexibility means you can instantly connect any input to any output using the mLAN Graphic Patchbay without physically plugging or unplugging any cables.

All audio, MIDI, clock and control signals are handled on a single standard FireWire cable, eliminating the need for messy and often noisy analog cabling.

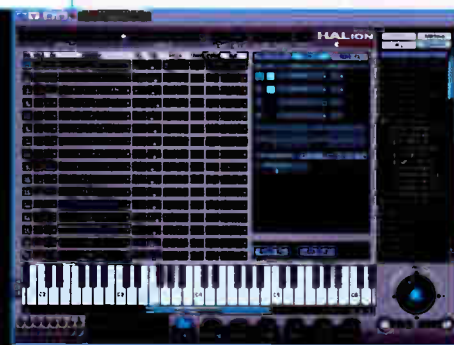
and film and video post companies.

Steinberg's Cubase line of digital audio workstation software covers a whole range of budgets, from our affordable Cubase SX3. Cubase SX3 is our flagship MIDI and recording program that offers dozens of cutting-edge features that allow you to work quickly and efficiently, making it the choice of top producers, engineers, remixers and musicians everywhere.

When you are done with your mix, Steinberg also offers WaveLab 5, a multichannel editing and mastering program that allows you to master and burn CDs and DVD-A discs.

In addition to Nuendo, Cubase and WaveLab, Steinberg also invented the VST (Virtual Studio Technology) standard that revolutionized the world of computer-based music production. Steinberg makes a complete range of VST plug-ins, including the amazing Halion3

software sampler, the Hypersonic synth/sample player, The Grand sampled grand piano, as well as the amazing songwriting and performing tools Virtual Guitarist and Groove Agent.



Halion 3: The ultimate VST software sampler

Steinberg makes a complete range of audio and music production tools, so no matter what kind of music you make, Steinberg has a software package that is just right for you.



The modern MUSICIAN

Tony V (aka VFX)

Tony, you're working on a new release entitled *VFX Vol.2*. What types of software and synthesizers are you using for this project?

To record and produce my latest CD, I used Nuendo, Wavelab, Yamaha's DTX-TREME IIS electronic drum kit, the Motif ES keyboard, Steinberg's Halion Software Sampler and lots of cool soft synths and VST plug-ins like Groove Agent and Virtual Guitarist.

You use the Yamaha [DTXTREME IIs] to perform. What is it that makes this such a unique performance tool?

It forces you to think like a record producer and composer from the moment you plug it in. It gives me real-time access to thousands of great loops, synth sounds and sampled drums, plus it has a sampler built in. I remix these elements live with my sticks and foot pedals. It also offers me

chord voicings, melodic ideas and bass lines in real-time from each pad. I don't feel any difference in response between this electronic kit and my acoustic drums. DTX-TREME II is the MIDI controller for any forward-thinking drummer/producer.

You are using a lot of VSTs in your music...

I use Halion quite a lot. I love the library of sounds and the ease of use—I never have to leave the computer environment whether

I am sampling, mastering, creating loops, triggering samples live or archiving my data. Also, VSTACK allows me to trigger all of these VST instruments live in real time from my PC.

What kind of processing power is needed to run these types of applications?

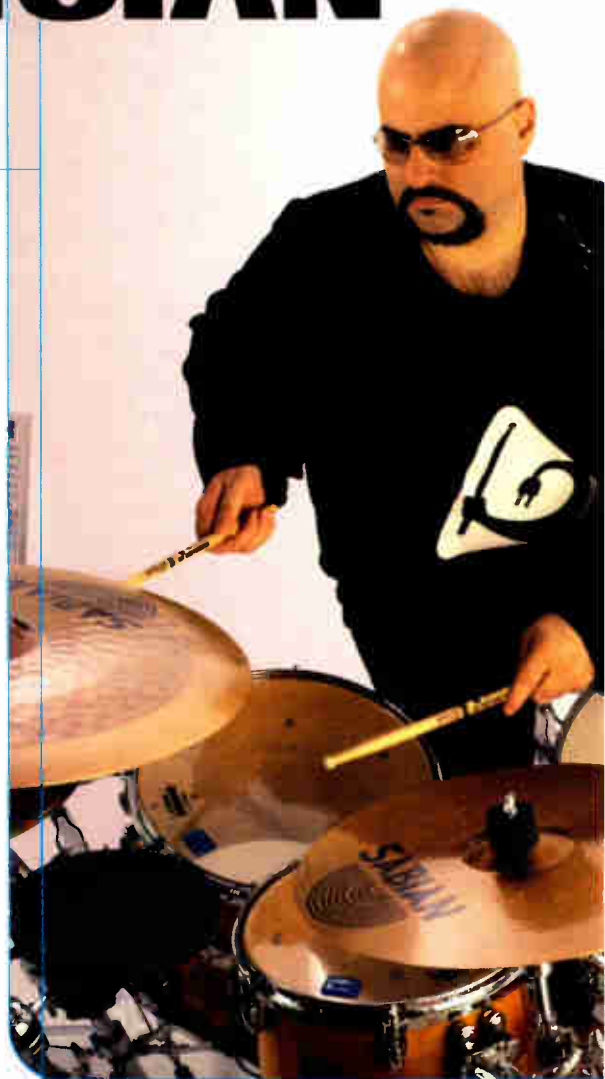
Since I tend to use very dense layers of virtual synths, a large number of tracks and many instances of Halion at one time in any given composition, processing speed is everything! I like to run lots of multiband EQs and compressors on certain tracks, plus all of my effects are virtual. I run dual AMD Opteron processors with Nuendo and I never have any issues. That VST performance window is just chillin' between 10% and 20% of capacity—

my system is extremely fast.

What does AMD64 do for your performance?

My AMD system offers me the power and stability I need for demanding studio and remix sessions, the latest being a remix and drum tracking for Dream Theater guitarist John Petrucci.

I also rely on that power when I am triggering and remixing sounds live with my rackmounted PC system. When you have thousands of people watching you on stage during a solo performance, the last thing you want to be worried about is your gear. AMD gives me tremendous confidence and allows me to relax and just stay focused on making great music.

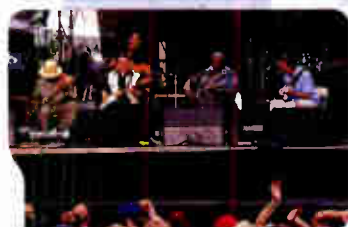


Cubase SX3

Tony Verderosa spends a lot of time in his studio, and he needs tools that work together. Steinberg invented the world-standard VST plug-in format, and Tony makes heavy use of plug-ins when composing. Halion 3, Hypersonic, Virtual Guitarist, Groove Agent, The Grand—they're all there, serving as his instant rhythm section, orchestra and songwriting partners.

But to fully exploit the capabilities of the VSTs, he needs the power of AMD64 processors. With lightning-fast Direct Connect Architecture, superior processing power and a massive L2 cache to efficiently run VST plug-ins, AMD64 processing is the only serious choice when you're serious about your music. It's what Steinberg recommends when running Nuendo or Cubase SX3 and what dozens of top studios and producers have chosen to power their studios.

Computer Music at the Crossroads



Until now, you've had only two choices in the world of computer-based music production: Buy four or five pieces of gear from different manufacturers and wonder if you'd ever get them to work, or buy proprietary hardware and software from one company. One choice left you scratching your head over manuals, and the other left you wondering what ever happened to freedom of choice.

That's why AMD, Steinberg and Yamaha are working together. Our goal is to make sure that your studio gear, your software and your computer all work together with seamless integration. We also share a philosophy that these advances in integration should be made available to the entire industry to further a common goal of making computer recording easier for everyone.

Open architecture is the cornerstone of the PC industry. Steinberg developed core technologies for computer audio, including ASIO and VST. Yamaha developed the core specifications for MIDI and Audio over 1394 Firewire, and more recently introduced mLAN Firewire Music Networking. These empowering technologies have been made available to the entire industry without cost. AMD raised the bar by creating the world's only Windows®-com-

patible 64-bit processor and de-bottlenecking the PC platform with Direct Connect Architecture. These features are designed to meet the processor-hungry demands of the digital media age. When the best in the business get together, good things are bound to happen.

Computer Music Production is at a crossroads. Some people see a bleak future limited in creative choice and dominated by companies driven not by customer demand but by their desire to maintain proprietary advantages. AMD, Steinberg and Yamaha realize the future is not software vs. hardware, not them against us. Instead, it's about a common vision where products are seamlessly integrated to work together in one creative workflow. We're tearing down the walls between host-based and hardware-based mixing and processing.

We believe it's all about the freedom to choose a solution that meets your musical needs. It's about being able to record your music where you want, when you want and how you want. AMD, Steinberg and Yamaha are dedicated to providing reliable, flexible and integrated solutions for your computer music production needs, giving you the freedom to be creative and the power to be productive.

Eric Clapton's Crossroads Guitar Festival in June 2004 presented one of the toughest recording environments imaginable: three days, outdoors, live music, multiple stages, legendary performers, 10+ hours of recording a day, high-resolution 24-bit/96kHz audio in the Texas heat. Who did the pros call on to capture the magic? AMD64 and Steinberg. Good call.

The POWER
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World Radio History

02R96 Evolution of Excellence



A lot has changed in the world of digital audio production since Alan first started using his Yamaha 02R. Now, with the audio industry settling on the 24-bit/96kHz format, and surround sound proving that it is here to stay, Yamaha brings you the new standard in digital mixers: the 02R96 with Version 2 software.

The 56-input 02R96 provides artists with more than five times the processing power of the original 02R, and offers the latest features required by even the most advanced production needs.



With the release of the new MY16mLAN mLAN card, you can simultaneously record up to 48 channels of 24-bit audio (32 at 96 kHz) directly into Nuendo or Cubase SX via a single FireWire cable, giving you the ultimate digital recording studio.

The 02R96 provides up to 6.1 channels of panning and monitoring, with a flexible surround bus architecture and easy surround pan bypass. It's a perfect fit with Nuendo's surround capabilities.

The advanced DAW integration for Nuendo and Cubase includes Selected Channel Control, which allows hands-on control of all Nuendo's EQs and dynamics, and complete MMC transport control.

ADD-ON EFFECTS

Software plug-ins are an integral part of today's music production environment, but there's one thing that's always true: You can never have enough DSP power. That's why all of Yamaha's 0 Series digital mixers give you 4 bands of parametric EQ and dynamics processing on each mixing channel to shape and contour your sound. Now with Version 2 software for the 01V96 and 02R96, you can add new Virtual Circuit Modeling effects to your mixer that faithfully re-create the sound of esoteric vintage audio gear.

Virtual Circuit Modeling technology (developed by Toshi Kunimoto and his group, the same sonic wizards who created the world's first physical modeling synthesizers) actually models the exact analog circuits of

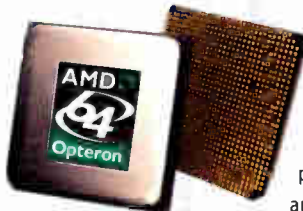


studio classics...right down to the last resistor and capacitor.

The AE-011 Channel Strip Package for tracking killer vocals and guitars features the sound and characteristics of 5 classic compression and EQ units from the '70s.

The AE-021 Master Strip Package Open Deck provides VCM models of 4 vintage tape mastering machines, including parameters for tape types, tape speed, bias and EQ settings. You'll be amazed at how OpenDeck can give your digital recordings "analog" warmth.

AMD64 Processors



AMD64 processors include the AMD Opteron™ processor for servers and workstations and the AMD Athlon™ 64 family of processors for desktops and laptops. Each provides industry-leading performance on 32-bit applications and 64-bit capabilities for tomorrow's software. This means you can upgrade your system with a simple software upload at your own pace without having to purchase new hardware!

WAVELAB⁵

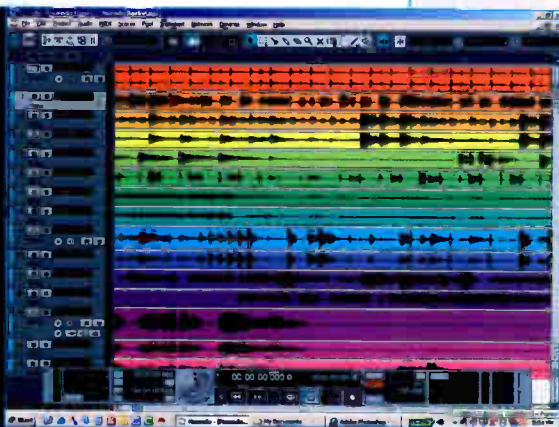
AUDIO EDITING AND MASTERING SUITE

DVD-A Authoring Right From Your Desktop!

A good thing has definitely gotten better with the arrival of WaveLab 5, the ultimate audio mastering and editing software package for Windows. Now, the stereo or surround mixes you create on Nuendo can be edited and mastered in WaveLab 5 and then directly burned to DVD-A, providing you with artistic control through the entire process.

And whether you need to master standard CDs, high-resolution 24-bit/192kHz stereo audio or 5.1-channel 96kHz surround, WaveLab 5 is your complete editing, mastering and burning solution, with full support for DVD-A authoring, including text, images and graphical menus. Nothing even comes close to the power and flexibility of the combination of Nuendo and WaveLab 5 for all your recording, mixing, editing and mastering needs—whether you work in stereo or make the leap to surround.

5.1, 7.1 or even 10.2 surround, Nuendo provides all the power and flexibility you demand, without the limitations of hardware-based systems. You can run Nuendo on your laptop or on your desktop, making it the most versatile system available on the market today.



The Surround PRODUCER

Alan Parsons

Your new album is a different direction for you. Can you tell us what synthesizers and software you used?

A Valid Path is the first album I have made without a "real" band. The star of the show was the Yamaha Motif. It is by far the best hardware synth out there.

There are also a lot of software synths on the album, including Steinberg's Halion and D'Cota, as well as Native's Absynth and FM7. Drums mostly came from sampled loops or "made up" kits with [NI's] Battery.

Can you tell us a little about the Motif sounds you use?

There's a brilliant guitar selection on the Motif. There's an absolutely killer power chord sample that

we used on more than one track. We used it for some drum and percussion sounds, too. I really like the analog-y pad sounds, and there is a perfect preset "Stereo Clav" sound that I use for "I Robot" live in concert.

VSTs seem to be a big part of your production today. What do you use and what are the advantages of software?

The whole album was basically recorded in Steinberg's Nuendo. We used very little outboard processing, as I have come to like the convenience of always being able to come back to a song exactly as I left it. We made substantial use of plug-ins from Steinberg, Waves and Native Instruments.

What about surround sound and DVD-Audio?

The album is already mixed as a 5.1 surround version, but it probably won't be released until next year. My guess is that it will come out in the new DualDisc format—i.e., Red Book CD on one side and DVD-A in 5.1 surround with added visuals on the other. The surround mixes were done with the stereo versions as a starting point. Nuendo makes that very easy, and the surround aspects of Nuendo are very well thought out.

Do you use a digital mixer in production?

All of the vocals and real instruments were recorded using an Aphex 1100 tube preamp. The Motif and other line sources were usually recorded through the converters on the Steinberg I/O units. Once inside Nuendo, I only used my trusty original 02R as a "direct monitoring" mixer during recording to get around the latency. I intend to upgrade to an 02R96 or a DM2000, and perhaps then I will go back to using real faders again.

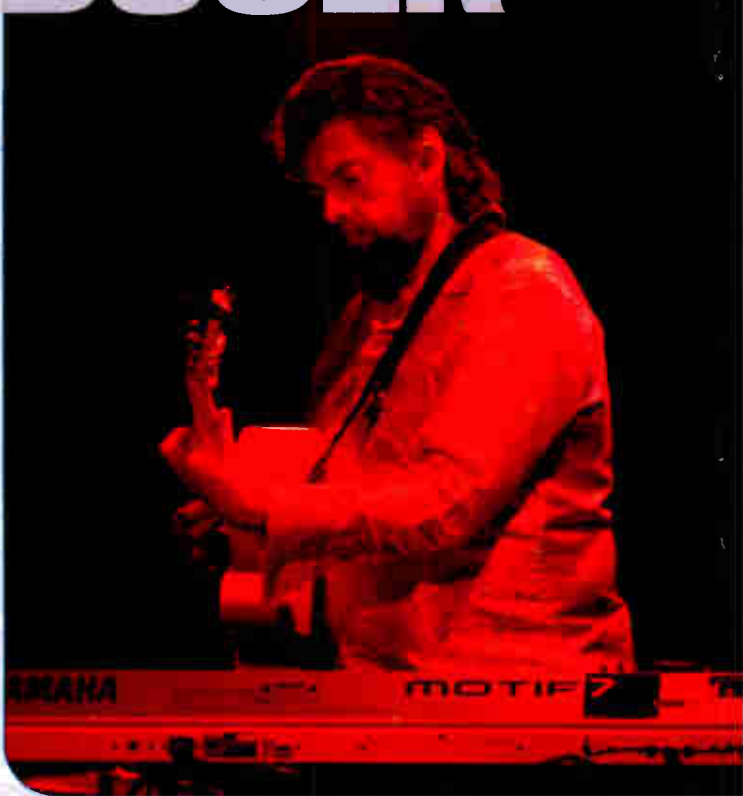
What are your thoughts about the new AMD64 processors?

There is no doubt that computers have to be purpose-designed for effective and efficient music recording these days. So much modern music is laptop-based, and finding the right combination of processing power, compatibility and speed in a small space is a big challenge. I am pleased to see that AMD is addressing these issues and is working alongside the music hardware and software manufacturers, as well as the computer makers, to provide a truly integrated solution.

Nuendo Flexibility

Alan Parsons is your classic artist/engineer/producer, and as such he needs to have tools that support him on "both sides of the glass." Alan continues to push the edge with his new solo album, *A Valid Path*, which explores the world of electronica in 5.1 surround format.

Alan has been using Nuendo since its initial release, and things have only gotten better since the release of Nuendo 2, known for its remarkably easy-to-use, user-definable interface, its unmatched versatility through support of VST effects and instruments, and its seamless integration between the MIDI and audio worlds. Whether you work in





AMD64 LIVE!

It's time to make music again and stop putting your creative efforts into working around limitations of technology. To that end, AMD developed AMD64 Direct Connect Architecture specifically with the artist in mind.

At AMD, we simply asked and you told us under no uncertain terms: You want your computer to work, to be invisible and to not interrupt your creativity when the inspiration is flowing.

We got the message and created AMD64. We won't bore you with the technical details about the magic behind the magic (please visit our Website if you really want to know).

We've been working with a spectrum of the best digital artists and we got it right. They loved it.

So what is AMD64 LIVE!? It's the difference between *working on a computer* and *performing with a computer*.

Think of it as an amp for your inspiration and creativity. Now you can go out on the artistic tightwire without fear as you stay tucked into the creative side of your brain.

AMD64 LIVE! is a challenge to spark the renaissance of the world's greatest performances. Give us your magnum opus, your masterpiece, your lightning in a bottle! AMD64 LIVE! will capture it whenever and wherever it hits!

You can tell a lot about a musician by the music they play. You can also tell a lot about a technology company by the products it makes.

Some processor makers think they're smarter than you and try to force technology on you that you neither want nor need. We took a revolutionary approach. We listened. It's time to take it live...AMD64 LIVE!

Cubase SX3's in-place editor maximizes your productivity

Cubase SX3 has revolutionized the way you work by adding many time-saving features. One example is the new in-place editor function that allows you to edit MIDI data directly in a track, saving you

from having to switch screens. You can even draw controller data directly into the track!

Cubase SX3 also saves time with Device Maps, External Plug-ins and Studio Connections support. Device Map support allows you to create "virtual control surfaces" that control your external MIDI gear directly from inside your project. External Plug-in support lets you control I/O levels and latency of external gear, and even "freeze" the external effect by committing it to a disc track. Finally, there is Studio Connections, a new industry proposal for tightly integrating hardware and software (see sidebar).

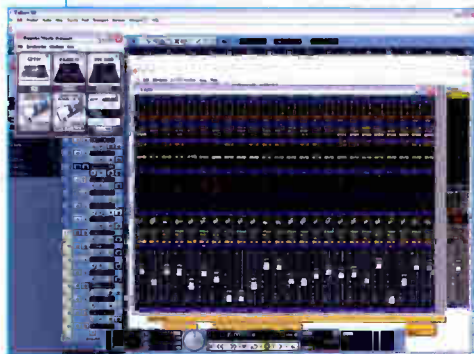


STUDIO CONNECTIONS

RECALL

As studios have grown more powerful and more complex, achieving a seamless cross-platform total recall solution that retrieves all your studio settings for both hardware and software has been illusive. Until now. Introducing Studio Connections, the new cross-platform standard for integrating your external gear into your software world.

The first products to adopt Studio Connections are Cubase SX3 from Steinberg



Yamaha's Studio Manager Software works within the Cubase SX3 environment

and Studio Connections Recall-compatible Studio Manager 2 software from Yamaha. With Studio Connections, you can control your hardware via graphical editing software directly from within your DAW application and save all of the settings for your Steinberg software and Yamaha hardware together in one project file. Just think: No more notebooks with little pictures of knob positions and long lists of parameters. With a single mouse click, Studio Connections technology lets you get your studio connected back up just the way it was last week, or several months ago when you last worked on that project. Studio Connections is a *huge step* forward in the continuing effort to provide seamless integration between software and hardware—for a faster and more intuitive workflow.

We proudly present the new member of the mc² family: the mc²66. It has been developed with over 30 years of experience and is equipped with the finest technology you can purchase today.

Fitted with 48 + 8 (up to 64 + 8) faders, the mc²66's lightweight construction is ideally suited for OB vans as well as studios. The core with 3072 mono channels offers 192 fully equipped DSP channels at 96 kHz. The central control section and the flexibly assignable channel strips allow intuitive operation.

Further features of the mc²66 are the straightforward matrix and console configuration, advanced audio-follows-video, parallel IT track summing as well as convenient console splitting that allows two users to work independently at one console.

All these new features, together with the proven architecture of the mc² series, come at a surprisingly modest price, making the mc²66 the ideal choice for all future requirements.

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World Radio History

EastWest Quantum Leap Symphonic Orchestra

A Scalable Sample Library for High-End Music Production

The EastWest Quantum Leap Symphonic Orchestra (EWQLSO) takes the concept of sampling to the next level. The disk streaming library offers recordings from three vantage points that can be combined to manipulate each instrument's perspective. The orchestral players were recorded in a concert hall in their normal positions and each instrument was recorded with three stereo mic setups: spot mics (C, or Close programs), a Decca tree array in the front-of-stage position above the conductor (F, or Full programs) and back of the hall (S, or Surround).

Producers Nick Phoenix of Quantum Leap and Doug Rogers of EastWest hired top-notch classical engineer Keith Johnson, who used his considerable skills and arsenal of custom-built equipment to record EWQLSO. The library's huge and very real sound is probably its biggest selling point—it literally gave me an adrenaline rush when I sat down to play some of its instruments.

A VERSION FOR EVERYONE

EWQLSO is offered in three versions. Each (or each orchestral section in the top-line Platinum version) comes as a virtual instrument in its own dedicated Native Instruments Kompakt sample player. For more extensive editing, you can open EWQLSO in Native Instruments' Kontakt, which can load 16 instruments per instance vs. Kompakt's eight, so it's also more efficient with memory when multiple programs share the same loaded samples.

The Platinum edition (\$2,995) is about 67 GB and includes all three phase-coherent mic positions to mix and match. You can license the entire orchestra or purchase each Platinum edition section (strings, winds, brass, percussion) separately.

At roughly one third the price of Platinum edition, EastWest offers the Gold edition (\$995), weighing in at about 14.5 GB. It includes almost all of the instruments and articulations in Platinum, except it has just the Full programs and is in 16-bit format.

A \$295 Silver edition offers a handful of Gold and Platinum's articulations and is intended to be used by schools or composers who need a laptop-friendly version with much lower system requirements.

OUTSTANDING INSTRUMENTS

EWQLSO provides characteristic articulations unique to each instrument. EastWest recorded the standard long and short notes, as well as specialized articulations such as string "blooms" (short swells with heavy vibrato) of various lengths.

There are a lot of these articulations to choose from, and they're great when they happen to fit your tempo and context. When they don't, you just have to work harder with the standard articulations.

The library is intended to be played using just a keyboard and mod wheel, plus MIDI CC#11 volume-riding. Most instruments feature mod wheel crossfades between dynamic layers and a couple of keyswitch programs. (Keyswitches are on-the-fly instrument changes triggered by notes on an unused portion of the keyboard.)

There are too many highlights in EWQLSO to list, but I'll start by saying that the percussion blew me away. Johnson managed to record the biggest, booty-shakingest concert bass drums you've ever heard, the timps rock the house, the orchestra bells are terrific and the orchestral toms are testosterone-laden.

The low strings are to die for, and with the exception of a few high string articulations that can sound synthetic, the whole string library sounds very realistic if you select the right articulations and "program" the dynamics well. In general, I preferred the grittier sound of the 11-piece second violin to the 18-piece first violins, but it's great having the choice.

Some of the woodwinds, such as the piccolo, are as good as the rest of the library, while others, such as the overly buzzy contrabassoon, struck me as sounding less convincing than the other sections. This is not always noticeable "in the mix," but it is when you play some of the instruments individually. My hunch is that different halls and studios simply work better for recording differ-



The library is designed to be played using a keyboard and mod wheel, controlled here in Native Instruments' Kompakt.

ent instruments, but the players seem to be very good.

The brass is powerful, huge and very exciting to play. In addition to big sections (six French horns, three tubas, a trombone section extended by a muscular bass trombones, etc.), solo instruments are included. I had a blast overusing the Wagner tuba octave unison rips.

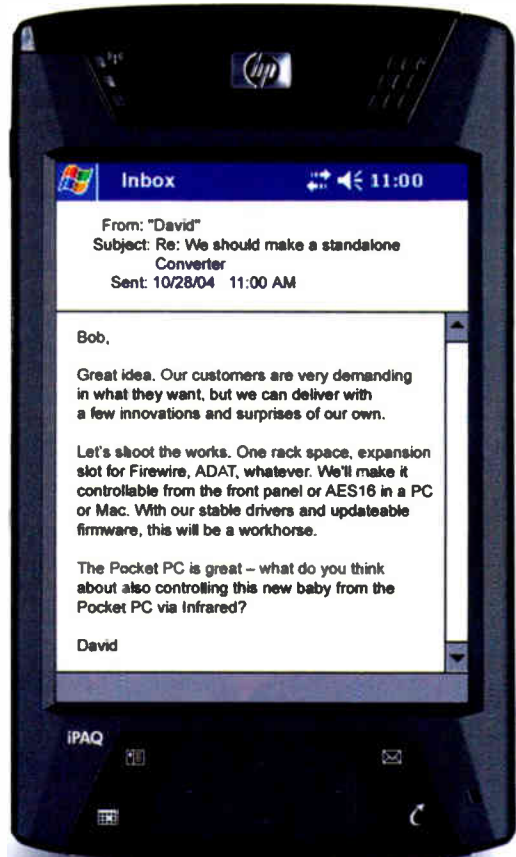
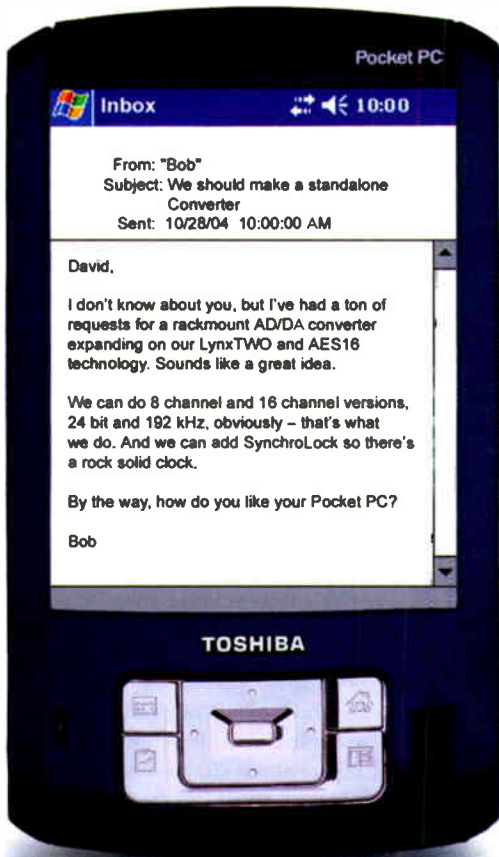
BALANCING AND MIXING OPTIONS

Cues using only the Full programs sound mixed and pretty well-finished out of the box if you just balance the instruments' levels. When required, you can shorten, lengthen or adjust the release trails' levels in Kompakt. You can also use its built-in filters on individual sample layers to avoid having external equalization affect the recorded ambience along with the "direct" signal.

Being able to mix in some of the other mic positions adds considerable flexibility to Platinum. You can use the Close mic programs for solo passages or you can mix them in very low to add definition to ensemble passages. For the latter, Johnson suggests highpassing them and boosting the top end slightly. He also suggests mixing in a hint of the brightened C programs at the beginning of important ensemble lines to help establish them.

The Surround programs are intended to then go to the rear speakers in 5.1 mixes, with the Full programs in the front and one channel of the Close programs in the center. You can also use the S programs for extra ambience or to move sounds farther away

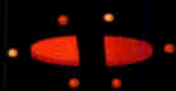
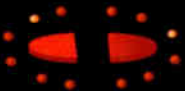
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in a stereo mix, delaying them a little to simulate pre-delay, if desired.

HAPPY TRAILS?

Most of the time, Kontakt/Kompakt automatically matches the release trails to the amplitudes of notes when they're released. However, there are some slow attack programs in which the trail doesn't sound if you release the note too early. Usually, you can just shop for a different articulation for that note, but not always. Also, when you're using MIDI CC#11 to ride the level while sequencing parts, the ambience disappears if you fade the note out. Usually, you don't

hear that in a mix, but it can be necessary to add a little reverb.

IDEAL PLATFORMS

Computers are a central issue with EWQLSO. As great as the release trails sound, they ring after notes are released, so the library uses a lot of polyphony. Unless you're running Platinum on multiple computers, it's practical to load one mic position at a time when working with a lot of instruments. The workaround is simply to mix and bounce successive groups of stem mixes from each mic position (in stereo pairs of each section). It would be nice if there was a command to

replace all loaded programs with the same ones from another specified mic position.

The Gold edition ran fine on a 2.4GHz generic Windows machine. After a bumpy start on the Mac, versions from Kontakt 1.5.2 and the EastWest edition of Kompakt 1.0.3.010 on work very well under Mac OS X Panther, too. Its improvements should have been incorporated into Kompakt by the time you read this. I would not recommend OS 9 as a solution. Even though the box states that it is compatible, when I tested it, the OS 9 versions of Kompakt and Kontakt didn't work—I constantly got crackles and the program froze with only a few voices.

The Platinum library must run on high-performance PCs or Macs or you'll get clicks and pops. On EastWest's recommendation, I borrowed a BYC VisionDAW with 2 GB of RAM for this review, a very quiet rackmount Windows machine tested and put together specifically to run Platinum. The VisionDAW uses a 2.8GHz Pentium 4, 10,000 rpm Western Digital SATA hard drives for the samples and BYC turns off everything you don't need in Windows XP Pro. Having the SATA controller on the motherboard rather than on a bridge chip is one of a number of details that the company claims are responsible for Platinum's excellent performance on this machine. You do pay a little more for custom PCs, but while they're certainly not mandatory, most pro users would find it worth the premium.

The VisionDAW loaded between two-and-a-half and three instances of Kontakt 1.5.2 (40 to 48 instruments) and stream bursts of about 250 (maybe 150 sustained) stereo voices in Platinum. With Gold running inside Emagic Logic Audio on a dual-gig G4 Mac with 1.5 GB of RAM, I had two-and-a-half AudioUnits Kontakts (40 instruments) full and with roughly the same number of voices. This performance is impressive, but large orchestral libraries want to run on more than one machine.

THE FINALE

EWQLSO is a major success and I really enjoyed working with it. The production, room and recording gave it a great finished sound out of the box. The "room" sound and reverb trails can't be matched, even with the best convolution reverbs available. Anyone interested in adding sampled orchestral sounds to their productions would have to consider this terrific library.

EastWest, 800/833-8339, www.soundsonline.com. ■

Nick Batzdorf is a music and audio technology writer, composer and engineer/producer in Los Angeles.

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Apogee AD-16X and DA-16X Converters

World-Class, High-Res Performance at a Breakthrough Price

Apogee topped itself with the release of its latest product, the AD-16X and DA-16X converters. The new units replace the company's similarly named AD-16 and DA-16, but share virtually nothing in common electronically with their predecessors. The new I/O twins owe their superb performance in part to the incorporation of Apogee's jitter-nuking C777 clocking technology, which was first used in the company's Big Ben master clock (reviewed in *Mix*, December 2003).

TOURING THE AD-16X

The 1U rackmountable AD-16X provides 16 channels of 24-bit A/D conversion at standard sampling rates from 44.1 to 192 kHz, and can lock to internal crystal or external word clock input.

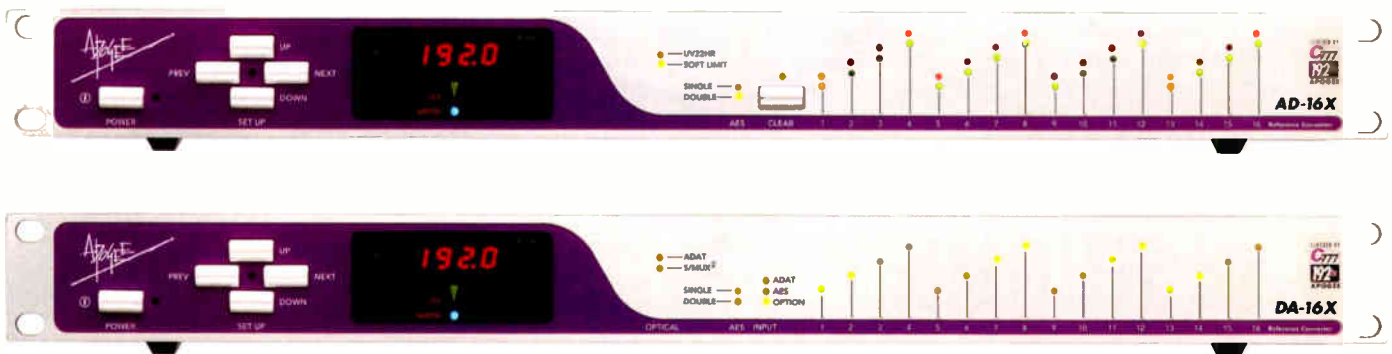
pending on the AD-16X's currently selected sampling frequency): ADAT (16 channels at 44.1 or 48kHz rate), S/MUX 2 (16 channels at 88.2 or 96 kHz) or S/MUX 4 (eight channels at 176.4 or 192 kHz). Additionally, an option slot accommodates either an X-FireWire or X-HD card (\$595 each) for direct interfacing with a computer equipped with FireWire or Pro Tools|HD connections, respectively. All digital output connections are always simultaneously hot, and each analog input gets routed to its corresponding numbered digital outputs.

