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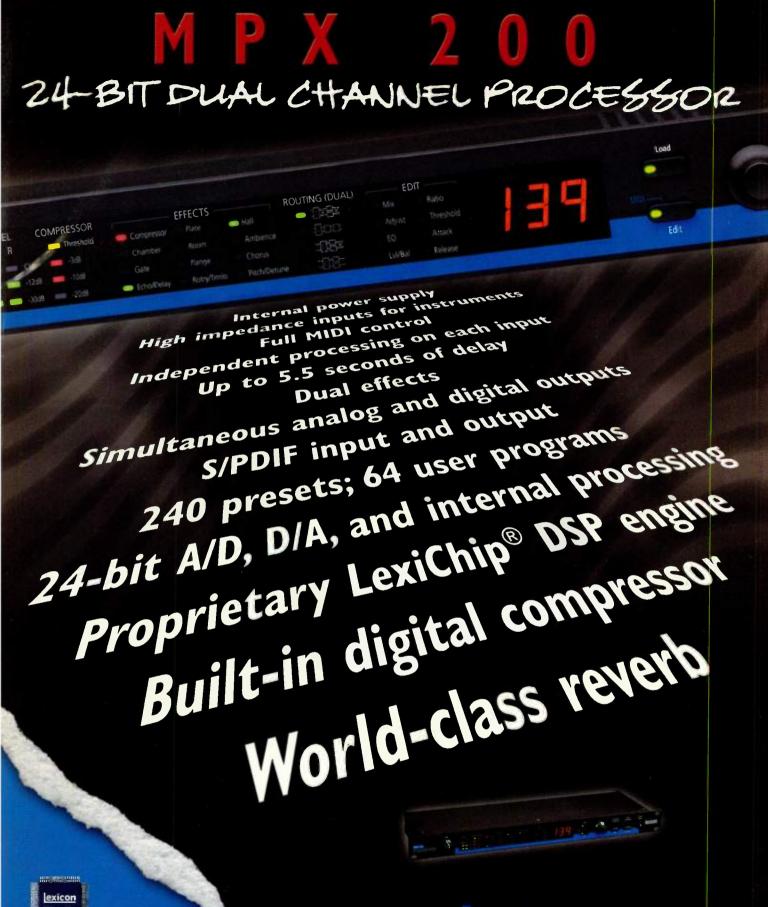
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CONTENTS



FEATURES

- 48 BACK TO BASICS Elton John returns to recording basics with producer Patrick Leonard By Lisa Roy
- 59 SWANN SONG Producer/Engineer Darryl Swann bucks the trends with Macy Gray By Howard Massey

TECHNIQUES

- 40 THUNDER DOWN UNDER The masters discuss recording kick drums Bu Rich Tozzoli
- 44 USING REASON AS A TONE MODULE Put reason to work as a multimbral MIDI sound module By Craig Anderton
- 46 WAH-WAH OF THE GODS Use your mixer to put the pedal to the metal By Craig Anderton

REVIEWS

- **66** MARK OF THE UNICORN MOTU scores two big winners with Digital Performer 3.0 and the 828 FireWire interface Bu Mitch Gallagher
- 72 YAMAHA AW44IGHDCD PROFESSIONAL AUDIO WORKSTATION EQ takes Yamaha's new digital audio production environment for a test drive By Steve La Cerra
- 80 GORDON INSTRUMENTS MIC PREAMPLIFIER SYSTEM High-end, solid-state, two-channel mic preamp By Emile Menasché
- 84 KRK V88 POWERED STUDIO MONITOR Double the woofers, double the enjoyment? By Mitch Gallagher
- 88 MICROBOARDS TECHNOLOGY ORBIT II CD-R/RW DUPLICATOR Bulk CD copying gets affordable...and fast By Marvin Sanders

LIVE

95 EDITORIAL

- 96 NEW PRODUCTS
- 98 MEET MY RACK: ROSS PALLONE By Steve La Cerra
- IOO THE X FACTOR Getting in your face with the ESPN Summer 2001 X Games By Steve La Cerra

COLUMNS

- 32 BONZAI BEAT: JOHN NEFF By Mr. Bonzai
- IOS KURMUDGEON'S KOUCH: CREPUSCULE FOR DAISY By AI Kooper
- IOS GUEST ROOM WARRIOR: DON'T LEAVE HOME WITHOUT IT By Jim Bordner
- 108 STUDIO TECH: WORD CLOCK DISTRIBUTION MADE EASY, PART I By David Frangioni
- ISO ACROSS THE BOARD: AES OR BUST! By Roger Nichols

DEPARTMENTS

- 6 EDITORIAL
- 8 LETTERS
- IO ON THE BOARDS
- 20 FIRST LOOK: ROYER ACTIVE RIBBON MICS
- 22 SESSION FILE: NATHAN EAST
- 26 ROOM WITH A VU: NIAGRA FALLS
- 26 ROOM WITH A VU: EARMARK PRODUCTIONS
- 30 MICROPHILE: RCA TYPE-88A
- 99 AD INDEX

The Perfect Pro Tools[®] Companion: TASCAM MX-2424

Why is the TASCAM MX-2424 the perfect companion to your Pro Tools or other DAW system? One word: compatibility. The MX-2424 offers your choice of two native audio file formats: Sound Designer II on Macintosh-formatted drives, and Broadcast Wave on PC formatted drives. These files support time stamping, giving you a fast, convenient way of transferring audio into your Pro Tools or other DAW system that supports time stamped audio files. Instead of spending hours aligning each track to its approximate original location, your recordings will be where they belong with sample accuracy.

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one of these.



For all the details on the MX-2424 go to WWW.MX2424.com All copyrights are the property of their respective balances If you don't have a DAW system, TASCAM's MX-View waveform editing software runs in native Mac and Windows versions and connects via a fast 100Mb Ethernet interface. With MX-View, you get sophisticated, sample-level waveform editing, drag-anddrop editing on the fly, click and pop repair with the pencil tool, onscreen metering for up to six MX-2424s, editing across multiple machines, easy management of virtual tracks and much more.



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EDITORIAL

The events of September 11 will be with us for years to come - the destruction and loss of life were incomprehensible. Those of us in New York City, Washington D.C., and other areas directly affected by the tragedies are continuing to work to get our lives back on track against a depressing backdrop of ongoing threats and military action in the Middle East. This isn't just happening here at "Ground Zero"; people across the country and around the world are adapting themselves to the new world we've been forced into and moving forward with their lives.

Now we, collectively as an industry, also have an opportunity to make an even more positive show of support and healing by attending the 111th Audio Engineering Society (AES) Convention and Tradeshow, which has been rescheduled for November 30-December 3 at the Jacob Javits Convention Center in New York. In addition to the alwaysanticipated manufacturers' exhibits, the program for the rescheduled convention will include technical workshop and paper presentations, technical committee meetings, and the annual AES business meetings.

Naturally, rumors have been flying about the show and who will and won't be attending. That's as it will be; each attendee must make up his or her own mind. But please don't let these rumors affect what you decide for yourself. The show will go on, with the vast majority (if not an overwhelming percentage) of the slated manufacturers and attendees at the show. The new products will be unveiled, papers will be presented, and committee meetings will be held. If you have doubts as to how many new products will be shown, just take a gander at the extensive preview coverage featured in our September and October issues - besides all of those items, you can bet that there will be many surprises and unexpected product unveilings as well.

It's my belief that the 111th AES Convention and Tradeshow will be the stronger for having occurred under such difficult circumstances. As residents of this great city, my staff and myself will be out in full force supporting the show and supporting New York's efforts at recovery. I hope that you will do the same.

See you at the show - it's gonna be a good one!

-Mitch Gallagher mgallagher@musicplayer.com



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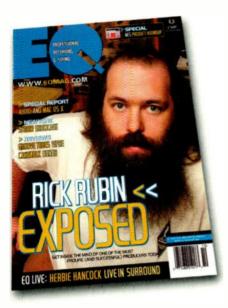
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© 2001 Yamaha Corporation of America, Pro Audio Products, P.O. Box 6600. Buena Park, CA 90622. For literature. call (800) 937-7171 ext. 615 or visit yamaha.com/proaudeo Yamaha is a registered trademark of Yamaha Corporation. All rights reserved. *Estimated street price **Dual stereo returns feature EQ but no dynamics

CIRCLE 48 ON INFO CARD



SHOW OF SUPPORT

In the October 2001 letters column, Roger Nichols responded to Trevor Riddick's questions about CD burning by stating he uses Jam rather than Toast and edits in Sound Designer II. In this response, Mr. Nichols states:

"The problem is that Digidesign no longer supports Sound Designer, so you have to beg them to sell you a copy or find a music store that still has an old copy."

This leaves the very false impression that there are no other programs that can do this work. Although Sound Designer is still preferred by many, it is hardly the only editor that supports regions in SD2 files. There are several modern alternatives, notably BIAS Peak, which are up to date and supported by their companies.

> Gary Hobish Armin Hammer Productions San Francisco, CA

WIT'S END

Mitch Gallagher's editorial on the concept of product reviews ("Second Opinion," September 2001) has inspired two "original" witticisms.

Regarding your solution of adding "second opinion" sidebars to your product reviews, my only concern is that, like compression, unless used in moderation, the effectiveness of the review could be lessened by the clutter. In other words, "Too many reviewers spoil the review."

"Readers want reviews with good taste, not reviews that taste good." *--Gary Pagoda, JPGT studios*

Regarding the possibility of subjective opinions weakening the value of the review, I would say that the opposite effect is more likely. If a reviewer is knowledgeable, open-minded, and fair (as should always be the case in a quality magazine like *EQ*), then it is the bias of the reviewer that the reader values most. In other words, "All objectivity and no subjectivity makes for a dull review."

All kidding aside, I think your idea of second opinions is a good one, if tastefully applied. Remember, "Readers want reviews with good taste, not reviews that taste good."

> Gary Pogoda JPGT Studios

SPLITTER DECISION

I read the "Mic Splitter" Q&A in the August issue's On the Boards section, and I would like to comment on the response.

Although Mr. Massenburg is surely right when it comes to "no-budget" splitter designs, I feel that the question Jason asked needs some further explanation, as most sound companies and bands trying to capture the a live performance probably need a different and more affordable solution.

When used for recording, live splitters serve the purpose of taking a microphone or DI signal and splitting the signal between what gets fed to the front of house (FOH) and monitor and to the recorder. Using high-quality isolation (bridging) transformers like a Jensen JT-MBC is the best and most common solution in this situation. Transformers isolate the input from the output, thus alleviating ground hum and noise, and also serve to reduce common-mode noise due to electromagnetic fields and RF. Mic splitters are available from a number of manufacturers, and are most commonly purchased as part of a snake system. They are also available in stand-alone devices (the most typical is eight-channel).

It is important to know that not all transformers are created equal. Steel or iron core transformers tend to distort the signal and cause phase shift. Also, to save costs, cheaper transformers do not incorporate multiple Faraday shields. We use Jensen transformers because these employ laminated nickel cores that do not saturate and do not exhibit group delay because of their high permeability (bass, mid, and highs stay in absolute phase).

> Peter Janis President Radial Engineering

ON THE AIR

I just got my August copy of EQ, and had to have a chuckle at Mitch Gallagher's MP3 conversion project [Editorial, "Lost Along the Way"]. I just finished a project constructing a "radio server" that serves as an MP3 file repository. This G3 server has iTunes randomly (and repeatedly) playing my entire library through an inexpensive FM box that broadcasts a stereo FM signal throughout my house and garage. Any radio within 40 or 50 feet can receive my custom "radio station." No commercials, no annoving radio personality, and music that I like 24/7/365. The benefit to iTunes is that you can create "event specific" playlists for any occasion. Your article reminded me of my own project, and I just thought I'd share.

> Brian Gier via Internet

CORRECTIONS

In our AES Preview section of the September 2001 issue, we did not describe the Tannoy SuperTweeter properly. In actuality, the SuperTweeter is an accessory device that can be integrated with any monitoring loudspeaker for improved resolution, particularly in projects where the SACD and DVD-A formats are used. We apologize for any confusion we may have caused.

In the October issue, it was stated that Sony owns a major portion of TASCAM. This is not true. TASCAM has never been owned, in whole or in part, by Sony. Our most sincere apologies to both companies for this regrettable error.

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DI/LINE LEVELERS

Would you please explain the differences between DIs, line levelers, and the line inputs on mixers/mic pres?

I'm using a lot of vintage keyboards, tape decks, and effects boxes. The problems come in when trying to interface this unbalanced stuff with my mixer, which takes balanced and unbalanced inputs. —Chris

There are basically four different level structures:

1. +4 Balanced: Pro line level. Professional audio machines and effects devices fitted with XLR connectors (or sometimes barrier strips on the back such as the UREI 1176 limiter).

2. -10 Unbalanced: Semi-pro and hi-fi line level. Usually RCA (on hi-fi gear) or 1/4-inch connectors (as on synth outputs). Instrument outputs fall in the -10 unbalanced category. They are high impedance. You have three choices: connect to a direct box and mic preamp, connect to a level matcher (-10 to +4 balanced), or connect to a -10 keyboard mixer with +4 outputs.

3. Mic Level Balanced: Microphones with XLR connectors. Low impedance.

4. Mic Level Unbalanced: Microphones with 1/4-inch plugs. High impedance. Guitar direct outs fall into this category.

Direct boxes change a high-impedance signal to a low-impedance signal, which then goes to a professional lowimpedance mic preamp.

Just remember that there are two things that you have to match up: impedance and level. If impedances don't match, the signal will sound thin and twinky (technical term). Level is matched using -10 to +4 converter boxes. These boxes will also match impedances. —Roger Nichols

AES > S/PDIF

I need to make a cable to convert an AES output to an S/PDIF input. Can someone please advise me on the wiring for this? —L. Elliott

You can wire a simple balanced to unbalanced cable (using 110-ohm cable), and it might work. However, for true proper conversion, you'll need a small resistor pack to change the voltage. An inexpensive converter/adapter can be purchased from Aardvark. Then be sure to use 75-ohm cable for S/PDIF and a 110-ohm cable for AES. --David Frangioni

DISTRESSING BLEED

After some very kind words regarding Empirical Labs Distressors on heavy rock kits, I've been using them recently with amazing results — never have my drum sounds been so in-your-face!

But I've been getting carried away on my ratios on snare — it sounds so good with up to 14 dB of reduction! It makes a sh**ty steel shell snare sound like a tight piccolo. But I find, when I hit the Distressor hard, that the hats and cymbals get very loud into the snare channel — so much so that they almost overpower my overheads. I can work around it with EQ and mic placement, but it still is a problem.

One thought I had was putting a frequency-conscious gate before the Distressor. Another DIY method I thought of was to cut a hole in the bottom of a Styrofoam cup and feed my snare mic through the hole, so it would pick up less off-axis noise. —Adam B.

If you do get your gate settings tweaked



▶ web ⊓

Have a question you'd like answered? Visit Roger Nichols, George Massenburg, Ed Cherney, and David Frangioni online at

so that you have a natural-sounding snare coming through, and you then squash it so that you're reducing the dynamic range by the same amount as you increased it (with the gate), you're pretty much breaking even on the leakage. I often find that this can sound quite weird if things aren't working just right, especially if your drum mix favors the snare sound over the sound from the overheads. Even when this approach is working well, it's still at least unnaturalsounding, and not nearly as good as a good player's touch on a good snare. I suspect you know this already.

The Styrofoam cup will add a distinctive "filtered" sound that could be cool, but somehow I doubt that's what you're after.

A possible approach is to use higher ratio settings and faster attack/release settings just to curtail the loudest of hits and some of the transients of the more moderate hits, then EQ your low-mids to bring some meatiness out of the wussy-handed snare.

Another idea is to get your 14 dB of compression going and then key a gate after the Distressor with a more isolated mic, say a baffled, severely filtered mic under the snare or a contact mic attached to the shell of the snare. Its sound quality is unimportant, because it's just a key. Adjust the envelope and range of your gate until you're happy, and *voilá. —Dave*

By all means, gate the sh*t out of the sound. I wouldn't necessarily use a "frequency-sensitive" gate. Moreover, you can determine what you reach for by where you put your EQs. Normally, my chain goes mic pre>EQ>gate>compressor>EQ>recorder. This way I can determine what the gate "hears" and then correct it after compression.

Don't put a cup around the snare mic without being aware of the weird acoustical effects you're introducing. —George Massenburg

Extra Toppings

(or how to get real bass management)



(Canine SubWooferus)

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is sure to be welcome in your workspace.

We could (and should) go on about the other extra's in our new gourmet offering, but the proof of the pudding is in



the eating, and the PS350B is most definitely-Hmmm...Yum.



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PRODUCT VIEWS





THE PRODUCT: AMS Neve MIOS 96 THE BASICS: Quad microphone amp THE DETAILS: The AMS Neve MIOS 96 Quad microphone amplifier (the first

MIOS 96 module) features audio at 24-bit, 96, 48, or 44.1 kHz resolution. The 4U racks provide up to six hot-pluggable modules that support a number of analog and digital I/O formats connected to the console through the use of MADI multichannel audio connection.

CONTACT: AMS Neve at <u>www.</u> ams-neve.com. Circle EQ free lit. #101.

THE PRODUCT: Emu Proteus 2500 THE BASICS: New sound modules THE DETAILS: Emu's Proteus 2500 Command Module is a new four-rackspace sound module that triples the processing power of the Proteus 2000. It comes with a 32-MB soundset, and has the option of expanding to 128 MB using any of the eleven Proteus expansion ROMs currently available. Users will also be treated to 100 MIDI sequences. CONTACT: Emu at <u>www.emu.com</u>. Circle *EQ* free lit. #102.

THE PRODUCT: Cakewalk Guitar Tracks Pro

THE BASICS: Music creation and remixing software

THE DETAILS: Cakewalk is now shipping Guitar Tracks Pro, the company's "portable studio" software for guitar players and singer/songwriters. The Pro version (available online as an upgrade to owners of Cakewalk Guitar Tracks) features 32track audio recording and editing, up to 16 simultaneous real-time effects mixing, support for DirectX audio plug-ins, and support for 24-bit/96 kHz audio hardware. CONTACT: Cakewalk at <u>www.</u> <u>cakewalk.com</u>. Circle *EQ* free lit. #103.

THE PRODUCT: dbx Quantam II THE BASICS: Digital multiband processor THE DETAILS: dbx has produced a new feature-rich multiband processor, the Quantum II. It offers 96 kHz digital output, 24-bit A/D, D/A, digital I/O on AES/EBU or S/PDIF, 48-bit internal signal path, four-band stereo compressor-gate-limiter and five-band EQ.

CONTACT: dbx at <u>www.dbxpro.com</u>. Circle *EQ* free lit. #104.

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CIRCLE 198 ON INFO CARD



THE PRODUCT: TASCAM CD-RW402 THE BASICS: Dual-tray CDrecorder/duplicator

THE DETAILS: TASCAM's new CD-RW402 dual tray CD-recorder/duplicator offers a number of features, including call, auto cue, auto ready, pitch control,

record mute, digital gain adjustment, digital fade in/out, digital direct mode, auto ID, and a stutter scrub function (allowing cue points to be set frameaccurately).

> CONTACT: TASCAM at www.tascam.com. Circle EQ free lit. #105.

THE PRODUCT: M-

Audio Series Mac OS X Drivers THE BASICS: Mac OS X audio drivers for Delta Series interfaces

THE DETAILS: Mac OS X drivers are now available for the M-Audio Delta Series. These "first ever OS X audio drivers" have reported latency as low as 40 samples (latency time: 1 ms). The drivers add support for Delta cards (1010, 66, 44, DiO2496, Audiophile 2496, TDIF, and R-BUS), and include an additional VU meter panel, as well as ASIO 2.0 and legacy ASIO support. Requires Mac OS X 10.1 or later.

CONTACT: M-Audio at <u>www.</u> <u>m-audio.com</u>. Circle EQ free lit. #106.

THE PRODUCT: Universal Audio M610 Preamp and Universal Audio SmartCode Pro encoders

THE BASICS: Mono tube mic preamp and software encoders for Digital Performer 3

THE DETAILS: Universal Audio has a new mono tube microphone preamp called the M610. Based on the 2-610, it comes with double-alloy cores, phantom power, and selectable boost/cut controls.

Universal Audio has also announced the development of the SmartCode Pro line of software encoders for Digital Performer Version 3, the surround workstation software from Mark Of The Unicorn. For the first time, SmartCode Pro will be available for a native audio work-

> station — allowing it to deliver fully encoded Dolby or DTS surround projects. **CONTACT:** Universal Audio at <u>www.</u> <u>uaudio.com</u>. Circle *EQ* free lit. #107.





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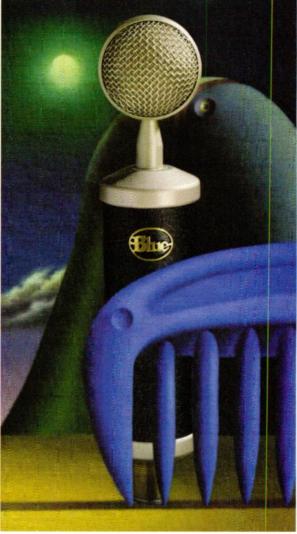
Baby Bottle

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BLUE Microphones is proud to announce the birth of our newest and most affordable microphone to date, the Baby Bottle. Following in the footsteps of our acclaimed tube Bottle mic system, the Baby Bottle is truly a chip off the old block. Each and every part of this solid-state, class A discrete condenser has been hand selected to insure nothing short of a stellar performance. Enclosed in a Lollipop spherical grille is a precision-machined, goldsputtered capsule with a fixed cardioid pattern. In the tradition of our award-winning microphones, the Baby Bottle employs the styling, attention to detail, and handcrafted quality for which Blue has become famous. The Baby Bottle is ideal for recording vocals, percussion, or any acoustic instruments,

and comes nestled inside a velvet pouch protected by a beautiful cherrywood box. You've heard the buzz and read about us in all the pro audio circles. Isn't it about time you tried one for yourself? Experience the next generation of Blue microphones; experience the Baby Bottle. Contact your local BLUE microphone dealer for a demo.





Nestled in its distinctively plush cherrywood box, the Baby Bottle encompasses BLUE's formula for exquisitely designed, high-precision mics.





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THE PRODUCT: Z-Systems z-K6 THE BASICS: Surround processor THE DETAILS: The new z-K6 K-Surround Processor is a solution for providing 5.1-channel surround-sound output from a conventional stereo source. It creates a dedicated center output, an LFE

output, and composes the surrounds through "the natural ambience that already exists in the recording." **CONTACT:** Z-Systems at <u>www.</u> <u>z-sys.com</u>. Circle *EQ* free lit. #108.

THE PRODUCT: MOTU 828 THE BASICS: Firewire driver update adds increased expandability THE DETAILS: MOTU'S 828 Firewire audio interface is now expandable up to 126 channels. A driver update is available at <u>www.motu.com</u>, allow-

ing users to connect multiple 828's to a Firewire-equipped Macintosh. Four 828's can be added to a single Firewire bus via a standard hub, which will offer 72 channels of audio input and output with no PCI or PC card required.

> CONTACT: Mark Of The Unicorn at <u>www.motu.com</u>. Circle EQ free lit. #109.

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Otari Southeast • 1214 17th Avenue South • Nashville, TN 37212 • 615/255-6080 Fax: 615/255-9070 CIRCLE 80 ON INFO CARD

PRODUCT VIEWS

THE PRODUCT: Peavey 16LM THE BASICS: Eight-channel mixer THE DETAILS: Peavey's new 16LM stereo line mixer offers eight input channels and one balanced master-stereo output. It features stereo (L/R) input and level control for each channel, as well as a master output section with level con-

trol with a clip LED. There's even an additional headphone output that allows continuous

phone output that allows continuous monitoring of the signal during mixer operation.

CONTACT: Peavey at

<u>www.peavey.com</u>. Circle EQ free lit. #112.

THE PRODUCT: Audio Precision System Two Cascade Plus and ATS-2 THE BASICS: New audio test and measurement systems

THE DETAILS: Audio Precision is launching two new products: System Two Cascade Plus and ATS-2. Their new Cascade Plus is a PC-based enhancement to the System Two Cascade. It features FFT acquisition memory, Nth octave smoothing on FFTs, and -112 dB specification with a 6 to 7 dB reduction.

The new ATS-2 is a PC-based system with analysis capabilities such as harmonic distortion and multitone analyzers. The ATS-2 can increase measurement bandwidth to 120 kHz and includes digital audio interface tests (including waveform and eye pattern displays). **CONTACT:** Audio Precision at **www.audioprecision.com**. Circle *EQ* free lit. #111.

THE PRODUCT: TC Electronic M•One XL THE BASICS: Dual effects signal processor THE DETAILS: TC Electronic's M•One XL dual effects processor has a number of new features, including enhanced early reflection and reverb tails, improved reverb density, and small rooms. The unit provides 24-bit processing, an "analogstyle" interface, and 25 effects such as chorus, tremelo, pitch, and delay. Presets will include 200 factory offerings, with the option of 100 user presets.

CONTACT: TC Electronic at **www.tcelectronic.com**. Circle *EQ* free lit. #110.



THE PRODUCT: Fairlight Plug-ins Manager

t.c. electronic

THE BASICS: Plug-in manager supports VST format plug-ins THE DETAILS: Fairlight has announced that it is integrating Steinberg VST format plug-ins into its new Fairlight Plug-Ins Manager. To extend functionality and versatility of Fairlight digital audio production systems, effective immediately, a wide selection of VST plug-ins may be accessed by Fairlight users at pro audio or MI retailers or on the Internet and loaded into Fairlight's recently introduced Plug-Ins Manager.

CONTACT: Fairlight at <u>www.fairlightesp.com</u>. Circle *EQ* free lit. #113.

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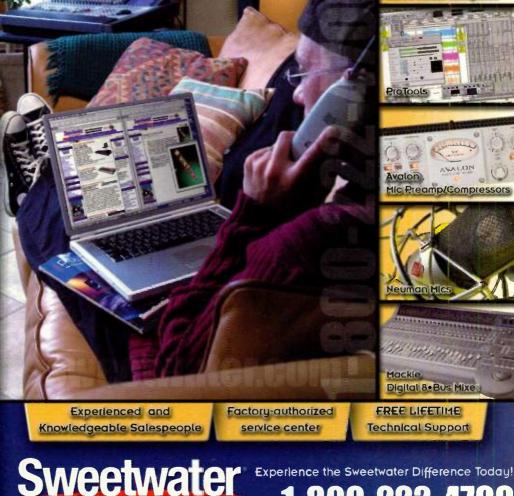




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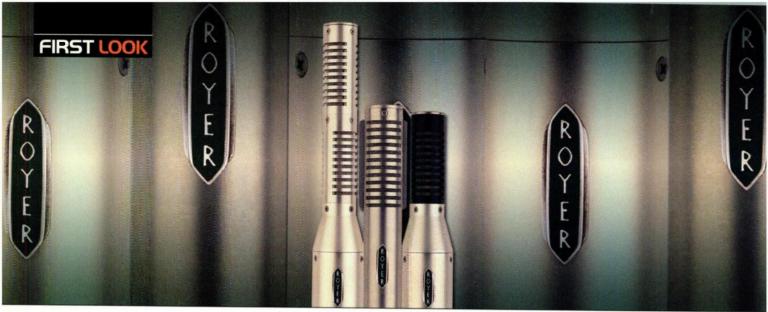
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MOTU Audio Interfaces



By Steve La Cerra

Royer Active Ribbon Microphones

Royer Labs — manufacturer of the R-121, SF-12, and SF-1 ribbon microphones — has introduced a unique new line of phantom-powered ribbon mics based upon their three original models. The Royer Active Series are the first ribbon microphones to incorporate on-board amplification, solving many of the problems traditionally associated with ribbon mics.

