

ProAudio Review

The Review Resource for Sound Professionals

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In This Issue!

- * **More Powerful, Easier-To-Use DAW**
Apple Logic Studio
- * **Ideal Entry-Level Amp**
QSC GX5 Series
- * **Production Room Profile**
College Radio With WLOY
- * **Hot Gear From InfoComm**



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'his te ri, 'his tri – [**his-tuh-ree**, **his-tree**]
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INSIDE THIS ISSUE



Evaluating audio products for professionals in commercial recording, broadcast production, audio for video/film, project studios, live sound, contracting and multimedia.

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ProAudio Review

The Review Resource for Sound Professionals

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Inside Broadcast Production

Although recording studio production often gets the limelight in pro audio magazines and their web sites, etc., Pro Audio Review has always covered the broadcast production world.

I have always been interested in broadcast production. After all, I worked for Radio World and TV Technology for a number of years before creating PAR. And way back in the 1980s, I was a broadcast journalism major.

Since 1995, with the assistance of our sister titles, Radio World and TV Technology in providing us a great list of working engineers to get subscribers, PAR has reviewed products that these end users are interested in. Radio production, TV production, location sound and, of course, the post production end as well.

Broadcast engineers come up to me all the time at the annual NAB convention to tell me they appreciate our product reviews, and that their stations had purchase several of the reviewed items for their production rooms.

Many of the products used in audio production fit right into the broadcast environment. Of course, there are broadcast specific products as well. The 360 Systems Shortcut and Vox-Pro hard disk editors come to mind.

Today it is not uncommon to see full Pro Tools rigs and a full arsenal of software plug-ins, portable FLASH recorders, and high-end microphones in a broadcast facility. Not too many reel-to-reel based facilities out there any more.

To supplement the reviews of gear and software that are useful for broadcast, PAR has created a new, gear-intensive feature, Production Room Profile, which focuses on the gear, techniques and background of a particular broadcast facility. In this issue, Ty Ford profiles WLOY, a Maryland college radio sta-

tion, which has its hand in all sorts of innovative areas of distribution and production.

Look for more Production Room Profiles from various radio and TV stations, as well as independent and network facilities, in the coming months.

A SUCCESSFUL INFOCOMM

The June InfoComm convention, which included the inclusion of NSCA for the first time, was a great success out in the Las Vegas heat. Attendance at the expo was high, as was the enthusiasm over the latest gear.

We recognized some of the best gear shown at the show through our Hot Gear InfoComm 08 awards, announced in this issue; there are a lot of new and improved speakers and the ever-increasing use DSP across many lines of products. However, there were new analog products, including Yamaha's new mid-priced, IM8 analog 8-bus, that made our list.

Column line arrays seem to be increasing in popularity. The Renkus-Heinz IC Live demo was impressive, and Community introduced its ENTAYSIS to much fan fare. A

company spokesperson for Community said that many dealers have already pre-ordered a number of ENTAYSIS systems.

My favorite new product was the Neutrik's Converti-Con, an innovative XLR connector that switches instantly between male or female. You're never without the right cable with this connector.

John Gatski is publisher/executive editor of Pro Audio Review. His first college radio station production assignment was handled by a cassette portable and a SpotMaster cart machine.



WLOY Radio Production Studio

Feedback

We want to hear from you. Send your comments to jgatski@aol.com. Please include name, city, state and job title and firm in the email. For product submissions, contact Strother Bullins at newproductsPAR@earthlink.net.

Evaluating audio products for professionals in commercial recording, broadcast production, audio for video/film, project studios, live sound, contracting and multimedia.

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Pro Audio Review Founded by Stevan B. Dana



LIQUID MIX VS. LIQUID CHANNEL?

Hello Rob,

I enjoyed your thorough and informative Liquid Mix review [PAR October 2006] and am hoping you may have an opinion in the following area.

I'm a voiceover artist with a clear, rich baritone voice (with bass overtones) and will be engaged in projects ranging from narration to hard driving rock commercials/trailers. I'm intrigued by the Liquid Mix/Liquid Channel and wondering if you feel it is particularly suited to voiceover applications, as some clients want an uncompressed, unprocessed voice product while others favor coloration.

Also, in the absence of having found the 'perfect' mic/preamp combination, does the versatility of the Liquid Mix/Liquid Channel allow me the ability to potentially compensate for a specific microphone's shortcomings by simply matching it with a different preamp sound on the Focusrite?

Finally, is the Liquid Mix a subsequent version of the Liquid Channel or is it a totally different product?

Thank you, Rob; I appreciate your insight and time.

Sincerely,
Bob Lysak

Rob Tavaglione responds:

Bob,

Glad you liked the review and thanks for the compliment. The Liquid Mix and Liquid Channel are entirely different products, although quite similar.

The Liquid Channel is a piece of hardware (with analog in and out) that includes a mic preamp and signal processing. It achieves its flexibility by using software convolutions of actual vintage hardware (both preamps and compressors).

The Liquid Mix is basically software (employed as plug-ins) with an optional (in use) control surface. It only has compressors and EQs, no preamps or pre-amp modeling, and (like the Channel) uses software convolutions to achieve its incredible versatility.

If you're still looking for a great preamp, the Liquid Channel will do you right. Its flexibility will mean you should be able to achieve just about any coloration a client might want of you. Its many compressors will allow you to squeeze your voice dynamically and achieve some more texture, if so desired. The Channel does not have convolution EQs, however. Not a big deal, but it could be an issue for you, especially if you like classic EQs and their unique colorations. Please check out Russ Long's thorough review of the Liquid Channel at our PAR archives for some detailed info:

LETTERS continues on page 64 ►



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DPA 4080



www.dpamicrophones.com

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DPA's 4080 cardioid lavalier combines optimal speech intelligibility in a compact design to create a high-performance microphone for public speaking. For those unwilling to wear a head worn mic system, this is the solution for chest worn applications in sound reinforcement systems that need the rejection characteristics that result in excellent gain before feedback while maintaining a neutral, highly articulate sonic signature.

CARDIOID

The microphones for sound professionals with uncompromising demands for audio accuracy.

DPA 
MICROPHONES

by Steve Murphy

Steinberg Nuendo 4 Digital Audio Workstation

It's post-time for Steinberg's workstation workhorse

In the eight years since its introduction, Steinberg Nuendo has matured into a full-featured, high-end studio and post-production workstation system – one that is increasingly recognized by post and studio engineers as an attractive alternative to the reigning Digidesign Pro Tools. A major push towards the post-production market started in earnest with Nuendo 3, so it is no surprise that it is in this area of Nuendo 4 (\$1,799) that the most competitive and impressive strides are made. Ladies and gentlemen, start your audio engines...

| HUSTLE AND FLOW

Nuendo 4's default layout and workflow are quite intuitive, allowing new users to get up and running with a minimal learning curve. The program generally follows the traditional DAW layout

| NATURAL SCALE ENHANCEMENT

Nuendo 4 includes a wealth of enhancements that span the gamut from expanded editing tools to a spanking-new, first-class automation system. Composers will be pleased with a new global Transpose track that significantly speeds up the process of roughing-in, rescaling or repurposing cues. Transpose affects all events and parts;



FAST FACTS

APPLICATIONS:

Studio, post-production, location, live

FEATURES:

New in N4: comprehensive automation; extensive media management; 38 new VST3 plug-ins; expanded routing options; track presets; quick controls; unified instrument tracks; dedicated post editing tools; 32-bit Vista PC and Universal Binary Mac compatibility; expanded Euphonix EuCon integration.

PRICE:

\$1,799

CONTACT:

Steinberg | www.steinberg.net

with a timeline-based Project editor and associated channel-strip mixer. These are augmented by a number of fixed, floating and pop-up tool sets and dialogs. Digging a little deeper rewards users with a tremendous amount of custom control over Nuendo's look and operations, thanks to its expansive Preference, Key Command/Macro and external Sync/Control dialogs.

Nuendo uses a 32-bit floating-point audio engine, has delay compensation throughout (including external hardware), supports up to 192 kHz/32-bit recording (plus import, editing, and mixing up to 384 kHz.). The cross-platform DAW supports all 32-bit versions of Windows XP, Vista, and Mac Universal Binary. A 64-bit "preview" version is available for Vista 64, and a Mac Leopard counterpart is in the works.

For a complete rundown of general features and specifications, please refer to Steinberg's website (www.steinberg.net); also check out *PAR*'s previous Nuendo reviews, which are available at www.proaudioreview.com.

though it is easy to exclude elements, and changes can be limited, bypassed or compared. An Arranger track also helps to quickly build up longer composition frameworks – sections of the timeline can be quickly defined and then reordered, repeated, chained, queued and/or triggered in various ways. Arrangements can later be "flattened" to the timeline for traditional editing, overdubs, transpositions, etc.

All users will enjoy the 38 new and generally multichannel-aware VST3 plug-ins. While the previous fare provided utilitarian coverage, I have found the VST3 plugs to be on par with – and occasionally superior to – the best third-party plug-ins. My fav new processing perk is the terrifically improved 4-band parametric channel equalizer that replaces the previous rudimentary model. The EQ – built into every mixer channel – now includes a variety of high- and low-pass, shelf and parametric filter choices, filter-inverse switch, and an excellent GUI.

Post and design editors will appreciate the 20 dedicated editing commands and tool modifiers that N4 brings to the desk,

NUENDO continues on page 12 ►

MEGA PERFORMANCE.



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including heads/tails, range-size and positioning and cross-track alignment tools. An enhanced EuCon adapter (optional) further expands MIDI, automation, routing, and plug-in integration between Nuendo and Euphonix consoles and controllers. General post features including MP3 surround support, audio and video pull up/down, replace audio in video, file conforming, split-timeline and personal favorites Edit Mode (video scrubs while moving and resizing events, adjusting fades, etc.) and comprehensive Control Room speaker management/cue/TB section add to the power and speed of posting in Nuendo.

Several of the new items that have topped Nuendo users' wish lists for some time will also go far to make Pro Tools users feel more at home. Most notable is the ability to copy, move and reorder plug-ins via drag & drop, thoughtfully implemented throughout all relevant sections of the program. Also of note is the native support of plug-in side-chaining that is part of the new VST3 spec, plus a vastly expanded channel routing system that, among others, permits the recording of FX returns and groups to audio tracks for stems. And there was much rejoicing!



Main Window

| AUTOMATIC FOR THE PEOPLE

The richly expanded automation system not only wins the "Best in Show" award, but significantly ups the ante for the competition as well. The customizable control panel at center of the automation system is notable not only for the new features – the majority of which mirror those found in Euphonix' excellent System 5 series – but also for its clean, touchscreen-like design that provides at-a-glance visual feedback of essential control states.

The range of Fill tools are particularly handy for finding a desired setting and then retroactively writing that value throughout a designated area. Fill To Start and To End writes the "punch-out" value (the last recorded value when a control was released) in the direction indicated; Fill To Punch fills from the punch-out point back to the punch-in point; and Fill Loop uses the punch-out value to fill the area within the L/R "loop" markers.