Rounding out the AD-16X's rear panel are word clock I/O (on BNCs), a word clock termination switch and a three-prong receptacle for the detachable AC cord. The AD-16X's Word Clock (WC) Ratio function allows the unit to operate at 2x or 4x mul-

systems. User calibration settings are non-volatile and can be adjusted either globally or independently for each channel, in either 1 or 0.01dB increments.

Apogee's superb Soft Limit processing (an extremely transparent analog limiter with minimal overshoot) can be applied independently to any or all channels. The company's acclaimed UV22HR processing can also be applied independently to any number of channel pairs (at 44.1- or 48kHz rate only) to reduce their signals' bit depth from 24 to 16 bits while preserving much of the low-level detail that was in the original signals.

Metering for the AD-16X is rudimentary. Each channel sports one green LED that glows brighter as digital output level increases from -36 to 0 dBFS and a red LED for digital "overs." You can clear the red



All I/Os are on the unit's rear panel. Sixteen balanced analog inputs are via two DB-25 connectors. Another DB-25 connector provides either 16 channels of single-wire or eight channels of double-wire AES/EBU output (selectable from the front panel). The supplied AD-16X user's guide gives detailed pin-out diagrams for all DB-25 connectors, and Apogee also offers optional breakout cables with XLR fan ends (\$179.95 per set) for use with these connectors. The AD8-IFC provides eight XLR female connectors for analog input (two sets are needed for 16 channels), and the AES16 I/P IFC provides 16 channels of AES output on XLR male connectors.

Four Toslink optical connectors on the AD-16X's rear panel also output digital audio in one of the following formats (de-

tiples to the WC input frequency at up to the maximum rate of 192 kHz. Alternatively, the WC Ratio function can output clock at 2x or 4x frequency multiples (again, up to 192 kHz) with respect to the internal sampling rate. Should there ever be a loss of source clock, Apogee's SureLock technology ensures that the AD-16X continues to output stable clock. Electrically speaking, the AD-16X (and DA-16X) can operate at 100 to 240 VAC and at 50 to 60 Hz for plug-and-play operation anywhere in the world.

The AD-16X's analog inputs are factory calibrated such that a +4dBu signal reads -16 dBFS. However, you can adjust the unit's analog sensitivity (using digital front panel controls) to produce 0dBFS readings over an input range of +6 to +24 dBu, thus accommodating either +4dBu or -10dBV nominal

LEDs manually or automatically by employing one of two peak-hold modes. One mode clears the meters after one second, while the other does so when signal level drops below -50 dBFS for at least five seconds and then recovers (as happens when starting a new take).

CRUISIN' THE DA-16X

The 1U rackmountable DA-16X supports the same digital formats and sampling rates as the AD-16X, and all of its I/O are also on its rear panel. I/Os include two DB25 connectors for the 16 analog outputs, another DB25 providing AES/EBU input (16 channels of single-wire or eight channels of double-wire format), four Toslink connectors for ADAT- and S/MUX-formatted digital inputs and an option card slot to accommodate digital inputs via an

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X-FireWire or X-HD card. (The option cards are bi-directional and can therefore be used in multiple AD-16X and DA-16X units to achieve, for example, 32 inputs and outputs at once with Pro Tools.) Word clock I/O (on BNCs) and an AC receptacle round out the DA-16X's rear panel. Unfortunately, the unit's word clock termination switch is located *inside* the chassis. Apogee remedied this; in later batches, the switch is located outside the chassis.

The DA-16X can lock to internal crystal, word clock input or digital input (i.e., clock embedded in a digital audio signal) and features the same WC Ratio function as the AD-16X.

The DA-16X ships calibrated to provide +4dBu analog output for a -16dBFS digital input, but can be calibrated globally or on a per-channel basis with the same incremental resolution and over the same range as the AD-16X. An internal oscillator with adjustable digital reference level is included to aid calibration. A single green LED for each channel indicates digital input level from -36 to 0 dBFS according to how bright it shines.

A/B COMPARISONS

With an A-weighted dynamic range of 120 dB, the AD-16X's converters conveyed a strong sense of realism. In A/B tests, they provided significantly greater depth, focus and high-frequency detail than the Apogee Rosetta 800's A/D converters. The Rosetta 96's A/Ds, on the other hand, provided a hair more depth and fluidity in mids and highs than the AD-16X's converters. The differences were extremely subtle, but sounded as if the mics were moved a couple inches closer to the source (without added proximity effect) from a couple feet away to reveal a tad more nuance.

The DA-16X's converters boast an A-weighted dynamic range of 118 dB. They sounded a little more fluid, warmer, sweeter and 3-D than the D/As in the Benchmark DAC-1. Compared to the D/As in a Rosetta 800 (with the entire system slaved to Big Ben clock), the DA-16X's converters offered slightly better transient response and more open low mids, but the Rosetta 800's bottom end sounded slightly bigger and tighter.

While neither unit is inexpensive, the AD-16X and DA-16X represent a dramatic breakthrough in price-per-channel for high-performance converters. To my knowledge, there are no other high-end converters on the market that deliver such world-class performance at such a great price. I highly recommend them. Price: \$3,495 (basic configuration).

Apogee, 310/915-1000, www.apogee-digital.com. ■

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Taylor Guitars/Rupert Neve Expression System

Taking Acoustic Guitar Reproduction to the Next Level

I was walking around the Winter NAMM show a year ago and ran across Rupert Neve. I wondered why this dean of analog electronic design was at an MI show. He told me to come by the Taylor Guitars booth and I'd be in for a treat. He was right.

Dissatisfied with the performance of acoustic guitar electronics, company founder Bob Taylor teamed his pickup designer David Hosler with Rupert Neve to create a system that could reproduce the sound and nuances of an acoustic guitar. After years of research, the result is the Expression System (ES). Exclusive to select Taylor guitars, ES uses two vibrational Dynamic Body Sensors™ and a sub-fretboard Dynamic String Sensor™, the three of which are precisely blended via high-end electronics.

Forget low-fi designs and cheap pots found in typical onboard guitar electronics. The summing circuits for the three individual transducers output to balanced TRS (the guitar ships with a TRS-to-XLR cable for interfacing directly to mic inputs)—no direct box required. To cap off the system, Mr. Neve designed the Taylor K4, an optional outboard preamp/equalizer.

THE GUITARS

The ES is available on Taylor's steel-string models (300 Series and higher). I reviewed a 614CE, a "Grand Auditorium" with Sitka spruce top and bookmarked flame maple sides and back. The "CE" designation implies a cut-away model with electronics. ES can be retrofit into certain Taylor models; call Taylor for details. The 614CE played perfectly right out of its heavy hard case, with immaculate fit and finish, a full, rich balanced tone and intonation that was spot-on. ES electronics aside, this is an amazing instrument.

The ES design brought new attention to details, such as freedom from the typical drop-in battery holder/electronics module that mounts in a huge hole chopped into the guitar's side. Instead, the ES has three small knobs (bass/treble/volume) in the side wall near the neck. Beside its elegant look, this approach provides easy access to the detented pots, where "flat" is at the 12 o'clock position. Near the tailpiece is a holder for two AA cells and the TRS output/strap pin. The unit powers up when a cable is insert-



ed; battery life's about 20 hours. The output is balanced but also works with an unbalanced cable for connecting to a standard guitar amp, effects box or tuner.

One question that everybody seems to ask is whether users can tweak the individual levels of the three transducers—and the answer is no. But for anyone used to working with piezo or standard magnetic pickups on acoustic guitars, hearing the ES is a major shock. For the first time from a pickup, I heard a natural, uncolored sound that required little tonal tweaking. This is miles removed for the surgical, radical EQ needed on a standard pickup to make it sound even vaguely natural. The guitar's onboard EQ is sweet and gentle—just what you'd expect from a Rupert Neve design. And whether playing in a festival or coffeehouse venue—I used it in both—the system simply wouldn't feedback, even in high-SPL situations. Another point worth noting is the amazing amount of headroom the ES electronics offer, offering clean reproduction at any playing level from subtle harmonics to heavy slammed chording. Yeah!

ENTER THE K4

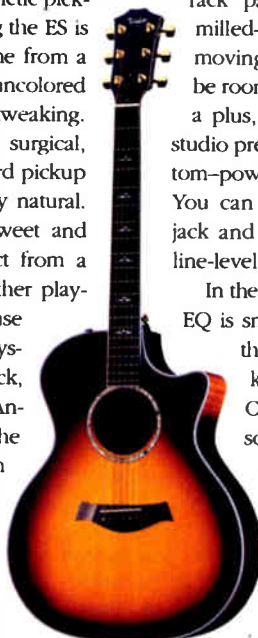
Designed for studio or live use, the optional (\$898) Taylor K4 is an outboard preamp/EQ for acoustic guitar that features low-impedance, transformer-coupled balanced XLR I/O, bass and treble controls, a true parametric midrange with adjustable Q, a pre/post-EQ effects loop, polarity reverse switch, headphone jack with level

control, mute and a dedicated tuner output. An internal (nonswitchable) -18dB/octave highpass filter removes rumble and LF crud below 30 Hz. The K4 is powered by an external wall wart and for convenience—say, for those times when you forget the power supply—can be powered by two "C" batteries. In the studio, I'd prefer a standard 1U rack package to the K4's stand-alone milled-aluminium chassis, and by removing the battery compartment, there'd be room on an internal power supply. As a plus, the unit doubles as a nice little studio preamp when used with (non-phantom-powered) dynamic or ribbon mics. You can also patch into the loop return jack and use the EQ alone to tweak any line-level source.

In the studio, the K4 is plug-and-go: The EQ is smooth and musical, whether using the shelving LF (450 Hz) and HF (1.6 kHz) or the parametric MF band. Calling the latter a "mid" band is somewhat misleading, as it has an extremely wide, 80 to 8,000Hz range. With a touch of EQ, the ES truly rivals a well-miked acoustic guitar setup. I particularly liked the convenience of overdubbing acoustic guitar parts in the control room—something I would have never attempted before the ES system.

Taylor's Expression System applies a high-quality, high-tech approach to the old problem of guitar transducers, with impressive results. Hear it for yourself at AES, booth 105.

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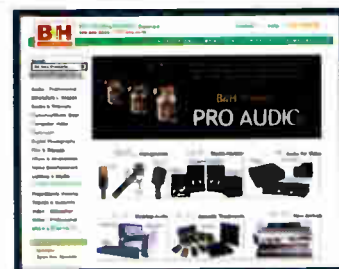
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Demeter VTMP-2c Microphone Preamp

Limited-Edition, Dual-Channel Tube Unit Celebrates Anniversary

Leaving your teens is always an event, even if you're a mic preamp. Commemorating the upcoming 20th anniversary of the VTMP-2, Demeter Amplification is making a limited-edition version of the current VTMP-2c. Each of the hand-built versions will be tested, signed and numbered by James Demeter.

To provide some historical perspective, in 1985, Demeter Amplification began producing a tube-based microphone preamp, the VTMP-2. For those whose memory of the recording industry in 1985 is a little vague, stand-alone microphone preamps were not that common; in general, mic pre's were part of the console. And tube mic preamps were even less common: When the VTMP was introduced, it was the only tube preamp being made.

SO WHAT'S IN THE BOX?

The VTMP-2c Limited Edition is a 2-channel preamp, with each channel offering between 30- and 65 dB of gain. Each channel has a continuously variable gain control and an output volume knob, plus switches for low cut (with a choice of 6- or 12dB roll-off), a 20dB pad, phantom power and phase. The large 10-segment LED meters show either dBu or peak levels, as well as an overload indicator. In addition to XLR inputs, each channel also has 1/4-inch DI inputs on the front of the two-rackspace unit. Available outputs include XLR, TRS and 1/4-inch unbalanced outs.

The VTMP-2c uses Jensen 110KhPC input transformers and has active balanced outputs (which use Burr Brown DRV-134s). The tube complement comprises two 12AX7as, two 12BH7As and one 12AT7a. The input impedance is 1k for microphones and 1 MB for the instrument, while the output impedance is 50 ohms balanced and 100 ohms unbalanced.

OBSERVATIONS

In an era when many microphones (and for that matter, a number of preamps and other signal processors) appear to have become "brighter," it's nice to have a tool available that can help mitigate that harshness. The VTMP-2c does an excellent job of doing exactly that. When recording a fairly



bright Taylor acoustic guitar with a pair of Neumann/Gefell M-582s, the Demeter smoothed out the recorded signal's top end in an extremely natural way, without making the guitars sound muddy or muffled. The same smoothing effect was evident when using the VTMP-2c on overheads. I've had issues in the past with some overhead tracks being a bit strident, especially when using 414s or UM57s (East German Neumanns) as overhead mics. The VTMP-2c's low end didn't sound boomy or muddy, but the top end had a smooth roll-off that seemed to be a bit more pleasing than some of my other preamps.

Some (though not all) vocals benefited from this roll-off, as well. A couple of the singers who were recorded through the VTMP-2c sounded more natural than with my usual vocal preamps, both with ballad-type material and screaming rock tracks. In keeping with what I found elsewhere, this was dependent more on the singer's voice than anything else. With only a few exceptions, darker voices sounded fine (as always) or were possibly a bit muffled when using the VTMP-2c. Bright voices, and those with an edge to them, typically sounded smoother—at least, a bit less EQ was needed at mix time to smooth them out.

That I found the VTMP-2c to be less edgy than most other preamps should not be construed to mean that it is overly dark. When recording trumpet with an RCA 44 (with up to 65 dB of gain available, this preamp handles even vintage ribbon mics with no problem), the sound was everything that I wanted: present, full and with just the right amount of edge to sit comfortably in the track. The pad switches worked well for applications such as the aforementioned drum overheads, especially when the microphones didn't have pads of their own. The low cut was a handy tool for cleaning up

extraneous noise on relatively high-frequency sources such as mandolin. I found that the gentler 6dB-per-octave roll-off was more usable than the 12dB setting, which tended to be a bit aggressive for my taste.

The DIs worked as advertised on bass and keyboard modules, yielding a solid bass sound (and, because I've owned Demeter's bass preamp for close to 10 years, a familiar sound) and adding a certain desirable thickness to keyboards. And if the natural sound of the preamp isn't quite enough, the VTMP-2c can be over-driven for more of an edge.

CONCLUSIONS

Like the earlier iterations of the VTMP-2, Demeter's VTMP-2c is a solid workhorse preamp with a fairly distinct vibe. A number of changes and enhancements have been made to the unit over the years, but the VTMP-2c still has the classic Demeter sound. Stand-alone preamps are a much larger part of the recording process than they were when the original VTMP-2 was introduced (and, indeed, are a much larger part of the audio industry), but the attributes that made the original VTMP-2 a success are still a part of this latest version.

With a manufacturer's direct price of \$1,899, the VTMP-2c Limited Edition falls squarely in the middle of the preamp price spectrum—a fairly crowded segment of the market. However, once you consider the flexibility and sonic quality represented by the Demeter VTMP-2, this preamp becomes a relative bargain. Overall, it seems a good value and would be an excellent part of a well-rounded mic pre collection.

Demeter, 818/994-7658, www.demeteramps.com.

Martin Allen is a Nashville-based producer and engineer.

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~ Mitch Gallagher
EQ Magazine



"Honey they shrunk my M49! Compared to my \$10,000 reference, both had that big bold Neumann sound, yet the M930 seemed to have a deeper low end and was definitely quieter. Wow, was I impressed! Despite its diminutive size, the M930 contains a full 1" diaphragm and amazingly hip electronics. The tiny form factor makes various stereo arrangements easy to accomplish and the M930 is the quietest mic I have ever used. I liked them so much, I bought them."

~ Dr. Fred Bashour
Pro Audio Review



"The compact size of the M930 is very useful when trying to get a mic into a tight space. It is smaller, lighter and has greater headroom than others. It acquitted itself very well indeed in all cases, including all forms of human voice, capturing lots of detail, but in a fairly neutral way. The M930 matches or exceeds the performance of alternatives costing substantially more."

~ Hugh Robjohns
Sound on Sound



"In all of the applications, the M930's small size was an asset. I found myself writing the word superb over and over. The M930 gave me lovely, unblemished signals, that were easy to mix and required little or no EQ. The M930 is a rare critter. In short, a superb professional microphone, among the best I've used. I bought them."

~ Paul Stamler
Recording



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Georg Neumann with Chief Engineer Mr. Kühnast Sr. – circa 1933

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2004 – Hand drilling an M930 back plate

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M930 matched stereo pair with SH93 X/Y bracket

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Supporting High-Resolution Audio

The Quest for Universal DVD Players

Every Sunday, I scan the back page of *The New York Times Arts and Leisure* section for the J&R Music World ads. As a barometer of what's popular, it covers everything from computers to DJ gear, headphones to home theater, iPods to eye-candy. Sadly, DVD-A and SACD players are under-represented. Sure, the hardware and software exists if you know where to look, and these are, after all, niche-market items geared toward audiophiles and home theater enthusiasts. This column is primarily about elevating awareness of universal DVD/SACD players (see the table) and encouraging audio professionals to take advantage of DVD-A as a format. But before I begin, I must make a few points.

Bullet 1: While DVD-A and SACD are capable of multichannel audio, the emphasis is on stereo reproduction. This is partly because a good stereo system is capable of providing a 3-D experience. Whether we're talking about surround or stereo, Bullet 2 is the obstacle—getting regular people to sit down in the sweet spot to enjoy the fruits of our labors. Note: How SACD is converted from Direct Stream Digital (DSD) to the analog output jacks of a universal player is not a primary concern for the moment. Suffice to say that quality is likely to vary with the price of the unit. In addition, some players allow standard CDs to be up-sampled before D/A conversion. Here, too, you'll get more for your money.

Bullet 2: The popularity of MP3s reflects a cultural shift toward music as wallpaper rather than serious listening. This reinforces Bullet 1, that in the short term, DVD-A could be a trickle-up consumer format, one that serves the obvious niche markets, including our own. Long term, we gotta figure out how to entice listeners.

Bullet 3: I will not be nibbling away at nuance except to point out some obvious flaws in the way invalid comparative judgments are made. The ability to truly discern the differences among various audio sources requires, quite literally, a level playing field. I do plan to devote a whole column on how to set up a "proper" A/B/X evaluation. But for now,



the most important issue is that both of these formats exist, as each serves a useful purpose.

Compared to a CD, DVD-A has an enhanced feature set (including still and video images), while SACD is simply standard and high-resolution stereo and high-resolution surround. Unlike CD and DVD-A players, SACD players do not have digital outputs.

Bullet 4: A DVD-A can be just as easily and affordably burned as an audio CD. This is not an option with

Universal SACD/DVD-A Players

Table 1: An assortment of Universal SACD/DVD-A players. Prices are typically of the e-street variety and are to be considered ballpark for reference only. Check out www.dvd-a.dk/start.php?page=P25 for a comprehensive listing of universal players.

MAKE	MODEL	PRICE
Denon	2200	\$600
Denon	2900	\$799 to \$999
Denon	2910	\$649 at J&R
Esoteric (Teac)	DV-50	\$4,295 to \$4,995
Esoteric (Teac)	P-70 transport	\$6,999
Esoteric (Teac)	D-70 DAC	\$5,999
Lexicon	RT-10	\$3,495
Panasonic	DVD-RP91	\$500
Pioneer Elite	DV-45a	\$449
Pioneer Elite	DV-47ai	\$639
Pioneer Elite	DV-59AVI	\$950 to \$1,500
Pioneer	DV-563A	\$149 at Best Buy
Toshiba	SD-4960	\$149 at J&R
Toshiba	SD-6915	\$159 at J&R
Yamaha	DV-S5770	\$449
Yamaha	DV-S1500	\$399
Yamaha	DVD-S2300	\$999



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the SACD.

With these parameters set, let's get to the real discussion.

BREAKING THE HABIT

As professionals, we sweat the details, meticulously tweaking the trees to create the most wonderful, bug-free forest possible. (Unless, of course, they're really good-sounding bugs!) Outside of the lab, truth be told, while we may have certain minimum standards for playback, there are plenty of us who try to listen as consumers do.

The CD is like the Yamaha NS-10, a standard that represents one facet of the average playback system. No longer as flawed as it was once perceived to be, every aspect, from hardware to technique, has been scrutinized and improved so that the 44.1kHz/16-bit medium can fully realize its potential. Now only the "cheap reproducers" are the weakest link.

MONKEY "C"

That the high-resolution niche is such a small percentage of a larger, but shrinking, sonic market should not deter us from jumping onboard and sharing our environment with serious audio hobbyists. I'm not saying there's

gold in them thar niche hills, but at least audiophiles are listening. Think of it another way: High-resolution consumers are less likely to complain about relative level from one disc to another. It might be a way to get the Volume Wars' monkey off our backs.

Excessive compression and peak limiting may be a form of artistic expression today, but it might also be responsible for turning off listeners in the long run. It literally collapses the sound stage down from three to two dimensions, and in doing so, it only makes the analogy of music as wallpaper more accurate. Car audio systems have become the lowest common denominator, greatly improved in response and power, and yet challenged by a dynamic range that is dictated by higher-than-average noise floor. It's a pity that audio has been composed to emulate FM radio signal processing—yet another contributor to the downfall of high fidelity.

HANDS UP

In our midst are those who have issues with surround, thinking that it requires too much "fuss" to set up or that consumer playback systems are too unpredictable. While the latter is true, some progress has been made on

both the consumer and professional sides of the equation in terms of addressing production technique. Surround is not a dominatrix; it can do your bidding, and you can use as many or as few channels as you'd like. I recently did a jazz trio project in which the front channels (left and right only) got the stereo mix, while the rear channels got an ambient stereo mic and a taste of reverb.

LESS CONFUSION, PLEASE!

My interest in high-resolution took off several years ago after DVD-A authoring became affordably possible via Minnetonka's DiscWelder Steel (\$495 list). Then last year, my mother-in-law accidentally purchased a Three Tenors Christmas SACD—one without the CD layer (duh!)—so I snagged it and bought her the CD-only version. CDs, DVDs and SACDs all look the same—so many formats now exist for the ubiquitous 12cm disc that manufacturers need to make it easier for consumers to play any and all.

SPREAD THE WORD

Because manufacturers are not likely to read this column, I'm hoping to turn y'all on. Spread the word to your customers by

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World Radio History

offering to burn them a DVD-A. They'll share the sonics with friends and that will hopefully trigger a small chain reaction—increased universal DVD player sales will perhaps give manufacturers the hint. Meanwhile, as high-resolution audio is already being stored on hard drives, CDs and DVDs as *data*, why not use DVD-A for both archiving *and* client evaluation? Consider this: DAT trickled up from the consumer to the professional domains with the help of record company paranoia. That's fortunately not the case with DVD-A, but I hope you'll see its trickle-up potential.

BEWARE COMPARATIVE ANALYSIS

You may have noticed that I've not spoken a word about the actual sound quality of high-resolution audio. That's partly because I believe that the most significant "bit" is in the hands of the producer, engineer and artist. Besides, if you're not gonna sit in the sweet spot, what's the point? But people do sit down to listen. When I get a moment to sit down, it can be an emotional experience. From Louis Armstrong to Frank Sinatra, Shawn Colvin to k.d. lang, The Beatles to Björk, I have, on occasion, been moved to tears. I love when the music is so powerful that I momentarily for-

get about the technology.

On the other hand, people have told me about the stunning difference between, for example, the CD and SACD "layers" of otherwise identical material. When asked how the comparison was made, the response was disappointingly unscientific. To start, two identical players and discs should be playing side-by-side. Sony has a test SACD, part number TGZD 90005, that may be hard to get but would facilitate the setup process. It would also be helpful to speak with the mastering engineer.

The CD layer would require minimal processing—resampling and dithering—but that would still make for a fair comparison with the high-resolution layer. However, if dynamics processing were also used to make the CD layer comparable to other CDs, all bets are off. This was the case with Pink Floyd's *Dark Side of the Moon* SACD as reviewed and analyzed by Jon Iverson and John Atkinson in the May and June 2003 issues of *Stereophile*. As it turns out, dynamics processing was applied to the CD layer. I became aware of this via reprint in the Boston Audio Society's newsletter, the *BAS Speaker*.

LISTEN

That consumers seem content with MP3s is a cultural statement: Easy, portable music-as-wallpaper, which is fine for its intended purpose, but it's not good ear-training. My mission is far more subversive than promoting high-resolution audio. While I have never been obsessed about kissing digital zero for fear of losing resolution, I believe that, by taking advantage of the DVD-A, we can collectively kick the "excessive dynamics processing" habit. Perhaps it is idealistic of me to think that *if* music production and recording could be made more inviting, *then* more people would take a moment to listen. But it's worth trying.

Our country has been obsessed with the goal of constantly increasing productivity, a malady that's spilling over into Europe to the point where their way of life is threatened. You've got to admit that a six-week vacation sounds like a pretty good idea. Granted, many of us work through holidays and don't always get to take vacations, but perhaps we should all take a step back and think about increasing and appreciating the quality of life—and listening. ■

Eddie would like to thank David Glasser of Airshow Mastering for his SACD expertise and David Hadaway of the BAS Speaker for the tenacious pursuit of accurate comparative analysis.

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PHOTOS: MARK SELIGER

FLYING (ALMOST) SOLO

IN THE STUDIO WITH LENNY KRAVITZ

By Elianne Halbersberg

"Lenny Kravitz has taken up 80 percent of my adult life," says engineer Henry Hirsch without so much as a trace of cynicism in his voice. "When I met him, he was exactly as he is now; there's not much different about what he is."

Hirsch met the singer/songwriter/multi-instrumentalist/producer almost 20 years ago when Kravitz walked into Hirsch's Waterfront Studio, then in Hoboken, N.J., to cut a demo with his band. As it turned out, the teenaged Kravitz was the only one qualified for session work and he ended up playing most of the instruments—the beginning of a recording method that would come to define his career. Although the two men connected, for Hirsch it was just another session. But when Kravitz signed his record deal several years later and was ready to cut his debut album, *Let Love Rule*, he remembered the engineer that he calls "the best in the world." They've been partners ever since, and their collaborative efforts are most recently heard on Kravitz's latest release, *Baptism*.

Like his previous recordings, *Baptism* showcases Kravitz's myriad influences, ranging from classic soul to contemporary rock. One moment he's unleashing wild guitar solos and the next he's singing the blues. His fondness for what Hirsch calls "real instruments,"



however, has earned him a retro tag, which the engineer finds offensive. "Lenny's style and sound don't fit current trends," says Hirsch. "Listen to his first two records compared to other records made in the late 1980s, like Mötley Crüe, and see which sounds more dated. The retro tag stuck and has not been helped by the vintage gear I have. We've done what we wanted to do, and, unfortunately, he's been hit hard and I take exception to it."

"My role is completely in recording and interpretation," Hirsch continues on a lighter note. "Lenny comes forward with a song and I make it into something we both want to hear. I take his raw ideas and we build it up. We don't have a band. We take it from the bottom up, drums or whatever instrument, and I envision what it should sound like when it's finished. If the drums are wrong, it shows when we do guitars. He gives me a basic idea and trusts me to make the right decisions. Vocals are cut at the end of the recording process and all that we've done before that has got to make musical sense. Sometimes it does and sometimes it's a struggle."

"Henry helps me come up with the sounds I'm

—CONTINUED ON PAGE 154

"THE UNBROKEN CIRCLE"

A TRIBUTE TO THE FIRST FAMILY OF COUNTRY MUSIC

By Blair Jackson

It has been quite an emotional couple of years for producer John Carter Cash. In May 2003, his mother, singer June Carter Cash, died unexpectedly, a week after undergoing heart surgery. Then in September of last year, he lost his father, country legend Johnny Cash, to complications from diabetes. Somehow, in the midst of his grief, he managed to complete an album project that includes performances by each of his parents, and which pays homage to the legacy of the most famous family in country music. *The Unbroken Circle: The Musical Heritage of the Carter Family* is both a fitting tribute to the producer's—indeed, of country music's—roots and a wonderful showcase for some of our finest contemporary singers and pickers.

Hailing from the hills of Virginia, the Carter Family laid the foundation for modern country music in the '20s, '30s and '40s, recording hundreds of songs: old mountain tunes, traditional ballads that came over



from the British Isles and a number of now-famous original songs—written by patriarch A.P. Carter—including “Will the Circle Be Unbroken,” “Wildwood Flower,” “Wabash Cannonball,” “Keep on the Sunny Side” and so many more. June Carter was the daughter of original Carter Family member Mother Maybelle Carter (cousin of A.P.’s wife, Sara, who was also in the group) and grew up singing as part of the family act with her sis-



PHOTO: COURTESY OF THE CASH FAMILY PERSONAL PHOTO COLLECTION

An archival photo of the Carter Family, featuring (from back, L-R): A.P. Carter, Janette Carter, radio personality Announcer Bill, Sara Carter and Mother Maybelle Carter. In front are the Carter Sisters: Helen (l), Anita and June (r).

ters, Helen and Anita. In a wedding of true country music royalty, June married Johnny Cash in 1968; John Carter Cash was born two years later.

Every few years, it seems, Nashville rediscovers old-time country music through the work of contemporary artists. In the early '70s, it was the Nitty Gritty Dirt Band's epic, star-studded celebration of traditional country called *Will the Circle Be Unbroken*. In the '80s, it was Emmylou Harris' *Roses in the Snow* and *Angel Band*. Just three years ago, it was *O Brother, Where Art Thou?* and the Down From the Mountain tour. So, *The Unbroken Circle* has arrived at a time when the audience is primed for this kind of music, and it has the star power to perhaps reach beyond the usual traditional music audience.

The CD's 15 tracks feature a nice blend of family, friends and perhaps a few unexpected contributors working through a diverse collection of mostly less well-known tunes associated with the Carter Family. “We didn't want to dictate what the different singers would do,” says John Carter Cash. “We made some suggestions, of course, but a lot of them had their own ideas, which was fine.” In the case of John Prine, for instance, “Bear Creek Blues” has been in his repertoire for years. Other artists on the collection include George Jones, who lends such authority to “Worried Man Blues”; Harris, who

sings “On the Sea of Galilee” with the Peasall Sisters (the three cuties who sang “The Highways and the Hedges” on the *O Brother* soundtrack); octogenarians Janette and Joe Carter, the children of A.P. and Sara Carter; Rosanne Cash; the Nitty Gritty Dirt Band, joined by Kris Kristofferson; Marty Stuart; Willie Nelson; Norman and Nancy Blake; Shawn Colvin (with Earl and Randy Scruggs); The Whites with Ricky Skaggs; bluegrass titans the Del McCoury Band; Sheryl Crow; June Carter (a track from her 2003 album *Wildwood Flower*, also produced by her son, John); and in his final recording, Johnny Cash. There are gospel numbers, love songs, murder ballads, tunes about growing up, growing old and everything in between. It's mostly acoustic instruments, but an electric guitar shows up on a couple of tracks, and there's even drums on a pair.

“I've loved this kind of music my whole life,” Cash says, “so it was really a matter of life-long inspiration for me to do this kind of project. Within the last eight or 10 years, I've become even more interested in it, and over the last couple of years, I've done quite a bit of research into the songs. The Carter Family recorded more than 300 songs and I was unfamiliar with a lot of them until fairly recently.

“In dealing with my mother's record, *Wildwood Flower*, I sort of grasped the tip of

—CONTINUED ON PAGE 158

TOWER OF POWER'S "WHAT IS HIP?"

By Maureen Droney

Oakland, Calif., at the beginning of the 1970s was light years removed from the residual Summer of Love vibe still hanging on across the Bay in more affluent San Francisco. Oakland was gritty, working-class, largely black and somehow the perfect breeding ground for Tower of Power, one of the most unique bands ever assembled. Blazing out of the East Bay, the 10-piece, horn-driven outfit was often imitated and never duplicated: a funky downtown combination of soul, jazz and rock powered by a virtuoso rhythm section.

Eighteen albums and more than 30 years later, Tower of Power still records, still tours, still sells out venues and still cranks out blistering grooves topped by that greasy five-man horn section. Among those grooves is one that—though never a single—is a TOP signature: "What Is Hip?" written by hand-leader/singer/tenor saxophonist Emilio Castillo, baritone sax player Stephen "The Funky Doctor" Kupka and drummer David Garibaldi, all of whom are, in 2004, part of the TOP lineup.

Even if you've been deprived and have somehow missed "Hip" performed by its originators, you've no doubt heard it as a favored band bumper on *Late Night With David Letterman*, *The Tonight Show* and *Saturday Night Live*. As a matter of fact, Lenny Pickett, *SNL* bandleader and master sax man, was a longtime TOP member who played on the original "What Is Hip?" when it was recorded in San Francisco as part of the 1973 eponymous *Tower of Power* album.

In those days, in true working-class style, TOP rehearsed five days a week at a shared rehearsal hall in Berkeley. Fitting the parts together was the job of handleader Castillo. Although it was TOP's third record, it was his first as producer, and he was out to make the perfect record. About "Hip" he recalls, "When we rehearsed, everybody was there. We'd just start hammering at it. I was coming up with chords on guitar

and finding ways to sing to the groove. The horns were sitting around and somebody would come up with a lick; it was pretty much a group effort."

