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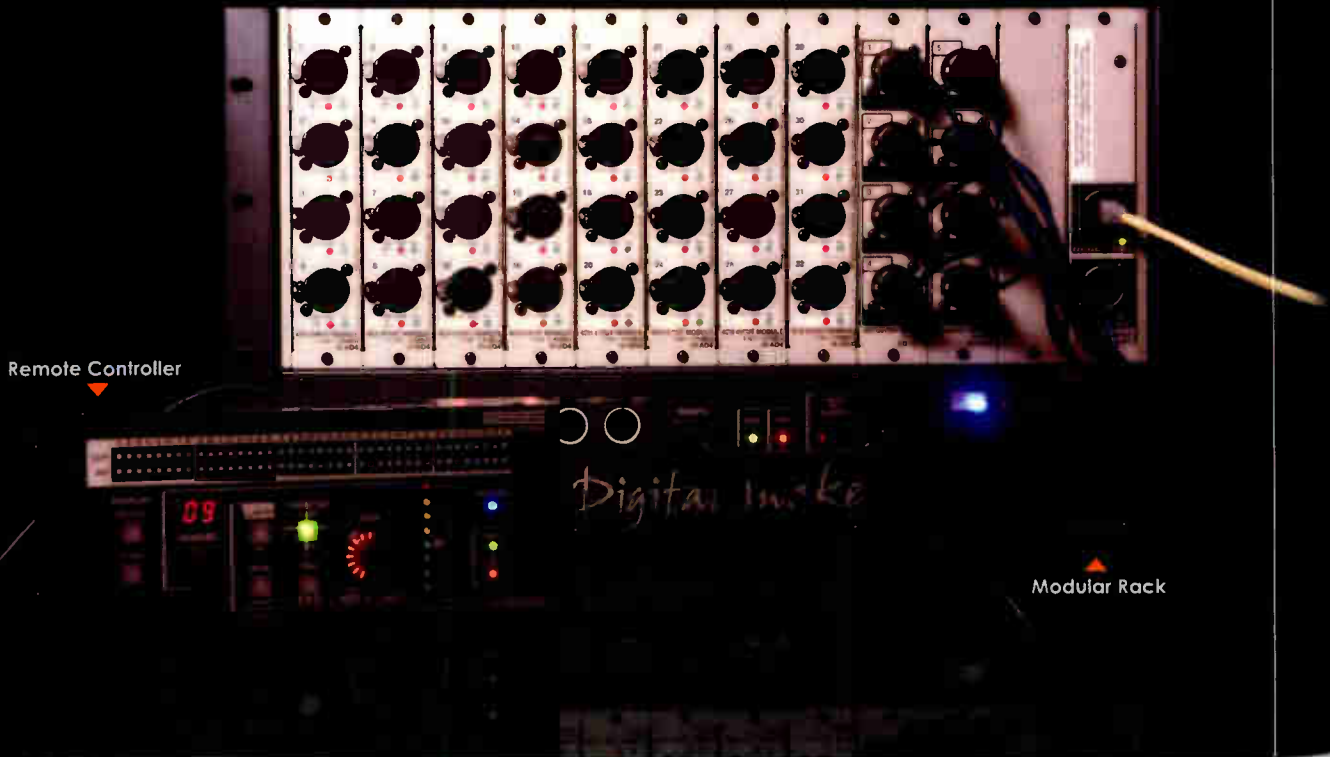
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Features

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PROFESSIONAL PRODUCTS

New Review Editor Joins PAR

BY JOHN GATSKI

In our pursuit of remaining the best review magazine for pro audio, *PAR* is currently tweaking a few elements in our formula. One of our latest additions is the hiring of Strother Bullins as our new Reviews and Features Editor. Strother will be working with *PAR*'s class group of reviewers and the manufacturers to make sure we line up the best reviews for our many thousands of readers who rely us as the pro audio's review resource.

Strother, an accomplished drummer and studio tech, joined our sister title *Audio Media* in the late 1990s. His *AM* tenure included stints as associate editor and managing editor of the US edition, as well as handling mucho writing chores. He has been freelance writing our X/Audio column and the Single Slice column for a couple of years. Thus, he is no stranger to the *PAR* readership. Beside his liaison with the manufacturers and the reviewers, Strother will continue to write the two columns, plus a review or two each issue.

His new position coincides with *PAR*'s growth plans, which includes last year's introduction of the very successful digital edition, and the September debut of *PAR*'s new look, as well as a ramping up our web site.

Being an industry veteran, Strother will work closely with me, and Managing Editor Brett Moss to give you the readers the best reviews out there. Feel free to email Strother and welcome him aboard to the *PAR* staff (strotherpar@earthlink.net).

TWO-TRACK NIRVANA

There has never been so many choices for pro audio engineers in the world of two-track recorders — especially the portable ones for remote work. Long-time remote recording engineer Mike Rivers overviews a bunch of the recorders in this issue, ranging from the low cost units from Fostex, M-Audio and Edirol to high-end units from Sony, Nagra and all the ones in between. The hard drive/Flash card evolution has simply revolutionized the capability of the small recorder. I have auditioned a number of them and currently own a

TASCAM HD-P2; the onboard recording quality in the high-res mode is very good, and if you add external converters, phenomenal.

Although the pressure is on from computer recording solutions, digital studio decks continue to advance from the old DAT days with DVD and hard drive-based solution, showing there are people who still like to record on standalone machines. The TASCAM DV-RA1000 and the Fostex series of DVD-RAM decks are quite popular as is the Alesis MasterLink.

Remember standalone CD recorder decks? Even with their speed disadvantage to a computer burner, there are still a number of those still made from TASCAM, Alesis, Marantz and Denon. Heck, I have three myself. Ain't nothing easier than duping a copy of a CD from my dual-deck Denon DN-650. Yeah, it's the slow burn mode at 2X, but the set-it-and-forget-it simplicity and the satisfaction of actual button pushing buttons make me feel like I am doing something.

The media for all these machines just gets cheaper and cheaper. Decent capacity hard drives approaching \$50; Flash Cards down below \$50 for 2 GB, and DVD and CD-Rs — they almost pay you to buy them.

For those who love the simplicity and quality of recording analog, one solemn moment to note: there is only one 1/4-inch two-track 15 ips machine still being manufactured and made available in the U.S. The Otari MX-5050BIII priced at almost \$5,000 grand continues in production in Japan and distribution here, while the two-track 1/4-inch TASCAM BR-20 R-R finally bows out.

Since there is still a lot of preference (electric guitars still sound the best on R-R) in analog for studio recording machines, some companies still repair and modify R-Rs. Tape is also still available — at higher prices, but the final chapter of the big tape machines is almost here.

John Gatski is publisher and executive editor of Pro Audio Review. His first tape machine was a Mayfair eight-track from Hills dept. store, \$39.95. The first album 8T was Tom Jones (way before his '80s 'coolness' rebirth), She's A Lady.

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Audio Transport or "Digital Snake"

Dear Editor:

I am writing to point out what I have found to be an obvious omission that seems to be common among all of the professional audio industry magazines. Whether it is for a product guide, awards category, trade show listing, or other such instances, there is no category included for what I call "audio transport." This would cover all manners of fiber optic, Ethernet, or otherwise digital transport systems (also referred to as 'snakes' – although I think it is best to use "transport" in place of 'snake' in most situations - the word 'snake' is too limiting in many cases).

In the past few years several new products have come to the market that belong to this category of products. In fact, a poll in *Live Sound* magazine named "Audio Transport" second as the area in pro audio needing the most improvement, just after speakers - in other words, your readers have this category and these products very much in their thoughts these days. A listing of just a few of the companies that manufacture product in this category

would include – Aviom, Fiberplex/Light Viper, Optocore, ProCo Sound, RockNet, Roland and Whirlwind. The point is, there is much more of it today than just a few short years ago, and our industry magazines should give this product segment an amount of focus and attention commensurate with the interest your readers have in this subject. To simply include these products in "ancillary" or "other" or "cable" categories doesn't give this category the amount of attention it deserves.

Sam Spennacchio

*Director of Sales & Marketing
Fiberplex/Light Viper
Annapolis Junction, Maryland*

Brett Moss, Managing Editor responds:

All good points, Sam. *Pro Audio Review* has been mulling the question over for some time on how to handle this. Clearly a new category has developed and it's bigger than just the old-fashioned cable-dominated "Interconnects" category. In fact, taken just a step further, "audio

transport" can get broader when you throw in digital audio processing and distribution systems from the likes of Atlas and Digigram along with semi-proprietary systems from Electro-Voice/Telex, Harman, Intelix, Peavey and Symetrix. They are all different yet similar. There are also very high-end systems coming out of the video distribution market that are likely to become cheap enough to be specced for audio in the future.

It should be pointed out that *Pro Audio Review* has examined offerings from Aviom (4/04 and 4/06), Light Viper (6/05) and E-V (2/06) and this issue has a look at the new Roland Systems Group "Digital Snake" (their words). So we are doing our bit but it's a big world and getting bigger!

WE WANT YOUR FEEDBACK

We want to hear from you. Send your comments to jgatski@aol.com. Please include name, city, state, job title and firm in the e-mail.

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Celebrating its 30th anniversary is **Nady Systems**, a pioneer of wireless mic systems. Congratulations!

Running from lowest to highest: VME Ltd. in the UK has added an **Allen & Heath** 24-channel and a 32-channel GL2800 console to its inventory; Budapest's Fine Arts Museum has added a 24-channel GL3800 for its mobile PA system and in New Zealand Sound Partners Limited has added a 40-channel GL4800 to its stock. On the ML side of things, the National Polish Radio Symphony Orchestra used an Allen & Heath ML3000 during its Penderecki Festival.

Jewel used a **Neumann KSM 105** on her recent tour. See picture of Jewel and the mic.



Though not quite employing "a cast of thousands" the world premier of *The Lord of the Rings* stage version did use a mess o' **Sennheiser** wireless equipment. Up to 73 channels were employed including 64 SK 5012 and SK 50 bodypack transmitters. The Princess of Wales Theatre in Toronto was the setting. The Editors are using Sennheiser e 840 mics on their current world tour. The Sugababes, see picture, used Sennheiser SKM 935 G2 wireless mics and Evolution EW 300 G2 in-ear monitors on their recent tour.



NEW PRODUCTS

Audio-Technica 700 Series Freeway Wireless Microphone Systems

The 700 Series Freeway Wireless Microphone Systems are the latest additions to Audio-Technica's wireless family. The 700 Series is a UHF system with A-T's one-touch frequency scanning system. It comes in bodypack-only, guitar, headworn mic, lavalier mic and dynamic handheld mic packages. Additional features include ToneLock squelch, diversity reception capacity for linking eight systems together. Prices: \$349 - \$459. Contact: **Audio-Technica** at 330-686-2600, www.audio-technica.com.



TC Electronic C300 Dual Engine Dynamics Processor



The C300 Dual Engine Dynamics Processor is a multipurpose tool at home on the road or at home in the studio. Tools include compression, limiting, de-essing, expansion and multiband gating. It offers 16 memory presets for compression/limiting and 16 memory presets for gate/expansion. Included are specialized algorithms for such jobs as acoustic guitar, female vocal and drums. Analog and digital I/O are available along with linking. Price: \$249. TC Electronic at 818-665-4900, www.tcelectronic.com.

JBL MRX500 Series Speakers

JBL's MRX500 series of speakers is a new family designed to take VERTEC technology into a lighter weight and smaller cabinet. The passive family starts out with 15-inch, dual 15-inch and 12-inch two-way main speakers along with an 18-inch and dual 18-inch subwoofers. All speakers share Differential Drive woofers, 16-gauge metal grilles, Neutrik NL4 connectors and DuraFlex finishes. The main speakers have 70 degree x 70 degree patterns. Prices: \$769 - \$1,119. Contact: **JBL Professional** at 818-894-8850, www.jblpro.com.



Road Ready Cases Utility Drawers

Road ready Cases has a new line of rolling utility drawer cabinets out. Featuring four, five or six drawers, with sizes ranging from two to four RUs in drawer size the cabinets feature 3.5-inch casters, 3/8-inch laminated plywood construction, recessed spring-loaded handles and an ATA300 rating. Prices: \$1,099 - \$1,299. Contact: **Road Ready Cases** at 562-906-6185, www.roadreadycases.com.



HD-P2

NEW! Portable HD stereo recorder with timecode

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- Pro Audio Review, March 2005*

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The pro solution for challenging live and on-location applications, the **HD-P2** records at up to 192kHz/24-bit resolution to Compact Flash media. Audio files are instantly available to your DAW through the built-in FireWire connection. There are 2 XLR mic pres and a built-in mic for interview situations, an instant re-take feature, and a time code input for syncing with external devices.

This is no consumer-grade recorder masquerading as a pro unit—it's a true high-definition stereo recorder for anyone who needs the best possible recording, wherever the work takes you.



- ▶ Records at up to 192kHz/24-bit resolution to Compact Flash media
- ▶ 2 XLR mic inputs with 48V phantom power
- ▶ Broadcast WAVE files instantly available to DAW via FireWire connection
- ▶ Time code input for synchronization and time-stamping audio files
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TASCAM

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World Radio History

BY TOM YOUNG

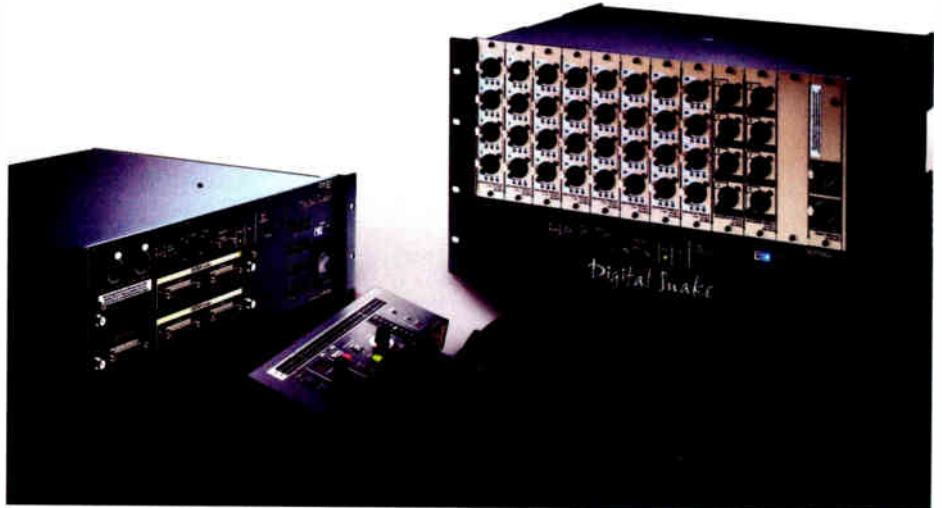
The use of a “digital” snake is obvious when it comes to a digital console – converting the signal to digital as close to the origin of the signal – ideally right at the preamp. Many digital consoles have package deals of proprietary digital signal routing systems, i.e. snakes. But a digital snake can also be used with analog consoles. To address these concerns (with digital and analog consoles), Roland Systems Group (RSS) has recently introduced the S-4000S, a modular digital snake system delivering up to 160 channels of high quality 24-bit/96 kHz audio over CAT-5e cables. The advantages of this technology are ease of setup, sound quality, no hums or buzzes from cabling, and flexibility in modular design, making it a product for the future.

FEATURES

The Roland S-4000 Modular Digital Snake is configured using two basic components, the S-4000H and the S-4000S. The S-4000H is a fixed 8-input, 32-output design that is typically used at the front of house position or as the output side of a split. System components include remote controllable XR-1 professional quality mic preamps, redundant Ethernet ports and splits using standard Ethernet hardware.

The S-4000S is a modular chassis that was configured as an S-4000S-3208 with 32 inputs and eight outputs for my demo. This configuration worked with the S-4000H at FOH to make a 32 x 8 system. A 64 x 16 system can be easily configured using two S-4000S-3208, two S-4000H

Roland Systems Group S-4000 Digital Snake



units and two CAT-5e cables. The unit carries an MSRP of \$7,995 for 32 x 8 systems with remote control, stage and FOH units, and modular in design. Pricing for custom configurations are available by contacting Roland Systems Group.