In earlier versions, all controls related to a mixer channel were affected when its Read or Write button was engaged. A new Suspend section permits seven different control subsets – Volume, Pan, EQ, Sends, Inserts, Mute, and all Others – to be individually excluded from read and/or write operations. A new Virgin Territories mode writes automation data only while a control is actively engaged, and leaves gaps of unwritten, virgin territory in between. Controls simply coast from the end of a written section to the start of the next, and can be freely adjusted within the empty sections. A button is provided to fill in the gaps if desired.

Perhaps the most powerful of the new auto functions are found in the Preview section. Beyond the ability to preview, compare (Suspend) and write (Punch) automation changes, punched

sections are automatically stored and can be recalled for use elsewhere in the project. A group-select tool with the particularly obtuse name of Touch Collect Assistant writes a data point for all related controls when one member of that group is adjusted (e.g., when an Aux Send is adjusted its On/Off status is also written). This ensures that all relevant control settings, not just the one adjusted, are copied/pasted.

Any of the global write modes (Touch, Latch, Trim and new X-Over) can now also be selected on a per-track basis. While not the most glamorous of the new features, this unexpected gem has boosted the amount I

can accomplish per pass by allowing a number of tracks to be placed in "set-and-forget" Trim and/or Latch modes, while the tracks on which I am most focused are in Touch.

PRODUCTPOINTS



- First-class Euphonix-like automation and expanded EuCon integration
- Many new post-production tool sets & features
- Comprehensive media management system



- Lacks decent edit- and mix-channel linking/hiding

SCORE

Nuendo Version 4 is without a doubt the most ambitious and rewarding upgrade to date.

| LOGICALLY MANAGED & MEDIA SAVVY

Two other set-piece additions to N4 are the Project Logical Editor and the MediaBay database system. Similar to Steinberg's staple MIDI Logical Editor, the new PLE enables the use of logic-based filters, operators and functions to automate simultaneous changes to edit-window elements. Specific



Automation Panel

tracks, track types, audio events, MIDI events, automation data (and many settings related to the above) can be targeted using a range of filter conditions, whereupon desired editing and transformation operations can be performed. New and modified logical routines can be stored as named presets, and these can be assigned to a key command and/or called directly from other macros.

When the logical filtering abilities of the PLE are combined with macros (which draw from a nearly full range of program commands), powerful new utilities – such as application-specific conforming, automated ADR alignment or multitrack drum quantiz-

NUENDO continues on page 14 ►

PL



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NUENDO Continued From Page 12

ing – can be crafted. As an avid user of custom macros and key commands – in conjunction with a Radical control surface and a couple of PI Engineering's excellent X-Keys USB controller/keypads – I am very excited about the timeline-element specificity added by the PLE, and the creative and labor-saving possibilities it affords.

On the utilitarian front, Nuendo 4 includes many new media file and preset management tools. The sheer number and

the aforementioned dialogs and browsers are simply stripped-down subsets of the MediaBay, which makes access to specific data quicker and more control-surface-friendly.

Sound Frame is the link between the database system and the expanded set of objects and locations throughout the Nuendo GUI that permit the storage and recall of presets. Presets relevant to the selected object type can be stored, tagged, edited, and/or



Automation Panel

variety of seemingly redundant management features – MediaBay, Loop Browser, Sound Browser, Sound Frame, Search Media, Project Browser and the original Project Pool – was a touch confusing at first, to say the least, but the pieces fell into place eventually.

The first key to making sense of this apparent mess is that the above named are, for the most part, spawned from the same omniscient entity called the Media Management System (managed file types include: MIDI; video; Track, EQ and plug-in presets; sound effects, loops and samples; and all project-related files and data). MediaBay is the primary user interface for organizing, tagging, searching and auditioning system-wide and project-related files/data. The MediaBay has expansive search and sorting options, and supports auditioning of files at project-tempo and in sync with the project transport.

The second key is that Nuendo historically has emphasized user flexibility, especially when it comes to accessing preference settings and menu commands via shortcuts and hardware controllers. To that end, many of

searched using the MediaBay dialogs, or simply browsed, previewed and recalled using a simple list. Portions of presets (e.g., just the EQ) can also be extracted from complete Track presets. A healthy collection of already-tagged and categorized presets for all of the above object types is included.

| GLAD YOU ASKED

On my wish list for Nuendo: expanded implementation of the [Alt/Opt] modifier as used to affect selected tracks (e.g., as it does now when setting multiple-channel I/O's and automation write mode, but not when adding plug-ins, setting tracks to Read/Write, record etc.); integrated edit conforming/matching for replacing scratch-res files and matching video cuts; allow the tempo track to be displayed in the timeline like the Marker, Arrange, and Transpose tracks; and build the Project Logical Editor conditions and commands into the macro interface (as line items or subroutines).

Lastly, one niggle – please implement the automation write-mode-per-track function on Group and FX tracks – and one old rant:

the program's woeful channel linking and hiding hasn't effectively improved since N2. Nothing can be added or subtracted from a link group; linking can't be bypassed/re-engaged; links can't overlap (e.g., an overheads and an all-drums group); and there is no visual indication of which channels are linked. The barely useful "Can Hide" function (Now Convoluted With Command Targets!) are no more than Band Aids. Still only one group of user-selected channels – those set to "Can Hide" – can be hidden in the mixer display, and there's no option for this to affect the edit-window track display. Steinberg, please take a moment to look at PT's elegant, unified linked-channel and channel-hiding section. Rant over.

| SUMMING BLOCK

Nuendo's speed and exceeding flexibility has been a breath of fresh air, especially following a decade of avid PT use (which I necessarily continue to use when working in area facilities). Integrated features such as networked processing, multi-room and multi-seat project sharing, IP-based collaboration, built-in support for all major project exchange standards and media file formats, and the development-friendly VST plug-in spec all serve to reinforce the open nature of Nuendo. And, of course, as a native application, users' systems can be configured to specific needs using the wide range of computer components, audio and video interfaces, clocks, and DSP plug-in cards available on the market.

Nuendo Version 4 is without a doubt the most ambitious and rewarding upgrade to date. Though its multitude of new post and management features – including top-notch automation and media management systems – have kept me busy with the books for months, I'm looking forward to see what Steinberg will do for an encore.

For more information on Stephen Murphy v41.5 please visit www.smurphco.com. New version includes measured increases in S/H (scalp-to-hair) and Gear-to-Debt ratios; same user-friendly interface.

REVIEW SETUP: I principally used Nuendo 4 on a quad-processor XP Pro system that also includes two TC PowerCore and two Universal Audio UAD-1 DSP cards, an RME Fireface 800, a DeckLink HD video card and a Radical SAC-2.2 control surface. I also added N4 to a backpack Nuendo kit comprised of a dual processor Dell laptop, a TC PowerCore Compact, a Frontier AlphaTrack controller and a mini Pelican case to protect the Hub o' Dongles.



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by Heather Johnson

Developments & Trends: Digital Audio Workstation I/O

Manufacturers Speak Out

Today, virtually every audio production professional works with, and largely within, his or her own choice in digital audio workstations (DAWs). As a result, getting in and out of a DAW is a constant process for the modern recordist.

In this feature, *PAR* interviews four prominent manufacturers of DAW input/output gear. Beyond touting their own products, these I/O experts reveal numerous intricacies of this rapidly evolving part of the pro audio market — that which directly follows the development and continual improvement of the modern CPU itself.

APOGEE ELECTRONICS

Apogee built its reputation designing filters to remedy some of digital audio's early problems. Through the years, the company has grown to offer a wide range of conversion systems, from their popular Rosetta and X-Series converters to the Big Ben Master Clock. Most recently, Apogee has targeted it's focus to Apple platforms with such products as the Duet audio interface and Symphony, a competitively priced DAW that offers 96 channels of I/O for the Mac. *PAR* caught up with Sean McArthur, Apogee's marketing director, to discuss the company's converter technology and affinity for Apple.

PAR: What's unique about Apogee converters' design?

Sean McArthur: I would answer that question in two parts. First, it's our approach to analog design. Audio manufacturers have struggled with analog design from the very beginning of sound recording. Whether the signal is from a microphone or a line-level source, the question is what is the quality of your analog output to a converter? A converter's performance will first and foremost be

defined by the quality of the analog signal it is sampling. This is the first criterion of quality: How good is the analog signal?

Second, it's our approach to digital design. The performance of the converter and the stability of the clock ultimately define the accuracy of the sampled signal. Overall, it's the design of the entire solution. Apogee delivers an analog-to-digital/digital-to-analog system, which is built upon the foundation of an excellent power source and a world-class design environment. There are no short cuts and no cost-saving trade-offs.

PAR: There is a concerted effort from Apogee recently to design products specifically for the Mac (Duet, Ensemble, Symphony). Why such a strong Apple focus?

SM: The Apple environment provides unparalleled processing power and cutting-edge software tools for audio and film production, all of which are powered by the most elegant operating system available. What else could one want? Media authoring professionals, from every field, consistently choose Apple.

Apple and Apogee were ideally suited to partner. Apogee can leverage the stability and performance of the Apple system to deliver premium audio performance within a low-latency environment and Apple's offering is completed by our reputation for offering incredible audio interfaces. Additionally, the commitment to a single platform allows us to focus our engineering efforts and provide the customer with unprecedented performance and integration.

Unfortunately, the PC environment is a moving target where, components, processors, and drivers combine to create an unpredictable platform. Without exception, I can pull a drive from my Mac Pro, put it in another Mac Pro, and it works. As a developer, it allows for designs that can consistently deliver the highest

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FIREWIRE/USB-BASED DAW I/O

Arguably, the most popular DAW I/O products today are based on FireWire (IEEE 1394) or USB (Universal Serial Bus) data transfer interfaces. Look no further than the marketplace for proof; nearly every major recording product manufacturer offers a FireWire or USB-based product, many of which come complete with A/D and D/A converters, microphone preamplifiers, built-in mixers, and much more. Per manufacturer, below is a selection of notable products in this category.

Alesis (www.alesis.com): The iO/26 (\$599) is a 24-bit/192 kHz-capable FireWire-based I/O device featuring input via eight mic/line preamps (two with high-impedance DI), 16 ADAT (Lightpipe), stereo S/PDIF, etc., for 26 total inputs to your DAW, hence its name. Cubase LE for Mac or PC is included.



Apogee Electronics (www.apogeedigital.com): Duet (\$499), Apogee's award-winning I/O companion for Apple Logic, features two channels of 24-bit/96 kHz I/O; two XLR inputs with selectable 48V phantom power; two unbalanced high-impedance instrument inputs; stereo headphone output, two -10 dBV line outputs for powered speakers; and FireWire 400 for Mac OS X Core Audio. Its Maestro software directly controls Apple Logic Pro/Express, Soundtrack Pro, and GarageBand.

Applied Research & Technology (ART) (www.artproaudio.com): The TubeFire 8 (\$649) features eight 2nd generation discrete Class A



vacuum tube mic preamps in a 1U rack unit with balanced I/O and FireWire connectivity for Mac or PC direct tracking. Each channel features balanced XLR and TRS input with -10 dB pad, HPF, phase invert, eight balanced outputs, headphone output for monitoring, and more. TubeFire 8 ships with Cubase LE.

Benchmark (www.benchmarkmedia.com): The DAC1 USB (\$1,275) is an extremely high-quality two-channel D/A converter with USB connec-



tivity. Benchmark's uncolored conversion is legendary; the DAC1 USB allows unmatched high-resolution playback with only a simple USB connection for Mac or PC.