The title was Kupka's idea, as were most of the lyrics. "Hip" was a big word in those days," he explains. "I started thinking about how things change and how what was hip 10 years ago isn't today. And, thusly, things that are hip now—well, that's the lyrics: 'What's hip today, may become passé.' It wasn't one of those songs that took a long time. I'm not too complicated when it comes to rhyme schemes. I'm just trying to get the words to jump out at you: Does it have a story and is it a clever line? What's funny is, as it turns out, the lyrics



The Tower of Power horns in the Record Plant, circa 1976

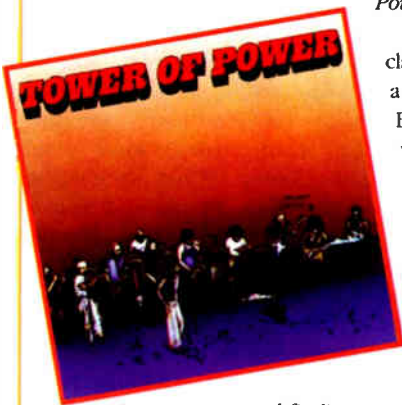
stood up better than any 'hipness' of the time."

While Kupka was concocting lyrics, Garibaldi, a drumming icon known for his polyrhythmic style, was, as usual, fooling around with a new groove. "I really liked this cool Freddie King song called 'I'm Tore Down,'" he recalls. "It had an ostinato bass line, a similar concept to what we ended up with on 'What Is Hip?' I put one of my beats to a one-note bass line, brought it into rehearsal and said, 'Maybe we can build a song out of this.' [TOP bass player] Rocco "Francis" Prestia] kind of rolled his eyes: 'A one-note bass line?!' Everybody thought it was weird, but we tried it and got into it."

"The style of bass line was similar to 'I'm Goin' Down,'" agrees Castillo, "but what made it different was [Garibaldi and Prestia] pushed that last note a 16th early. Nobody was doing that back then. People just didn't think like that rhythmically."

"We have a pretty renegade approach to making music," Garibaldi admits. "Since my basic thing was to avoid repeating myself in every song, I had to develop a vocabulary. And then I got into not repeating myself from section to section [in a song]. I wanted each portion of a song to stand on its own, to have its own signature groove, which I wouldn't use anywhere else. If there's a groove from beginning to end in a song, what changes in between doesn't really matter. That's a concept we used in our music from the very beginning. It's non-traditional, but it developed into our traditional way of making music."

Bassist Prestia is an icon of his own, garnering godlike devotion from legions of bass players. "How the f*** does he do



that?" is probably the question most frequently asked about him. And while to the general public it's the horn section that makes TOP great, fans and musicians know the band's foundation is the interplay between Prestia and Garibaldi.

"When I talk to him about parts, I don't say specific things," comments Garibaldi. "Rocco's like radar. I would play something and he was always right there to complement it. That's where our real connection is.

We really listen to each other and try to play something that fits together."

Although Castillo points out that arrangements were a group effort, he also says, "By the time of 'What Is Hip?' [trumpeter and arranger] Greg Adams was starting to get more instrumental in the arrangements. And Greg's thing was voicing."

Adams, who has gone on to a solo career, reflects, "'What Is Hip?' was one of the main songs that showcased the horn section

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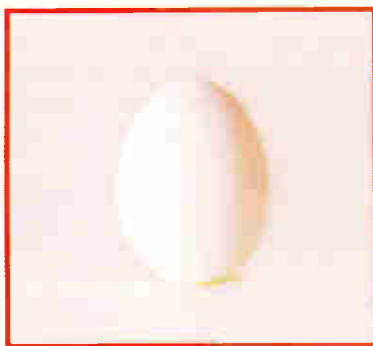
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Cool Spins

The Mix Staff Members Pick Their Current Favorites



Wilco: A Ghost Is Born (Nonesuch)

My affection for Wilco has waxed and waned through the years. After loving their alt-country debut, *A.M.*, I've liked them only intermittently since. Their latest finds leader Jeff Tweedy, fresh from detox, in a rather unusual headspace: The songs are disarmingly honest, confessional and occasionally almost childlike in their simplicity. Yet there are still imaginative images and metaphors, and it's hard not to root for this scarred, emotionally naked character; he comes off as sort of a nicer Roger Waters. The music, with Tweedy's pleasing vocals out front on most songs, is all over the map: Folkie here, Beatles-influenced there, with a trace of electronica left over from the last Wilco outing. Instrumentally, it's dominated by Tweedy's electric guitar ramblings (some quite lengthy), which have a searing, Neil Young-esque quality to them. (Though Tweedy isn't nearly as proficient, technically, as Young.) Say this for Tweedy/Wilco: They're rarely dull and often quite fascinating.

Producers: Wilco and Jim O'Rourke. Engineers: Chris Shaw (tracking), O'Rourke (mixing). Studio: Sear Sound (NYC). Addi-

tional engineering: Mikael Jorgensen at SOMA (Chicago). Mastering: Steve Rooke/Abbey Road (London).

—Blair Jackson

X: The Best: Make the Music Go Bang (Elektra/Rhino)

For my money, X was hands-down the greatest punk/new wave band to come out of the West Coast in the late '70s/early '80s. The electric combination of John Doe and Exene Cervenka's cracked harmonies, the speedy guitar assault of Billy Zoom and D.J. Bonebrake's crashing drum sound was so explosive that clubs (and albums) could barely contain them. If they never made an album after their first, *Los Angeles*, they



would still be immortal, but the fact is they kept making fine music for years and their sound expanded to incorporate more influences than the frenetic punk of their early days. Disc One of this two-CD retrospective collects the cream of their most productive years (1980 to 1983) on Slash and Elektra; I wouldn't change a single selection. This is *gold*. Disc Two is more mot-

—CONTINUED ON PAGE 161

almost as part of the rhythm section, with staccato, machine gun–like horn parts. “The horns couldn’t play off each other as the accompaniment behind the lead vocal—we had to be in unison. It was all about the rhythm, like the way the horns hit the ‘up’ notes that Rocco would hit on the high strings. Also, ‘Hip’ had the augmented ninth chord, which was a popular chord for some reason in the ‘70s. In most ways, ‘What Is Hip’ was very ahead of its time, but there was something about using the ‘70s-style augmented ninth that made it more ferocious, more aggressive,” contemplates Adams.

Memphis engineer Jim Gaines, who had helped out on *Bump City*, TOP’s previous record, was brought in to man the board for *Tower of Power* at Wally Heider Studios in San Francisco. A rocky road lay ahead. Internal power struggles and drugs took a toll on the band’s lineup and major personnel changes went down half-way through recording. Lead singer Rick Stevens, guitarist Willie Fulton and saxophonist Skip Mesquite were out, and the songs, including ‘What Is Hip?’ were recorded a second time with new members in the lineup: Bruce Conte on guitar, Lenny Pickett on lead sax and Lenny Williams on lead vocals. Also brought in for the second round of recording was Chester “C.T.” Thompson. (Since the mid-’80s, Thompson has been Carlos Santana’s keyboardist and handler.)

“We started out with one killer band and went to another level with a second killer band,” says Gaines. “But it took almost a year because we recorded it twice. Back in those days, I was working up to three different sessions a day. There were times we actually started the sessions at midnight or one in the morning because it was the earliest I could get there.”

Rhythm tracks were laid down first with horns overdubbed. Gaines recalls the drum setup: “When I put up stereo-miking for the drums, David didn’t like it,” he says. “So I took a [Telefunken] U47, put it above his head a little bit, shooting straight down at the snare, and added mics on the snare and kick. I may have had a hi-hat mic, but basically I just used the three mics. That’s what he liked, and I was trying to please him.”

Sonically, the *Tower of Power* CD is a classic example of the tight, dry ‘70s sound. Gaines remembers the snare drum mic as a Shure 546, the “old chrome and black head” SM57 precursor, with an Electro-Voice RE-20 on the kick. “We didn’t go for the big drum sound,” says Gaines with a laugh. “In those days, we were making R&B records, which were either dry-sounding or had the Mo-

town sound, which was all reverb. There were two totally opposite sounds. On the *Tower of Power* record, you’ll hear reverb on the voice, but hardly any on anything else.”

Gaines calls the band “easy to record,” noting that Prestia’s bass was recorded direct and his Ampeg B15 amp got a [Neumann] U67 mic with a UREI 1176 for compression. “The hardest part was the horn section,” Gaines says. “Emilio was a perfectionist on both capturing the sound and on the parts.” That horn section comprised two trumpets [Greg Adams and Mic Gillette], Castillo on tenor sax, Pickett on tenor and alto sax, and Kupka on baritone sax. Horn mics were RCA DX77s on trumpets, Neumann U67s on sax and a Neumann FET 47 on baritone. No compression was used on the horns. “You’ve got to remember, there were five horns going on out there,” says Gaines. “Hell, most control rooms didn’t have five compressors.”

Mixing, in Heider’s Studio C on an early

**We started out with
one killer band and went
to another level with a
second killer band.**

—Jim Gaines

MCI 500 console, was, of course, pre-automation, done “all hands on the console”-style, which, with a 10-piece band, made for exciting mixes. “In those days, it was community mixing,” says Gaines with a laugh, “and the more community got involved, the worse the mix got. Everybody got their own fader, so you’ve got five guys at the console pushing faders up and down with their little marks. By the time you get to the end of the mix, all the faders are wide open because everybody wants to hear more of their parts and you’ve got to start all over.

“Something people forget now is that as an early engineering tool, we mixed in sections. Everybody had assigned cues: ‘You get the vocal in the bridge,’ ‘In the ride-out, I’ll catch the trumpet.’ We’d mix a verse and a chorus, screw up and stop. And then it was, ‘How’d you do?’ We’d sit back and listen, then mix the rest and splice it all together. A master mix tape usually had five or six splices in it.”

In an event typical of the career of TOP—who have been gaining audience since the late ‘80s—it wasn’t until the early

’90s when the *Tower of Power* album was finally certified Gold. But in the meantime, “What Is Hip” took on a life of its own and remains a staple of the constantly touring band’s repertoire. “We had all those difficulties during the record,” concludes Castillo, “and I just did what I had to do and forged on. Then God brought me Lenny Williams, Lenny Pickett and Bruce Conte. It was a classic lineup. I had the best horn section in the world, the best drummer and the best bass player, and I knew it was going to be a great record. There was no doubt in my mind.” ■

LENNY KRAVITZ

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looking for,” says Kravitz. “He understands when I say I want the drums ‘carpet-y’ or ‘boxy,’ or I want the guitar to be like this or like that. He understands the references. He also gives me his opinion.”

“I can overstep,” Hirsch admits. “Sometimes he completely wants to throw me around the room, and sometimes it gets volatile, but it would be a disservice not to give him my true opinion, whether it’s good or bad. We fight. It’s what it is, and usually he’ll say, ‘You don’t get it,’ but I’m persistent, and if I don’t like it, I don’t play it. He’ll say, ‘Put the guitar in.’ ‘What guitar?’ ‘The damn guitar!’ ‘Oh, *that* thing? We have to listen to this?’ ‘It sounds great!’ So I get about 10 percent and he gets 90 percent.

“We’ve had, from the beginning, a communication and musical point of view that doesn’t even have to be spoken,” Hirsch continues. “When he starts a song, he leaves me to do the audio and I leave him to do his thing. The partnership stands up because of a mutual love for each other. We communicate easily without saying much.”

Kravitz wrote, produced, arranged and performed all of the material on *Baptism*. Hirsch played bass and piano on two tracks; their partner, David Baron, played sax on one track and arranged strings with Kravitz on another. Bandmember Craig Ross added guitars, drums and piano. The album was recorded in Miami at Kravitz’s Roxie Studios, and in New York at Edison Studios. Engineer Cyrille Taillandier handled the Pro Tools rig.

“My Pro Tools skills are as low as they can get,” says Hirsch. “Cyrille is very conscientious, and any person manning a Pro Tools station needs to be. This brings up the subject of recording with multitrack tape machines and Pro Tools. It’s an interesting situation because I try to use both. Pro Tools

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has given Lenny a lot of advantages because it happens so fast and it can fix everything. But I don't always like everything to be perfect. I like the way multitrack sounds. I like it as a recording machine and Pro Tools as an editing machine, but Lenny often works very fast and Pro Tools does that better than multitrack."

"I still love tape and the sound of tape and the stereo image of tape, but the new Pro Tools is close," says Kravitz. "Put something from *Let Love Rule* on the monitor and something from *Lenny* on the monitor—the stereo imagery is much different, the new

system is wider. So we use it, it makes things go quicker than 16-track 3Ms—it goes *cha-clink*, and you go crazy punching and editing all day. So I'm kind of stuck on Pro Tools right now as a tape machine and editing machine. Every now and again, we use a compressor or EQ or reverb on it, but not too much."

Perhaps the most surprising element of *Baptism* is its lack of effects while sounding as if Kravitz and Hirsch utilized every trick in the book. "The effects are pretty organic," says Kravitz. "The flange is tape flange; it's Henry with three tape machines. The slap is

tape. Reverbs, 99 percent of the time, are plates. I love when everything is dry and it's me and a [Neumann] 47 into a Fairchild on the vocals. People aren't used to hearing nothing, so nothing becomes an effect—dry and compressed."

"Lenny has a great ear, and the two of us get to a balancing point," Hirsch adds. "We mix as we make the record. It's a fundamentally different approach that happens to work for us."

"I do different combinations of things with the drums, and if they're deadened down, I have no problem doing a traditional miking situation. I make sure it's all phase-coherent."

"For the bass, I use a custom DI that Dave Amels, a brilliant electrical engineer, built for my specific needs. It's an amazing design."

Hirsch continues, "I don't believe in surrounding myself with a lot of equipment. I don't record 48 or 64 tracks. I use a Helios console, an English console built by the people who built Olympic Studios in the 1960s. It has 26 inputs, eight groups and 24 monitors. The beauty is the simplicity—very little electronics. I believe the less electronics, the cleaner the sound. This being at odds with most console manufacturers who cater to people who like things that look big."

"I use ATC SCM200s for monitors. They're English speakers. I knew immediately that they were what I was looking for because I'm always struggling with midrange in loudspeakers. These SCM200s were set up by Ross Alexander, an engineer from Miami who retuned the entire studio, as well. They're beautiful-sounding monitor speakers, the frontline of sound here."

"Dave [Amels] built me custom mic pre's. My criteria was a mic pre with very little distortion. "I also have a Fairchild 660 compressor. It's the first piece a vocal will hit; it's very nondestructive. To limit the vocal, I use a Focusrite 230. We also use a Motown EQ. It's a hard-to-find gentle EQ."

Regarding mics, Hirsch's first choice is the Neumann U47. "I've been recording Lenny with those for at least 10 years. It's his frontline mic. I also use the 269, a version of the [Neumann] 67. I have four RCA 10001s—very rare mics that I learned about from Keith Grant, who built Olympic Studios. I have a BBC [Coles] 4038 [ribbon mic] and a Sanken CU-31 to give extended high end. I have two AKG C28s [tube mics] on my piano and a Neumann U57 that's not well known, but it's a good mic orchestrally. I use a Sony C38 for guitars, amps and anything loud because it simply will not distort."

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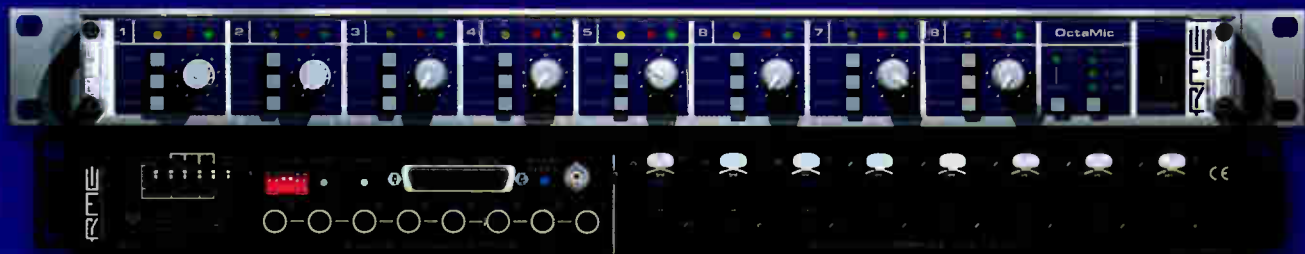


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Henry Hirsch and Lenny Kravitz in the studio

ing, a one-man band in the studio. Kravitz—an obvious perfectionist—admits to being his own worst critic, noting, “If I’m not feeling something, I’m not like, ‘Oh, that’s wonderful, I did it.’ Not at all. I’ll work on something and work on it and work on it until I get it right or it doesn’t happen. [I’ll] work on the same piece, changing the drums, doing things one at a time. I don’t have the luxury of a band getting things worked out. You have snare, you put guitar on top, now the snare’s not so big, the kick gets lost from meshing with the frequency of the bass, or maybe some of the low mids on the guitar are crossing it and that’s when we run into nightmares. Not often, but it happens. Then it’s, ‘Let’s recut the drums.’ ‘Oh, it’s not quite as good.’ ‘Oh, I love the drums now, but the guitars don’t work; let’s do it again.’ This can go back and forth for two weeks. It’s a frequency dance you’re doing, and with a band, I’d be able to work it all out, but that’s not the way it happens with me.”

“It has its upsides and downsides,” says Hirsch of the process. “The downside is you don’t know in advance what the finished record will be. With a band, you have a dummy vocal and a clearer framing of the song. The advantage is that Lenny plays all the instruments so well that he assists in my work, sound-wise. I have a better chance to get a good sound from the drum kit, for example, because he’s sympathetic to how it should sound.”

The creative process for Kravitz is different for every song. “Sometimes, I take the track home and write lyrics,” he says. “Most of the time, I cut drums, guitar or piano, bass, more guitar and then vocals. Lyrically, it just comes out. A lot of times, I cut a track,

hear the melody and write lyrics. That’s what this record is about—I don’t have a concept or direction. I stay out of the way and just let it happen.”

“Lenny is a musical genius,” says Hirsch. “People don’t give him the credit because they think it’s his group, but 90 percent is him playing stuff from the bottom up. His style, which is just what he does, is a combination no one really has today of older R&B and a sense of rhythm and rock ‘n’ roll, which is why he’s so unique. As a singer, he’s gotten better and better and better.”

Kravitz is equally quick to praise Hirsch and credits him with successfully translating ideas and sounds to disc. “Henry is brilliant,” he says. “He writes, plays and understands music. He’s extreme with his engineering. He chains things together, goes in and out of channels and has such an amazing ear. When we mix, we share such a similar sense of balance and placement. He’s technical as well, and understands signal flow, how to get stereo image at its best, understands EQ like no one I’ve ever seen. I can’t say enough good things about him. It’s a blessing to have him in my art.”

“THE UNBROKEN CIRCLE”

FROM PAGE 151

the iceberg, so to speak,” he continues, “and I realized there was a lot more to look into. So it seemed to be a natural progression to do a record like this that celebrated the Carters’ music and style. A lot of the people on the record are people I consider to be in that tradition. And I wanted them to perform it how they felt it, whether it was full of

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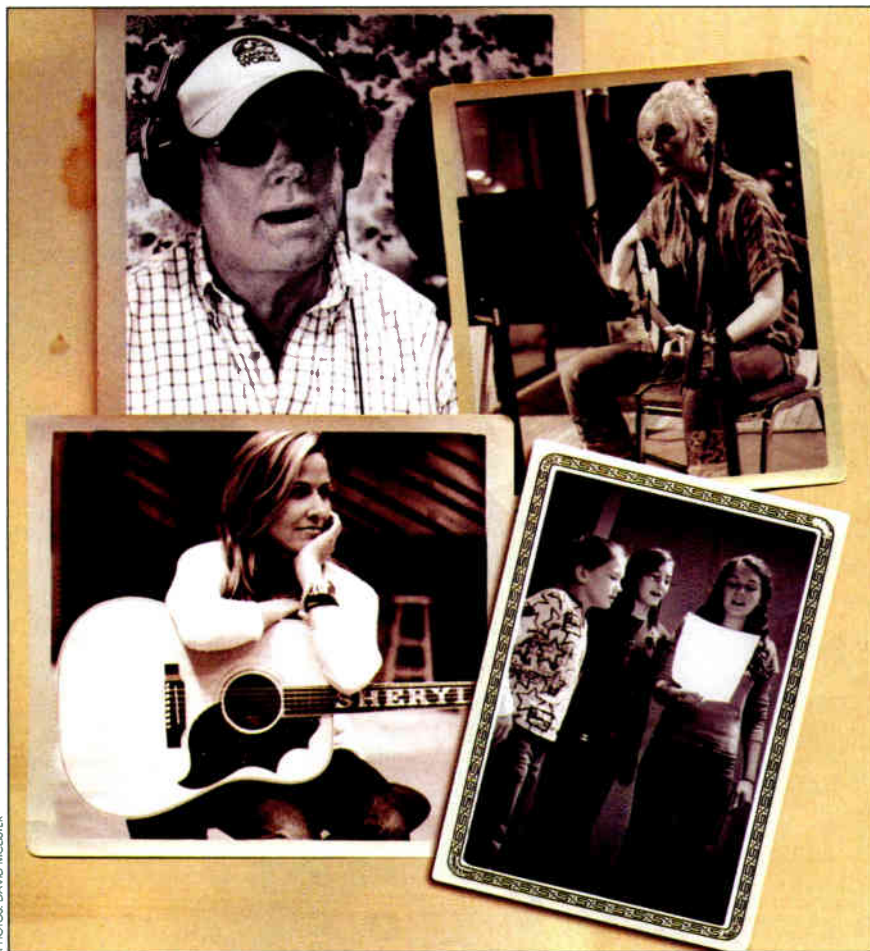


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PHOTOS: DAVID MCLESTER

Clockwise from left: George Jones, Emmylou Harris, the Peasall Sisters and Sheryl Crow all contributed their vocal stylings to John Carter Cash's tribute to his family, *The Unbroken Circle*.

country vigor or a little rock 'n' roll like Marty Stuart."

Typical of these sorts of multi-artist projects, *The Unbroken Circle* was cut in a number of different studios. Willie Nelson tracked his song in his famous Pedernales Studio in Spicewood, Texas. Sheryl Crow's moving version of "No Depression in Heaven" was cut at Avatar Studios in New York with Roy Hendrickson engineering. Emmylou Harris and the Peasall Sisters were captured at Sound Stage Studio's Groove Room in Nashville, as was Shawn Colvin—except for her lead vocals, which were recorded at Cedar Creek in Austin (engineered by Fred Renmert). The tunes by Janette and Joe Carter and June Carter came from sessions at the Carter Family home-stead in Maces Springs, Va. However, the majority of the songs were cut at the Cash Cabin Studio in Hendersonville, Tenn., with Chuck Turner engineering, ably assisted by Mark Petaccia.

Built in the '70s, Cash Cabin is what its name suggests: an actual log cabin, that has been transformed into a recording studio.

"It's a very comfortable place, as you might imagine," engineer Turner says. "Not surprisingly, it has a kind of dark and woody sound to it. About a year ago, we added on a tracking room and a couple of booths with hardwood floors and rough-cut cedar or pine wall and ceiling treatments. But it's still very rustic." Like the Carter family, Turner hails from Virginia, but he's been in Nashville for a number of years, working on a variety of pop, rock and country projects. He's engineered most of John Carter Cash's projects the last couple of years, including Cash's 2003 solo album, *Bitter Harvest*.

"The cool thing about working with John is it's *real*," Turner offers. "We don't have to go lookin' for vibe; it's built-in, as it is with most of these artists—these are the real-deal artists in my opinion."

"We cut *The Unbroken Circle* the way we like to cut just about everything," Turner continues, "completely live, with very few, and sometimes no, overdubs. Instead of doing a lot of overdubs and punching in, we prefer to use the best of the takes. Sometimes, we'll combine a couple of takes, but

in this case, a lot of what's on the album are first takes. This is very traditional music—there's not a lot of fluff and it doesn't need to be fussed over."

Turner says that the Cash Cabin control room is centered around a Soundcraft Ghost console "that we use mostly for monitoring, and then we have assorted mic pre's and compressors—it's real basic. This album probably has a deeper track count than most of what we do. It's very rare that I use more than six or eight microphones just because of the type of music it is—there aren't a lot of big drum sets. Marty Stuart's track has a drum kit, but I still only used four mics on it. We put up a baffle here and there, but you really didn't need it. This kind of music isn't meant to be separated and divided into sections."

For microphones, "We use a lot of Audio-Technica mics: 4050s, 4033s on vocals and guitars. We also have a couple of the Shure KSMs that we use. Most of the acoustic instruments are close-miked—I'm a single-mic guy with guitars. Depending on the session, I'll use either Audio-Technicas or [AKG] 451s; maybe a [Neumann] KM84 in there." The album was recorded to Pro Tools and then mixed by Turner (with one exception) at Quad Studios in Nashville on a Neve 8068.

"We don't toil over the mixes," Turner says of his and Cash's approach. "You don't want to lose the magic of the track. Basically, I just want to make sure everything has its space, and I try to lay out the mix to reflect where people were in the room. I want to hear it the way I see it [go down in the tracking]."

The one song on the album Turner did not mix was Johnny Cash's striking version of "Engine One-Forty-Three," one of those classic, gruesome, death-on-the-railroad tales that are so much a part of the American folk tradition. "I got sick and couldn't do the mixing date," Turner says, "so John [Carter Cash] ended up doing it, and, actually, it's appropriate that he did. It's a neat little twist that he got to mix his father's last track."

"It did end up being the last thing he ever recorded, just a couple of weeks before he died," Carter Cash adds. "We did it here in the Cabin. He was weak; you can hear that. But it's totally honest. It's who he was at that time. He still told a great story and just like always, you can feel the emotion. The last line he ever sang was 'Nearer my God to thee.' Pretty strong stuff there," he adds quietly. "That session was very meaningful for me. It was very close and tender."

Carter Cash notes that Janette and Joe Carter will have an album of their own coming out soon, "and they're really very close

in style to the original Carter Family. They're the real thing."

Turner adds, "And keep an eye on the Peasall Sisters. Those girls are something else! They've got the Carter Sisters' thing goin' on like you wouldn't believe. You'll be hearing a lot more from them."

As we will from Norman and Nancy Blake and Emmylou Harris and the others who have devoted so much of their lives to performing traditional music. "The title of the album says it all," Carter Cash concludes. "Hopefully, what we're doing is carrying on that unbroken circle." ■

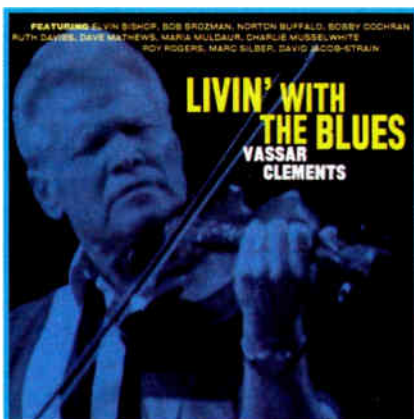
Cool Spins, FROM PAGE 153

ley but still excellent. It opens with their great take on "Wild Thing," moves to a couple of tracks from their country/rockabilly off-shoot group, The Knitters, and then returns to X and some of the glossy Michael Wagener-produced songs from *Ain't Love Grand!* The post-Billy Zoom period is best represented by four live cuts from 1987. Definitely worth picking up!

Compilation produced by John Doe and Gary Stewart. Many different engineers, producers and studios. —Blair Jackson

Vassar Clements: *Livin' With the Blues* (Acoustic Disc)

One of the most inventive and jazz-influenced modern bluegrass fiddlers, Vassar Clements has always had a sound—like bluegrass itself—rooted in white and black blues. On his latest CD—his first since the death of his beloved



wife, Millie—he gets to explore the blues outright, joining with such fine players and singers as Elvin Bishop, Roy Rogers, Maria Muldaur, Norton Buffalo, Charlie Musselwhite and Bob Brozman on a set of tunes that spans decades and multiple shades of blues. There's a warm, relaxed vibe to the proceedings, but there's still plenty of life and intensity in the music—par-

ticularly in Clements' fiddle parts, which range from good-natured ambling to howling, pain-filled excursions. Special kudos to Bob Brozman for his sparkling work on the National tri-tone guitar.

Producers: David Grisman and Norton Buffalo. Engineers: Larry Cumings and Grisman. Studio: Dawg Studio (Marin County, CA). Mastering: Paul Stubblebine/Stubblebine Mastering (S.F.). —Blair Jackson

BeauSoleil Avec Michael Doucet: *Gitane Cajun* (Vanguard)

Blending the upbeat fiddle and accordion-driven instrumentation common to Cajun with influences from blues, country and more, BeauSoleil's latest release, *Gitane Cajun*, is once again a platform for the group's multi-in-



strumentalist Michael Doucet, who has been leading the group since 1975 and plays violin, guitar, accordion, mandolin and provides most vocals.

Throughout the many stylistic changes in the album, Doucet's fiddle is out front, but he's ably assisted by a band of talented musicians. The latest incarnation of BeauSoleil includes Doucet's brother David (guitar, vocals), Jimmy Breaux on accordion, percussionists Billy Ware and Tommy Alesi and Al Tharp (bass, fiddle, banjo and electric guitar).


The wistful opening track, "Gitane Cajun I," Celtic-influenced "Les Fleurs Fleurissent" and upbeat "Bye Bye Boozoo" are as varied as they are exceptional, and the one English language track, "Windhorse Eyes," is a slight but noticeable deviation from an otherwise inspiring tour through one of the South's well-loved sonic landscapes.

Producers: Michael Doucet, David Doucet and David Egan. Recorded and mixed by Curry Weber and Bill Bennett. Studio: Dockside Studios (Milton, Louisiana). Additional recording by Billy Ware at Bungalow Studios (Lafayette, LA). Mastering by Dave Glasser/AirShow (Boulder, CO). —Breean Lingle ■

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AC POWER PRODUCTS

Furman Series II Power Conditioners

The Series II versions of Furman's beloved power conditioners represent the next generation in power conditioning technology. They feature maintenance-free Series Mode Protection (SMP) and Furman's exclusive Linear Filtration Technology (LiFT). Together, these offer advanced and comprehensive transient voltage-surge suppression. Retail: \$159. AES Booth #805. 707/763-1010, www.furmansound.com

Hosa PWD Power Cable "Jumpers"

A system's usual nest of AC/IEC power cables can cause EMI and are messy. Hosa's PWDs offer a solution, allowing AC power to be cascaded or daisy-chained, reducing potential problems and clutter. Each PWD uses a molded IEC female/NEMA female with a short (1-foot or 2-foot) pigtail NEMA male plug. Plug the male into the source AC and the IEC into the first piece of gear, and then cascade another from the first. PWDs are ideal for tight rackspace while reducing the yards of cable tied off in coils that contribute EMI and dead weight to a rig.

Hosa NEMA-to-IEC Power Cords

Powered speakers typically come with AC cables that are too short. Hosa's new PWC Series offers a solution to unsightly power strips and extension cords. These 14 AWG power cables are designed for use in 15-amp circuits. Power-up suspended, tripod or wall-mounted speakers, keyboards, computers, line level gear etc., without extension cords. No loose connections or misplaced cables at a session or gig. U.S. retail: PWC-415 (15-foot), \$18; PWC-425 (25-foot), \$28; and PWC-450 (50-foot), \$52. AES Booth #1331. 714/522-8878, www.hosatech.com

JSX HDP7 Uninterruptible Power Source

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ACOUSTICAL MATERIALS

Acoustical Solutions

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Auralex Acoustics TruTraps

It is common knowledge that an airspace behind a passive absorber increases its low-frequency effectiveness. Building on that principle, Auralex Acoustics introduces the TruTraps™ broadband absorption system. TruTraps allow you to quickly and easily install offset acoustical panels on your walls or ceiling for a "one-product-fits-all" broadband acoustical solution. AES Booth #1343, 317/842-260, www.auralex.com



Primacoustic Venice Panel

This attractive, kit-style acoustical panel system lets users install acoustic panels on walls without causing severe wall damage from the glue. Each Venice kit has four panels and includes Z-foam acoustic baffles, top and bottom wedges, 48x12-inch corrugated backing boards and adhesive. Easy installation with small finishing nails or tacks.

Primacoustic Iso-Pad

This speaker isolation pad eliminates the mechanical coupling from a reference monitor to the bridge or work desk, providing truer response. Made of ultra-high density charcoal polyurethane foam, Iso-Pad is available in choice of 10° wedge or parallel designs to suit desired angle. Shipped four to a box. AES Booth #1628, 604/942-1001, www.primacoustic.com

RPG Diffusor Systems Modex Plate

Critical listening spaces often exhibit poor low-frequency response with significant emphasis at modal resonances. Porous surface absorption is ineffective at these frequencies because the air motion at the walls and in corners is essentially zero. The Modex Plate offers broadband low-frequency absorption effective from 50 Hz to 500 Hz in a thickness of only four inches. Now you can absorb more bass in less space! Retail: \$999. AES Booth #520. 301/249-0044, www.rpginc.com

WhisperRoom Wide Door Upgrade

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CABLES & CONNECTORS



Amphenol MP-62

The MP-62 series are considered a miniature or higher-density version based on the proven Mil-C-26482 military connectors. They feature a three-point, quick mating bayonet coupling and five key polarization. Available with 39 or 62 contact pins, and gold-plated solder contacts fitted as standard. AES Booth #1336. 714/230-6231, www.amphenol.com.au

Gefen Digital Audio Extender

Gefen's ex-tend-it Digital Audio Extender transmits audio 1,000 feet from the source using a Cat-5 cable combined with small sender and receiver units. MSRP: \$150. AES Booth #726. 818/884-6294, www.gefen.com

Gepeco DS Series Digital Audio Cables

Gepeco introduces its new DS Series of 110-ohm digital audio twisted-pair cables. Available in 24 and 26 gauge types and in multi- and single-pair configurations, Gepeco's DS Series offers leading-edge electrical performance and improved flexibility. Engineered to achieve the bandwidth and performance required for transmission of high-resolution digital audio sample rates, they feature a 25MHz bandwidth for 192kHz sample rates, minimal attenuation, low jitter and a 110-ohm impedance that remains stable when the cable is flexed.