The other component of an S-4000 digital snake is the S-4000R remote controller. The S-4000R can be used at either the stage or the FOH position, but typically is used to control the input gains from the console at the mix position. The remote is plugged into the S-4000H using an RS-232 port and designed to control up to 40-channels of audio at microphone or line level. The remote has illuminated buttons for phantom power, 20 dB pad, and a “clip clear button.” If the input mic preamp channel clips, the button stays illuminated until depressed to clear it. The input gain is set using a rotary knob located on the remote to adjust input gain from -64 to +4 dBu. The remote has memory presets for storing gain settings.

IN USE

I used the RSS Digital Snake on several shows with Tony Bennett and his Quartet with a system provided by Altel Systems of Brewster, N.Y. The first show was a benefit at Pier 60 in New York City that required the snake to be run above and along the ceiling. The advantages of running this CAT-5e snake versus a traditional analog copper snake was immediate on this

show as it took two guys a very short time to complete the task versus running a 48-pair copper snake.

A nice feature of the S-4000 system is built-in redundant cable ports. If the main cable is broken, the system will automatically and seamlessly switch to the backup Ethernet cable. Also, if you are on the road and you need to replace this type of cable, you can probably get it at Radio Shack. An optional S-240P power supply (\$995) can be used at the stage location, FOH location or with any splits. If there is a problem with the original power supply the optional supply will automatically switch over.

Another nice design feature is the ability to “split” system inputs using standard Ethernet hardware switches providing for multiple audio splits to monitors, a recording location or broadcast truck. Keeping the audio in the digital domain, there is no loss of audio quality when creating a split.

Sonically overall, I was pleased with the XR-1 preamps. They were very clean and complemented the sound I was trying to achieve on all instruments and vocals. I found the clip indicator light a little too sensitive, as it seemed to engage at times when no clipping was apparent. It should be noted that Clear-Com Communications intercoms couldn’t be run down this snake due to its DC voltage. So if you need communications and are using this snake you should bring wireless communications.

continued on page 52 ►

Fast Facts

- **Applications:**
Sound reinforcement, live sound, installation
- **Key Features:**
Modular system; 24-bit/96 kHz performance; Ethernet; separate stage box
- **Price:**
\$7,995
- **Contact:**
Roland Systems Group at
800-380-2580,
www.rolandsystemsgroup.com.

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*VSX 26 model MSRP

The sea beasts (and their land-based visitors) will be treated to better sound at the Aquatic Center in Ventura, California courtesy of a dbx ZonePRO 640 digital zone processor. The 640 will work with JBL Control 30 speakers and Crown CH amps.

In other aquarium news... The North Carolina Aquarium at Fort Fisher has added a Listen Technologies portable FM assistive listening system.

Mount Vernon Baptist Church in Houston is the new home for a Peavey Sanctuary Series music system. Included in the package were S24 mixer and various SSE speakers. Also used were Peavey CS amps, Pro Comm wireless systems and VCM mics, plus an Architectural Acoustics DigiTool processor.

Also in Houston churches, Aviom has installed an in-ear monitoring system at the Lakewood Church.

The Immanuel Baptist Church in Baltimore has installed four Inter-M amps (two I1800 and two L2400) as part of a renovation. They'll work with a dbx DriveRack processor to drive D.A.S. loudspeakers.



Charleston-based Innova Organs is using Inter-M QD-4480 amplifiers to power a new digitally-enhanced organ design. See picture of Innova's Allan Ontko (right), amp and organ.

Marantz's Russian distributor sold 19 PMD570 solid state digital recorders to a new Arbitration Court in Moscow.

MC2 seems to have locked up the amplifier needs of the Minneapolis club scene by providing E25 and E45 amps to two new clubs, Karma and Visage.

NEW PRODUCTS

Turbosound TCS-C50T Ceiling Speaker

Not usually associated with small, round ceiling speakers, Turbosound has introduced the TCS-C50T, a small, round ceiling speaker. Designed for standard industrial ceiling duties – messaging, paging, background music and emergencies, the two-way TCS-C50T features a 5-inch woofer with a ferrofluid-cooled tweeter in an ABS plastic frame. Dispersion pattern in 180 degrees by 180 degrees and it is 70V and 100V compatible. Price: \$172.



Contact: Turbosound/Sennheiser USA at 860-434-9190, www.turbosound.com.

Intelix Audisey Athena

The Audisey Athena from Intelix is an audio distribution system. Available in 8 x 8 or 16 x 16 configurations, the rackmountable Audisey Athena is a crosspoint matrix mixer with 15V phantom power for mic inputs, onboard DSP and amplified outputs. Amplifier power is up to 100W per channel. DSP includes parametric EQ, delay and compressor/limiter with up to 16 presets per channel. Ethernet, USB and RS-232 facilitate control. Prices: Athena-16 - \$4,957; Athena-8 - \$3,440.



Contact: Intelix at 866-462-8649, www.intelix.com.

Dymo RhinoPRO Vinyl Labels

Organization! There's not much worse than a bunch of unlabeled cables and ports. Dymo's new line of RhinoPRO colored vinyl labels might help. Available in red, orange, yellow, white and green, the labels are come in 3/8-inch, 1/2-inch and 3/4-inch widths. They are compatible with Dymo's RhinoPRO 3000 and 5000 electronic labelers. Prices: \$15.99 - \$17.99.



Contact: Dymo at www.rhinolabeling.com.

Integra NVS-7.7 Integrated Media Center

Welcome to the future!
The NVS-7.7 from Integra is a media center computer designed from the ground up for installers. It offers a 400GB hard drive for storage, Intel's new ViiV media technology and a 2.8 GHz Pentium 4 CPU, 1GB of DDR RAM, Windows XP Media Center, USB and Ethernet ports along with a DVD drive and 8 in 1 memory card reader. Goodies from Integra's receivers such as Wolfson DACs, Vector Linear Shaping Circuitry and the whole gamut of audio decoders from Dolby keep audio and video performance at levels equal to dedicated receivers. Price: \$3,000.



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Hear the Power of Technology

BY ANDREW ROBERTS

This is a great time to be in the live sound field. Technological advancements have delivered enormous computing power to most of the electronic tools of our trade. The formerly dark art of speaker processing has now entered a golden era with powerful units flooding the market - especially those that are affordable to budget-restricted churches, schools and small SR providers. Gone are the days when you needed a rack full of gear and thousands of dollars to perform critical speaker management functions like crossover, EQ, delay and limiting. A notable new arrival in this class is the Navigator series from Sabine. These units perform all the previously listed functions as well as matrix mixing and Sabine's unique FBX feedback suppression.

FEATURES

There are three basic units in the Navigator line. The NAV8800 has eight inputs and eight outputs while the NAV4800 has four inputs and eight outputs and the NAV3600 has three inputs and six outputs. There is also an option for Ethernet function - allowing for control of Navigators on standard networks or Ethernet and serial-based touch screens. This capability means that users can control their Navigator from anywhere in the world (although I'm not sure why you'd want to do that). Additionally, the Navigator can be controlled from its front panel or from a laptop computer with the provided Navigator Remote software.

The NAV3600 3 x 6 has a list price of

Fast Facts

■ **Applications:**

Sound reinforcement, live sound, installation

■ **Key Features:**

Four inputs, eight outputs; 48 kHz sample rate; parametric, graphic EQs; delay; compressor/limiters; crossover controls; FBX Feedback Exterminator

■ **Price:**

\$2,149

■ **Contact:**

Sabine at 386-418-2000,
www.sabine.com.

Sabine Navigator NAV4800 Speaker Management System



\$1,099; the NAV4800 4 x 8 lists for \$2,149 and the NAV8800 8 x 8 lists for \$2,829. Ethernet-equipped versions add \$200 to the list price of each unit.

The unit I received for review was the NAV4800. As mentioned, it has four inputs and eight outputs - all of them appearing as balanced XLR connectors. The chassis is one rack space and it protrudes eight inches back into the rack. The front panel features mute and function buttons for every input and output, a backlit LCD display screen, six menu buttons, and a dial encoder for parameter adjustments. The rear is home to the input and output connectors, an RS232 serial port (for connecting to a remote computer), a power switch and an options panel (for optional Ethernet connection).

The Navigator features 24-bit A/D and D/A converters, a sampling rate of 48 kHz, and internal processing at 32 bits (40-bit extended). It has a claimed frequency response of 20 Hz - 20 kHz (± 0.1 dB) and a purported dynamic range of 115 dB (unweighted). The unit generates a modest propagation delay of 1.47ms.

As would be expected from a dedicated speaker processor, the Navigator offers control over level, polarity, parametric filters (up to six with either numeric or graphic control), crossovers (Bessel, Butterworth, and Linkwitz-Riley with slopes up to 48 dB per octave), high and low shelving, compression/limiting (with adjustment for threshold, ratio, attack, release and gain), and digital delay (up to 450ms adjustable in 20 microsecond increments and selectable as ms, feet or meters). And, unlike most other speaker processors, there are eight FBX Feedback Exterminator filters too. All of these processes are available on every input and output of the Navigator. The unit stores up to thirty presets and features multiple levels of password security (a nice feature for install duty and to avoid tampering from pesky band engineers).

When using the Navigator Remote soft-

ware, the user can access all the above features and additional goodies like graphic filter adjustments, viewing and editing frequency response curves, storing and recalling files, setups and programs, controlling

I found this unit to have
no discernible negative
sonic impact... and lots
of headroom.

up to sixteen linked Navigators (on Ethernet equipped units) and firmware upgrades.

IN USE

I have been using the Navigator for almost two months now and have found it to be a wonderfully competent unit in a wide variety of scenarios. I have stored stereo two-way (with an aux fed subwoofer) and three-way presets (it can also do stereo four-way) for two different sets of loudspeakers (each requiring a different crossover slope and point with appropriate equalization). I also created slots for music and speech systems with satellite delays.

At one gig, I had a band playing on the main floor at the National Air and Space Museum in Washington, DC. The room is very cavernous but, to protect delicate artifacts like the Spirit of Louis, they have some strictly enforced SPL limits. My client that day wanted the music from the band on the stage piped to the upstairs balcony during the cocktail hour. Obviously, we couldn't just turn up the PA for it to be heard upstairs

continued on page 16 ►

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YAMAHA



► Sabine from page 14

so we sent the signal to another system upstairs via a wireless link that derived its feed from an output on the Navigator (set to a distance delay and minus filtering that appeared on the other outputs).

The Navigator is very intuitively designed - I had the software installed on my laptop and the PA operational in short order (all without consulting the manual!). The user interface is very sensible with excellent graphics. I like the fact that the

unit features a spreadsheet function where you can view all the parameters and make a quick overall comparison. I also liked the easy-to-use copy and paste function - a real boost for quick setups. Another nice find was the preferences menu, where you can select delay units (ms, feet or meters), EQ bandwidth units (Q or octave) and ambient temperature (Celsius or Fahrenheit).

While I have used another speaker processor in this price range that featured a higher sampling rate (96 kHz), I found this

unit to have no discernible negative sonic impact (that's optimal) and lots of headroom and gain capability. In fact, overall, I found it to be as competent as some processors that cost more than 50 percent more.

While I rarely experience feedback loops that are caused by the house speakers, I do understand how the onboard FBX filters could assist inexperienced users in a setting like a worship house or school. The FBX filters are very handy when using the Navigator on monitor duty, yielding more system gain and happier singers. Since I was already savvy at using FBX filters, I found the system easy to set-up and operate. Novice users may find it a bit more complicated to initiate but they are also the people who may reap the most reward from this processing since they may be untrained at removing troublesome frequencies.

I do have a couple minor gripes about the Navigator. First, I wish there was a graphical display for gain reduction when using compression. Also, when using the front panel controls (which is rare since the software is so much easier to navigate), I noticed that certain soft keys caused other keys to move (not trigger) when one was depressed.

SUMMARY

The Navigator has found a home in my rack. It is a highly competent piece of equipment - performing all the essential functions of a high quality speaker processor (and then some). It has a wonderful user interface in the accompanying remote control software and, during the course of my review, the unit performed without a glitch. The Navigator 4800 is not the cheapest speaker processor on the market (although the 3600 is pretty close) but it is affordable. It represents a great value- especially considering it has features and capability that puts it in the company of the some of the industry standards.

Andrew Roberts, a regular contributor to Pro Audio Review, is a sound reinforcement and recording engineer.

Review Setup

Midas Venice 320, 160, Allen & Heath GL2400 consoles; JBL and Community cabinets; Audio-Technica, Shure, Audix and Sennheiser mics; Rane, TC Electronic, BSS, PreSonus processors.



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Sony's PCM-D1 portable linear PCM recorder



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There's never been an audio recorder like the Sony PCM-D1. Musicians have hailed its 96 kHz/24-bit uncompressed audio. Recording professionals love the sound quality of the on-board stereo mics and mic preamps. Bloggers and journalists appreciate the intuitive design. Because the PCM-D1 records WAV files to 4 GB of on-board memory, there are no moving parts and no self-noise for the mics to pick up. You won't worry about running out of power or capacity in the field, thanks to field-replaceable AA batteries and Memory Stick PRO™ High Speed media. Even the case is superb: one millimeter-thick titanium with a finish about ten times harder than aluminum. Reviewers have called the PCM-D1 "impressive," "a gem," and "a home run." We call it a whole new way of audio recording.

Find out more at www.sony.com/proaudio.

"IMPRESSIVE."

Sound & Vision Pro Audio Magazine, December 2005

"A GEM"

Lorenz Rychner, Recording Magazine, April 2006

"A HOME RUN"

Frank Beaulieu, Radio World, February 15, 2006

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THE NEW WAY OF BUSINESS™

NEW PRODUCTS

Gepco, the wire guys, is celebrating its 25th anniversary in business. That's a lot of wire!

Even older, **HNB**, is celebrating its 30th anniversary. Congratulations!

Deaf Dog Music in Chicago has added a pair of **ATC SCM100ASL Pro** monitors to its control room.

Musician/engineer Greg Wells wrote a bunch of checks to **Rupert Neve**

Designs recently - obtaining a 5012 pre-amp, 5042 tape emulator and five 5043 compressor/limiters. They join an old Neve console in his home studio in Culver City, Cal. In Finland Midas Studios has added eight 5012 preamps. They are being installed for a project recording Gjallarhorn. See picture of Gjallarhorn lead singer Jenny Wilhelms with the new 5012s.

Full Sail, the recording arts school, has added **Steinberg Nuendo** and **Cubase** to its DAW curriculum.

API has placed its Vision 5.1 surround sound consoles into two schools - University of Massachusetts at Lowell and the University of Michigan.

Bicoastal Music in New York

has added **Auralex SpaceArray** acoustical diffusors in its control room.



Joemeek MC2 Compressor

With today's sea of digital multiprocessors and digital audio workstations a simple, half-rack dedicated



product like Joemeek's MC2 optical stereo compressor stands out. Nothing fancy here for the most part - input gain, compress, slope, attack, release, makeup gain controls. But nice touches are the gain reduction hold and stereo width controls (with bypasses). Price: \$199.

Contact: Joemeek/PMI Audio at 877-563-6335, www.joemeek.com.

API Audio A2D Converter

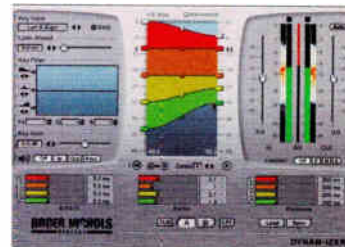


Prepare the smelling salts! API has gone digital! The A2D is an analog-to-digital converter utilizing a pair of API 312 mic preamplifiers as the front end. The analog preamps have the standard gain controls, 48V phantom power, phase reverse, and mic/Z input switches. Sample rates are 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz and 192 kHz. It will also handle an external sync source. Price: \$1,995.

Contact: API Audio at 301-776-7879, www.apiaudio.com.