Ribbon microphones can be "electronically challenged" due to low output level (typically 15 to 20 dB lower than a condenser mic) and high sensitivity to variations in input impedance of the mic pre. These characteristics make preamp selection critical when using any ribbon mic. Many preamps aren't quiet enough for use with ribbon mics in low-SPL situations, or simply don't have enough gain to adequately drive the input of a tape machine. Impedance mismatch with the preamp can load down the ribbon element — resulting in decreased sensitivity and reduced low-frequency response. There's also the danger of a ribbon being damaged by phantom power or incorrectly wired mic cables.

Royer's Active Series eliminates many of these issues by allowing the ribbon element to

ROYER MICROPHONES

WHAT IS IT? A new line of ribbon microphones with on-board active electronics. WHO NEEDS IT? Any fan of ribbon microphones.

WHY IS IT A BIG DEAL? Active Series have a significantly increased output level and a decreased sensitivity to input impedance loading. SHIPPING: Fourth quarter of 2001 PRICE: R-121A, \$1,495; SF-12A, \$3,150; SF-1A, \$1,575 CONTACT: For more information, contact

CONTACT: For more information, contact Royer Labs at 818-760-8472 or visit www.royerlabs.com. EQ FREE LIT. #: 114

live in a stable electronic world. Following the ribbon and transformer is a balanced, discrete head amplifier system with a very high input impedance and a lowimpedance, buffered output. The head amp ensures that the ribbon element will always see an optimum, consistent load --- eliminating the problems associated with impedance

mismatch. Interestingly, it's not the amplifier that achieves the 15 dB of gain characteristic of an Active Series mic — it's a specially designed transformer.

The head amp also acts as a sort of buffer, guarding the ribbon from damage due to phantom power, incorrectly wired cables, or other electronic mishaps, as well as allowing long cable runs with minimal signal loss (in fact, 48-volt phantom power is use to drive the head amp electronics). Royer assembles and tests the circuit boards by hand, with some components being custom-designed. These features allow Active Series mics to be used under a wide variety of circumstances while maintaining a high level of sonic performance. Active Series mics feature a sensitivity rating of -38 dB -- more in the vicinity of a condenser mic, thus eliminating the need for massive amounts of gain in the mic preamp stage of the signal chain.

Initial introductions in the Royer Active Series include the R-121A, SF-12A, and SF-1A — all based upon proven transducer designs by Royer Labs. The company emphasizes the fact that each Active Series microphone is sonically identical to its passive predecessor. Royer also points out that, as with some condenser microphones, the increased output level of an Active Series mic can overload your mic pre if the gain is set too high, or if a pad isn't used.

The R-121A mono and SF-12A stereo mics are recommended for a wide range of applications, while the SF-1A mono microphone was designed primarily for classical recordings. Since output level from all of the Active Series mics is hotter than passive ribbon mics, they can be used with preamplifiers that feature lower gain even in ambient- and distant-miking situations.



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Bass for Eric Clapton

Allen Sides tracks Nathan East playing bass with Eric Clapton

"I love bass, and having a player like Nathan East makes things remarkably simple," proclaims Allen Sides, who's recording techniques are anything but. "In a sonic sense, I'm sort of a fan — I love low-bass together with my midbass. I love to have the complete bass sound going down to the lowest octave. I really enjoy the subharmonics." Sides' sonics so impressed Eric Clapton that he stayed at Record One for two more albums.

SIGNAL PATH

Allen Sides explains, "For 'Blue Eyes Blue,' I recorded straight to [Digidesign] Pro Tools into one of the Ocean Way DIs directly into the SSL 9000J console. The DI is a proprietary transformer with a very high-impedance primary. It's particularly effective with a non-active bass — that comes directly off the pickup. I go into the

DATE: May 29, 1999

STUDIO: Record One, Studio B
LOCATION: Sherman Oaks, CA
ARTIST: Eric Clapton
PROJECT: Runaway Bride — Soundtrack
TRACK: Nathan East playing bass on "Blue Eyes Blue"
PRODUCER: Rob Cavallo
ENGINEER: Allen Sides
ASSISTANT ENGINEER: Tom Sweeney

direct box, then into the SSL module because the preamp is quite good — but always insert out, no busses, to Pro Tools."

MIC POSITION

"In this particular case, with Nathan, I've never miked an amplifier in all the years I've recorded him," states Sides. "He doesn't usually bring an amp with him, so it hasn't been an issue.

By Lisa Roy

"But when I'm in a situation where I do have to mic the amp, I'll set up the amp head in the control room and run the speaker wires out into an isolation area. I put foam baffles to either side of the bass amplifier to eliminate any reflections from the side walls. I usually use a Neumann U 47 FET as close to the speaker as I can get it, pointed straight at it. In this position, it minimizes the delay time between the direct signal and the mic signal. For 'Blue Eyes Blue,' however, no microphone was used as I recorded Nathan direct."

PROCESSING

"I recorded the bass directly to Pro Tools without limiting, then I took a mult off that into an original dbx 160," Sides continues. "I set it up for a certain level of compression and print that on a second track, because then I'll play the two tracks together. That way I can return both tracks; a compressed track and an uncompressed track. I get a nice sustain when I bring in the compressed track, but I still get all the peaks and attacks of the original track.

"I use about 10 dB of compression because this is not the sole track. I wouldn't compress bass normally unless I had a player who was somewhat out of control and I really needed to bring it into range. If I were to compress that

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much on a regular bass, it would ruin it. But with this session, the dynamics were so great that all I wanted to do was add more sustain without screwing up the original bass track, so the compressed track was fairly compressed, and that worked well.

"In regard to EQ, the SSL 9k has a remarkably good sounding mic pre, so I used that, adding at maybe 40 Hz. But the difference between coming through a bus and coming insert out is major. It's twice as good if you come insert out. I patch insert out straight to Pro Tools and then use the little mic trim as my volume control and bypass a ton of stuff. It's definitely not a wire with gain."

TRACK

Sides concludes, "Generally speaking, with Rob Cavallo, we do live takes with all musicians. As I recall, there wasn't a single punch with the bass. That's one pass with everybody playing live, and we went back and did a few touch ups. But Nathan was one of the few things we didn't touch up. The drums were completely original, as were the guitar passes, and then we did some additional parts, but that was basically it. We put a mic up in the control room for Eric to sing while the track was going down. But when he sang the lead vocal, it was one or two passes, and it was great.

"Being a bass player, I love to make my instrument speak. Having the two tracks, one compressed and one not, makes the notes jump. I like attack; I like a lot of punch. The compressor,

although it does something for bringing out low-level stuff, brings the sustain up. The bass player would try to enunciate in such a way that all those notes speak as well as possible, and I don't want to lose that because that can be a very valuable asset in a tune. That's when I came up with a way to get both the floor and sustain. I've been doing it for years.

"As for recording into Pro Tools, I recorded the bass at a pretty high level. Obviously, you don't want to hit 'reds' if you can avoid it, because digital distortion can be very noticeable. With bass, I wouldn't record it quite as loud (like with a kick or snare as I'll hit reds). Overall, I try to use all the resolution I can on something like this. I take it to the top where it gets red, and I bring it down and make sure I have enough room, so, when I get to the tune, I'll be up there in the top scale. Maximize your bits — it makes a huge difference.

"One thing about Rob and Eric is that there's no dead air. We're moving incredibly quickly. I spent four or five minutes on drum sounds, and I probably spent two minutes on a bass sound, a few minutes on the guitar, and, basically, when Rob walks in, he wants to roll. He expects that it's way-together before he walks in; that's one of the reasons we work well together. I think Eric was thrilled because, when he walked out and put the headphones on to do the first rough vocal, it sounded like a record, and that's always fun for the artist."

Truth is the most valuable thing we have. Let us economize it - Mark Twain

The truth about nothing but the truth.

The problem with most so called reference monitors is they simply can't reproduce the full range of audio frequencies needed for true representation of the sound, especially low frequencies. Today's most common monitors use a 2-way design with 8" woofers to cover the low frequencies, but they can't go down low enough to give you the lowest octaves that are essential to the character of so many instruments, like bass and drums.

Ported v sealed boxes.

Some designs use ported cabinets to help do the job woofers can't do on their own. While a port can extend low frequency capabilities, it can't deliver the transient response of a sealed box. At high levels, airflow through the port produces turbulence that reduces efficiency and actually causes high frequency noise. There's no getting around it—If you want a

true reference, you need a sub-woofer.

The truth about the "hole" truth.

With the advent of 5.1 surround sound, the low frequencies have received much more

attention. Many companies now offer subwoofers as add-ons for stereo monitors. But when components aren't designed to work together matters can get more complicated, and new problems are often created—such as an audible hole in the sound.

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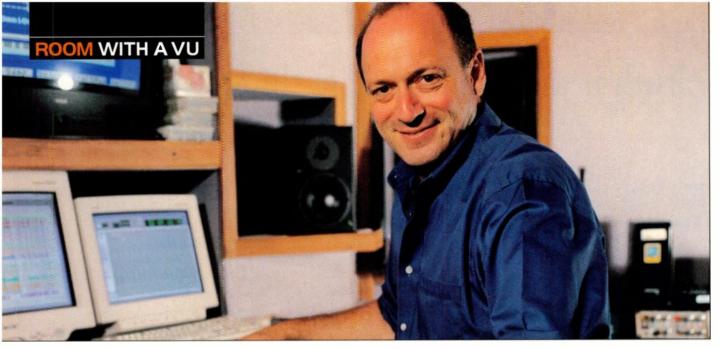
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By Steve La Cerra

Niagra Falls

No waterfall, but plenty of sound

STUDIO NAME: Niagara Falls LOCATION: San Francisco, CA KEY CREW: Bruce Kaphan; studio design by Michael Blackmer

MONITORS: Dynaudio Acoustics BM6A [2], Bag End Infra 18 powered sub, Studio Comm Model 60/61 (monitoring module) HEADPHONES: AKG K-240, Beyer DT770 Pro

AMPLIFIERS: Symetrix HA-10 headphone amp, BGW 100B (for headphones) RECORDERS: Alesis ADAT [3] with BRC, Panasonic SV3700, Yamaha CDR400 CD-R, Nakamichi BX-1 cassette

OUTBOARD: UREI 1176LN, dbx 166A, 120XP Subharmonic Synthesizer, FMR Audio RNC1173 compressor, Hughes Microelectronics AK-100 Sound Retrieval

System, Peavey Autograph II EQ EFFECTS: Lexicon Reflex, ART SGE Mach II, Sequential Circuits Pro FX Model 500 with 510 Phase Shifter, 512 Distortion, 514 Mixer [3], 516 Parametric EQ, 522 Flanger/Chorus, 524 Digital Delay [2]; Master Room XL-305 Spring Reverb

MICROPHONES: Neumann M 149, KM 184 [2], TLM 103 [2]; AKG D112, C414EB; Oktava MC012 [2], Audio-Technica AT4033 [2], Earthworks SR71, Countryman Isomax IIC, Coles Electroacoustics STC 4038, Shure SM54 [2], SM57, Beta 58

MIC PREAMPS: Summit Audio TPA 200B,

WED

You can find more information on Bruce Kaphan at www.brucekaphan.com.

Brent Averill API 312 [4 channels], Neve 1272 [4 channels], Avalon VT-737SP, ART Pro MPA, Tube MP

SAMPLERS/KEYBOARDS/MIDI MODULES: Kurzweil PC-88MX, Roland JX-8P, D-550, S-760; Ensoniq ESQ-1, Yamaha TX802, Emu Proteus 1, Proteus 2, Vintage Keys; Alesis D4, PAIA Fat Man, Voce DMI64, Opcode Studio 128X, Studio Plus Two MIDI interfaces, Time Machine reader/generator COMPUTER: Apple PowerMac 9600 with Newer Technology MAXPower G3/400 upgrade, 288 MB RAM, Magma 7-Slot PCI Expansion Chassis

DAW: Digidesign 888/24 [2], ADAT Bridge, Mix Core, DSP Farm [3], Universal Slave Driver; Glyph 9 GB [4] and 36 GB drives; Club Mac 18 GB drive, Sony DDS-DC DDS-3 data DAT SOFTWARE: Digidesign Pro Tools 5.1, Mark Of The Unicom Digital Performer 3.0, Masterlist CD 2.2, Adaptec Toast 4.0, Retrospect 4.1

POWER CONDITIONING: Furman AR-117 STUDIO NOTES: According to Bruce

Kaphan, "Niagara Falls was built to satisfy my need for a sonically and technically dependable, affordable room for mixing, editing, and single-instrument overdubs. It serves me perfectly as a place to write and produce my solo work, including albums and scoring. I knew that the project was going to be expensive and time consuming, but I really wasn't prepared for how much it cost and how long it took. A very wise friend advised me early in the process that construction projects are 'easy as pie — multiply your contractor's continued on page II2

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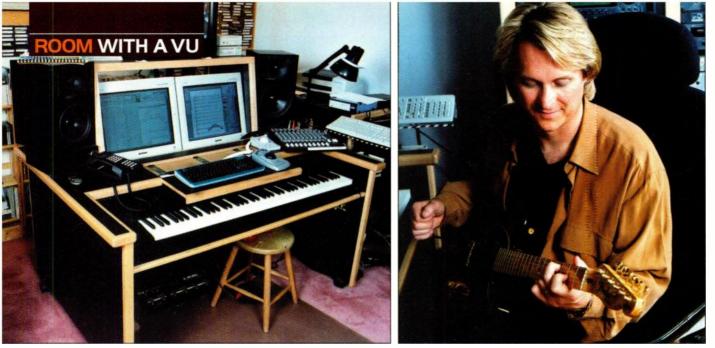


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10:22:15:

CIRCLE 67 ON INFO CARD



By Steve La Cerra

Earmark Productions

Making the move from garage to project-studio powerhouse

STUDIO NAME: Earmark Productions, Inc. LOCATION: Woodland Hills, CA KEY CREW: Danny Pelfrey, Linda Lawley Pelfrey, Greg Townley, Wes Nagy, Amy Horsting

CREDITS: Danny Pelfrey: Emmy nomination for Felicity; Joseph — King of Dreams, Spin City, That's Life, Star Trek Armada, Star Trek Voyager, Elite Force CD-ROM games, Another World, Guiding Light, Santa Barbara, Veronica's Closet, and 20/20. Linda Lawley Pelfrey: Enemy Of The State, Get Carter, I'll Be Home For Christmas, The Big Kahuna, Survivor, Spin City, Felicity, Providence, Chris Isaak Show, Boston Public, songs for Tom Jones, The Carpenters, and Exile MIXING CONSOLE: Panasonic DA-7 [5] MONITORS: Genelec 1031A, 1032A, Dynaudio Acoustics BM6A, AKG K240, K141 headphones [6]

AMPLIFIERS: Rane HC-6 headphone amp RECORDERS: TASCAM DA-88, 122 MkII cassette; Panasonic SV3700

OUTBOARD: Neve 33609C compressor, Apogee PSX100, TC Electronic Finalizer Plus, dbx 160x, 166; Aardvark AardSync II EFFECTS: Lexicon 960L, PCM90, PCM70; TC Electronic M•One, Ensoniq DP/4, Roland SRV2000

MICROPHONES: Neumann M 149, RCA 77, AKG C414, Shure SM57

MIC PREAMPS: Brent Averill Enterprises Neve 1272, Studio Technologies Mic



Pre-Eminance

KEYBOARDS/SAMPLERS/MIDI MODULES: NemeSys GigaStudio [4], Emu E4 [5], B3; Roland S-760 [4], JV-1080, S-770; Kurzweil K2500S, Access Virus, Clavia Nord Rack, Yamaha TX802, Akai S5000, MOTU MIDI Timepiece AV [3], Micro Express [4] COMPUTERS: Apple G4 450 MHz with 256 MB RAM, G4 Dual 450 MHz with 256 MB RAM, G4 500 MHz with 256 MB RAM, PowerBook G3/333 MHz; Sony VAIO 833 MHz with 512 MB RAM, Plextor CD-R, MediaForm CD5400L, CD4004; Glyph, Maxtor, Seagate, and IBM drives SOFTWARE: Digidesign Pro Tools 5.1, MOTU Digital Performer, Adaptec Toast, Jam; Sonic Foundry Sound Forge DAW: RME Hammerfall audio cards [4]

POWER CONDITIONING: American Power Conversion UPS [6]

STUDIO NOTES: "This studio was originally a two-car garage behind the main house and the pool," says Danny Pelfrey. "The power was marginal, but sufficient to supply a small project studio. We use several large APC UPS's to calm down the outages and brownouts that are prevalent here in Woodland Hills. The structure employs a design by James Donnellan with double-thick walls. The main room (22 x 22 feet) is split into a back-to-back workstation and mixing station, both with video screens and Genelec monitors. We found that we needed the same monitors in both locations to maintain writing and mixing consistency.



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CIRCLE 76 ON INFO CARD



MICROPHILE



RCA Type 88-A

MICROPHONE NAME: RCA Type 88-A FROM THE COLLECTION OF: Bob Paquette, The Microphone Museum, Milwaukee, WI YEAR OF MANUFACTURE: 1938 PRICE WHEN NEW: \$74.95 TYPE OF MIC: Pressure-actuated dynamic POLAR PATTERN: Non-directional FREQUENCY RESPONSE: 60 to 10,000 Hz OUTPUT IMPEDANCE: 50 or 250 ohms OUTPUT LEVEL: -56 dBm, referenced to one milliwatt and a sound pressure level of 10 dynes/cm² HUM PICKUP LEVEL: -109 dBm referenced to a hum field of 1 x 10⁻³ gauss

FINISH: Umber gray and satin chrome

DIMENSIONS: 4.5 high x 2.125 diameter x 3.375 long (inches)

WEIGHT: 16 ounces

MIC NOTES: The Type 88-A was cataloged by RCA under two different stock identification numbers: MI-4048-D and MI-3044-D. As the MI-4048-D, it was sold for general handheld use, remote pickup, and studio applications. RCA's Photophone Division offered the Type 88-A as MI-3044-D for use in the film industry, where the microphone was used for location recording in hundreds of well-known movies.

The Type 88-A is essentially omnidirectional, although, at 4,500 Hz, its polar response more closely resembles that of a modern hypercardioid pickup. In spite of this slight directionality, the Type 88-A's pattern is not sufficient to prevent a pronounced "room tone" or reverberant quality from being captured along with the desired audio. For this reason — as well as to increase directionality for dialog recording — RCA recommended equipping the mic with a baffle such as the one shown in this photo (RCA stock number MI-3062). While the circular baffle doesn't significantly change the polar response below about 250 Hz, the increased directionality above that frequency is sufficient to provide greater intelligibility and reduce ambient interference.

Frequency response of the Type 88-A features a bump of about 2.5 dB in the midrange; since this mic employs the same acoustic motor assembly as used in RCA's BK-1A, they share a very similar sonic signature.

Technical data courtesy of Arthur Garcia.



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Behind the board, ahead of the crowd

John Neff

SUSPECT:

ANCESTRY:

OCCUPATIO BIRTHPLAC **RESIDENCE:** VEHICLE: DIET: SHOE SIZE: **CREDITS:** NOTES:

	John Neff						
	Swiss/Irish						
N:	Chief Engineer/Studio Manager of David Lynch's Asymmetrical Studios, guitarist, producer, composer, radio DJ						
E:	Detroit, MI						
:	Santa Clarita Valley, CA						
	1995 Lincoln Executive Town Car						
	Hawaiian coffee, poi, Alaskan salmon, sushi, salads, some meat						
	13						
	Recorded the score for Lynch's new film, Mulholland Drive in Prague, mixed soundtrack for release. Has re-mixed in 5.1: The Elephant Man, Blue Velvet, Twin Peaks, Fire Walk With Me, The Straight Story. Mixed and posted numerous Lynch-directed commercials, including Sony PS2 launch (Europe) and material for the new multimedia site www.davidimch.com. Co-wrote with Lynch, played, recorded, and sang on Blue Bob CD, available on www.davidlynch.com.						
	Suspect started out as a guitarist in the '60s, followed by work as a recording engineer and session and touring musician with groups such as Electric Blues Band and Redeye. Moved to Hawaii in the '80s as a producer of island music and as a morning DJ for eight years. In 1989, he teamed up with Walter "Steely Dan" Becker to develop a new studio to record Donald Fagen's <i>Kamakiriad</i> . Worked as a session guitarist/ keyboardist/engineer with Willie Nelson, Buffy St. Marie, Ry Cooder, David Lindley, Jim Keltner, and Jimmy Buffett.						
	As a consultant, Neff has worked with						

As a consultant, Neff has worked with studio owners worldwide, and after the completion of Lynch's studio in 1997, he came onboard as an engineer/manager.

EQ: What did you do for the 5.1 Lynch movie mixes?

JOHN NEFF: On *The Straight Story*, I ran an automated board mix, and on *Mulholland Drive*, Ron Eng and I mixed much of the film in Pro Tools. Patrick Giraudi premixed the dialog while we were in Prague recording the score. David pushed faders on things that he wanted to finesse on the console.

What is unusual and unique about Lynch's studio?

First, the place has the functionality of what would normally be five rooms in a tradi-

tional movie post facility. That makes it very flexible, but also very complex. Second, David is an avid experimenter. Much to the consternation of the producers, we took almost 14 weeks mixing *Mulholland Drive*. David likes to push the equipment to areas that maybe the designers didn't think of.

Do you know how to thread these big film projectors?

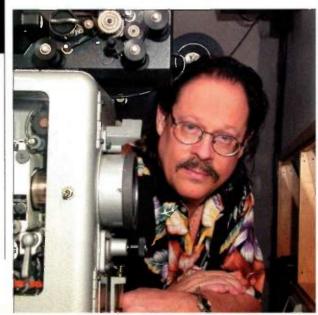
Yes, and all the film runs onto the floor. We use professional projectionists, something most theaters do not.

What did you learn from your experiences with Walter Becker in Hawaii?

Walter was very different to work with than David. He wanted everything available at all times, as does any studio owner, but the engineer is to disappear into the woodwork. I produced and engineered many albums on my own there, but on his and Donald Fagen's CDs, creative input was frowned upon. We did some experimenting in the beginning. I think the most fun was the after-session late night jams in the studio. On the technical side, working with those guys, and with Roger Nichols, was graduate school. As Walter put it, "Donald slices a finer hair."

Can you recall the first time you burned a CD?

Yes. People sent us an amazing number of tapes and CDs — dropped them in the mailbox, threw them over the fence, slid them under the door. Walter wouldn't usually listen



WERFUL HTENING

CRAIG (#5) SLIPKNOT

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PHOTO: STEVE SESKIS C 200

Studio Speakers & Panelists

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CONFERENCE PROGRAM*

Friday December 7, 2001

TRACK #1A: Case Studies or "How Did They Do That?" The "Case Studies" track offers techniques and demonstrations regarding a specific project, with the intention of informing the audience of the details required in order to complete the project.

These are mostly individual presentations, although some panel discussions are included. Depending upon the presenter, they could either be an entire session in length or two per session.

10:00 a.m. - 10:45 a.m.

Session #1A: Surround Sound and the Artist

The process of making the recording artist aware of the wide range of sonic possibilities available in surround sound requires a great deal of time, thought, and preparation. In this presentation, artists and producers describe designing a product specifically for surround and what is entailed.

10:45 a.m. - 11:15 a.m. Technology Showcase

11:15 a.m. - 12:00 p.m.

Session #2A: Surround Mic Techniques

A presentation, demonstration, and analysis of the techniques and equipment used during the recording of several surround projects. How much is different from stereo? Do normal stereo miking techniques apply? How well does the next generation of surround microphones work? 1:15 p.m. - 2:15 p.m. Networking Lunch

2:30 p.m. - 3:15 p.m.

Session #4A: Surround Mastering

As with most other aspects of surround, mastering has required large-scale changes in both equipment and approach. During this session, Bob Ludwig not only explores the process required to master a high-resolution surround project, but explores what happens afterwards as well.

3:15 p.m. - 3:45 a.m.

Technology Showcase

3:45 p.m. - 4:30 p.m.

Session #5A: Repurposing Stereo – Titles to Surround With so many catalog titles lacking multitrack masters, stereo-to-surround repurposing has become a necessary audio evil. This session explores the various techniques and equipment used in the process.

4:45 p.m. - 5:30 p.m.

Session #6A: Film Mixing

While surround mixing came first to the dubbing stage, the process has evolved over the years. This presentation describes the different approaches taken, as well as the trials and tribulations that occur, during surround film mixing.





to them, but once in a while we'd toss them in the microwave and turn it on. That's a good show.

Any suggestions for the film and music industries?

Give the sound guys more time and money! You know, the funny thing about film is, if we do our job exceptionally well, nobody notices. Why? Because what they hear matches what they see. They take it for granted. But if you don't pull it off, the sound can take you out of the story, and then you're the goat. There's incredible pressure in both time and

finances when a film gets to the sound department. You never have enough time (read: money) to experiment and create really nice things. This time, David said he was going to take the luxury of having his own studio and doing what he wanted.

As to music, I love the democratization of good quality equipment available for the home - I have guite a home studio myself - but the record industry has taken that to mean that if you're working at home, you don't need nearly as much money to make your record. That has really hurt the commercial studios,

because every record put out for sale by a big record company should have the benefit of a "real" studio mix and all should be mastered by a true mastering engineer. Artists are always too close to the thing to master their own records.

What do you listen to while you're driving?

Talk radio or nothing. I don't even have a CD player in my car. Before work, I need to think about what has to be done today. After work, making hundreds of tiny decisions about sound, I want to clear my head.





Bill Schnee, Grammy Award winning engineer, Owner of Schnee Studio, North Hollywood, CA.



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BONZAI BEAT

If you could go back in time before recording, what would you like to hear?

Beethoven playing after he was deaf. That would teach you something.

What is the first music you remember hearing?

My mother had a lot of Broadway show albums. My older brothers were huge Elvis, Little Richard, Chuck Berry, and Jerry Lee Lewis fans. I used to watch *American Bandstand* with them every afternoon.

What did you learn from Roger Nichols?

To eat as much as you can stuff in your face in 30 seconds, between takes.

Who were your musical heroes when you were getting started?

I was a recording artist first, and made my first record in 1965. I think the raw sound of the early rock 'n' roll records was something I was after, but the Beach Boys had such a smooth, even recording technique — I liked that a lot, too.

Is there anyone in the world you'd like to work with?

IPIKA

HOLLYWOOD, CALIFORNIA

Cal h

GUITAR

=3/n

BASS

Is this a job application? Yes, Jeff Lynne

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and Mark Mothersbaugh. I haven't met Jeff, but I hold his work as the high standard. I like Mark because he has that impish creativity and experimental spark. Oh, and you'd have to include Roy Thomas Baker in that bunch, and then there's....

How would you like to be remembered in history?

As someone who tried it all. It's funny — I was never huge at anything, but my education has never ended. Curiosity is a good thing.

Do you know any interesting business tricks?

Yes, Walter taught me the Pretzel Logic: Lose money on every deal and make up for it in volume.