Gepeco Heavy-Duty CAT5e Cable

Gepeco introduces the CT504HD heavy-duty tactical CAT5e cable. For portable or remote patching of Ethernet networks, or digital audio/video formats, the CT504HD was created for audio/video professionals who need a rugged, reliable, portable and flexible cable solution. In addition, the CT504HD utilizes stranded 24-gauge conductors to enhance flexibility and flex-life durability. AES Booth #528. 800/966-0069, www.gepeco.com

HAVE Flexegy Flat Audio Snake

Flexegy™ 8 from HAVE, Inc. is a new 8-pair flat audio snake designed to lay flat, stable and out of the way in auditorium and studio applications. Conductors: 24 AWG, (7/32) annealed copper; shield: 100% aluminum/polyester tape. 518/828-2000, www.haveinc.com

Hosa Drum & Area "Little Bro" Sub Snake

Drummers and project and remote recordists usually have to make do with bundles of XLR cables for the mics, etc. Hosa's "Little Bro" provides a single-run, six-XLR stage box with two TRS insert points. The fan is terminated with metal XLR and TRS plugs, and the TRS jacks can be used as balanced lines sends or headphone inserts. The Little Bro is ideal for small studio areas, brass sections, home studios, news crews, churches, etc. Retail: SH-6X2-20 (20-foot), \$96; and SH-6X2-30 (30-foot), \$106. AES Booth #1331. 714/522-8878, www.hosatech.com

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ASP510 Surround Sound Controller



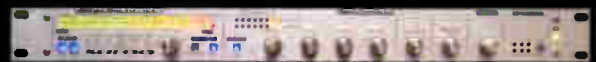
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Disc Makers MacElite

This large-capacity, high-throughput, unattended disc duplication/printing system for the Mac OS features an easy-to-use, custom Mac interface that lets users design disc label artwork, copy CDs and DVDs, and archive images of frequently copied titles to their hard drive. The systems include the 4800 dpi Autograph6 inkjet disc printer, and are available with one or two CD-R or DVD-R drives. The one-drive MacElite1 is easily upgradeable. MacElite duplicators connect to G4 and G5 Mac systems via FireWire and USB. Prices start at just \$2,990 for a 52x CD-R model and \$3,690 for an 8x DVD-R/48x CD-R duplicator/printer. AES Booth #1433. 800/468-9353, www.discmakers.com

MF Digital 5906C LIVE

The new 5906C LIVE combination recorder/duplicator system allows easy recording from virtually any mixer or other analog or digital source right to the EC Live hard disk and then almost instantaneous output to six to 60 disc copies at once. This powerful, yet easy-to-use system is ideally suited for recording church and school events, seminars, lectures, concerts, legal depositions, or any application in which multiple audio recordings are instantly needed. Retail: \$3,895. 631/249-9393, www.mfdigital.com

Microboards 10-Bay Towers

The DSR DVD-D8810 multidrive DVD/CD duplicator, which uses Pioneer's 107 speed-selectable DVD/CD recorders, is now available with 10 drives in one easy-to-use unit. You can duplicate up to 60 DVDs or 160 CDs in an hour! A two-line LCD ensures easy detection of errors during the record process, preventing bad disc duplication and monitoring the status of the recording session. The system's standard 80GB hard drive lets users archive up to 10 images or perform CD track extraction for audio compilation CDs. At high (8x) duplication speed, DVD images are automatically cached to the hard drive before duplication to ensure recording stability. Retail: \$1,595. AES Booth #340. 952/556-1600, www.microboards.com

Minnetonka discWelder CHROME II

discWelder CHROME II offers an extensive and innovative feature set for the production of highly interactive DVD-Audio discs for release to market, including import of all linear PCM formats supported in the DVD-A specification, MLP import, our exclusive "gapless" PCM playback, "gapless" MLP playback and DSD audio conversion. We provide user-defined menu graphics, a hierarchy of multiple selections menus, slideshow graphics to accompany audio tracks, automatic mirroring of the video zone, DLT output and video_ts import for "hybrid" DVD-A/V-formatting capability. Retail: \$2,995. 952/449-6481, www.discwelder.com

Computer Peripherals

Digigram LCM420

Part of Digigram's LCM range of sound cards, the LCM420, with four balanced analog outputs and two balanced analog inputs, is designed for live-assist applications. (The second stereo output may serve as cue output.) Full-duplex, offering simultaneous and independent record and playback capabilities. Real-

time, simultaneous MPEG Layer-I and Layer-II compression and decompression during record and playback. Retail: \$1,260. Only available to Digigram OEM development partners.

Digigram PCX1222HR

Part of Digigram's PCX range of sound cards and inspired by the widely deployed PCX822v2, the PCX1222HR takes mission-critical live-assist systems from four to six stereo outputs in a short-length PCI format (plus one stereo input). 24-bit/192kHz converters, 66MHz/64-bit PCI interface, extremely powerful DSP, comprehensive set of drivers (Digigram np, WDM DirectSound, .WAV, ASIO); hardware sample rate converter for recording a digital signal with a sample frequency different than the internal clock, companion board connector for Digigram or custom add-on cards, and optional breakout box. Retail: \$3,960. Only available to Digigram OEM development partners. AES Booth #1236. 703/875-9100, www.digigram.com

Echo Digital Audio Gina3G

Multitrack digital audio recording interface for desktop computers. Two analog inputs with mic preamps, six analog outputs, and S/PDIF I/O, ADAT I/O, MIDI I/O. Retail: \$349.

Echo Digital Audio Layla3G

Multitrack digital audio recording interface for desktop computers. Eight analog inputs/outputs with two mic preamps, S/PDIF I/O, ADAT I/O and MIDI I/O. Retail: \$499. 805/684-4593, www.echoaudio.com

Gefen Dual-Link DVI Switcher

The ex-tend-it Dual-Link DVI Switcher is a 2x1 switch that alternates access between two digital video sources. It switches USB 2.0 peripherals and is geared toward new Apple display systems using DVI for video displays. Retail: \$499.

Gefen CATS-1000 DVI

The ex-tend-it CATS-1000 DVI is an upgraded KVM extender that extends a DVI monitor and USB keyboard/mouse and audio hundreds of feet from the computer for working in a safe, quiet location. Retail: \$695. AES Booth #726. 818/884-6294, www.gefen.com

M-Audio Revolution 5.1

M-Audio's \$99 Revolution 5.1 PC/Mac soundcard brings surround audio to the home computer, and features six simultaneous discrete outs (5.1) on three 1/4-inch stereo jacks at up to 192kHz/24-bit resolution. A S/PDIF digital out provides Dolby Digital and DTS passthrough to a capable decoder. A control panel handles bass management and other adjustments, and the package includes SRS TruSurround XT and SRS Circle Surround II. www.m-audio.com

Studio Network Solutions globalSAN

The SNS globalSAN is the storage solution for facilities that require a significant upgrade in networking performance, but do not have the budget for a Fibre Channel SAN or point-to-point WAN connectivity. Built on SNS' new iSANmp volume-sharing software, an iSCSI protocol that enables rapid and efficient transport of block-level I/O data over high-speed Ethernet, globalSAN works with Windows and Mac OS X systems and is the first such product available to Mac users. Prices vary with configuration.

Studio Network Solutions iSANmp

SNS' iSANmp software is a solution for facilities that need to share audio and video files over Ethernet. Built on the iSCSI protocol, iSANmp is an IP-based storage-networking standard that enables rapid and efficient transport of block-level I/O data over high-speed Ethernet. iSANmp works in conjunction with SNS' globalSAN, which can be used with both Windows and Mac OS X systems and is the first such product available to Mac users. Prices vary with configuration. AES Booth #1244. 877/537-2094, www.studionetworksolutions.com

Radial Convertible V12

The Convertible V12 modular snake system packs 64 input channels, four zoomed sub snakes, 3-way transformer split, cross patching and separate XLR outs in a 12-space, 19-inch rack. Based on 8-channel modules with front and rear rails, the V12 can be configured to suit with choice of multipins, breakout and sub-snakes. Its modular design lets users reconfigure the snake as system requirements change. Priced from \$3,500 USD. AES Booth #1628. 604/942-1001, www.radialeng.com

Zaolla Telecaster Guitar Cable

Fender Telecaster guitars use recessed insert jacks that don't accept standard right-angle male plugs. Zaolla's new universal right angle plug fits into a Tele or any other standard 1/4-inch phone input. The design lets the cable run close to the guitar body and under the strap, preventing accidental contact with mic stands etc, which have been known to snap off straight plugs during performance. Zaolla's exclusive use of solid, single-grain conductors provides signal clarity in any application. AES Booth #1331. 714/736-9167, www.zaolla.com

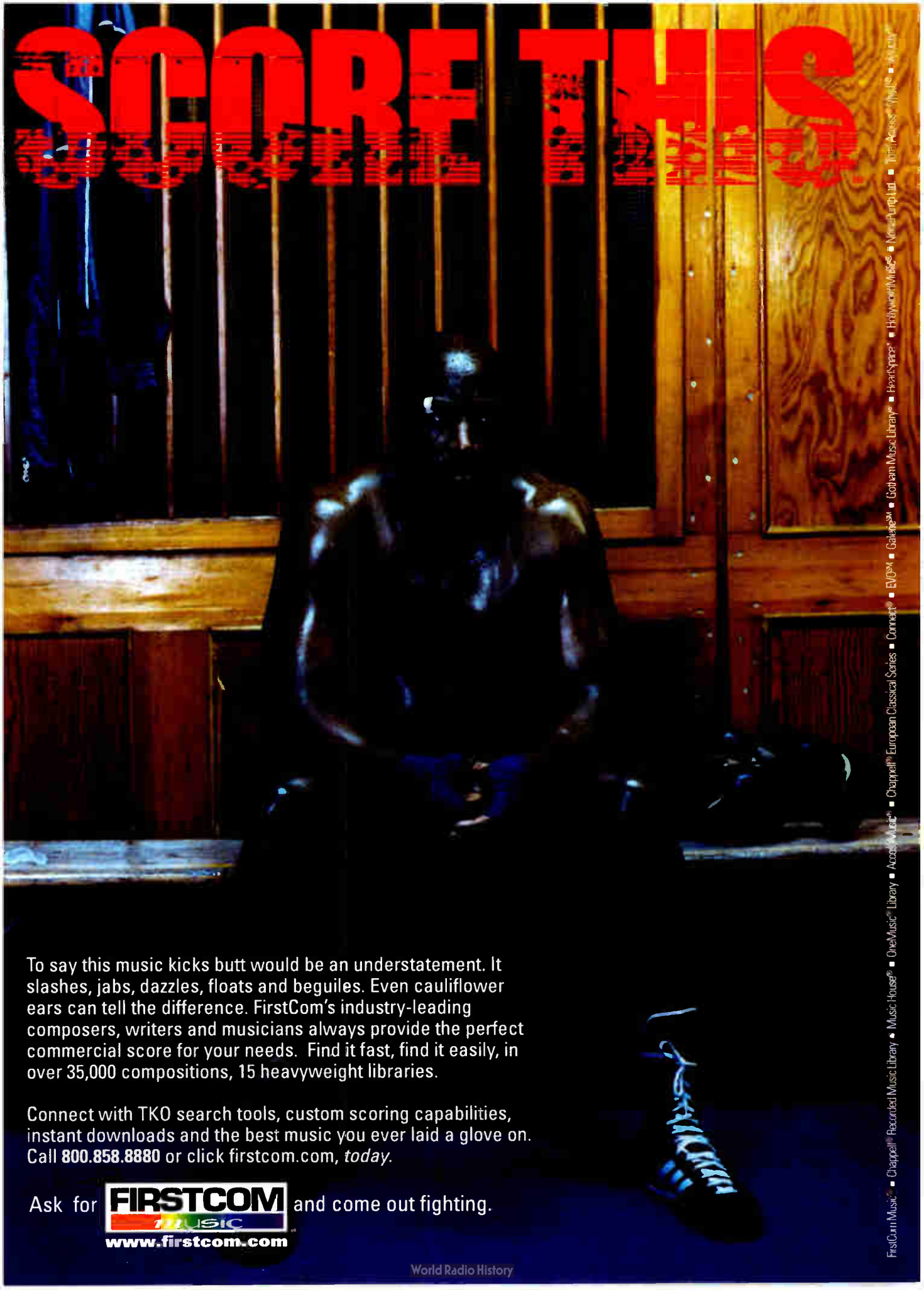
CD/DVD

Duplicators/Recorders



Alesis CD Twin

This stand-alone 52x audio/data CD duplicator makes one-button CD copies and compilations from several audio CDs and data backup from your PC or Mac via USB. Stereo line outputs and a headphone jack allow audio monitoring. The unit supports CD-R and CD-RW discs, and audio CD, data CD, VCD, CD-1, CD+G and Photo-CD formats. Retail: \$399. 401/658-5760, www.alesis.com



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TerraTec Phase 24 FireWire

Phase 24 FireWire is a 2-in/4-out FireWire audio interface with MIDI and digital I/O. Retail: \$249. 603/766-0497, www.terratec.com

COMPUTER SOFTWARE

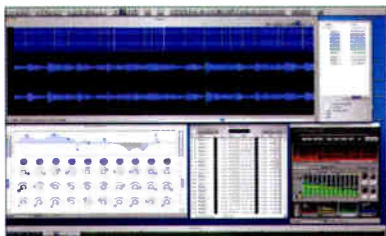


Ableton Live 4

Live 4 brings full MIDI and DAW functionality to this acclaimed live music performance recording/sequencing software. Among a wealth of other features Live 4 adds a host of virtual instruments along with its powerful onboard effects and adds full VSTi and Audio Units support, while still catering to the provisional and live users. www.ableton.com

Apple Logic Pro 7

Apple's Logic Pro 7 sequencing/workstation package features Logic Node, a plug-and-play solution that provides the ability to tap networked computers for more audio processing power. The result is more processing power than was previously unimaginable for native-based systems. Users can now open GarageBand files in Logic, for even more flexibility. Logic Pro 7 expands its collection of instruments and effect plug-ins with the Sculpture component modeling synthesizer, Ultrabeat drum machine and Guitar Amp Pro modeling plug-in. AES Booth #910. 408/996-1010, www.apple.com



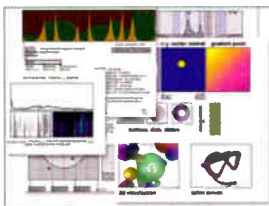
BIAS Peak 4.1 Mastering & Restoration Edition

Includes Peak 4.1 Professional audio mastering, sample editing and audio processing; JAM 6—Advanced Red Book CD authoring and CD burning/premastering application; SFX Machine LT, a creative sound design plug-in with 21 customizable presets; SoundSoap Pro, broadband noise reduction, click and crackle removal, hum and rumble removal and a noise gate for a final polish—four restoration tools in one intuitive plug-in! SuperFreq: 4, 6, 8 and 10-band, pro parabolic mastering equalizer plug-ins. Retail: \$899. AES Booth #432. 707/782-1872, www.bias-inc.com



Cakewalk SONAR 4 Producer Edition

SONAR Producer Edition has a well-earned reputation for delivering powerful production tools in a fast, streamlined user interface. With new Version 4, Cakewalk has added powerful recording, editing, comping and navigation tools that optimize workflow for today's pro. In addition, Version 4 combines innovative surround and A/V capabilities along with precise engineering tools, making SONAR 4 Producer Edition the definitive audio production environment on the Windows platform. Retail: \$959. AES Booth #1434. 617/423-9004, www.cakewalk.com



Cycling '74 Max/MSP 4.5

Max has been the premier environment for the development of interactive media and live performance applications for more than a decade. Max lets users build programs (called patches) by connecting graphical objects together. Some objects perform calculations and others make up the user interface of the program. MSP adds a large set of objects that connect together to make audio patches where signals flow from one object to the next. And the Jitter collection of objects allows the user to create video or 3-D graphics patches or work with any matrix-based data. Retail: \$495. AES Booth #728. 415/974-1818, www.cycling74.com

Minnetonka SurCode for Dolby Pro Logic II

The best way to encode 5.1 surround for stereo delivery formats. SurCode for Dolby Pro Logic II matrix encoder lets broadcasters, game developers, video producers and audio pros easily encode 5.1 surround mixes into stereo sound files. Surround ambiances, sound effects and music stems can all be pre-encoded for delivery within stereo cues and the resulting mix is completely stereo-compatible. Retail: \$495. 952/449-6481, www.surcode.com

Sound Toys EchoBoy

The only pro echo for Pro Tools, EchoBoy effortlessly creates tempo-locked drum delays with thick saturation, slapback delays that rock on guitars and lush echoes that transform a lacking performance. EchoBoy puts you in control of tape saturation, wobble, ducking and cut, as well as full control over the echo rhythm pattern. Lock-to-MIDI clock or tap in the tempo and EchoBoy will groove with your music all night long. Available in mono or stereo delay configurations. Analog Distortion mode for added warmth or "dirt"; zero to four-second delay with zero-to-infinite repeats. Retail: \$495. AES Booth #913. 802/951-9700, www.soundtoys.com

Soundminer File Management

Soundminer is a fast, elegant Mac-based file-management system compatible with all major DAWs. It supports all major audio formats, cataloging from any local or network drives, clip editors, spotting, batch transfers, VST plug-in processing, the digitizing of commercial SFX CDs, multiterminal networking and remote systems access. New at AES is Webminer, a cross-platform option to a Soundminer Server that provides any Web browser access to the same Soundminer search functionality as the Mac application. Retail: \$995, USD. AES Booth #1635. In Canada: 416/644-1066, www.soundminer.com

Spectrasonics Stylus RMX

The Stylus RMX real-time groove module is a completely new virtual instrument plug-in that vastly expands on Spectrasonics' best-selling Stylus plug-in. Developed with Spectrasonics' powerful new S.A.G.E.™ technology, Stylus RMX features the unique Chaos Designer™ real-time loop manipulation for creating loops that can improvise, a massive new core library of sounds, multi-output/multitimbral capability, integrated racks of professional effects, mixer, Groove Control and REX file expansion, real-time host tempo/beat sync, drag-and-drop MIDI and more. Retail: \$299. AES Booth #1038. 818/955-8481, www.spectrasonics.net



Steinberg Cubase SX 3.0

Cubase SX 3.0 is a complete audio and MIDI music creation and production environment for songwriting, recording, editing, mixing and remixing. It incorporates virtual instruments and plug-ins, as well as connects and organizes outboard music and recording hardware. Among 70 new features are Play Order Track, In-Place MIDI Editing, Time Warp (real-time time stretching and pitch shifting), external hardware plug-ins and Yamaha Studio Connections. Retail: \$799.99. AES Booth #226. 877/253-3900, www.steinberg.net

Synthogy Ivory

Three Concert Grands in one custom-built piano engine: This is the largest, most skillfully designed sample-based piano Virtual instrument to date, bringing out the resonance, response and character of Bösendorfer, Steinway and Yamaha grand pianos. Nearly 30 GB of samples are combined with Synthogy's exclusive sample velocity engine, with sample interpolation for ultra-smooth velocity transitions and string resonance DSPs for realistic damper pedal responses. Plus built-in effects, custom controller velocity mapping and more. Retail: \$349. Dist. by Ilio. 818/707-7222, www.synthogy.com

USB Sounds Ultra Focus

This massive sample-based virtual instrument, powered by USB Sounds' next-generation LVI-Engine, is packed with 8 GB of sounds designed using legendary synths, all in one multi-platform plug-in. In the past, it took a mountain of expensive gear to accomplish what Ultra Focus can do today: classic analog, FM, wavetable, vector, additive, PCM synths and many more treasures have been captured in a way that often improves on the original, providing more than 2,000 inspiring presets. Retail: \$399. Dist. by Ilio. 818/707-7222, www.usb-sounds.com

Virtual Katy VK Premium

Virtual Katy gives Pro Tools users massive workflow gains. Spend 80% less time on syncing picture edit changes. Automate painful, time-consuming update and conform sessions. New to the market, Virtual Katy is already the "go-to" technology for sound editors such as Mike Hopkins of *The Lord of the Rings* and Lee Herrick of *Bridget Jones' Diary*. The Virtual Katy software compares the differences between two or more versions of a picture edit and creates a "ChangeList EDL" to represent the changes between these versions. Using the "VK AutoConformer," Virtual Katy then re-confirms your Pro Tools session and updates your data from the ChangeList EDL in a fraction of the time it would take to do a manual conform. Retail: \$3,495. AES Booth #218. 617/266-2471, www.virtualkaty.com

WHAT IS IT THAT MAKES **SE** MICS THE PROFESSIONALS CHOICE?

NEW DUAL TUBE



NEW SINGLE TUBE



SMALL DIAPHRAGM CONDENSER



MULTI PATTERN CONDENSER



MULTI-PATTERN TUBE



Rob Kelly

'We have used the SE Gemini on various sessions at Strongroom Studios, and they stand up to the best valve mics in our collection. They are clear, full and detailed sounding. We bought two for Strongroom, and several of our clients who got to use them have put orders in for their own mics without hesitation.'

Strongroom Studios



Geoff Dugmore

'The coolest grooves the hardest beats the funkiest vibe only come together when I'm using the meanest mics. GET THEM OR GET OUT OF THE STUDIO.'

Robbie Williams, Tina Turner, Dido, Bruce Springsteen, Jeff Beck, Rod Stewart



Sidh Solanki

'... in the studio we usually have the pick of the crop when it comes to microphones but I keep coming back to my Gemini - I use it for almost everything from recording bass cabs and kick drums to acoustic guitar and vocals - knockout detail and luscious warmth - plus the two valves glowing in the back... simply beautiful.'

Outkast



Steve Levine

'The Gemini studio tube microphone is a very unusual microphone as it combines both the traditional warmth, expected of a high quality studio tube condenser microphone, along with an exceptional transparent high end, normally only available with solid state designs.'

Culture Club, The Creatures, The Beach Boys, Westworld



Paul Borg

'The Z5600 is a great all rounder. I have found it to be a great work horse using it on vocals, acoustic guitar and even bass amps. It has plenty of depth and handles low frequencies well whilst delivering real clarity on the high end with vocals and acoustic instruments.'

Busted, Mc Solaar, James Brown, Gangstar, Urban Species, Sugababes



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Digital Converters



Benchmark ADC1

The ADC1 is a 2-channel, 24-bit, 192kHz A/D audio converter. As with the companion DAC1, the ADC1 pushes the limits of conversion technology and yet maintains an affordable price point. A simultaneous secondary output provides 44.1- or 48kHz output with a switch-selectable 16- or 24-bit word length resolution. This output is intended for safety backup recordings. The secondary output has the same quality as and is fully independent from the main outputs in sample rate and word length. Retail: \$1,725. AES Booth #1230. 315/437-6300, www.benchmarkmedia.com



PreSonus Firepod

The Firepod is a complete 24-bit/96k recording studio combining eight high-quality PreSonus microphone preamplifiers, 24-bit/96k sample rate conversion and, as an added bonus, Steinberg's Cubase LE 48-track recording software. The perfect hardware and software combination to deliver professional quality at an amazing \$799.95 retail. AES Booth #1413. 225/216-7887, www.presonus.com

Prism ADA-8 XR

The XR will take you to a whole new realm of possibilities. It utilizes the latest in converter technology, providing you with the ultimate in performance and flexibility. This—combined with numerous expansion cards, enhanced clock stability and sampling rates from 32k to 192k—make the ADA-8 XR the only choice for your production. Retail: \$10,000.

Prism ADA-8 XR FireWire Expansion Card

The ADA-8 XR FireWire expansion card provides the user with the choice to utilize popular software packages with the ADA-8 XR multichannel converter, opening up a whole new realm of performance and possibilities. Retail: \$1,286. AES Booth #515. 973/983-9577, www.prismsound.com

Disk-Based Recorders/Editors

Alienware OZMA-m DAW

A highly portable sound environment optimized for recording and editing applications, OZMA-m DAWs are made-to-order machines constructed with top-of-the-line components. Each system has an M-Audio Firewire 410 audio card, NVIDIA Quadro FX Go1000 graphics card and comes installed with your choice of software from Cakewalk, Steinberg, Sony, and Adobe. Retail: \$3,405. 305/251-9797, www.alienware.com

Digital Audio Wave DAWin 6400 Mobile 64-Bit PC DAW

DAWin 6400 is the first 17-inch LCD 64-bit Mobile PC DAW system intended to fulfill the most demanding digital audio processing, editing and mastering needs. The DAWin 6400 is powered by a 32- and 64-bit capable AMD Athlon™ 64 processor for desktop replacement (DTR) notebooks and an ATI Mobility Radeon 9700 (M11-P)/graphics accelerator chip with a stunning 128MB DDR video RAM. The crisp, bright 17-inch WXGA+ display gives the DAWin-64M eye-popping visual characteristics, rivaling those of high-end workstations. Retail: \$1,995.

Digital Audio Wave DAWin QB-4

The DAWin QB-4 is a specialized DAW computer system with one AGP8X and three full-length PCI slots, a standard 8-in-1 card reader, and 300W power supply, the limiting factors of small form-factor systems become history. With its sound-insulated side panels, baffled vents and hybrid plastic/aluminum sandwich case material, it delivers quiet and stable operation for demanding audio/video projects. 713/977-2746, www.digitalaudiowave.com



Doremi V1 Video Disk Recorder

With a DAW, the V1 video disk recorder offers instant access, frame-accurate chase and the power to scrub in perfect sync within DAW sessions. Retail: \$4,000.

Doremi Multichannel Video Server

Doremi's MCS Video Server allows multiple DAW operators to work on the same video project. The MCS Server offers instant access, field-accurate digital video with the power to scrub in perfect sync within the DAW session. The new ListMaker software provides effortless management and sharing of the video files. Retail: \$15,000. AES Booth #1520. 818/562-1101, www.doremilabs.com



iZ Technology RADAR 24 V. 3.3

New Version 3.3 software for RADAR 24 features CD burning, high quality SRC, Ethernet control and FAT32/HFS drive format support for exporting/importing BWAU audio. RADAR 24 supports rates up to 192kHz on 73GB removable SCSI drives with expansion up to 2 TB. Other features: DVD-RAM, DVD-R, CD-R combo drive backup, Iomega REV backup drive support, Ethernet, XGA output, professional remote, 24-channel meter bridge, 114GB additional disk storage, word, video, SMPTE, MTC, 9-pin, Soundmaster, MMC, RADAR Link and two card slots for optional 24-channel digital I/O. AES Booth #235. In Canada: 800/776-1356, www.izcorp.com



Nagra V

Two-channel recorder designed for television, film and documentary work. Records 16- or 24-bit linear PCM data at selectable sampling frequencies up to 96 kHz on a removable hard disk. Packed with features such as pre-record, camera return monitoring, timecode with chase synchronizer, routable inputs, internal hard drive storage and audio limiter circuitry, the Nagra V is a flexible, affordable answer to location recording. Post-production-compatible BWF files. AES Booth #1325. In Switzerland: +41 21-732-0101, www.nagraaudio.com

Open Labs OMX64 Extreme

Perfect for users of Nuendo, Cubase, Project 5, Traktion and other Windows-based audio apps, the OMX64 has Dual AMD Optron processors for recording more than 48 simultaneous tracks at 24/96 or more than 96 simultaneous tracks at 24-bit/48 kHz. I/Os include eight 1/4-inch I/Os, two XLR preamp ins, two XLR outs, two ADAT I/O, S/PDIF I/O and word clock. Four 250GB drives and a 80GB startup drive are standard as are 4 GB of RAM. Four PCI-X and a PCI Legacy slot and more than 1,000 sounds and effects are included.

Open Labs OMX64 LE

The OMX64 LE is a cost-effective way to integrate a high-performance, rugged DAW into any setup and is offered without any audio I/O. Users can utilize existing system components they already have or alternatives to our standard options. More than 1,000 sounds and effects are bundled with the OMX64 Ultra for use right out of the box. The OMX64 LE is the perfect DAW for all MIDI controllers from M-Audio, Evolution, Novation and many others. AES Booth #115. 512/444-6222, www.openlabs.com



Roland VS-2000CD

The VS-2000CD Digital Studio Workstation is Roland's first V-Studio with plug-in support. The VS-2000CD boasts 20 recording tracks, eight XLR inputs, an optional VGA output with mouse-based graphical editing, plus a 40GB hard drive, CD-RW drive, USB 2.0 and more—making it an incredible value. And with support for the optional VS8F-3 Plug-In Effect Expansion Board, the VS-2000CD lets musicians tap into the power of plug-in effects from Roland and optional third-party plug-ins. 323/890-3700, www.RolandUS.com



Sound Devices 744T

The high-resolution 744T is an ultracompact file-based audio recorder with timecode. The 4-track 744T records and plays at either 24- or 16-bit, with all professional sample rates from 32 kHz to 192 kHz. Writing to either its internal 40GB hard drive or to Compact Flash, the 744T generates industry-standard AES31 BWF mono or polyphonic audio files. In addition, MP3-format files can be written and played. NP-80 Lion camcorder batteries power the unit. Retail: \$4,295. AES Booth #1334. 608/524-0625, www.sounddevices.com

Zaxcom Deva V Hard Disk Recorder

Deva V is a 10-track, 192kHz hard disk audio recorder with a dynamic range of 123 dB. Retail: \$12,950. AES Booth #1140. 973/835-5000, www.zaxcom.com

Cruise Control

Take control of your studio with the ultimate combination of form and function. The ID controller is a masterpiece of German engineering and manufacturing. Designed to interface seamlessly with the Nuendo production environment, ID provides a console style worksurface that gives you full control over your entire project: tracking, overdubbing, mixing, mastering, and post-production are all handled with ease on the ID. Motorized 100mm Alps faders, extensive editing and grouping capabilities, and over fifty LCD displays combine to offer incredible hardware control in a workflow-oriented arrangement.

All at a price that's within reach.

Features include:

- 12 touch-sensitive 100mm Alps motorized faders
- 40 rotary encoders with push-button functionality
- Full control room and studio monitoring section
- 32 30-segment bar graph meters
- High resolution, weighted jog wheel
- User-friendly channel access features
- Built in Trackball and ASCII Keyboard
- Expandable, up to 4 fader packs, 120 channels/60 Faders
- Designed in cooperation with Steinberg for ongoing compatibility and upgrades
- Built to last with the highest quality components and meticulous workmanship

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Loudspeakers



ADAM Audio P33A

These offer the advantages of ADAM's unique mirrored S3-A design at a lower price. One woofer acts as a full-range driver with the second woofer joining it only below 150Hz for exceptional low end without compromising midrange performance. The P33-A is mag shielded, has three onboard 100W amps and can be used either horizontally or vertically. Response is 34 Hz to 35k Hz. AES Demo Room #232. 805/413-1133, www.adam-audio.com

A-Line Acoustics AL10

Offering powerful performance, compact-size and quick, easy setup, the 2x10-inch AL10 2-way enclosures feature Line Source Replication for maximum projection and detail. Integrated patent pending EZAL hardware makes quick and easy position of each enclosure from 0° to 19° whole flying or stacked. Four stacked wheel boards (four high up to 16 boxes) can be loaded inside the width of a standard trailer taking up about 3 feet in length. Power (program): 160W HF/800W LF; max SPL: 129 dB; response: 75-18k Hz. Retail: \$3,900.

A-Line Acoustics LS218

Optimized for flat, linear frequency response from 45-200Hz, the front-loaded, 2x18-inch, LS218 subwoofer is the preferred choice for symphonic, jazz and other musical applications where natural acoustical response is desired. Rated at 2800 watts program, the low-profile, truck-packing friendly LS218 features separate sealed chambers for greater efficiency and higher output. Built-in wheels offer easy maneuverability. Retail: \$1,849. 814/663-0600, www.a-lineacoustics.com

Bag End E-Trap

Designers of control rooms and studios employ large acoustical bass traps to dampen low-frequency modal resonances. The E-Trap is a physically small, electronic, tunable bass trap that offers easy electronic adjustment of parameters, allowing resonance dampening and a flattening of the frequency response. Independent of the monitor loudspeaker system, the E-Trap can be used to improve low-frequency acoustics in a room with or without a sound system. Retail: \$1,195.

Bag End INFRA-MXB

The INFRA-MXB is single-rackspace stereo electronic crossover with mono-sum INFRA bass processing. The MXB low-frequency output offers dual integration and dynamic filter protection. Surface-mount technology construction throughout and an improved grounding scheme ensures high performance and low noise. MXB dual integrators provide flat response down to 8 Hz when used with Bag End INFRA Series bass speaker systems. Outputs are low-impedance and balanced. Retail: \$1,180. AES Booth #1625. 847/382-4550, www.bagend.com

Blue Sky MediaDesk

Blue Sky's entry-level 2.1 system, MediaDesk offers full-range monitoring on the desktop and is optimized for computer-based audio production. Easily expandable to a 5.1 system as with all of our systems, MediaDesk 2.1 incorporates two ultracompact two-way satellite speakers, each featuring a high-quality 4-inch driver and a 1-inch tweeter, along with a dedicated 8-inch powered sub and bass management system. Retail: \$499; a 5.1 upgrade includes three more satellites and the amp/control module for an additional \$499. AES Booth #725. Dist. by Group One. 516/249-1399, www.abluesky.com

Celestion FTR Loudspeakers

FTR is a new range of 15- and 18-inch loudspeakers available in 600W and 1,000W models. The FTR range incorporates a number of patent-pending technologies that significantly lower distortion and improve heat transfer for better reliability and power handling. Retail: \$395. AES Booth #725. Dist. by Group One Ltd. 516/249-1399, www.celestion.com

Community I/O Series

The I/O 5 and I/O 8 compact two-way systems can outperform competitive 10-in format systems and handle a full 100 watts of power. Both speakers offer high sensitivity and high power handling to allow dynamic, realistic sound reproduction over their full operation range. Features: compact 90°x50° speakers; I/O 5T and I/O 8T with multitap transformer; five-way binding posts for easy and secure installation; injection-molded cabinet; polypropylene LF cones for all-weather use; powder-coated metallic grilles; suitable for indoor and outdoor applications; Infini-Ball mounting bracket for infinite positioning; and a five-year warranty. Retail: \$98. AES Booth #1410. 610/876-3400, www.loudspeakers.net

Dynaudio Acoustics AIR Base 12

AIR Base 12 is a new active subwoofer in the AIR Series that features an original 12-inch driver that was specifically designed for low-frequency reproduction and extremely tight impulse response. AIR Base 12 features a 500-watt amplifier and a frequency response of 22 Hz to 200 Hz. Retail: \$3,595.