Roger Nichols Digital Dynam-izer

Grammy Award-winning familiar audio face Roger Nichols has brought out a whole new line of DAW plug-ins. One of the first is Dynam-izer, a multizone leveling plug-in. Dynam-izer offers attack, ratio and release controls along with a key filter controller and a limiter. It comes in RTAS and VST flavors for Mac and Windows along with AU for the Mac. Price: \$249.



Contact: Roger Nichols Digital at 727-230-1603, www.rogernicholsdigital.com.

Mojave Audio MA-200 Tube Microphone

Mojave Audio might appear to be a new name to many but in reality it is not so new. It has been a side project of David Royer, he of Royer Labs, the ribbon mic guys. The latest from Mojave is the MA-200, a tube-based, cardioid condenser microphone. The MA-200 has a 1-inch gold-sputtered diaphragm and uses Jensen transformers and JAN 5840 tubes. The mic ships in a carrying case with power supply, cables and shockmount. Price: \$995.

Contact: Mojave Audio at 818-847-0222, www.mojaveaudio.com.



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World Radio History

BY FRANK BEACHAM

Over the past year, the floodgates have opened with new audio recorders using Flash memory for file-based storage. Yet, with all the new choices, there remains the difficulty of matching the right model with the application.

Unfortunately, perspective buyers cannot count on the marketing material and spec sheets for the whole story. As with many new technologies, users often must wade through a thicket of “gotchas” discovered only after the purchase.

A Flash recorder can look great on paper, but have buggy software and a complex, unfriendly user interface. For portables, there are important issues like battery configuration, connectors, weight, and the visibility of the metering display. Finding the right recorder usually involves a very personal search — one dictated not only by cost, but the user’s skill level and application. It’s very important to know where you fit in the food chain.

I desire a simple-to-operate recorder for interviews, live music, and other general purpose location sound. For most of this year, I have used Sony’s excellent PCM-D1 — a recorder that combines remarkable sonic capabilities with absolute simplicity of operation and record-solid, reliable software.

Though expensive and a bit heavy, I feel entirely comfortable with the D1. However, because of its size and weight, I don’t carry it everywhere. I have been searching for a much smaller, lighter recorder that I can keep in my day bag

Edirol R-09 Flash Recorder

with a pocket camera for unexpected opportunities.

Now, a new pocket-sized, six ounce portable has emerged from Roland’s Edirol division that — though not perfect by any means — is serving my requirements for a take-everywhere field recorder.

FEATURES

The new Edirol R-09, priced at a very attractive \$399 street price, records files in uncompressed linear WAV and MP3 bit rates up to 320 kbps. The sampling rates are 44.1kHz and 48 kHz. The bit depth for WAV recording is either 16 or 24.

The R-09 runs on a pair of standard alkaline (or rechargeable) AA batteries for about four hours. It records to a standard SD Flash card with up to 2GB capacity. I say ‘standard’ because the new very high-speed SD cards for photography can cause problems in audio recorders. I used the Sandisk Ultra II 2GB card with excellent results. *[Edirol recommends using only Type I Flash media for reliable performance – Ed.]*

Since I work alone, I want simplicity, reliability and intuitive operation in a portable recorder. The Edirol R-09 delivers on all three counts. The 128 x 64 dot graphic display is a marvel, one of the best and easiest to read displays I’ve ever seen on such a small device.

The software is a no-brainer to navigate and configure. No manual is needed — to me the ultimate test of whether a user interface is well designed. And, best of all, it works. With the pre-installed version 1.03 firmware on the recorder I purchased, there has not been a single glitch during many hours of use with several Flash cards.

Since the device creates no background noise, the built-in stereo mics sound quite good for non-critical, utility recording. However, the R-09 has separate mic and line inputs, both through stereo mini



jacks. The mic input has a switchable mode for Plug-in Power, the 3.3V consumer standard.

Also convenient are the hard on-off switches (as opposed to menu options) for AGC, low-cut filter, and stereo or mono mic modes. There’s also a low-high mic gain switch. All are located on the back of the recorder.

There’s no S/PDIF input, but the mini headphone jack doubles as an optical S/PDIF output. There’s also a USB 2.0 connector that allows the recorder to mount like a hard drive on a Macintosh or PC. File transfer is easy.

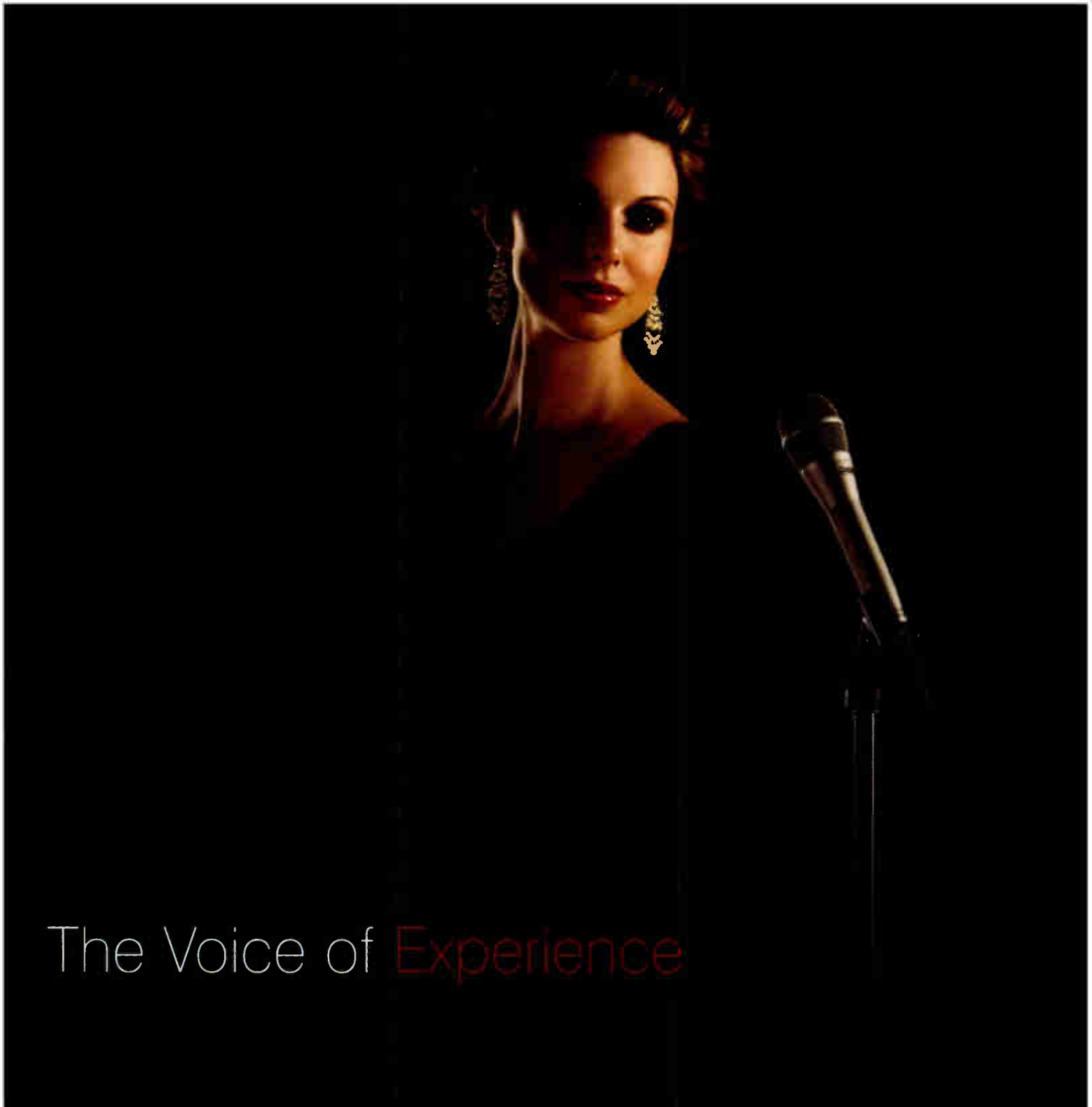
IN USE

Though I think the R-09 is a remarkable product, a reality check is needed.

continued on page 22 ▶

Fast Facts

- **Applications:**
Field, broadcast, studio
- **Key Features:**
Compact Flash media format; 16-bit, 24-bit; 44.1 kHz, 48 kHz sample rates; USB port; battery operable
- **Price:**
\$399
- **Contact:**
Edirol at 800-380-2580,
www.edirol.com.



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► *Edirol from page 20*

This is NOT a professional audiophile field recorder, though many pros will use it and their results may be exceptional.

It's clear that to meet an under \$400 price point for the product, Edirol took some significant design shortcuts. The most obvious is the cheap plastic case, and the door that covers the batteries, SD card and USB connector. To say the door is badly designed is an understatement!

A short drop to a concrete floor would

almost certainly total an R-09. It's that flimsy. The battery door is so fragile, Edirol includes a warning insert to new users. Opening this Rube Goldberg contraption requires multiple steps, a very gentle touch, and some practice. How long before it breaks is anybody's guess.

Instead of including a largely useless digital reverb feature on this recorder, I wish Edirol had put the resources into a more rugged case suitable for frequent field use.

Product Points

Plus:

- + Good sound for \$399
- + Pocket-sized & only 6 oz. loaded
- + Excellent user interface
- + Beautiful visual display
- + Great battery life on two "AA" alkaline batteries
- + Reliable software
- + Useful hardware switches for key operations

Minus:

- Poorly designed cover door for battery, SD card & USB connector
- Fragile plastic case
- No S/PDIF input

The Score:

Maybe a bit flimsy but overall a handy tool for capturing sounds in the field.

SUMMARY

If you don't drop it and treat it with kid gloves, the Edirol R-09 can be a revolutionary new tool. It may very well be the best low-cost, featherweight portable WAV audio recorder now available. Think of it as a consumer audio recorder capable of professional results.

Frank Beacham is a New York City-based writer and media producer.

Broadcast News

Ultrasonics headphones are being used in ESPN broadcasts of events such as the NCAA women's basketball Final Four.

Pittsburgh-based NEP Broadcasting has added even more Calrec consoles to its fleet of mobile truck. New are two 72-fader Alpha consoles.

CBS has added two Fairlight Dream Constellation XT consoles to its Los Angeles facilities. Fairlight has also provided nine Dream Satellite mixer to the UK National Film and TV School.



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BY RUSS LONG

Audix SCX25-A Microphone

Pro Audio Review (1/02) reviewed the chic, lollipop-shaped SCX25 when it was introduced several years ago. The mic has been upgraded with modifications to the capsule interface. It is still a large diaphragm condenser microphone that includes a patented capsule suspension system that acts as a built in shockmount. In addition to being sold individually, the mic is now being shipped as a stereo pair which includes an aluminum carrying case and special Audix Dflex piano mounts. The mic sounds smooth and natural and is perfectly suited to record vocals, percussion, stringed instruments and of course, piano.

FEATURES

The six-ounce SCX25-A is a transducer-type condenser microphone. The microphone has a fixed cardioid polar pattern with a 20 Hz to 20 kHz frequency response and an output impedance of 200 ohms. The mic's sensitivity is 27 mV (ref 1k @ 1 Pascal), its equivalent noise level is 14 dB (A-weighted) and its signal to noise ratio is 80 dB (ref 1 kHz @ 1 Pascal). The mic has a maximum SPL of 135 dB with a 121 dB dynamic range. By making use of miniaturized low noise components, Audix has been able to fit the preamp circuitry for the SCX25-A into a four-inch brass housing. This has resulted in the SCX25-A having the smallest footprint of any large diaphragm microphone ever thus making it extremely easy to place when working in tight spaces (e.g. the bottom of the snare drum). The mic's output is via a gold plated male XLR connector that is wired pin-2

hot and the mic operates on 48V - 52V phantom power. The mic has an internal capsule suspension mounting system which eliminates the need for expensive shockmounts in most situations. The mic is warranted for a period of one year from any and all manufacturing defects.

IN USE

I've been using a pair of SX25-As for several months now and I've been impressed with their performance and flexibility. The mic reproduces vocals and acoustic instruments with exceptional detail and realism.

Of course I was most excited to put the mics to work on piano. While tracking at Nashville's House of David studio (www.houseofdavidstudio.com) I used the mics to capture session ace Jeffery Roach play David Briggs' 9.5-foot Baldwin grand piano (one of the finest pianos I've ever heard). I was blown away by the sound of the SCX25-As. I placed one mic mid-way over the upper register towards the keyboard and the other mid-way over the lower register towards the rear of the strings. When I've recorded this piano in the past I've always used a pair of Neumann U87s and was shocked to discover that a pair of SCX25-As sounded every bit as good. In my opinion the mics work so well for piano that it would be worth it to purchase them only for recording piano. Audix's optional D-flex mic clip makes it easy to mic the piano and still close the lid. The D-flex mic clip attaches to the dividing bars of the piano and can be placed in a wide variety of positions allowing the piano lid to be completely closed if necessary.

While tracking St. Louis-based rock band Ludo, I used the SCX25-As as drum kit overheads and again was pleased as pudding. The mics have a pleasant top end sparkle without any of the harsh, brittle characteristics frequently common with lower priced condenser microphones. I also had good results using the mics to record tambourine, shaker and congas.

I found the SCX25-A to be a nice vocal microphone with an acute accuracy and



detail especially in the upper mids and higher frequencies. The mic has very little proximity effect so placing the vocalist anywhere within 24 inches of the mic works fine.

I also had good results using the microphone to record acoustic guitar on several occasions. In most instances the best sound was attained about 9 inches away from the guitar and about four inches - six inches above the sound hole with the mic placed between the end of the fret board and the sound hole. I also found that the microphone works well with the violin.

I used the mic with a wide variety of preamps including the A-Designs Pacifica, the Pendulum Quartet II, the Hardy M-1 and the Langevin Dual Vocal Combo and *continued on page 52* ►

Fast Facts

- **Applications:**
Studio, broadcast, live sound
- **Key Features:**
Cardioid pattern; lollipop-style 25mm capsule; built-in suspension
- **Price:**
\$799; matched pair - \$1,729; piano miking system - \$1,829
- **Contact:**
Audix at 503-682-6933,
www.audixusa.com.



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BY MIKE RIVERS

Summer NAMM is Hot!

The Summer NAMM show, held in the Austin, Texas heat last month, is smaller than the big January blowout in Anaheim, and it tends to be more oriented toward guitars and drumsticks than compressors and consoles, but there are still plenty of cool things that might find a home in your studio.

Mics'N STUFF

The surge of new condenser mics seems to have cooled off a bit, but ribbon mics are heating up, fueled largely by the work of Wes Dooley of Audio Engineering Associates. Wes married modern manufacturing techniques with classical ribbon mic designs, and, a couple of years back, introduced a line of new, affordable large ribbon mics. Nady took up the challenge, introducing their Chinese-built RSM-2 last year, and at this show, displayed more new ribbon mics than you could shake a drumstick at. They come in all sizes and shapes, all with roughly two-inch long by two-micron thick ribbons with exception of the "lollipop" style RSM-4 which sports a 6-micron ribbon, suggesting a more vintage sound, both mechanically and visually. All are priced under \$350.



Shure KSM9

Other new ribbon mics were the VR-88 from Samson and the CR-14, a dual ribbon mic from a newcomer, Avant Electronics. One thing this generation's ribbon mics has in common is that, while they're all bidirectional, they're designed to sound different from each side. This offers a choice of a brighter or darker tone, but trading off true bidirectional symmetry, making them unsuitable as the side mic in an M/S configuration.

Shure introduced a new top-of-the-line stage vocal condenser mic, the KSM9. Its dual diaphragm 3/4-inch capsule is switchable between hypercardioid and cardioid patterns (the switch is inside the screw-on grille). The selectable pattern was driven by live sound engineers who prefer the smoother cardioid pattern when using in-ear monitoring, but can get more gain before feedback when used with conventional wedge monitors.