Dangerous Music (www.dangerousmusic.com): The D-BOX (\$1,599) is an ideal eight input summing buss with built-in D/A and monitor control enclosed in a 1U unit. It includes talkback, headphone cue, two speaker outputs, AES and S/PDIF digital input, and much more.

BRING ON THE HEAT. TUBEFIRE8

Eight Channel Tube Preamplifier with Firewire



The ART TubeFire8™ delivers the best of all worlds in one tube driven digital audio interface package. Ideal for any recording application, the TubeFire8™ adds eight incredibly warm tube driven microphone or line inputs and eight balanced outputs to any FireWire equipped computer.

Complete FireWire Based Studio Solution

Designed as a complete studio package, the TubeFire8™ is shipped with Steinberg's Cubase LE 48-track for both Mac and Windows operating systems making it a truly plug and play recording solution, although it is compatible with many popular ASIO and Core Audio based applications.

Class-A Tube Design

ART's TubeFire8™ packs eight quality second-generation discrete Class-A vacuum tube microphone preamps in a single rack space audio interface with balanced I/O and FireWire connectivity.

Versatile I/O

ART's microphone preamps provide clean quiet gain while maintaining incredible transparency through the input stage. The eight balanced outputs of the TubeFire8™ can be driven from either the analog microphone preamp inputs making the TubeFire8™ an in-line eight channel tube preamp, or from the internal high quality D/A converters making it a high quality multi-channel audio output for your PC.

Full Input Control & Low Latency Monitoring

Every input channel offers both XLR input and 1/4-inch TRS balanced input with 70dB of gain. All inputs have -10dB Pad, High Pass filter, Phase Invert clip indicators and a wide range LED meter to monitor the preamp levels. The eight balanced outputs can be summed to an integrated headphone output providing either a mono or stereo mix function for low latency input monitoring and for monitoring audio playback from the computer.

Features

- Shipped with Steinberg's Cubase LE 48-track (for both Mac and Windows operating systems)
- 8 x quality second-generation discrete Class-A vacuum tube microphone preamps
- 8 x XLR & 1/4-inch TRS Combi-jack Inputs
- 2 x 1/4-inch instrument jack inputs (CH1 & 2)
- 8 x 1/4-inch TRS balanced Outputs
- 1 x 1/4-inch TRS headphone jack
- 8 x Input Gain / Channel Level / HPF / Phase Invert
- 8 x Channel Metering (4 bar led graph w/ clip indicator)
- 44.1KHz, 48KHz, 88.2KHz, 96KHz Sample Rates
- 24-204KHz External sample rate
- 44.1K, 48K, 88.2K, 96K, 176.4K, 192K Internal sample rates

A R T
APPLIED RESEARCH AND TECHNOLOGY

We have delivered leading edge products with exceptional tone and versatility which have gained the loyalty of musicians and sound engineers worldwide – on the road, in nightclubs, arenas, recording studios, auditoriums, churches, basements, garages, bedrooms – wherever there's a need to capture your creativity or amplify it, ART is a brand you can trust.

level of performance. The development of the Symphony System illustrates this; we are realizing latency specifications and channel-count capability that have to date been impossible on any platform.

PAR: Does that cut out a significant part of the market?

SM: We're aware that many users are working in Windows. We hope to address their needs by connecting to Windows sound cards via standard digital protocols i.e. ADAT, S/PDIF or AES-EBU. As I stated before, we feel the most stable and powerful platform available for audio production is Apple. We expect this will become clear to our customers as well.

PAR: Apogee has attracted a lot of attention with the Symphony workstation and the EuCon control protocol, of which Apogee is a part. Is this a challenge to more established platforms?

SM: Apogee is committed to delivering a powerful and flexible set of I/O devices, which support audio recording technologies enabled within forward-looking applications like Apple's Logic. The recent Apple-Apogee-EuCon developments are an example of that commitment.

The audio authoring market is demanding premium performance. The Apple computing platform provides revolutionary computational power, the EuCon products deliver an intuitive, ergonomic work surface, and Apogee is providing the finest audio conversion, at that point what else is there at any price.

Apogee's focus is on the 'Defining Moment' in recording, that single opportunity to capture and deliver the best sound possible. We see this time in our industry as a defining moment as well as one that will move the art of digital audio forward, and we are doing our part to lead the way.

DANGEROUS MUSIC

Dangerous Music, the manufacturer, evolved out of Dangerous Music, the East Village, NYC recording studio. As DAW-based recording became the norm, president Bob Muller and partner/electronics engineer Chris Muth developed a box to help their clients achieve better results in their final mix. This prototype became the 2-Bus, an analog summing bus for digital audio workstations, a concept that they pioneered. Over the past decade,

the Dangerous product line has expanded to include a range of summing and monitoring devices and monitor controllers. Here, Muller discusses analog summing's place and purpose in the I/O food chain.

PAR: First off, how does having an analog summing mixer benefit the DAW user?

Bob Muller: Using a high-quality analog summing amp changes several things related to DAW mixing. It reduces the need for excessive gain management by providing an analog environment with a lot of headroom. The process of mixing a bunch of audio signals together, whether done in the digital world or in analog, means you have to lose gain. If you try to add two or more tracks together without losing level somewhere in the process, you would be clipping before you even get the whole drum kit in the mix. To our ears, analog does this job better than digital. By using multiple D/A converters to share the workload, your track faders are typically going to run a lot hotter in your software mixer than they would when mixing to the internal stereo bus. Also, when you insert analog outboard gear using a 2-Bus it becomes a very easy, elegant process because you're already in the analog domain, with no latency issues or extra A/D/A conversions, and you'll remain in analog until the final mix is recorded. Overall, it speeds up your workflow - you'll get where you're going quicker with a box like this.

PAR: How do you choose your components?

BM: Our designer, Chris Muth, has a deep background in the mastering world. He has designed gear for the pickiest ears on the planet for years and has done a lot of research on components and how they sound in a circuit. Spec sheets will only get you so far. In addition to op-amps and active components this guy listens to connectors, relays, different wire, and switches. When you're designing mastering equipment you have to get the highest level of performance, and Chris brings this philosophy to the Dangerous gear.

Chris knew what components worked really well, so when we designed the 2-Bus we weren't starting from scratch. The circuit and its layout — how the components are physically laid out on the board and how shielding and grounding are handled — are the heart of how

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Bob Muller

Lexicon (www.lexiconpro.com): The Alpha Desktop Recording Studio (\$199) is a Mac or PC compatible USB powered I/O mixer that includes Cubase LE and the Lexicon Pantheon VST reverb plug-in. It's an affordable two-in/two-out interface for basic USB recording tasks.

Lynx Studio Technology (www.lynxstudio.com): The LT-FW (\$595) is a FireWire 400 LSlot interface for high-quality Lynx Aurora 8 and Aurora 16 A/D and D/A converters. It allows up to 32 channels of analog and digital I/O at sample rates up to 96kHz; at 192 kHz, it allows 16 channels of I/O.



Mackie (www.mackie.com): The Onyx Satellite (\$259) is a neat two-piece FireWire-based recording system for Mac or PC DAW users on the go. It offers two Onyx mic preamps, eight total inputs, six line level outputs, and built-in control room functions; it is 24-bit/96 kHz capable.

M-Audio (www.m-audio.com): The M-Audio ProFire 2626 (\$899) is a PC or Mac-based FireWire recording device with 26 X 26 simultaneous I/O with an onboard DSP mixer for up to 24-bit/192 kHz resolution. Comprehensive connections include eight Octane mic preamps, ADAT, S/PDIF, word clock, dual headphone outs, front-panel quarter-inch instrument inputs, MIDI, and more.

Metric Halo (www.mhllabs.com): The Mobile I/O 2882 (from \$1495) — arguably the granddaddy of FireWire DAW I/O — was originally debuted in 2001 and still sets the mark for high-quality bus-powered recording. New for Mobile



I/O is its 2d Card, based upon a new, next-generation DSP that provides a large increase in in DSP power: 5.5 times the available processing power of the original Metric Halo +DSP implementation.

MOTU (www.motu.com): The UltraLite-mk3 (\$595) from MOTU is a compact bus-powered FireWire audio interface specially built for Digital Performer DAW users. It offers up to 192 kHz and I/O including two mic/instrument inputs, six line level analog inputs, 10 analog outputs, stereo S/PDIF and a stereo headphone output. Also included is the no-latency CueMix FX digital mixer.

Prism Sound (www.prismsound.com): The Orpheus (\$4,995) — a high-end FireWire multi-track audio interface with Pro Tools LE and M-Powered compatibility — offers eight analog and 10 digital input channels, eight analog and 10 digital output channels, and renowned Prism Sound component quality and performance. Features abound; see the Prism Sound website for more information.





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our gear sounds and why it works well. We use direct (DC) coupling topology, which means there's no filter caps or other stuff in the signal path that will affect the transient response. This gives our gear a really wide, flat frequency response — from below 10 Hz to above 120 k — as well as lightning-fast transient attack and great crosstalk rejection, which translates into a clear, wide stereo image.

PAR: After nearly a decade, do you still have to educate the recording community?

BM: Whether an engineer came up in a console/tape environment or their first studio was a DAW rig, there's still quite a bit of education that goes on, even before we talk about summing. The whole idea of maximum level and metering in the digital domain is still new to some people. With a VU meter there's always something over zero. In digital land, zero is it. Early on in digital recording everyone was pushing their average levels up to right below full scale, and then wondering why their snare doesn't have any crack and things are starting to sound all rounded off and weird — it's because they're losing all of their transient response. The educational curve is definitely improving though, and we enjoy doing it because it makes for better-sounding recordings in the end.

PAR: Many engineers who mix 'in the box' have reported that with analog summing, they finally have that 'warm' sound back. Do these units really add color, or is it their lack of color that people notice?

BM: It's both really, depending on the manufacturer. The way I see it, there are two schools of thought for summing amp design: the color school and the clean school. We're all about the clean school. We encourage people to listen and pick the box that works best for them, but overall find that keeping the tonal options open wins out. The Dangerous philosophy is to keep both the summing and monitoring paths very real. Don't disguise the sound of the recorded tracks. You can then add color if you want by inserting outboard processing, but the summing box itself should not add coloration because that limits your options.

It's all about being able to pick and choose per project, and to not paint every track and every song with the same brush. Also a lot of mixers invest money in really great outboard gear, and they do that because of the way it sounds. If you have a mastering quality summing box and you run it through that SSL or

Neve compressor, then it's going to sound like you expect it to. We went this way because of our roots.

DIGIDESIGN

Like Coca-cola is to soft drinks, Pro Tools has become synonymous with the DAW environment. Digidesign software and hardware transformed the industry, and their presence continues to loom large. While Pro Tools largely remains the DAW 'standard,' platforms such as Apple Logic Pro and Steinberg Nuendo offer a viable, and in some situations, competitive, alternative. But like Pepsi and RC Cola, they appeal to a more select audience. We spoke with Digidesign manager of hardware product marketing Greg Westall about the inner-workings of Digi's I/O interfaces for Pro Tools | HD.

PAR: As Pro Tools software evolved how have Digidesign's I/O interfaces evolved with it?