Dynaudio Acoustics BM 5A

The BM 5A is a self-powered, compact pro monitor that delivers high performance and state-of-the-art technology at an affordable price. The two-way active speaker is powered by two 50-watt amps and operates within a 50 to 21k Hz frequency response. Designed with a 6.7-inch woofer and 1-inch soft-dome tweeter, BM 5A delivers the exquisite clarity and performance that is characteristic of all Dynaudio Acoustics' studio monitors. Its small footprint makes it well-suited for project studios, edit suites, broadcast vans and other situations in which there is little room for the monitor setup. Retail: \$1,250/pair. AES Demo Room 210. Dist. by TC Electronic. 805/665-4900, www.dynaudioacoustics.com

Eastern Acoustic Works JFXi Series

EAW adds six new models into its JFX Series of portable two-way loudspeakers. The JFX100i, JFX200i, JFX260i, JFX290i, JFX560i and JFX590i incorporate new woofers using EAW's new Orbital Magnet Array that uses small magnets around the voice coil and pole. This enhances airflow through the magnet structure for reduced power compression, a more consistent magnetic field, less distortion and better transients. All JFX products feature unique multi-angle enclosures that work equally well on stands, walls, floors and ceilings, and a complete range of hardware options. AES Booth #1218. 508/234-6158, www.eaw.com



Everything But the Box Terra II

Terra II is unique, handcrafted passive near-field monitor. It is phase-aligned with changeable tilt of the front baffle and has a high-frequency passive equalizer, anti-vibration suspension system and solid brass HF horn. Terra II has an extremely true sound and uniform dispersion. In Bulgaria: +359 (52) 600172, www.everything-but-the-box.com

Genelec 8030A Active Monitor System

This two-way, bi-amplified audio monitor features a 5-inch woofer and 3/4-inch tweeter, each with 40-watt amplifiers. Operating Bandwidth of 55 to 20k Hz. Minimum diffraction enclosure, Iso-Pod speaker mount, advanced DCW and all-new electronics and drivers. Retail: \$595.

Genelec 8040A Active Monitor System

This two-way, bi-amplified audio monitor features a 6.5-inch woofer and 3/4-inch tweeter, each with 90-watt amplifiers. Operating bandwidth of 45 to 20k Hz. 105 dB SPL. Minimum diffraction enclosure, iso-pod speaker mount, advanced DCW and all-new electronics and drivers. Retail: \$1,150.

Genelec 8050A Active Monitor System

This two-way, bi-amplified audio monitor features an 8-inch woofer, 1-inch tweeter. 150W woofer, 120W tweeter, operating bandwidth of 35 to 21k Hz, 110dB peak output. Minimum diffraction enclosure, iso-pod speaker mount, advanced DCW and all-new electronics and drivers. Retail: \$2,050. AES Demo Room 220. 508/652-0900, www.genelec.com



JBL LSR6325P

The LSR6325P Studio Monitor provides ultra-accurate response and exceptional SPL capability in a compact form factor. The system incorporates features to minimize the detrimental effect on response caused by the acoustic properties of the room, making it ideal for stereo and surround recording, post-production and broadcast systems. The LSR6325P Studio Monitor combines JBL's latest transducer and system technologies with LSR (Linear Spatial Reference) design to provide greater accuracy at the mix position. Retail: \$399.

JBL SRX700 Series

Comprising seven system configurations, the SRX700 Series offers an unprecedented combination of advanced audio technologies. Compared to previous and competitive products, many SRX700 models actually weigh 30% to 50% less—yet without any loss of power or performance. The result is a mid-sized portable P.A. system that brings a new level of convenience to the user while improving the high level of sound quality for which JBL has long been known. Retail price (each): SRX712M, \$1,199; SRX715, \$1,499; SRX718S, \$999; SRX722, \$1,799; SRX725, \$1,949; SRX728S, \$1,599; and SRX738, \$1,999. AES Booth #909. 800/852-5776, www.jblpro.com



A LOT OF MICS ARE MADE IN CHINA. NONE ARE MADE LIKE THESE.

The sE Electronics story begins with Mr Siwei Zou, a hugely talented classical musician from Shanghai who won a top place at the Shanghai Conservatory and went on to become a highly successful player, conductor and composer. He worked closely with the Shanghai Opera and the Shanghai Philharmonic Orchestra as both conductor and recording artist, with several hugely successful classical hit recordings to his name.



In 1987 he was invited by California Sonoma State University as a visiting Scholar to serve on the faculty. He continued to teach counterpoint and orchestration as a faculty member in the Music Department at the University. He also studied recording technology under Grammy Awards nominee Professor Warren Dennis Kahn.

The sE commitment to exceptional quality can be directly attributed to the company founder Mr. Zou, who in his distinguished career has developed an ingrained instinct and desire for perfection.

Wishing to bring this drive for artistic and creative perfection to bear in a tangible way, Siwei started his own microphone manufacturing company. Working with a team of his own top engineers, and experts



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in the field of electrical engineering at Shanghai University, Siwei designed, built and tested a whole range of new and innovative products.

Shunning the common practise of western manufacturers re-branding cheap Chinese microphones, Siwei designed and built his own range of microphones which are now manufactured in his state-of-the-art facility in Shanghai., the ultra-modern face of new China. sE Electronics make only their own products, which means dedication to detail in every aspect of performance and styling without compromise.

All sE mic capsules are entirely built by hand. Even the chassis and flight cases are built in-house. In fact when you own an sE microphone you can be confident that every aspect of both the mic and its accessories has had the same unrivalled level of care and passion right throughout its design and manufacture. Even to the level that every single microphone that leaves the facility has undergone a personal listening test rather than simply being put through a machine - and it shows.

**'...sE Electronics
condenser mics are now
the number one brand in
the UK and the fastest
growing microphone
brand in Europe...'**

Launched in Europe in 2003, sE Electronics condenser mics are now the number one brand in the UK and the fastest growing microphone brand in Europe. The brand, in its short history, has already won almost every major European award possible for excellence including the Future Publishing Readers Poll 'Mic of the Year' Award. Although sE is a new line to the USA in 2004, both the sE Gemini and Icis have already won the coveted 'Mix Certified Hit' Award and the range is fast finding the same unanimous acclaim and passionate following that it has in Europe.

sE is so confident you'll be able to really hear the difference, that they offer a completely free loan service for all of their products! The range includes three superbly tailored



'pencil' instrument mics, two large diaphragm solid-state condensers, two incredible performance tube mics, and the world's first dual tube, transformerless, studio mic in the form of the award-winning Gemini.

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Mix AES 2004 New Products Guide

JSX Sound Design Speaker System

The SD loudspeaker system was designed to translate mix stage and exhibition theater system properties to a smaller scale such as those found in sound design and screening rooms while retaining cinema-standard measures of accuracy, frequency response, soundfield dimensions and dynamic range. Major features include adjustable screen wall baffles, Class-A amplification, horn-driven HF, 3-subwoofer array and proprietary DSP algorithms. AES Booth #1638. 707/766-7400, www.jsxaudio.com



NHT Pro M-20

The M-20 near/mid-field monitor features a flat, wide baffle across the tweeter and a narrower baffle surrounding the low-distortion woofer. NHT's Xda DEQX-calibrated amplifier/processor sends up to 150W to each of the four drivers in a 2-channel system. The Xda will have four presets for different boundary conditions. Room correction and multiband parametric EQ will be available in the near future as a software add-on. Retail: \$3,000.

NHT Pro M-80

The M-80 tracking monitor features two 8-inch woofers, two 2-inch dome midranges and a 1-inch dome tweeter. The woofers will be magnesium cone models, and the midranges and tweeters will be driven by NHT's Xda 250W amplifier with DEQX-calibrated DSP processing. Each channel of the amplifier will drive the woofers. This amplifier will also be used as a subwoofer amplifier to drive the S-80 sub (included with the system). Also included are four boundary positions (selectable), parametric EQ and room correction. Retail: \$5,000. AES Booth #208. 800/648-9993, www.nhtpro.com



Quested S6

Quested will unveil the S6, a new compact studio monitor retailing at \$695. See it at AES Booth #215. In England: +44 (1404) 41500, www.quested.com

SLS PL6/PL6C Series

Offering enhanced sonic performance for in-wall and in-ceiling installs, both new models include a PRD Planar Ribbon HF driver and a polycomposite woofer with Santoprene surround, which provide the extended frequency range necessary for the accurate playback of high definition music. In addition, the system offers uniform coverage over the entire frequency range with an extra-wide "sweet spot" for maximum full-range coverage.

SLS PS8R Powered Studio Monitor

Building on the award-winning S8R line of studio monitors, the new PS8R powered studio monitor uses a unique amplifier topology that lowers distortion, increases bandwidth, and improves noise performance over traditional amplifier techniques while maintaining high efficiency. Additionally, each amplifier has been customized and matched to power the S8R drivers with appropriate headroom, damping, and uniform response. AES Booth #341. 417/883-4549, www.slsloudspeakers.com

Tannoy TS12 Subwoofer

Tannoy has now added a more powerful version—the TS12—that's designed to enhance the performance of stereo or multi-channel loudspeaker systems. Despite the TS12's high power and very low-frequency performance, the external dimensions

are not much more than 1 cubic foot in size, including the attractive coned-shaped spiked feet. The TS12 is a 22-liter, closed-box design with a down-firing 12-inch woofer driven by a 500-watt RMS amplifier. AES Booth #327-B, 214. In Canada: 519/745-1158, www.tannoy.com



Tascam VL-S21 Monitor System

This low-cost monitoring solution pairs two thin satellite speakers with a powered subwoofer for home recording/edit suite/multimedia use. The powered left and right speakers use NXT-technology single drivers that provide wide dispersion, uniform frequency response and reduced room interaction, offering full-range sound in an astoundingly small package—ideal for laptop/desktop production. Retail: \$129. AES Booth #902. 323/726-0303, www.tascam.com

Trident LS-102 Monitors

The new Trident LS102 features two white coned, 4-inch low/mid drivers and a 1-inch dome tweeter. The magnetic-shielded design is perfect for DAW users working in restricted space. Power handling capability of the monitor is 50-watt RMS at 4 ohms and the dual gold-plated speaker terminals allow for bi-wiring. The cabinets are finished in black vinyl and intended for stereo near-field and surround applications. The frequency response is from 30 to 22k Hz with a very low distortion rating. Dimensions: 17x12x7 inches; weight is 20 pounds each. Retail: \$540. AES Booth #543. In England: +44 (1474) 815300, www.oram.co.uk

Turbosound Aspect Series

Turbosound's Aspect Series is its most efficient loudspeaker design, scalable for small clubs and auditoriums, to arenas and stadiums. Incorporates many patented concepts such as the system's Polyhorn™ designs. These are applied at both high and high-mid frequencies, and comprise equal-path-length, multisection waveguides that create a phase-coherent wavefront. Due to the design's tightly focused point-and-shoot directivity, it permits individual wavefronts to coincide seamlessly with the physical curvature of an array and to minimize comb filtering effects between adjacent cabinets. Dist. by Sennheiser. 860/434-9190, www.turbosound.com

Wharfedale Diamond Studio Pro Monitors

The Diamond Studio Pro Active 8.1 and 8.2 are pro monitors based on Wharfedale's acclaimed consumer speakers, with 5- or 8-inch shielded Kevlar woofers, 1-inch dome HF and on-board bi-amping. A profiled phase plug improves the off-axis performance to project an excellent stereo image across a wide listening area. 508/850-3950, www.wharfedalepro.com

MICROPHONE PREAMPLIFIERS

ADK Preamp

Handmade in the U.S., Class-A discrete solid-state preamp with unique "open-ended" architecture that allows for swappable op amps. With toroidal power supply, this half-rack preamp is designed to fit a full rackspace with its companion solid-state compressor. Both have five-year parts and labor warranty and are a perfect complement to an ADK or other quality condenser microphone. Retail: \$1,199. AES Booth #843. 360/566-9400, www.adkmic.com

Audio-Technica AT2020

Audio-Technica's AT2020 establishes new price/performance standards in side-address studio condenser microphones. Its



Klein+Hummel PRO M 1012/ Monitor Mixer/Controller

Surround control and bass management. Up to 7.1 with additional stereo near-field system switching between different surround loudspeaker setups (i.e., music or cinema). Assignable HP/LP X-over functions, individually controllable for each channel, with unique X-over frequencies/slopes created by adding additional filter modules. Fully variable bass routing configurable for each channel. Fully variable LFE routing, such as to dedicated subwoofer(s), or LFE redirection to satellite speakers. Four-step phase adjustment (0, -60, -120, -180) for accurate sub/satellite alignment. All kinds of downmixes are possible, such as 7.1-to-5.1, 5.1 and stereo. Retail: \$7,000.

Klein+Hummel O900W

This magnetically shielded high-performance studio subwoofer features two extra-long-excursion 12-inch woofers, extremely low-frequency, highly articulate and accurate bass with excellent impulse response reproduction down to 17 Hz (-1.5 dB), and maximum sound pressure with remarkably low distortion. It is an excellent low-frequency complement to the Klein+Hummel studio monitor models O300D, O400 and O500C. Retail: \$3,000. AES Booth #1232. 301/888-2426, www.klein-hummel.com

Meyer 700-HP Subwoofer

The 700-HP ultrahigh-power subwoofer was designed to meet the need for high-power reproduction of drums and percussive instruments in popular music, while meeting all of the practical logistical demands of touring. Two Meyer Sound-designed/manufactured 18-inch cone drivers produce its operating frequency range of 28 Hz to 150 Hz. As a self-powered system, the 700-HP's components are designed as a unified system, optimizing performance.

Meyer MILO 120

A variation on the popular MILO high-power curvilinear loudspeaker, the self-powered MILO 120 is a compact, lightweight four-way system providing 120° of horizontal/20° of vertical coverage. The MILO 120 loudspeaker is the perfect downfill complement for standard MILO or M3D line array loudspeaker systems or in other fill applications that can be satisfied by one or two cabinets. MILO 120 can also be used by itself to form wide-coverage arrays. AES Booth #1512. 510/486-1166, www.meyersound.com

Nexo NX242

The NX242 Digital TD controller is a proprietary advanced digital processor that lets Nexo loudspeakers achieve exceptional performance and reliability. The NX242 provides crossover, sensed amplifier control and system alignment acoustically matched to each component in Nexo Geo, PS and Alpha products. NX242's complex software algorithms combine this calibrated data with sensed voltage and current measurements to precisely control the temperature and displacement of each driver; ensuring that all Nexo systems deliver optimum sonic performance. AES Booth # 222. Retail: \$2,850. 415/482-6600, www.nexo-sa.com

low-mass diaphragm is custom-engineered for extended frequency response and superior transient response. With low self-noise for digital recording and rugged construction for durable performance, the microphone offers a wide dynamic range and handles high SPLs with ease. The AT2020: the new standard for affordable side-address studio condensers. AES Booth #1302. 330/686-2600, www.audio-technica.com



Aviom AN-16fi-M Mic Input Module

The AN-16fi-M is a 3U-high mic and line-level input device that allows mic level signals to be used with Aviom's AN Series products to create digital snakes and with the Personal Monitor Mixing System. The AN-16fi-M has 16 mic preamps with 24-bit A/D converters. Individual phantom power, phase invert, highpass filter and gain control are also provided. Sixteen XLR thru connectors create a built-in microphone splitter. Each channel also has balanced insert send/return points. Retail: \$1,999. AES Booth #642. 610/738-9005, www.aviom.com

BLUE Robbie Preamp

This Class-A discrete tube mic/instrument preamp has a 10-100k Hz response, sports balanced in/out and provides 68 dB of gain through its ECC88 tube gain stage. On the rear, the 7-pound unit offers switchable phantom power, a -20dB pad, polarity reverse switch and input for the external power supply. Retail: \$1,299. AES Booth #1619, 818/879-5200, www.bluemic.com



Buzz Audio ARC1.1

The ARC1.1 is a outboard channel strip combining a mic/line preamp, equalizer, compressor and limiter in one box. Intended for vocal recording and processing, the ARC is a useful tool for all sorts of recording and mixing applications. With all of the connection and routing options available, the ARC may be used as a separate mic preamp, DI box, equalizer and compressor/limiter (optionally with sidechain EQ) all at the same time. Retail: \$3,000 USD. AES Booth #339. In New Zealand: +64-4-3852478, www.buzzaudio.com

Cadac M16

Remote-Controlled Analog Mic Amp

The M16 meets the demand for a high-quality remote microphone amplifier for seamless interoperability with all types of analog and digital consoles and DAWs. Designed for live, broadcast and recording needs, the M16 integrates directly with Cadac's new D16 Digital Mix Matrix, and up to 16 M16 units can be controlled within a single system. Remote control is optional via the RM16 remote or Cadac's SAM software. The M16 is a flexible, high-quality system for every console, offering the classic Cadac sound. AES Booth #302. In England: +44 (1582) 404202, www.cadac-sound.com



Daking Mic-Pre IV

Four channels of Class-A preamps in a 1U chassis and outboard universal power supply. Configured for four mic inputs or four line inputs from XLR/TRS Neutrik Combo jacks on the back, plus four line inputs on the front. Continuously variable gain control on each input, aluminum knobs and 20-segment LED level meter with +24dB peak indicator. Switchable mic/line hi-Z instrument, switchable +48V phantom power, switchable input phase and switchable -20dB pad. Retail:

\$2,895. Booth #602. AES Booth #602. Dist. by Transamerica Audio Group. 702/365-5155, www.transaudiogroup.com

Drawmer 2032

Single-channel mic/line/instrument preamp and 4-band parametric EQ. Internal power supply. Retail: \$3,000. AES Booth #602. Dist. by TransAudio Group. 702/365-5155, www.transaudiogroup.com

GML Model 2032

GML presents the Model 2032 microphone preamplifier and parametric equalizer. Incorporating the renowned 8300 preamplifier and reference-standard 8200 equalizer, the Model 2032 inherits years of GML engineering excellence. This transparent Class-A discrete design with internal supply delivers reliability, musicality and precision. Now available. Retail:

\$2,999. AES Booth #602. Dist. by Transamerica Audio Group. 702/365-5155, www.massenburg.com

Joemeek TwinQ

The first in a new generation of Joemeek products, TwinQ is a dual-channel, mic pre/EQ/compressor with built in A/D converters. Mic pre has phantom power, phase reverse and "iron." The 3-band EQ has sweepable LF/MF; HF is selectable between 6k and 12k Hz. Photo-optical compressor has compression, slope, attack, release and gain make-up controls. VU metering monitors gain reduction or preamp. Outputs: +4dB, -10dB, AES/EBU and S/PDIF. AES Booth #628. Dist. by PMI Audio Group. 310/323-9050, www.joemeek.com

Everything you need to know about Variable Transconductance:



It sounds *really* sweet.

Introducing The Glory Comp™ All-Tube Compressor



The Power Plant: Seven Groove Tubes offer tremendous output power driving a custom wound and robust output transformer.



The Glory Knob: Adds low-order even harmonics to the compressed signal. Makes basses fuller and guitars chimier without increasing signal level.



The Ultimate Front End: Pair the Glory Comp with a GT VIPRE™ mic pre. Your mics will love you for it.

You may not care much about variable transconductance, but fortunately we do. It's what makes the new GT Glory Comp the finest all-tube compressor ever made. The Glory Comp is a real, actual tube compressor... nothing but tubes are used to process the program audio. But not any old tube will offer the smooth response needed for superb dynamics processing. So the Glory Comp makes use of the 5749 remote-cut-off variable transconductance tube for spectacularly linear modulation of the signal level.

But enough geek talk. The result is the most invisible, malleable, and inherently musical compressor you've ever heard. You get rich dynamics processing with virtually no trade-off in frequency response, along with creative features not found on any other compressor, at any price. For the full story on the Glory Comp, see your GT dealer today!



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www.groovetubes.com

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LavryBlue Microphone Preamplifier

Lavry quality in a 2-channel mic pre module offering clean, transparent, high-end performance. Low noise/low distortion with state-of-the-art common mode performance, each channel gets a double shunt-regulated phantom power and a high drive-discrete output stage. Features: no-nonsense controls and 65 dB of gain in 1dB steps (potentiometer-free design), gain pad and microphone selection (condenser, dynamic or ribbon). A user-friendly, nonvolatile memory-based design. Retail: \$968. AES Booth #502. 206/842-3552, www.lavryengineering.com

Lipinski Sound "The Gainer" L-408 & L-409

These wide-bandwidth (L-408, 200 kHz; L-409, 80 kHz) mic pre's feature a first stage with discrete transistors and Class-A circuitry with minimal negative feedback and separate unbalanced output. The second stage uses the fastest available current feedback-integrated amplifiers and has a balanced output. Selecting transformer ratio, setting a particular gain at the first and a separate gain at the second stage gives users an enormous palette of sounds. AES Booth #237. 301/229-4360, www.lipinskisound.com

Mercury M76m

Built in the tradition of the highly regarded Telefunken Studio-Mikrofonversarker V76 of the late 1950s/early '60s, the dual-channel Mercury M76m studio microphone amplifier features all-tube/all-transformer circuitry and adds several features not found on the original classic, such as a transformer balanced line input, high/low-impedance select and an output fader. Features also include stepped attenuation (16 to 76 dB), a -15dB input pad, phase reverse and 48V phantom power. Retail: \$4,999. AES Booth #602. Dist. by Transamerica Audio Group. 702/365-5155, www.transaudiogroup.com

Old School Audio MP1

The MP1 preamp is a Class-A/B discrete, transformer-coupled preamp in the style of classic vintage console microphone preamps from the '70s. The MP1 preamp comes in four flavors. We achieve this by offering a different type of input transformer for each of the four models, yielding maximum sonic flexibility. Optional transformer-based instrument input available, line-level +4 input is standard. Gain ranging from 25 to 65 dB, headroom of +32 dBm. AES Booth #339. Dist. by Atlas Pro Audio. 866/235-0953, www.oldschoolaudio.com



PreSonus Eureka

This pro recording channel strip has a discrete Class-A transformer-coupled mic preamp, compressor and 3-band parametric EQ. The preamp features variable input impedance so it can be matched and "tuned" for all types of microphones and recording applications. The preamp circuit has a Saturate function that adjusts the drain current on the input FET amp to simulate the effects of tape saturation and tube "warmth." An AD192 24-bit/192k digital output card is optional. Retail: \$699.95. AES Booth #1413. 225/216-7887, www.presonus.com

Thermionic Early Bird 2

Stereo tube mic pre and EQ. Balanced push-pull, double triode circuit makes it virtually silent and distortion-free, with very open and clean, yet warm sound. Simple but effective EQ for top, mid bass in the feedback circuit (switchable). The highpass filter has been designed so that it works conventionally at lower settings, but on the two highest settings, it is gentler, providing a mid cut when used with the active bass lift. Retail: \$3,300. In England: +44 (1440) 785843, www.thermioniculture.co.uk

Tonelux MP1 Remote-Controlled Mic Pre/DI

Discrete, remote-controlled mic preamp/DI featuring direct input on the front panel. The mic in is transformer-coupled in/out, and has a 20dB pad switch (effects both mic and DI), a 48V phantom and polarity switches. The combo XLR/direct input automatically switches to the direct input and switches in the tilt

tone control when a ¼-inch plug is inserted. Turned up, the tilt control has a 0 to 6dB boost on the high end while cutting the low end the same. Turned down, tilt boosts LF up to 6 dB and cuts the high end up to 6 dB. Tonelux is a new company from former API head Paul Wolff. Retail: \$695. AES Booth #721. 703/730-8800, www.tonelux.com

Trident 4T Celebration Channel Strip

This year is the 40th anniversary of John Oram's music business career and he intends to celebrate with various items of new equipment. The foremost item is the 4T Celebration module channel strip issued for the event. A single rackspace of Trident and Oram design excellence and featuring superb mic pre, EQ magic and dynamics with facilities for stereo repro through the unit. An instrument input adds to the flexibility, enabling a single performer to use the system for live performances and sound great. Retail: \$999. AES Booth #543. In England: +44 (1474) 815300, www.oram.co.uk

Toft Audio Designs EC1

Housed in a 1U rack with a sculpted aluminum front panel, this single-channel studio channel includes a mic pre with phantom power and phase reverse, a musical 4-band sweep EQ (pre/post compressor) and classic FET compression with attack, release and ratio. VU metering allows monitoring of gain reduction or output level. Designed by Malcolm Toft, the EC1 continues his legacy of high quality recording products. AES Booth #628. Dist. by PMI Audio Group. 310/323-9050, www.pmiaudiogroup.com

Tube-Tech MMC-1A

The MMC-1A is a new mic preamp with a multiband tube compressor. It features a no-compromise Lundahl transformer-equipped mic preamp with variable input impedance, 69 dB of gain, a high-impedance instrument input and a line-level input. The MMC-1A also includes a 3-band optical compressor with adjustable crossovers. Retail: \$3,995. AES Booth #326. Dist. by TC Electronic. 818/665-4900, www.tube-tech.com

Universal Audio Multichannel Mic Preamps

The 8110 provides eight channels of premium Class-A, all-discrete amplification and is the first analog product from Universal Audio to break from our vintage roots and offer a world-class tool of "ultra fidelity" and still provide musical and warm euphonics. Every channel features dedicated gain and level controls, input and output metering, dual input impedance selection, hi-Z inputs and a three-way Shape switch offering a variable signal path for maximum sonic versatility. The 4110 is a similar product in a 4-channel version. AES Booth #314. 866/823-1176, www.uaudio.com



Wunder Audio PEQ1R

The PEQ1R is the rackmount version of the PEQ1 Class-A discrete 1970s-style mic pre/EQ with custom-designed mic, line and output transformers. Compared to a 1073, the PEQ1R has more equalizing power with better lows and more presence in the mids and highs that opens up your input signal. Based on modules from a 1971 console for John Paul Jones, the huge Mu-Metal transformers are made on the same winding machine as the original and are 79% nickel. Retail: \$2,250. AES Booth #701.512/338-6777, www.wunderaudio.com

Microphone Products

ADK CS-1 Handmade Valve Mic

Handcrafted in Belgium, the CS-1 is a Class-A valve (tube) microphone created for vocal and critical instrumental recordings. The CS-1 features a BK-47 or similar European capsule

with custom electronics and modified power supply, Swiss Gotham Audio multipin cable and premium flight case. Retail: \$2,999. AES Booth #843. 360/566-9400, www.adkmic.com

AEA R88 Stereo Ribbon Mic

The AEA R88 large ribbon mic is optimized for natural frequency response and precise stereo imaging. Transducers: dual 2-inch ribbons oriented at 90°. Specifications: sensitivity is -52dBV/Pa; response is 20 Hz to 15 kHz (± 3 dB); and SPL handling is 165dB SPL. Built-in shock-mount and captive 4-meter cable to two A3M standard XLR connectors. Retail: \$1,895. AES Booth #612. 626/798-9128, www.wesdooley.com



AKG C-414 B-XLS and C414 B-XL II

The next generation of AKG's industry-standard C 414 studio condenser is available in C-414 B-XLS (ultralinear) and C414 B-XL II (transformerless) versions. The new mics have the same pricing as their predecessors, but incorporate many new improvements such as five polar patterns (wide cardioid was added), 60dB self-noise spec, internal elastic iso capsule-mount, three bass roll-off choices, three-position pad (-6/12/18 dB), +6dB more sensitivity and a provision for future optional remote control of all functions. AES Booth #909. 615/620-3800, www.akgusa.com



Brauner Phantom V

The Brauner Phantom V is a multipattern phantom-powered microphone voiced with Brauner's "A" technology for a warm, but very detailed sound. Retail: \$1,900. AES Booth #602. Dist. by Transamerica Audio Group. 702/365-5155, www.transaudiogroup.com

CAD Equitek e1002

This supercardioid electret condenser features a 10 to 18k Hz extended frequency response; 132dB dynamic range; THD <0.15%; 148dB SPL handling; transformerless balanced output circuits; and an internal power reservoir system. Retail: \$399. 440/354-3300, www.cadmics.com



CharterOak SAS38 Condenser Mic

Rather than emulating old classics, CharterOak's SA538 combines a clean and simple electronic design with extremely rigid construction and field serviceability, resulting in a gorgeous-sounding, dependable and consistent dual-diaphragm condenser mic. Frequency response is 20-20k Hz; max SPL is 128 dB; sensitivity of 12 mV/Pa; E.I.N. 22 dB, A-weighted. Polar pattern is variable. Retail: \$1,299. 860/698-9794, www.charteroakacoustics.com



DPA Windpac Windshield/Shockmount

The DPA Windpac is an ultra-lightweight, windproof solution for location recording. Fully wind-resistant and simple to operate, it weighs just 9 ounces—50% less than any other windshield system—with space-saving benefits to match, thanks to a quick and easy dismantling function. AES Booth #1342. 303/823 8878, www.dpamicrophones.com



Earthworks DrumKit System

The DrumKit™ System provides a better drum sound with three mics than seven or more quality mics from other manufacturers. Proprietary Earthworks mics with incredible impulse response and short diaphragm settling time capture full percussive attacks and minute details that other microphones mask. The system includes new 25kHz mics and comes in two versions: The recording DK25/R has two TC25 omnis for overheads and an SR25 cardioid for kick drum; and the live performance DK25/L has two SR25 cardioids for overheads and SR25 for kick. Retail: \$2,095. AES Demo Room #216. 603/654-6427, www.earthworksaudio.com

Holophone H2-PRO Surround Mic

The Holophone H2-PRO is a new patented audio capture device capable of recording up to 7.1 channels of high-quality and discrete surround sound. The H2-PRO has eight DPA Model 4060 mics, which terminate in eight XLR cables. It's compatible with all recording consoles, multichannel preamps and portable hard disk location recorders that provide phantom power. The H2-PRO is the only tool specifically designed to capture ultrarealistic, discrete surround sound in real time with no processing. It is compatible with all consumer multichannel formats. Retail: \$6,000 USD. AES Booth #915. 416/362-7790, www.holophone.com



Josephson C617

The Josephson C617 is a P48 powered microphone body designed to work interchangeably with industry-standard 200V externally biased half-inch measurement capsules. The C617 replaces the C606B and provides improved capsule powering and lower noise. Retail: \$960. AES Booth #521. 831/420-0888, www.josephson.com



Neumann N248 Power Supply

The N248 supplies one stereo mic or two mono condensers with 48V phantom power (P48). All connectors are of XLR 3-type. The audio signal outputs are DC-free. The five directional patterns of

the TLM127 and TLM170R can be remote controlled with rotary switches. The remote control operates by varying the nominal phantom voltage of 48V over a range of $\pm 3V$ (patented). Cable lengths up to 300 meters are permissible. Retail: \$825. Dist. by Sennheiser. 860/434-9190, www.neumannusa.com



Popless Voice Screens VAC-s3.5/VAC-s6

The VAC-s3.5 pop filter attaches to a mic's suspension mount and has two 3.5-inch-diameter acoustic screens and a mini-gooseneck for precise placement. Variable Acoustic Compression™ adjusts the amount of pop and sibilance filtering. One screen is used for minimum filtering; adding the second screen close to the first screen provides medium filtering. Maximum filtering is obtained when the distance between screens is farthest apart. Similar model VAC-s6 comes with two 6-inch acoustic screens. Retail: \$63. 845/255-3367, www.popfilter.com



RØDE S1

RØDE brings its studio sound to the stage with the S1, a high-performance handheld vocal mic with low-noise FET electronics, an internally shock-mounted true (externally biased) condenser capsule, gold-sputtered large diaphragm and five-year guarantee. AES Booth #1137. 310/328-7456, www.rodemic.com

Sanken CO-100K

Sanken's new CO-100K omnidirectional condenser microphone is the world's first 100kHz mic designed for professional recording and not for measurement purposes. Designed by Sanken with NHK Science and Technical Research Laboratories, the CO-100K is the ultimate microphone for full-spectrum high-frequency response in recording for SACD, DVD-A and future high-resolution formats. Retail: \$1,895.



Sanken CUW-180

Sanken's new double 180° cardioid condenser microphone is two cardioid condenser microphones joined in one body! Each of the two 180° capsules are independently adjustable, providing a versatile microphone for a variety of stereo and surround recording applications. Two CUW-180s are ideal for true 4-channel recording. Retail: \$2,995. AES Booth #709. 323/845-1171, www.plus24.net



SE Electronics Gemini

Gemini is a large-diaphragm cardioid studio condenser with dual-tube (12AU7 and 12AX7) electronics. The result is an incredibly large, detailed and intimate sound reminiscent of classic valve mics from decades ago. If you are after something special you really must hear this microphone. Retail: \$1,499, including flight case, shockmount and cables. AES Booth #1517. 617/623-5581, www.sonic-distribution.com



Sennheiser Evolution 900 Series

The Evolution 900 Series comprises seven new backline mics: 901 (kicks/drum), 902 (kicks/bass guitar/brass), 904 (drums), 905 (snare), 906 (guitars, percussion/horns), 908 (brass and percussion) and 914 (all-purpose electret condenser), plus the three previous 900 Series models. All feature transparent sound, low handling noise, excellent transient response and feedback rejection. Tight and uniform polar patterns and gold XLR pins are common to the entire line.

Sennheiser Headset Mics

Two new Sennheiser headsets, HSP2 (omni) and the HSP4 (cardioid), are designed for professional broadcast, theater and touring applications. Both are very unobtrusive, extremely rugged and lightweight, with integrated windscreens and clean, clear sound. The line has a 1.1mm diameter, fully adjustable boom arm, mountable on either side and an integrated windscreen. Constructed of beta titanium materials, the units are flexible and comfortable to wear. AES Booth #1020. 860/434-9190, www.sennheiserusa.com

Soundelux EL308

Revolutionary in design, the EL308 is the world's first commercial version of a Golden Ellipsoid Capsule, which makes significant strides over conventional round condenser mic capsules in its ability to reduce in-band resonance and extend bandwidth in both directions.