Audio-Technica updated their Artist series, adding two new cardioid condenser models, the handheld ATM710 and the small diaphragm side address ATM450. This pencil-style mic offers some inter-



Audio-Technica ATM450

esting placement options, particularly around drum kits and acoustic stringed instruments. The ATM350 miniature instrument condenser mic is packaged with a gooseneck clip-on mount and a clever Velcro strap to attach it to the strings of a fiddle between the bridge and tailpiece.

Studio Projects has updated their B and C series of studio condenser mics, increasing the capsule polarizing voltage and upgrading some of the components, resulting in 6 dB higher output and lower self noise. A sturdier case and new mesh grill both decreases mechanical resonance and improves the appearance.

Among mic accessories, Avant showed a couple of rugged shockmounts; a con-



TASCAM US-144

ventional stand adapter for pencil-style mics, and a sturdy metal drum-rim clamp. Studio Projects displayed their upgraded mics in a new shockmount with a clever twist, an additional threaded stud that, with the addition off the appropriate length extension, allows a pair of mics to be mounted head-to-head on the same stand for coincident stereo applications.

RECORDERS

The new Sony MZ-M200 Hi-MD MiniDisc recorder updates the MZ-M100 with several new user friendly features such as larger buttons and a no-nonsense display with usable meters and a true overload indicator. Recorded audio can be transferred between the disk and a computer via USB 2.0, and the Hi-MD format offers up to 94 minutes of 16-bit/44.1 kHz of uncompressed recording on a disk (up to 34 hours with the most severe data reduction). The MZ-M200 comes with a wired remote control and T-style stereo mic which can be plugged directly on to the recorder or used through a supplied extension cable. With Flash memory recorders rapidly taking over for field recording, some of us still like to have sufficiently inexpensive removable media for storage of the "master," and the Hi-MD seems to be filling that niche.

The Zoom H4 hand sized four-track or stereo Flash memory recorder sprouts a

continued on page 28 ▶

EXTRAORDINARY MICROPHONE UNPRECEDENTED PRICE

While many microphones add a 'certain something' to the sound, DPA microphones are world renowned for capturing the performance - and the performance only - with breathtaking sonic accuracy.

The new 4090 exhibits an open natural sound, with an imperceptible noise floor and an impressive 134 dB of SPL handling capability, making it a perfect choice for a wide variety of both live and recording applications. From acoustic guitar to drum overheads, acoustic piano to full symphony, this mic excels.

Find out more about the 4090 at www.dpamicrophones.com.

Also available: the acoustically identical 4091 with an additional 10 dB of SPL handling.



World Radio History

DPA 4090

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► Summer NAMM from page 26

pair of crossed cardioid condenser microphones as well as phantom powered XLR mic inputs. A high impedance instrument input and built-in DSP effects reminds us



M-Audio ProFire Lightbridge

that Zoom is still in the guitar processor business. Similar in concept is the Boss Micro BR pocket sized four-track recorder. Designed for the musician on the go, it includes such features as a time stretcher, DSP effects, and a programmable drum machine.

GOZINTAS AND GOZOUTAS

M-Audio introduced the ProFire Lightbridge, connecting up to four ADAT optical inputs and outputs (32 channels) to a PC or Mac via FireWire. It also supports the SMux protocol for 16 channels at 88.2 kHz/96 kHz.

TASCAM has updated the US-122 USB interface with two new variants, now offering USB 2.0, 24-bit resolution, and sample rates up to 96 kHz. A styling makeover with flat, recessed knobs fits the pocket or tote bag better than the original model. All of the original US-122 features are retained with the exception of the insert jacks, including no-latency analog input monitoring. The US-144 adds S/PDIF I/O to the two mic/line/instrument inputs, and provides separate controls for headphone and line level monitor outputs.

New from Alesis is the tabletop IO|14 FireWire audio interface. Combo XLR connectors with insert jacks in the signal path accommodate four phantom powered mics, line level sources, or high impedance instrument pickups in any combination. Digital inputs are S/PDIF and ADAT optical (SMux for four channels at 96 kHz). One pair of balanced analog and one pair of S/PDIF digital outputs provide monitoring for in-the-box mixdown. MIDI inputs and outputs are also included.

The API A2D, comprised of a pair of API 312 mic preamps and a 24-bit/192

kHz A/D converter, is the company's first product with an integrated digital output. Separate preamp and A/D input gain controls provide intelligent management of gain structure to optimize headroom of both the mic preamp and A/D converter. Analog insert jacks between the preamp output and A/D converter input allow the use of outboard processors.

COOL GIZMOS YOU NEED

Stage Ninja has been making custom roadie tools and accessories for a while, and at this show, they've introduced their first commercial products. The Musician's Extension cord is a heavy duty 25-foot or 50-foot AC power cable with weather-resistant sockets every five feet. Their Light Grip flashlight holder on an articulated gooseneck with either a heavy duty clip or magnetic base is just the ticket for those times in the dark when you need a third hand.

Disc Storage Solutions offers a line of high-capacity CD/DVD storage cases. It's a clever marriage between a standard CD



Peterson StrobeFlip

sleeve and a hanging file folder. A hanger slips through a slot at the top of the CD sleeve and is suspended from a pair of front-to-back rails in the case. It's great for the DJ who has to carry hundreds of disks and find them quickly, or for storage of your project backups.

The Ebtech HumX is a ground loop eliminator about the size of an ice cube. Plug it into an AC outlet, plug your problem device into it, and, according to Ebtech, the ground loop problem is gone.

I was assured that it's completely safe and completely effective (it's not a \$90 safety ground lifter). We'll let you know. Miracles sometimes happen.

Peterson's new, compact StrobeFlip multi-temperament virtual strobe tuner fits in a pocket and offers features common to Peterson's Virtual Strobe tuner line such as user-programmable temperaments, preloaded sweeteners and temperaments including pedal steel and the Buzz Feiten tuning system.

D'Addario's Planet Waves S.O.S. (Strobe On String) tuner for guitar or bass (a model for each) is a fat flat pick (try saying that fast) shaped gadget with a thumbwheel switch on the flat end and two LEDs on the pointy end. Set the thumbwheel switch to the note you want to tune, and the two LEDs flash as a strobe. Pick the string with the tuner's point and when the illuminated portion of the string is stationary, you're in tune. Very cool, and it really works. Less versatile than the StrobeFlip, but it's handier and considerably cheaper.

SOFTWARE

Audio Impressions wowed at the last NAMM show with their virtual pipe organ. This year's buzz was about their DVZ (Digital Voice Zones) Orchestrator. This real-time program automatically maps chords to different voices so that, for example, the highest note of the chord is played by the first violins, the lowest note played by the basses. In addition, it can divide a section into multiple parts with parts coming in according to assigned priorities. With a traditional MIDI sample player, if one note plays 16 violins and you play a three note chord, it sounds like 48 violins. With DVZ, it sounds more realistic, like the chord is played by 16 violins.

MasterWriter is a songwriter's tool, consisting primarily of a data base of words, phrases, rhymes, synonyms, alliterations, and pop culture icons intended to help find the perfect word or phrase to fit a song in progress. Other integrated working tools are simple audio recorder for getting the melody down, and an online date-of-creation registration service that might save your bacon before you get the copyright paperwork.

Veteran engineer and industry pundit
continued on page 30 ►

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World Radio History

► Summer NAMM from page 28

Roger Nichols himself was ably demonstrating the new Roger Nichols Digital line of plug-ins. To describe the set (two dynamics tools, two equalizers, and an analysis tool) is beyond the scope of a quickie show overview, but my favorite was the Dynam-Izer. It's similar in concept to multiband compression but, rather than separating the audio into frequency bands with each band getting its own flavor of processing, the audio is divided into amplitude bands, allowing different dynamic processing of low and high level program material in a mix. It's very cool in the right hands, which could be your hands.

AND ON TOP OF OLD CONSOLE

Remember Auratones, the tiny loudspeakers on the console bridge of just about every studio in the 1970s? Avant Electronics has brought back the concept with the Avantone Mix Cube, a small, single speaker designed to show how your mix will sound on a less than full range playback system. Unlike the cheaply



Alesis DM5

made Auratone, these are solidly built with MDF cabinets and a good quality driver (you supply the power amplifier), padded on the bottom to protect a console top or bridge, and with a mic stand socket for convenient mounting in today's consoleless studio. While not very expensive, this is not intended to be your only monitor – it's a tool for checking your mix for other environments.

FOR THE MUSICIAN IN YOU

It's a guitar amplifier! It's a varispeed CD player! It's a phrase looper! It's TASCAM's GA-100CD Guitar amplifier/trainer. This 60 watt instrument amplifier with a 12-inch speaker and DSP effects combines with a CD player offering playback tricks that help you learn licks, or simply play along with a recording.

The Caswell #39 is a joint project of Studio Electronics' Tim Caswell and Soldano Amplification. The amplifier has a totally analog signal path with motorized pots for MIDI-control recall of 128 stored presets. With the #39's flexible gain staging and wide range tone controls, several classic amplifiers (stored as factory presents) can be closely emulated. It's \$6,000, so it's not for everyone.

Alesis displayed several new products for those who like to bang on things. The DM5 Electronic Drum Kit integrates the DM5 drum module with a set of drum control pads and stands, including a foot-controlled hi-hat pedal. Trigger I/O offers ten drum trigger inputs with five-pin and USB MIDI outputs and comes bundled

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Sony MDR-7509HD

with the BFD Lite software drum module. Finally, ControlPad is an eight-zone percussion controller with USB output.

iCooustic is integrating amplification with high quality travel-sized guitars and basses by installing a modified Fishman pickup system and mounting a decent speaker in the sound hole. A patchbay on the control panel lets you plug in a player such as an iPod and play along, plug in an effect pedal, or patch in a mini recorder (a Korg ToneWorks PXR4 was on the demo guitar) to record tracks and play along with yourself, as well as use the Korg effects. This is a class act, very nicely done.

Sony's new MDR-7509HD headphones are a logical alternative to the longstanding favorite of many audio professionals, the MDR-7506. The 7509 has a larger driver than the 7506, a more comfortable ear cup, extended high frequency response (up to 80 kHz!), and, most significant, flatter midrange for more accurate monitoring and less fatigue.

LOST IN AUSTIN

I'm not much for parties, but I took the opportunity to walk along 6th street, the main "music row" following an after-show party one night. There's about an equal number of bars with music, tattoo parlors, and ATMs. No doubt about it – this is a

music town. This is NAMM's first shot at Austin after several successful years in Nashville and (according to many reports) a lackluster show last summer in Indianapolis. Many people were predicting that the Austin show would be a dud as well – hot weather, few direct flights, a long drive from just about anywhere, and general industry doldrums. It was definitely smaller and less crowded than the January show, 14% down in attendance from last summer, according to NAMM, but it meant not being rushed

through the exhibits. I'll take that over a mega show any day. The jury's still out on where next summer's show will be, but there was enough positive feedback so that it will definitely be held.

Mike Rivers, after working around and about audio and electronic engineering for over 40 years, is now retired and freelancing as a donut moistening specialist and tech writer. He doesn't have an iPod.

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BY TOM JUNG

On Saturday June 17, 2006 one of pro audio's most eminent figures passed away at his mother's home in Long Island at the age of 55.

An audiophile in the true sense of the word, David Smith was the most quality-conscious dedicated pro audio person I had ever met or worked with. David had been Executive Committee Chairman of the AES New York chapter for years and was very active in many AES events.

I first met David at A&R Recording in NYC where he headed up the technical department and I was a freelance engineer working on film scores, records and jingles. David and I hit it off when we first met largely due to our total agreement philosophically about the recording and reproduction process. With David there was never any BS he was full of knowledge without coming off as a know it all. Even though he did know more about the inner details of recording electronics and microphones than just about anyone I had ever encountered, he was humble and always willing to listen to other ideas or viewpoints.

TRUE MENTOR

I thought I might share some of the great professional memories I had with David, as he was a true mentor to me.

In 1982 when I started DMP Records I turned to David for technical guidance on developing a shorter and more pristine recording path than was currently available in "off the shelf" audio equipment. The first 50 or so albums on DMP were live-to-two-track so a stereo mixer was really all I needed but it had to be ultra clean, quiet and totally transparent. We both agreed that what I was looking for had to be custom made and with David's design chops I set

off to build my first mixing console. It was passive, had eight inputs two outputs and sounded great with unlimited headroom, no noise or distortion whatsoever but was severely lacking in the features department. I used the mixer on

David Smith: A True Loss to Our Industry



several DMP projects and the audiophile press loved the minimalist approach. As projects became more technically demanding the passive mixer was put to rest and I set off again with David's assistance to build an all-discrete single ended solid state Class A mixer, this time with 20 inputs, two outputs, eight aux sends and eight returns. Still minimalist in the sense of no EQ, routing or dynamic control, the goal of this mixer was to be as sonically transparent as possible even though it was active. Unfortunately the person I contracted to build the mixer was a total flake and it never saw its first session, it just never lived up to the design goal that we were both looking for.

It took me a while to get over abandoning this second mixer project but again with David's encouragement I set out on a new mixer venture this time with someone who had a great reputation in both design and build quality.

Mark Levinson had just started a new company in New Haven, Conn. called Cello. Two products from this new venture were of great interest to me: the Audio Palette and the Audio Suite. The Palette was an equalizer designed by Richard Burwin with very low Q filters and probably the most musical equalizer I had ever worked with. Not

intended for doing surgery but for overall tonal shaping it was the best. The Suite was a modular preamplifier intended for high-end residential systems where a phono preamp and any number of balanced or unbalanced line level inputs could be configured in a semicustom approach. After suffering the mechanical and electronic disaster of the former project this overdesigned and overbuilt approach was just what I was ready for. The phono preamp was redesigned and turned into an ultra quiet microphone preamp and several modules were built to fill the Audio Suite mainframe. The Cello Mixing Suite and Audio Palette were discrete pure Class A and lived up to sonic goals that were established. The Cello gear was used in production at DMP until I was literally forced by artist to go multi-track, something I regret to this day.

David Smith's most recent position was at Sony Music Studios where he was VP of audio engineering and R&D. To this day several pieces of Cello equipment are used by Sony Studios in production and mastering. Things simply will not be the same without David he will truly be missed.

Tom Jung is technical consultant for Pro Audio Review.





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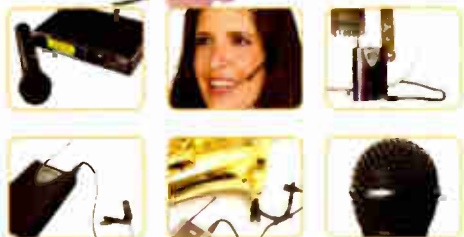
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World Radio History

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BY MIKE RIVERS

Two-Track Recorders - Lest We Forget

With most recording and mixing performed inside a computer these days, two-track recorders seem mundane or redundant, but at times, a dedicated recorder is just the ticket. Engineers are still getting good mileage out of two-track recorders in the studio and in the field. In this article, we'll look at today's technology, revisit recorders that have been forgotten, and some we'd like to forget. This is a broad brush survey and not a collection of detailed reviews, but many of the recorders mentioned here have been reviewed in *PAR* over the years.

Today we usually think first of location recording when we talk of two-track recorders. Klay Anderson of Klay Anderson Audio says: "What is best for location sound? Define location sound. Stealthing at a rock show? Your limitations are budget and size. ENG? Again budget, but post production and speed are the criteria. Marantz seems to be taking it pretty seriously, but they have owned the reporters' market with cassettes for decades. All they have done (with their current solid state media recorders) is upgraded that reliable concept, made it solid-state and good sounding."

Creative musicians are using portable stereo recorders to sample environmental and ambient sounds for use in their compositions and productions, and there's no simpler way to record band rehearsals or gigs than to set up a stereo mic and a pocket-sized recorder. While professional on-location productions are recorded multitrack today, small budget local or noncommercial broadcast projects are often recorded straight to stereo, generally using a fairly "professional" quality recorder.

In the studio, it's not uncommon to find one or more two-track recorders for mix-down, backup, and for clients who want to take home a cassette for reference.