Greg Westall: In 1991, the beginning of Pro Tools, you could combine interfaces and have up to 16 channels of I/O. Early interface development was focused on channel count. Today, we can deliver plenty of analog or digital inputs and outputs (160 channels with Pro Tools | HD), so the primary focus has become qualitative instead of quantitative. When Pro Tools | HD, Digidesign's flagship system came along in 2001, we began pushing the limits of how warm, natural, and transparent that audio can sound. You can have tons of tracks and tons of I/O, but the challenge is to make the audio as high quality as possible.

In terms of approach and/or design, every recording interface manufacturer uses the same converter chips from Cirrus, AKM, TI, and other component companies. To my knowledge the only pro audio interface manufacturer that doesn't go that route is Prism. From what I understand, they build some of their own discrete converters from scratch; as a result, their interfaces are quite expensive. For customers that are looking for A/D or D/A that does sound different, Prism is an alternative.

PAR: How is having a good I/O interface any more or less important as DAW platforms, such as Pro Tools | HD, have improved in quality?

GW: Even though an HD system delivers 120 dB of dynamic range and sample rates up to 192 k, very few recording environments can fully take advantage of that capability. For example, the vast majority of the recording industry still uses 44.1 and 48 k sample rates.

PreSonus (www.presonus.com): FireStudio Tube (\$899) is a 16 X 10, 24-bit/96 kHz FireWire recording system featuring two 'SuperChannel' Class A vacuum tube microphone/instrument preamps with analog limiting per channel and 12AX7 tubes. I/O includes eight mic amps, six balanced TRS line inputs, eight TRS outputs, headphone output, MIDI I/O, and much more. Cubase LE is included.

RME (www.rme-audio.de): Fireface 800 (\$1,999) is a DAW I/O monster, featuring up to 56 channels of record/playback, up to 192 kHz sample rates, eight balanced line I/O, four phantom-powered mic preamps with balanced XLR and TRS input, and much more. Use of the XLR and TRS ins allow 35 simultaneous inputs to 28 tracks at once.

TASCAM (www.tascam.com): The FireOne (\$399) is an ergonomically friendly FireWire audio interface with shortcut keys, a weighted/illuminated job wheel plus two microphone preamps, two outputs, and 24-bit/96 kHz audio resolution. Other neat features include a visual metronome for overdubbing musicians and eight DAW shortcut keys.



TC Electronic (www.tcelectronic.com): The Desktop Konnekt 6 (\$295) is a unique FireWire audio interface and monitor controller featuring the IMPACT microphone preamp with phantom power, built-in M40 reverb and included Cubase LE. Also includes a hi-Z guitar input, balanced stereo outputs, and direct monitor control.



From that perspective, modern day interfaces are still ahead of their time. Most engineers aren't taking advantage of the features or capability that is already available.

More interfaces sound good these days, but the high-end players are focused on that last one percent of improvement. In actuality, a good converter gets the heck out of the way; it shouldn't impart any color or tonality. So the analog circuitry in front of it becomes increasingly important. For example, the Pro Tools | HD 192 interface has Class A discrete line amps. Those amps are as important as the converters. In a way, increasingly better converters have caused the surrounding electronics to become more important. I'd say, as a result, having a good I/O has become more important, because better converters reveal everything.

PAR: How does Digidesign maintain quality standards in more cost-effective packages such as the MBox family?

GW: Cost-effective devices in the pro audio industry are a direct result of offshore manufac-

turing. Labor costs have plummeted on making a high-quality interface. And labor costs being what they are in Asia have allowed everyone to bring costs down.

Digidesign selects A/D and D/A chips that are a little more expensive because our products are used by professionals. But the real magic in an MBox 2 is designed by our engineering team. The continuation of the quality there has been brought about by advancements in mic preamp and power supply design, lower noise, and distortion, etc. Some of these qualitative advancements are independent of cost. Other innovations cost more, but those costs sometimes can be offset by offshore assembly. Bottom line, where products are assembled really isn't really an issue in terms of sound quality or reliability nowadays.

PAR: Does Digidesign work with third-party manufacturers? Companies such as Apogee, Lynx, and Prism make excellent products that work with Pro Tools.

GW: The manufacturers you mention here are using the Pro Tools | HD DigiLink connection without consulting with or gaining approval from Digidesign. In effect, they have reverse-

engineered a way into our HD system. Digidesign created the DigiLink interface as a custom, ultra-high-speed pipeline into Pro Tools | HD. It was a proprietary design because there was no other 'off the shelf' or standard way to solve the latency, expandability, hardware setup, or many other needs that our professional customers were demanding. For example, via DigiLink, Pro Tools intelligently compensates for each interface's latency profile. However, for reverse-engineered interfaces without that intelligence, there's no way for Pro Tools to differentiate between them, change settings, and compensate accordingly. Bottom line, Digidesign's promise to our customers is quality and reliability. We have dozens of QA engineers testing our systems and software with different CPUs, operating systems, hard drives; it's a massive quality assurance and test matrix. To add another competitor's reverse-engineered product to that matrix, would represent a huge cost for us that none of these companies compensate us for.

Still, these unsupported options are available in the marketplace. For interfaces from

other companies, we just can't support them or promise that they will deliver consistent results. Customers who use non-Digidesign interfaces with Pro Tools | HD unfortunately miss out on some of the benefits that we built in.

EUPHONIX

Whether it's broadcast audio, audio post, live venue, or music recording, Euphonix is considered a leader in providing high-end digital consoles and control surfaces. Facilities worldwide have relied on the company's products for years; however, their EuCon control protocol, a high-speed Ethernet protocol that integrates various DAWs and video editing applications with their System 5 and MC Pro controllers, spawned serious growth for the company in 2007. Andrew Wild, Euphonix's Marketing VP, discusses the company's range audio converters and their relationship with the DAW.



Andrew Wild

PAR: What stands out about Euphonix's I/O design? Is it beneficial to hang on to old Euphonix I/O when moving to a digital system?

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BERLINER MICROPHONES

Model U77

"The human voice is a complex instrument so recording that perfect vocal sound can be a challenge. Since I added the Berliner U77 to my collection, its become my "go-to" vocal mic! It delivers that magical sound I look for in a high-end tube mic!"

~**Boris Milan**, Recording Engineer/Mixer
(Carlos Santana, Placido Domingo, Ricardo Montaner) 2006 Latin Grammy Award Nominee, Album of the Year - Fonseca Corazón. Latin Grammy Award, Best Merengue Album - Olga Tañon



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by Russ Long

JZ Microphones Black Hole BH-1

This striking multi-pattern microphone offers versatile, high-end performance.

In many ways, Latvia has become the Germany of the 21st century when it comes to microphone design and construction. First there was BLUE Microphones, then Violet, and now JZ Microphones. JZ's flagship product — the Black Hole BH-1 microphone — has several unique features and has generated somewhat of a buzz since its introduction last fall. Naturally, I was anxious to see how the mic fared in the real world.

| FEATURES

The Black Hole condenser microphone is a visually stunning matte-black mic with a large rectangle opening — a "hole" — in the body. The 203mm x 51mm x 28 mm mic has a frequency response of 20 Hz – 20 kHz, and although it is much lighter than it looks, it appears to be solid and well made. A small switch inside the opening selects the mic's pickup pattern (cardioid, figure-8, or omni). I'm sure this isn't the case, but the switch location, labeling and feel has the appear-

ance of being an afterthought. Typically a multi-pattern microphone incorporates a single condenser capsule with dual front and back diaphragms, but the Black Hole design uniquely places two identical 27mm capsules back to back, combining the output of both to create its various patterns.

Also distinctive to the Black Hole is its capsule design. Instead of the usual thin, uniform sputtering of gold over the diaphragm's surface, the BH-1 uses a patented variable-sputtering process. With this process, a proprietary alloy mixture is placed in a pattern of irregularly sided circular shapes surrounded by areas that don't have any coating at all. The Black Hole's design incorporates discrete, Class-A electronics that provide low noise performance (7.5 dB, A-weighted, DIN/IEC) and an output impedance of 50 ohms. The mic requires +48V phantom power for operation and it has a dynamic range of 127 dB. Included with the BH-1 is a beautiful wood case that is magnetically held closed (and, for my taste, is slightly too difficult to open). The case provides perfect storage for the mic and its spring-loaded shock-mount.

| IN USE

My initial use of the Black Hole was while multitracking a live concert for gospel artist David Phelps. There were several songs that required capturing several people singing a cappella around a single mic. The BH-1 seemed like — and proved to be — the perfect choice; the mic sounded wonderful. The voices were smooth, uncolored and sonically pristine, and the cardioid's rather wide response worked well with the vocal ensemble.

A few weeks later I used the mic to record a beautiful-sounding Taylor 514-CE acoustic guitar and, once again, had fabulous results. The shock mount is an amazing little device that not only acoustically isolates the mic, it

also allows for very versatile placement making it easy to use in cramped or awkward situations.

While recording Nashville session ace Gary Burnette's electric guitar during a tracking session for Universal Music, I used the mic (set to omni) as a room mic while close miking the cabinet with a Royer R-122 and had fantastic results. The microphones complemented each other perfectly. Later I used the BH-1 to close mic a guitar cabinet. The results were decent and usable, but nothing overly impressive; I wouldn't count this as one of the mic's strengths.

During another tracking session I found that the BH-1 does a fine job capturing room ambience while tracking drums. I ended up rolling off a bit of the top end and squashing it with a Distressor, but the end result was great.

All of this said, I anticipate that the majority of people who purchase the BH-1 will be using it to record male and/or female lead vocals, so I anxiously tested the mic in both of these situations; I found it to work well in each case. The mic is extremely detailed and smooth and has a very subtle proximity effect. I recorded backing vocals with four singers with the mic set to omni and was amazed at the smoothness and consistency of the mic at every position.

I was discussing the BH-1 with a producer friend, and I found myself describing it as a solid-state Sony C-800G without the top-end hype. Actually, when I use the mic along with the LaChapell 583s tube mic pre — the mic pre that I found to perfectly complement the BH-1 — it actually sounds very much like the C-800G.

| SUMMARY

The Black Hole's \$2,295 price tag surprised me at first, as I was expecting something in the \$1,500 – \$1,800 range. However, after using the mic for several weeks, I think the large price tag is easily justifiable. The mic is a perfect option for anyone looking for a versatile high-end mic that will work well in almost any situation. If the BH-1 is out of your price range, the newly released Black Hole SE is a single-pattern (cardioid) version of the mic available for \$1,895.

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



FAST FACTS

APPLICATIONS

Studio, project studio, broadcast, post production

KEY FEATURES

Condenser; cardioid, figure-8, or omni patterns; back-to-back, uniquely-placed dual 27mm capsules; patented variable-sputtering process per diaphragm; discrete, Class-A electronics; 50 ohm output impedance of 50 ohms; 127 dB max SPL; wood case; spring-loaded shock-mount

PRICE

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PRE420

4 Channel Mic-Pre/Mixer



ADC1 USB

2-Channel 24-bit 192kHz A/D Converter



DAC1 PRE

Stereo Pre-Amplifier / DAC / Headphone Amp

When your clients expect professional results, your studio cannot have a weak link. The essential elements of your signal chain must perform with consistent integrity. It is important to use audio tools that deliver superior performance, unvarying dependability, and uncompromised quality.