Soundelux E250 Cardioid Tube Mic

The Soundelux E250 cardioid tube condenser is designed by David Bock for close-miking loud vocals. Similar-looking to the ELUX 251, the E250 has an entirely new capsule that is mounted in a brass holder. Bock also chose a different tube and output transformer, yet kept the Soundelux Stable Bias circuitry design to prevent the sound of the mic changing with

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dynamics. The mic's frequency response stays constant whether singing loud or soft. Retail: \$3,000. AES Booth #602. Dist. by Transamerica Audio Group. 702/365-5155, www.soundluxmics.com

Telefunken Ela M 12

Celebrating the 50th anniversary of the original C-12, Telefunken North America announces the Telefunken Ela M 12. Each system is handcrafted in the U.S., utilizing the original Austrian blueprints and meticulously duplicating the original C-12 specs. On any signal source, from close-up vocals to ambient orchestral recording, the Ela M 12 delivers high-fidelity sound. The Telefunken Ela M 12 features a TK-12 capsule with nine polar patterns, T14 transformer and NOS 6072 tube. Retail: \$5,995.



Telefunken Ela M 14

The new cardioid-only Ela M 14 tube mic offers uncompromised sonic performance and mechanical design at a reasonable price, and features a single-sided TK-12-inspired capsule, NOS 6072a tube and custom transformer. All Telefunken mic systems include wooden mic box, external power supply, swivel connector cable, owner's manual and five-year limited warranty. Retail: \$2,995. AES Booth #1614. 860/882-5919, www.telefunkenusa.com

Wunder Audio CM12

The CM12 uses the T14/11 output transformer, which was standard in the C12/24/ElaM. The capsule is a CK12-style. The tubes are NOS GE 5-star 6072. Capacitors, resistors and high-end Teflon-coated silver wire are of the highest quality available. The PSU offers true precision regulation combined with passive filtering, safer for microphone and capsule. RF and transient voltage-protected AC input. The unit uses gold Neutrik connectors and Mogami point-to-point wiring for the audio path. Retail: \$4,995. AES Booth #701.



Wunder Audio CM7 (Large Transformer)

The new version of the Wunder Audio CM7 Tube Microphone comes with the early large-style U47 transformer that was used in the legendary "Large Badge" U47s. These first couple hundred U47s are very sought after sonically. The CM7 transformer's high nickel content achieves better low-end rolling off at 22 Hz instead of 40 Hz. Newly skinned vintage M7 or KK47 capsules are options. Tubes are hand-selected vintage Telefunken VF14 or EF14. Retail: \$4,995. AES Booth #701. 512/338-6777, www.wunderaudio.com

Mixing Consoles

Alesis MultiMix Series

This line of compact analog mixers provides 16-bit stereo simultaneous inputs and outputs over USB. Models 8USB and 12USB have four high-gain mic/lines; the 16USB has eight high-gain mic/line (XLR and 1/4-inch balanced) inputs with phantom power, two stereo balanced 1/4-inch line inputs, aux send (can send to onboard or external effects) and a stereo aux return. All feature 100 onboard digital effects and 3-band EQ per channel with high/low shelving and mid-band pass/re-

ject. No drivers required: plug-and-play operation under Windows and Mac OS. 401/658-5760, www.alesis.com

Allen & Heath Mix Wizard3 14:4:2

The four-group MixWizard3 14:4:2 is the ideal mixer for live sound applications and is great for rental companies to stock for smaller gigs. Engineers will appreciate the new EQ and pre-amp design, individual phantom power switches, channel meters and the new 2-output matrix. The WZ314:4:2 features Allen & Heath's legendary dual functionality, allowing it to be used for front of house or monitors, recording on location or in the studio. Retail: \$1,549. AES Booth #919. In England: +44 (0) 870-755-6250, www.allen-heath.com

API DAW Monitor Racks

Essentially a mini API console in a convenient, roll-around slanted cabinet, the new DSM (Discrete Summing Mixer) workstation monitor rack is specifically designed to complement any DAW by providing professional analog summing, mixing, control room switching/monitoring, patchbay facilities and studio I/O connections. The three new API DSM products are the DSM 24, DSM 48 and DSM 72. Each includes a number of the API 7600, 7800 and 8200 modules. AES Booth #402. 301/776-7879, www.apiaudio.com

Argosy 90 Series Console for DXB

Argosy's 10th anniversary Platinum 90 Series console for DXB provides creature comforts found in high-end large-format consoles for Mackie's newest digital controller. Fully enclosed with access from the top and back, full-length padded armrest and powder-coated steel legs support this specially designed chassis to integrate your Mackie DXB digital controller with select 19-inch rack-mounted equipment, computer monitor(s) and other gear. 90 Series expandable chassis are available in 90, 120, 150-inch and larger configurations. Retail: \$2,116. 573/348-3333, www.argosyconsole.com

Behringer BCA2000

The BCA2000 is a high-speed multichannel audio control interface, providing intuitive control for audio/MIDI sequencing. Features: IMP "Invisible" mic preamps with phantom power; line and hi-Z guitar inputs; digital I/O (ADAT, S/MUX, AES/EBU, S/PDIF with optional Dolby Digital and DTS); eight I/O channels at 24-bit/96 kHz; USB 2.0 interface/100mm faders in master and monitor sections; MIDI I/O; and input signal A/D converter limiter/gate overload protection. Retail: \$259.99.

Behringer BCF2000

The BCF2000 is an innovative, hands-on MIDI/USB control surface with precise 100mm motorized faders for controlling virtual mixers, synths and samplers. It lets you control all of the virtual gear in Cubase, Cakewalk, Logic and other major audio software, with eight motorized faders, eight endless rotary encoders, a 15-element LED indicator and push-to-set function that lets you select, adjust, set and control myriad functions. Retail: \$259.99. 425/672-0816, www.behringer.com

Cadac D16 Digital Mix Matrix

Cadac's D16 provides a powerful and reliable digital engine, ideally suited for operation as a stand-alone audio processor for smaller-scale performances or as an expansion mixer for existing analog Cadac consoles. Operates with SAM™ (Sound Automation Manager) software. Retail: £6,665 UK. AES Booth #302. In England: +44 1582/404202, www.cadac-sound.com

Calrec LCD Metering

Calrec Audio launches new user-configurable LCD metering at AES in San Francisco. Available immediately across its digital range, Calrec's proprietary LCD metering has been designed to provide absolute configurability. In common with all Calrec operating software, LCD meters are independent of the PC. Totally configurable and capable of input and output metering, the system is also designed to provide graphic representations of EQ and dynamic levels. AES Booth #1132. In England: +44 (1422) 842159, www.calrec.com

Chandler Limited Mini TG Rack Mixer

Chandler Limited, Abbey Road and EMI announce a new agreement for the manufacturing of classic recording gear. The Mini TG Rack Mixer is a 16x2, fully discrete unit with all transformer-balanced channels and a full-featured control room section including talkback, mute, mono, dim, speaker switching, external input (return DAW and track and sum through the mix bus) and separate control room and stereo bus outputs. The mixer frame will also be available with EQs and limiters, allowing for a totally rackmount portable mixing/tracking system designed specifically for DAWs. Retail: \$5,000. AES Booth #619. 319/885-4200, www.chandlerlimited.com

Digidesign ICON Integrated Console

The Digidesign ICON is an integrated console environment featuring the all-new D-Control tactile worksurface, Pro Tools|HD Accel as its core DSP engine and modular HD audio interfaces for analog and digital I/O. The first truly integrated console solution of its kind, ICON empowers operators to accomplish every aspect of a project—recording, editing, mixing and processing—complete with integrated video and delivery. ICON provides unmatched control with a fully automated, completely recallable total production system. AES Booth #712.



Digidesign VENUE Live Sound Environment

The Digidesign VENUE is a new state-of-the-art live sound console environment. Purpose-built with the rigorous requirements of live sound in mind, VENUE embodies an ideal synergy of excellent sound quality, flexibility and expandability. VENUE components include the D-Show mixing console, a digital mixing engine, mix position digital and analog connections, stage-located remote-control mic preamps and a digital multicore snake replacement. VENUE also supports effects plug-ins and features an integrated Pro Tools recording and playback option. AES Booth #712. 650/731-6300, www.digidesign.com

Euphonix MC Intelligent Application Controller

The MC editorial controller gives users high-speed control of not only EuCon-aware applications such as Nuendo, but also any PC application via keystroke commands programmed into the MC's LCD SmartSwitches. Programmable buttons switch functions with each different application running on the host PC for unrivaled speed of operation. MC includes a 5.1 monitor section, twin trackballs, standard full-size keyboard, eight programmable knobs, four full-throw touch-sensitive moving faders and 56 programmable LCD SmartSwitches with a small touchscreen for fast access to the unit's programmable features. The MC will be launched at and ships early 2005. AES Booth #926. 650/855-0400, www.euphonix.com

Fairlight DREAM Constellation XT

This fully featured digital console has high-end automation and processing that provides the same level of operation and functionality found in other available expensive large-format digital consoles. The DREAM Constellation-XT delivers up to 250 channels routed to up to 72 mix bus elements—ready for any cinema-playback format currently in widespread use, up to 7.1 channels. In addition, DREAM Constellation-XT may also include a fully integrated 96-track disk recorder and editor. If that's not enough, the system is delivered at a significantly lower cost than any other available components and with an even higher degree of user-adaptability. AES Booth #1018. In Australia: 61 (2) 99751777, www.fairlightau.com



Hear Technologies Talkback 600 MV

Talkback 600 MV adds talkback, monitor master volume, monitor switching and monitor dimming capability to recording consoles, digital hard disk recording systems and portable audio workstations. Retail: \$399. AES Booth #1544. 256/922-1200, www.HearTechnologies.com



InnovaSon Sy48 Digital Console

A variant of the Sy40 console, the Sy48 is suited for mixing touring front of house or monitors and fixed installations. As a stand-alone console, the Sy48 is equipped with 64 channels with a total of 48 local inputs (32 mic, 16 line). The optional stage box moves 48 inputs to stage with 16 local mic/line inputs, while the LEM option (Local External Mix box) allows up to 64 local mic inputs. InnovaSon's operating system, Sensoft Version 9, adds a raft of new hardware control and software features. AES Booth #1010. Dist. by Sennheiser. 860/434-9190, www.innovason.com

Inter-M EMI-300 7-Channel Powered Mixer

Five line inputs and two mic inputs, with an integrated ducking function on mic 1, which automatically fades the music to background level during announcements. Features: master EQ (± 6 dB bass and treble), two full stereo master sections, overload limiters for internal power amps and a line-level lowpass output (-12 dB at 100 Hz) with balanced XLR output for connecting active subwoofers. Retail: \$770.

Inter-M SFX-8460

Powered mixer with eight mono and four stereo inputs and onboard stereo amplification (600W x 2-channel at 2 ohms). Features include EFX and tape input, 3-band EQ, XLR and 1/4-inch inputs, 9-band master graphic EQ, onboard 24-bit digital effects and phantom power. Retail: \$1,500. AES Booth #1444. 610/874-8870, www.inter-m.net

Lawo mc2 66 Digital Console

The Lawo mc2 66 is a compact, mid-sized mixing console with an integrated 30722 matrix and a maximum of 192 fully equipped channels and 144 summing buses. The system can be configured for broadcast, production and recording and is fitted with 72 faders max. Signal processing for surround 7.1 and 96 kHz completes the system. Comprehensive control functions include Ethernet, Sony 9-pin, MIDI and GPI. More features include parallel IT track summing, integrated monitoring and console split with doubled PFL/AFL summing and isolated bank/layer switching, extended audio-follows-video, external control via Ethernet for remote control of the console and integrated matrix. Retail: \$120,000. AES Booth #101. In Germany: +49 (7222) 1002, www.lawo.de

Logitek Guest Panels

For the Logitek console router system, these guest panels provide a headphone jack with level control, on/off/cough buttons and integrated router control. Programmable buttons are also available. Units are available in desk-mount and rack-mount configurations. Retail: \$1,000. AES Booth #1417. 713/664-4470, www.logitekaudio.com

Mackie Onyx 80 Live Consoles

Like the Onyx small-format analog mixers, the Onyx 80 live consoles feature Mackie's flagship Onyx preamps and the renowned

4-band Perkins EQ. Available in 24/32/40/48-channel frames, all feature eight Aux Sends with Stereo Link function for up to four IEM mixes; an Aux/Group Flip function; 10x2 Matrix; four Mute Groups; eight stereo Aux inputs; and an optional redundant rack-mount power supply. AES Demo Room #230. 425/487-4333, www.mackie.com



Nautilus The Commander

This all-discrete, Class-A mixer is for DAW users who want better sound through summing in the analog domain and using prized analog gear when mixing. Eight main input channels feature pan and mute, and four dedicated input channels can be used for effects returns or channel expansion. Stereo functions include four-way selectable insert, separate L/R mutes, mono and VU meters. A unique stereo bus feature adds the ability to switch from the 8-channel mixing section to an auxiliary "Stereo B" source for special mixing effects or precise A/B comparisons with previous mixes or other CD/SACD stereo sources. Retail: \$3,995. AES Booth #333. 714/894-4000, www.nautiluspro.com

OmniRax Synergy XL Series

The Synergy XL Series is designed to provide beautiful and functional console housings for all of the popular mixers, accommodating both mixer and associated peripherals. The S6DXBXL for the Mackie DXB features one 6-space rackbay sloping up on the right side of the console, with a large writing surface between it and the wrist pad. The left side has a small writing surface next to the wrist pad, followed by two rackspaces, with six more rackspaces angling up. Includes heavy-duty powder-coated black-steel legs. Retail: \$2,460. 415/332-3392, www.omnirax.com

Oram BEQ Series 4T

This Series has a 24-bus architecture and routing to two stereo buses, which are easily combined to provide 5.1 and 7.1 mixes. The Series 4T is a derived version of the Series 24 used on many Oscar-winning soundtracks, and is offered at special low prices for this year only in celebration of John Oram's 40th year in the industry. Retail: \$27,900. AES Booth #543. In England: +44 (1474) 815300, www.oram.co.uk

Solid State Logic AWS 900 Updates

The AWS 900 is a revolutionary combination of a compact world-class analog mixing console and a comprehensive DAW controller. Based on SSL's flagship XL 9000 K Series console, the AWS 900 provides everything needed to record, edit and mix professional projects when using the workstation of your choice. AES San Francisco sees the announcement of a new optional Total Recall package, providing a facility to reset to specific settings. Retail: \$87,000. AES Booth #1002. 212/315-1111, www.solid-state-logic.com



Soundcraft GB4

The GB4, named after Soundcraft founder/designer Graham Blyth, is a surprisingly affordable dual-mode, four-bus mixing console notably featuring the same preamp and EQ topologies as the popular MH4, 15 total buses (four subgroups, plus LCR and eight aux sends), four mute groups and a 7x4 matrix.

Available in 12 to 40-mono channel configurations (each with two stereo channels), the GB4 also boasts switchable direct outputs on every channel and a high-quality limiter on dedicated record outputs. Retail: \$2,399 to \$5,999.



Soundcraft GigRac 1000st

Soundcraft's new GigRac 1000st integrated mixer/amplifier combo improves upon previous GigRac models by offering 1,000 watts of output power (500 watts per channel into 4 ohms) and full stereo operation, including expanded 3-band EQ on the inputs, two 7-band graphic equalizers and 10 high-quality preset digital effects. Designed for gigging bands and presentation systems, the compact and lightweight GigRac 1000st requires only speakers and cables to complete a versatile and powerful portable sound reinforcement system. Retail: \$749.99. AES Booth #909. 818/920-3212, www.soundcraft.com



Speck Electronics LiLo Line Mixer

The LiLo is a desktop analog line mixer that offers features and flexibility for use in the most serious recording applications. With more than 100 balanced input/output connections, this modular console will mix 32 signals with unmatched signal routing, generous amounts of headroom and a neutral signal path. The LiLo is targeted at recording studios and audio post-production installations. Speck will also show the Model ASC 4-band EQ and MicPre 5.0 mic preamp. Retail: \$8,490. AES Booth #607. 760/723-4281, www.speck.com

SPL MMC2 Multichannel Mastering Console

SPL's multichannel mastering consoles represent unusually powerful command centers for stereo and surround mastering applications. After last year's all-in-one solution MMC1, this year's new compact MMC2 console comes in a 19-inch/9U format and provides source connection, track assignment, speaker management and master and monitor level setting. The discrete, fully analog console is based on SPL's unique 120-volt op amps for unprecedented dynamic range, headroom, bandwidth and audio purity. Retail: \$35,900.



SPL MixDream

The MixDream is a cascadable, 16x2 analog outboard mixer in a 19-inch/2U format. Any DAW or digital console can be expanded with analog stereo summing and insert functionality while retaining the entire scope of computer automations. The MixDream discrete Class-A technology is based on a 60-volt rail (± 30 V), providing a low noise level of -97 dBu (A-weighted, all channels active) and a dynamic level of over 125 dB. Retail: \$3,795. AES Booth #1243. 951/272-3465, www.spl-usa.com

Mix AES 2004 New Products Guide



Studer Vista 8

The Vista 8 digital live production console combines and extends the powerful on-air facilities of the Vista 6 with the dynamic automation of the Vista 7 to create a highly sophisticated and flexible multipurpose live broadcast desk. Aside from featuring Studer's highly acclaimed Vistronics™ user interface, the Vista 8 also sports a redesigned central control bay, greatly expanded metering facilities, advanced matrix functionality, a comprehensive snapshot system, dedicated mute groups and many other notable amenities. Retail from \$200,000. AES Booth #909. 818/920-3212, www.studer.ch



Studio Technologies Model 230

The Model 230 is the newest addition to Studio Technologies' 200 Series line of announcer's consoles. This feature-rich unit supports applications requiring a wider range of flexibility. Ideal for on-air television and radio broadcasting, stadium announce, live event production and events requiring simultaneous translation or voice-over applications. Retail: \$1,095. AES Booth #419. 847/676-9177, www.studio-tech.com



TOA D-901 Digital Mixer

The D-901 digital mixer is the ideal solution for a wide variety of installed sound applications including A/V, houses of worship and many others. The D-901's modular design supports up to 12 mic/line inputs and eight line outputs with flexible RS-232 or contact-closure remote control. Audio processing tools include auto-mixing, feedback suppression, multiband parametric filters, compressors, limiters, noise gates, crossovers, delays and more. Full input-to-output matrixing allows users to store and recall any input to output combination for multi-zone or room-combining applications. Retail: \$2,190. AES Booth #1420. 650/588-3349, www.toaelectronics.com



Tonelux 5.1 Surround Line Mixer

The MX5.1 mixer is a surround line mixer with many features of a large-frame console, but housed in a 3U modular rack format, which holds 16 modules. Any module can be placed into any position and you can mix EQs, mic pre's and mixer modules in the same rack. The racks are linkable and will offer master control modules and many other modules to accent the line. Retail: \$449/channel; transformer-direct outputs are optional. AES Booth #721. 703/730-8800, www.tonelux.com



Yamaha PM5D Digital Console

The PM5D combines the features and self-contained design of the acclaimed DM2000 with the operating style of the groundbreaking PM1D to create a new category of live performance digital consoles. The console offers 64 input channels (48 mono, plus four stereo analog inputs, four internal stereo returns) of dynamic 96kHz audio with 32-bit internal processing. All onboard AD/DA conversions use 24-bit/96kHz converters. Outputs include 24 mix, two stereo (ST A and B or LCR), eight matrix, eight mute groups and eight DCAs. The PM5D functions without the use of a meter bridge. Retail: \$48,900. AES Booth #802. 714/522-9011, www.yamaha.com/proaudio

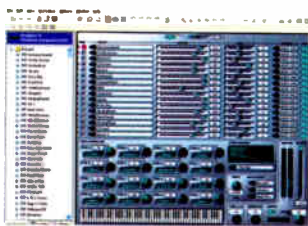
Music Products

East West Percussive Adventures 2

Performed and produced by drummer/percussionist/composers of Kurt Wortman and Tony Humecke (aka Beta Rhythm Farm), Percussive Adventures 2 has 70 full multilayered pieces, with full beds, full bed loops, alternate mixes, phrases, endings, individual elements/layers and some individual hits. Requires DVD drive, 256MB RAM, and Windows XP, Pentium III/Athlon 400 MHz or Mac OS 10.2.6 with G3 500 MHz. Supported interfaces: VST, DXi, ASIO, RTAS, AudioUnits, Core Audio and DirectSound. Retail: \$399.95.

East West Storm Drum

Produced by Quantum Leap producer Nick Phoenix. Six gigs of loops and multisamples from three world-class percussionists and one lunatic producer with enough taiko drums to fill an 18-wheeler and thousands of completely original, evolving drum beds, featuring some of the largest and most impressive drums on the planet. No sampler required! The library includes a state-of-the-art Mac/PC plug-in audio engine/interface from Kompakt/Native Instruments, which is specifically designed for rhythmic loop playback, manipulation and mayhem. Retail: \$399.95. 310/271-6969, www.eastwestsounds.com



E-mu Emulator X and X Studio Update

The Emulator X and X Studio desktop sampling systems for Windows 2000 and XP PCs combine E-mu sampling technologies and hardware DSP with software features such as disk streaming and file management. Both systems can run standalone or VSTi and feature an integrated waveform editor and powerful synth functions, with a 24-bit/192kHz audio interface with hardware-accelerated effects. (The Emulator X Studio comes with a sync daughter card.) AES Booth #1426. 408/438-1921, www.emu.com

Garrigan Personal Orchestra

Personal Orchestra includes a comprehensive orchestral sample library, Native Instruments KONTAKT sample player, GenieSoft's Overture™ LE notation program, Cubasis VST (for PC

and AMBIENCE Reverb. Features: samples of all major symphony instruments—strings, brass, woodwinds, and percussion—as well as instruments not found in other orchestral libraries, such as a Steinway concert grand, Stradivarius violin, Wurlitzer and Venus concert harps, Haynes flutes, Heckel bassoons, a Mustel celeste, a Rudolf von Beckerath concert pipe organ, a harpsichord and many other exquisite instruments. AES Booth #721A. Retail: \$279. 360/376-5766, www.garrigan.com

Hollywood Edge Cartoon Trax II

Almost a decade after releasing Cartoon Trax, the first (and highly respected) cartoon library, Hollywood Edge is releasing Cartoon Trax II. With great sound designer Tom Clack, this 5-CD set promises to be an improvement on a library that no one thought could ever be exceeded. Cartoon sounds are versatile for every conceivable production—not just animation. And Hollywood Edge has set the benchmark for production sound effects. Retail: \$595.

Hollywood Edge Walla and Ambiences Edition

The Hollywood Edge has assembled the best major motion picture walla and ambiences from the past decade. Here is the first of what we hope will be many installments of the sounds that are most famous for how difficult they are to record just right! Every walla for your every need. The quick fix for any scene you are working on that requires more than a bing or a boing. More like real life than life itself. On five CDs. Retail: \$595. 323/603-3252, www.hollywoodedge.com



mSoft MusicCue 3.5

Get rid of your CDs with an audio server system from mSoft. Imagine everyone in your facility having instant access to all of your production music and SFX without leaving their desks! Our all-encompassing search tool for managing music, FX, video, etc. interfaces with any DAW and can create a frame-accurate automatic cue sheet by reading any standard-format EDL file. We offer all and any music and FX libraries (15,000 CDs and growing) pre-digitized on an audio server system. Retail: \$11,995. AES Booth #1044. 818/716-7081, www.msoftinc.com

Native Instruments Battery 2

Battery 2 takes drum sampling to the next level with a powerful new audio engine optimized for large and memory-intensive drum kits, enhanced sound shaping and modulation capabilities, extremely sophisticated sample mapping and a revised user interface that retains all of the intuitiveness and straightforwardness that Battery is famous for. Also included is a massive new drum kit library with more than 3.5 GB of pro drum samples in all styles and genres. 866/556-6487, www.native-instruments.com

Non-Stop Music Library

Non-Stop has added the following collections to the Non-Stop family of music libraries: Cavendish Music Library, V—the production library, Groovers Music Library, Crashed Music, Countdown Classical, Point Culture and Mathambo Music. 801/531-0060, www.nonstopmusic.com

PowerFX Systems SoundShuttle

SoundShuttle is the first Internet-based library of sample loops and sound effects available directly into your sequencer as a VST plug-in. More than 40,000 sounds in the PowerFX data-

base can be, auditioned and downloaded directly from your sequencer, offering an efficient way to search and purchase sounds, with looping preview files, real-time sync with host, unzipping sounds on-the-fly and drag-and-drop downloads. In Sweden: +46 (8) 6609910, www.powerfx.com

Radikal Spectralis

The Spectralis groove box combines the latest digital with proven analog technology. Spectralis' step sequencer makes possible highly complex sound creations which opens up new worlds of sound used in connection with the programmable fixed filter bank. In addition to its outstanding analog sound possibilities, Spectralis also provides DSP based sound creation, taking care of all the ancillary needs for drum sounds and polyphonic voices. This sound creation is 48 voice and offers killer drum sounds, creamy pads and a lot of other goodies. 2018/36-7671, www.radikaltechnologies.com

SampleTank Expansion Tank Acoustic Drums

I-Map and GM map acoustic drum kits recorded in some of L.A.'s best studios will add the depth and realism of live studio drums to your sequences. Each of the kits features a complete standard drum kit, including bass drums, snare drums, hi-hats, rides, crashes and toms, with variations for each drum and cymbal. Now includes new SampleTank 2 presets. Retail: \$99.

SampleTank Expansion Tank Brit Horns

Chromatically sampled horn sections and solo instruments from the legendary Thoms, Barnacle & Brooks brass section. This superb horn CD features trumpet, sax and trombone—full sections in different combinations, plus solos—all performed by three of the UK's finest horn players. "Very natural...good value, good playing, well recorded..."—Sounduser.com. "5 Stars"—*Sound on Sound*. Retail: \$99. AES Booth #942. Dist. by IK Multimedia. 954/846-9101, www.ikmultimedia.com

Sonik Capsules Studio Drums Capsule

This three-pack features special mapping that facilitates keyboard-based drumming by placing every drum and cymbal in its most intuitive location. The Groove Capsule™ has 500 drum loops covering rock, alternative, jazz, funk, swing, country, Latin, avant-garde, breakbeat, house, jungle, effects and more. Includes .WAV/.AIFF files, single hits and short segments, as well as beat-sliced versions and MIDI files for every loop. Retail: \$249.

Sonik Synth 2

Sonik Synth 2 includes one of the most diverse sample collections of vintage synthesizers ever incorporated in a virtual synth. Covering a wide range of rich ethereal soundscapes, deep and moving bass tones, killer leads, moody orchestral textures, spectral and vocal formant pads and all of the workstation variety of keyboard sounds and drums in one package. A co-production between IK Multimedia and Sonic Reality. Format: RTAS, HTDM, VST, AudioUnits, DXi and MAS. Retail: \$399. AES Booth #942. Dist. by IK Multimedia. 954/846-9101, www.ikmultimedia.com

Sound Ideas Mix XI

The Mix XI Broadcast Music Library offers 240 themes and more than 1,000 tracks of broadcast music with rock, dance, techno, easy listening, drama, classical and comedy music. Every theme comes with :60, :30 and stinger broadcast lengths. Mix XI is available on 12 audio CDs, plus two DVD-ROMs of .WAV files, making it easy to drag-and-drop the music immediately into your productions. Retail: \$495 USD.

Sound Ideas WebSound

WebSound has 550 buttons, roll-overs and sound effects, specially designed to increase the interactive pulse of your Web-site. Enhance your visitors' exploration of your pages with sound effects, music accents and other audio cues. Let WebSound give your Web presentations an audible personality. All audio files are provided in both 16-bit/44.1kHz stereo .WAV and MP3 file formats. AES Booth #706. Retail \$129 USD. In Canada: 905/886-5000, www.sound-ideas.com

Synthogy Ivory

Three Concert Grands in one custom-built piano engine: This is the largest, most skillfully designed sample-based piano Virtual Instrument to date, bringing out the resonance, response and character of Bösendorfer, Steinway and Yamaha grand pianos. Nearly 30 GB of samples are combined with Synthogy's exclusive sample playback engine, with sample interpolation for ultra-smooth velocity transitions as well as string resonance DSPs for realistic damper pedal responses. Plus built in effects, custom controller velocity mapping and more. Retail: \$349. Dist by Ilio Entertainments. www.synthogy.com

Taylor Guitars/Rupert Neve K4 EQ

The Taylor Guitars K4 equalizer is an outboard EQ for acoustic guitar. Mr. Rupert Neve, who created the preamp in Taylor's Expression System acoustic guitar pickups, also designed the K4, which features low-impedance, transformer-coupled balanced I/O, bass and treble controls, sweepable 2-band parametric midrange with adjustable Q, a pre- or post-EQ effects loop, phase invert, headphone jack with level control, mute and a dedicated tuner output. Retail: \$898. AES Booth #105. 619/258-1207, www.taylorguitars.com

Tonebone Cabbone

Cabbone is a guitar amp cabinet switcher allowing one head to toggle between two speaker cabinets. You could put a Fender Twin on top of a 4x12 Marshall and toggle between the clean open-back sound or the crunch of a sealed half-stack. A built-in SlingShot remote lets Cabbone switch amp channels at the same time or be remotely controlled with a footswitch from the control room.



Tonebone Headbone VT/SS

This head-switching device for guitar amps lets two heads drive a single speaker cabinet. Session guitarists and studio engineers can switch between two amplifier tones without repositioning the mics and it saves on cartage! All audio circuits are 100% discrete Class-A and speaker signals are controlled through relays. A resistive load assures safety for the standby amp. Choice of tube or solid-state. AES Booth #628. 604/942-1001, www.tonebone.com

TRF Production Music CDs

Ten new CDs are being added to TRF's Kool Kat Production Music Library, now totaling 80 very contemporary, cutting-edge CDs. The releases include Techno Fusion, Hip Hop Vol. 5, Hard Rock Vol. 3, Pop Music Beds, New Jazz/Techno Vol. 2, Lounge/Kitchen, Action & Suspense Vol. 2, X-treme Drama Vol. 3 and Classical Piano. Forty CDs are also added to TRF's Adrenaline, Bravo, Dennis and Stock libraries, and 50 classical and ethnic CDs are added to Supraphon Classical and PAN International Ethnic libraries. 845/356-0800, www.trfmusic.com

Vienna Symphonic Library Horizon Series II

Capitalizing on Vienna's experience in producing the award-winning Vienna Symphonic Library and developing the revolutionary Performance Tool, the Vienna team continues to expand its successful Horizon Series with six new titles: Chamber Strings—Small String Ensembles (\$895); Epic Horns—Eight Unison Double Horns (\$395); French Oboe Plus Bonus Instruments—English Horn, Small Clarinet in Eb (\$295); Woodwind Ensembles—ensembles of Flutes, Oboes, Clarinets, Bassoons (\$455); Vienna Harps—two Heavenly Harps (\$295); and FX Percussion—From Angklung to Waterphone (\$295). Dist. by Ilio. 818/707-7222, www.vsl.co.at

Power Amplifiers



Architectural Acoustics ICS 4200

The ICS 4200 4-channel commercial power amp is designed for permanent installs and features four independent, 200-watt channels in a compact, fan-cooled two-rackspace package. The ICS 4200 can supply maximum output power to both low-impedance (4 and 8 ohms) and high-impedance (70V) loads simultaneously in single-channel or 2-channel pairs, or the ICS 4200 can be configured for bridged operation. An SPS™ loudspeaker protection circuit and an integral 60Hz highpass filter provide protection in even the most severe applications. 601/486-1678, <http://aa.peavey.com>

ART SLA-2

The SLA-2 studio linear power amp delivers 200 watts/channel (560 watts bridged mono) of clean, clear power from a single rackspace. In addition to a temperature-controlled, variable-speed cooling fan, the oversized convection heat sinks located on each side of the SLA-2 silently direct heat flow outside of the chassis. Euroblock connectivity keeps input connections secure and convenient. We've also included a tamper-proof faceplate for fixed installations. Retail: \$379. 585/436-2720, www.artproaudio.com

Crown I-Tech Series

The I-Tech Series offers amazing power, light weight and ease of use. Onboard DSP features 24-bit, 96kHz AD/DA converters, and all models are compatible with the IQ Network and TCP/IQ™ networking. Digital audio and IQ control signals connect to the amp via a single cable (in CobraNet™-ready models). Pushbutton DSP presets simplify the setup for various loudspeaker arrays. The switching Global Power Supply works anywhere in the world and offers PFC (Power Factor Correction). I-Tech amplifiers have the highest output voltage in the industry (200V peak), which provides clean transient peaks. Retail: IT-4000, \$5,000; IT-6000, \$6,117; and IT-8000, \$7,685. AES Booth #909, 234. 574/294-8000, www.crownaudio.com



Hot House Pro Model Four Hundred High-Resolution Control Room Amplifier

Fully differential from input to output and utilizing a split-dual toroidal power supply, the new High-Resolution Series Control Room Amplifiers take advantage of Intelligent Output Device Technology, lowering distortion in the critical mid and high frequencies to near-immeasurability (less than 0.002%) while increasing stability and reliability due to the internal self-biasing and self-protecting nature of the new output devices. No sound-compromising protection circuitry, current limiting or global feedback is required. Power per channel @ 8/4 ohms: 140/210 watts RMS. Retail: \$1,999. 845/691-6077, www.hothousepro.com

Klein+Hummel PRO A 2000

The PRO A 2000 offers extremely low THD under full load conditions. Its Smart Limiter with temperature control reduces output power gradually when the temperature rises to a critical value. Its overload limiter reduces the level and provides an undistorted audio signal, even while operating into a 1.5-ohm load. Its efficient cooling system has four three-step controlled fans for efficient cooling. Its energy-saving, low-power mode goes into standby during no audio signal condition for minimal power consumption, less heat generation and minimum fan noise. Retail: \$3,400. AES Booth #1232. 301/888-2426, www.klein-hummel.com

Mix AES 2004 New Products Guide

Mc2 Audio E 45

The E 45 is a 2-channel lightweight switchmode power amplifier rated at 2250W into 4 ohms. Weight is under 25 lbs. Product carries a 5 year warranty. Adjustable limiters for speaker protection. AES Booth # 725. Retail: \$4,095. Dist. by Group One Limited. 516/249-8870, www.mc2-audio.co.uk



Signal Processing, Hardware

A Designs REDDI Tube Direct Box

This all-tube direct box finished in fire-engine red features a Combo 1/4-inch/XLR input, balanced XLR output, power switch, LED power indicator, level control knob, ground lift, EIN power connector, metal vented casing, toroid power transformer, custom output transformer and a 6N1P tube. Retail: \$850. AES Booth #602. 818/716-4153, www.adesignsaudio.com

API 550A

The 550A is a true replica of Saul Walker's original discrete, three-band EQ; the 550A uses bridge-T filters (RC networks), two of API's 2520 discrete amp modules and 1:3 output transformer. All three frequency bands overlap, with up to 12 dB of boost/cut in 2dB steps, selectable peak/shelving HF/LF bands and a switchable, 12dB/octave, 50Hz to 15kHz bandpass filter. AES Booth #402. 301/776-7879, www.apiaudio.com

BBE Sound Max-X3

This quality stereo 2-way (or 3-way mono) crossover features BBE's 482i Sonic Maximizer, 24dB/octave state-variable Linkwitz-Riley filters and a 30Hz low-cut (HPF) on each channel to remove unwanted low frequencies. Retail: \$329.99.