What was your oddest session in Lynchland?

On Jocelyn Montgomery's CD (*Lux Vivens*), she wanted to use a crystal bowl as a tone source. You wet your finger, run it around the rim, and you get a clear bell-like sound. Fine. Mic it up with a Groove Tubes Model 1 tube mic (one of my favorites), and get it into Pro Tools. Transfer it to the 24-track, and vari-speed

it back into Pro Tools at various pitches, verified by a tuner. Many tracks. Give each one a board channel. Then play the faders like Hammond drawbars, to make up the accompaniment.

What old saying do you hate the most?

"We'll fix it in the mix." No you won't! Record it right the first time! You can't polish a turd!

What are you worried about?

Let's see — why do I wake up at two in the morning? Money and security. ▶ continued on page II2



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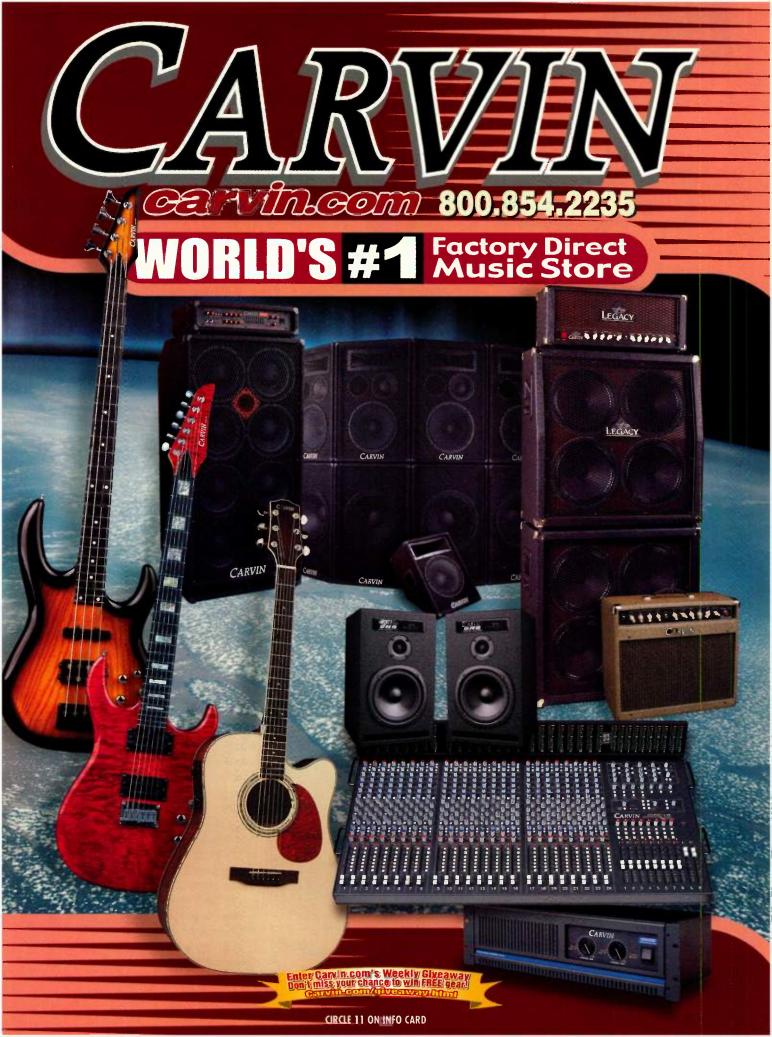
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[= 3 h

RECORDING





by Rich Tozzoli

TECHNIQUES

MIKING

Whether used in a blistering rock tune or a smooth jazz groove, the kick drum provides the solid foundation upon which great recordings are built. In this question-and-answer session, four highly respected engineers discuss their secrets for capturing the thunder down under.

THE PARTICIPANTS

Al Schmitt: An industry legend, Schmitt has worked with them all, from Frank Sinatra to Barbra Streisand, taking home a pocketful of Grammys along the way.

Bob Rock: Truly one of the kings of rock, he's well known for his work with Metallica, Bon Jovi, Motley Crue, and The Cult.

Pete Moshay: A longtime engineer with Hall & Oates, Moshay's platinum credits also include Average White Band,

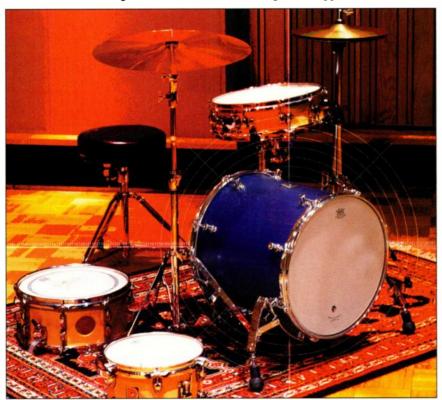
Mariah Carey, and Journey.

Julian King: One of Nashville's finest, King has worked with Randy Travis, Brooks & Dunn, Travis Tritt, and Faith Hill, winning a Grammy for his work on her *Breathe* release.

Q&A What mics do you generally use on the kick?

AS: It varies, but I like an AKG D-112 and will also try a Neumann FET U 47 and even a Royer [R121] on certain tracks.

BR: That depends on the situation and on what you're going for. If you wanted to go for a regular basic kick sound, I'd probably use a Sennheiser [MD] 421 or an [Electro-Voice] RE20. The '421 has just a little more solid feel to it. The RE-20 is a softer feel. Generally, what I do, because I tend to go for a bigger kick that is kind of



hyped and a bit deeper, is I usually go with an AKG D-20 (The "Ringo" mic) and I will use a [Sennheiser] '421 with it. Also, I use — which may sound insane — a '421 dead center with the D-20 back a little bit. Then about 12 feet away I will use a D-30, which is another old AKG that was supposedly used by Bonham.

PM: Usually a [AKG] D12, [Electro-Voice] RE20, [Sennheiser] '421, [Shure] Beta 52 sometimes combined with a [Shure] '57 or SM98.

JK: I like to use a Neumann FET 47i with both pads when recording most kick drums.

How many mics?

AS: When I'm doing jazz, just one, but I'll also use ambience mics.

BR: It's got a lot to do with the way the drums tune and who is playing. If the player is dynamically not that solid, I will use distant mics to get great presence. If someone is really solid with all their hits, usually you can use a little more of the closer mics. Generally, the further away you get from the inside of the drum, the dynamics of the drummers foot become less apparent. I can use up to three mics or I can use one - every situation is different. The thing is, with the second and third microphone, there is all sorts of phasing that happens, which I use to shape or contour the sound. It almost acts like EQ in a way - I use the phase cancellation to come up with a sound. When I do a double-head kick, I have a Y-cord that is wired in and out of phase, and I usually use a [AKG] '409 on the beater side, and a '421, [Neumann] U 87, or a '409 on the front side.

PM: Usually one or two, but I will also use ambience mics.

JK: One, along with room mics.

How important are room mics for the overall sound?

AS: Very important. I use them all the time, and it's important to use quality mics on the room.

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BR: I'd say every decade has its own kind of sound. With a lot of the '80s metal I worked on, the room was quite important — generally it was the distance in the room with microphones. Right now, I'm having a lot of fun with the [RCA] 44's and Coles [ribbon mics]. They're a bit darker and flatter. They sound quite cool, and you can hype the frequencies with EQ and compression. Generally, now a lot of the drums are late-'70s-sounding, a lot dryer in terms of the actual mixing, so the kick drum doesn't really have a lot of lows from the room mics.

PM: Very! And not very wide either, sometimes mono.

JK: I typically use a pair of Telefunken 251's for room mics, and I use a fair amount of them in the overall drum mix to help put some natural ambience into the sound.

Front heads on or off?

AS: It varies, as some of the jazz drummers keep the head on, so I'll mic the other side of the beater, obviously. Each drum and each drummer is different, so where you place the mic actually depends on the drummer. It can be six inches from the skin or a foot and a half, depending on the sound that you're looking for. The overall sound of the drums is really important, too, including how they want it to fit in the mix. Some like a nice tight sound, so the front head may be off, or they may have a hole in there you can get in on in order to get a tighter sound.

BR: I prefer front head on with enough of a hole in the center that I can place the mic there.

PM: Dense tracks seem to favor front head off for control of punch and attack. If the track has some more air, then I'll use both heads (maybe with a small 10inch hole).

JK: I prefer the front head on and with a larger hole in the center of the drum. The larger hole gives me more choices with regard to mic placement and also allows for a larger volume of air to escape as the drum is struck. The smallholed drums make it really hard to experiment around for a sweet spot.

Do you generally stuff the drum with anything?

AS: I don't, but sometimes the drummer will do it that way if that's the sound he or she wants. There are times where I'll say it's a little too boomy and we should put a pillow or a piano blanket in there, then adjust it to where we want it.

BR: It's down to tuning and pitch. Simon Phillips showed me the towel trick, on the beater side, inside the drum, which dampens it slightly. Then, of course, if it's double-headed, you can add a little newspaper with that. I've also stuffed pillows in there and had a dead plastic skin, which is not my favorite. I prefer to go light on the damping.

PM: I definitely put in a light feather/foam mix pillow. Also, I have a very heavy granite rock wedged up against the beater head a bit, which lowers the pitch and tightens up the punch. Weight inside is very important to getting the sound for me.

JK: Most of the drummers I've worked with have either a small pillow or folded blanket inside their kick drum. These tend to get shifted all around during transport, and I usually re-orient them so that they have a bit of contact with both the front and back heads.

Is there a particular preamp you prefer to use on kick?

AS: I usually use a tube preamp, but I may also use an old Neve.

BR: I usually use my Neve 1081's, and, right now, I'm into my Helios preamps. The combination of the D-20 and the D-30 with the Helios is really classic sounding.

PM: I have an Audix mic pre/EQ I like a lot, also the Sony DMX-R100 channel sounds great on kick.

JK: I like to use a Neve 1081 or equivalent preamp.

EQ settings?

AS: I use very little, but there's a trick I learned years ago. Certain times you'll want that point on the kick, and I'll add a couple of dB up at 10 kHz. What that gives is a little tap up at the top, but I don't always do that.

BR: When I record, I tend not to EQ. I will get the sound of the drum in the mics if I'm using multiple mics for a blend — I don't hype it, I just tend to clean up frequencies, standing waves, etc.

PM: I tend to dip out a bit around 400



Panelist Pete Moshay (left) with Mickey Curry (center) and T-Bone Wolk —the "rhythm section of the Gods."

[Hz], and if I need more attack, I adjust the mic position or change to a plastic Pearl beater that has four different sides.

JK: I like a Pultec EQ in my signal path to add some attack if needed, usually at 5 kHz and maybe add a little bit back in at 100 Hz. I use the [Neve] 1081 to dip out some low midrange and also cut some under 30 Hz. The [Neumann] U 47 is huge down there below 30 Hz and some cut helps to control the "floppy" low end.

What about compression?

AS: I use a Summit limiter and pull about 1 dB or less, just to get that fatness from the tube.

BR: I add compression, both fast and slow, on different mics to give different sounds. It helps that phasing and shaping of the contour I was talking about.

PM: Sometimes I like the Neve 33609 at 3:1, but never too heavy into compression while printing, mostly as a safety limiter. I prefer to compress later.

JK: My preamp is followed by a Neve 33609. The compression is light and hits threes and fours [dB of gain reduction].

How about tuning the drum?

AS: I normally don't tune it because usually I leave that up to the drummer. Fortunately, the guys I work with are all the top guys. They may ask me if they should tighten or loosen them a little, but most times I try to capture what they've got.

BR: I do tune them, but it's usually a

combination (if there's not a drum tuner there) of the drummer putting it where it feels good, and then the two of us figuring out what sounds best. If there's pitch to the actual drum, and you can find that low resonance and dampen it, you'll get a much tighter bottom end.

PM: Crucial! My first choice is a Remo white Ambassador head, my second choice is driving to the music store to get one. The key of the song and where the bassist is playing determines the tuning a lot. I decide early in the record what will have most of the sub frequencies, either the kick or bass guitar, but I'm very conscience of them not fighting in the subs.

JK: I don't play drums and don't attempt to tune them myself.

Overall thoughts?

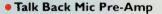
AS: Just watch your levels — you don't want to saturate what you're doing. I'm fortunate as most of the work I do is on analog tape, so I get that nice tape sound back. It gives you that nice chest thing. The most important things are your ears. You have to know what you want to hear and go out and be able to do it. Sometimes it's just a matter of moving the mic an inch or two that will make all the difference in the world.

BR: For the records that I make, the kick is a big center of attention. I think drummers, much like guitar players, want a sound to their drums. I think kick is so important these days with the amount of emphasis that's put on rhythm now. It's almost like it is the part of the sound you must have happening, and that's why I give it so much attention.

PM: Being a drummer since I was 12, I would say having some choices of drums and cymbals is a tremendous asset in getting a great sound, but, first and foremost, a great drummer can work with you to achieve the perfect drum sound for the song. My favorite session drummer is Mickey Curry (Hall & Oates, Brian Adams, The Cult, Celine Dion, and many more). Not only is he a great guy to work with, but he works with me to get a special sound that really makes the track, and he's funny as hell, too!

JK: I like to approach the drums as one instrument rather than several and start getting sounds by hearing the room mics only. I add the remaining mics one at a time and try not to spend too much time with any one mic in solo. Remove the communications barrier in your studio...

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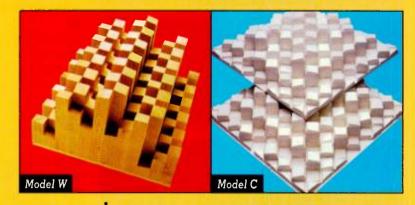
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Put Reason to work as a multitimbral MIDI sound module

Using Reason as a TORE MODULE

by Craig Anderton

Propellorhead's Reason is an amazing piece of software that combines a bunch of sound generator modules, signal processors, mixers, pattern generators, and an internal sequencer. Although often thought of as a dance music program, its NN19 sample playback module, SubTractor analog synthesis emulation, Dr. Rex loop playback machine, and ReDrum drum computer are great soft synths in their own right, regardless of your musical tastes.

In fact, you can ditch the pattern generators and sequencer, and treat Reason as a multitimbral tone module.



And because Reason is coded efficiently, you can likely run it from an older computer, or a laptop for live use, and still have it deliver plenty of timbral power.

CREATING THE TONE MODULE

Start by matching Reason to your MIDI environment. Reason accommodates up to four MIDI ports. This is useful if you need more than 16 instruments in your multitimbral setup, or want to distribute the "MIDI load" over multiple ports so all the data isn't being squeezed through one port.

TO SET UP THE PORTS:

 Go Edit > Preferences > Advanced MIDI (fig. 1).
 Assign each bus to the desired MIDI port.

3. Unless you plan to trigger any of Reason's pattern generators from your main sequencer, set MIDI Clock Sync to "No MIDI Input."

NOW CREATE YOUR MULTITIM-BRAL SETUP:

 Create a rack with your choice of softsynths, along with a Mixer 14:2 and any desired signal processors.
 Go to the MIDI

Inputs/Audio Outputs module (at the top of the "rack"). Note the Bus buttons; select





the desired bus for your first round of assignments.

3. Each channel has a small arrow to the right of the channel name. Click on the arrow for channel 1, and a drop-down menu appears with a list of your rack's synths (fig. 2). Choose the module you want to assign to channel 1.

4. Similarly, click on the arrow associated with MIDI channel 2 and assign it to an instrument.

5. Keep assigning instruments to channels. If needed, select another bus and assign instruments to it as well.

Now route your audio outs, and Reason is set up as a multitimbral synth module. I sometimes run Reason on my slower "office" computer, drive it with SONAR (on my "music" computer), and record the outputs into a SONAR digital audio track...cool!

Craig Anderton is the author of "Quick Start" books for SONAR and Reason (published by Wizoo/Music Sales). His next book will be on project mastering.

MINIMIZING MIDI BANDWIDTH

Sending MIDI data from one computer to another should be a simple procedure, but, in reality, the more data you send down a MIDI cable, the greater the chance of introducing small MiDI timing errors. These may not be audible with patches like string pads, but drum, bass, and other parts — particularly those with percussive attacks — may exhibit annoying timing inconsistencies.

A simple workaround for Redrum, and for parts driven by the Matrix, is to program the parts using Reason's own pattern generators, and trigger them via an external MIDI clock. You can even program all your Reason parts using Reason's internal sequencer and symching it to your main sequencer, which may give better results than triggering instrument notes via MIDI.

To set up Reason to accept an external clock:

- Go Edit > Preferences > Advanced MIDI.
- Under MIDI Clock Sync (bottom field), select the MIDI port over which the timing signals will appear.
- B. Go to the Options menu (fig. 3), and select MIDI Clock Sync instead of Internal Sync.

Now when you press Play on your main sequencer, the Matrix and Redrum pattern generators (as well as the main internal sequencer) will start, and, of course, they will respond to stop signals, too.

Options Windows Help		FIG.
Internal Sync	- Bard	
MIDI Clock Sync		
Relvine Synt		
Enable Keyboard Remote		10
Edit Keyboard Remote		-
Clear AN Keyboard Remote		
Enable MIDI Remote Mappin	g	1
Edit MIDI Remote Mapping		
Clear MI MIDI Remote Mapp	ng	
Toggle Rack Front/Rear	Tab	
Show Cables	Ctrl+L	
Follow Song	Ctrl+F	
		57





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Use your mixer to put the pedal to the metal

Wah-Wah of the Gods

by Craig Anderton

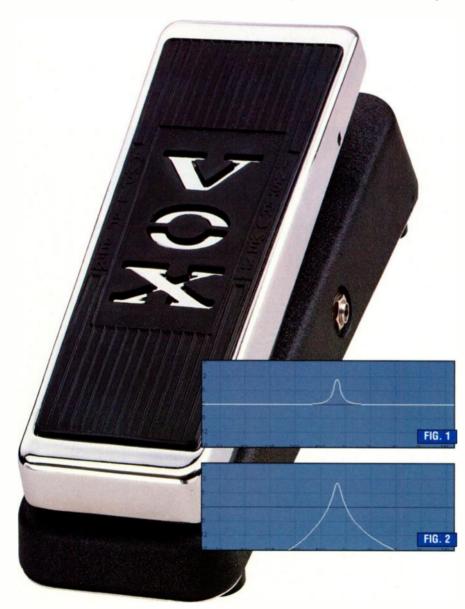
TECHNIQUES

EFFECTS

What do Jimi Hendrix, '70s disco, porn movies, and *Shaft* all have in common? Of course — the wah-wah pedal. Here's a way to get a classic wah-wah sound out of today's mixers. Although I developed this technique on a Panasonic DA7 digital mixer, it also works with analog mixers.

If you think that setting your paramet-

ric EQ for a bandpass response and sweeping the frequency gives a wahwah effect, you're partially right. But the response curve of a parametric is essentially flat, with the bandpass peak poking out above the baseline frequency (fig. 1). A wah-wah pedal gives a response that looks more like fig. 2, which rejects frequencies outside the bandpass range. Although you can set other filter stages in



a parametric to reduce response outside the bandpass range, you lose the "twist a single knob to add wah-wah" option. Fortunately, there's a simple solution to getting the desired response.

1. Split the input signal to be wah'ed into two mixer channels, with the EQ set to the flat position.

2. Throw one of the channels out of phase, and start playing the instrument or track you want to process.

3. Adjust the levels of the two tracks so that they cancel completely.

4. Enable parametric EQ on *one* of the tracks.

5. Choose a bandpass response with a relatively large boost and narrow bandwidth — adjust to taste.

6. Sweep the filter frequency. Wow! Or perhaps I should say, Wah! The sound is just like the real thing.

Incidentally, one reason why I use this technique with the DA7 is because filter frequencies can be MIDI-controlled; furthermore, the DA7 has a "MIDI layer" that you can program so that its faders generate MIDI controller signals. I feed the mixer's MIDI out to the MIDI in, which allows controlling the wah-wah effect with a long-throw fader from the MIDI layer instead of a little knob.

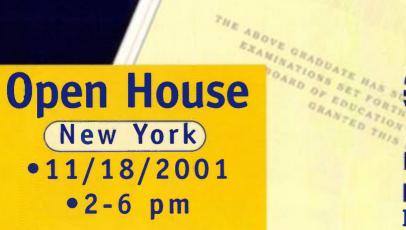
An even sneakier trick: the DA7 includes an internal pink noise test tone generator. By injecting a teeny bit of noise in with the wah-wah sound, you get an even more vintage effect, as bringing the "pedal" into the high-frequency range lets through a little bit of hiss.

It may seem crazy to use a mixer as a wah-wah pedal, but don't knock it until you've tried it — it sounds highly cool.

Craig Anderton is the author of "Quick Start" books for SONAR and Reason (published by Wizoo/Music Sales). His next book will be on project mastering.

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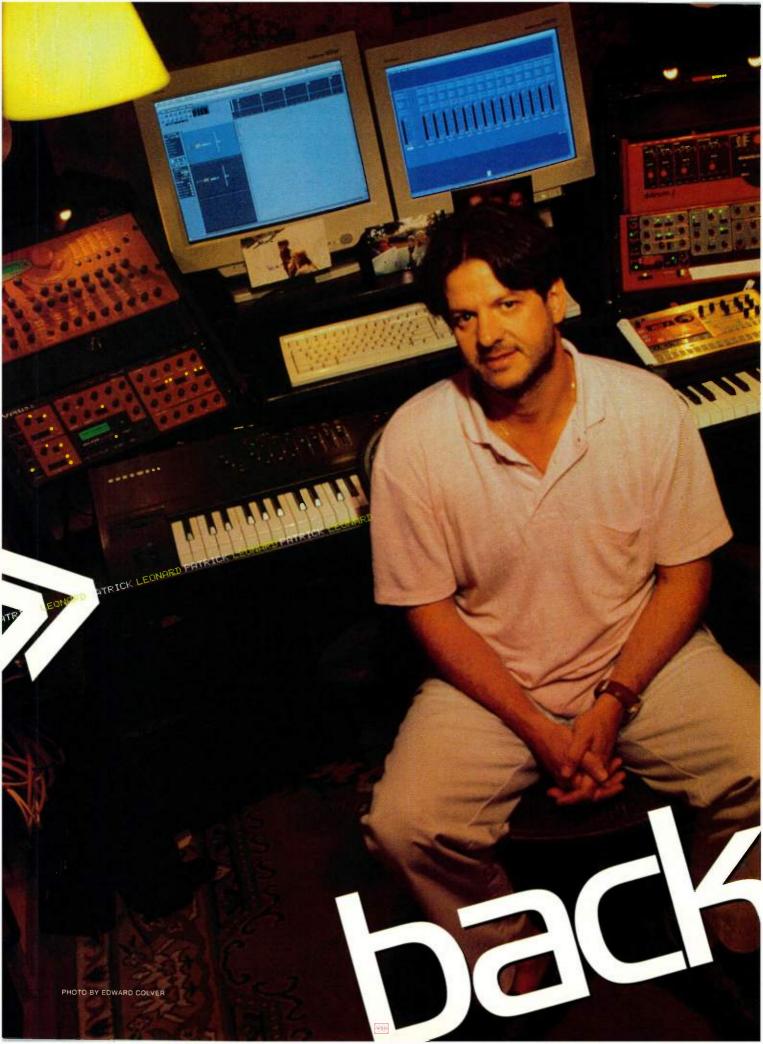


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TRACK #1B: Production Hardware or "What Gear Do I Use?"

The "Production Hardware" track focuses on the type of production equipment available for surround-sound production and mastering, with the intention of informing the audience of techniques for achieving commercial results.

10:00 a.m. - 10:45 a.m.

Session #1B: Surround in the DAW

Since DAW use has become so widespread, the next logical step for manufacturers and developers is to incorporate surround features in the workstation. This panel presents an overview of the latest surround capabilities in the DAW world.

10:45 a.m. - 11:15 a.m. Technology Showcase

11:15 a.m. - 12:00 p.m.

Session #28: Ambisonics -

The Surround Alternative

A primer and demonstration of this revolutionary, though under-exploited, technology and its potential impact on present and future multichannel audio.

12:15 p.m. - 1:00 p.m.

Session #3A: Surround Mix Techniques While surround sound mixing may use much of the same equipment, the thought process behind the mix is certainly different. In this session, the presenters both demonstrate and analyze the approaches and techniques used during a project.

1:15 p.m. - 2:15 p.m.

Ne working Lunch/Technology Showcase

9 p.m. · 3:15 p.m.

***ion #4B: Surround for Gamers**

you provide an extreme surround experience within the boundaries of a anvironment? A panel of software developers provides an update on the ound sound developments in the expanding gaming world.

.m. - 3:45 p.m. .iology Showcase

o.m. - 4:30 p.m.

sion #5B: Back to Basics -

verview of DVD Technologies

 difference between DVD formats? What exactly is the advantage of DVDesentation provides an overview of the basic surround sound capabilities
 3-A and DVD-V media, and how engineers and producers can best utilize
 reative opportunities.

" .m. - 5:30 p.m.

. >n #6B: Repurposing: The Technical

Behind the Technique While, on the surface, making a stereo program into a 5.1 surround mix might seem simple, there's a lot of computation taking place under the hood. TC's Thomas Lund sheds some light on how such a complex issue is resolved.

Saturday December 8, 2001 TRACK #2A: Production Hardware or "What Gear Do I Use?" ... continued

The "Production Hardware" track continues on Day #2 with overviews of specific surround sound topics, with the intention of informing the audience about critical operational topics.

10:00 a.m. - 10:45 a.m. Session #1A: "The History and Future of Surround Sound" Part 1 An annotated presentation with Tom Holman

11:00 a.m. - 11:45 a.m. Session #2A: "The History and Future of Surround Sound" Part 2 An annotated preventation with Tom Holman

11:45 a.m. - 12:15 p.m. Technology Showcase

12:15 a.m. - 1:00 p.m.

Session #3A: 96 kHz and Beyond — "Will We Soon Live in a High-Res World?"

A presentation by the Consumer Electronics Association that discusses the problems and benefits of working at 96 kHz and 192 kHz.

1:15 p.m. - 2:15 p.m. Networking Lunch/Technology Showcase

2:30 p.m. - 3:15 p.m.

Session #4A: Acoustic Design for Surround Sound If you though the environment for two speakers were hard to deal with, how about five? Panelists discuss basic multichannel acoustic designs and potential modifications for existing spaces both large and small

3:15 p.m. - 3:45 p.m. Technology Showcase

3:45 p.m. - 4:30 p.m.

Session #5A: System Calibration & Bass Management

A hands-on presentation that details the correct way to calibrate a surround system, including the importance of bass management — why we need it, and when to use it.

4:45 p.m. - 5:30 p.m.

Session #6A: Surround Studio Owners Panel Being on the cutting edge isn't always easy. In this session, panelists discuss the requirements and hardships of owning and booking a surround studio.

TRACK #28: Delivery Formats or "How Does Surround Sound Reach its Audience?"

The "Delivery Formats" track focuses on the ways they surround sound material reaches its targeted audience, ranging from auto playback systems, through the retail experience, to live sound design and broadcasting.

10:00 a.m. - 10:45 a.m.

Session #1B: A&R Looks At Surround – Again Record label executives share their experiences on developing surround titles and gaze into the crystal ball about what's in the future.

11:00 a.m. - 11:45 a.m.