Benchmark has developed a family of audio tools that never compromise: the PRE420 microphone preamplifier; the ADC1 USB A-to-D converter; and the DAC1 PRE monitor system pre-amplifier / D-to-A converter.

Benchmark products set the standard for performance and reliability. Engineers have praised our mic-preamps for their breath-taking realism, true-to-life detail, and consistent performance - even in harsh RF environments. Our digital converter technology has become the benchmark of absolute accuracy due to the jitter-immune UltraLock™ clocking system, intelligent circuit layout, and pristine analog sections. All Benchmark products are designed, assembled, and tested in Syracuse, New York, USA, by a team that is committed to quality craftsmanship and tireless customer support.

The PRE420 is a 4-channel mic-preamp with a plethora of features, including built-in, independent stereo mix and solo busses. The sonic performance of the PRE420 has been described as making the instrument "sound like it's being played right in front of me!" It delivers the audio with such clarity that no

textures are lost or obscured by distortion or noise. The remarkably low noise floor spans a wide range of gain setting, making the PRE420 the perfect pre-amp for ribbon microphones. For room and ambient recordings, the ultra-low distortion performance puts the listener in the live-room. Also, the PRE420 circumvents "Murphy's Law" with its bullet-proof "phantom-hot-plug" protection circuitry and incredible RF immunity.

The ADC1 USB is a reference-quality, 2-channel, 24-bit, 192-kHz A-to-D converter. The UltraLock™ clocking system delivers unvarying mastering-quality performance - regardless of clock source. The ADC1 USB offers variable input gain from -6 to +39 dB to interface directly with a wide range of devices. Precise levels are easily achieved with the 9-segment, dual-range LED meter.

The DAC1 PRE is a reference-quality, stereo monitor system controller with the DAC1's award-winning, 24-bit, 192-kHz D-to-A conversion system. The DAC1 PRE continues the legacy of the DAC1, which has become a staple of control rooms around the world. The analog inputs provide a simple and direct path to the monitors for mixing consoles, iPods, etc. The AdvancedUSB™ input supports native 96 kHz, 24-bit operation without cumbersome or invasive driver software. The built-in, 0-ohm HPA2™ headphone amplifier provides ultra-low distortion headphone monitoring.

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by Russ Long

Apple Logic Studio

This Mac-based, lightning-fast, bargain-priced software package provides true user-friendliness for the industry's most feature-laden professional DAW suite.

Logic Studio is Apple's comprehensive suite of professional audio production tools. The Mac OS X package includes Logic Pro 8, MainStage, Soundtrack Pro 2, Studio Instruments, Studio Effects, Studio Sound Library, WaveBurner, Compressor 3, Impulse Response Utility and Apple Loops Utility; it's a massive package that is essentially everything needed to create, record, mix, and perform music.

| FEATURES

The heart of Logic Studio is Logic Pro 8, which has been reworked into a single-window interface. This redesigned interface is designed for fast, intuitive control. All of the key functions are organized in a unified workspace, greatly simplifying operation and providing instant access to the pro-

gram's powerful music creation and production features. Sample-accurate editing and snap-to-transient selection are accomplished directly within the Arrange window. Several new features — including dynamic channel strip creation and Quick Swipe Comping — drastically speed up workflow. Additionally, Logic Pro includes surround production capabilities with multichannel tracks and busses, support for True Surround software instruments and effects, and innovative surround panning controls.



Logic Pro 8 Main Screen

The updated Arrange window consolidates the edit and browser windows. You can now record multiple takes; cut, move or stretch audio with sample accuracy; apply channel strip settings; or automate a group fade from one central location, without switching between windows.

A toolbar is affixed to the top of the Arrange window and a transport bar is affixed to the bottom, both fully customizable. The toolbar gives one-click access to common activities, such as merging data and setting locators. Many of the Arrange window tasks have been simplified or enhanced. At high zoom levels, data can be selected and edited with sample-accurate detail. Option-dragging the end point of a region allows audio to be time-stretched or compressed. This can be



processed with one of the time-compression algorithms provided with Logic or by using a third-party algorithm such as Serato Pitch 'n Time or iZotope Radius.

There are two channel strips in the Inspector area (formally called the Parameter area) located on the left pane. The right strip is context-sensitive, displaying the bus or output selected on the left channel strip. This provides instant access to the entire signal path of a track without opening the mixer window. The Media area has replaced Logic's Project Manager. Organized access to all of the media on the computer's hard drives is provided via the Bin, Loops, Library and Browser tabs. Logic Pro songs

are now saved as part of a project.

Logic's Network-Based Save and Share allows personal channel strip settings, plugin settings, and key commands to be stored to a .Mac account for easy access from any computer connected to the Internet. Favorite settings can also be shared across a local or Internet-based network or through your .Mac Public folder.

Logic's surround capabilities have considerably increased, making it an extremely powerful surround DAW that easily supports up to 7.1 mixing. Surround signal flow is supported throughout the DAW, including the ability to bus audio to external or internal surround processors. The Downmixer plugin makes it simple to downmix from

LOGIC continues on page 26 ►

FAST FACTS

APPLICATIONS:

Studio, project studio, mastering, broadcast, post-production, live performance

KEY FEATURES:

Mac-based audio applications including Logic Pro 8, MainStage, Soundtrack Pro 2, Studio Instruments, Studio Effects, Studio Sound Library, WaveBurner, Compressor 3, Impulse Response Utility and Apple Loops Utility

PRICE:

\$499; \$299 (upgrade from Logic Express 8); \$199 (upgrade from Logic Pro 7)

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PLENTY OF POWER IN LOGIC EXPRESS

Let's say you have decided that Apple Logic is your new DAW. Do you need the \$499 Logic Studio bundle featuring Logic Pro 8, or would the \$199 Logic Express 8 bundle just as easily serve your needs? Fact is, for most potential users, buying Logic Express is both budget-conscious and logical ... please pardon the pun.

According to Apple, and as Russ alludes in his review, all Logic Pro 8 performance and functionality is present in Logic Express 8 except for four features: in-the-box surround mixing, TDM/DAE support, distributed audio processing (DAP), and "support for high-end control surfaces."

Let's hypothesize for a moment. If you plan to do stereo-only mixes; if you'd be happy with 73 plug-ins and 36 software instruments (nearly all of those offered with Logic Pro); if your projects won't be "big" enough to warrant the need for DAP; and if control surfaces such as Mackie Control Universal, Frontier Design TranzPort, TASCAM US-2400, and Yamaha 02R96 seem "high-end" enough



for you; then Logic Express 8 is sure to please, while leaving your wallet \$300 fatter. Best of all, if you later decide that any of Logic's four "pro" main features are necessary, an upgrade from Express 8 to the Logic Studio bundle is only \$299; thus, in the end, Logic Studio is a \$1 cheaper if you try Express 8 first. It's cool how being thrifty works sometimes.

— Strother Bullins

surround to stereo.

MainStage is a new live-performance application that transforms a Mac into a mean, lean, performance machine. Before MainStage, if a musician wanted to use Logic Pro's built-in instruments and effects onstage, they had to run Logic and configure separate tracks, or possibly separate songs, for various setups.

Soundtrack Pro 2 provides professional editing tools and seamless film and video integration. Once a mix has been completed, Compressor 3 provides the tools to encode and preview the mix in the Dolby Digital AC-3 surround format. In addition to the dozens of built-in formats, third-party encoders can be used as plug-ins.

The collection of 40 instrument plug-ins found in Studio Instruments enables musicians to access and play an infinite number of sounds. The updated EX24 editor now has a more conventional multi-sample display, shows group and zone settings in a matrix-style layout, and supports graphical editing of group and zone Velocity ranges. Ultrabeat has added a Step Automation edit mode, and the Full View step-sequencer display now lets you see and edit the steps for all 25 drum voices simultaneously.

Studio Effects includes 80 powerful effect plug-ins for unlimited options in shaping sound. Among the most impressive is the new Delay Designer plug-in that features 26 independent taps. Each tap has its own filter, pan and pitch control. True Surround is also supported by Space Designer convolution reverb, which includes 138 new surround impulse responses.

The massive 40 GB Studio Sound Library features content from the five Jam Pack collections and Final Cut Studio 2. These 18,000 Apple Loops, 1,300 EXS24 sampled instruments and 5,000 sound effects that span a huge variety of genres and styles and are a phenomenal production resource. There is also a large collection of impulse responses for Space Designer, many of which are in full surround.

WaveBurner is an easy-to-use yet powerful application for CD mastering and authoring. It is perfectly suited for creating a simple demo disc, a Red Book standard CD master, or anything in between. Apple Loops Utility allows any audio file to be converted into an Apple Loop. Metadata can be added to specify the attributes of the file, making it easy to locate from the Loops browser built-in to Logic and Soundtrack Pro.

Impulse Response Utility is a multitrack

PRODUCTPOINTS



- Tons of features
- Great sound quality
- Supports high-resolution audio



- No PC support ("Truthfully, you should throw that PC away and buy a Mac anyway," opines Russ.)
- No aux send panning

SCORE

At \$499, Logic Studio is a bargain and an intuitive, impressive software bundle — the perfect one-stop shop production tool for audio production professionals.

audio recording, editing, and deconvolution utility that allows mono, stereo, discrete surround, and B-Format surround impulse response files to be created and used within the included Space Designer convolution reverb plug-in.


Logic Studio retails for \$499. An upgrade from Logic Pro 7 to Logic Studio is \$199. Customers who purchased Logic Pro 7 on or after August 1, 2007 are eligible for a free upgrade to Logic Studio. Optionally, Logic Express 8 is available for \$199. It is identical to Logic Pro except that it doesn't support distributed audio, high-end control surfaces, surround, or TDM. It also lacks some of the instruments and effects. The upgrade from Logic Express 8 to Logic Studio is only \$299 so if you go this route, the end cost is the same as if you originally bought Logic Studio.

| IN USE

I installed and used Logic on three computers: a Macintosh 2 GHz Dual Processor G5, a MacBook Pro 2.33 GHz Intel Core 2 Duo, and a Macintosh 2 x 2.8 GHz Quad-Core Intel Xeon w/4 GB RAM. Besides the endless waiting (two to three hours to install in all three instances), installation was a breeze. No surprise on the install time though; it takes a while to install over 40 GB of data regardless of your computer's speed.

After launching Logic, I selected Create New Project, and immediately experienced a new feature. The Create screen was segmented into two boxes. On the left there are collections titled Explore, Compose, and

LOGIC continues on page 28 ►




sweat the small stuff.

LS9-32

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Yamaha's LS9. Worth Your While.



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LOGIC Continued From Page 26

Produce. Within each of these collections there are a list of options in the Template column on the right. I found that using these starting points got me working in a shorter amount of time. If you prefer, you can just open an empty project and start from there.

I found it easy and quick to create a song using a loop, a couple of virtual instruments, and a microphone. Being more at home with Digidesign Pro Tools than Logic, I'm constantly impressed with how intuitive Apple has made the Logic Studio environment. Speaking of intuition, I found the Quick Swipe Comping to be a wonderful way to comp vocals, feeling more natural than anything I've ever done in the past with Logic or any other DAW.

Although it isn't new to Logic, another nice feature is the ability to create and store customizable Key command sets. This is great for a multi-user system, allowing each user to have his/her own key command set. It is also great for users who have already learned a key command set for another DAW and don't want to relearn them for Logic.