CATEGORIZING THE TWO-TRACK RECORDER

With today's multitude of products, you can almost always find the right tool for the job, but what's the best choice? A tight budget usually dictates digital recording due to the minimal media cost, but there are several digital media options,



Sound Devices 702

as well as different levels of what we, with some reservation, call "professional features." Sometimes size matters, and that's another category. User interface is important and some of today's digital recorders can get pretty complex. Let's take a look at some of these issues in terms of what's available today.

FLASH MEMORY MEDIA RECORDERS

Flash memory recorders are all the rage today, and for some very good reasons. Eliminating moving parts such as a tape transport or disk drive greatly increases the potential for reliability and ruggedness as well as reducing size, weight, and cost. But while a Flash memory recorder can be remarkably inexpensive, the cost of the removable memory cards that most of these devices eat for lunch is still high enough so that media management must be considered in the project budget.

A \$100 4 GB (gigabyte) Compact Flash card can hold an impressive 70 hours of audio at 64 kbps MP3 compression (rough speech quality), 14 hours at 320 kbps (good cassette quality), 6.5 hours at 16-bit/44.1 kHz uncompressed PCM (CD standard) or barely an hour at 24-bit/192 kHz. While even major broadcast networks today seem to accept the tizzy or phasey sound for news reporting that results from aggressive data compression, you really don't want record your music masters in that mode.

The usual working mode with a flash memory recorder is to own a card large enough for your gig, transfer the record-

ing to another medium as soon as you get back to home base, then re-use the card on the next project. With the concept of preserving (at least as long as the project is active) the first generation recording gone out the window, we now rely on the "perfect digital copy" as our master. It's interesting to note that there is no specialized storage system for Flash memory cards, and there's barely enough clear space on the card's surface to write any identification data, so you really need to do something with the data as soon as possible after the session. Most Flash memory recorders provide a USB or IEEE 1394 (FireWire) port for data transfer between the memory and a computer, though since most models have removable memory cards, slipping the card into a reader attached to the computer is common.

The top shelf (\$3,000+) for professional Flash memory field recorders includes the Nagra ARES and the Sound Devices 7 series. The Nagra ARES-C, being a broadcast-oriented recorder, uses MPEG-2 data compression but no PCM uncompressed format. The Nagra ARES-BB+ records PCM with MPEG compression optional. Sound Devices answered the demand for a lower cost version of their 722 hard disk field recorder by leaving out the disk drive and offering the Flash-only 702. While the Sound Devices 702 utilizes common Compact Flash memory cards, the Nagra recorders use PCMCIA form factor memory cards. Both are available in SMPTE time code versions for working with film and video projects and both have XLR mic inputs with 48V phantom power.

The TASCAM HD-P2 and Fostex FR-2 (\$1,000 range) are typical mid-range professional flash memory field recorders.



TASCAM HD-P2

Both use the Compact Flash card format (presently available up to 8 GB) and record at all standard sample rates up to 192 kHz at 16 and 24-bit resolution, but



Fostex FR-2

offer no MP3 compressed formats. Both have XLR mic inputs with 48V phantom power and are SMPTE timecode-capable.

In addition to its Compact Flash memory slot, the FR-2 accommodates a PCMCIA form factor hard disk. The hard disk alternative was a good idea when the recorder was first introduced and gigabyte-sized flash memory was barely on the horizon, but today, solid state memory has left the PCMCIA disk in the dust.

The Sony PCM-D1 is far too nice to be considered a consumer model, but it lacks some features that are important for certain professional applications. For many situations, its built-in X-Y condenser microphone pair will suffice, but should you want to use external mics or a line level input from a



Sony PCM-D1

mixer, you'll be dealing with unbalanced inputs on stereo mini phone jacks, and no phantom power. The PCM-D1 has 4 GB of Flash memory built in, and accommodates a Sony Memory Stick Pro for additional memory. Recording is PCM-only, 16 or 24-bit, up to 96 kHz sample rate. The Nagra ARES-M is similar in concept – a one-hand quick recording solution, incorporating a built-in microphone (an external tie-tack external mic is also supplied) and internal 1 GB memory for uncompressed 16-bit recording up to 48 kHz or MP3 compression

up to 384 kbps.

The Marantz PMD-670 and 671 are the 21st century replacements for the PMD-200 series cassette recorders so

continued on page 36 ▶

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► Two-Trackers from page 35

popular with broadcast journalists through the 1990s. The 670 records 16-bits up to 48 kHz plus several levels of MP3 compression while the 671 extends



Marantz PMD-670

resolution to 24-bit and sample rates up to 96 kHz. The 660 is a new small-budget family member in a smaller case. All feature phantom powered XLR mic inputs and the classic cassette recorder controls.

The sub-\$500 M-Audio MicroTrack 24/96 and Edirol R-1 and R-09 (a recent update – see review on page 20) straddle that wide fence between professional and consumer, built like mass market consumer products while finding their way into some professional applications. Both are barely hand-sized with the corresponding pluses and minuses (flyweight, limited battery life, cramped controls, miniature connectors to the outside world) but both are capable of making good quality recordings. Radio stations are starting to use these as replacements for MiniDisc



Edirol R-1

field interview recorders, and both are popular among musicians for recording live shows.

While most of the Flash memory action is in the portable area, the Marantz PMD-560 and 570 are rackmount units designed for installed sound and broadcast production rooms. These are the kind of units you'd look to as a replacement for a cassette deck when assembling or updating a rack for a theater or house of worship installation. Both can be controlled through an RS232 port for programmed playback of prerecorded announcements, or for remote control.

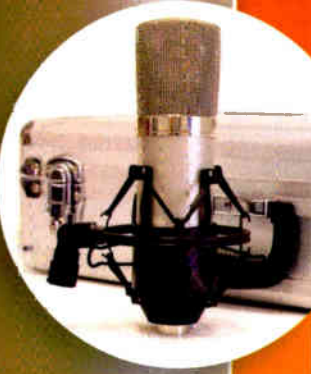
I have to cheat a bit here (it's mono, hence not two-track), but the HHB FlashMic is just too cool not to include in a basic recorder survey. It's a whole recorder built into the body of a Sennheiser omni mic – no cables, and up to eight hours of recording time on a pair of AA batteries. The internal (fixed) 1 GB flash memory provides up to three hours of 16-bit PCM recording, or extended recording times with MPEG compression. There are a lot of settings and a small built-in display, but once set up, recording is as simple as pressing a button. A 10-second pre-record buffer lets you catch those phrases when you're a bit slow



HHB Flash Mic

on the button. There's a headphone jack for

continued on page 38 ►



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PMD671

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➤ *Two-Trackers from page 36*
playback and a USB port for data transfer.

HARD DISK RECORDERS

For field recording, hard disks have almost completely been replaced by Flash memory, but at the fully professional level, hard disk recorders are still alive. King of the currently available portable hard disk two-track recorders is the Sound Devices 722, cousin of the 702 Flash card recorder. The 722 records 16 or 24-bit PCM up to 192 kHz sample rate or MP3 compressed formats to either an internal 40 GB disk drive, Compact Flash memory, or both. Either medium can be used to back up the other. Mic (XLR, phantom powered), line, and AES/EBU inputs are provided.

Hand-sized units from Creative Labs, Archos, and iRiver, while primarily designed for playback of MP3 files loaded from a computer, offered decent recording quality. These have almost entirely disappeared from the current marketplace but second-hand units are readily available. With 20 GB to 60 GB of disk space, there's plenty of recording time for a weekend gig without having to worry about when you'll run out of media. Mic preamps on these devices range from blah to barely functional, so it's best to feed them a line level signal from an outboard preamp or mixer. The mini I/O jacks, a consequence of small size and low cost, are worrisome, but recording quality is surprisingly good. An open source development group to create completely new firmware for several of these "Jukebox" recorders has sprung up. If you're into eBay-diving, check out the Rockbox Project at www.rockbox.org for models that can be upgraded.

The Alesis MasterLink ML-9600, still in production after seven years, is a dedicated tabletop hard disk recorder with a built-in CD drive. Initially conceived as a

studio mixdown recorder, the MasterLink records from line level analog or AES/EBU digital inputs to its internal 40 GB hard disk at 16 or 24 bits, up to 96 kHz sample rate. A playlist from recordings can be assembled directly on the MasterLink, and



Alesis MasterLink

it will create a Red Book CD, applying sample rate and word length conversion if required. While most of this work is routinely done on a computer today, the MasterLink is still a solid performer and a no-haywire solution for mixdown, backup, or remote two-track recording.

CD AND DVD RECORDERS

Not too many years ago, Yamaha introduced the first standalone CD recorder for about \$20,000. Now that CD-R drives for computers cost less than twenty bucks, there isn't a lot of call for a dedicated CD recorder, but they still have some applications, and there are still some standalone CD recorders on the market. Whether the gig is a remote music recording or a conference lecture, it's convenient to be able to hand the customer a CD immediately, with no intermediate steps. The market for dedicated CD recorders cooled off for a while, but there's a new interest with the growing practice of offering CDs of a show for sale while the band is signing autographs and packing up. Inexpensive multibay CD duplicators require a CD as a master, and there's no quicker way to make one than to record it directly. The TASCAM CD-RW402 and Marantz DN-C550R are both dual-transport models equipped with one recording and one playback transport, which can function as a duplicator as well



TASCAM CD-RW402

as a recorder. Both companies offer several models of single-transport CD recorders optimized for various applications and budgets.

The Marantz CDR-300 is the CD version of their venerable portable cassette recorder line. About the size and weight of a pack of printer paper, the CDR-300 features direct recording to CD-R from mic (XLR, phantom powered) or line inputs. For lecture or conference recording, the CDR-300 offers a handy mode which generates a track index each minute. The CDR-420, similar in I/O and form factor to the CDR-200, records either MP3 or 16-bit 44.1 kHz PCM to a 20 GB hard disk, from which one can burn a CD on its internal drive. Like the MasterLink, rudimentary editing is offered, so it's handy for field production.

The TASCAM DV-RA1000 is the first, and so far only stand-alone two-track DVD recorder. The DV-RA1000 offers a wide range of recording modes from CD up through 24-bit 196 kHz PCM on DVD, as well as DSD. In addition to making high-resolution stereo recordings, it's a good tool for delivering DSD masters for SACD audio replication.

MINIDISC

Sony introduced the MiniDisc (MD) over ten years ago, intending to replace the consumer grade "Walkman" portable cassette recorder/player. The original design used a proprietary perceptual encoding data reduction technique known as ATRAC that offered 60 minutes of stereo recording on a tiny magneto-optical disk. The format became popular among those recording live shows and the MD started to creep into the broadcast industry for field work. Over the years ATRAC compression has improved both in efficiency and perceived sound quality, resulting in wider acceptance for music applications. In 2004, Sony introduced the Hi-MD format, using a 1 GB disc to record 90 minutes of 16-bit, 44.1 kHz uncompressed PCM audio as well as up to 34 hours using ATRAC3plus data reduction. A Hi-MD recorder can also reformat a standard MiniDisc to double its capacity.

The new Sony MZ-M200 Hi-MD recorder is aimed squarely at the professional market. While its tiny size precludes pro-style I/O connections, Sony has taken the user interface a step above other MD recorders currently on the market, providing larger and better spaced controls for us fumble-fingered users, and an uncluttered visual display with excellent record level metering. While it's still necessary to navigate through menus for setup, one-button recording is a snap. The MZ-M200 is supplied with a remote control and a T-style stereo mic that can be plugged directly into the recorder or



Sony MZ-M200

used like a tie-tack with the provided accessory extension cable.

For the production room or installed sound applications, TASCAM's rackmount MD-350 standard MiniDisc recorder pro-

vides flexible interfacing, track editing, and cueing.

While most MD recorders are equipped with a USB port, the original intent was to provide a way to load music from the computer to a disk. For many years, copying an original MD recording from recorder to computer was prohibited by the special file transfer software, making the use of the MD recorder inconvenient in the production environment. This restriction has gone away with the current Hi-MD implementation.

There are far too many MD recorders to list them here, but the fountainhead for information, models currently available, and user reviews is the MiniDisc Community web page www.minidisc.org.

COMPACT CASSETTE

This is the format that we love to hate. There are so many reasons for it not to work very well – low speed, narrow tracks, minimal guiding – but the bottom line is that the cassette format is still alive and kicking, blank media is still in production, and with care and good equipment, recordings can sound quite good. The compact cassette format is about as bulletproof as it gets, and someone new to field recording, with just a little training, can always bring back a usable recording. The Marantz PMD-222 deserves mention here even though it's mono, being the last of the professional-oriented portable cassette recorders that were the workhorses of field broadcast journalists for many years. While out of production for several years, many good board tapes have been made with Sony's WM-D6 pocket-sized stereo cassette recorder and their larger but seriously professional-oriented TCD-5.

continued on page 40 ➤

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▶ Two-trackers from page 39

The rackmount TASCAM 112 Mk II has been a workhorse standard in production rooms and studios, with the 102 being a lighter-duty lower cost model. TASCAM 202 Mk III and 322 are dual-transport cassette decks for copying or continuous recording. Marantz offers the DRM-555P, a single transport rugged rack-mount cassette deck suitable for studio or installed sound use, as well as three dual-transport cassette decks differing mostly in control functions. The DRW-585 offers automatic bias adjustment, the PMD-505 offers variable pitch and wireless remote control (wired remote optional), and the DN-780R offers RS-232 remote control and redundant recording to both decks simultaneously.

DAT

Like the cassette, Digital Audio Tape (DAT) started out as a consumer format but it was embraced early on by the professional community as a cost effective primary digital recording and mixdown medium. With except of the TASCAM DA-45HR which offered an optional 24-bit interlaced double-speed format, DAT was limited to 16-bit 44.1 or 48 kHz recording. There are no longer any DAT recorders being made, though many remain in service, primarily for playback and backup recording. To obtain a DAT recorder today, you'll have to haunt the used market. They're inexpensive to purchase but expensive (and sometimes impossible) to repair, so don't expect a long life, and be prepared to buy another one when yours dies. Major manufacturers were Sony, TASCAM, Panasonic, and Fostex, and they're all about equal in quality and functionality. Be aware, though, that Panasonic's implementation of the AES/EBU and S/PDIF digital inputs requires proper selection of DIP switches to get it working correctly. Get a manual!

Of particular note are the Sony TCD-D10, HHB PortaDAT, and TASCAM DA-P1 portable DAT recorders, all solid performers offering professional I/O and battery operation. Sony offered several DATs in the Walkman series that were popular for (often stealth) concert recording.

HYBRIDS (SOME ACCESSORIZING NEEDED)

The Core Sound PDAudio System is an S/PDIF input-only interface that plugs into the Compact Flash slot of a PDA. With the

appropriate software and external A/D converter, the PDA can become a portable recorder capable of up to 24-bit 192 kHz operation. Recordings are stored on a CF memory card in the PDA's second card slot. As a companion to the PDAudio card, Core Sound offers the Mic2496 mic preamp with A/D converter, or you can use your own favorite.

The iKey Plus from Gemini (the DJ people) is a bridge between analog audio and a USB mass storage device. Connect it to a USB disk drive, an iPod, or even a USB memory stick and you've got a PCM or MP3 recorder. This is new and evolving, but it's a pretty cool idea.