Session #28: Surround in the Car — The View from Detroit Carmakers

Will this be the year that surround becomes standard in our vehicles? A panel of auto audio experts discuss the latest in car surround. Who has it? Who will have it? What can we expect in the future? Why it may be different than what's in the home.

12:15 p.m. - 1:00 p.m.

Session #3B: The Latest in Home Theater Systems What's hot and what's not in the home theater world. This CEDIA-sponsored panel of installers discusses and shows examples of their work, both large and small.

1:15 p.m. - 2:15 p.m. Networking Lunch/Technology Showcase

2:30 p.m. - 3:15 p.m.

Session #48: Live Surround

Yes, there's life beyond 5.1 and it can be heard right now in the live sound arena. A panel of live sound engineers and permanent-fixture designers describe their work in developing and operating large scale surround sound systems in a live environment.

3:15 p.m. - 3:45 a.m. Technology Showcase

3:45 p.m. - 4:30 p.m.

Session #5B: SACD Close Up Look out DVD, there's another way to deliver surround. A close-up look at the inner workings of SACD and DSD material with practical examples.

4:45 p.m. - 5:30 p.m. Session #6B: Broadcast Surround — Surround in a Hi-Definition World

Forget the picture for a second, 5.1 is an integral part of the HDTV spec. In this session, a panel of broadcasters discusses the trials and tribulations of the new format and shares tips and techniques on mixing to picture and provides a live demonstration of surround capture techniques. As of 10/18/01



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CIRCLE 83 ON INFO CARD

A Partnership Is Born "I put my whole hear and soul into this record and I can't honestly say l've done that in the last rev allouns," Elton John confided as he took a break from his summer holiday in Europe to chal. The always been enthusiastic up envirys been entities and need when the any really tried my records, but this one I really, really, really the and the second se best, and it's got 150% of me in it and that's why i think I'm so happy with it." Part of his satisfaction with this project also comes from the process of recording itself. John shares that he and Leonard took a different approach to recording this record than those in his most recent past. The epiphany that defined this new approach was inspired, John

ELTON JOHN RETURNS TO RECORDING BASICS WITH PRODUCER PATRICK LEONARD

he plan was simple: Make a raw, honest rock album within 40 days. The stories are near unbelievable, but all are true. Songs whitten in A5 minutes, titteen lead vocals in wo days, nig wranglers, tiny dancers, new band, on band, and Petrick Longard Lord or Production cathe band, and Bernie's amazing Witc book. Sir Ellon John and Patrick Leonard, Lord of Production, gath ered their Knighte of the Roundtable, free Chiccarelli and Brian Scheuble (Royal Engineers), Todd Shoemaker (MIDI guru), David Channing (Prince of Pro Tools), and Bill Bottrel (Master Mixer - with additional mixing by Chiccarelli). All came together accumpner many by convertent, in came ogeneration to create what Elton calls, "a very important record to create when Ellon cars, a very important record for my career. The album, tilled Songs From The West Coast, arrived in stores this month.

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back to basics

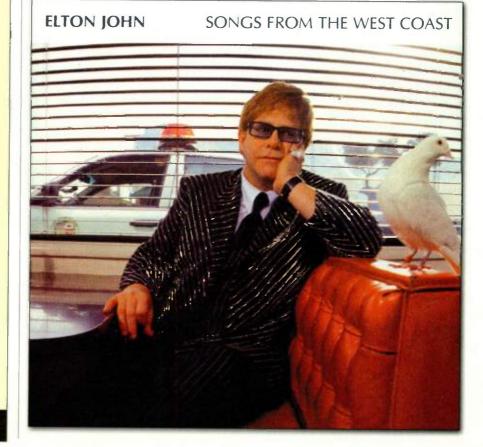
says, by singer/songwriter Ryan Adams, who has become one of John's greatest influences as of late.

*****1 found this record called Heartbreakers by Rvan Adams and I read on the sleeve notes that it was written and recorded in about 12 days in Nashville. I thought, 'I used to do albums like that, why can't I do albums like that now?' Pat and I kind of used that as the catalyst for this album. We went to see Ryan at the Troubadour Club. Ironically enough, that is the first place I ever played in America. I saw Ryan and heard his new album. It was such an album of infinite beauty, simplicity, and warmth, and I used that as a guideline to how I wanted my album to be. If I could get anywhere near that, I would be very, very happy because that album is such a special album to me, and he's a very. very special artist to me. He's my favorite artist in the world right now as far as new artists go."

team (Scheuble and Chiccarelli behind the board and Leonard in the producer's chair) embarked on this mission to make a record with John that was reminiscent of some of his best work of the '70s, such as *Tumbleweed Connection* and *Madman Across the Water.* To accomplish this, John said he went back to the basics, which in his world means three things — himself, a piano, and a microphone.

Leonard was working with John for the second time, the first having been the recording of Dreamwork's 1999 *Road To Eldorado* soundtrack. Leonard, whose career includes hit albums with Madonna, Roger Waters, and Jewel, echoes John's sentiments on the direction of this record. "The vocal process is something we kind of established on *Eldorado*. That was where we really got close and there was a symbiosis about it, because we would literally do one take of vocal. Elton would come in the control room and we would redline whatever

In December of last year, the creative



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phrases or words wanted to be fixed, which was usually just a couple. He'd go out, I'd punch them in (I'd operate the machine myself so I could stay very much with him), and we would do the next song."

Chicarelli, who tracked half the album, explains, "What was totally exciting for me was that you're in the studio while then be ready to record it within two hours. We would record the track, and, as one of the guys is fixing their track or adding something to it, Elton would go in and write another song in the piano room. We would have the piano room with the mics still coming up, but going to DAT machine so that we'd record everything he did as he was writing it."

patrick leonard's MIDI RIG for elton john

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- > ELECTRONIC DRUMS: Clavia Ddrum 4
- > EFFECTS: Electrix Mofx, Filter Factory, Warp Factory
- > MIXER: Yamaha 02R [2]
- > COMPUTER: Power Mac G4
- > SOFTWARE: Digidesign Pro Tools Mix+ and SampleCell 2, Emagic Logic

he's conceiving the song, and from what the band has told me, every song Elton's ever written in his life he's written in no longer than 45 minutes."

Scheuble confirms that the tracking dates for his part of the record went down in a similar fashion with the same quick timetable. "He would come in, Bernie [Taupin] would hand him the lyrics, he'd write the song within 45 minutes, and

The Tracking Plan

Leonard and John agree that much of the magic of this project came through their commitment to doing very little preproduction and just laying down the album in the studio, track after track, as they were inspired. "He did fifteen lead vocals in two days," Leonard reports.

"The process," as he calls it, was very simple. They set up shop around



Elton John and Patrick Leonard pose with a fan that managed to get into the studio.... No? How about Elton, Patrick, and their new studio woofer.... You're right, we're sorry.

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back to basics

Pat is basically able to re-create the sound and the funkiness of those earlier albums of mine, but give it a slightly modern touch as well." —Elton John

Christmas last year and began recording | in various Los Angeles studios including Sony Studios in Santa Monica and Hollywood's Cello Studios. "We wanted enough space to set up an Elton world, a guitar world, a drum world, and a writing world. There was enough space where Elton could be off working while everyone else was tracking, and Sony was brilliant for that." The idea was to go in without any preproduction done and just let the record happen. Leonard says that John had some songs written and some were not. His longtime writing partner, Bernie Taupin, had submitted a book of lyrics, which Leonard and John spent some time going over and choosing the ones they felt most compelled to record. In other cases, John would sit at the piano and compose "on the fly." A good example of this can be found on a track called "Mansfield," which John wrote at the piano in the studio in literally five minutes.

Technically Speaking

To create the working environment, Leonard had a Emagic Logic setup with

various synthesizers, including his main keyboard, a Kurzweil K2500 (see sidebar for full list). Leonard's MIDI guru, Todd Shoemaker, kept it all running smoothly. In addition, he set up drum modules and a couple of drum pads so he could program something quickly if John came in and needed a track to play against. The piano that John used was seven-foot Yamaha Disclavier MIDI piano; Leonard shares that it was rare if he ever needed more than one take.

"Elton would play the song to a click or a loop usually once, maybe twice. We would make any corrections in Logic. It was always very minor." He continues, "We didn't quantize the piano. Sometimes we'd bump things a little closer to downbeats, but there wasn't much to do. Then we would re-print the piano from that and he would re-sing it. So, in very short order, the piano and the vocal were done. Then the band would overdub to the sound of his piano; sometimes we'd use a full rhythm section, and other times just drums and bass. Initially, when we started out, we cut with everyone

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WRH

back to basics

the **sound strategists**

Some key crew members tell — in their own words — the part they played in the making of Songs From The West Coast.



BRIAN SCHEUBLE - KNOB TWIDDLER EXTRAORDINAIRE

"I cut fourteen sides in Studio 1 at Cello Studios in Hollywood, with the Neve 8078 December last year. We used the first day to set up and get sounds. I set up three different areas for Matt Chamberlain's drums with different types of sounds. One area was mostly dynamic mics; another was the

big, traditional, roomy drum sound; and then an old-style drum setup with tight mics and lots of blankets around the kit. I only used three mics for that setup, which were an RCA on the bass drum, a Neumann U 87 on the overhead, and a Shure SM57 on the snare.

"We had Rusty Anderson playing guitar and Paul Bushnell on bass. We took our time with each guy and made sure they were comfortable and had full access to different sounds. Alan Saunderson was my assistant engineer, and he was fabulous. Elton, Rusty, and Paul would pretty much traditionally stay with their same setup."

JOE CHICCARELLI'S ROYAL SOUNDS

"Six of the songs on the record were cut with Brian, and I cut the other six, starting at the end of January, on the Neve 8078 at Sony Studios in Santa Monica. We had a big room there that we set up as Elton's Yamaha Disclavier piano writing room. We'd have a live DAT running while he was working on the songs. When Elton finished writing a song, we'd record his piano and vocal to the Studer A827 as well as the MIDI data into [Emagic] Logic Audio with [Otari] RADAR slaves. Then we'd spit the MIDI data back into the piano and re-record the piano fresh and have Elton do a live vocal on top of that.

"My mic setup for Elton's piano changed from song to song, but, for the most part, I used either a pair of AKG C12's or BLUE Kiwi's or a pair of Neumann U 87's. Depending upon the song, I would position them about six to twelve inches over the soundboard, one near the high end and one near the low end, but a little further back. On a few of the songs, I had a pair of Audio-Technica AT4050's in the room as ambient mics, just to give a little bit more air. For the single 'I Want Love,' I used a pair of U 87's close on the strings, which I ran through my Pultec HLF 'Telephone' filter and through a Fairchild 670.

"The thing about Elton is that his piano is one take, and all his lead vocals on the record are one take. There's no time for a vocal sound — he's so focused that the minute he steps up to the microphone, he's going to sing something that's great. The vocals done at Sony used a BLUE Bottle, and the final vocals were done in England at the Townhouse on a Neumann U 47 through a Neve 1073, EAR Tube EQ, and a Fairchild 670. I didn't use much EQ; most of it was pretty flat. The most amazing thing is simply the fact that Elton did 15 vocals in two days over a 15-hour period with doubles and harmonies."

DAVID CHANNING - PRO TOOLS WÜNDERKIND

"I'm the engineer, editor, Otari RADAR II compiler — kind of arbiter of the tracks that make it to mix (not to make the choice, but just to make sure that they're administered and nothing is lost). I also did all of the Pro Tools editing work as well as engineered the overdubs that were done at Pat's [Leonard] studio, Johnny Yuma.

"My first job was making sure that of all the gear (the RADAR, Pro Tools, and whatever) that was going to be required to capture the MIDI data generated by Elton's piano was in place and set up, and was talking to each other. This record had comparatively very little Pro Tools editing being done, just because of the caliber of the players. There was nearly no Pro Tooling done to Elton himself.

"I'm the one guy who was in the room throughout the project. For the Brian Scheuble-engineered tracks at Cello Studios, I rented Studio 7 down the hall to do my edits on location. At the end of the Cello sessions, we did transfers into RADAR. We needed to have working versions of the record in RADAR for two reasons. One, so we could continue to work at Johnny Yuma, and, two, so that we could take the analog master tapes and put them on the shelf rather than beat them up through the process of all the overdubs.

"After working at Johnny Yuma, we reconvened at Sony Studios and Joe Chiccarelli engineered the remaining dates. At Sony, my Pro Tools rig was in the control room and I did edits at the end of the day. The rig interfaced to the copy mult (for transferring from machine to machine) so I'd have quick access to all 24 tracks of one of the Studers and vice-versa to put it back. At the end of the tracking dates, Joe then made RADAR stem mixes that would subsequently go to London for Elton to sing to.

"My rig is a Mix+ in a G4 with three 888's and two hot-swap Glyph bays, a CD burner, and DLT for backup. I use a USD for synchronization and I use an Emagic Unitor as my MIDI interface."

BILL BOTTREL - MIX MASTER

"We did the mixes at Cello Studios on the Neve 8078, mixed to one inch two-track Ampex ATR 102. I also mixed to Sony DSD. I like oneinch analog, and that was my choice, but Gary Meyerberg (Cello's chief engineer) suggested we try the DSD and we did. It sounded beautiful. I haven't mixed an outside project since the mid-'80s. Pat sent me the rough mixes. Joe Chiccarelli and Brian Scheuble tracked the project, and they did a brilliant job. I just took it from there.

"To start, I bring up all the faders at once. Then I just start shaping — turning things down and others up — EQing things, compressing, and using effects on some things. I just keep shaping for a couple hours until there's a moment where it starts to sound like something — so it really defines itself. I did subgroups and basically got everything within 24 faders in front of me. If there were twelve tracks of background vocals recorded, I would bus them into two channels so that I can have them on two faders in front of me. That way I don't have to reach very far. I don't like leaving the sound of the proper position of monitoring. I try to get everything right in front of me, put all the faders flat, and just start shaping it.

"Elton's vocals are up from the beginning. I treated the vocals differently for each song. I used mostly a Neve 32264, a Pultec EQ P1A3, or a Fairchild 670 depending on what the song needed. Very little had to be done to his vocals really.

"I ride things a lot. I don't compress for any reason other than for the sound of the compressor on that instrument or on that track. I ride the faders all the time, sort of massaging the dynamics.

"Elton's piano went through the [SPL] Transient Designer, with a little EQ and sometimes a dbx limiter. I don't place too much importance on the gear. I try to have the technical, engineering, and audio matters stay out of the way of the music. If they become apparent, then it should be contributing to the music, not detracting from it or covering it up.

"There's this one song that really stuck in my mind, 'This Train Don't Stop There Any More.' It's a beautiful song. I'm a songwriter first, so I'm always really listening to the song as I engineer a mix. I'd say the final outcome of the album is very soulful!" playing together at the same time. Then we'd go back and re-print Elton's piano so there wasn't drum leakage and whatever else. But, after a couple of songs, Elton requested that he just play to a click."

John has a mutual admiration for his newfound producer, saying, "Pat is basically able to re-create the sound and the funkiness of those earlier albums of mine, but give it a slightly modern touch as well. It was a match made in heaven!"

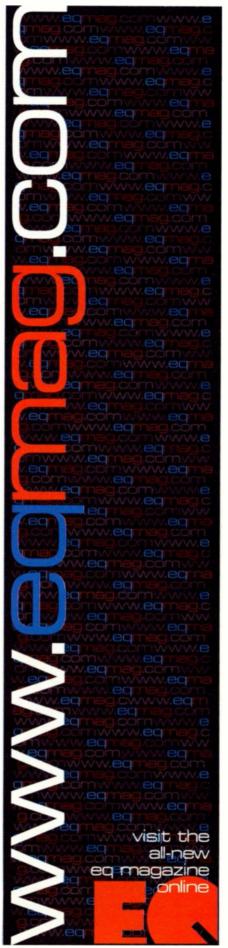
John and Leonard agreed on their need for two key elements of the recording process — vintage Neve consoles and analog tape. John reports that Leonard has officially converted him to an analog fan. "Pat and I talked about the approach of the album, that he definitely wanted to do it on analog tape, which was a huge difference for me," John says. "To do it as simply as possible with piano, bass, drums, and guitar. Nothing records the piano like analog tape — it's a certain warmth you just don't get on digital tape."

When it was time to move into the mix phase of the project, they carried their concept of "creating, not editing" with them and Leonard turned to mix engineer Bill Bottrel for the mixing duties. "It's very clean, and there just isn't anyone better than Bill Bottrel. It's mixed with the sort of artistry that I think only Bill can bring to something," he praises. "There weren't three-day mixes; some of them were three-hour mixes. And they don't sound like threehour mixes, they sound like great music. So we kind of let it be. I think part of this role as a producer is letting your intuition speak to you. Mine was saying, 'If we slow this process down we're going to ruin it."

They pressed on and kept mixing, and after just 41 days total, from tracking to mix, they emerged with an album that contains the most consistently touching set of tunes with production reminiscent of the character and warmth of John's most prized '70s albums.

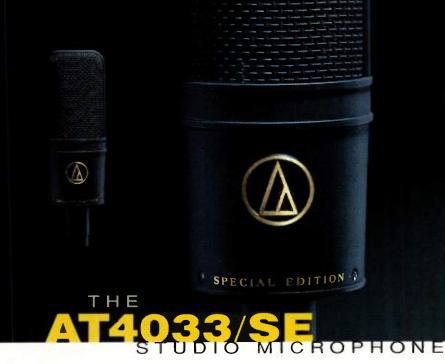
"I can't be happier with the end result," muses John.







EQ I NOVEMBER2001 | 57



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ible. Once I put it up, I can never really take it down." These were the exact words legendary producer/ engineer Phil Ramone used to express his feelings about the

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SUANANASSEY

The key to getting a great interview, as with most aspects of life, is to be in the right place at the right time. One sunny afternoon in Los Angeles not long ago, I dropped in on a good friend at The Record Plant and happened to mention that I was scouting around for hot producers involved in hot projects. "Ah, you want to shoot over to Studio 4," she told me. "Darryl Swann is in there putting the finishing touches on Macy Gray's new album, and I'm sure he'd love to talk with you." A short time later, I found myself engaged in fervent conversation with Swann, a young, eager, and thoroughly dedicated engineer/producer whose success has clearly not gone to his head. Talking expansively about the gritty street sound he created with Gray for her groundbreaking hit "I Try," Swann gives an insider's perspective on how to start a trend and not just follow one.

EQ: Tell me how you got started in this career.

DARRYL SWANN: I grew up in Cleveland where I used to play in and do sound for local bands — after the show was over and all the guys were chasing the girls. I'd be the one wondering why the speaker blew up. Eventually I moved out to California, playing guitar for a mid-'80s group called Haven — our big claim to fame was that we used to play the Troubadour and hung out with Poison and Warrant before they were signed! [*Laughs*.] Through a friend, I was offered a job as a runner/second engineer at Silverlake Recording. Within two weeks, I was doing my first session — second engineering for LA Reid and Babyface. I ended up living at the studio! [Laughs.] I used to sleep under the mixing board because that's the only place where the carpet was clean. I'd do 30- or 40-hour sessions and then sleep for three hours, wake up like a glazed doughnut with sweat all over me, and do it all over again. But I really got to cut my teeth; inbetween sessions I'd put up my own reels and start playing with drum machines, bringing in artists late at night, working that whole thing out. I also discovered that I had a knack for working with people, which is so important in producing. like being a psychologist. You have to know how to pull something out of a person, how

PHOTO BY ALEXX HENRY

PRODUCER/ENGINEER DARRYL SWANN BUCKS THE TRENDS WITH MACY GRAY

swann song

to make a person active, how to make a person feel good.

Then I went to college at UCLA, graduated, got back into music, and started living out of another studio [Straight Arrow Recording] with gospel producers Buster and Shavoni. I was their guy for years and years; eventually I placed a song with a group called Pretty In Pink — Chaka Khan's daugh-

ter was a member — and, from then on, I was a producer.

How did you meet Macy?

Interestingly, we actually grew up about a half an hour away from each other back in Ohio but we didn't know each other then. What happened was that in '93-'94, I had a group called Cultural Revolution - it was kind of a Soul-To-Soul group, and I was the "Jazzy B" guy. Macy sang on one of our demos. We actually landed a label deal, but she opted not to be in the group; she said, "I'm doing my own thing." Six months later she got a deal with

Atlantic and recorded a great rock 'n' roll project that never came out.

So I have my deal, she has her deal. I had a single released, but my album never came out - her album never came out, and we both lost our deals. So I'm back engineering - this is around '95 or so - and she's a secretary somewhere, and, out of the blue, she calls one day and says, "Let's write something." We go into my buddy's garage studio [W.H.K., in Culver City, CA] and write "I Try" with a couple of other guys; we put it together in one night. That one demo that we did that night got put in two films and two soundtracks - Love Jones and Picture Perfect, with Jennifer Aniston.

Did you record that album analog or digitally?

We did everything on two-inch [analog tape]. We would mock it up in the [Akai] MPC60, or the MPC3000; that's pretty

much my canvas in terms of coming up with sounds and ideas — the machine is just incredible. A lot of people think that it's just a drum machine, but I create entire spirits and moods with it.

Do you do your editing in the MPC as well?

I do a lot of editing in there. Obviously, when we have multiple tracks, then I'll use [Digidesign's] Pro



Darryl Swann's techniques can be heard on Macy Gray's The Id.

Tools. But for the smaller stuff, I'm lightning fast on that machine; I fly all the backgrounds in with it.

I also use it as a MIDI controller to trigger other modules and things; it's such a versatile machine. A lot of guys use computer programs, which are cool, too, but not as mobile as having one of these.

Do you print the MPC sounds onto tape, or do you run it virtually while you're mixing?

Usually, I'll print the sounds to tape to smash it down nice. Or I may use this as a slave machine. If I have, let's say, tracks 1 through 8 burning with all the drum sounds and we need the tracks on tape. I'll comp those eight down to one tape track and then, come mix time, I'll run the sounds virtually.

Do you go to tape for the tape sound, or is it purely convenience?

I'm going for the sound; you get that saturation. I view it as electrons hitting tape, kind of like a bug hitting your windshield on the highway. It kind of splats, and the harder it splats, the more it spreads.

It doesn't sound like you're a big fan of digital recording?

No, it's cool. It's like I said — it's all about the tool needed for the job. I love tape for the tangible qualities of tape saturation, the loud compression, the

> splat. Also, tape is much more forgiving, in terms of clipping and distortion. Tape distortion is good distortion, whereas digital distortion is scary distortion. At the same time, digital provides a lot of convenience. For this new album, we've printed everything on the two-inch, and we've transferred then everything over to Pro Tools, and we're mixing off of Pro Tools, just for the convenience of it.

Yet you're mixing through an analog console [SSL 9000], so you're going through multiple conversion processes.

Yeah, well, actually what we're doing is we're working everything. We're working

tape, analog to analog, and then if we have to do some editing, we'll drop it into Pro Tools and we'll drop it back over.

What do you mix to?

Mostly half-inch.

Which ultimately is going to get converted to digital in the mastering house, so there are going to be several conversion processes. Does that bother you?

One thing we did to try to keep the conversions as clean as possible when transferring into Pro Tools is that we brought in the dB Technologies A/D converters. It's strange, though: we were A/Bing the vocals and, ironically, the 888's sounded better on certain things just because it crunched them differently — it was a little dirtier where the dB's were so clean.

Presumably for you, like most engineers, distortion is a tool.

Absolutely. It's a usable, tangible

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swann song

object. So the number of conversions really doesn't bother me that much because I feel that, with the stuff that we're doing, we're using dirty-ass beats, which are already crunchy, we're playing with heavy transient drums and really phat basses, plus Macy's scratchy voice. As long as our chain is clean, then we let the gear do what it's going to do.

Do you ever record through analog tube gear on your way to tape, or do you leave all that for the mix?

Oh, absolutely. I like running the bass through a Neve pre and a [UREI] LA-2; I love

that combination. Another piece of gear that I like running drums through is a [UREI] LA-4. Those are my favorite compressors; they have such a soft yet hard push, almost like a trampoline.

I used to teach engineering, and I'd tell my students, "If it sounds good, it *is* good — taste your food before you salt it." I know so many guys who feel that they're not earning their money unless they're pushing switches and turning knobs.

At what point do you say to yourself, it's ready?

When you're standing next to a snare

<page-header>

Swann and Gray knew each other for a long time before working together.

First, let me say that the drum kit that we've been using is a special kit called Kik Drums. They're really dynamic, and they have a really unique design in that the shells are ultra-thin and there are absolutely no holes in them, so you get this nice resonation. You have to start with a greatsounding kit.

The mic that I love starting with on the kick drum is the [AKG] D112 on the front side. I'll use a [Sennheiser MD] 421 or an [Electro-Voice] RE20 on the beater side to get the attack, and then I'll put a [Neumann] U 87 two or three feet out to

Lots of phase checking, absolutely. On the snares I use a [Shure] SM57, as new as possible. Lately, I've been positioning the '57 kind of far away from the snare. A lot of times vou'll see '57's right on the skin, but, believe it or not. I find that the mic shuts down when it's the that close; diaphragm doesn't breathe - it's just getting too much. I usually ride it off to an angle, maybe about five to six inches away from the head. I'll also use a '57 on the bottom.

I love using the [Shure] SM81 on the hi-hat because it's thin, and it's real directional, so you get minimal leakage. I've

devised this little technique where I'll take a pop stopper and put a ski cap over it and then wedge it in-between the '57 on top of the snare and the hi-hat mic. That cuts off literally 95% of the crosstalk between the snare and the hi-hat. It's essential; I don't do anything without it.

Wool or polyester ski cap?

Lycra. [Laughs.] And I'll use [Neumann] KM 84's on the bottoms of the toms, and '421's on the tops. I've also been using an old Shure mic called a Salt Shaker; it's great for that old Motown thing between the kick and the snares and tom right in front. You get

Macy's voice is like taking some finely granulated sand and tossing it in the air — you can see through it, but there's things there.

drum and then you go into the control room and listen to the speakers and it sounds exactly the same. Or if it sounds exactly the same and you want to take it somewhere else; that's when you tie outboard gear in.

You said that Macy has a very particular drum sound. capture the full spectrum. That way, I get a nice, wide thing with a lot of air. The '112 gives me my 100 Hz, and the RE20 or the '421 on the beater side gives me my 2k and click. I get a really nice balance that way.

With all those mics, obviously you have to do lots of phase checking.

that great old crunchy sound. Plus I've been using a lot of cool ribbons on the kit.

What mics do you use for overheads?

I have a couple of tube [Neumann] U 49's close left and right, and I've got some [RCA] 77's a little bit behind those,

left and right, and then we have some [Neumann] U 67's up high, left and right. And then right back behind the drummer we have an [RCA] 44, an [Neumann] M 49, and a U 67. That's something else that I've found: in getting a room sound, a lot of people think you have to go out to the front of the room. But if you stand behind the drummer and listen, you can really hear all that is going on. I find that is the absolute sweetest spot for a room sound.

Do all the drum mics get printed to separate tracks?

Sometimes we'll comp a few down, like the kick drum mics. I'll usually find the sound and merge those down to one, but if we're going for something special, like a real ambient kick, I'll print the ambient mic on its own track and I'll print the attack-y ones on another track. We'll often do the snare the same way, and the Salt Shaker will go on its own track. That's the mic I use the [Empirical Labs] Distressor on; it just gives it that nuclear sound, really unique. We usually have two mics on the toms, so it's just left and right toms. And then the room - depending on what we're going for, I'll print stereo rooms, and then I'll print one or two additional mono rooms for a unique sound. There's one song that didn't make it onto on the new album called "Love Fanatic," where basically the entire kit is a U 47 right behind the drummer's right shoulder. The tone of it is so crisp and fat.