My biggest gripe with the software is there is no way to pan an aux send. Having the ability to do so would give a lot more flexibility to setting up cue mixes. I found that using the Post-Pan feature was a workaround in most instances, but this doesn't work if a musician wants to hear a different panning than I hear in the control room.



MainStage Instrument Screen

Apple describes MainStage as a performance rig for Logic Pro and AU plug-ins without the encumbrance of running Logic, but I've found it to be an excellent tool in the studio for utilizing Logic's marvelous virtual instrument arsenal while tracking in other DAWs.

The majority of my time spent with Logic has been in conjunction with the Apogee Ensemble. [Please see Russ' review of Ensemble in an upcoming issue of *PAR* — Ed] Logic Pro includes an Apogee Control Panel, which seamlessly provides the ability to adjust and store the Ensemble's settings from within a Logic Project. Very nice!

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STUDIO | REVIEW

LOGIC Continued From Page 28

| SUMMARY

Apple's Logic Studio is an amazing suite that includes a host of powerful applications. The software is lightning-fast (especially when running on a dual Quad-Core Xeon machine) and has more features than I could imagine. Logic Pro 8's makeover has resulted in the world's most feature-laden DAW, actually becoming user-friendly, and Apple has done it in a way where current Logic Pro users will be right at home with the new ver-

sion. The system sounds wonderful, and the included instruments, loops, samples, and effects are all professional quality with no sonic compromises whatsoever. This said, at \$499, Logic Studio is a bargain and is the perfect one-stop-shop production tool for composers, musicians, sound designers, engineers, and producers.

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

LOGIC PRO 8 FOR COMPOSITION

I use Logic for soundtrack composing and pop production. Over the past four years, I've shifted from using MIDI modules and keyboards to streaming sample players and software synths. Logic's integrated music production environment is now the starting point for all my composing projects. I've used Logic since Version 5, so I was eager to see Apple simplify and beautify the user interface.

The consolidated Arrange window with pop-up panes for the mixer and piano roll editor and the sliding pane for the media bin and instrument/loop library are a welcomed improvement. However, I still use the separate score and environment windows when I need to focus on those tasks. The transport and status bar — centered along the bottom of the main window — worked well, even stretched across two 19-inch standard displays. The Mackie Control that I've used since Logic 6 worked fine, as did a Uitor8 MIDI interface.

The Studio Sound Library, instruments and effects plug-ins are the heart of Logic Studio for composers. The sounds and loops cover many genres including pop, world, R&B and strong support for classic and modern electronic music. The sound effects and ambiences are well suited to indie film and stage productions.

Logic Pro 8 (LP8) makes sound picking easier than pie. Select a software instrument track in the Arrange window and click in the library browser to instantly audition thousands of pre-built instrument channel strips. For example, "gated synthesizers" combine soft synths with effects locked to tempo. The symphonic instruments won't fool your music teacher or put the high-end sample libraries out of business, but are more than adequate for pop production and symphonic sketches.

I had no trouble loading Logic 7 project files. In fact, once I started using LP8, I found almost no need to go back to 7. One exception: Vienna Horizon instruments use a VSL plug-in for EXS24 and some settings can be used, but not edited, in LP8.

I frequently use QuickTime clips for film scoring. The new small movie pane in the consolidated Arrange window is a great idea and full screen mode is just a couple of clicks away. To investigate the surround features I used Logic's surround-animated component modeling synth, Sculpture, and other instruments in surround channels. I added a Sound Designer convolution reverb with one of the new surround impulses. Next, I picked a surround setting in the new Delay Designer and added Logic's Surround Compressor with the "Atmospheric Master" preset in the master output.

The MultiMeter adds a surround signal viewer and a goniometric display to show coherence and phase relationships between stereo pairs. All together, it's a powerful combination of tools for surround production. You can burn your surround mix to DVD-A format directly from Logic or bounce to PCM for Dolby Digital encoding with the Compressor utility.

In summary, LP8 packs a huge bang for the buck. Mature audio and MIDI tools along with the extensive loops, samples and software synthesizers make LP8 a must-have tool for rock, pop, urban and new age producers and a cornucopia for film, TV and game composers.

— Carlos Garza

L LINEAR PCM R

STUDIO POWER in your POCKET

The POKETRAK 2G is the smallest, easiest to use and most portable digital recorder available today. It easily fits in a shirt pocket so you can take it everywhere. The 2G features 2GB of built-in memory so you don't need external memory cards, and the built-in USB 2.0 connectivity makes it easy to transfer your linear PCM or MP3 recordings to and from your computer. Long battery life with the enloop battery technology, a high sensitivity tilt-up stereo microphone and built-in stereo speakers make the POKETRAK 2G a complete recording studio in your pocket. The bundled Cubase AI4 DAW software lets you easily edit and master your audio recording on your computer.



1.7 Ounces and slim true pocket-sized design



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Bundled Cubase AI4 DAW software for editing and burning CDs



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Behind The Scenes: JBL Professional – A 60-Year Legacy

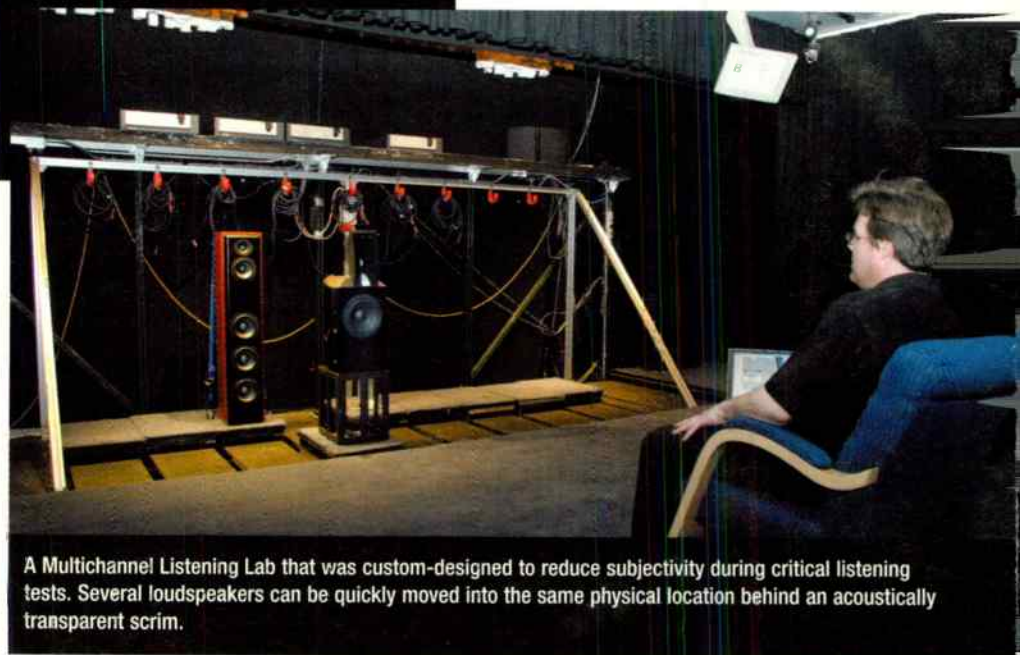
by Mel Lambert

JBL Professional, Harman International's pro audio loudspeaker division, can boast a fascinating ancestry, dating back over 60 years to a highly talented engineer whose initials still grace the company logo. James Bullough Lansing was born James Martini on January 14, 1902, the ninth of 14 children in Macoupin County, Illinois. While relatively little is known of Lansing's early days, he was particularly interested in things electrical and mechanical, constructing crystal sets and a small radio transmitter. During the late-1920s, Lansing moved to Los Angeles and set up Lansing Manufacturing Company to make loudspeakers for use within radio receivers; it was at this time that Martini changed his name to James Bullough Lansing, for reasons lost in the mists of time. During the following decades Lansing's firm built loudspeaker systems for motion-picture theaters and recording facilities.

However, financial problems continued to plague the fledgling company until, in September 1949, James B. Lansing passed away, aged 47. William Thomas eventually became the sole company owner and decided to capitalize on the initials, JBL. The '50s and '60s saw JBL develop a number of pro audio designs utilizing new-generation LF and HF drivers for recording studios and motion-picture theaters, culminating in the early 1960s with the Model 4320 Studio Monitor. In 1969, Thomas sold the firm to Sidney Harman of the Jervis Corporation; under Harman, the company grew from a modest \$8 million per year business to about \$60 million. In early 1977, Harman sold JBL to Beatrice Foods. Three and a half years later Harman re-acquired JBL, which remains a leading producer of branded loudspeakers throughout the world, with more than 50% being sold to export markets.

FIVE VERTICAL MARKETS

Drawing upon its extensive experience of developing high-performance loudspeakers systems for recording studios, post facilities and motion-picture theaters - the latter result-



A Multichannel Listening Lab that was custom-designed to reduce subjectivity during critical listening tests. Several loudspeakers can be quickly moved into the same physical location behind an acoustically transparent scrim.

ing in a blossoming demand for powerful touring/permanent PA systems - today JBL Professional addresses five vertical markets, according to VP of Marketing Mark Gander. "We innovate products relevant to Touring Sound, Recording/Broadcast/Post Production, Installed Sound, Cinema Theaters and Portable PA, with VPs or marketing directors overseeing each specialty," Gander says.

"One of the keys to our success has been the design and manufacturing of our own transducers. JBL Professional is hence one of the very few companies that is in charge of its own destiny. That continuity from design to manufacturing means that we can respond quickly to our customers' demands and continue to develop new technologies as the needs of our markets change. We listen to our customers, and try to anticipate their needs, which maybe even they are not currently aware of! It's a cyclic process, where market demands and our ability to respond rapidly feed off one another - we don't innovate in a vacuum."

Gander considers that the company's unique ability to offer new, JBL-innovated technologies has revolutionized the cinema industry during the past 25 years. "The older paradigm focused on cone woofers with large-diameter compression drivers. The Shearer System, which secured a Technical Oscar in the '30s, evolved into our Cinema Series, which, in

turn, during the '80s became the first THX-approved cabinets for the blossoming theatrical market.

"We combined constant-directivity horns mounted on our unique compression-driver designs with direct-radiating LF transducers in vented boxes; the end result offers very smooth

power handling." The resultant system secured three JBL engineers — John Eargle, Mark Engebretsen and Don Keele - a coveted Science and Engineering Award in 2002 from the Academy of Motion Picture Arts and Sciences; two other engineers - Bernard Werner and William Gelow — secured Technical Achievement Awards from the Academy for development of the ScreenArray System. "Today, JBL Professional supplies the majority of cinema systems worldwide," Gander states.

As a result of the firm's evolutionary high-power designs for motion-picture theaters, during the '60s and '70s a growing number of touring-sound system designers began to take a closer look at using the same components for sound-reinforcement applications. "Indeed," the VP continues, "a growing number of music-touring companies and larger amphitheater operators started to specify our components for large-scale playback systems. During the Sixties there was a growing emphasis on guitar-based music, which required high-power amplified sound systems to reach their audiences. Our large voice-coil systems with rugged construction were perfect for that market - Clair and Showco here in the US were both early users of our heavy-duty components, together with Jands Productions in Australia and Hibino PA in Japan."