Contacts

| | |
|----------------------|------------------------------------------------------------------------------|
| Alesis | 401-658-5760, www.alesis.com |
| ATR Service | 717-852-7700, www.atrservice.com |
| Core Sound | 201-801-0812, www.core-sound.com |
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| Gemini Sound | 732-738-9003, www.geminidj.com |
| M-Audio | 626-633-900, www.m-audio.com |
| Marantz | 630-741-0330, www.d-mpro.com |
| Nagra | 615-726-5191, www.nagra.com |
| Otari | 818-734-1785, www.otari.com |
| Sony | www.sony.com/professional |
| Sound Devices | 608-524-0625, www.sounddevices.com |
| TASCAM | 323-726-0303, www.tascam.com |

THE GOODE OLDE DAYS OF QUARTER-INCH ANALOG TAPE

In this digital age, people still crave "that warm analog sound" and are finding that there's nothing like tape to produce it. Otari, a long time supplier of analog recorders for studio and broadcast applications, has discontinued most of their analog product line, but the industry work-



Core Sound PDAudio CF-7A

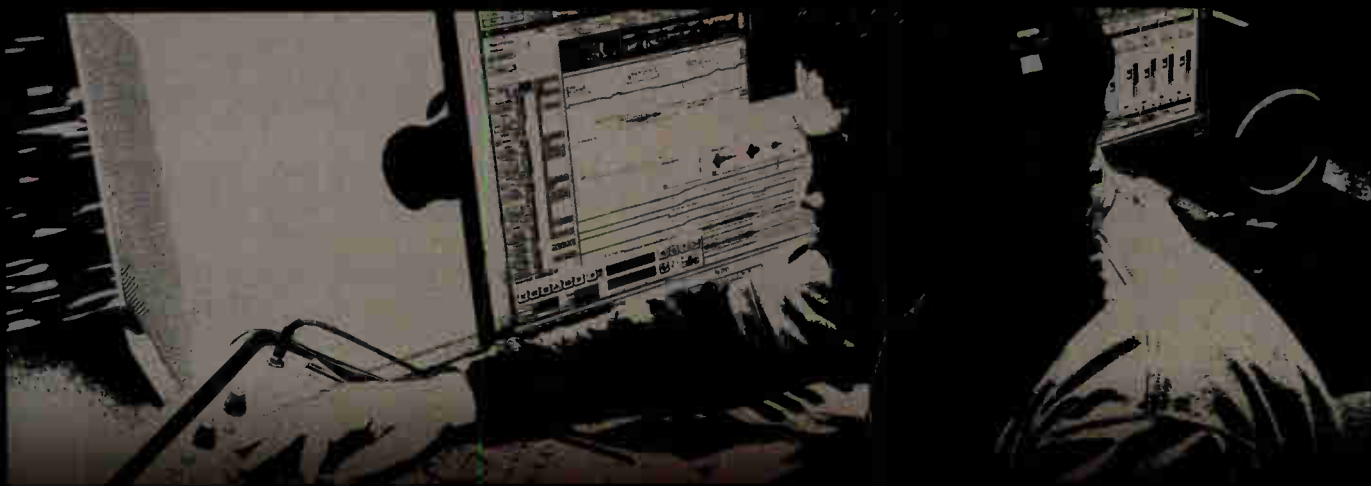
horse 1/4-inch two-track MX-5050BIII is still available. TASCAM, another long time recorder manufacturer for both the professional and project studio, just recently discontinued manufacture of their last stereo analog recorder, the BR-20, but there are still some new ones to be had.

Although it's been many years since an analog tape recorder has been manufactured in the US, dumpster divers and eBay hunters can find great bargains in old-but-not-dead-yet, fully professional AG-440 and 350 models from Ampex and the JH-110 from MCI. Many are ready to roll while others need some work, or head refurbishment. They're large and heavy (beware of shipping costs if you're not buying local) but they're glorious. ATR Service specializes in complete overhaul of Ampex recorders, making them better-than-new with custom heads, custom electronics, and precision mechanical parts and alignment. Their refurbished ATR-102 recorders are highly revered mastering machines. ATR Service owner Mike Spitz has so much faith in the future of analog recording as a professional medium that he's begun manufacturing a high performance recording tape and teaches regularly scheduled analog recorder alignment seminars.

Spitz says: "The audio palette is so much greater with an analog recorder than with digital. There's no one 'analog' sound, but you can get whatever sound you're after if you learn how to use and adjust your recorder." John French, proprietor of JRF Magnetic Sciences and frequent collaborator with Spitz, is the go-to guy for analog tape head refurbishment. A professional grade recorder, built for many years of hard service, can almost always be put into first class shape for just a few hundred dollars. And many home studio experimenters are digging their grandfather's Sony out of the attic and using it much in the same way as an effect processor.

In the universe where it's rare for audio to leave the computer in anything but finished "master" form, recording direct-to-stereo is becoming less common. But it's a quick setup, there's no hours of tweaking the mix, and it's a challenge to get it right the first time. Try it. You might like it.

Mike Rivers, after working around and about audio and electronic engineering for over 40 years, is now retired and freelancing as a donut moistening specialist and tech writer. He doesn't have an iPod.



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BY RUSS LONG

Sony Oxford EQ and Dynamics Plug-Ins

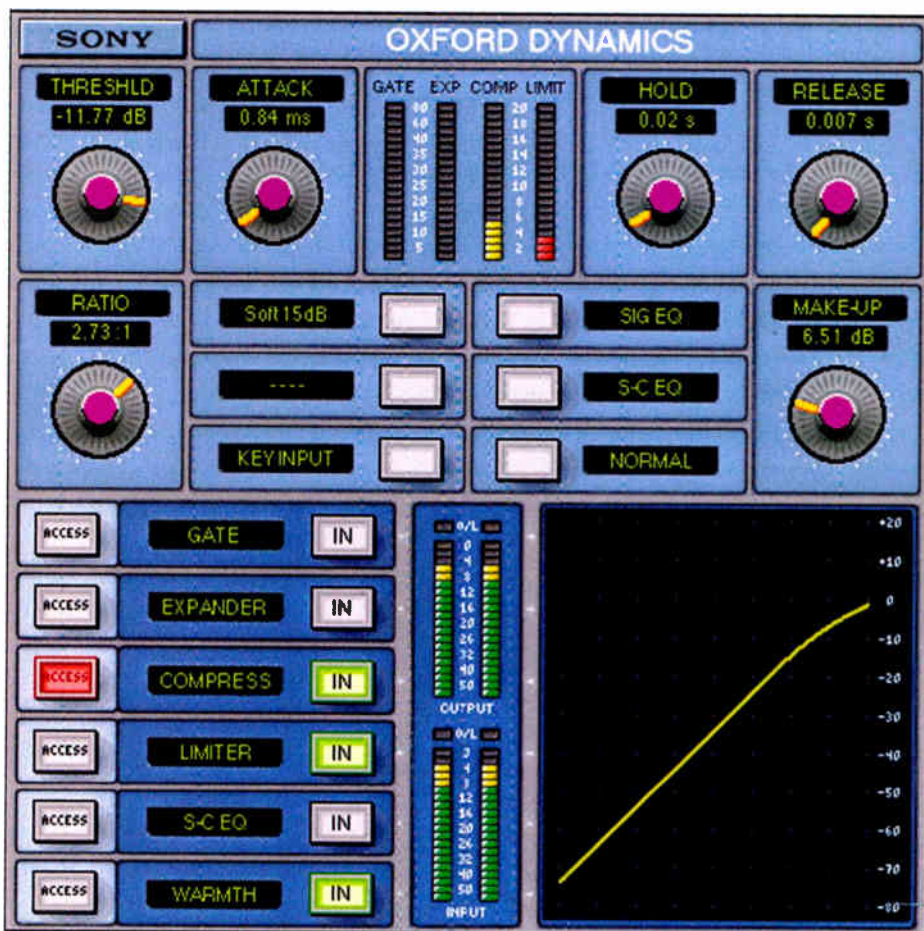
It was a technical milestone when Sony squeezed the sonic quality of their million dollar Oxford console into the affordable DMX-R100 several years back. The squeeze was taken to the next level with the release of the Sony Oxford line of plug-ins. These include the Oxford EQ, Oxford Dynamics, Inflater, Trans Mod, Reverb, Limiter, and Restoration Tools plug-ins. These plug-ins support sample rates up to 192 kHz and provide the sonic performance of the Oxford console with an investment of a few hundred dollars. I was able to spend a couple of months with the Oxford EQ and the Oxford Dynamics plug-ins and was extremely pleased with their performance.

FEATURES

The EQ and the Dynamics plug-ins are compatible with Pro Tools HD/HD Accel, Pro Tools MIX, Pro Tools LE and TC Power Core (the Oxford EQ with the GML option is only supported on the Pro Tools HD/HD Accel and Pro Tools MIX formats). Both plug-ins are based on the Sony Oxford console and are fully automatable.

The EQ plug-in is a fully functional five-band equalizer with selectable shelf settings on the LF and HF sections. There are also separate variable slope (up to 36 dB/octave) low-pass and high-pass filters. The EQ provides four different selectable EQ types (five with the GML 8200 option) that cover various EQ styles that include legacy styles renowned for their artistic capability. The use of novel coefficient generation and intelligent processing design provides remarkable performance in both artistic freedom and sound quality.

The plug-in has a comparison feature that



allows instant comparison between two completely independent EQ settings. All EQ functions are fully automatable. Besides supporting sample rates up to 192 kHz, the plug-in offers extremely low noise and distortion. The four versions of the plug-in (five-band EQ with filters, five-band EQ without filters, three-band EQ without LMF and HMF sections and the filter section only), each available in both mono and stereo versions, allow for optimal DSP management (this plug-in is rather processor hungry). The four different EQ types (five with the GML option) included with the Oxford plug-in provide various styles of EQ that take in account gain, Q dependency and overall control ranges.

The Sony Oxford/GML 8200 Option adds the GML 8200 EQ emulation to the plug-in. This accurate emulation was originally designed in collaboration with GML for the OXF-R3 console. It has all the finer character-

istics of the classic analogue outboard unit, faithfully reproducing all the control ranges and responses of the original EQ, even to the point of producing center frequencies up to 26 kHz while running at 44.1 kHz or 48 kHz.

The Oxford Dynamics plug-in provides independent compress, limit, expand, gate and side chain EQ functions and it has a signal path noise and distortion level below -130 dBr. The plug-in's two-band side chain EQ can also be used in signal path. The selectable time constant curves and variable soft compress functions allow the user to quickly move from subtle level control to extreme sound manipulation. The plug-in uses a feed-forward architecture with a logarithmic side chain processing making use of look-ahead techniques, consequently ensuring a sonic quality and dynamic accuracy unavailable from other dynamics units, analog or digital.

The plug-in includes a separate bus compressor/limiter with surround support and

Fast Facts

Applications:

Studio, post production

Key Features:

Pro Tools-compatible; PowerCore-compatible; five-band EQ; compressor, limiter, expander, gate; up to 192 kHz

Price:

Pro Tools TDM \$891; Pro Tools LE \$360; TC Powercore \$630

Contact:

Sony Oxford at
www.sonyplugins.com.

selectable sub channel filtering and gain contribution control. The fully variable soft ratio function allows for extreme program tolerance and highly musical compression and the variable harmonic enhancement provides extra loudness, presence and punch. There is also a selectable redithering function for word length reduction in mastering situations.

IN USE

I had no problems installing the Oxford plug-ins on my Pro Tools rig but getting them to run was a bit of a challenge but after a bit of troubleshooting and then some direction from Sony's online support team (who I found to be impressively fast and knowledgeable) I was quickly up and running.

There are several EQ plug-ins that sound reasonably good when used sparingly. The problem is, as the equalization becomes more drastic, the sound becomes phasey and loses definition. This is not the case with the Oxford plug-in. Regardless of how drastic the equalization is, the Sony Oxford EQ sounds utterly astounding, always smooth, and always natural.

I also found having the option between

EQ types to be extremely useful. Although I still vary my EQ type from situation to situation, I have found myself most often using Type 1 (which is reminiscent of an SSL

Product Points

Plus:

- + Phenomenal sound
- + Supports 192 kHz sample rates
- + Flexible

Minus:

- More expensive than comparable plug-ins
- The GML option is not compatible with TC PowerCore or Pro Tools LE

The Score:

If your DAW simply must have the best sounding EQ and dynamics plug-ins available, then the Sony Oxford plug-ins is something you can't live without.

4000 series) on drums and percussion, Type 3 (which is more reminiscent of a classic Neve EQ) on guitars, bass and strings and the GML 8200 on vocals.

I frequently found myself using the A/B

comparison/selection feature. I mixed a track with a lead vocal that went from a whisper in the verses to a full fledged belt in the choruses and needed completely different EQ settings from one section to the other and instead of taking the time to do extreme EQ automation or the extra DSP to insert an additional EQ, I had two settings on the plug-in and I simply automated the A/B switch to go to the proper setting in the correct section of the song.

To test the accuracy of the GML option on the EQ I duplicated the EQ settings on the plug-in with my hardware 8200 so I could compare the two. The difference was amazingly subtle, so much so that I anticipate that all I was hearing was the extra D/A-A/D conversion that using the hardware version required.

The Dynamics plug-in provides an amazing amount of sonic control. I used it on drums, percussion, bass, acoustic and electric guitars, keyboards and vocals and was always able to quickly and easily obtain results that I was extremely pleased with. The side chain EQ controls give an amazing amount of control, especially on vocals.

continued on page 52 ►



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BY TY FORD

Fostex FR-2 Field Memory Recorder

DAT was a transient format, right? Short of keeping one or two DAT machines around to handle what you already have on DAT, it's time to move on. There are a growing number of DAT replacements on the market. The Fostex FR-2 is one of them. Leveraging their experience and lessons learned with the PD2, PD4 and PD6, Fostex has advanced its line of stereo field recorders with the FR-2.

FEATURES

The FR-2 uses Type II CompactFlash cards and Flash ATA card micro drives; Toshiba MK5002MPL, Simpletech STI-HD1.8/5 and the Kingston DP-PCM2/5GB, to be specific. The FR-2 supports the FAT32 files system, using BWF files in interleave file mode. A maximum file size of 2 GB or 4 GB can be selected during setup.

The FR-2 is powered by eight AA cells, the optional AD12-1300 AC adapter or by an external 12 VDC supply. Alkaline, Ni-Cad and Ni-MH batteries are acceptable, but not manganese. Battery swapping must be done with the FR-2 powered down or data may be lost. The battery compartment is on the back of the FR-2. Not an ideal place if you have it in a bag.

The FR-2 indicates battery life on the main LCD panel and generates an error tone when the voltage level drops below threshold. Expect about an hour and a half using alkalines. Changing eight AA batteries every 90 minutes makes me think an external NP-1 is the way to go, but I'm not sure the FR-2 is smart enough to know the



mA/hr capacity of an NP-1. Although the power supply plug is of right angle design with a small keeper flange under which the cord may be secured, I'd also like to see a slightly beefier DC jack on the FR-2 itself.

The power jack is on the FR-2's left side. That's also where you'll find the card slot for the optional SMPTE card that uses RCA jacks and has a green LED that blinks to indicate operation. If you want the SMPTE option, buy an FR-2 with the card already installed. At last word, installing the card has to be done by Fostex.

There are two USB ports; the "PC only" port (Yes, the FR-2 works with OS X Macs too.) is for transferring files. There's also a keyboard USB port that makes re-naming files a lot more convenient. Finally, there's a digital I/O comprised of a male and female XLR. In the menu, you can choose AES/EBU or S/PDIF.

Moving on to the top controls, the FR-2 supports a wide variety of sample and bit rates that are selectable by hardwired switches on the top of the unit. Sampling rates include: 22.05 kHz, 44.1, kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz and 192 kHz. Bit rates are 16 and 24-bit.

Other top-mounted controls include: mono/stereo: prerecord; a six or 10 second pre-record; limiter; mic/line, input trim and 100Hz high-pass filters for each of the two inputs and a set of rewind, forward, play, stop buttons. There's also a small

speaker mounted into the top, the volume of which is controlled by the Monitor/Headphone pot on the front panel. The headphone amp has plenty of guts to drive my Sony MDR 7506s.

The front panel has an amber back-lit LCD screen, seven buttons, a combination scroll and enter control, REC/STBY button and green LED, REC button and red LED, memory access LED, Peak LEDs and concentric independently adjustable input level controls. I don't care for the mounting of the LCD because it's countersunk about 1/4 inch into the face. As a result, depending on the available light, the edges of the display fall into the shadows and are difficult to read unless you use the FR-2's backlight and are at the correct angle. I'm not as interested in seeing the free running timecode display as I am seeing the file name, levels and maybe the start and stop timecode. Perhaps an LCD view option centralizing the important information would be helpful.

On its right side, are the FR-2 power switch, a pair of RCA audio output jacks, XLR input jacks, a phantom power switch and the memory card and micro-drive slots.