BBE Sound MaxCom

Dual-channel compressor/limiter/gate with onboard BBE Sonic Maximizer processor, MaxCom provides transparent compression with full control over the threshold, ratios from 1:1 to infinity:1, variable attack and release times and an "auto" mode. MaxCom's dynamic controls and patented Sonic Maximizer offer a wide palette of dynamic-control options. Retail: \$329.99. 714/897-6766, www.bbesound.com

CEDAR Cambridge V. 2

We will show the latest incarnation of the CEDAR Cambridge audio restoration system. This will include numerous enhancements that will be of interest in environments such as national libraries and archives, as well as to the system's users in the fields of CD and DVD remastering, post, broadcast and audio forensic investigation. AES Booth #818. In England: +44 1223/881771, www.cedaraudio.com



Crest Audio MLM-2 and MLS-2

The MLM-2 and stereo MLS-2 studio microphone and line input intelligibility processors. The units are designed to optimize audio signals in recording, broadcasting and live applications, and offer an EQ and dynamics section and the SmarTube processor that adds tunable upper frequency harmonics to the program material.

Crest STP-1

The STP-1 is a 2-channel mic/line processor and channel strip. Each channel has four functional sections: the mic and line pre-amp; a four-band parametric EQ; output level, pan, meter and sum controls; and a SmarTube™ sound processor, a solid state processing technology that replicates the natural warmth of vacuum tubes to provide a distinct sonic edge for your mix. 201/909-8700, www.crestaudio.com

Dan Dugan Model D-3 Automatic Mixing Controller

The Model D-3 Automatic Mixing Controller is the next evolution in the famous line of Dugan live mic processors. The 8-channel DSP processor unit patches into a digital console's AES I/O ports. A separate ergonomic control panel connects with a single cable. The Dugan-patented algorithms eliminate missed cues on live mics without gating. The system maintains a natural ambience, doesn't chop off the beginnings of words and doesn't cut off talkers who go off-mic. Retail: \$12,200. AES Booth #627. 415/821-9776, www.dandugan.com

Demeter VTMP-2c

A hand-built, limited-production update of the Classic VTMP-2 2-channel tube preamp, the VTMP-2c retains the sound of the original but has many updates such as continuously variable gain, new Jensen mic input transformers, active balanced outputs, two-stage low cut, 10 to 65 dB of gain range and 10-segment LED VU meters. Each unit is hand-signed and numbered by the designer, James Demeter. 818/994-7658, www.demeteramps.com

Dolby Digital Plus for HD Packaged Media

Dolby Digital Plus for high-definition packaged media offers the highest performance/quality possible while simultaneously providing flexibility for additional discrete channel coverage extending beyond the traditional 5.1-channel model, such as 7.1 and higher. These high bit-rate extensions are also designed specifically to ensure full playback compatibility with existing external Dolby Digital 5.1 decoders in home A/V receivers. It's also ideal for limited-bandwidth environments found in HD media applications such as interactive delivery of audio content and applications using an enhanced feature package. AES Booth #1402. 415/645-5176, www.dolby.com



Drawmer 1968ME

Two-channel "Mercenary Edition" compressor with FET circuitry on the input stage for quick attack and tube circuitry on the make-up gain stage for warmth. Other features include sidechain listen and "Big" HPF switch. Retail: \$2,150. AES Booth #602.

Drawmer DSL424

Two channels of compression, two channels of gate in one rackspace. Retail: \$1,365. Dist. by TransAudio Group. 702/365-5155, www.transaudiogroup.com

Empirical Labs Lil FrEQ

Multiband parametric dynamic equalizer with SuperSection, three outputs including Class-A transformer output for vintage-style soft saturation and "beefy" low end. Retail: \$1,799. AES Booth #721. 973/541-9447, www.empiricalabs.com



Eventide H8000A

The H8000A, Eventide's new alternate version of its H8000 flagship, offers four channels of analog I/O (instead of two with the H8000). It also offers four channels of AES/EBU (instead of eight with the H8000), and ADAT, S/PDIF digital I/O and word clock which are standard on both. The H8000A, like the H8000, boasts more processing power than the Orville™, and features

nearly 1,500 preset algorithms. As with the H8000, Monolithic Tandem™ allows both DSPs to operate together, facilitating large complex algorithms including 5.1 reverb and effects up to 96 kHz. Retail: \$5,995. AES Booth #1015. www.eventide.com



Groove Tubes Glory Comp

This true all-tube compressor uses seven selected vacuum tubes. Compression ratios from 1:1 to 10:1 are available, as are attack, release and compression Threshold controls, with release times from 10 ms to two seconds, and logarithmic or linear release. Like ViPRE, the Glory Comp uses high-quality ceramic multideck switches (instead of cheaper pots) for easily repeatable settings. Features: custom, backlit VU meter displays in seven different modes; built-in sidechain EQ with adjustable LF/HF filters, using internal or external sidechain source; and a unique Glory knob, which affects second-order harmonics—perfect for bringing out a vocal or a solo instrument in a mix. Retail: \$2,999. AES Booth #625. 818/361-4500, www.groovetubes.com



Korg TP-2 Tube Preamp/Compressor

Korg's TP-2 is a compact dual-tube preamp/DI with optical compression and coaxial/optical S/PDIF out. Also available as a user-installable option (TPB-2) for Korg's D32XD and D16XD recorders, both versions feature twin 12AX7 tubes, XLR and 1/4-inch TRS inputs, stereo linking and phantom power/phase/low-cut/hi-Z switches on each channel. 516/333-9100, www.korg.com



Lake Mesa Quad EQ

This new 4x4 digital matrix processor is designed for use in stand-alone or networked concert sound, recording, mastering and broadcasting. Incorporating the same advanced DSP-based EQ, delay and dynamics processing tools found in the Lake Contour digital speaker processor, the Lake Mesa Quad EQ™ is also supported by the Lake Controller software in its latest release, V. 3.0. In addition to shelving and parametric filters, all four discrete channels of the Lake Mesa Quad EQ feature Lake's powerful EQ overlay processing, which may be configured to provide both Lake Mesa EQ parametric overlays and Ideal Graphic EQ™ overlays according to user needs. Retail: \$4,999. AES Booth #1509. 415/861-1147, www.lake.com

Manifold Labs Plugzilla Surround Edition

Stand-alone, rack-mount, plug-in player with eight channels of audio I/O. Retail: \$4,999. AES Booth #1330. 609/497-0328, www.plugzilla.com



MediaMatrix NION

NION (pronounced like neon), the Networkable Input Output Node is a programmable digital audio processing node designed for pro commercial audio. NION's internal processing core supports MediaMatrix's scalable I/O architecture, a modular I/O scheme with optional plug-in cards for maximum versatility and four module bays for 32 simultaneous analog channels, while the a CobraNet port provides another 64 channels for a total of 96. NION's new embedded Linux architecture offers efficient and robust performance. A new 512-channel digital audio bus allows seamless stacking and redundant, self-healing configurations. Software support includes a new Windows-based interface that works with multiple nodes across an Ethernet network. 601/483-9548, <http://mm.peavey.com>

Mercury Recording M66

All-tube/custom transformer hand-built limiting amplifier designed after the legendary Fairchild 660. Retail: \$7,299.

Mercury Recording Pultec-Style EQs

At AES, Mercury will show a full line of new equalizers based on the classic Pultec designs. These include the EQ H (\$2,399), EQ P (\$2,899) and the EQ1 (\$2,650). All are hand-built, all-tube designs with custom transformers. AES Booth #602. Dist. by TransAudio Group. 702/365-5155, www.transaudiogroup.com



Oram Hi-Def 4T Memory EQ

Digital developments from Oram is a new division of the Alphabet Belmont Group. Its first product, the Hi-Def 4T Memory EQ, will be a digitally controlled analog equalizer with gain control with multiple memories. The ongoing development program will involve this technology and result in a console with total reset potential. Retail: \$3,591. AES Booth #543. In England: +44 (1474) 815300, www.oram.co.uk

Radial J33 Phono-DI

This combination stereo RIAA phono preamp/direct box lets a turntable connect directly to a mic pre or mixer. The J33 offers choice of stereo RCA, 3.5mm and 1/4-inch TRS 10dB outputs along with 600-ohm mic-level XLRs. Powered with 48V phantom or DC supply, the J33 is ideal for sampling, archiving, recording scratch performances and disc jockeys that prefer to mix using professional mixing consoles. Retail: \$200 USD. AES Booth #1628. 604/942-1001, www.radialeng.com

Sabine Feedback Exterminator Update

Since Sabine first invented digital feedback control in 1991, FBX Feedback Exterminators have set the standard for transparent and reliable automatic feedback control. Now, Sabine announces the next generation of automatic feedback controllers: the FBX1200 and FBX2400, now with SMARTFilter™ technology. Retail: \$499.95. AES Booth #301. 386/418-2000, www.sabine.com

Sage Electronics D.I. Joe

The D.I. Joe™ active direct box is designed to optimize transfers of audio signals from passive magnetic and piezo-type pickups (or keyboards) to a balanced low-Z output. Features: discrete Class-A input that eliminates loading signal sources, dual 9-Volt battery supply for superior headroom and a 10 to 50k Hz (±1dB) response. Retail: \$179 USD. In Canada: 613/228-0449, www.sageelectronics.com



Thermionic Culture Culture

Stereo tube distortion unit free from solid-state additives. Offers odd and even harmonics, or a combination of both. Variable input drive and bias controls allows gentle warming of sounds or a noise like a 200W guitar stack with the speakers slashed. Output and filter controls, overdrive switch, Ma meters for precise channel alignment, and high and low I/O connectors. AES Booth #426. In England: +44 1440-785843, www.thermioniculture.co.uk

Tonelux EQ4P Constant Energy Parametric

The EQ4P is a discrete parametric EQ with some very unique features. The panel has no Q control. The filter Q control is in relation to the boost and cut control, and uses a musically pleasing Constant Energy Curve that keeps the bandwidth wider at lower boost or cut levels and becomes narrow at higher boost or cut levels. The curve is identical to many classic EQs. The HF band has a shelving control instead of a Peak control. Retail: \$895. AES Booth #721. 703/730-8800, www.tonelux.com

Universal Audio LA-610 Classic Tube Recording Channel

The LA-610 brings legendary vintage "all-tube" technology into a modern channel at a groundbreaking price. The LA-610 combines the 610 tube preamp and EQ based on the legendary console modules developed by Bill Putnam, with the compression circuit from the LA-2A optical compressor. This electro-optical detector is the very heart and soul and identical gain control element in the Teletronix LA-2A. Retail: \$1,749. AES Booth #314. 866/823-1176, www.uaudio.com

SIGNAL PROCESSING, SOFTWARE



AmpliTube Live

Now available for PC, AmpliTube Live is the best-sounding stand-alone virtual guitar amp and FX modeling for Mac OS X. A plug-and-play select choice of excellent FX modeling software including three amps, three cabinets, four effects, chromatic tuner and 128 presets, and is MIDI-controllable. Also includes the AmpliTube LE plug-in. Format: stand-alone Mac OS X and Windows XP. Retail: \$99. AES Booth #942. Dist. by IK Multimedia. 954/846-9101, www.ikmultimedia.com, www.amplitube.com



Antares Auto-Tune 4 TDM PC

The next generation of the worldwide standard in professional pitch correction. Now available for Pro Tools TDM on the Windows XP platform. Retail: \$599. 831/461-7800, www.antarestech.com

BIAS SoundSoap 2.0

SoundSoap 2.0 is a new version of BIAS' "one-click" noise-reduction solution. Version 2.0 adds a click and crackle removal slider and an enhancement slider to restore frequencies that may have been lost during the noise-reduction process. Other features include 50/60Hz hum removal, rumble removal, preserve voice and broadband noise reduction. Sound Soap 2.0 is available in RTAS, VST, DirectX and AudioUnits plug-in formats, and also ships with a separate stand-alone application. AES Booth #432. 707/782-1872, www.bias-inc.com

Cube-Tec DDP 3.0 Premaster

DDP-Solution 3.0 is a software solution for the creation of DDP media based on the DDP (Disc Description Protocol) and DCA industry standards. The DDP file can be written to external drives such as 8mm Exabyte tape or directly to a hard drive using Steinberg's WaveLab 5.0 audio editing software. DDP-Solution is compatible with Sonic Solutions, SADI, DCA and other systems. Retail: \$1,695. Dist. by Sascom. 905/469-8080, www.cube-tec.com

Eventide H3000 Band Delays

The one-and-only H3000 Band Delays algorithm TDM plug-in for Mac. Band Delays is eight voices of tempo-based filtered delays with pan controls. All eight filters are fully parametric with configurable low/band/high pass or shelving choices and a bandwidth control. Band Delays deploys an extensive modulation section offering 19 wave shapes as well as MIDI control, and includes all of the original presets derived from this algorithm found in the H3000. AES Booth #1015. Retail: \$395. 201/641-1200, www.eventide.com

Levelground Media CrunchEQ 1.0

The CrunchEQ 1.0 AudioUnits plug-in provides the unique combination of a 10-band graphic EQ with a 5-band parametric equalizer. Further, its Crunch feature applies complex mild distortion algorithms to the audio signal, yielding adjustable "crunch" to the signal. Use CrunchEQ on any audio in which you would use other EQs. With its unique sound, it will be an asset to any project you are working on. Retail: \$59.95.

Levelground Media Fattener 2.0 (AudioUnits)

Fattener "fattens" the middle and low-end audio of tracks or mixes that were recorded with a thin sound or that need an extra boost to come to the front of your mix. With Fattener 2, we've added more functionality to allow users more control in tweaking the output effect(s) to meet the demands for specific projects. With its easy-to-use design and high-precision algorithms, Fattener allows users to add subtle or drastic sound coloration to their projects. Retail: \$59.95. www.levelgroundmedia.com

PSP Nitro V. 1.01

This multimode filter plug-in (VST/DirectX and RTAS for PC; VST, RTAS and AudioUnits for Mac OS X) offers many filter types derived from analog prototypes in addition to other useful processing blocks such as phaser, bit crusher/down-sampler, wave shaper and interpolated delay blocks. These can be connected to each other using virtually any routing scheme. The advanced control signal generators are capable of modulating most of the processing parameters, making this plug-in an essential tool for sound design and experimental purposes. Retail: \$149.

PSP ProZilla 1.0

PSP ProZilla is a unique set of PSP plug-ins dedicated for Plugzilla, the ultimate hardware VST plug-in player. All PSP plug-ins use 64-bit floating-point computations and other techniques to provide excellent processing quality. The set comprises PSP AutoComp, PSP EasyLimit, PSP MasterQ, PSP Mix-Pressor, PSP MixSaturator, PSP MS, PSP StereoController, PSP StereoEnhancer and the award-winning PSP VintageWarmer. Retail: \$599. AES Booth #1634. In Poland: +48 (601) 963173, www.PSPAudioware.com

Mix AES 2004 New Products Guide

Sony Oxford Reverb Plug-In

The Oxford Reverb plug-in is a highly flexible reverberation generator, combining the highest technical and sonic performance with superb artistic and creative facilities. Powerful user control of all parameters gives the Oxford Reverb the flexibility to build virtual spaces on artistic need from dry reflection ambiances, room and hall simulations and sound effects to expansive reverberant spaces with broad textures and spatial character. Compatible with ProTools HD Accel, HD and LE platforms & Mac OS 9. AES Booth #1210. 800/686-SONY, www.sonyplugins.com

Sound Toys EchoBoy

The only Pro Echo for Pro Tools. Effortlessly create tempo-locked drum delays with thick saturation, slapback delays that rock on guitars and lush echoes that transform a lacking performance. EchoBoy puts you in control of tape saturation, wobble, ducking and cut, as well as full control over the echo rhythm pattern. Lock-to-MIDI clock or tap in the tempo and EchoBoy will groove with your music. Available in mono or stereo delay configurations. Ping-Pong, Hard Pan or completely independent stereo echo rhythms with variable tap counts. Analog distortion mode for added warmth or dirt. Zero to four-second delay with zero-to-infinite repeats. Retail: \$495. AES Booth #913. 802/951-9700, www.soundtoys.com

TC Electronic MD3

Stereo Mastering for PowerCore

The MD3 Stereo Mastering package for PowerCore brings pro production and mastering tools previously only available in System 6000 to the realm of DAWs, and integrates smoothly with VST- or AudioUnits-compatible applications for music and post-production, with two first-class algorithms: MD3 Multiband Dynamics and BrickWall Limiter. Retail: \$995.

TC Electronic PowerCore Compact

PowerCore Compact is the newest member of the PowerCore family. With easy FireWire connectivity for laptops and VST and AudioUnits compatibility, Compact is the signal processing solution for artists and studios on the move. Right out of the box, PowerCore Compact includes Tubifex, Mega Reverb, Classic Verb, Vintage CL, PowerCore O1 (synth), EQSat Custom, Voice Strip, Chorus/Delay, 24/7-C limiting amp, Character, Filtrid and Master X3. Retail: \$995. AES Booth #326, Demo Room 210. 805/665-4900, www.tcelectronic.com



Trillium Lane TL Space TDM Edition

This ultimate Pro Tools reverb offers full control of reverb parameters in mono, stereo and surround formats. It's also the first Pro Tools plug-in to harness up to eight Pro Tools|HD DSP engines in parallel to deliver smooth, low-latency convolution processing. Used with Pro Tools|HD Accel systems, TL Space provides zero latency processing essential for live studio work. Extensive automation features are designed specifically for post applications. TL Space TDM Edition supports TDM, HTDM, RTAS and AudioSuite processing. Retail: \$995. 206/202-5227, www.tllabs.com



Unique Recording Software BLT EQ

The URS BLT is our introductory 2-band program EQ for the Pro Tools platform. We've selected our favorite bass and treble curves for quick track or mix sweetening. Just add a little BLT for taste. The URS BLT EQ features a bass band of 100Hz shelving with boost and attenuation, a Level control to adjust the right amount of loudness and a treble band of 5kHz shelving with boost and attenuation. Retail: \$99, TDM; and RTAS, \$49.

Unique Recording Software FullTec Program EQ

The URS FullTec is our 5-band superprogram EQ concept for the Pro Tools platform. The URS FullTec EQ features one band of low-frequency shelving with simultaneous boost and attenuation and three bands of peak equalization, each band with boost and attenuation and variable Q. The fifth band features high-frequency shelving with simultaneous boost and attenuation. Retail: \$499, TDM; and \$249.99, RTAS. The URS FullTec is included in The URS Everything EQ Bundle Version 3.0. www.ursplugins.com

Waves IR-1 Convolution Parametric Reverb Version 2

Version 2 of Waves' IR-1 Convolution Parametric Reverb now lets users capture their own impulse response samples from reverberant acoustic spaces and hardware devices. The first convolution-based reverb to offer control using familiar parameters (such as pre-delay, room size, density, etc.), users can radically customize their own captured samples. IR-1 comes with an extensive library of samples and presets that re-create the sonic environment of more than 60 carefully sampled real acoustic spaces and more than 60 samples and presets created by classic hardware devices. Retail: \$1,200, or \$800 native.

Waves L3 Multiband Peak Limiter

The world's first multiband auto-summing peak limiter, L3 differs from conventional wide-band and multiband limiters by using linear phase crossover filters to divide the audio spectrum into five bands. Its PLMixer™ then uses psycho-acoustic criteria to intelligently decide how much attenuation to apply to each band so that all available headroom is used. Intermodulation is minimized and overall loudness is maximized, while brick-wall limiting is still maintained—while retaining the simplicity of a single master threshold control. The L3 comes in two versions: the Multimaximizer™ and the Ultramaximizer™, which offers limited controls. Retail: \$1,200, or \$600 native. AES Booth #636. 865/909-9200, www.waves.com

Sync, Control & Automation



Coleman Audio SR5.1MKII

The SR5.1MKII is a 5.1 surround level control with fold down to stereo/fold down to left, right, center. Individual mutes allow isolation of speakers & individual trims allow fine tuning of the level to each speaker. All trims are accessible from the front panel. Combo jacks on the inputs allow connection with either stereo 1/4-inch plugs or XLR connectors. All inputs/outputs are balanced. AES Booth # 618. Retail: \$1,100. 516/334-7109, www.colemanaudio.com



Drawer D Clock

Dual-input/20-output word clock distributor with zero latency loop-through via AES or BNC inputs. Sample rate measurement accuracy to 2 ppm. Retail: \$950. AES Booth #602. Dist. by TransAudio Group. 702/365-5155, www.transaudiogroup.com

JLCooper MCS-QuickShot

KeyShot features 10 remotely legible, multicolor, backlit LCD push-button switches. The LCDs can display 36x24 pixel bitmaps or three lines of text (six characters per line), or a combination of text, graphic symbols or animation. This enables a customized user interface that changes to suit the task at hand to help users work faster and with fewer mistakes. Other controls include 13 lighted function keys and a rotary encoder. The KeyShot is capable of accepting RS-232, RS-422, USB or Ethernet interface cards. Retail: \$1,499. 310/322-9990, www.jlcooper.com



PreSonus Central Station

This studio monitoring interface features three sets of stereo analog inputs for input sources such as DAW, mixer, CD/DAT/tape player or keyboards/samplers. Two stereo analog inputs feature TRS balanced and the third stereo input features RCA inputs with trim control. Also included are two digital inputs via S/PDIF or Toslink providing D/A conversion up to 24-bit/192kHz for monitoring DAW and CD/DAT output. Three sets of monitor outputs have passive trim controls. The monitoring section also provides mute, dim and mono switches. Cue outs can feed headphone amps, and there's a separate stereo main line-level out. Retail: \$699.96. AES Booth #1413. 225/216-7887, www.presonus.com



SPL Surround Monitor Controller SMC

The SMC 2489 provides one-point stereo and 5.1 volume control with source and speaker management. This year's product update to model 2489 comes with a new front design, including a huge aluminum volume control knob. A fully analog design for straight, system-independent monitoring and a comfortable switching matrix constitute a nifty DAW extension for essentially any audio application from surround and stereo production over DVD-V/A, SACD and DTS authoring to movie, video or game post-production. Retail \$799. AES Booth #1243. 951/272-3465, www.spl-usa.com

TEST EQUIPMENT

ATI Sound Pressure Level Meter

The SLM-100 SPL meter features a large, easy-to-read analog meter movement for quick and accurate measurements in factories, schools, offices and airports, or for checking acoustics of studios, auditoriums and home theater installs. It has a wide frequency response of 32 to 10k Hz and is equipped to make both A- and C-weighted measurements with peak or averaging response. The SLM-100 is also equipped with an SPL range selector, calibration control and a test signal output via an RCA jack. Retail: \$79. AES Booth #422. 215/443-0330, www.atiaudio.com



NTI Acoustilyzer

Handheld acoustics and audio analyzer for comprehensive acoustical and audio measurements, including speech intelligibility. Together with the optional MiniSPL measurement microphone, the AL1 offers high-resolution FFT with zoom, sound level meter, RTA with real-time SPL and LEQ, RT60 reverb time measurements, delay time, optional STI-PA speech intelligibility, level, frequency, THD+N and polarity in one palmtop device, as well as a standard PC interface for offloading and processing data. The ideal test tool for any system, installation or event monitoring need. Retail: \$904.

NTI Digilyzer DL1

Compact and effective handheld digital audio analyzer now even more comprehensive! Measures embedded audio and digital carrier for AES/EBU, S/PDIF and ADAT signals from 32k to 96k sampling rates. Includes both headphone output and built-in speaker driven by internal D/A for conversion and monitoring of the digital audio signals anywhere you are! Also checks status bits, reports other channel information, logs errors and functions also as a combined VU and PPM level meter. Retail: \$1,499. AES Booth #1326. 503/684-7050, www.nt-instruments.com

TerraSonde Audio Toolbox Trinity: Color

The color version of the Audio Toolbox Trinity Series builds on the monochrome version while adding many unique features. These include dual phantom-powered mic preamps, balanced/unbalanced hardware input/outputs, integrated USB preamp, new powerful audio and acoustic analysis tools, digital card slot for real-time recording of uncompressed digital audio, S/PDIF and Toslink outs, and SoundCore™ firmware package with a full complement of acoustic analysis and audio tools. The color Trinity has a transfective 320x200 color LCD screen, Type-2 measurement mic, hard-shell case, expanded firmware tools and a newly designed lithium-ion battery system. Retail: \$2,399.

TerraSonde Audio Toolbox Trinity: Monochrome

The Trinity: Monochrome puts the power of the Trinity: Color system in a less-expensive, \$1,399 unit. AES Booth #1041. 303/545-5848, www.TerraSonde.com

Wireless Products



Audix RAD-360

The Audix RAD-360 is a frequency-agile UHF wireless microphone system with 193 selectable frequencies and dual-tuner, true-diversity receivers. Operation in the UHF band between

638 to 806 MHz. The RAD-360 is designed for a wide range of professional applications including live performances, regional sound companies, fixed installations, corporate meetings and events, and houses of worship. Retail: \$799. AES Booth #319. 503/682-6933, www.audixusa.com



Lectrosonics Wireless Test/Measurement System

Lectrosonics will unveil a wireless test and measurement system using its exclusive Digital Hybrid technology. The plug-on-type transmitter, model UH400TM, provides phantom power at 5, 15 or 48 volts to run any test microphone with 100mW transmission power for exceptional range. The receiver, model R400, uses advanced diversity technology for rock-solid reception. Because the signal is digitally encoded, there is no compander in the system, thus the audio is equivalent to a 24-bit, 88.2kHz digital signal. This allows quick, large-scale system measurement without any cables. System response is 15 Hz to 20k Hz, ± 0.5 dB. AES Booth #202. 505/892-4501, www.lectrosonics.com

Sabine SW70-H1 Series Handhelds

Sabine has enhanced the performance of its 2.4GHz wireless systems with new handheld transmitters, new lavalier and headworn mics, software and firmware improvements and a new FBX Feedback Exterminator™ algorithm. The new SW70-H1 handhelds are 30% lighter (using two AA instead of a C battery), a larger LCD viewing area and expanded dynamic range. The SW70-H13 has the Audix OM3 capsule; the SW70-H15 uses the OM5. Designed by Audio-Technica, the SW731L-TA4 cardioid lavalier mic and the SW773W-TA cardioid headworn mic have a warm sound and excellent gain before feedback. AES Booth #301. 386/418-2000, www.sabine.com

Shure SLX Wireless Systems

Suited for installed sound applications and working bands, Shure's SLX Wireless Systems deliver superior audio quality in an easy-to-use, quickly configurable package. Offering Shure's patented Audio Reference Companding technology, along with an innovative setup complete with automatic synchronization, SLX supports up to 20 compatible systems (area-dependent). The system, which sits in between Shure's Performance Gear™ Wireless and ULX™ Wireless lines, is a logical choice for houses of worship, corporate boardrooms, lecture halls and portable road cases. Retail: \$850. AES Booth #1202. 847/600-2000, www.shure.com

Trantec S6001

Trantec will show the S6001 single-channel wireless receiver mounted in a half-space rackmount format. The S6002 is a 2-channel wireless receiver. Retail: \$2,500. AES Booth #725. Dist. by Group One Ltd. 516/249-1399, www.trantec.co.uk



Zaxcom Digital Wireless With Neumann KK-105 S Head

The Zaxcom handheld digital wireless transmitter is now capable of working with the Neumann KK-105 S capsule head. Together, they provide a sound so superior it can only be matched by a hardwired microphone. Retail: \$4,000. AES Booth #1140. 973/835-5000, www.zaxcom.com

Other Products

Argosy Rack 'n Roll H-10

The newest Rack 'n Roll equipment cart, the H-10 puts rack gear within easy reach. The low-profile unit will tuck under the armrest of your Argosy console or workstation. Use a pair to create a cockpit feeling and surround yourself with vital controls. Limited-time 10th anniversary pricing: \$299.95, including S+H within the USA. 573/348-3333, www.argosyconsole.com

Equation Audio RP-20 Headphones

The RP-20 is a set of wideband (10Hz to 22kHz; ± 3 dB), circumaural studio headphones. Features: high-output, 56mm neodymium transducers; swivel earcups with user-replaceable cushions; a 9.8-foot, braided-jacket, tangle-free cable; and 32-ohm impedance. Retail: \$139. 615/627-1880, www.equationaudio.com

Fender Passport P-80

The P-80 is perfect for both public speaking where the power of much larger systems is not needed. Features: mono 75-watt amplifier, two mic channels and one line channel. The Passport P-80 comes with one Fender P-51 mic. Retail: \$599.99. 480/596-7296, www.fenderaudio.com

Grace Design m902 Reference Headphone Amplifier

Reference headphone amplifier, with 24bit/192kHz DAC, 6 selectable inputs (digital and analog) and an additional variable speaker/ studio monitor output. AES Booth #1041. 303/443-7454, www.gracedesign.com

Little Labs STD Mercenary Edition Instrument Cable Extender

The STD allows you to use long microphone cables or microphone tie lines to extend your guitar or any instrument cable without the loss of tone and increase of noise associated with long instrument cable runs. It also has two outputs for splitting between two amps or between an amp and a direct injection box, with a selectable ground lift on one output to eliminate ground loop problems. AES Booth #620. Retail: \$150. 323/851-6860, www.littlelabs.com

Road Ready Cases RREMX500012

The RREMX500012 mixer case is built for the road and high-stress situations. The case has a heavy-duty, removable, latchable cover with Road Ready's No Pressure design to protect your mixer controls and a unique low profile base design that allows you to access your mixer's rear connection panel without removing your mixer from the case. Retail: \$199.99. 310/767-1772, www.roadreadycases.com

Ultimate Ears UE-5c Ear Monitors

The UE-5c are custom-made in-ear monitors with one low-frequency and one high-frequency speaker in each ear providing detail and clarity that make prior listening experiences seem anemic by comparison. Retail: \$550. 702/263-7805, www.ulimateears.com

Ultrasonics HFI-550 Headphones

Ideal for drummers, bass players and DJs, the HFI-550 is a foldable, closed-back headphone offering a tight powerful bass, extreme isolation and an impressive power spectrum. Like the HFI-650, the HFI-550 is also a circumaural headphone but has a more rugged (50mm Mylar) transducer with a lower impedance and improved sensitivity (SPL 103dB). Frequency response 10Hz-22kHz and choice of a straight or coiled 3m cable. Retail: \$189. AES Booth #626. 615/599-4719, www.ultrasonusa.com

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L.A. GRAPEVINE

by Maureen Droney

As the music industry continues its wrenching changes, so do commercial recording studios. Amazingly, however, the L.A. recording scene during the past year has, for the most part, dug in for the long haul. Surprisingly few studios have actually thrown in the towel, although several have downsized, made major changes or gone on the market. Like anything else, all studios are for sale for the right price, and currently many in Los Angeles are for sale at prices that a few short years ago would have been

PHOTO: MAUREEN DRONEY



Ellis Sorkin of Studio Referral Service sees projects moving back into commercial studios.

thought a bargain.

Those who have closed the doors include Music Grinder's two-room Hollywood facility, Santa Monica's Red Zone, and in North Hollywood, the one-room SSL-equipped Master Control. The Enterprise in Burbank has closed E2, its across-the-street annex, and sold the property to a post-production company. As I reported in May's column, Larrabee Studios, taking advantage of L.A.'s red-hot real estate market, sold the building on Santa Monica Boulevard in West Hollywood that housed the original Larrabee.

Business as usual is ongoing at Larrabee

North and East. Cello Studios in Hollywood continues negotiations with new buyers; plans include changing the name of the complex back to its historic original—Western Recorders. And in Silverlake, the multi-room Soundcastle has been sold to producer Josh Abraham (Velvet Revolver, Staind, Limp Bizkit), who will move his Pulse Recording headquarters into Studio I. Soundcastle owner Buddy King is leasing the facility's Studio II from Abraham as headquarters for his new endeavor, Soundcastle New Media.

Although the equipment sales division at

Westlake Audio is in transition, it's also business as usual at Westlake's seven studios. At press time, a buyout of the sales division by another pro audio dealer was in the works. The studios, VP Steve Burdick assures us, are holding their own with regular clients including Josh Groban, Maroon 5 and Latin sensation La Ley, as well as Westlake's busy indie artist development program.

In the Winnetka area of the Valley, Rumblo Recorders—sold some time ago by its original owner, Darryl Dragon (of Captain & Tennille fame)—now has another new owner. Persian singer/producer Mory Barjesteh,

—CONTINUED ON PAGE 192

NASHVILLE SKYLINE

by Rick Clark

When I first moved to Nashville almost 10 years ago, one of the first things I learned is that the region is loaded with all kinds of non-country music folks hiding away in hollows, farms and subdivisions outside the city. Take Michael Wagener, for example. His engineering and production credits include Ozzy Osbourne, Skid Row, Metallica, X, Megadeth and countless other headbangers. Not exactly the type of guy you'd expect to find on a beautiful chunk of rural acreage east of Nashville.

Unlike many folks who have been working day-in and day-out behind a console for years, Wagener still seems truly excited to record and produce music. It's like watching a kid at play. And his studio, WireWorld, is a gearhead's dream.

Most recently, Wagener launched an educational service that he calls MOAW, Mother Of All Workshops. "I kept getting calls from musicians I had worked with trying to find out how to mike a cabinet or route something in their mixer," says Wagener. "A lot of musicians had become studio owners and their own producers and now were looking to find out about the recording producing process."