But, of course, you have to be in a good-sounding room.

You have to be in a good-sounding room. And the Record Plant has greatsounding rooms.

Do you ever use a bass amp, or is it always DI?

I use both. We're using one of those re-issued Ampeg amps, and I've got an RE20 right up on it.

Do you use the two signals for different parts of the frequency spectrum?

Usually the DI will have that real present thing, and the amp will have the fuzzy kind of warm, wide thing. So, depending on what we're going for, I'll print those on separate tracks so I can

have the option.

You said you generally record bass through a compressor on your way in, usually an LA-2.

Usually so, but real light.

Do you recompress the bass when vou mix?

A little bit. If it's just breathing nicely, I'll let it go. But usually I'll put a little something on it to give it a pump.

How do you record electric guitars?

I like to use amps as much as possible; very little DI. I'll put a [Shure] '57 up against the grille on one speaker, a [Shure SM] 58 on another one, a U 87 about five feet back, and then I actually sometimes try a ribbon also. Sometimes I'll even throw a '421 in the back, especially if it's a Fender Twin, to give it a nice mid-range kind of thing. Once again, you've got to check for phase frequently.

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And acoustic guitar?

I usually like to use a [Sennheiser] C451 with either an [AKG] C414 or a U 87. I also enjoy the Royer ribbon mics, and B&Ks — those are really nice on acoustics.

How do you position them?

I'll usually use two mics — a B&K or '451 up on the neck and then a wide condenser around the sound hole so I'll get the nice attack from the neck and the air of the hole. It gives a good balance; a nice, wide, full-body guitar.

Any tricks for recording piano?

Yeah, we've been doing a lot of really creative stuff with that. In some cases, we've been going for a lo-fi kind of sound, so what I'll do is throw a dynamic in the room and crank the hell out of it. That gives a really nice lo-fi ambient kind of thing. If I want a widespread sound, I'll throw a '451 and an '87 in there in kind of a V-position; that gives a nice stereo spread. Sometimes we'll even throw some mics underneath.

Everyone is struck by the sonic

qualities of Macy's voice. As her recording engineer, can you describe it technically?

Well, it's a very unique instrument, that's for sure! Take a voice like Luther Vandross, which I signify as taking some baby powder, throwing it up in the air, and when it falls you can kind of see through it. Macy's voice is like taking some finely granulated sand and tossing it in the air — you can see through it, but there's things there. From the unique scratchiness of her tone, it's almost polyphonic; you can almost hear harmonics in her voice. I've found that sometimes a dustier mic actually sounds better on her than a transparent mic.

So you're talking about using a mic that imposes its own sonic signature?

Exactly. It's almost like a Focusrite EQ, which doesn't put anything on a sound, whereas a Neve EQ lays something on it.

Do you need to EQ her vocals?

No, I usually go real easy on the EQ or have no EQ whatsoever. For some rea-

son, her voice loves an old Neve pre.

Are there any special treatments that you give her vocals in the mix?

We usually put a nice harmonizer on them, using an Eventide H3000.

Is there anything else you'd like to share with the readers?

It's all about your axe, your weapon of choice. And the most important thing I can say is to have an objective before you get started. If you have an objective, then everything else falls into place. You can walk into a studio and it can be very alarming to see all these knobs and buttons and everything. But if you know specifically what you're doing, you go from seeing this wide thing to seeing a very focused situation. Ironically, at the same time, serendipity or mistakes usually make up the most special moments in a song.

Howard Massey's latest book, *Behind The Glass*, is a collection of interviews with record producers, now available from Backbeat Books.









828

SUMMARY: The MOTU 828 provides all you could ask for in an audio interface - via FireWire!

STRENGTHS: Hot-pluggable FireWire connection. Excellent sound. Flexible analog and digital I/O including two mic inputs with phantom power. No-latency monitoring for selected input pair. Easy to install and use. ADAT sync. Includes bundled DAW software (Mac only).

WEAKNESSES: No dedicated word clock connections. Limited metering. **PRICE: \$795**

E0 FREE LIT. #: 130

CILK MOTU scores two big winners with

Digital Performer 3.0 and the 828 FireWire interface

Digital Performer 3.0

SUMMARY: Version 3.0 of MOTU's Digital Performer offers a revamped user interface as well as tons of new features and productivity enhancers.

- STRENGTHS: Multiple plug-in windows. Flexible audio bundle-based routing. Key command assignments. Three automation display modes. Excellent surround mixing support. MIDI and audio can be edited in the same window. Four surround panner choices. Multiple processor support. Improved QuickTime movie support. Fourteen new plug-ins, including surround EQ and limiter. Score notation zooming. Dynamics potation symbols
 - Dynamics notation symbols.
 - WEAKNESSES: No grouping of mute or solo in mixer. Can't group tracks for editing. **VERSION REVIEWED 3.01**

MINIMUM REQUIREMENTS: 604e/120 MHz Power Mac with 128 MB RAM and Mac OS 8.5.1 or higher (OS 9 or higher recommended): G4 with 256 MB RAM recommended.

PRICE: \$795, upgrade \$295, competitive upgrade \$395



EQ PEVIEU By Mitch Gallagher • mgallagher@musicplayer.com

Long a purveyor of top-level audio and MIDI software and MIDI hardware, Boston-based manufacturer Mark of the Unicorn has made a real impact on the audio interface and DAW world in the past few years; first with the release of their 2408-series of PCI card-based audio interfaces and, recently, with the world's first FireWire audio interface, the 828.

In addition to creating the 828 and other audio interfaces, MOTU has continued to develop their flagship DAW software, Digital Performer, which has now reached version 3.0.

DIGITAL PERFORMER 3.0

Digital Performer (DP) has been one of the leading Macintosh audio/MIDI software offerings on the market for many years now. The program is exceedingly deep, and offers way more functionality than could possibly be covered in an



[SURROUND DELAY] Besides the surround panners, 10 additional new plug-ins are bundled with DP3, including the Surround Feedback Delay shown here. This awesome delay allows you to bounce echoes around the stereo field in a user-definable path; the delay time can be in milliseconds or locked to rhythmic values based on tempo. Other new plug-ins include a surround speaker calibrator, bass mananger, surround parametric EQ, MasterWorks surround limiter, MasterWorks Gate, plate reverb, Quan (dither and noise-shaping), and an MS decoder.

Another new plug-in, Trigger, allows you to create MIDI note data based on an audio signal. The plug-in is inserted onto an audio track, and its MIDI output is routed to whatever MIDI module is providing your drum sounds. With a clean input signal, and by carefully adjusting threshold and timing controls, you can get good drum replacement results using it.



(ARC PANNER) Four types of surround panners are included with DP 3; here we see the Arc Panner, which allows you to graphically place the audio signal in the surround field, as well as filter the signal and feed it to the LFE channel. Note that each output can be soloed or muted — nice! The Stereo Mode pulldown allows you to determine what happens to a stereo signal when it is panned in surround. You can have the two channels mirror each other, move at a fixed distance around a center point, move at a changing distance around a center point, or down-mix them to mono.

entire magazine, let alone one review. Since we looked at DP 2.7 in the June 2000 issue of EQ, let's focus on what's particularly cool in the latest version 3 release.

I tested DP3 on two rigs: The first is my "main" studio rig, which consists of a B&W G3 with a 400 MHz G4 CPU upgrade and 512 MB of RAM; this computer has a Digidesign Pro Tools Mix+ system installed; for a short time this computer also had a TC Works PowerCore installed. The second rig is my "composing" studio, which consists of a 400 MHz G4 titanium PowerBook with 512 MB of RAM, a stack of MIDI samplers and synths, loads of soft synths and samplers, and, currently, a MOTU 828 FireWire audio interface (see below). Both rigs are equipped with many different plug-ins in both TDM and MAS formats. I found the program to be very stable on both platforms.

The program contains many improvements, not the least of which is the new look and feel.

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For many users, though, the major breakthrough may be the ability to edit audio and MIDI in the same Sequence Editor window. This simplifies many tasks, especially where MIDI must be lined up with audio waveforms.

mark

of the UNICOPN

For those who work with video, the Sequence Editor now has a movie track that displays down to the frame level, which is perfect for editing to picture and lining up hits.

A total of 14 new plug-ins are also featured in DP3 (including four new surround panners). In addition to the bundled plug-ins, third-party MAS plug-in support has been increasing of late; AudioEase, Bomb Factory, Antares, TC Works, Waves, and others are [AUDIO BUNDLES] DP 3's Audio Bundles allow you to create flexible setups that greatly simplify and speed routing. Bundles can accommodate from mono up to 10.2 surround formats, and can be set up for inputs, outputs, or bussing.

all offering native MAS plug-ins. You can also run VST plug-ins in DP, although AudioEase VST Wrapper, Spark FX Machine, or Cycling '74 Pluggo is required. The factory MOTU plug-ins have always been solid, and the new additions don't disappoint. I was especially enamored with the Surround Feedback Delay, which allows you to create a "path" for routing echo repeats around the surround field.

If you work in surround, DP3 has a lot to offer

DP3: The Guest Room Warrior Opinion

As your humble Guest Room Warrior, I'm all *about* productivity. So the things I like best about DP3 are the little things; the seemingly small new features that make a giant difference in how fast and how well I work. The new Editing window, for example, which allows you to display MIDI data and audio waveforms side by side.

Nudging audio to line up with MIDI notes used to be a real pain, but now you can simply drop your cursor line and push the MIDI data or audio into place. I still wish the scrolling wiper didn't disappear when you drag or time scale an audio soundbite, but this is a good step forward.

Trigger, one of the new set of MOTU plug-ins, is a winner, too: it simply uses audio data to trigger MIDI notes in real time. I used it right away for enhancing some poorly recorded drums (the tracks in question were recorded in another studio...honest) with springtime-fresh sampler drums. I used to have to play along with the original track and line up misplayed notes by hand; Trigger is great time-saver.

Best of all are the display options in the new Editing window. Each MIDI or audio track can be resized individually. For example, you can put the track you're currently editing up big and leave other tracks small, so you can easily see other tracks that affect the edit. In addition, it has a variable zoom slider that "hypes" the waveform or the MIDI notes in a given track, making them larger within the confines of the track size. Great for finding edit points in a VO track quickly and accurately.

I like the new approach to audio outputs. DP now lets you assign "bundles" of outputs in a given project, and only the bundles you have created show up in the selection list. Not only does this allow for mono direct outs (finally eliminating the tedious "left-right-left-right" pan control nonsense required to get DP to output to mono channels), it also makes your selection list much more manageable. After installing Reason, B4, and a pile of other software instruments on my system, my list of available I/O options was outrageous. Now it's clean, neat, and customized for each project.

And the new Search command makes quick work of grabbing a group of MIDI events in a given track. Set the parameters you're looking for, and find them all with single keystroke.

There's a lot to like about DP3, with one exception: The crosshair cursor can be damnably hard to see against the background of the Editing window, causing me to jog my mouse repeatedly looking for some kind of movement. Well, okay, that's not all that serious, but could we have a ruder cursor in the next update? [MOTU says that new cursors will be implemented in version 3.1.] —Jim Bordner



[AURALIZER] The Auralizer surround panner places the sound not only in the surround field, but also includes the effects of room boundaries on the sound, such as Doppler effect and reflections off the room surfaces.

828 Saves The Day!

I was in New York working on a Steely Dan project. We needed to fly vocals around from chorus to chorus, and I didn't have my Pro Tools. What to do, what to do....

I bought a MOTU 828 FireWire audio interface, a MOTU Digital Timepiece, and a Maxtor 40-GB FireWire hard disk to connect to my G4 laptop. I rented an Otari UFC-24 box to transfer digitally back and forth from the Sony 48-track. Word clock from the Sony fed the UFC and the DTP. The DTP was connected to the 828 with an ADAT sync cable. Optical cables connected the audio from the UFC to the 828.

With all of the check boxes selected correctly, I transferred eight tracks, including drums, keyboards, bass, and click, into Digital Performer 2.7. On the second pass, I transferred eight tracks of background vocals. (On the 48-track, I had bounced a few beats of click onto the beginning of one of the background tracks to make sure everything lined up.) I copied the background vocals to the other two choruses, made sure the clicks lined up, and flew them back to the 48-track. It worked perfectly. I also had to move one lead vocal line from the first chorus to the last chorus — also a perfect first-try lockup. With this setup, I was able to repeat the lockup with two-sample accuracy every time.

Everything worked fine, and there was no problem having the 828 and the hard disk on the same FireWire bus. I was playing back 16 tracks from hard disk while recording eight tracks. There was never a cough.

The 828/DTP is now a permanent member of my digital audio SWAT team.

---Roger Nichols

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EQ | NOVEMBER2001 | 69

of the UNICOPP

Second Opinion: DP 3.0

The latest incarnation of MOTU's Digital Performer is much more than the next rung up the incremental upgrade ladder. Version 3.0 is a milestone for Digital Performer, offering a number of new features aimed at surround, music-for-picture, and audio editing/automated mixing applications.

Immediately apparent is the new Mac OS X-like user interface. But don't let the UI fool you — DP isn't yet OS Xcompatible, despite its appearance overhaul.

One of the biggest overall improvements is that audio and MIDI tracks can be viewed and edited (down to the sample level) with the same set of graphic editing tools within the Sequence Editor window. Previously, audio and MIDI could only be viewed alongside each other as thin strips of data within the Tracks window, which didn't allow for vertical zooming.

When it comes to editing your tracks, DP's new floating tool bar is a godsend for quickly drawing MIDI and audio track automation data. You're given the standard set of tools (pointer, pencil, magnifying glass, etc.), but, in addition, there are several new tools such as the Waveform tool. This offers ten waveform choices (square, sine, sample-and-hold, parabola, and so on) that can be used to automate a variety of parameters. When DP's rhythmic grid is active, automation waveforms snap to whatever rhythmic duration you've selected. By setting the grid to 1/4-notes and inserting filter cutoff automation using the sample-and-hold waveform, I turned a static synth pad into a bubbling rhythmic bed in less than 30 seconds. Sweet.

A movie track can also be shown within the Sequence Editor. Initially I didn't find this to be a huge asset because the video clips are automatically placed along the track — you can't force clips to be shown on a marker at 1:06:50:24, for example. However, as you zoom in, more frames are displayed, allowing you to zero in on specific hit points. This proved to be easier than scrolling through the QuickTime movie to locate hit points.

Key commands are another area where DP 3.0 shines. Now you can assign nearly every parameter to a keystroke, which is a feature I've long admired in Emagic Logic Audio. What's more, MOTU includes keystroke/command assignments for the major audio sequencers, so, if you're used to working in Pro Tools, you don't have to learn new key commands to get around on Digital Performer. Just select the key binding for the program you're most comfortable with and go.

I worked with DP 3.0 over the course of several projects, including several TV commercials and a short industrial film without any major crashes. I had a few problems using VST plug-ins via AudioEase VST Wrapper, but, after pulling this from my plug-ins folder, everything was fine. The only significant problem I experienced was within the Sequence Editor. Sometimes after moving from one zoom level to another, screen redraws would get hosed (multiple playback wipers would appear, the movie track would turn into a dark mess of color streaks, etc.). According to MOTU, a tix is in the works and should be available by the time you read this.

-John Krogh, technical editor, Keyboard magazine

Second Opinion: 828

How was my experience with the 828? Let's put it this way: I had it set up and was recording tracks with it in about as much time as it will take you to read this sidebar. I used the 828 with a Macintosh G3 PowerBook, and, once I'd installed the 828 drivers and connected the FireWire cable, I plugged in an electric bass to input 1, hit Record, and laid down a track to a click in AudioDesk. I switched to an acoustic/electric guitar and overdubbed a rhythm track, with no audible delay as I monitored the tracks. I plugged in a mic, adjusted the levels, and did a vocal take, once again having no impression of latency.

The sound of the guitar, bass, and vocal tracks I recorded reflected what I heard going in. The 828's preamp didn't fatten or color the sound of any of the tracks, certainly not to the degree that some guitar and mic preamps are famous for.

I went hog-wild with the 828, porting over an eight-track tune from ADAT into the PowerBook via lightpipe. I processed certain tracks, added effects to others, then transferred them back to the ADAT one at a time so I could check the sync. The 828 performed flawlessly, including control of AudioDesk from the ADAT's LRC. Going live, I put eight simultaneous tracks of synths and samplers through the 828 and into Cubase, recording an entire tune without a hiccup or dropout.

I loved the 828's routing and monitoring flexibility, its rock solid performance, and its sound quality. I went back and torth about the fact that it comes with rack ears; an interface that can be so easily integrated with a laptop might be better served with a chassis that lets you slip it easily into a shoulder bag. But for such an affordable audio interface, you couldn't ask for much more.

-Ernie Rideout, senior associate editor, Keyboard magazine

you besides the new delay plug-in. As mentioned above, there are four different surround panner plug-ins included with the program. These range from a graphic "arc" panner, to a three-knob TriPan, to a grid-style panner, to Auralizer, which provides spatial cues along with surround panning. These panners include LFE support and filtering, as well as support for panning stereo signals in surround. Having the option to choose the best style panner for an application is very nice.

828 Specifi	cations
MINIMUM REQUIREMENTS	
ANALOG INPUTS	2 Neutrik 1/4-inch/XLR combi mic/line level with switchable 48V phantom power; 6 1/4-inch TRS balanced/unbalanced
SYNC	9-pin ADAT sync 1/4-inch punch in/out footswitch
COMPUTER CONNECTION	FireWire
RESOLUTION	44.1 or 48 kHz, 64x oversampled on input, 128x oversampled on output24-bit
METERING	18 ins and outs Signal present LEDs for analog, coaxial S/PDIF, and optical activity Mac: MAS, Sound Manager, ASIO. Windows: WDM, ASIO

There's so much more to talk about; we've barely begun to scratch the surface of all the DP3 can do. Please take a look at the various sidebars and screenshots accompanying this article; they'll give you a more complete overview of what DP3 is all about. But when it's all said and done, version 3 of DP3 accomplishes a lot;



[MULTIPLE PLUG-IN WINDOWS] No digital graphics trickery here — DP3 supports multiple plug-in windows being open simultaneously. Can I get an amen?

the new look is cool, and the productivity enhancements had me repeatedly saying, "Yes!" Combining that with the

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[UI] The most obvious enhancement to DP3 is the new user interface look and feel. Here we see the Transport controls (with Quick Access "drawer" open), and the Tracks window, which gives an overview of project. Note the new floating tool palette at the upper right, which contains automation drawing, zoom, scrub, and loop playback tools.

MOTU has added many other useful UI/productivity enhancements as well, such as wiper-centered zooming (when you zoom in and out, the focus point remains on the playback wiper's position), stationary playback head, and the ability to edit MIDI and audio in the same window.

> log ins and outs, eight ADAT lightpipe, and stereo coaxial S/PDIF. Two of the analog ins double as mic-level connections, complete with switchable 48V phantom power. ▶ continued on page I26

new plug-ins, excellent surround support, and enhanced editing and score/ notation features, DP3 makes an already-solid program even more capable. Highly recommended.

828

those who For have been waiting for a FireWire interface for their Mac or PC, the wait is over! The 828 delivers up to 18 simultaneous inputs and outputs, including eight ana-



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Yamaha AW44I6HDCD Professional Audio Workstation

EO takes Yamaha's new digital audio production environment for a test drive

IN REVIEW

Yamaha's AW4416 is a self-contained digital audio production environment in a desktop package. Combining a fully automated mixer, 16-track hard disk recorder, and multitimbral sampler, the AW4416 records uncompressed 16- or 24-bit audio at 44.1 or 48 kHz. In addition to the 16 tracks, the unit also provides a discrete stereo track for recording a mix of a project. In 16-bit mode, the AW4416 can simultaneously record up to 16 tracks while playing back 16 tracks. In 24-bit mode, the maximum number of simultaneous record/play tracks is also 16.

The HDCD version of the AW4416 ships from Yamaha with a 2.5-inch, 12 GB hard drive, and a 6x CD-RW drive for data storage and audio CD burning. Using four screws and a multipin connector, the hard drive mounts on a small "sled" that slides into a slot on the rear panel, facilitating the use of multiple drives. Installation of the CD-RW drive was a bit more involved, as the unit must be turned upsidedown on its face to access the drive bay. Yamaha very wisely suggests using the top half of the original packing material as a support while doing this, ensuring that faders or other front-panel controls will be safe from harm. It took about a half-hour to install both drives.



YAMAHA AW44I6HDCD

MANUFACTURER: Yamaha Corporation of America, 6600 Orangethorpe Boulevard, Buena Park, CA 90622. Tel: 714-522-9011. Web: www.yamaha.com/proaudio. SUMMARY: Automated digital mixing console with integrated multitrack hard disk recorder. STRENGTHS: Excellent sound quality. Stable operating system. Versatile I/O options. WEAKNESSES: Does not import AIFF files. Stereo mix routing is a bit convoluted. Sample trim is undo-able. PRICE: \$3,799, including 12 GB hard drive and CD-RW drive. EQ FREE LIT #: 115

GETTING STARTED

When the AW4416 arrived for review, OS v1.3 had just been released, so I decided to down-

load the update from www. aw4416.com and install it before putting the system through its paces. Installation consists of using a computer to download and expand the files, burn them onto a CD-R, and load the disc into the AW4416. OS v2.0 is now available and was used for part of this review. Both installations went smoothly, but one part of the procedure made me nervous: the AW4416's LCD screen never actually tells you it's done loading the new OS. Upon installing v2.0, I realized that the track meters serve as a progress bar, filling up as the software is loaded. When all 16 meters are full and begin blinking, the load process is complete. Customers who register their machine will be sent CDs with all the instructions explaining the 16-meter gauge as well as manuals in PDF format.



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I plugged a drum machine into the AW4416 and hit "quick record" to see what would happen. The Record Ready buttons for all 16 tracks blinked red, and the AW4416's backlit LCD screen showed a block diagram indicating that inputs 1 through 8 were "patched" to mixer channels 1 through 8 and then bussed to tracks 1 through 8 (and doubled up on tracks 9 through 16). Input and monitor faders were automatically set for unity gain, while EQ and dynamics were bypassed on all channels. The second page of the Quick Record menu shows individual inputs, mixer channels, and tape tracks, allowing you to draw a patch cable between any channel and any track (one track per channel, please!).

Of course, you can use the Track Arm buttons to make any individual track record-ready. One thing that bugged me was that you couldn't arm or disarm a track while the transport is rolling — it must be parked. In addition to the traditional transport controls, the

YAMAHA AW44I6HDCD SPECIFICATIONS

FREQUENCY RESPONSE	
TOTAL HARMONIC DISTORTION	Less than 0.02% @ 1 kHz
DYNAMIC RANGE	
INTERNAL DRIVE	
MAXIMUM HARD DRIVE CAPACITY	
MAXIMUM # OF SONGS	
MAXIMUM SIZE OF 1 SONG	

recorder section includes autolocate features such as marker set (up to 99 per song), locate to next/previous marker, A to B repeat, and autopunch on/off. Using autopunch and A to B repeat, it's possible to automatically loop a section for recording. However, the Track Arm buttons are locked out when repeat is engaged with auto punch. So if you're doubling a part starting with track 7, you can't disarm track 7 and arm track 8 on the fly. You have to defeat the repeat function, disarm track 7, and arm track 8 (a minor inconvenience).

Initial recording of any track takes



CIRCLE 72 ON INFO CARD

(and thus keep the take that had been recorded on VT 1), you access the menu of the same name and use the cursor to select the virtual track on which you'd like to work. After recording several virtual tracks, you can listen to each take and piece together a finished comp track. Users will be able to see the waveform of any single track by moving the cursor up to the track in question and pressing Shift and F2. This will display the waveform of that particular channel. You can then move the locate point and send the transport to that point (sort of like offline locate). The AW4416's scrub function makes it easy to locate a particular piece of audio that can then be divided into regions for editing. Tracks may be named, erased, copied, pasted, or broken into regions (which can also be edited). In case of recording mishaps, an undo function can back up by as many as ten steps. Tracks may be edited one at a time or as pairs.

place on the first virtual track. To record

on any of eight different virtual tracks

The L/R meters function as input level meters for the stereo track. This track is a nice bonus because it leaves the other 16 tracks for recording. It allows a mix to be stored in the same place as the rest of the project. A mix is recorded simply by arming the stereo track and pressing Play and Record. The default routing of the stereo track playback is to the first two monitor channels - the same place where you would have monitored tracks 1 and 2 during mixdown. This isn't a good way to listen to the stereo mix because these channels are likely to have been EQ'd or otherwise processed - so you'll hear double processing unless you reset the channels.

The more desirable way to hear the mix is to use the recorder's cue

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CIRCLE 77 ON INFO CARD

IN REVIEW

function. First you access the stereo track page of the recorder's Track menu and unmute the stereo track (it will have been muted upon record). Then you use the recorder's cue function and select the stereo track - at which point, the stereo track will be played directly to the 1/4-inch, TRS balanced monitor out jacks on the rear panel. It took a few minutes to figure this out, and I can see it as a potential source of frustration for inexperienced users. I'd like to see a dedicated "2-tk mix" button to make life a bit easier. It would also be nice if the track edit functions were extended to the stereo track.

Out of the box, the AW4416's mixer includes eight analog inputs with 24-bit A/D: two feature balanced TRS lines, XLR mic (with phantom power), and TRS inserts points. Channels 3 through 7 are balanced 1/4-inch TRS line inputs. Channel 8 has a balanced 1/4inch line input and a separate highimpedance, 1/4-inch instrument input. All eight channels have trim controls with a peak LED indicator. Audio functions are reminiscent of Yamaha's 02R IT'S SCARY JUST HOW MUCH CAN BE DONE WITH ITS ONBOARD CAPABILI-TIES, MAKING IT A GREAT CENTERPIECE FOR A SMALL PROJECT STUDIO, A BROADCAST PRODUCTION ROOM, OR A 'SATELLITE' STUDIO IN A MULTI-ROOM FACILITY. digital recording console with four-band fully parametric EQ, dynamics, pan, and routing for every channel. Most functions are accessed using the cursor buttons, data/jog wheel, and "Enter" button, but Yamaha thoughtfully included controls for direct access to pan and EQ operations, and a mouse input is also provided. Seventeen motorized faders control the AW4416's inputs in three layers: inputs 1 through 16, inputs 17 through 24, plus effect returns 1 and 2, and tracks 1 through 16. Each layer has an Access button to speed operation.