IN USE

The FR-2 has input trims followed by record level controls. A true PFL level indicator would be nice to maximize gain

Fast Facts

- **Applications:**
Location, studio, studio
- **Key Features:**
Two-channel; battery powered; up to 24-bit, 192 kHz recording; phantom power; playback speaker; USB file transfer and optional SMPTE
- **Price:**
\$1,299, \$1,899 with timecode
- **Contact:**
Fostex at 310-329-2960, www.fostex.com.

staging and S/N. The FR-2 only offers a peak light and an over "beep" signal. If you turn the trim pots up all the way, you can overload the input pretty easily as you begin to open the record levels. After hitting the wall, I backed the FR-2 input trims off to the 4 o' clock position and fed the FR-2 line level tone from my Sound Devices 442 mixer. With the FR-2 record level knobs set fully counterclockwise, the LCD meter on the FR-2 mixer registered below -60 dB. Raising the FR-2 record level knobs to nine o' clock gave me a -20 dB level and I started recording.

I first compared recordings with a Schoeps CMC 641 using the FR-2 preamps with those in my Sound Devices 442 mixer and found the 442 preamps were not as bright. The FR-2 preamps were certainly usable.

Using the USB port, I was able to transfer audio to and from the FR-2 by simply



dragging and dropping files on the desktop. Although I was successful with Mac OS 9.2.2, Fostex says not to use a Macintosh computer below OS X. Under OS X 10.3.9, with Pro Tools LE 6.2.3, I had no problems. One 24-bit, 192 kHz file was 75 seconds long and 41.4 MB. It took about 50

seconds to convert and import into PTLE. The FR-2 also supports Windows ME, 2000 or XP for Microsoft systems.

While the record, cue, mark cue and card release buttons are on the face of the FR-2, the REW, FFWD, Play and Stop buttons are on the top. If you have the FR-2 in a bag on a shoot and need to get to playback, you may have some difficulty, depending on the construction of the bag.

SUMMARY

Fostex delivers on its promise of a DAT replacement (I won't miss the tape stock). While certain aspects of the FR-2's operation make using it in a bag problematic, the basic recorder is a good value. Another \$600 gets you timecode.

Ty Ford has been reviewing equipment for PAR since the first issue. Find him at www.tyford.com.

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ADAPTIVE AUDIO

BY STEPHEN MURPHY

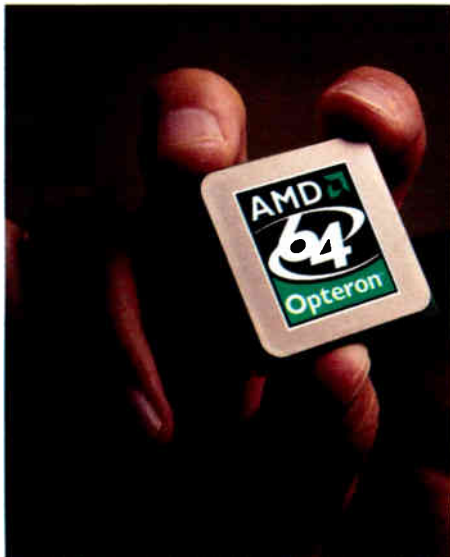
This is the last installment in the "Building the Perfect Beast" series, which provided a general roadmap to the configuration of a Windows XP-based high-performance audio workstation from the ground up. For those who are interested, the complete series is archived under "Articles" on my website (www.smurphco.com).

ALL ACCESS

Picking up where we left off last month, the only essential change in Windows XP for use with audio applications is to set processor scheduling to Background Services (Control Panel > System > Advanced > Performance Settings > Advanced Tab > select Background Services). While you are there, you may also want to set visual effects to a minimum (click on the Visual Effects Tab > select 'Adjust for Best Performance').

There are a number of other non-essential tweaks that can enhance performance and/or prevent unintended interruption of audio processes. Last month I noted the three most rudimentary and benign tweaks (disable screen saver, turn off power schemes, and disable system sounds). For those wishing to eek out a bit more performance and/or prevent uninvited Windows handholding attempts, here are several more tweaks to consider for your XP audio workstation.

Though most of the following are fairly simple and should cause you no worry, I strongly recommend "Ghosting" your system drive (see 'Beast' part 3) before



Building the Perfect Beast (Part IV)



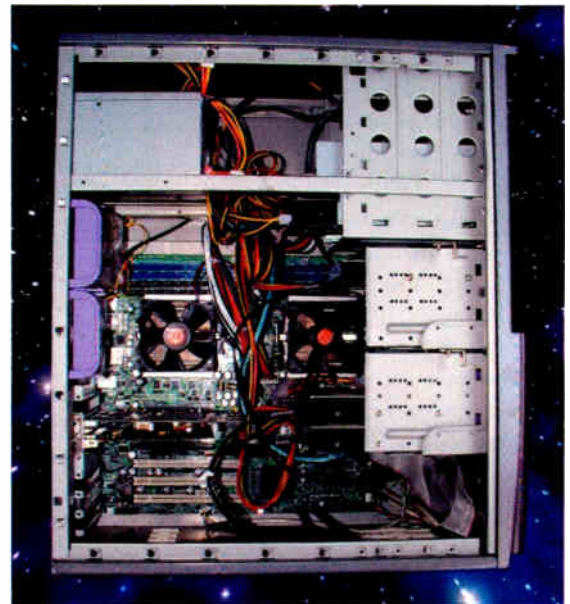
trying tweaks requiring registry modification.

1. Disable "Map Through Soundcard" (Control Panel > Sounds and Audio Devices > Hardware Tab > Double click your sound card in the list > Properties tab > Audio Devices > Double click your sound card in the list > Check the 'Do not map through this device' checkbox). Many applications attempt to play sounds through your main sound card. By not mapping these sounds through your sound card, you prevent potentially damaging sounds from getting through and unintentional sample rate changes that can affect open projects in your audio/video editing application. For those applications (internet etc.) that you wish to hear but do not allow selection of your pro sound card, consider using the motherboard's built-in audio system (set to default device) connected to a mixer, unused pro interface inputs or a pre-amp/switcher.

2. Disable "Automatic Updates" (Control Panel > System > Automatic Updates tab > Turn off Automatic Updates). Update manually when necessary.

3. While you in the System panel, go to the Remote tab and uncheck "Remote Assistance" and "Remote Desktop" unless otherwise needed. Also, if you are one of the people that never chooses to "Send Error Report to Microsoft" when a error or crash occurs, you can disable this option permanently in the System panel Advanced tab (under 'Error Reporting').

4. Disable XP Themes and Desktop Background Image (Right click on desktop and choose Properties. On the 'Themes' tab, set to Windows Classic and on the Desktop tab set to "None"). I also like to set the "Start" bar to Windows Classic (right click the 'Start' button > Properties > Select 'Classic'). You can then select "Customize" to choose your Start bar



items and disable crap like "Personalized Menus" (where you only see a few items under program and start bar menus, and have to click an arrow to view the rest).

5. Disable "Hibernation" (Control Panel > Power Options > Hibernate > Uncheck Hibernation. Disable this to free up hard disk space equivalent to the amount of RAM installed in the computer.

6. Disable "Fast User Switching" (Control Panel > User Accounts > Change the way users log on or off > Deselect 'Use Fast User Switching'). This feature allows additional users to log on to the computer without logging off the first user or shutting down open applications. Disable to prevent accidental overhead-hogging multiple log-ons.

ADULT SWIM ONLY

The following tweaks require a bit more computer knowledge and consideration. A registry backup and/or ghosting is highly recommended.

1. Disable "NTFS Last Access Time Logging." This is one of the more advanced and effective performance-enhancing tweaks. To quote directly from Microsoft, "Disabling the Last Access Time improves the speed of folder and file access [by reducing] the logging impact of updating the last access time-

continued on page 52 ►



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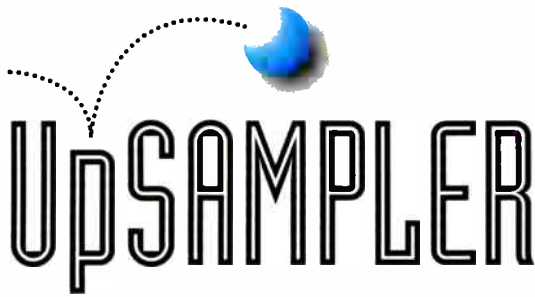
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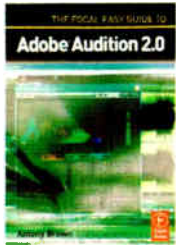


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Focal Easy Guide to Adobe Audition 2.0

Price: \$24.95 Contact: www.focalpress.com



The Focal Easy Guide to Adobe Audition 2.0 by Antony Brown is a handy guide to the popular Windows-based DAW program formerly known as Cool Edit Pro. Under Adobe's ownership the program has gotten a bit larger and become partially integrated with some of Adobe's other well-known media productivity programs such as Premier.

The book is clearly aimed at those just beginning with the program. In that sense it works as a good primer on the whole concept of DAW work. It covers setup of the program, basic editing, multitrack work, working with loops, restoration and processing, surround sound, video integration, mastering and CD burning.

Very helpful are the copious and easy to interpret screenshots. It's under 140 pages so it's neither encyclopedic nor bulky. Topics can be found easily. It doesn't have a CD full of goodies (or craptastic demos).

- Brett Moss

Blue Snowball

Price: \$159 Info: www.bluemic.com

Designed with Apple GarageBand users in mind, the Snowball is a USB-powered condenser microphone which connects directly to your computer (via the USB port). A switch on the mic selects between the cardioid capsule, the cardioid with a 10 dB pad or a second brighter capsule that is omnidirectional. In practice this should be able to handle everything from a normal speaking voice, a trio of talking heads, or a loud group of amplified instruments gathered around the mic.

Beware of the short tether, the connection cable is only five feet long due to limitations in the USB standard. Setup is plug 'n play with GarageBand and OS X Core Audio. A few DAWs require more elaborate workarounds. As always, research your particular program for compatibility.



In use, I had trouble getting enough recording level from quieter speaking and singing voices. A future firmware update is expected to have the option of 12 dB - 18 dB increased output. Most intended users (podcasters) will probably need the extra gain. In my case, increasing the level artificially during mix-down with a compressor plug-in still sounded fine. Most tracks needed the compressor anyway. A pop screen is necessary for close proximity work, which is where this mic sounds best.

I first used the mic with a singer who unexpectedly decided he needed some guide vocals to cue his instrument overdubs. The Snowball saved me having to change my guitar setup and we did all of the guide vocals in 20 minutes. A few of the Snowball-recorded couplets even made it to the final vocal, which was cut with a Neumann TLM 103 a few weeks later. The change in timbre was noticeable but not laughable. I tracked an electric guitar, percussion and some more vocals with the Snowball for a couple of different projects. The tracks sounded solid and articulate in the mix.

Useable, quality tracks made quickly, that's what this USB mic is all about. If they can get the recording gain issue worked out, the Snowball will then be the convenient tool that many have been wishing for.

—Davis White

Electro-Harmonix Flanger Hoax

Price: \$298 Info: www.electro-harmonix.com

My favorite phaser pedal has one knob and a flanger I often borrow has three controls. The Flanger Hoax Flanging Phaser Modulator from Electro-Harmonix has nine knobs four switches, and a long name. So where does one even begin to tweak the sounds?

Well, a degree in acoustical engineering would be a good start. The controls are highly interactive and specialized. Random knob twirling is usually pointless here. Actually understanding the controls on this pedal will save a lot of time and frustration. Sadly, the "booklet" provided by Electro-Harmonix is not much help. The all-analog pedal is designed like a science project. An adjustable LFO sweeps two individually adjustable short delays. These are wired in series into both fixed and swept bypassable phasers. Various different routings both with and without feedback can be selected via the many controls. This can produce Leslie speaker effects, ring modulator sounds, asymmetrical beats, or extreme filter peaks. It's a good idea to follow this pedal with a limiter. A settings diagram with the various core sounds would be a big help in avoiding the many totally unusable possibilities.

A guitarist friend was able to dial in quite a few classic sounds of 1980s post-punk after he realized what effect just a few of the knobs produced.

Some of the settings were nice and shimmery but we never once declared a sound to be beautiful.

In my favorite application, the Flanger Hoax dramatically changed the presentation of some rather uninspired synth loops. For the first time the pedal made me remark "hey, that's cool." I might suggest that they rename the pedal "The Transformer" as it has the power to impart a totally different and weird tonality to various sources. The advantage of the Flanger Hoax is that it is a unique effect not many will recognize.

The Flanger Hoax, not really a flanger pedal, and some would say not even a pedal. Line level is the preferred input! A guitar plugged directly still works but some of the settings can become very, very noisy. It's not for everyone, the chosen few perhaps. Out of ideas? Whip out the Hoax.

—Davis White



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The DIY Platinum of Crossfade

In early 2004, Crossfade — a band comprised of three musicians from Columbia, South Carolina — completed a collection of home recordings that, following its release by Columbia Records, became an RIAA-certified platinum album by the end of 2005 and featured the ‘#1 Most Played Rock Song of 2004’ entitled “Cold.” While a final mix by legendary engineer Randy Staub didn’t hurt Crossfade’s chances at radio, none of this would’ve been possible without the band’s infectious, self-penned modern rock nuggets, not to mention their dedication to do-it-yourself recording.

FOLLOWING UP

In fact, for Crossfade’s full length follow-up to its self-titled debut — *Falling Away*, to be released on August 29 — the band once again returned to its South Carolina studio to



Capsule Reviews and Product Review Updates

Sonic Valentine Video Podcast

Price: Free Info: www.sonicvalentine.com

Opinionated Nashville-based engineers Scott Velasco and Ben Strano pull no punches in their irreverent yet informative new video podcast, “Sonic Valentine.” The

two sit around a mixing console drinking beer and reviewing gear. The format resembles a cross between Wayne’s



World and Ebert and Roeper. The typical episode has them raving about the newest EQ plug-in or complaining about the Fisher-Price aspects of an expensive control surface. Alcohol fuels many of their insightful ruminations so this podcast is probably NSFW. Mix in a few short comedy bits plus a favorite feature “Guitar Gods of MySpace” and you have a tight 25-minute biweekly show.

— Davis White

record, even though it would be working with Staub (this time as both mixer and coproducer) as well as with Steve Lillywhite (NARAS’ ‘2006 Producer Of The Year’) on the first single titled “Invincible.” All of this is still a bit overwhelming for guitarist, vocalist, and recordist Ed Sloan, who is preparing for a long



run of tour dates to support the record that he — with his bandmates Mitch James (bass) and James Branham (drums) — wrote, produced, and recorded the vast majority of in his own home. So — how did Sloan’s garage become a DIY hit factory? “It just materialized that way,” Sloan explains. “We had always hoped to get good enough at recording ourselves to make some decent demos with what we had. Then, once we were discovered, we’d go to a big studio and record it all that way. It just turned out that, over time, we got better and better at doing it ourselves. Now it’s the only way that we operate.”

For 2004’s *Crossfade*, the band recorded and mixed the release in its entirety, had it mastered, then printed 4,000 copies through Disc Makers for sales and promotional purposes. Soon after, Columbia Records recognized the band, flew them to their headquarters for a showcase, and signed them with the intention of only remixing the band’s self-produced work. It was simply that good. “It was bittersweet for us because, at the time, we still had dreams of our debut CD recorded in a big studio,” Sloan recalls. “Since they weren’t for doing that, we just thought that we’d save some money and maybe it would all work out. It happened to work out.”

Part of Crossfade’s initial apprehension of releasing a self-recorded CD on a major label existed because no one in the band ever strived to be an engineer or producer. “I

still don’t have a clue,” Sloan self-deprecatingly explains in regards to his knowledge of the technical aspects of audio engineering. “I started off as a player. We ran out of money. I was into computers, found some software called N-Track and a soundcard, and just started with that. Over the course of five or six years, I moved to Cakewalk Sonar, faster computers, and better soundcards. It’s still trial-and-error for me; I didn’t go to school for this. It’s just a matter of me recording what I hear.”