That inspired Wagener to start his production workshops at WireWorld. During a period of nine days, engineers and producers from all levels of experience record and mix one song under Wagener's supervision. The sessions go into detail about room acoustics, placement of instruments, microphone choice and placement, gain staging, outboard gear selection, console automation and plenty more. The participants learn different recording techniques and tricks of the trade that Wagener has collected during his 33 years in the business.

In one recent MOAW workshop, Wagener teamed up with the always colorful gadfly Fletcher from Mercenary Audio—himself a 30-year audio and recording veteran. Fletcher brought along a nice selection of high end audio gear from his store in Foxboro, Mass. Instead of selecting a local rock band, Wagener invited rockers King's X (whom he met at a concert at Nashville's Exit/In) to participate. This par-

NEW YORK METRO

by David Weiss

ticular workshop was a two-stage affair: Part one focused on tracking and overdubs and part two was on mixing. King's X managed to get two completed songs and two basic tracks out of a five-day session.

"It is a pleasure to work with such gifted musicians," says Wagener. "A workshop is not the most creative environment for musicians because it's meant for engineers and producers, but Doug [Pinnick, bass/vocals], Ty [Tabor, guitar/vocals] and Jerry [Gaskill, drummer/vocals] handled the situation absolutely professionally and didn't let the questions from the workshop guests disturb their workflow."

The first track was recorded with a traditional mic setup inside the WireWorld recording room. "Fletcher did an amazing job at tuning the studio's drums—they never sounded so good before," says Wagener, "which goes to show that no amount of gear can replace experience in recording."

Tabor's guitars were miked with a Royer R-121 on each cabinet through the Chandler TG-2 mic pre and the Crane Song HEDD 192 converter/tape emulator. Wagener aligned the microphones in front of the cabinet with pink noise to find the sweet spot and phase-align the mics.

—CONTINUED ON PAGE 195

From left: Mercenary Audio's Fletcher, Michael Wagener, Kings X bassist Doug Pinnick, guitarist Ty Tabor and drummer Jerry Gaskill

How does one of the ultimate small-studio applications, Propellerhead's Reason, cross paths with Avatar's Studio A, one of New York City's ultimate big rooms? By putting together a Reason ReFill sample library with true tone.

For New York City-based producer and keyboard fanatic Chris Griffin (www.syntheticmess.com), the path to creating M-Audio's new ProSessions Premium and Premium Refills Rhodes, Wurly and Clay was paved with a need to hear things as he knew they should sound.

"I started sampling out of necessity," he says. "I know what real instruments do to a mix, and if you understand how a keyboard like a Rhodes works and sits in a track, pretty soon your samples start to sound like a real player. There's no way you can get that organic sound from a computer, but with good programming and engineering techniques and knowing what an instrument does in your soul, you can come really, really close."



PHOTO: DAVID WEISS

Keyboard fanatic Chris Griffin of Syntheticmess

Griffin proved himself by creating the majority of the electromechanical Reason ReFill for Propellerhead. After hustling his way onto M-Audio's roster with old-fashioned tenacity, they collaborated on the concept of a Reason ReFill that would bring a small-sized but superior-sounding '70s Rhodes, D6 Clavinet and Wurliizer Model 214 into the soft synth workstation. "The basis was recording the sounds in a great room," Griffin explains. "I wanted that Avatar vibe, that sound, so you immediately feel at home because you've heard it so many times."

As any new sound library offering should, the Rhodes, Clavs & Wurlies collection, with both 24-bit and 16-bit versions, fills a niche. "Reason has graduated from being just a dance tool to a composer's writing tool," says Johnny DeLeon, new media product manager for M-Audio. "We looked at the marketplace and said, 'What is missing in that area?' When we got to the natural and organic instruments, Reason was not necessarily raved about. Chris is a Reason user himself, and we talked about how we can develop a sound library so they would experience it as if they were playing a Triton, Motif or Fantom.

"The concept was looking at Reason as a keyboard and these ReFills would be the expansion boards," DeLeon continues.

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PHOTO: RICK CLARK



MOELLER "TRANSPORTS" MIDAS TO HOME STUDIO

Jens Moeller, MI and concert sound sales rep for ASCON Trading (the Danish distributor for Electro-Voice, Dynacord, Midas and Klark Teknik), can practice what he preaches now that he's installed a Midas Verona 400 into his Copenhagen home studio.

Navigating the 40-channel console wasn't a problem for Moeller, but hauling up four flights of stairs to his small apartment was certainly a challenge. "It was a fair amount of effort but definitely worth the trouble!" he says jokingly, noting that he had to first sell off most of his furniture to make room for the new board and then call on a few favors from his musician friends to get it into his apartment. "I wanted to try it out and finally had the opportunity. I couldn't get it out of my flat, but it sounded so good I bought it." Traditionally used in live settings, Moeller uses the Midas as "kind of a patch board. I have a huge number of keyboards and each one can go into its own channel."

Moeller and bandmate Peter Alfred comprise the electronic duo Transport, a Kraftwerk-influenced collaboration that's two years in the making. "We play all of the instruments ourselves," Moeller says. "It's not a MIDI hell."



INDIE BUZZ

PRESIDENTS PROMISE, LOVE EVERYBODY



L to R: bassist/vocalist Chris Ballew, engineer Joe Nardone, guitarist Dave Dederer, assistant engineer Phillip Carbo and drummer Jason Finn

Just in time for this month's elections, '90s hitmakers Presidents of the United States of America reunited to record the 14 playful guitar-pop gems on *Love Everybody*, released on their own label, PUSA Music. The trio, who parted ways with their former label, Columbia, in 1997, turned down label offers to have more control over their music and keep their business local, according to their Website.

The Seattle-based band recorded basic tracks locally at Egg Studios with studio owner/engineer Conrad Uno (The Posies, Supersuckers) and at Jupiter Studios with Martin Feveyear (Mudhoney). They later used vocalist/bassist Chris Ballew's home studio for overdubs and rough mixes. In between U.S. tour dates, the group stopped by The Cutting Room (New York City) to record a live performance/interview session for online entertainment site UnderGround Online (www.ugo.com).

SONIC WAVE THUNDERS WITH EARTHRIDE

The hills and valleys of Raleigh, N.C., rumbled and quaked this fall when doom-metal band Earthride visited Sonic Wave Studios to record their second release for Southern Lord Records.

The Maryland-based group teamed with Mike Dean, bassist for thrash-metal trailblazers Corrosion of Conformity, who produced and engineered the project. The group recorded on the Sonic Wave's 48-channel Neve 8108 console to MCI analog 24-track and then uploaded tracks into Pro Tools, which will be completed at C.O.C.'s project studio. In between sessions, Dean jetted down to New Orleans, where C.O.C. worked on their own forthcoming release for Sanctuary Records with Galactic drummer Stanton Moore.



L to R: Mike Dean, Earthride bassist Rob Hampshire, drummer Eric Little, guitarist Kyle Vansteinburg and vocalist David Sherman

BEHIND THE GLASS

VANESSA WILLIAMS WRAPS SILVER & GOLD AT SOUND ON SOUND



L to R: Ray Bardani, Vanessa Williams and Rob Mathes

Pop singer Vanessa Williams and producer Rob Mathes chose Sound on Sound Recording (New York City) to record and mix her forthcoming Christmas album, *Silver & Gold*.

According to general manager Chris Bubacz, Williams and crew tracked drums, bass, guitar, keyboards, percussion overdubs and a small choir on Studio A's SSL 9000 J Series board. Engineer Jan Folkson later worked on Williams' vocal overdubs in Studio E. The project was recorded onto Pro Tools|HD and later mixed in Studio A by Ray Bardani.

BEN KWELLER PLAYS WITH GRAVITY



Gazing at the Gravity Neve: producer/engineer/studio owner Doug McBride (left) and Ben Kweller

Melodic rocker Ben Kweller stopped by Gravity Studios (Chicago) to mix five songs for Chicago's Q-101's TBA radio show, promoting his current tour and ATO/RCA release, *On My Way*.

Engineer Doug McBride mixed in Gravity's Studio A, which features a Neve 8058 console, Genelec monitoring, Pro Tools|HD3 and a Studer 827 analog 24-track, among others.

TRACK SHEET

NORTHWEST

Bongo Post & Music (Sacramento, CA) creative director **Bob Smith** recently mixed, edited and scored music for the "Welcome to California" tourism campaign featuring **Gov. Arnold Schwarzenegger** and wife/journalist **Maria Shriver**...In addition to recent projects for **Kenny Wayne Shepherd** and ex-Candlebox singer **Kevin Martin**, producer/Talking Head **Jerry Harrison** recorded and mixed three songs each for local bands **Thistle** and **Wake**. **Karl Derfler** engineered; **Matt Cohen** assisted...At **Outpost Studios** (San Francisco), Spine Films writer/producer **Josh Rosen** finished audio post for two Discovery Channel shows. Studio owner **Dave Nelson** handled sound design and mix for Science Channel and Travel Channel projects...**Mudvayne** wrapped up a six-week stint at **The Plant** (Sausalito, CA) with producer **Dave Fortman**. The **Kronos Quartet** and **Andrea Bocelli** also stopped in...**SF Soundworks** (San Francisco) welcomed **DJ Shadow**, who was tracking songs for a new album with **Count** and studio owner **Tony Espinoza** at the board. The **Count/Shadow** duo also remixed a special "election-related" song for **Radiohead**. **Espinoza** engineered two Apple iTunes originals for **The Cardigans**, which were produced by **Alex Luke**. **Todd Rundgren** manned the SSL J for his own live 5.1 DVD.

SOUTHERN CALIFORNIA

Jessica Simpson finished vocals for her latest Columbia recording at the **Steakhouse Studio** (North Hollywood) with producer **Billy Mann**, and was followed by **Mars Volta** tracking their latest for Universal...**Threshold Sound + Vision** (West L.A.) chief mastering engineer **Stephen Marsh** completed album mastering for E-Factor/Universal group **Mississippi's** latest, *The Book of Life*...**Australian Idol** winner **Guy Sebastian** visited **SoundMoves Studios** (Burbank) to record vocals for his new release with producer **Beau Dozier** and engineer/studio owner **Michael Woodrum**.

SOUTHWEST

Engineer **Steve Chadie** tracked **Ray Price's** new release, *My Old Friend*, at **Willie Nelson's Pedemales Studio** (Austin, TX), and for **Los Lonely Boys** and **Hilary Duff**...**WexTrax Mastering Labs** (McKinney, TX) recently merged with **Maximedia Recording Studios** (Dallas), which hosted tracking sessions with **Jack Ingram** and mixing for **The Tommy Flowers**, produced by **Jack-opiere's Cary Pierce**.

SOUTHEAST

Trouble mixed his debut single, "Do Ya Feel Me," at **Circle House Studios** (Miami) with engineer **Niko Marzouca**...**Clover Productions** (Louisville, KY) received a visit from film starlet **Kirstin Dunst**, who worked with ADR editor **Dan Laurie** for the film *Wimbledon*...Blues rocker **C.C. Adcock** got cookin' in **Kitchen Mastering** (Carrboro, NC), mastering his latest, *The Lafayette Marquis*, with producer **Mike Napolitano** and engineer **Brent Lambert**. The newly reunited **Camper Van Beethoven** mastered *New Roman Times* with Lambert, as did **Indecision**, **Will McFarlane** and **Jeff Himmelman**.



Canadian world music artist/producer **Matthew Lien** (left) celebrates the final mix of *The Journey of Water*, which was commissioned by Taiwan's Yi-Lan county government and features traditional and aboriginal music. Using DPA hydrophones, **Lien** dove underwater to record volcanic events and other sounds. **Michael Harris** (right) engineered the project at **Signature Sound** (San Diego, CA).

MIDWEST

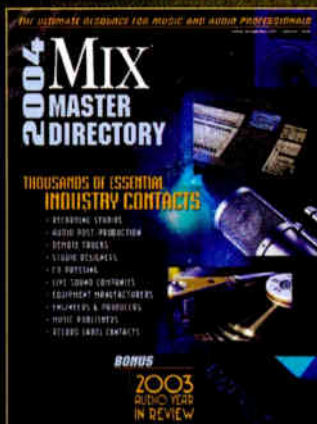
Dennis Tousana finished mixing an album for world/jazz artist **Shannon Harris** at **Chicago Recording Co.** Meanwhile, **Octone Records** artist **Michael Tolcher** worked on new materiel with engineer **Jeff Lane**; the **Musical Outfit** recorded new songs with producer/engineer **Chris Steinmetz**; and guitarist **John Mclean** brought in his septet to record with engineer **John Larson**.

NORTHEAST

MTV2 *Headbanger's Ball* host/Hatebreed singer **Jamey Jasta** stopped by **Trod Nossel** (Wallingford, CT) to add vocals to Brooklyn rap group **MOP's** latest...Producer **Richard Barone** and engineer/studio owner **Al Houghton** wrapped up the new **Tracy Stark** album in **Dubway Studios'** (NYC) Yellow Room, with songstress **Phoebe Snow** pitching in backing vocals on a track. **Chip Taylor** continues work on his album with *The Late Show's* **Anton Fig** on drums and **Mike Presta** at the board...**Allaire Studios** (NYC) helped wrap up **Staind's** latest with producer **David Bottrill** and engineer **Brian Sperber**. Co-producer **Hans Wendi** and engineer **Tom Lazarus** recorded the **Don Byron Trio** for an upcoming Blue Note release. **Longwave** and **The Raveonettes** also recorded new music at Allaire...At **Sound on Sound** (NYC), **Beanie Seigel** tracked and mixed with producers **Bink** and **Boola** and engineer **Doug Wilson**; **Heather Hedley** tracked with **Swizz Beats** and **Brian Lodato**; and **50-Cent** recorded vocals with producer **Kris Kraze** and engineer **Bojan Dugich**...**Sessions@AOL** brought **Ryan Cabrera**, **L.L. Cool J** and others to **Avatar** (NYC) to record with engineers **Greg Thompson** and **Anthony Ruotolo**. Also in recently were **Big Dismal**, **Mars Volta** and production team **Scrap 60**...Producer **Curt Frasca** and engineer **David "Dibs" Shackney** mixed **Samantha Moore's** upcoming single at **The Cutting Room** (NYC). **Head Automatica** and **Tynisha Kelli**, **Old Dirty Bastard**, **Mos Def** and rock band **Orange Park** were also spotted...Engineer/mixer **Kamel Abdo** and producer **Harold Lilly** chose **Quad Studios** (NYC) to record vocals for *American Idol* star **Fantasia Barrino's** upcoming J Records release...**Moby** continues his extended stay at **Loho Studios** (NYC).

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who previously owned Metronome Studios, has re-opened what is now called Rumbo/Metronome. The three-room complex retains all of its previous studios and equipment, as well as its phone number.

No one has a better overview of the L.A. studio scene than Studio Referral Service's Ellis Sorkin. "While the trend toward recording at home has become even more popular," he comments, "I find quite a few people who have turned the corner and want to get out of the house. Whether it's because the family is disruptive to their work or the work is disruptive to their family, or just because they want to separate work from home, there are a lot of artists, producers—and even engineers—trying to lease or buy studios."

Brokering lease and purchase arrangements are a growing part of Sorkin's business, with deals ranging across the board from "little spaces renting for \$1,500 a month to major facilities with tracking rooms, where people can do all of their projects and, when they're not using them, rent them out to others."

In comparison to 2003, Sorkin sees session volume up. Budgets, however, remain down. "If labels are going to be in business, they have to create something to sell. Now they're working with whatever budgets they can put together, generating product as cheaply as they can. Unfortunately, there will be more studios closing before we see a balance between how much work there is versus how many studios we have.

"It's not new that labels are going for the best deal they can get," Sorkin continues. "Some labels do realize the value of having a relationship with a studio where they can be forthright about a project's actual budget. But they do need to assimilate that if they're getting rates down just to get the lowest possible price, eventually they're going to drive everybody out of business. At a certain point, there really *won't* be anywhere to record except in your garage.

"We keep hanging in there," he concludes, "developing alternate streams of income and trying to keep a positive attitude. You've got to run lean and play smart."

One studio model that seems to fit the times is Paramount/Amerycan. Owners Adam Beilenson and Michael Kerns started out with Hollywood's multiroom Paramount Studios in 1987. In 2001, they expanded by acquiring another two-plus rooms at North Hollywood's Amerycan. This year, they purchased Third Stone Recording, also in North Hollywood, with an eye to leasing out its three studios on a long-term basis.

Paramount, with four studios and a mastering suite, has long been known as a breeding ground for new talent, from Macy Gray to the Black Crowes and Ice Cube, and

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both Paramount and Ameraycan host a number of loyal producers, some of whom have taken up residence.

"Because we have so many different kinds of rooms, we work with all kinds of artists," says Kerns. "A lot of clients—producer/engineers like Matt Hyde, Claudio Cueni, Rob Chiarelli, Mike Schlesinger, Jamie Seyberth—started here. We like to think we're nurturing, and we try to cut the right deals with people."

The acquisition of Ameraycan came at an auspicious time, although, in late 2001, it didn't seem that way. Beilenson and Kerns were buying "up" at a time when the industry was turning down. As it worked out, industry conditions and the partners' facilities met in the middle: Good rooms at reasonable rates have positioned them for today's market.

"In 2001, the good times seemed to be ending," recalls Beilenson, "but we still knew we needed to be at a certain level in what we could offer clients. It was obvious that the competition was only going to grow more heated."

Ameraycan now has a producer-in-residence: Tim Palmer, whose recent projects on the main studios' SSL G Plus consoles include Zakk Wylde, Sarah McLachlan, Tears for Fears and Nelly Furtado.

Paramount now boasts three SSLs, in-

cluding an 80-input 9000 J Series. Recent visitors include Brandy, Pink and the Pussycat Dolls featuring Carmen Electra. Other producer/engineer clients include Andy Johns, Neal Avron, Neal Pogue and Matt Hyde. In residence is producer/engineer Brad Haehnel and Macy Gray returned, taking over the facility's production/rehearsal space with producer Damon Elliott.

In Studio E/Paramount Mastering, Bill Dooley (Madonna, Me'Shell NdegéOcello, Mötley Crüe) is heading into his second year as chief engineer. Studio E is now fitted with ADAM ribbon tweeter speakers, Sonic Solutions and a Merging Technologies Pyramix DAW. Dooley's recent projects include a live DVD for New Found Glory, Wylde's latest release, *Hangover Music Vol. 6*, and CDs for DJ Quik, country rock artist Andrew Coleman and the soundtrack for *Vanity Fair*.

Third Stone, located near Ameraycan, was designed by the same architect: Jack Edwards. As we went to press, The Program, the busy film music company owned by L.A. Clipper Elton Brand, was in the process of inking a lease on its second floor, which contains a mix suite and two production rooms. Downstairs is a large 40x50-foot tracking room with iso booths and a large control room. Currently without a console, the studio is available for lease on a long-



Engineer Barry Conley (left) and Zakk Wylde

term or monthly basis; Macy Gray and Gilbey Clarke (ex-Guns N' Roses) are currently in negotiations for the space for use as both a studio and, potentially, a music school devoted to rock.

"Networking is more important than ever," Beilenson concludes, "and I think our clients like the synergistic energy of our studios. With more online music selling, the labels are opening up a little more again. Things seem to be getting better." ■

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Pinnick's bass was recorded through his Mesa Boogie preamp via a Pendulum Quartet II (Mercenary edition) mic pre/EQ/compressor combo. The Quartet II provided all of the processing necessary to record the Mesa amp direct into the Euphonix R1's converters. For the bass DI, the Tab/Funkenwerk V78 mic pre was used, which rounded off the bass' direct signal.

For the second setup, the drum kit was moved outside into the studio parking lot. The main microphones for the outside recording were a pair of Microtech Gefell M-930s with windscreens.

Fletcher had someone tap the snare drum as he walked around in the parking lot with one ear plugged up and searched for a couple of spots where the slap echo between the buildings would work in time with the song. The interesting effect of having no walls other than two buildings separated by about 80 feet allowed them to hang two Josephson 600 Series amplifiers with Microtech Gefell omnidirectional measurement capsules 20 feet in front of the drums. The effect is interestingly large in stereo and mind-bending when mixed in 5.1.

"There is a house on the other side of the WireWorld parking lot that provides a flutter echo between the two buildings," says Fletcher. "The idea was to try to place the kit and the ambience mics where the flutter echo was kind of in time with the song. No hard measurements were made to determine timing; it was a guesstimate after listening to the track."

The drums were then moved back inside the studio for the third variation. This time, minimal miking was used on the drums, employing a Coles 4040 microphone for the front of the kit, a Microtech Gefell M-900 over the center of the kit and a Microtech Gefell 930 aside the kit. Fritz helped a little with this setup, as well.

The King's X song, "Allison," will combine all three miking techniques into one song. The drums were always played to the same guitar, bass and click tracks, so they can be intercut on different parts of the song.

It was an eventful and productive four days, and Wagener and Fletcher decided to add an additional day of recording with King's X. The workshop also revealed a solid chemistry between the band and Wagener, and it became apparent that they should finish the next King's X album together. The band will be back at WireWorld in December to do just that.

To find out more about the production workshops, go to www.michaelwagener.com. For more photos from the MOAW session, go to www.kingsxonline.com/news.html. ■

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"Looking at the staple items in these keyboards, you definitely have to have piano, strings, Rhodes, B3s, Clavs. That's why we looked to Chris—for his history and what it means to understand and just capture the essence of an instrument and then create a ReFill for Reason users and plug it into an NNXT [Reason sampler]. You'll almost feel as if you're playing a true Rhodes and it's affordable—it will street for \$79.95."

Before he could provide those users with all that beautiful inspiration, however, Griffin had to face an incredible amount of perspiration, starting with the recording session in Avatar's famed Studio A. He used a three-pronged approach to capturing the sound—with a DI, miked amps and room miking through Studio A's Neve 8068 into Apogee A/D 8000 converters and then Pro Tools. Griffin and Avatar staff engineer Peter Doris had their priorities firmly in order, starting with the source: "It was more than just recording a Rhodes or a Clavinet," Doris points out. "These are the Rhodes or Clavinet that 99 percent of the people would use when they come to Avatar.

"To make a sample library, you have to find the best instruments you can," Doris continues. "You can have the best mics in the world, but if the Clav hums, it will hum in the material. Getting your instrument in top shape is probably foremost to any recording process. If you're going to try to record your own sample library, it doesn't have to be the most pristine signal path—it has to be the one you'd use to be authentic, which is why dirt and fuzz is not always a bad thing."

"Being an engineer myself, I knew the technical aspects of what needed to happen and what we needed to capture to create a vibe," Griffin says. "I knew I wanted a Neve, Pultec EQs, Coles mics and something sweet and vibe-y on the DI. From there, it's all about the instrument. The Rhodes, for example, has a pickup on each key. If there's any 60-cycle hum or noise or RF, the Rhodes will pick it up, so a lot of our time was spent getting the noise down. There are de-noising techniques I use while processing the sample, but I don't want to use too much of that because it alters the character of the sound. We tracked onto individual tracks in Pro Tools. If you look at the session, you can see the phase alignment on the separate signals: The DI is sitting just ahead of the amp, and then the room is sitting way back here with nearly a 10ms delay. That's not a problem. I think some sample libraries would tend to line that up, but then you lose your [room] space. I'm trying to keep that intact all the way through the process so the player will get that, too."

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PHOTO: CHRIS GRIFFIN

The seriously miked Fender Rhodes at Avatar's Studio A

Once Griffin and Doris were finally plugged in, the *urfun* began. "Our session was very tedious," Griffin admits. "I started playing at 11 a.m. and stopped playing past 12 a.m. the next day. You have to have your game on so you can know if all of the velocities have been taken, because you can't go back and get it again. The mics will never sound the same. I just sampled the white keys. Because I'm a programmer, I can work that out.

"I went through the keyboard, playing extra soft, as light as I could play it, all the way up, from F0 to F6 on the Rhodes. Because I'm not a robot and each key doesn't respond the same, the lightest I can play it will vary from key to key. So I took five to six velocities within the range of extra soft. I repeated the process for medium soft, medium hard and hard. I played the whole keyboard four times, getting six velocities each time I went up."

Back in his own Pro Tools-equipped Manhattan studio, Griffin's labor of love became even more laborious. "This is an editing nightmare," he says. "You have a four-hour 5-gig Pro Tools session that must be edited down to a 200-meg Reason patch, and even that is large because in Reason, you also need to be able to load up a drum set and horns—this shouldn't be the only instrument you get to load.

"So I just dive in. The velocities get separated out. That way, I can manage my editing task. I just go through it, take the notes, start isolating them and cutting out the blank space. I can't do 'Strip Silence' because when the Rhodes hammer lifts off the key before the initial attack, that's part of the characteristic sound, but it looks like silence to most gates. Ultimately, I have them arranged from softest to loudest for each note and I put markers on them accordingly."

To keep things tightly organized, Griffin

gives each sample a name such as "Rhodes DI FF F0 2," with the last number representing a velocity rating from one to five. "That way," Griffin says, "when I'm building my 'extra-loud' key map and start loading in the extra-loud notes, for example, some of the notes with a velocity rating of three may have responded louder or have a different timbre than other notes rated a three, so I might need to calm one down a little bit with a one or two to match. That way, a keymap is even."

At that point, Griffin digs in again, meticulously tweaking filters and envelopes for each note in the keymap. "Then, the programming in Reason starts. Just because I have four keymaps doesn't mean the player will use only those four velocities, so I have to make those keymaps crossfade into each other or do creative filtering to make the velocities work. Using the filters and envelopes to make it act like a real instrument takes a good amount of programming. You have to know what the real instrument is doing, not to mention that not all of the keys on even the best real Rhodes are the same. With good looping and envelope techniques, you can effectively extend the decay on abnormally short sustains or, with the exception of long decays, you can shorten it to blend with the other keys."

It's a ton of work, but for Griffin, hearing his music played with may be even better than hearing his music played. "When I did the electromechanical ReFill and heard what the demo guys had done with the sounds," he concludes, "it was like, 'Okay, I've raised the bar here.' You get that kind of magic holy moment where you realize other people will benefit from this and that music will be changed as a result. That's probably its own greatest reward."

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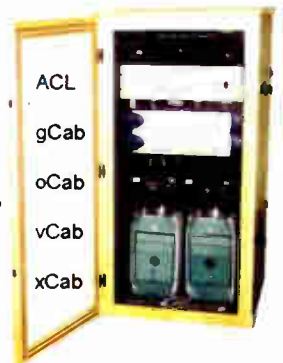
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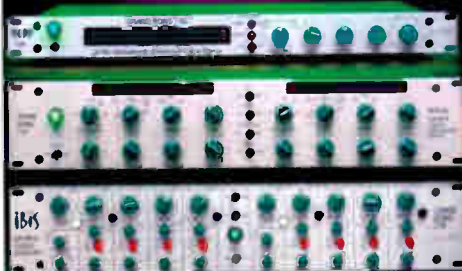
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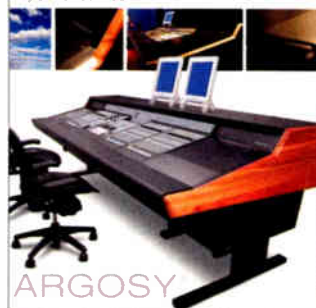
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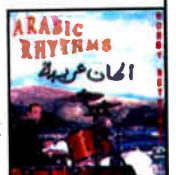
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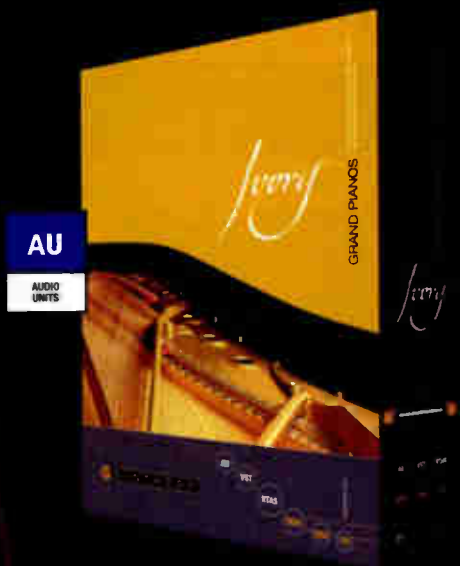
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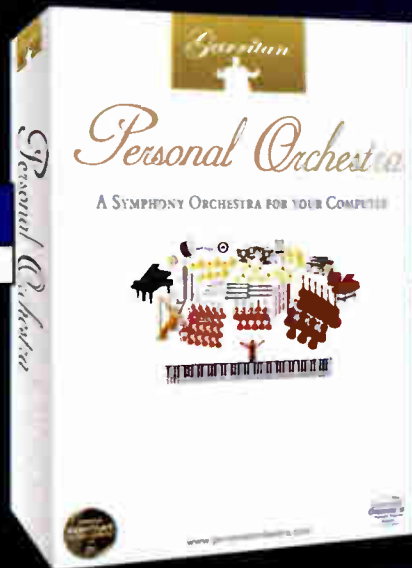


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Yamaha **O1x Digital Mixer**

For mixing "inside the box" or "outside the box" with Digital Performer, the Yamaha O1x gives you the best of both worlds. In fact, the O1x can serve triple duty in a MOTU-based studio as a mixer, control surface and audio interface. First and foremost, the O1x is a world-class 28-channel moving-coil digital mixer with 8 mic preamps, 24/96 A/D converters and total recall. Built on world-renowned 96kHz DSP technologies found in Yamaha's flagship DM2000, D2R96 and O1V96 professional digital mixers, the O1x has massive power under the hood, at an amazingly affordable price. If you choose to mix in Digital Performer instead, the O1x serves as a comprehensive control surface for Digital Performer's mixing environment, complete with motorized faders. And Finally, the O1x can serve as a multi-channel audio interface and multi-port MIDI interface via mLAN FireWire.



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World Radio History



By Jerry Harrison

Why I Call S.F. Home

In Talking Heads, we tried to change our approach on every album. On '77, we worked with a Disco producer. On *More Songs About Buildings and Food*, we went to the Bahamas to work with Eno. On *Fear of Music*, we recorded at our rehearsal loft on a couple Sundays because that was the only day when there wasn't a lot of noise from trucks driving by. On *Remain in Light*, we decided to write in the studio so that we could capture an idea's first bloom. Intrinsicly, we knew that by changing the process, different avenues of songwriting and recording would appear, and that we would be stimulated to create fresh and inventive recordings.

As the '90s began, I turned my attention to producing, wanting to bring the freshness that had defined my work with Talking Heads to the bands I worked with. When I decided to leave Manhattan, I knew that I wanted to be someplace that embraced innovation—and San Francisco was that city. I had always loved playing here; the audiences were exciting and knowledgeable. I think the three days we played the Boarding House still stick out as highlights from Talking Heads' whole career. There were great clubs, though the scene around the Mabuhay Gardens is the one I most remember. By the time I moved here, the Fillmore had reopened, the clubs South of Market were just beginning and a new energy had infected the city.

It is still a wonderful city in which to see music: All bands make a stop in San Francisco. You can keep up with the world

from here, and I go out often. I think there is no better way to understand the growth and change of music than at live shows. Often, just five minutes of a new band's show will tell me more than hours spent analyzing their demos. Just last night, I saw The Dirtbombs and The Ponys at the Great American Music Hall, and I saw Jackie Green at the Sweetwater in Mill Valley a few nights ago. Very different music; all three bands were great.

Among the musicians we met when we were touring were the

Residents, The Tubes, The Avengers, Leila and The Snakes and Pearl Harbor and The Explosions. Though there was a style during the '60s that could be called "San Francisco Music," the musicians that break out of here now follow their own route. One only has to think of Primus, Green Day, Third Eye Blind, Train, DJ Shadow, Metallica or Rancid to know how varied the scene is. As in New York and Los Angeles, the city's musicians have matured to the point that they are inspired by the world of music and not particularly by their local peers.

This gives the scene a fractured sense, but for a producer, it offers a wide palette of talented musicians from which to draw. Furthermore, there are more musicians here who have ventured into the esoteric. Whether it's the investigation of *just tuning* or studying at the Ali Akbar School of Indian Music, you can find these musical explorers here.

I was also attracted to the innovation coming out of Silicon Valley and the inventors I had met at various AES shows. Long ago, when I moved from organ to synthesizer, I spent a week at Rod Argent's keyboard shop in London. They were nice enough to let me become familiar with the synthesizers of that era. It turned out most of the companies that interested me—particularly Sequential Circuits and E-mu—were in the San Francisco area. I remember running into Dave Smith, who founded Sequential and was perhaps the first to marry the power of computers with synthesizers, at an AES show in New York. He told me he was on his way to give a paper on the possibility of musical instruments talking to each other in a common language—this was the beginning of MIDI. A little later, I met Peter Gotcher and Evan Brooks from Digidesign and Dave Oppenheim and Chris Hallaby from Opcode. Again, San Francisco was a haven for the software development that pertained to music.

Yet another reason I moved here was the range and scope of recording studios in an area that is conducive to raising a family. Because San Francisco's studio scene has been developing for some 40 years, there is a wealth of talent, equipment and variety. Though I now have my own studio, Sausalito Sound, I still take advantage of the great variety of studios that grace the San Francisco landscape: from the orchestral room at Skywalker Ranch, to the crazy mirrors and murals of The Plant (not to mention Arne's investment in new boards) to Fantasy, the drum room of Studio D, the rural comfort of the Site, the new South of Market studio SF Soundworks, and Steven Jarvis and Larry Cragg's obsession with excellent rental gear—all provide tools to get the job done.

I love to work all over the world. London, New York and Los Angeles have wonderful musicians and studios, but San Francisco is still my home. The variety of talent and resources, the great restaurants and, of course, the beauty of living and working here makes it special. To me, it is the last bastion of liberal, and perhaps free, thinking. It is no accident that the same city that the Beats made their West Coast home, spawned "the Summer of Love" and even found an uneasy alliance with the Hell's Angels became the center of technological development, and particularly musical technology, in the United States. ■

Producer and former Modern Lover/Talking Head Jerry Harrison is the owner of Sausalito Sound.



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