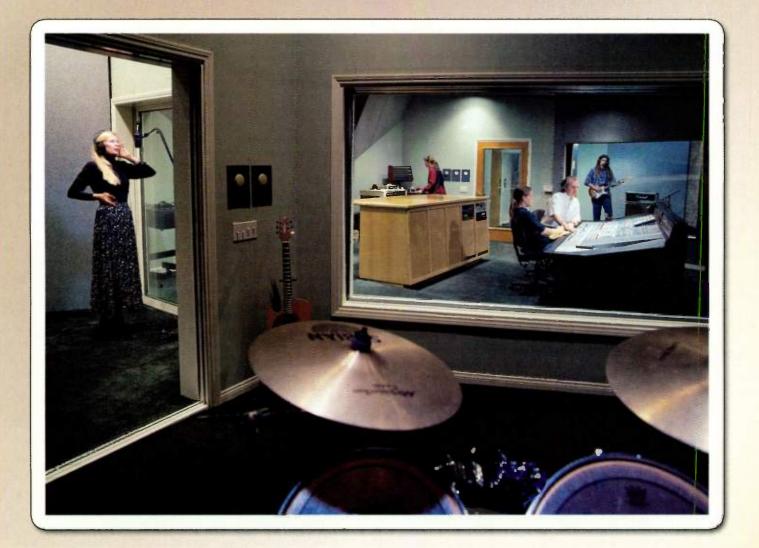
Eight aux sends are called up via dedicated buttons, at which point the faders are used to set the send level for the selected aux. Yamaha built in a safeguard for auxes 7 and 8 — you can't route effects return 1 into aux 7, and you can't route effects return 2 into aux 8 (either of these routings would cause feedback). If you insist on trying this, the fader will automatically pull back down. Very clever. Sends 1 through 6 may be physically routed out of the AW4416, while sends 7 and 8 are



CIRCLE 19 ON INFO CARD

76 | NOVEMBER 2001 | EQ





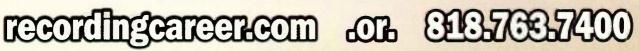
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RECORDING

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dedicated to two discrete internal DSPs capable of delay, reverb, flange, phase chorus, pitch shift, and amp simulation effects (these effects may also be used insert-style on a specific channel). Although Yamaha doesn't provide a specific output jack for each send, four rear-panel "omni" jacks (as well as the S/PDIF and analog stereo outs) can be configured to carry any of the sends. The jacks may also be configured to output a signal from busses 1 through 8, direct outs 1 through 16, hard disk tracks 1 through 16, stereo bus left or right outs, or any signal that may be coming in via the two expansion slots (expansion slots accommodate ADAT optical, TDIF, AES/EBU digital, or analog I/O cards). A signal from any of these sources can also be routed to any mixer channel. The omni jacks -

YAMAHA THOUGHTFULLY INCLUDED CONTROLS FOR DIRECT ACCESS TO PAN AND EQ OPERATIONS

along with the expansion I/Os - can be configured to act as insert points for any channel, so you're not limited to the TRS inserts provided on channels 1 and 2 (a really nice option). Routing assignments may be stored for future recall.

AUDIO-MATION

The AW4416's may be automated via scene store/recall or Automix, a powerful system that allows fader, channel on/off, pan, EQ, aux sends, and scene recall to be dynamically automated. To write Automix data, a channel's Select button must be engaged, but be aware that changing fader layers will de-select a channel on another layer. When you return to the original layer, you'll have to re-select a channel to resume writing automation data.

The AW4416's onboard sampler is a

"utility" sampler that allows a track region, audio CD, or a WAV file to be sampled (you can't sample a live input). Sixteen samples may be loaded into two banks of eight sample pads. Limited editing is provided for the sampler, most notably trim in and trim out. Unfortunately, you can't preview the trim function - you must execute the trim to hear it - and the trim function isn't undoable. To get around this, Yamaha suggests that you edit the sample from the track before it is imported. Hits on the sample pads can be recorded into a simple onboard sequencer for triggered playback. It'd be nice if a simple event list editor was provided on the trigger page for finetuning of the playback timing for a trigger. As it stands, you'll have to "perform" on the sample pads. The bottom line on the sampler is that there's enough memory in it to fly in stuff such as background vocals, giving you that ever-elusive seventeenth track.

When a project has been completed, it can easily be burned to an audio CD or a CD-R/RW for data backup. The AW4416's "mastering" menu is a bit of an overstatement, since the only thing you can do is select stereo mixes for creation of an audio CD. It'd be nice if a future OS revision included a preview feature and perhaps a trim control to even out the levels of different mixes.

CONCLUSIONS

It should be apparent by now that the Yamaha AW4416 is an extremely powerful and well-engineered tool for digital audio production. It's scary just how much can be done with its onboard capabilities, making it a great centerpiece for a small project studio, a broadcast production room, or a "satellite" studio in a multi-room facility. I recorded live drums directly into the AW4416 and, aside from mics and cables, felt no need for additional gear. Audio quality is clean with plenty of headroom on the mic pres, the OS is stable, and its ability to slave to external clock and MTC accurately and consistently means that projects started on the AW4416 can easily be moved to other digital recording systems. No doubt - this is a really cool workstation!

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CIRCLE 82 ON INFO CARD

Gordon Instruments Mic Preamplifier System

High-end, solid-state, two-channel mic preamp I hadn't heard of Gordon Instruments, a small Nashville-based company, before receiving their Microphone Preamplifier System. But, since plugging in a couple of mics, I found this single-rackspace unit a fixture in my signal path. The Gordon boasts premium sound, though at a premium price — \$3,500 for a two-channel preamp. The Gordon is targeted at high-end project and pro studios.

Each channel of this FET-based solid-state device has a completely discrete signal path that remains balanced from input to output, with no internal transformers. The Gordon's gain staging is designed to optimize audio purity. The signal path uses switched, variable gain amplifiers (with no feedback or attenuators) in order to minimize distortion and maximize dynamic range. Instead of over-boosting the original signal to a fixed level and then using an attenuator to bring it down to the desired level, the Gordon has developed what they call a "soft signal path" to set a level that's automatically optimized for the selected gain and output load. The idea is to minimize noise at low-gain settings and maintain consistent performance across all gain settings.

Balanced XLR and 1/4-inch inputs are mounted on the front panel, which also houses the XLR-balanced outputs, phantom power, phase reverse, and hi/lo-Z impedance switches that toggle each channel's inputs between 1 kohm and 2 Mohms. The front panel mounting of the ins and outs facilitates rack mounting — you'll never have to fight through the back of the rack to get at your vital connections.

Like many preamps, the Gordon has a basic set of controls (in this case, Gain and Mute). But, unlike most, the controls reside on a separate rack-mountable remote control unit that attaches to the rear panel of the main device via a standard XLR cable. Thanks to the remote, you can position the Gordon close to the source microphones and operate it from your control room. This lets you keep mic-level cable runs as short as possible;



GORDON INSTR. MIC PREAMP

MANUFACTURER: Gordon instruments, P.O. Box 150644, Nashville, TN 37215. Tel: 615-665-1005. Web: www.gordonaudio.com.

SUMMARY: The Gordon will put a hole in your bank account, but it delivers spectacular results with a variety of sources.

STRENGTHS: Excellent sound. Quality construction. Remote control. Single remote controls up to four channels (two units).

WEAKNESSES: Expensive. No phase switch on the remote.

PRICE: \$3,500 EQ FREE LIT. #: 125

keeping the long runs to the line-level output from the unit offers optimal performance. The notched rotary volume knobs increase gain in 5-dB steps from 10 to 60 dB. The remote Gain Control panel also offers a +24 dB peak indicator light for monitoring overloads. The notched controls make it easy to set up, change direction, and re-create the original settings for oft-repeated tasks. I found it especially useful when setting up vocal tracks for two different singers. Although some competing models let you adjust gain more precisely, I didn't find the 5-dB gain increments to be too wide in practical terms.

The mute switches are also useful for troubleshooting and identifying which mics are feeding which channels, especially when you're operating the preamp from a remote location. If you use an open mic in the control room, these switches make it easy to mute the mics when you want to listen to

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CIRCLE 73 ON INFO CARD



good track into mud.

upper-midrange smearing that can turn a

and get an idea of how well a device will

perform, but the truest test comes in those elusive qualities that make a per-

formance shine. The Gordon's best fea-

ture is the way its impressive numbers

translate into impressive tracks.

At three-and-a-half very large ones, the Gordon might be out of the typical project studio owner's price range. But its high-quality construction and sonic performance justify its high sticker. It consistently delivered excellent results with a variety of sources and microphones. Its ability to capture the depth and clarity of complex sources across a wide dynamic range sets it apart from the pack, where other preamps excel at boosting quiet passages but can be taxed by the hard stuff, and vice-versa. The remote control makes it easy to make changes on the fly while preserving the shortest path possible from source to preamp. You can look at low noise specs and high headroom

SPECIFICATIONS

PREAMPLIFIER	
HANNELS	
NPUTS	
	1 kohm (2 Mohms with hi-Z switch engaged
	100 dl
	.0.7 Hz–700 kH
	+30 dBn
POWER SUPPLY	100, 120, 240 VAC, 50–60 H
GAIN CONTROL REMOTE	
HANNELS	
	.5 d
	+24 dB

Note: According to the manufacturer, these specs are typical and apply for 60 dB gain, 20 Hz–20 kHz, RS=150 W, RL=100 kW, and TA=25°C unless otherwise noted.

playback over the monitor speakers. It would have been nice to have the phase reverse switches on the remote. Note that the audio chassis is not shielded to prevent magnetic interference. The manual recommends that you place it away from any potential interference sources such as computer monitors.

I'm sorry to sound like I'm describing a California wine, but the Gordon's sound has the elusive quality of a fine vintage. In tests with a number of condenser mics, including an AKG C414 ULS, Audio-Technica AT4047/SV, and the tube driven Røde NTK, the Gordon produced a robust, clear tone full of both body and detail. More than one vocalist commented on how big their voices sounded on playback. The Gordon also excelled on sources such as electric guitar (especially when mated to the Røde), bass (going direct through the low 1/4inch input), percussion, and acoustic guitar. A combination of mic and DI inputs produced vivid results with a Taylor 614BCE equipped with a Fishman Blender preamp. The Fishman provided the body of the tone, while a condenser microphone pointing at the neck picked up the attack and air of the guitar. The Gordon captured the attack of both signals equally well - no harsh "thwack" from the Fishman, and plenty of articulation from the mic. The Gordon's ability to handle a wide dynamic range without overload was also impressive. Sensitive

acoustic guitar passages retained their focus and more aggressive passages stayed clear, avoiding that

UNDER THE HOOD

Popping the top on the Gordon Instruments mic preamp and discussing the circuitry with designer Grant Carpenter is a joyous experience — there are few pieces of pro audio equipment crafted with such painstaking attention to the tiniest details.

There are two unique aspects of the circuits. "The true gain control and the output load compensation," explains Carpenter, "are fully automatic features, buried features, if you will, with no other knobs, lights, or buttons — they have a very low 'gadget' quotient." With the Gordon, you get only the desired amplification; one gain stage provides the first 10–35 dB of gain, and a second stage comes into play only when gains from 40 to 60 dB are required.

As for the automatic load compensation, Carpenter has designed what could be classified as an analog computer that trims bias and operating voltages to best feed the actual load impedance. "It looks at the output current," Carpenter explains, "and compares that to the output voltage, and from that can determine the load impedance. From there, it can determine how to best set up the parameters to drive that impedance." This means the entire physical load, including cable capacitance, is automatically adjusted for. The circuit uses a long time constant to make transparent adjustments while continually monitoring the load. It even reflects source material, adjusting for frequency-dependent loads based on actual signal spectrum.

The signal path of the Gordon is all-discrete, built around JFETs and two purpose-designed JFET switch topologies. One switch type is used to make gain changes in 5-dB steps, and to control output stage parameters. The other type is in the signal path. At low gains, a single switch is in the signal path: the phase invert switch. At higher gains, a second switch is also in line to couple the second amplifier stage. Carpenter runs as much of the gain as possible in the first stage as, "that's where your signal-to-noise ratio is set."

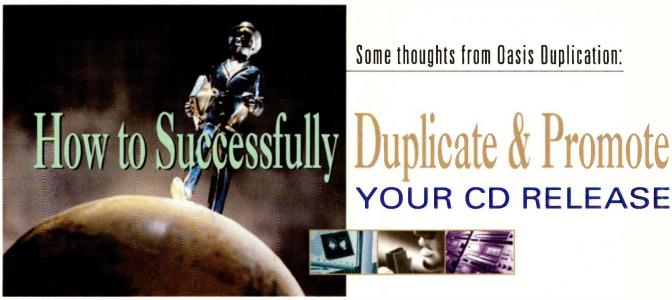
After conversations with numerous mic manufacturers, 1 kohm was chosen for the nominal input impedance, switchable to a 2-Mohm hi-Z mode. The circuitry is balanced all the way through the preamp — it would have added more stages to the path to unbalance and re-balance the circuit.

The signal path capacitors, the power supply electrolytics, and the toroidal power supply transformer are among the various components ordered custom for the Gordon Instruments preamp. The attention to detail is enormous, including a dozen closed-loop discrete voltage regulators per channel (with ±87 VDC primary rails!), a massive ground plane on the two layer, low-loss dielectric PC board, and even the sharing of PC board holes between adjacent components to cut down on intercomponent traces.

The short version is, on the bench, the Gordon Instruments mic preamp measures on a par with its design, and its design falls into the category of art.

-Frank Wells

For more tech details on the Gordon Instruments mic preamp, visit <u>www.prosoundnews.com</u> or check out the September issue of Pro Sound News.



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KRK V88 Powered Studio Monitor

Double the woofers, double the enjoyment? KRK Systems has been turning out excellentquality studio monitoring systems for some years now, ranging from very compact models such as the newest addition to the line, the V4, to higherend models such as the popular Exposé series, and up to even larger mega-buck "mains" systems such as the dual-15-inch 15K-A5's. Along the way, the company has accumulated an enviable list of "name" users, as well as a solid presence in the monitor marketplace.

Over the years, I've had opportunity to listen to and work on a number of the company's speaker systems, and I've always found them to be accurate and solid performers. Having had a very pleasant experience putting the mid-level eightinch powered V8 monitors through their paces a few years ago, when I heard about the new V88's, I was anxious to check them out.

The V88's combine two eight-inch bass drivers with a 33-mm dome high-frequency driver powered by built-in 160-watt (lows) and 60-watt (highs) amplifiers. Back-panel high-frequency trim and low-frequency turnover controls are provided for "tuning" the speakers to your room, as is a system gain control for matching levels. Given the dual-woofer approach, the V88's aren't as massive as you might expect — they're not, for example, twice as big as the V8's, but they are substantially larger and heavier than many common nearfield monitors — well over twice the size of my Genelec 1030's. These speakers would be at home either as



KRK V88 STUDIO MONITOR

MANUFACTURER: KRK Systems, 5452 Business Drive, Huntington Beach, CA 92649. Tel: 714-373-4600. Web: <u>www.krksys.com</u>.

SUMMARY: Looking for chest-thumpers? With dual eight-inch low-frequency drivers, the V88's provide solid *real* low-end, not the ported air blasts that pass for bass frequencies with many compact studio monitors.

STRENGTHS: Excellent sound quality. Solid lowend response. Good imaging. Manage to achieve high-end clarity without hyped high-end response or harshness. Plenty of power and output for most applications. Easy to listen to for extended periods.

WEAKNESSES: May be too large for some nearfield applications and home/project studios. With certain material, low-mids can sound smeared.

PRICE: \$2,400/pair EQ FREE LIT. #: 126

large nearfields, or, placed a bit further from the listening position, as midfields. The monitors are finished in sort of rough-feeling gray "Zolatone," and feature rounded corners and edges. As if

> this didn't make them distinctive looking enough, the yellow cones on the dual woofers make them unmistakable. A small yellow LED near the KRK logo on the front panel indicates when they're powered up.

After rearranging things in my studio a bit to allow placing the monitors properly, I connected all the various speakers at my disposal (Genelec 1030's, Event PS6's with 20/20/15 subwoofer, a Blue Sky 2.1 system, and the KRK's) to a four-way switchbox for easy comparisons. Next, I calibrated all the monitors to within 1 dB of each other, and settled in for extended listening tests. In



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IRCLE 26 ON INFO CARD



CLE 05 ON INFO CARD

IN REVIEW

with elliptical waveguide

(2) 8-inch woven Kevlar

.39 Hz to 23 kHz, ±2 dB

Low-frequency: 160 w

.....>90 dB

5% at full output, 1 kHz

.....+6 to -30 dB

.....2.3 kHz

2 dB/octave Butterworth

Voctave, -3 dB at 21 Hz

.....Yes

ik 1/4-inch/XLR combo

ain, high-frequency trim

dB at 39, 47, or 55 Hz)

(+1 dB, flat, -1 dB), ency turnover frequency

SPECIFICATIONS

HIG

LOV

FRE

POV

SIG

THD

INP

CRO

CRC

SUB

MAC

AUD

CON

DIM

WE

H-FREQUENCY DRIVER	
-FREQUENCY DRIVER	
QUENCY RESPONSE	
VER RATING	
NAL TO NOISE	
UT SENSITIVITY	
SSOVER FREQUENCY	
ISSOVER SLOPE	
SONIC FILTER	
GNETIC SHIELDING	
IO CONNECTORS	
ITROLS	G
	low-frequ (–3
ENSIONS	
GHT	

addition to putting in speaker time of my own, I invited regular *EQ* contributor Jon Chappell to lay his ears on the KRKs as well.

LISTENING TESTS

I put the V88's through their paces using a variety of my usual reference CDs as well as my own mixes. My first impression was that the speakers were "scooped" in their upper-midrange response; on further listening I realized this wasn't the case. Rather, the low end and the lower-mids were much more present than on other speakers. Because of this, some of the smaller monitors sounded "nasal" compared to the V88's. On some material, particularly baritone male vocals, this resulted in an overly "chesty" sound to the voice with the V88's, which tended to smear the low-mids a bit. Jon agreed, stating that, in several cases, he felt he heard a bit of a low-mid swell in the speaker's response.

However, on the top end, the KRKs easily compared to the other monitors, providing a smooth, clear representation of the high frequencies. This also contributed to their superb imaging. Jon felt that the V88's imaged the best of any of the speakers we listened to.

If there are words to define the KRK's low end, I'd say they were "tight," "crisp," and "defined." In comparison, the other monitors seemed to be moving air down in the low ranges, and we could hear and feel the thump, but it wasn't as punchy and "contained" as on the KRKs. The low-end on kick drums was a solid thump, while electric and acoustic bass rumbled nicely on the lowest notes. Even at the loudest volumes, the low-end on the V88's remained solid and clear, without any mushiness or strain. Only when the other monitors were used with large subwoofers did the low end feel as solid as it did on the KRKs.

I've always tried to have at least two different pairs of monitors in my studios, preferably with very different tonal qualities. For my money, the KRKs make a great contrast to small-coned compact nearfields. They're not quite as bombastic or overblown as refrigerator-sized "mains," but they are more accurate sounding than many larger speakers, especially in a smaller room.

Once I'd familiarized myself with them, mixes done on the KRKs translated well to other systems. In particular, I found it much easier to balance reverb and effects on the V88's. As Jon commented, for long sessions, the KRKs are pleasing — nice-sounding — without sounding like they're covering up subtle details. They have a smooth sound from top to bottom that's easy to listen to for extended periods.

CONCLUSIONS

At \$2,400 per pair, the KRK V88's are inching up toward the "high-end" portion ► continued on page I26

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And the rhythm section.

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CIRCLE 84 ON INFO CARD

IN REVIEW

Microboards Technology Orbit II CD-R/RW Duplicator

Bulk CD copying gets affordable... and fast "Accept." What a wonderful word, conjuring images of home, Mom's apple pie, and your Little League team before they found out you liked jazz. It's also a word you'll see a lot if you buy Microboards' Orbit II, flashing on the unit's LED after every perfectly burned disc. During my tests, it produced 115 CDs with nary a coaster, no doubt in part because of the onboard BURNproof technology preventing buffer under-runs.

Intended to make bulk CD duplication painless, the Orbit II doesn't connect to a computer. Rather, it employs a devilishly simple design consisting of a CD reader for the master, a hopper for the blank discs (above the 16x CD-R/RW burner), an accept bin, and a reject bin, all in a sturdy lightgray package with a 26- x 12-inch footprint. The user interface consists of a 16-character LED and — get this — two buttons: Yes and No. It also comes with the CD Stomper Pro labeling system.

Playing the part of evil product reviewer, I started off with a torture test, copying an audio CD to nine types of CD-R/RW media — including different brands (Fujifilm, Imation, Maxell, Office Depot, Ricoh, TDK, Verbatim) and speed ratings (from 4x CD-RW to 16x CD-R). Foiled! The Orbit II worked without a hitch, plugging away at 16x speed on the CD-Rs and auto adjusting downward when it encountered the CD-RWs. All the CD-R dupes played fine in several stereos, and the CD-RWs worked as expected in computers.

Best of all, this thing is fast. Copying a 650 MB CD-ROM took six minutes and ten seconds from the time the master tray closed until the disc hit the Accept bin. Just to put the Orbit through its paces, I burned a 50-CD and a 30-CD batch,

MICROBOARDS TECH ORBIT II

MANUFACTURER: Microboards Technology, 8150 Mallory Court, Chanhassen, MN 55317. Tel: 800-646-8881 or 952-556-1600. Web: www.microboards.com. SUMMARY: A 50-CD standalone duplicator for office and studio use. STRENGTHS: 16x speed. Burns CD-R/RW. Very forgiving of media quality. BURNproof prevents bad copies. Couldn't be easier to use. WEAKNESSES: Can't add to a multi-session CD. PRICE: \$2,995 EQ FREE LIT. #: 116

both of which worked flawlessly.

You have three primary options: "Copy CD to CD," "Copy & Compare," and "Compare." The unit checks the first and last sector of each dupe before accepting it, but you can use the compare function to do a complete verify for CD-ROMs. Though the manual says comparisons should take only about half as long as burning a CD, I found very little difference.

There's also a system menu that lets you turn burning off for simulated test runs, kill the buzzer, hard-assign the burn speed to 8x or 4x (though you'll probably never have to), and set the unit to

> ask for a desired quantity before each run — by default it just copies all CDs in the hopper. One small quibble: The power switch is on the power supply instead of the main unit. The Orbit duplicates

the "state" of the master, whether it was written disk-at-once or is an open, multi-session CD. However, it can't copy to anything but completely blank > continued on page II2



The soft synth is here to stay, and making music will never be the same. The Gxygen 8 is the first in a series of new controllers from MIDIMAN designed for the *software-centric* musician.

Oxygen 8 puts you in control of any 8 MiDI-assignable parameters within your favorite soft synths. VST instruments, or any MIDI-compatible software. Real time control is now yours for the taking: LFO rate, filter frequency, modulation, amplitude, whatever--it's all at your fingertips. You don't even need a MIDI interface for the Oxygen 8, because it *is* the MIDI interface. And since the Oxygen 8 doesn't use an external power supply, your laptop and the stage are sounding more like the studio than ever before.

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Oxygen 8 Features:

25-note controller with 8 MIDI assignable knobs, one MIDI assignable slider.
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20

- PRO AUDIO REVIEW, MAY 2001

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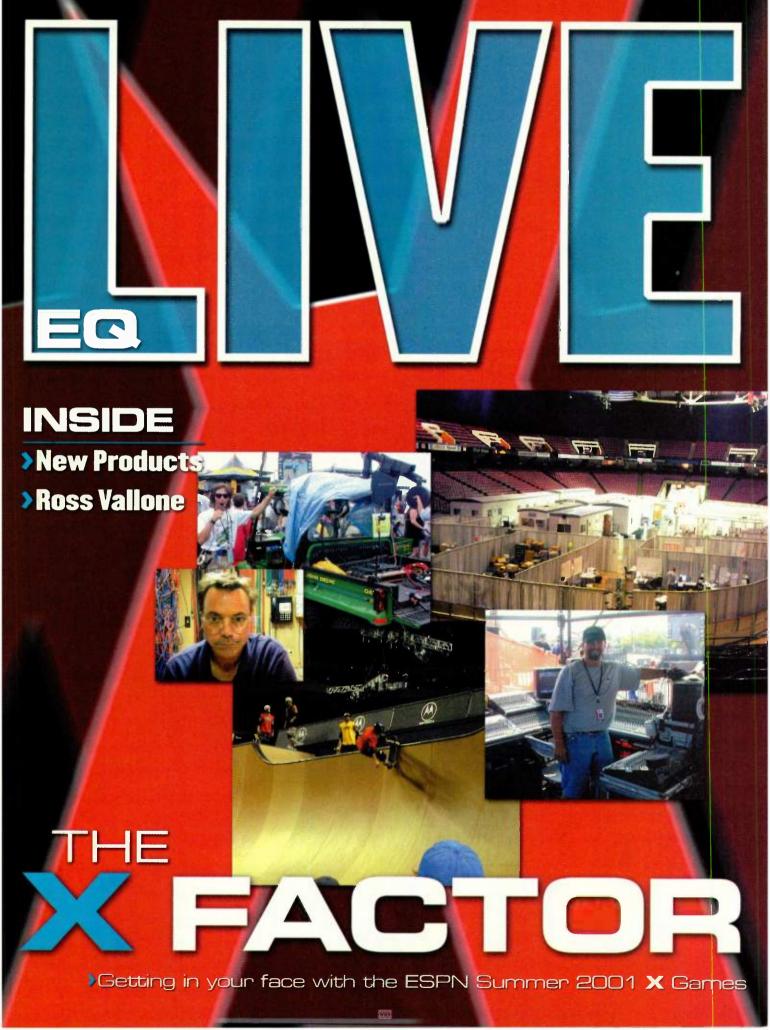


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2

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7

Easy level setting, Maximize headroom and minimize noise quickly via Channel solo and Trim control. Up to 60dB of gain for boosting timid vocalists. -10dB "virtual pad" for toning down drummers.

Six aux sends per channel (four available at any one time). Two auxes are pre/post switchable.

Ultra-sensitive signal present LED on every channel lets you monitor inputs at a glance. OL LEDs, too.

Dust and smoke-resistant logarithmic-taper 60mm faders for accurate control and long wear.

Instead of attending the 2001 NES Convention Inside: VLZ design es thermal rcuitry.

in NYC, Nackie Designs has chosen to cultry. make a significant donation towards disaster ecture nc a significant unitation consists uses i felicit and present our "exhibit" on line.

Control Room/Phones source matrix lets you create monitor mixes or remote feeds with any combination of the main mix, Subs I & 2, Subs 3 & 4 and tape inputs routed to separate bal./unbal. stereo outputs.

Separate Tape to Main Mix switch with independent level control.

Route Aux Return 3 to main mix, Subs 1 & 2 or Subs 3 & 4. Route Aux Return 4 to main mix or Control Room/Phones matrix only.

EFX to Monitor lets performers on stage hear a different level of effects than is in the main PA mix.

On the back: sixteen premium XDR mic preamps. Incredible 130dB dynamic headroom, rulerflat frequency response, lower E.I.N. noise specs at working OdB to +30dB gain levels and the best **Radio Frequency Interference** protection of any compact mixer on the market today.