THE LINE-ARRAY BREAKTHROUGH

Fast-forward to the late-1990s and JBL Professional's continuing R&D for the concert-sound and arena markets resulted in a breakthrough in line-array technology for live performance. "Following on from the packaged systems we developed in the '80s and '90s, and leveraging JBL's newest, most advanced dual-voice coil transducers," recalls David Scheirman, VP of Tour Sound, "our VerTec system was first revealed in 2000, as specified for use during the Democratic National Convention at the Staples Center in Los Angeles." The system's public launch took place at the Wiltern Theater [midtown Los Angeles] during the Fall 113th AES Convention later that same year.

"VerTec systems are based on the acoustical science of JBL's Vertical Technology," continues Scheirman. "Trapezoidal cabinetry and light-weight, neodymium-based components combine to offer a very high power-to-weight ratio. Our Differential Drive low-frequency drivers with neodymium magnets contribute to the system's lighter weight. Mid-range cone transducers provide significantly higher output than competitive devices with dual-voice coils, neodymium magnets and massive heat sinks. JBL also developed the industry's lightest, most powerful, compact, high-frequency driver for the VerTec system."

From the outset JBL's VerTec line-array concept attracted a lot of attention, since the revolutionary design provided consistent LF, MF, and HF performance with high output and optimum power/weight ratios. "We gradually expanded the line to include smaller-sized components and subwoofer cabinets," Scheirman continues. "And we also now have

powered options using JBL Drive Pack technology, which we developed in cooperation with Crown International and dbx Professional, our sister brands." (Other Harman brands include AKG Acoustics, BSS Audio, Lexicon Pro, Soundcraft and Studer.) JBL's DrivePack incorporates Crown's exclusive BCA (Balanced Current Amplifier) technology and Class I circuitry with temperature-compensated modulation; each unit includes an auto-sensing universal power supply and a fan-free, passive, cooling design. Optional network input modules link the powered speaker systems to Harman Pro's HiQnet System Architect software.

"And with the development of HiQnet, the Harman-innovated communications protocol," Gander says, "our active components can be controlled and monitored remotely using standard IT-based technology that is becoming increasingly important for some of our customers, including the ability to carry digitized audio via Ethernet connections." Co-developed and shared by engineers from all the brands within the Harman Pro group, the powerful HiQnet communications protocol and System Architect software benefits from years of combined experience.

"In addition to our dual voice coil/Differential-Drive and neodymium magnet technologies utilized within the VerTec Series, we also developed patented rigging schemes for the cabinets, which we build from a new-generation of lightweight composite materials" concludes Gander. Capitalizing on this extensive design and material-science experience, JBL Professional developed the Precision Directivity/PD Series and

JBL continues on page 34 >



The JBL Professional Marketing Team (from left to right): Mark Gander, VP Marketing; Jon Sager, Director of Market Development, Installed Sound; Rick Kamlet, Sr., Director of Commercial/Installed Sound Marketing; Peter Chaikin, Director of Recording & Broadcast Marketing; Simon Jones, Director of Portable P.A. Marketing; Chuck Goodsell, Director of Cinema Marketing; and David Scheirman, VP Tour Sound.

JBL COMPANY MILESTONES

- 1902 - James B. Lansing born in Illinois.
- 1927 - Lansing Manufacturing Company founded in Los Angeles.
- 1934 - Douglas Shearer of MGM heads team which designs first practical loudspeaker system for motion picture use. Lansing builds components for the system.
- 1937 - Shearer system awarded citation by the Academy of Motion Picture Arts and sciences.
- 1941 - Lansing Manufacturing Company acquired by Altec Service Company.
- 1943 - Lansing develops improved manufacturing methods, including flat wire milling and high-speed winding of ribbon wire voice coils.
- 1943 - Lansing designs 604 Duplex loudspeaker.
- 1944 - Lansing and Hilliard redefine the state of the art for the motion picture theater with the A-4, dubbed Voice of the Theatre.
- 1946 - Lansing founds a new company, James B. Lansing Sound, Incorporated, to pursue new directions in transducer and sound system design.
- 1947 - JBL introduces the D-130 15-inch loudspeaker, which was the first known use of a four-inch flat-wire voice coil in a cone transducer.
- 1949 - James B. Lansing dies; William Thomas becomes company president.
- 1954 - JBL introduces the model 375 high-frequency compression driver. This was the first commercially available 4" diaphragm driver and afforded flat response to 9 kHz.
- 1954 - JBL introduces a family of acoustic lenses, developed by Bart Locanthi.
- 1954 - Model 075 high-efficiency, high-frequency ring radiator introduced.
- 1955 - Leo Fender of musical instrument fame incorporates the model D-130 into his famous guitar amplifiers, signaling JBL's entry into the music reinforcement field.
- 1958 - JBL introduces the Paragon stereophonic loudspeaker system, incorporating a cylindrical reflecting principle for superior stereophonic imaging in the home.
- 1962 - JBL introduces the first two-way studio monitor using a high-frequency compression driver with acoustical lens.
- 1965 - JBL introduces the "T-circuit" output configuration for high performance solid state amplifiers.
- 1968 - JBL introduces the 4310 three-way bookshelf monitor. This system lives on through the models 4311 and 4312.
- 1969 - Sidney Harman acquires JBL from William Thomas. The company embarks on a period of accelerated international growth through the Harman distribution companies.
- 1969 - The L-100, a consumer version of the 4311, is introduced, eventually reaching sales of 125,000 pairs during the decade of the seventies.
- 1969 - JBL transducers power Woodstock and other major rock festivals.
- 1973 - JBL introduces the expanded line of 4300-series monitors, including the industry's first four-way designs.
- 1975 - JBL introduces Model 4682 "Strongbox" Line Array.
- 1976 - JBL's monitors rank first in the US recording industry survey conducted by Billboard.
- 1977 - JBL moves to new location in Northridge, California.
- 1979 - JBL introduces patented diamond surround diaphragm technology for high frequency resonance control.
- 1979 - JBL develops SFG Symmetrical Field Geometry magnet structures.
- 1980 - JBL introduces patented Bi-Radial Constant-Coverage horn technology.
- 1981 - Bi-Radial monitors introduced. Building on the acoustical concept of flat power response, the 4400-series monitors quickly gain acceptance by the recording industry.

JBL Continued From Page 33

Application Engineered/AE Series components that allow, Gander considers, "sound contractors and consultants to design a fully integrated sound system solving the audio challenges inherent to large installations, including arenas, stadiums, houses of worship and other performance spaces. In essence, the

PD and AES Series are used as components within larger system designs, often with VerTec cabinets, as was the case for Soldiers Field [home of the NFL Chicago Bears], whose customized system includes offerings from all three product ranges."

In 2006, JBL brought DrivePack technology to a broader market, with the introduction of its Venue Performance/VP Series powered loudspeaker systems for portable or fixed installation sound reinforcement. "The introduction of VP Series powered loudspeakers is having a profound impact on the live sound and installed sound industries, extending DrivePack technology to an unheard-of variety of applications," considers Jon Sager, Director of Installed Sound Market Development.

Parallel developments at JBL resulted in a new series of portable powered systems, including the highly successful EON Series that was unveiled in 1995. "EON was the first lightweight, molded, fully integrated active sound system," Gander states. "We mount the LF driv-

JBL continues on page 55 ►

1981 - L250 four-way consumer system introduced.

1982 - Titanium is introduced as a diaphragm material in compression drivers.

1983 - The model 4660 defined coverage system. Based on Bi-Radial technology, the system provides tailored coverage for speech application in rectangular spaces.

1984 - Titanium dome tweeters are introduced into consumer products, providing superlative response to 27 kHz.

1984 - UREI acquired by JBL, bringing electronics design and manufacturing expertise to JBL's traditional line of loudspeaker components.

1984 - The Academy of Motion Picture Arts and Sciences selects JBL components for the new system in the Samuel Goldwyn Theater.

1985 - The Everest DD 55000 system is selected by Japan's Stereo Sound as Product of the Year.

1986 - JBL introduces the first Control Series multi-purpose molded enclosure loudspeakers.

1988 - JBL acquires the British Soundcraft line of recording consoles for recording and reinforcement applications.

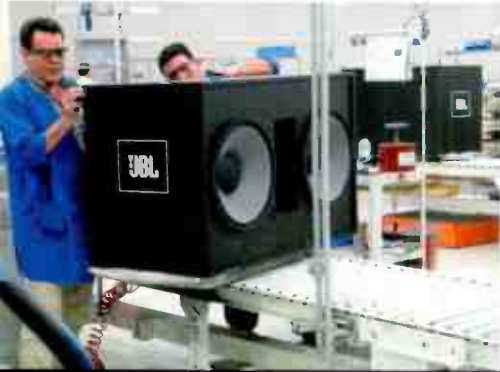
1989 - The Directors' Guild of America selects JBL components for the systems in their Hollywood headquarters building.

1990 - JBL develops patented VGC (Vented Gap Cooling) for raising the thermal power limits of low frequency transducers.

1991 - JBL's K-2 loudspeaker system is selected by Japan's Stereo Sound as Product of the Year.

1991 - JBL introduces first Pro Audio Neodymium woofer debuting in JBL Array Series.

1992 - JBL introduces new lower midrange compression driver with matching horns.



JBL Professional loudspeakers are manufactured within Harman International's Northridge, CA, production facility.

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*– Larry Villella
ADK President and Co-Founder*



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by Ty Ford

WLOY: Real World Facilities For An On-Campus Radio Station

John Devecka came to Maryland from LPB Communications in 2002 to be the Operations Manager at WLOY, the not quite on-the-air Loyola College radio station. He also took on the administrative responsibilities of the facility, student club and live events. Under Devecka's supervision, the process of building out the radio station took two years from discussion to completion; it went on the air in March of 2003. The new radio station would replace a weight room with rubber mats and sweaty college students on the first floor of a dormitory building that also housed the student newspaper and yearbook offices.

ditional room-within-a-room acoustical design. The Loyola facilities staff did the bulk of the build-out. Ziger and Snead (Baltimore, MD) did the architectural design. David Kahn of Acoustic Dimensions (Larchmont, NY) did the acoustic design."

Some college radio stations are created in whatever space that can be grabbed from existing offices and classrooms with little thought to the workflow, acoustic and technical realities of a real broadcast facility. You only have to walk through WLOY's front door airlock and into the news area to realize that a great deal of thought was put into this facility.

Devecka chose the main entrance air

lock doors from Overly Doors (Greensburg, PA) with a 52 dB rating. The second airlock, between the news area, air studio and Recording A was designed because it was cheaper to construct a passage with three doors, each with a 52 dB rating, than using doors with a 60 dB rating and no air lock. The laminated half-inch double pane, vacuum-sealed, slanted windows between studios came from Globe-Amerada (Chicago, IL). Several windows exposing the studios to the outside campus are 8.5 feet x 4 feet. Others, between studios, are three feet by 4.5 feet. A sightline from the air studio through two other studios allows bands to play live on the air, with different isolated spaces for instrument amps and drums. All of the recording rooms, production studio and workstations are wired back to engineering and to the main air studio. The protected electrical, networking, telecom wiring and low-flow HVAC ductwork was installed by the Loyola College facilities crew. "Not only did they do a great job, but their pride in the project is evident throughout," says Devecka. "Having it done in house means that we get questions answered immediately and by the person that did the original work."