Sloan is still an avid fan of the Sonar DAW, and upgraded to Sonar 5 running on a Windows 2000 platform for the recording of *Falling Away*. “I really like it, and I’m really used to it,” Sloan explains. “I’ve never had any problems with it. There’s nothing I can’t do in Sonar that I’ve heard I can do in Pro Tools and actually wanted to do.”

PREPARATION

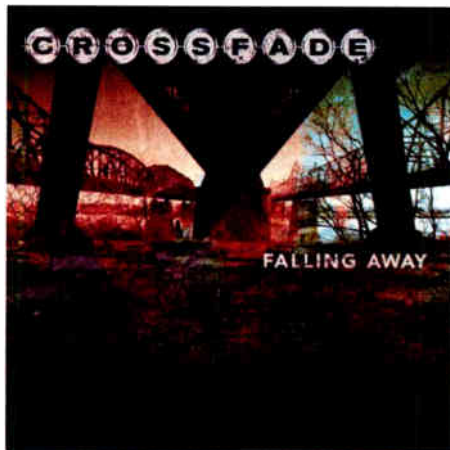
To prepare his recorded tracks for Staub, a Pro Tools user, Sloan simply exported sessions as broadcast wave (BWF) files, which he insists “wasn’t a problem at all. I’ve always been a PC guy. I’ve never been on a Mac. That’s why I initially used Cakewalk software, but it’s been great for everything I need to do.”

Sloan’s streamlined home recording setup offers a few necessities, but everything that he needs to provide a pro like Staub with

major-label quality tracks. “We have a Focusrite Liquid Channel, which is our main preamp,” tells Sloan, citing its appearance everywhere on the new record. “We also have several PreSonus Firepods (eight-channel, 24-bit/96 kHz front-ends for DAWs) and the PreSonus Central Station for monitoring control. We don’t have that many outboard effects. On a new and faster computer, we also use lots of Waves plug-ins and the POD Tone Pro XT to record all guitars and basses. For vocals, I use a Groove Tubes GT 55 microphone. That’s about it.”

Although there was a certain intimidation factor present when Sloan sent his self-recorded tracks to Staub for the first time, it wasn’t long until those fears subsided and were relieved. “I remember the very first time I shipped Randy the tracks after a week of meticulously going through all of them. I asked him how everything sounded, expecting to get an answer that I really didn’t want to get. But he said, ‘It sounds great. You guys did a great job.’ I was really scared that he was going to say, ‘Listen, maybe you guys should come up to Vancouver because this sh*t sucks.’ But he didn’t.”

One major difference in the production of *Crossfade* and *Falling Away* was in how the drums were recorded. “On *Falling Away*, we tracked electronic drums so we could record



everything else around it,” Sloan explains. “That’s a primary reason why we went to Vancouver at the end to work with Randy: so James could track acoustic drums there.” This meant re-recording drum tracks as overdubs, which Branham was initially quite nervous about. “He’s a great drummer, but on our way up there, he was worried. ‘Are you

sure it’s going to work out?’ But after he got there, he whizzed right through them.”

Sloan has more than a few suggestions to offer “X/Audio” types, but — upon thinking of advice for other do-it-yourselfers on the cusp of something big — he feels that it is most important to focus on songs and to keep the recording process as simple as possible. “Never just learn to live with your songs if you have a studio available to you,” Sloan insists. “In the past, I’d record it, live with it, say that it was just fine, and never let it evolve. But some of the best songs we’ve had came from older songs that were revisited, life was breathed back into them, and they became even better. Also, never overcomplicate the studio. Less is more. That’s why we still have the same kind of devices around, but they just cost a little more and sound a little better. Keep it bare bones and efficient.”

www.crossfadeonline.com
www.myspace.com/crossfade

Strother Bullins is the Reviews and Features Editor for Pro Audio Review.

PUT YOURSELF IN THE MIX

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► *Roland from page 10*

When you use the remote to set signal gain you must scroll to the input desired, then use another rotary knob to set the gain. There is no dB reading on the remote, which I found a little cumbersome. Having used many digital consoles I wished you could see the input gain in a dB reading, so gains could be preset for the various instruments. As you turn the gain knob you feel like you are guessing as to what your actual gain is.

Product Points

Plus:

- + Lightweight
- + Sonic characteristics
- + Ease of use

Minus:

- No dB reading on remote
- Cannot run communications through snake

The Score:

Pretty much everything you need in one integrated system.

For example, most engineers know the gain settings for a Shure SM 58. However, the system can be controlled from a computer with downloadable PC/Mac software. Using the software on my laptop I could see actual dB gain and monitor settings better and quicker than using the remote.

SUMMARY

The RSS Digital Snake is a worthy alternative to sound companies and contractors using traditional analog snakes. Its lightweight modular design will be a cost-effective alternative in the future when costs of raw materials like copper are constantly increasing in order to meet global demand. The ability to run extra CAT-5e cables in conduit offers great savings in installation and conduit costs when expanding this system especially in the contracting market. For anyone considering a new snake system for sound reinforcement the RSS 4000 system is worth checking out.

Tom Young is the live sound engineer for Tony Bennett.

Review Setup

Yamaha PM 4000, Midas Venice consoles; Meyer M1D speakers.

► *Audix from page 24*

in every instance was pleased with the results that it provided.

SUMMARY

The SCX25-A is an extremely flexible large diaphragm microphone perfectly suited to record practically any vocal or instrument. It has a smooth and natural sound and it sounds absolutely fantastic making it possibly the best performing microphone in regards to price that I've encountered.

Russ Long is an engineer in Nashville, Tenn.

Review Setup:

Apple Macintosh 2 GHz dual processor G5 w/2 GB RAM; Digidesign Pro Tools 7.1; Lucid Gen-X-96 clock; PMC AML-1 monitors; A-Designs Pacifica, Pendulum Audio Quartet II, John Hardy M-1, Langevin Dual Vocal Combo preamps and processors.

► *Sony Oxford from page 43*

The Dynamics plug-in also works extremely well for stereo bus compression. I had good results using it along with the L3 plug-in, with Digidesign's Impact plug-in and as the sole stereo buss compressor. I unfortunately wasn't able to do a surround project during my review period but I anticipate that the multichannel version of the plug-in would work wonders in this situation.

My only complaint with the plug-ins is that they are fairly DSP-dependent. I would love to have the Sony EQ and Dynamics plug-ins inserted on every channel of my mix but that just isn't possible on most of my projects which run at least 40 or 50 tracks.

SUMMARY

The Sony Oxford EQ and Dynamic plug-ins cost a bit more than most of their competition but they are worth every cent. They are easy to install and use and their sound quality is shockingly good.

Russ Long, a Nashville-based producer/engineer, owns The Carport recording studio. He is a regular contributor to Pro Audio Review.

► *Studio Sense from page 46*

stamp on folders and directories." Go to: Start > Run > type "command" (without quotes). At the command prompt, type "FSUTIL behavior set disablelastaccess 1" (without quotes). Reboot to make changes effective. Note that this may affect backup software that uses the "Last Access" time stamp.

2. Set "Indexing Service" to Manual or Disabled. The indexing service is an invasive background process that assists in searching by combing through the contents of your hard drives. When running, the process requires lots of page file space and zaps CPU power. To simply turn off or set to manual, go to Start > Run > Type "services.msc" > Scroll to "Indexing Service" and double click > Set Startup Type to "Manual" or "Disabled." If you are determined to keep the Indexing Service, you can at least limit its operations in the preferences section of the Start > Search window.

3. Disable System Restore (Control Panel > System > System Restore tab). This function monitors hard disk activity and hardware changes and allows you to roll back to a previous state in case of trouble. My preferred safety net is to manually use the aforementioned Norton Ghost prior to installing any software or hardware, and avoid the potentially invasive Windows System Restore function.

4. Turn off those annoying (and potentially disruptive) balloon notifications in the bottom right of your desktop. To do this, go to Start > Run > Type "regedit" > Go to HKEY_CURRENT_USER > Software > Microsoft > Windows > CurrentVersion > Explorer > Advanced. Double click the entry on the right called EnableBalloonTips and set value to "0", close the registry and reboot.

Although this was the last column in the "Beast" series, I will continue the computer focus in upcoming columns including tools and tips for workstation computers that are connected to the Internet, plus a round up of some favorite editing computer peripherals.

PAR Studio Editor Stephen Murphy has over 20 years production and engineering experience, including Grammy-winning and Gold/Platinum credits. His website is www.smurphco.com.

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Korg D888 Recorder/Mixer

Features: Hard disk format; 40 GB hard drive; eight track; WAV files; onboard effects; three-band EQ; phantom power; USB port; dedicated control surface; LCD screen. Price: \$800.

Contact: Korg at 631-390-8737, www.korg.com.



TASCAM DV-RA1000 High-resolution Audio/DSD Master Recorder

Features: DVD+RW, CD-R/CD-RW formats; 24-bit; up to 192 kHz sample rate; three-band mix down EQ; DSD-compatible; word clock; pitch control; remote control; tape style transport controls. Price: \$1,499.

Contact: TASCAM at 323-726-0303, www.tascam.com.



Fostex DV824 DVD Multitrack Recorder

Features: DVD-RAM format; eight track; 24-bit; up to 96 kHz sample rate; linkable; Ethernet port; FireWire port; USB port; LCD display. Price: \$7,495.

Contact: Fostex at 310-329-2960, www.fostex.com.



TASCAM CD-RW901 Pro CD Recorder

Features: CD-R/CD-RW formats; MP3-compatible; CD-Text; pitch control; remote control; onboard sample rate converter. Price: \$899.

Contact: TASCAM at 323-726-0303, www.tascam.com.



Marantz CD-R632 CD-R/CD-RW Recorder

Features: CD-R/CD-RW formats; MP3-compatible; CD-Text; pitch control; onboard sample rate converter. Price: \$699.

Contact: Marantz at 630-741-0330, www.d-mpro.com.



Fostex CR500 CD-R/RW Master Recorder

Features: CD-R/CD-RW formats; 16/24-bit; 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz sample rates; BWF files; cue controls; USB port. Price: \$599.

Contact: Fostex at 310-329-2960, www.fostex.com.



TASCAM HD-P2 High-Definition Stereo Recorder

Features: Compact Flash format; 16/24-bit; up to 192 kHz sample rate; BWF files; SMPTE timecode; FireWire port; LCD screen. Price: \$999.

Contact: TASCAM at 323-726-0303, www.tascam.com.



Marantz PMD560 Solid State Recorder

Features: Compact Flash format; MP3-compatible; WAV files; 44.1 kHz, 48 kHz sample rates; EDL editing. Price: \$799.

Contact: Marantz at 630-741-0330, www.d-mpro.com.



Korg D4 Digital Recorder

Features: Compact Flash format; four-track; onboard Korg REMS DSP effects; onboard pattern generator; onboard tuner; memory; USB port; dedicated control surface; LCD screen. Price: \$399.

Contact: Korg at 631-390-8737, www.korg.com.



Fostex FR-2 Field Memory Recorder

Features: Compact Flash format; Type I or Type II; 16/24-bit; up to 192 kHz; BWF files; PCMCIA card-compatible; battery operable USB port; LCD

screen. Price: \$1,499.

Contact: Fostex at 310-329-2960, www.fostex.com.



TASCAM MD-350 MiniDisc Recorder

Features: MiniDisc format; ATRAC V. 3; pitch control; cue controls; PS2 keyboard input; remote control. Price: \$585.

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TASCAM 322 Dual-Well Cassette Deck

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Broadcast News

A new Studer Vista 8 consoles can be found in a truck with All Mobile Video. Engineer Jorge Silva is using a Vista 8 at NBC to mix Martha Stewart's show. New OnAir 3000 consoles can be found with RTBF in Belgium and KMMB in Korea (they also have an OnAir 2000 and three OnAir 1000s. Dubai TV has added a Studer 928 to its offerings.

Innovason Sy48 digital consoles are taking residence with KULTURA, a radio and TV station in Moscow, and Video Europe, a rental house in the UK. An Sy80 was installed for Future TV in Beirut.

The University of Missouri at St. Louis has installed an Axia IP-Audio networking system into the KWMU-FM studios.

WHDH-TV in Boston has added a Solid State Logic C100 digital broadcast console.



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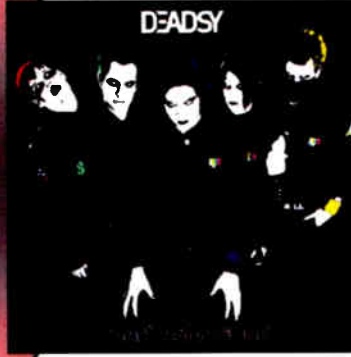
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BY STROTHER BULLINS



Single: "Carrying Over"

Album: *Phantasmagore* (Elementree/Immortal)

Date recorded and mixed: July 2006 at Henson Recording Studios and Westlake Recording Studios, both of Hollywood

Producer: Elijah Blue

Co-Producers: Carlton Bost and Brian Virtue

Album engineers: Rob Brill, Carlton Bost, Ashburn Miller, Tim Harkins, Bill Kennedy, Brian Humphrey, and Brian Virtue

Single mixer: Brian Virtue

Mastering: Stephen Marcussen of Marcussen Mastering in Hollywood

Other Projects: Alongside his involvement with Deadsy, Bost — a songwriter, guitarist, MIDI instrumentalist, producer/engineer, and performer — has worked with artists such as Berlin, Lunatick, Ashesdead, Cleanse, and Shades of Scar, a solo project.

Single Songwriters: Deadsy

Consoles: SSL 9072J (Westlake Studio E) and SSL 9080J (Henson Studio A), and SSL 6032 E/G (Henson Mix Room)

Recorders: Pro Tools|HD

Monitors: Dynaudio BM5A

Vocal microphone: Neumann U67

Vocal microphone preamp: API 512C

Vocal processing: Empirical Labs Distressor

Phantasmagore was released after a long period of anxious anticipation on the part of "the Legions," defined as fans of "Undercore," a musical genre named and created by unique rock act/art project Deadsy.

Confused? Don't be. If you appreciate the Darkwave and Metal of Gary Numan and Type O Negative, respectively, as well as subjects including (but not limited to) academia, special knowledge, and Urantian philosophy, then you're pretty close to grasping the work of Deadsy... or, most likely, you are 'Legion' already.

Musician/producer Carlton Bost — band member, engineer, and coproducer for Deadsy's latest effort — is currently on the road with the band for the 2006 Family Values Tour and is more than excited about the new record and the musical evolution it represents for the band, which is well exemplified in its first single, "Carrying Over."

"It starts off with an acoustic 12-string — it's a little more classic rock-influenced — and has some elements of Bowie," explains Bost. "Actually, the whole record incorporates more elements of classic rock; there are things influenced by Cheap Trick, the New York Dolls, and Lou Reed, to name a few. All of that worked its way into what we were already doing."



Carlton Bost

"Carrying Over" was deemed a last-minute addition to *Phantasmagore* when vocalist, guitarist, and bandleader Elijah Blue presented its impetus to the others. The song was tracked via Blue and drummer Alec Pure, overdubbed with bass guitar, additional guitars, and vocals at later sessions, and then topped with keys and other MIDI-based accoutrements.

Elijah's distinctive baritone was tracked using a Neumann U67 and an API 512C and Empirical Labs Distressor served as its signal chain straight to Pro Tools|HD. "We also tried an AKG C12 and a Neumann U47," tells Bost. "Out of those three, the U67 was the obvious choice. He has a rich voice as it is, and the U67 enhanced the natural characteristics of his voice."

Guitars, performed by both Blue and Bost, were treated with a bevy of textures, thanks to a collection of great amplifiers including the Mesa Boogie Rectifier, classic Marshalls, and others, most notably a custom model built especially for Blue. "Orange, the amp company, built the 'Blue' amp," describes Bost. "It has a unique, gritty, almost Black Sabbath-type sound. The Fender Twin and a Roland JC-120 were for tasty 'icing on the cake' guitars."

Strother Bullins is the Reviews and Features Editor for Pro Audio Review.

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