1604-VLZ PRO

16 total chs. • 4-bus configuration • 16 XDR " premium mic preamps • 16 mono mic/line channels 3-band EQ with swept mid. 75Hz low cut filters and inserts on all chs. . 6 aux sends per ch. · 4 storeo aux returns with EFX to Monitor and bus routing options . Control Room/ Phones source matrix . 60mm log-taper faders . 3-way rotatable I/O pod for rack or table use

1642-VLZ* PRO

16 total chs.. 4-bus w/double-bussed outputs • 10 XDR " mic preamps • 8 mono mic/line level channels • 2 hybrid mono mic and mono/stereo line level channels • 2 mono/stereo line level chs.. 3-band EQ w/swept mid on mono channels & 4-band EQ on stereo channels. 75Hz low cut filters on mono chs. . 4 aux sends per ch. · 4 storeo aux returns with EFX to Monitor . Ctl Rm/ Phones matrix w/level controls · 60mm log-taper faders

1402-VLZ PRO

14 total channels • 6 XDR premium mic preamps • 6 mono mic/line level chs. • 4 mono/stereo line level chs. • Extra ALT 3-4 stereo bus • 3-band EQ • 75Hz low cut filters on mono chs. • 2 aux sends per ch. • 2 master storeo aux returns with EFX to Monitor . Ctl Rm/Phones source matrix . 60mm log-taper faders • Switchable AFL/PFL

1202-VLZ PRO

12 total channels • 4 XDR premium mic preamps • 4 mono mic/line level chs. • 4 mono/stereo line level chs. • Extra ALT 3-4 sterco bus • 3-band equalization • 75Hz low cut filters on mono chs. • 2 aux sends per ch. • 2 master stereo aux returns with EFX to Monitor • Ctl Rm/Phones source matrix · Rotary gain controls · Built-in power supply

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CIRCLE 87 ON INFO CARD

editorial

Audio Techs for a Safer Country

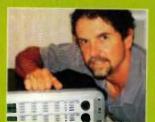
It sounds like a weird concept, but in light of the tragic events of September 11, 2001 that changed our lives forever, it might be an interesting idea.

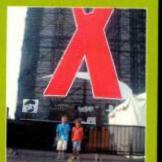
If you're reading *EQ Live*, you probably travel at least part of the time to earn your living. A good portion of that travel may occur in the air — especially since many management companies are increasing the number of "fly out" gigs booked for their acts so that they don't have to pay a crew for the extra days required to drive gear to a venue ahead of time. Flying has become something to think about more carefully — if not a little bit scary!

So, with all of the increased security checkpoints at U.S. airports, all the U.S. marshalls, immigration officers, police, and airport security personnel (that's a laugh), how is it that a tech friend of mine was able to get through security at New York's LaGuardia airport with a Leatherman tool and a Swiss Army knife in his bag? He didn't even know he was carrying these items until (on a layover) he went outside of the secured area at Chicago's O'Hare airport for a smoke. When he re-entered through security, the Chicago police discovered the items and confiscated them. I'm glad *someone* was paying attention.

Airport security in this country has been a disgrace. As frequent travelers, we can help improve it. Pay attention to the security in airports you encounter and report sloppy procedures. I personally am trying to recall which small airport I flew through this past summer where, not only was there no metal detector before the gate, but there were *no* security personnel present whatsoever. Blow the whistle. Email the FAA with a complaint or suggestion at 9-AWA-TELL-FAA@faa.gov. They can also be faxed at 202-267-5091 or phoned at 866-289-9673. I, for one, don't mind acting as a quality control agent.

-Steve La Cerra slacerra @uemedia.com







ABLE OF CONTENT

New Products

The latest product releases aimed at live sound applications

Meet My Rack Ross Pallone

100 Feature

The X Factor Getting in your face with the ESPN Summer 2001 X Games

WR

EQLIVE: NEW PRODUCTS



NADY SRM MIXERS

THE BASICS: Seven new additions to the Nady audio line THE DETAILS: Nady offers seven new mixer models (six compact mic/line mixers and one powered mixer). Rackmounted (with supplied rack ears) or as compact desk consoles, the SRM-6 is a 6-channel stereo mic/line mixer; the SRM-8 has 8 channels; the SRM-12X has 12 channels; and the SRM-14X has 14 channels. The CMX-16A is Nady's 16-channel stereo mic/line mixer that offers 20 input channels. The MXE-1212 is a 12-channel mic/line mixer with internal DSP effects. The PRM-400 is a 6-channel (200W/channel) stereo powered mixer with internal DSP effects. CONTACT: Nady at <u>www.nadywireless.com</u>. Circle *EQ* free lit. #117.



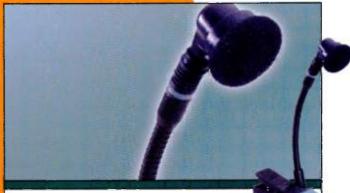
YAMAHA CLUB SERIES

THE BASICS: New and improved speakers and new power amp THE DETAILS: Now Yamaha's Club Series of loudspeakers has an improved and more durable exterior finish (a black polyurethane elastomeric bonded exterior) as well as more modern exterior design. The Club Series models are: the S112IVS (MSRP \$399), the floor monitor version SM112IVS (MSRP \$429), S115IVS (MSRP \$435), S115IVAS (MSRP \$575), and SM118IVS subwoofer (MSRP \$539). Also new from Yamaha is the CP2000 power amp, which features 2,000 watts of power into 4 ohms (bridged mono).

CONTACT: Yamaha at <u>www.yamaha.com/proaudio</u>. Circle *EQ* free lit. #118.



CROWN IQ-SYSTEMS THE PRODUCT: Crown IQ-System Updates THE BASICS: IQ-NT 3 Interface and IQ-RPT 3 repeater THE DETAILS: Crown is now offering updated versions of the IQ-NT 3 Interface and the IQ-RPT 3 repeater. Crown's IQ-INT 3 Interface bridges the RS232 connector on a host PC to an IQ Bus loop(s) for communication with IQ System components. The updated version replaces its previous IQ Bus DIN connectors with common RJ-45 connectors. The latest version of the IQ-RPT 3 Repeater has eliminated its DIN connectors in favor of RJ-45s, as well as new status LEDs that can now be found on both the front and rear panels of the product. CONTACT: Crown Audio at <u>www.crownaudio.com</u>. Circle *EQ* free lit. #119.



AKG D409

THE BASICS: Clip-on microphone

THE DETAILS: AKG's new clip-on instrument mic, the D 409, delivers a "neutral sound with a slight proximity effect and presence rise between 3 and 7 kHz." Its frequency range is 100 Hz to 17 kHz; sensitivity at 1 kHz is 1 mV/Pa and impedance is 600 ohms. It incorporates a hypercardioid polar pattern and produces 124 dB maximum SPL with 1% THD. This small, 4.9-ounce microphone requires no phantom or battery power and comes with external windscreen and clamp.

CONTACT: AKG at <u>www.akg-acoustics.com</u>. Circle *EQ* free lit. #120.

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CIRCLE 45 ON INFO CARD

ROSS PALLONE Getting the most from a limited amount of gear

NAME: Ross Pallone

POSITION: Front of house engineer, studio engineer/producer

CURRENT ASSIGNMENT: John Tesh

PRIOR ASSIGNMENTS: Michael McDonald, Charlie Sexton, Chaka Kahn, Wayne Johnson, Charlie Bisharat

TRANSPORT: One 6-space SKB rack

HARDWARE: TC Electronic M3000 [2], Triple C [2]; dbx 120X Subharmonic Synthesizer

COMMENTS: "I've had several carry-along FOH racks over the years," begins engineer Ross Pallone. "I carried the first one when I mixed for Michael McDonald. It was a large rack full of gear that's pretty much outdated now, but it gave me everything I needed to mix the show. (I only mix front of house for Michael occasionally now.) For the last five years or so, I've been mixing FOH mainly for John Tesh. His band configuration changes every year, so I've had several incarnations of racks. I try not to carry any more gear than I really need. Most of the time, when we are doing 'one offs,' I can get adequate gates and



Check out Ross Pallone's Web site at: www.rossaround.com.



compressors at the venue. Sometimes a sound company will provide gear that I haven't seen before, so I look at that as an opportunity to try something new. I concentrate on only bringing the gear that is not available from all sound companies.

"One of the biggest challenges in mixing John's band is making sure that the piano is always heard without allowing it to wipe out the rest of the band. The best way to do that is to use several sources in the piano and bus them all through a multiband compressor. I recently switched over to the TC Electronic Triple C because it has such sophisticated parameters; I can set up different presets for the solo piano songs as opposed to the more aggressive songs. I also use a Triple C for the violin. It is great for smoothing it out when the violinist really digs in on a solo.

"My other favorite piece of gear for live mixing is the TC Electronic M3000. I get a lot of horsepower with two M3000's. By using them in dual-input mode (*i.e.*, each input drives a separate stereo effect 'engine'), I can have four separate stereo reverbs, delays, or special effects. With John Tesh's band, I usually have one send for a nice piano reverb, one for drums, one short plate-type sound for guitar, and a chorus or pitch-shift type program. The M3000 combines the output of the two stereo engines to a

> single stereo output; that is great for saving valuable inputs on the FOH console. If I need a delay, I can always get that out of the effects unit that the sound company provides. As you can see, I'm a big TC Electronic fan. I own the very first System 6000 to come into the United States. I love it and use it every day in my Pro Tools studio.

"Last but not least, I love using the dbx 120X Subharmonic Synthesizer as a special bump on some of Tesh's dramatic instrumental pieces. I set it up on an aux and send kick, bass, floor tom, and piano to it. I keep the return off until the appropriate time for an accent or big ending. If you have a PA system with enough subs, it can be a very exciting effect.

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131	Kurzweil	36	800-421-9846	11	Tannoy/TGI North America, Inc.	38	519-745-1158
3	Lexicon	62	781-280-0300	5, 85	TASCAM/TEAC America, Inc.	74, 58	323-726-0303
115	Little Labs Pro Audio	68	323-851-6860	9	TC Electronic	40	805-373-1828
77	Los Angeles Recording Workshop		818-763-7400	101	Telex Communications	XX	800-392-3497
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127	MAC/Midi Music	XX	615-742-5291	45	Transamerica Audio Group	91	702-365-5155
2, 94		44, 87		115	Underground Sound	70	615-533-8234
2, 94	Manley Laboratories, Inc.	76	909-627-4256	127	Universal Concept, Inc.	XX	508-234-8832
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EQ | NOVEMBER2001 | 99



Above: The X Games offices took up the entire floor at Philadelphia's Spectrum Arena, and include the Broadcast Center and videotape library. Top Right: ESPN audio consultant Ron Scalise. Bottom Right: FOH at the Bike and Skate Park venue.





THE X FACTOR

GETTING IN YOUR FACE WITH THE ESPN SUMMER 2001 X GAMES

BY STEVE LA CERRA

ESPN's X Games are anything but ordinary. They feature on-the-edge events such as Moto-X, Street Luge and Vert/Park, Bikes, Blades, and Boarding. Media coverage of the X Games is equally unconventional, with ESPN's video and audio teams employing point-of-view cameras and microphones in creative locations to ensure that viewing is a unique, in-your-face experience. As ESPN audio consultant Ron Scalise explains, "ESPN sees the X Games as a launching platform for sports television's latest technical innovations in sound and picture, as developed by our 'New Technologies' group of technical and production visionaries. Since the X Games were created for television, we have the opportunity to place experimental cameras and microphones in unusual places, and we can create our own opportunities to present drama and excitement. The rules are much different from say, an NFL or Major League Baseball broadcast; there's no one saying 'you can't put a mic here this week,' so we're able to take liberties in sight and sound that quite often are restricted in other professional sports."

A total of five audio/video remote trucks were supplied by NMT and Game Creek Video for production of the Summer 2001 X Games (SX01). The mobile units were used as control rooms situated at the venues. A half-mile away, a dozen office trailers served as ESPN's Broadcast Center, where all master recording (audio and video) and editing took place.



Ron Scalise may be reached via email at ScaliseR@aol.com.

The trailers housed three Avid edit rooms (each with two Avid 9000's), three offline Pretures edit rooms (used for story and feature editing), three online linear edit rooms for conventional Beta tape editing, graphic suites, screening rooms, and three Pro Tools stations. The Broadcast Center also contained "pipe-and-drape" office space and a huge X-Games library of videotapes, taking up the entire floor at the Spectrum Arena (Philadelphia, PA). Additionally, the surrounding dressing/locker rooms were used for offices, meeting rooms, and an on-site travel department.

Audio and video editing systems were all hanging off a common server with complete access from any position — keeping efficiency and productivity at its peak. While the Avid edit rooms handled segment editing and show video preparation, the Pro Tools edit rooms were used for voice tracking, sweetening sessions, and final mixes for laybacks that were readied as air masters.

X-PLAINING NEW TECHNOLOGY

One of the cool aspects of the X Games is the use of cutting-edge audio technology to maximize on-air audio impact. "The X-Ducer," explains Ron, "is not necessarily a new technology, but the Summer X Games was the first time it's been applied to TV sports. We adapted piezo contact pickups into the size and shape we needed, placing almost 100 X-Ducers in our Bike and Skate Park venue. We placed 32 X-Ducers on each of the two Verts. The Moto X was a somewhat smaller venue, so we had only a few X-Ducers on jump ramps. These mics provide detail and articulation to sounds such as skateboard wheel friction, or give us the ability to capture a stunt bike rider or stunt skateboarder grinding across coping pipes with

ADVERTORIAL •

KLARK TEKNIK AND MIDAS: FAMILY TREE NOW INCLUDES HIGH-PROFILE, COMPACT FORMAT VENICE CONSOLES

Chances are that if you're an audio professional, you've at some point or other had your hands on products from the Klark Teknik Group. There is hardly an audio rental company in the world that does not own either a Midas console or two, racks of Klark Teknik signal processing, or both. Though many things have changed in the past 30 years, the fundamental principles applied by Midas remain the same - to provide the professional sound engineer with the ultimate in audio quality, flexibility and reliability. From the famous Pro Series consoles to the industry standard XL-3 and XL-4, the current state-of-the-art Heritage series, recently launched Legend, and the compact format Venice, Midas consoles remain the first choice for live sound professionals who expect the very best from their equipment.

Midas is a brand that is currently riding the crest of an extended wave. High-end console manufacturers are generally known more for quality than **quantity**, and while none can deny the quality of the Midas boards the world over, the company has also been astonishingly prolific of late. No fewer than four new product series comprising a total of eight consoles have been launched in the last two years.

Enter Midas' new high-profile, compact format console launched earlier this year in the diminutive shape of the Midas Venice, Granted, this launch threw many Midas devotees for a loop, largely because the recent foray into this market represents a complete departure from the perceived Midas image. For a start it's, well - small! In fact, by Midas standards, it's positively miniscule. With regards to this "departure," product manager David Cooper remarks, "Venice is yet another example of Midas providing the tools our customers have requested of us." Cooper continues: "Our clients wanted simplicity in a very high quality format with high quality inputs and a simple output structure, and this is precisely what they've got. Venice has superb quality mic preamps based on the XL3 preamp, and of course a top-notch but simple EQ section. As you can see, all three desks in the range are extremely compact so they're perfect for corporate work, smaller events or as a submixer to one of our larger consoles."

Simply, the Venice represents a new standard in compact mixing consoles. Now, for the very first time, Midas customers can enjoy

all the great features that go into every Midas console with three manageable sizes ---Venice 160 (8 Mono-Mic/Line + 4 Stereo-Line/Mono-Mic Inputs), 240 (16 Mono-Mic/Line + 4 Stereo-Line/Mono-Mic Inputs), and 320 (24 Mono-Mic/Line + 4 Stereo-Line/Mono-Mic Inputs). Customers can be assured that the desk embodies all the traditional hallmarks of Midas sound and reliability. In fact, it's fair to say that the Venice is a microcosm of the larger, more expensive Midas console. For example, the Venice contains an updated version of the groundbreaking Midas XL3 microphone pre-amp, which uses Midas' own "long-tailed pair" circuitry. Simply put this means that the Venice preamp has ample headroom and gain range to accept both microphone and line-level signals without any pad or range switching.

Like its big brothers and sisters, the Venice also has the ability to retain the natural qualities of many different types of input signals. The maximum input capability of Venice is +22 dBu, enabling the console to deal with even the hottest line signals. Hi-value EMI suppression filters shelter the signal-path from unwanted external noise, one of the fundamental Midas design specialties. The Venice equalization section includes HF and LF filters that won't interfere with the midband frequencies; all filters keep their gain regardless of frequency settings and +/-15 dB on a level potentiometer means exactly what it says.

Additionally, the Venice EQ is what thousands of Midas owners and users expect from Midas: *Pure Performance*.

The Venice 160 is supplied as standard with rack-mounting hardware, and a rotatable connector panel, which allows optimum configuration for the application, whether fixed or mobile. Whether used as a main console on events requiring up to 24 mono plus 4 stereo inputs, as a sub-mixer on larger productions, or as an onstage mixer for performers to control, the three models in the Venice series set a new standard in compact mixing consoles for a variety of applications.

One such satisfied customer is southern California's Nelson Sound. What are they saying about the Midas Venice? Well, let's find out...

Beginning this past June and extending through the end of September, the Pasadena Pops, a symphony normally comprised of 70 players, was reinforced by Nelson Sound utilizing the Venice 320, in addition to the Midas Heritage 3000. The performances — based on the themes "By George...By Gershwin, Hooked on Swing, From the Heart, and Majestic Masterpieces" — were held at Descanso Gardens, a challenging outside venue.

Coordinated by Nelson Sound, the sound system was designed by Larry Estrin, the consultant for the Pops and Nelson Sound's Jack Haffamier. Nelson Sound, now celebrating its twentieth year in business, has worked with the Pasadena Symphony, Santa Monica Beach Symphony, as well as contemporary acts Smashmouth, Eric Clapton, John Waite, and Mandy Patinkin. Throughout the summer's many performances, Midas played a significant role in delivering the high quality and musical sound-reproduction a symphonic production of this scale demands.

According to Jack Haffamier, sales manager/rental sound, Midas was the ideal choice: "The Midas Heritage definitely made the venue sound the very best it could. The Pasadena Pops team is happier with the sound than they have ever been. The Heritage is simply a great sounding console."

Regarding their choice to accompany the FOH system with the high-profile, compactformat Midas Venice 320, Haffamier commented: "For the money, the Venice is hands-down the best sounding small console out there. It sounds very transparent, and interfaces beautifully with the Heritage. We didn't experience any problems or glitches of any kind. It's amazing - you get that same Midas sound out of a very reasonably priced console. And it's the ideal sidecar. When you've got 90 mics open and you hear a pop or a crackle you tend to get nervous. But with the Midas Venice, which has green and red indicators, we just look for a red light and we know exactly where the trouble is coming from. When you have a production of this size, every trouble-shooting tool available is a benefit, and the fact that Midas hasn't cut any corners is great!"

For more information, please contact: Mick Whelan, General Manager, USA Concert Sound, (616) 695-4711, or email: mick.whelan@telex.com Web: www.klarkteknik.com, www.midasconsoles.com

THE X FACTOR

metal-shredding impact. We also used multiple placements of X-Ducers on the Speed-Climbing wall to hear the competitor's climbing activities. In addition to stereo miking of crowds and audio from handheld cameras, sounds captured by X-Ducers are used during the postproduction mix to 'dial in' the detail and get the 'in-your-face' immediacy or our X-Sound. Of course, we plan to put this concept to use for any and all sports we cover as the seasons bring them to television."

With consoles as large as 96-inputs quickly becoming filled up with various audio sources, submixing became an important aspect of audio for SX01. ESPN's audio crew used Lectrosonic automixer units, providing the ability to open and close groups of effect mics at predetermined threshold settings. The largest effect mic setup was at the Bike and Skate Park venue where - in a scaffolding tower overlooking the park - audio submixer Mark Lanciaux mixed effects from nearly 100 X-Ducers patched into seven Mackie mixers. Meanwhile, back at the Vert venue, Joe Carpenter mixed effect mics on a 32input submixer that in turn fed the Euphonix console in NMT's DX-9 truck.

ARE YOU LOSING YOUR BUTTONS?

A completely new technology debuting at SX01 was the RF Button microphone. Developed in conjunction with CP Communications, the RF Button is roughly the size of a matchbook and contains a microphone, transmitter, antenna, and rechargeable battery onboard! Scalise placed RF Buttons "inside the helmets of athletes or wall climbers, on 'friends and family' participants, and even as effect mics mounted to the seat of a bike or inside a helmet. If you're looking at a rider's face while he's riding a bike. I want you to hear what he is saying, and hear how he is breathing, the grunting. To me, that's the stuff ---that's in your face! Traditionally the rider would have to wear a body pack, but the RF Button is so small that the whole package clips on instantly.

"Prior to, during, and even postevent," he elaborates, "the X Games 'Swat Team' helps gather POV (pointof-view) audio and video. We'll get a competitor to wear a POV camera and RF Button mic and take shots from their point of view. These might not necessarily be shown during competition, but may be used for bumper shots or promos. We actually mic up luge boards, skateboards, rollerblades, etc., and capture runs so that we can put the audio into the Pro Tools server for sweetening."

DOLBY E

One of Scalise's concerns with SX01 was delivering guality audio and video signals from the venues to the remote trucks. "With our venue sites being within and around the perimeter of the First Union Center (Philadelphia, PA), and our Broadcast Center being housed in the old Spectrum building, almost a half-mile of distance existed between locations," Ron reveals. "Getting quality video and audio to and from these locations over that distance became a challenge. In the past I'd use eight XLRs, but, across a half-mile parking lot, that's ridiculous."

Scalise's solution was adapting a systern developed by Dolby Labs for storage of multichannel audio. "Whether it's a game show or music," Scalise explains, "everyone is mixing in 5.1 for TV, so it's six channels of surround plus a stereo mix. How the heck do you store that? Do you put it on a [TASCAM] DA-88? I suppose you could, but that's a storage nightmare because the audio is separated from the video. Dolby E is a digital data stream that carries eight channels of audio on a standard AES digital pair. which can then be stored on a pair of DigiBeta audio channels. I thought, 'Why can't I use this to move eight channels of audio from our four trucks a half-mile across the parking lot on one 'E Stream'? How about going directly from encoder to decoder on a piece of coax [cable], bypassing the tape machine?"

Indeed, that's what Ron arranged. "Dolby E streams were sent from each console in the three remote audio trucks to an Avid system, which acted as a 'master' recorder. Outputs from the Neve, SSL, and Euphonix desks were standardized into eight groups (for the 5.1 and stereo mixes) so that each console's mix busses would be compatible with the others. Analog group outs from the consoles

▶ continued on page IO9



ESPN X GAMES

Glossary of Terms

Here's some of the technical (and not-so-techn cal) terms pertaining to ESPN's X Games.

- BC: Broadcast Center
- · DIGITIZING: The master recording of eight chamnels of audio plus video
- SX01: Summer X Games 2001
- NLE: Nonlinear Edit
- X-SOUND: Development in progressive enhanced audio used for our Winter and Summer X Games by the ESPN audio department.
- UNITY SERVER: The storage device used to hold all incoming video and audio pre- and post-edit sessions. It connects to six Avids Edit NLE's and three Digidesign Pro Tools workstations.
- DUDE: What we all end up saying as a greeting after being at the X Games for a month
- VIDEO-SMITHING/AUDIO-SMITHING: The ability to assemble shows and segments with high quality, great production, and outstanding audioand have it all finished in the amount of time we're given to meet the broadcast air times. Usually overnight.

Types of Venues

- Moto-X: Wild stunts preformed on motorcycles on a preset course with ramps and moguls.
- · Vert: Consists of two half-pipe stages that differ in size for skateboard, bike, and inline skating stunts and tricks.
- · Speed Wall Climbing: Conventional rock-climbing-style wall on which simultaneous competitors race to hit a buzzer at the top.
- · Park Course: Skateboard and bike park that runs an open route for tricks and stunts. The largest venue in terms of space and audio technical demands
- Street Luge: Athletes lay on "lugeboards" and race down a city street with the excitement of passing, possible crashes, and upsets.
- · Wakeboarding: Held on the river where stunts are performed on the "funbox" and slide. A speedboat tugs these unconventional boarders.
- · Bike Stunt: Consists of mogul jumping and stepup over a high bar with both motorized and nonmotorized bikes.

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• For more information on the Studio Pro microphones, visit your local Peavey dealer or www.peavey.com/sr/microphones.html. -----

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I'm proud when someone tells me that they have an Ashly product that's still in service after twenty years, how our customer service people helped with an application, or how our Protea equalizer has changed the way they work.

That's the idea – to build high quality tools that make a difference out of the box and maintain their level of performance over the years.

After nearly 30 years, I still love working at Ashly – a company that still cares where people actually use the tools we produce and takes product concept and quality very seriously. A company that, year after year, grows steadily – strengthening the foundation for all of our people – customers and employees alike.

Thanks.

Bill Thompson

President, Ashly Audio, Inc.

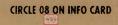
(and just for the record, we think the Redwood trees in the picture are the perfect metaphor for Ashly...)





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A non-shaggy dog story

Crepuscule for Daisy



My faithful dog, Daisy Mae, had to be put to sleep on September 9th, 2001. I woke up that day to discover that she could no longer walk, poor thing. In July, she had been diagnosed with cirrhosis of the liver, (is that redundant? I don't think there's a cirrhosis of anything else, is there?), dementia, and arthritis. She bravely transgressed those two months filled with humans' proffered medications, and I know she planned to make her exit on the afternoon of September 11th in all the confusion, but she just couldn't hold on for two more days.

I discovered her in Nashville, at the pound, on New Year's Eve 1990-91. She was neither aggressive nor soporific. She was just Daisy. She was born around the end of September 1990. On that recent morning of September 9th, I was preparing for a gig that night in Boston at Scullers, a venerable jazz institution. I had to be there at 3:30 p.m. to set up and do a soundcheck. So it was decided the missus would take Daisy to the hospital and have that difficult task to herself. Even if there was no gig, I don't know that I could have walked that last mile with her. She had a pointed head (Daisy, not the missus) and absolutely the cutest face a dog ever had. She was continually mistaken for a pup, even into her doggie seventies. Daisy endured the repetitious music of a man who composed songs in the same room with her; I always left the studio door open (truth be told, there is no door) while playing tracks over and over to get them just right. She never complained (neither Daisy nor the missus) about that repetition.

I read that dogs thrive on repetition, that it's the key to training them. So Daisy was a well-trained dog. I would show off how well trained she really was on those rare occasions when other humans visited my home. She had a huge fenced-in backyard all to herself both in Nashville and Boston, and spent each day with no rules out there. But at 6:00 or 7:00 p.m., when she came in for the night, she was under house rules and rarely broke them. When I'd go on the road, the missus said Daisy would push the envelope, but a stern word would get her back on track. I'm told there were many nights *without* stern words in my absence; of women bonding while men played music a great distance from home. But, upon my return, she'd snap back to attention as if I'd never left. She loved to please me. (Daisy, not the missus.) As I said before, she wanted to leave this world on September 11th. After all, the date was 9-1-1 and she was eleven. And the twin towers looked like the number eleven. It was all interconnected somehow, but she simply couldn't get past the 9th.

Daisy was in severe pain, and looked at us with those doggie eyes, pleading for the ultimate closure. One has no choice. And I had to perform two 90-minute shows that night for peeps that had paid good jazz money. In my mind, I dedicated the evening to her and persevered. The audience was none the wiser, having a lovely Sunday the last one, in fact, before the world changed. Two nights before that, I had collected an honorary doctorate from The Berklee School Of Music alongside Elvin Jones, one of my idols. A great night, but I yearned to get home and see how poor Daisy was doing.

Her ashes came today via UPS. They were disturbingly placed in a baggie that resided inside a Styrofoam container that might have housed a Big Mac. Very distasteful. I immediately sprinkled her ashes all over the yard that she adored so much, as a sliver of moon peeked out from a foggy, fall twilight. The yard is unspeakably still and empty these days.

For many of my compatriots, it should have been a dog's life — a leisurely romp in the yard, and a few house rules that never quite got obeyed; and those treasured halcyon days on the porch watchin' the wheels go round — or perhaps not: for Kurt Cobain, Ian Curtis, Tim Buckley, Jimi, Janis, Jim Morrison, Roy Buchanan, and Danny Gatton; for Richard Manuel and Rick Danko, for me — although I am still down here on this unfriendly world — and for Elvis and John Lennon. And now, somewhere far away in the Middle East, someone's let the *other* dogs out...what will become of us now?

Want to succeed? Get your demo out there!

Don't Leave Home Without It



GUEST ROOM WARRIO

JIM@GRAVITYMUSIC.COM

Just as I was about to start writing this column, the phone rang. My assistant was out at a meeting, and I was half-tempted to let the machine get it. But half a temptation is barely enough, so I grabbed it. I'm glad I did.

It was a music supervisor for a group of cable networks. The parent company was launching a new network, and they needed to license a whole pile of music, exclusively and in perpetuity, for their in-house productions...like a library of needle-drop, but all their own. He said some people there had heard an old demo of mine, and asked if I'd send them some samples for consideration.

Now, this is a guy I've never met. I didn't know he existed, and so I could never have approached him as a prospect. So how in blazes did he manage to find me here in my little music kitchen?

This is where the incredibly basic marketing lesson begins. Four years ago, a friend of mine was doing PR work for a division of General Electric and spent a few days working with a group of guys who produce programming for cable. He mentioned to me that they were looking for music suppliers and had given them my name. So I sent them a letter and (most importantly) a demo of my work.

One of the executive producers really liked my stuff and called to say so. But it soon looked like a dead end. I got to bid on a couple of their projects, but I didn't win the work, and, not long after that, the producer in question hit the road. He went to work for a fledgling cable network. So much for my big-time production connection.

But I stayed in touch. He told me that the network had a phalanx of in-house composers — they really didn't need anything from me, but I sent him my new demo anyway. A couple of years ago, I lost touch with him. I'd heard that he'd moved up to the parent company in Los Angeles.

Seems my demo went with him. He passed it around, and one of those guys liked what he heard. Hence the surprise phone call.

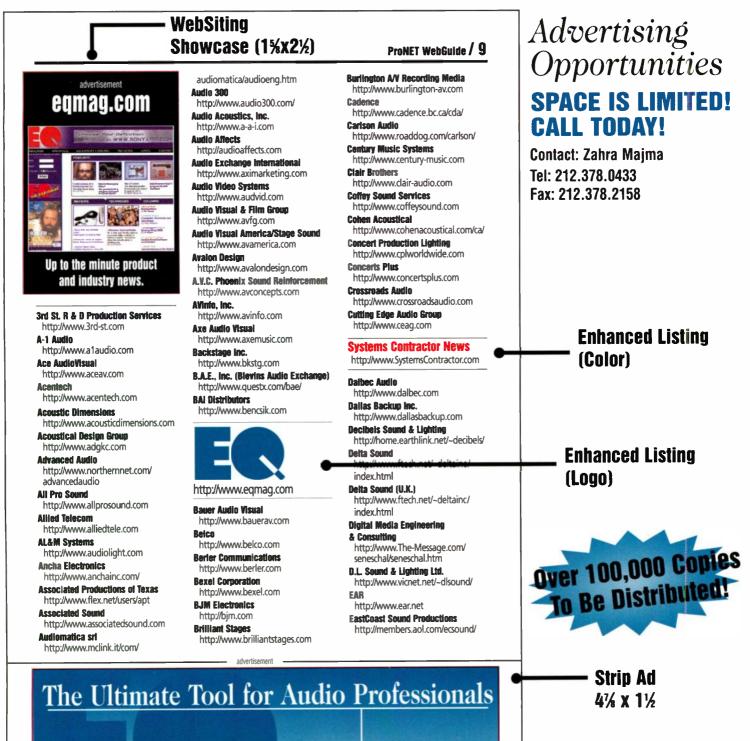
Most of you have probably already figured out the moral to this story. The best thing you can do as someone involved in the creative arts is to constantly and ceaselessly thrust samples of your work into the hands of other people. *Lots* of other people, not just the ones you think are worth it.

If you're the typical Guest Room Warrior, I can hear your response already: "I don't have time to market myself." Yeah, yeah, I hear ya - I've said it myself way too many times. But the fact is you do have the time. If you send out just one demo a week, that's one more person who knows about you that wouldn't know otherwise - 52 new contacts a year. Give up a half hour each week (in my case, I could stop watching reruns of Let's Make A Deal on Game Show Network), and never leave your studio without a copy of your demo at hand. I keep a couple of them stashed in the glove box of the Gravitymobile.

My introductory story illustrates the importance of getting your work in front of as many people as possible. A phone call is completely ephemeral, e-mail only slightly better. MP3s and Web sites fade into memory; intro letters hit the round file. But a CD of your music can live a life beyond your own, and can be out there working for you while you sleep (so to speak).

I know that not all of you are engaged in making commercial music. But getting those samples in circulation is key to your marketing effort no matter what you're selling. If you're recording bands, think about creating a compilation disc of 10 mixes for 10 different groups that you're really proud of (your clients will probably be flattered to be asked for inclusion). If you record radio spots and audio books, put together a killer montage of your best work. If your project studio exists to get you that major label deal, then get the songs on CD and hand them out on the street corner if you have to. Just get your work out there floating around.

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Configuring your system with a master word clock generator

Word Clock Distribution Made Easy, Part I

I've received a lot of positive feedback on the past few word clock columns; thanks for the kind thoughts and informative comments.

Probably the number one question is: "How do I distribute word clock around my

studio — both locally and throughout the entire facility?" That's important, because if word clock distribution is *not* done correctly, then the whole purpose of using a common, centralized "clock" could be lost. We'll cover a basic setup this month, then build from that in the next column.

SETTING UP THE MASTER

First, you need a word clock (W/C) generator to which you can "clock" all of your digital devices. This generator could be a standalone unit such as those listed in Chart 1, or the output of an A/D-D/A converter. If you're using an outboard converter as the master clock, make sure it's set to *internal* sync mode.

We'll design the system based around a 48 kHz

sample rate. In the next column, we will delve further into multiples of that rate, however, many of the principles discussed here apply to *all* sample rates. (Digidesign's Super Clock is an exception due to the extremely high sample rate.)

GETTING PHYSICAL

Let's now determine the type of physical outputs needed to distribute the clock signal. The two main connectors are BNC and XLR, and they exhibit the electrical characteristics shown in Chart 1.

Most standalone W/C generators have at least three BNC outputs and an AES output. This is an important distinction when the W/C

signal needs to travel long distances, which we'll discuss next time.

Let's look at the specs for several commercially available W/C generators (listed alphabetically by product name). Chart 2

CHART I

CONNECTOR BNC	IMPEDANCE	LEVEL 3.5 ∨ p-p	FORMAT
AES XLR male	110 Ohms	@ 75 Ohms 3.4-4 V p-p @ 110 Ohms	transformer balanced

CHART 2

Device	BNC Outputs, 1x rate	XLR Outs	Other (Super Clock etc.)
Aardvark AardSync II	3 or 4* (W/C 75 Ohms)	2 (AES)	1 or 2**
Lucid GENx6-96	6 (W/C 75 Ohms)	0	6•
Rosendahl Nanosync	6 (W/C 75 Ohms)	1 (AES)	6†
Mutec Smart Clock		1 (AES)	8^

* One word clock output can be switched to Super Clock.

One Super Clock output can be switched to word clock via internal jumper.
Generates word clock or Super Clock at 44.1 or 48 kHz, word clock at 88.2 or 96 kHz; front-panel switches for format selection (word clock or Super Clock) per output.

† Outputs 1–3 individual configurable as word clock or word clock x2; outputs 4–6 individual configurable as word clock or Super Clock.

Outputs can be word clock or Super Clock, switchable in pairs.

shows the number and type of outputs on each unit.

It is imperative to use the generator's W/C outputs when distributing W/C locally (*i.e.*, it travels within the same physical room using no more than a 35-foot cable run). If the generator doesn't have enough physical outputs, add either a W/C patchbay or a W/C distribution amplifier.

W/C PATCHBAY OPTIONS

The simplest (and cheapest) option is to build a panel-mount BNC patchbay with BNC connectors on the front and back. This will make connecting new devices very simple, while offering an easy method for patching W/C devices. Audio One made me a 48-point panel (three rack spaces) with Canare panel-mount BNC connectors and 12 BNC–BNC patch cables using Monster M1000D cable. The specifications on the connectors are suitable for W/C, so there's no signal degradation through the patchbay. Also, the patch cables are 75 Ohms, and using Monster Cable helps maintain a high-quality W/C signal path. Every W/C patchbay point is labeled on the front, which makes patching W/C as easy as patching anything else in the studio.

Another option would be a digital router that can store and recall preset W/C configurations at the push of button. For example, the Z-Systems Digital Detangler allows for eight or 16 W/C connections; each connection can be an input, output, or both. Importantly, each connection is properly buffered, so you could input one master clock and route its output to every device connected to the Detangler with no signal loss or input loading. Because of the preset routing options, you could alter which device was master or slave at the push of a button.

Next time, we'll cover distributing word clock throughout an entire facility. Until then, remember to log onto <u>www.eqmag.com</u> and visit the Studio Tech Web forum.

David Frangioni, studio tech to the stars, has recently finished studios for the Beè Gees, Steven Tyler, Ricky Martin, and HBO.

ESPN X GAMES

▶ continued from page IO2

ers. Analog group outs from the consoles were fed into A/Ds that in turn fed the Dolby E encoder (one per truck). The signal came out of the encoder as an E Stream on coax. The E Stream was embedded into the video signal using an N-Vision system, and then converted to a fiberoptic signal to be linked back to our Broadcast Center. Once at the Broadcast Center, audio was disembedded from the video, and Dolby E decoders (each with multiple digital outputs) would feed the appropriate NLE (nonlinear edit) rooms where Pro Tools was used for audio editing. Every truck had two Avids; typically, one was recording while the other was editing. You can transfer the E Stream, pass it through a routing system, make copies, or A/B roll it in a conventional linear audio editing suite. It maintains integrity without pops, glitches, or other artifacts, and transfers the surround 5.1 mix — even through the editing process — and you don't have to worry about where to archive the audio. We can send a signal as far as we need, and still have a clean, accurate signal."

Scalise likens the job of the ESPN audio team to that of mixing music: "Let's say

you're in the studio recording a guy playing a Marshall stack at 110 dB. You place your mics and you have to imply that this guy is wailing, no matter what level the listener is monitoring on. Even if it's on a transistor radio, you want it to sound ferocious. It's the same accomplishment that we're dealing with for the X Games, that same implication of what this sound means. Some people have surround cranked in the living rooms and some have a Magnavox TV with a three-inch speaker. Regardless, it has to be as exciting at home as it is in person."

It's not just boosting the signal level, it's adding warmth, increasing presence, and amplifying the essence of your music. It's embracing the signal.

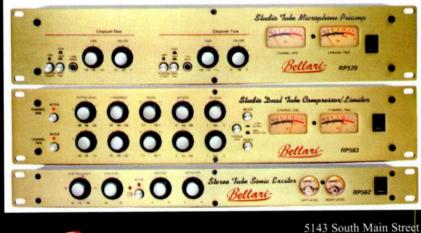
G/A II

Bellari products have gain. Bellari products are gain. With Bellari products YOU gain.

Sure - our mic preamps have transformer balanced inputs, 48 Volt phantom power, and phase reverse; our compressor/limiters have opto-coupled detector circuitry, our sonic exciter has phase adjustment and spectrum correction encoding, and our direct box has a variable input pad. Yes, all Bellari products have high-voltage plate voltages for that authentic tube sound, but the reason to use Bellari products is...

gain.

Bellari, Oh oh!



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CIRCLE 34 ON INFO CARD

Bellani





CIRCLE 27 ON INFO CARD

BONZAI BEAT

▶ continued from page 38

work very hard for, which cost a lot of money to make. How long can the recording industry exist as an incomeproducing business, when people think it's okay to just take what they want? We have mortgages and car payments. My sons are in college. I like to buy new recording goodies and guitars — well, old guitars. Dave has spent millions on his studio, we took almost two years (not constantly — movies get in the way) making our record. We want people to buy it. We worked very hard for your money.

Who is the most amazing artist you've worked with?

David Lynch. He is a true Renaissance Man. There isn't a moment he isn't thinking. We go down some twisted roads; not everything works out, but, man, do we find some interesting sounds! For instance, on the CD, he had me sing through his director's megaphone, into a beautiful tube [Neumann] U 47, with only multiple delays coming back into the headphones. No dry signal at all. You try that sometime....

What makes a great producer?

Hmmm...I have this thing about producers. Some shouldn't be let out of their cages. But, as a producer, listening to the material is the most important thing. The song or piece will speak to you. It will tell you what it wants to be. Your job is to carefully shape that, using the tools you have at hand.

Any advice for getting a good start in the music business?

Do what you love. Love what you do. Don't take no for an answer (except from me). Work your craft. Hone your skills. Make people need your efforts and enthusiasm.

Where is the quality of music today? As recorded, very high. As delivered, maybe not so good. As stolen (MP3, etc.), not good at all. As to the music itself, I love the resurgence of guitar bands, and the incredible production techniques of people like Kenny (Babyface) Edmonds.

What would you like Santa to bring you this year?

Success with the CD, so I may have the independence to produce new things that hopefully people will like as well.

NIAGRA FALLS

continued from page 26

estimates by pi (3.14), and you'll derive the true cost.' He was right!" **EQUIPMENT NOTES:** "My Digidesign Pro Tools system is my console, multitrack, mixdown machine, main source of signal processing, and my ongoing source of technical inspiration. It has completely transformed my thought process from inception to completion on every project I've done since I acquired it. My favorite thing about it is that it's essentially removed the word 'no' from my studio vocabulary."

PRODUCTION NOTES: "Niagara Falls played a very important role in the creation of my album Slider [Hearts Of Space Records, 2001]. One of my primary goals was to streamline the production process so that the borders between writing and performing/recording were minimal. My impetus was to infuse the production with the freshness of inspiration that accompanies the genesis of a composition. It wouldn't have been cost-effective (and, subsequently, would have been artistically stifling) for me to write in a studio where I was paving large sums of money not only to work, but to also keep the room in lockout when I wasn't working. If I recorded in a different room, I would have had to write the album beforehand, and I believe the result wouldn't be as vital."

EARMARK

continued from page 28

sweet spot with a generally flat response that is ideal for a good mix. A bass catch also serves as storage above the main room. The desks and racks were custom-built by KK Audio here in the Valley. The room was professionally wired by Vertigo and networked by Wes Nagy to the main house and office computers. Recently, a second writing and recording room (affectionately named 'Studio B') took up residency in the main house near the offices."

EQUIPMENT NOTES: "We love the way our vintage Neve 33069C compressor makes mixes big and hairy, yet sensitive and intimate when necessary. We call it 'The Box.' The Line 6 POD and pedal board are great for quickly creating fun guitar tones, which recorded through our Averill/Neve 1272 preamp — really cook."

PRODUCTION NOTES: "With difficult deadlines and lowered budgets, speed, flexibility, and efficiency are key. The ability to write, perform, and mix without re-configuring and re-loading samplers is necessary. Our back-to-back layout allows the engineer and composer or assistant to work together --- one does the mix while the other controls the computer samplers and modules. Redundant mixes are recorded to DAT (and sometimes simultaneously to DA-88) for archiving and backup, then burned to CD and backed up to DVD-RAM after the sessions for yet one more safeguard. Mixes are delivered in various formats depending upon the client."

MICROBOARDS ORBIT

▶ continued from page 88

media — it would've been better if you could add sessions or tracks to previously burned, but open, discs.

Using the Orbit is a simple matter of selecting your option, inserting the master, and pressing Yes. Discs drop into the burner when a small ledge inside the hopper shifts, and, as they're completed, they're lifted, placed on rubber rails, and shot into the Accept or Reject bin like something out of the Mousetrap board game.

The only glitches I encountered were a few instances where a blank disc dropped and didn't land properly in the burner, being shoved onto the rails when the tray closed (the Orbit correctly stopped each time and waited for me to remove the disc). This may have been a user error, but, regardless, points out the need to place media in the hopper with a bit of care.

With its \$3,195 price point, 50-CD capacity, and "easy burn" philosophy, the Orbit is almost in a class by itself. Given the great deals these days on mass disc duplication, it probably still doesn't make sense for artists or bands looking to save on album expenses. However, if you run a studio that constantly needs five copies of this or 20 copies of that, the Orbit II should quickly pay for itself in manpower alone, freeing up your interns for truly important tasks.



ACROSS THE BOARD

continued from page IBO

there is to know about it, such as:

· Pro Tools version used to save the session

· Date and time of creation and last update

· Sample rate and bit depth

 SMPTE frame rate, type, and offset · Whether a USD was in use as a SMPTE peripheral

Number of tracks with active voices

 Number of tracks with voices turned off or muted

· Hard disk allocation table (to see how many hard disks were used)

· Maximum channels used by tracks such as stereo or surround auxes

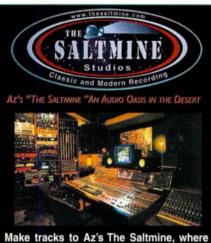
· Number of I/Os assigned and interfaces used (888, ADAT Bridge, 1622, etc.)

· List of track names and comment field

· Names and versions of plug-ins used in session with number of instances

 Routing schematic map of session so you can see how tracks were routed to busses; which fed aux inputs, which fed reverbs, etc.

• How many DSP Farms or Mix Farm



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Cards would be necessary to open the session

This utility would be the best thing to happen to Pro Tools since Pro Tools. The session document could be e-mailed to the studio days before the booking. The studio could run the utility and ascertain how big the Pro Tools system needed to be in order to work on that project. Would they need the big system in the main room or could it be done with the secondary Pro Tools system in Studio B?

Until this utility is available, you could start by listing these items in a "read-me" document included with your session file.

MY SOLUTION

I'd like to see two Pro Tools versions from Digidesign. First, a version of Pro Tools that would open any previous version of session document. This program wouldn't be able to record, and could only play back two channels through any output device allowed by the computer so you could tell what the track was, i.e., female vocal, saxophone, kick drum, etc. The program wouldn't require any Digidesign hardware. It would be for actually viewing a session as if it was open in a real Pro Tools environment. You could see the plug-ins and their settings, but you would just get the GUI, not an operating plug-in. You could see all of the I/O assignments labeled the way they were in the source program, but nothing would go there because this is a dummy program.

You should be able to shuffle the tracks around so you could decide which are the most important eight or 24 tracks, and then "save as" ("save" would be disabled) a session that you could open in Pro Tools Free or LE. This Pro Tools version could also include the utility features listed above.

Second, a version of Pro Tools that would save sessions with embedded plug-ins much like a PDF file is saved with embedded fonts. The embedded plug-ins would load and work just as they would if you had the plug-in on your Pro Tools system. You wouldn't be able to use them in any other session, or even on any other track in the session you opened.

Why? Because guite often studios have to work on Pro Tools sessions that use old plug-ins or plug-ins that the studio wouldn't normally purchase. Maybe the only time that plug-in would ever be used would be on this one session. The plug-in may be necessary for a particular sound this one time, but wouldn't warrant the extra \$700 to purchase it for one use.

As an example, a client sends me

LOC

In Roger Nichols's October column, it was stated that Sony owns a major portion of TASCAM. This is incorrect; Sony does not own, and has never owned, any part of TAS-CAM. Roger apologizes for any inconvenience or confusion this error might have caused.

a CD project in Pro Tools format that he's been working on for a year. He's tried mixing it himself, but he gives up and wants me to mix it. He does, however, like the vocal sound he got using a combination of plug-ins that I don't own. He saves his session with plug-ins embedded and sends it to me. I open the session and listen to his mix with his plug-ins. I see what he's trying to do, so I get to work on my mix. I use some of my plug-ins on other tracks, and finally finish all of the mixes and send him the session re-saved with my plug-ins embedded also.

The client gets the session document, opens it up, and hears the final mix. Everything is perfect, the client is happy. The client likes one of the plugins I used and buys a copy for his studio to use on future projects. I actually liked one of his plug-ins and bought my own copy. I never thought about using that plug-in for a voice, but it sounded cool and I thought it might come in handy.

In the real case that spawned this example I had to buy three plug-ins, two of which I've never used since. The client did buy one plug-in for his system, but not until he came over to my studio and heard the soloed track with the plug-in. He couldn't hear it on the session that I sent back to him because he didn't have the plug-in.

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B&H PAGE 3

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EQ | NOVEMBER2001 | 122



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EQ | NOVEMBER2001 | 125

KRK V88 REVIEW

continued from page 86

tion of the monitor price spectrum. But you're getting a lot of speaker — both literally and figuratively — for that price. If you've only worked with fiveor 6-1/2-inch "traditional" compact nearfield monitors, you'll probably find the KRK's a more visceral monitoring solution; these speakers have the power and surface area to deliver thumping output. The low end is solid, without the softening "poof" of air common to some small speakers that use ports to achieve low-frequency response rather than speaker/cabinet size.

But, as with all monitors, it comes down to how accurate they sound to you, and how well they work in your studio environment. For me, the KRKs sounded great, translated well, and allowed me to hear certain details that I couldn't hear on other speakers. I was especially enamored with their low-end and uppermidrange, as well as with their unhyped high-frequency response and imaging. If your studio requires (and



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© 2001 Full Sail, Inc. All rights reserved. The terms "Full Sail," "Full Sail Real World Education," and the Full Sail logo are either registered service marks or service marks of Full Sail, Inc. can accommodate) large near- or midfields, the V88's deserve your consideration.

MOTU REVIEW

continued from page 7I

Other features include 9-pin ADAT sync for sample-accurate lockup, a punch in/out footswitch input, and headphone outs. The first two outputs are duplicated; one set is intended for monitoring, the other set as main stereo outs. What's the difference? The monitor set includes hardware routing to eliminate latency from two of the inputs when you're recording audio - this works perfectly. While two analog inputs without latency is excellent, naturally I wish that you could do all eight for larger sessions. And since I'm listing minor complaints, while the 828 can sync digitally to several sources, I'd like to see a dedicated word clock input for those who are using dedicated word clock generators in their studios.

But that's trivial — the 828 does exactly what it's supposed to do, without hassle and without compromise. I used it for several months as the centerpiece for my composing rig. Whether I was running mics, direct guitars, hardware synths, or samplers, connecting a DAT or MiniDisc player by S/DPIF, or using lightpipe to hook up to my 01V mixer, Apogee Trak2, or Pro Tools rig with an ADAT bridge, the 828 never hesitated or hiccuped.

828 includes bundled The AudioDesk software, which is essentially a scaled-down version of Digital Performer's audio section. I also used the 828 with Logic Audio, Nuendo, Digital Performer, Spark, Peak, and as the audio output for numerous soft synths and samplers. As a bonus for those who are particularly I/O-hungry, MOTU recently announced a driver update that allows multiple 828's to be connected to the computer simultaneously, providing up to 126 inputs and outputs.

The bottom line is that the 828 works exactly as advertised, and sounds great while doing it. Even better, it does it at a reasonable price. What more could you ask for?

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EQ I NOVEMBER2001 | 127

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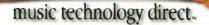


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be at your fingertips in Digital

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plug-ins appear in Digital Performer's mixing board, just like regular native plug-ins, but they run on four powerful 56K DSP chips on the TC•PowerCore PCI card. It's like adding four G4 processors (equal to 2.8 gigahertz of extra processing power!) to your computer. Run 12 studio-quality TC plug-ins with no hit on your CPU power, and run other native plug-ins at the same time! TC-PowerCore is an open platform, so it will also run plug-ins from other respected 3rd party developers, too (details TBA).

TC WORKS

CIRCLE 79 ON INFO CARD

Looking forward to all the new gear



AES or Bust!

The AES Convention was postponed because of the events of 9/11/2001. I'm still in a kind of slump since the destruction of the World Trade Center, but maybe some new high-tech gear will cheer me up a little bit. President George Bush said, "Spend money!" Being the patriotic American that I am, I can't let him down. Let us all go to the AES show and bring our checkbooks.

SONY

I've been using the Sony DMX-R100 small format digital console for one year now. I'm still impressed every time I play material through it. Version 2 of the DMX-R100 software should be available by the time you read this. It contains myriad enhancements that will improve the operation of the console and add new features. Among the new features are improved automation functions, snapshot storage for EQ and dynamics settings, improved channel link control, and 96k surround mixing.

On the hardware side, there's a MADI interface card. With the MADI card installed, you can digitally input 72 channels; 48 through the MADI card and 24 through the remaining three interface slots. The MADI board improves cascading two boards together, allowing for 96-channel digital mixes. There's a MADI interface option for Sony's PCM-3348 and PCM-3348-HR multitrack digital machines.

DIGIDESIGN

Now, if I could talk Digidesign into building a Mix Farm with a MADI interface, the world would be good.

Digi has released version 5.2 Pro Tools software. You can now share Pro Tools files over the Internet. This is basically a subscription service based on Rocket Network. Your audio files are stored on a server. Only someone you authorize can download the files to his Pro Tools system. That person can overdub material on his system and send it back to the server. You can then download the file into your original Pro Tools system and edit it or mix it — or even erase it — as you see fit.

Pro Tools is getting really stable. I haven't had a Pro Tools crash in a long, long time. Faster Macs make Pro Tools more enjoyable, too. Screen re-draws are instantaneous, AudioSuite plug-ins perform their tasks quickly, and loading sessions is almost painless. Which brings me to a topic that has become more and more a part of Pro Tools owner's conversations recently....

PRO TOOLS SESSION DOCUMENTATION

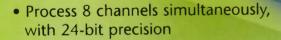
When a new format emerges, some of the data necessary for future deciphering of a project is often left off of the box labels. Nowhere is this more obvious than when you try to open a Pro Tools file from last year that was recorded in someone's project studio.

When 1/4-inch tape was first used, hardly anyone labeled the tape as "mono," because there was no other format. When the 3M digital 32-track machine appeared, it was the only digital multitrack, so the tapes were labeled "digital," but not "3M 32-track digital." After the introduction of Mitsubishi digital machines, it was unclear if a digital tape was Mitsubishi or 3M.

Now that Pro Tools has been around for 10 years, sessions are starting to show up that just say "Pro Tools" without regard to the size of the session, the version of Pro Tools used for the recording, the number of DSP Farms used, or what plug-ins will be necessary to re-load the session.

The Producers and Engineers Wing of NARAS is trying to address this problem by suggesting standard documentation for Pro Tools sessions so that they can be more easily transferred from one studio to another, or opened on a new Pro Tools system that comes out five years from now.

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CIRCLE 36 ON INFO CARD

Digital Performer In Concert

Mike McKnight Programmer / Keyboards Madonna 2001 "Drowned World" Tour



"The entire Madonna show is driven by Digital Performer running on two G4 Power Macs with four MOTU 1296 audio interfaces. When I hit the space bar, Digital Performer begins triggering everything: backing tracks, jumbotrons, and (for HBO)

the Neve in the recording truck." Is DP reliable? "When you're playing for 20,000 people in the venue and another 120 million on HBO, you've got to have the most reliable, musical system available. DP is that program." And overall? "Digital Performer has revolutionized the way I work. I put DP on the road with the two biggest tours of the year: U2 and Madonna. It has to be the best when you put your ass on the line like that. You can take DP from me when you pry it from my cold, dead fingers!"

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