Devecka's design intent was to include traditional professional audio gear and new technology to give his students the knowledge that would allow them to land jobs regardless of where they chose to work. "We have legacy rack-mounted gear as well as the most recent plug-ins."

THE PLANT

Working with Father Michael Braden at Loyola, Devecka had put forth a plan to create a seven room complex; a 10 by 14-foot air studio, a 10 by 14-foot production studio, two 9 by 10 foot recording rooms, a lobby/four desk radio news operation, music library, and engineering office, all with nine foot ceilings.

According to Devecka, "The intent was to attract new students to the college and to build lab facilities for the existing students. We started talking about a fixed budget to cover the whole project. I said forget about the initial gear and let's make sure the basic construction is done right. If it isn't, there's no fixing that. Among other things that meant making sure the rooms were well isolated from the rest of the building. WLOY's nine-foot ceilings are part of a tra-

lock doors from Overly Doors (Greensburg, PA) with a 52 dB rating. The second airlock, between the news area, air studio and Recording A was designed because it was cheaper to construct a passage with three doors, each with a 52 dB rating, than using doors with a 60 dB rating and no air lock.

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RPG Diffuser Systems (Upper Marlboro, MD) supplied the acoustic treatment for the studios. Studio Technology (Kennett Square, PA) custom built the air studio furniture. The production room desk came from Mid-Atlantic Products (Fairfield, NJ).

THE GEAR

Devecka's design intent was to include traditional professional audio gear and new technology to give his students the knowledge that would allow them to land jobs regardless of where they chose to work. "We have legacy rack-mounted gear as well as the most recent plug-ins: everything from Mini Disc to now CF and SD. The production studio console is an LPB



Dynamax MX-18e, which is now called a Sandies Dynamax MX-18e. It's an on-air console that was chosen because with only two full studios, we

then to an Intel iMac and Digi 002.

Other outboard gear includes a Roland Boss VT-1 voice transformer, Aphex 109 parametric EQ with Tubessence, Aphex Model 250 Aural Exciter III, Aphex 320A Compellor, Aphex 722 Dominator II, and a Presonus ACP22 two-channel processor to

process phone audio from two incoming phone lines. Add to that a standard patch bay, allowing students to insert any of the above gear, a Kramer VA-1120 1x10 DA, a Rolls RA62 Headphone amp, LPB Silent Booms with risers, two Studio Projects C-1 condenser mics, Hayes Spatial 1 passive monitors powered by a Hafler P1500 power amp and call it a very nicely packed room. Devecka also has Waves Platinum and Restoration plug-in sets running on the production studio Mac with standard plug-ins on the other Macs in Recording A and Recording B.

The WLOY network is running a Mac Xserve on a 2 GHz Intel Core Duo with 2 GB RAM, while the website and mailserver run on a second Xserve. The network supports file transport allowing anyone working at the six other Mac workstations access to the others. A student handles the routine network administrator chores. Station automation currently runs on an older IBM x345 Server in RAID configuration. A new Xserve-based array is in the near future, probably using iSCS.

WLOY continues on page 40 >



The WLOY Lobby




The WLOY Production Studio

knew the production studio would sometimes have to be used as an air studio."

The production studio includes a Denon DP-DJ151 digital turntable turntable with S/PDIF output (for digitizing donated vinyl), Denon DN720R cassette deck, Sony MDS-JE630 MiniDisc recorder player, two JK Audio InnKeeper 1rx telephone hybrids, Denon CDR-w1500 CD replicator and a student-designed (senior class EE project) optical switcher.

Recording gear started with a Windows Adobe Audition system running Cool Edit Pro, but quickly moved to a G5 Mac and Digidesign Digi 001 running PT|LE and

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WLOY Continued From Page 39

While much simpler than the main production studio, the two recording studios each sport two Apex 207 Preamps, Denon DNT620 cassette and CD combo players, Rolls Headphone RA62, Hafler P1000 power amp and a Broadcast Tools SS2.1 III Switcher for monitor switching. Recording A and Recording B currently run Digidesign DIGI 002 units on Intel Core Duos. Devecka says they are shifting A from 002R to a 002 Console to cope with the increase in live bands doing in-studio performances. There's also an LPB Blue 5c rack-shelf audio console, at the moment, for submixing.

THE NEWS

Out in the newsroom where newsgathering, telephone interviews and news production are done, the three news stations run on Mac Intel Core Duos with Digidesign Mbox2s and PTLE, Henry Engineering Studio Drives, JK Audio InnKeeper 1x half-rack telephone inter-

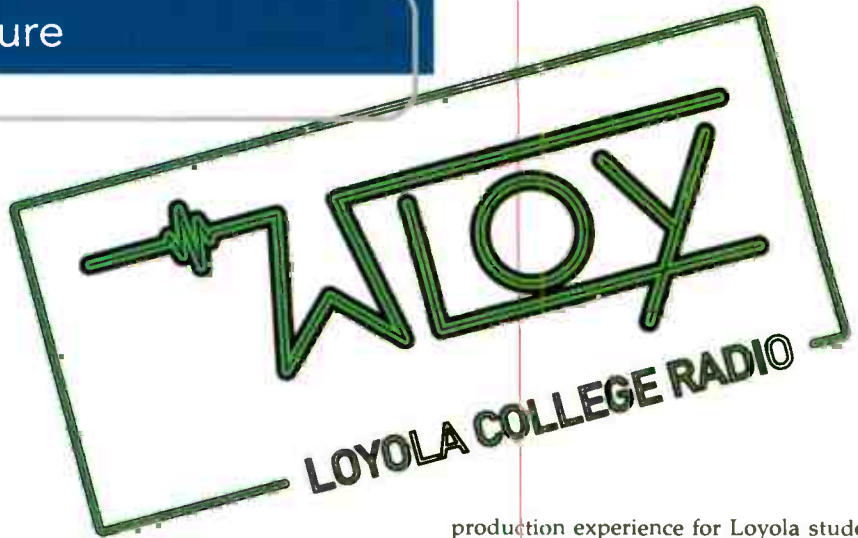
faces, LPB Silent Booms and Studio Projects B1 microphones. Students can produce on-the-fly news pieces for uploading to air or automation in each of these workstations, as well as the music library workstation (which doubles as a voice tracking booth).

THE END

WLOY provides a full spectrum audio

production experience for Loyola students — one that offers full exposure to the old gear and the new gear. Any student paying attention and with a passion for broadcast production audio will come out of Loyola having had the experience that will allow them to step up a little higher to that first job. And isn't that what education is all about?

Ty Ford has been writing for Pro Audio Review since the first issue. He may be reached at www.tyford.com.



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The advertisement features a central image of a computer keyboard and a mouse, with a glowing blue and green light effect emanating from them. To the right, there is a stylized graphic of a person with a gear-like head, rendered in white outlines against a dark background. The overall aesthetic is futuristic and tech-oriented.

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PHOTO PHILLIP ANGERT

At the 2008 InfoComm/NSCA convention in Las Vegas, our editors and contributors found several impressive new, or recently introduced products that we predict will be successful in the live sound/installed sound niches. To recognize those products, we have created the Pro Audio Review Hot Gear — 2008 InfoComm list. We added some commentary on why we picked 'em and web URLs, so readers can peruse, at their leisure, the company PR in more detail

—The Editors

HOT Gear

InfoComm 08

AKG D7 Dynamic Microphone

"AKG improves on the D5 with better immunity to RF and feedback, as well as filtering out handling noise." www.akg.com

Ashly NE Series Amplifier

"Ashly's NE Series features extensive DSP control and routing functions for its improved line of multi-channel performance amplifiers." www.ashly.com

Audix M1255 Distance Condenser Microphone

"Audix accuracy designed into a miniature, high-gain condenser distance microphone that is ideal for many applications including live choirs to office conferences. Looks great in white." www.audixusa.com

Audio Science AS18416 CobraNet Sound Card/ AS12416 CobraNet Interface Card

"Audio Science sound card and CobraNet interface allow CobraNet-routed audio to connect directly to any audio gear and to be played or recorded via any PC." www.audioscience.com

Audio-Technica M2 and M3 Wireless In-Ear Monitor System

"Excellent quality in-ear monitor system with a plethora of user functions." www.audiotechnica.com

BSS London SoundWeb Processor Series

"Powerful processing and efficient sound distribution via CobraNet, the SoundWeb series' pristine-sounding, digital processors are powerful, intuitive and easy to use." www.bss.com

Community ENTASYS Column Line Array System

"Designed for a variety of fixed installation applications, ENTASYS is a column-based compact array with small drivers, offering wide coverage from a small foot print." www.communitypro.com

Crown MacroTech I Amplifier

"Legendary MacroTech reputation designed in a new, power-efficient and DSP-featured sound reinforcement amplifier." www.harmanpro.com

Electro-Voice Tour X Loudspeaker Series

"Electro-Voice shares its high-end touring technology with these compact, yet accurate and technologically innovative, portable system that can be used in almost any small space configuration. Nice ergonomic touches include backbone grill and very cool integrated handles." www.boschcommunications.com

FBT Modus Integrated Line Array

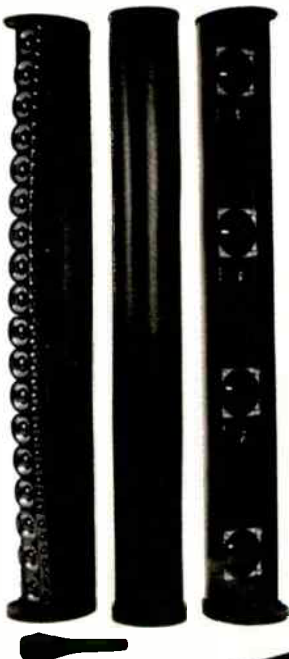
"Compact, line array that uses an innovative single housing design that combines the four modules into one unit." www.fbt.com

JBL Vertec VT48894-ADP Full-Size Line Array

"The well-received, full-sized Vertec line-array gets the full treatment from Harman Pro via the DrivePack technology — which features dbx processing and Crown's BCA amplifier technology." www.harmanpro.com

Kaltman Creations Invisible Waves PC RF Spectrum Analyzer

"RF spectrum analysis done via computer and software, this handy tool is perfect for looking for empty mic channels, in-ear wireless monitor spectrum and many other RF-intensive uses." www.kaltmancreations.com



Klein and Hummel IS Series Installation Loudspeakers

"The K-H Installation series maintains its qualitative reputation in the new IS series with two- and three-way models that features the company's patented dispersion system for enhanced coverage." www.kleinandhummel.com

Meyer Sound Labs UPQ-1P Powered Monitor

"Compact, two-way powered monitor that offers wide, accurate coverage via its specially designed horn driver and excellent internal amplifier. Ideal for churches, theaters and auditoriums." www.myersound.com

Neutrik ConvertCon XLR Combo Connector

"From the "why didn't I think of that," portion of your brain, this clever connector instantly converts from a female to a males XLR connector." www.neutrik.com

Presonus Studio Live Digital Mixer 16.4.2

"Packed full of features at a great price, this live or studio mixer includes quality preamps, built-in fire connectivity and analog and digital I/O." www.presonus.com

Polycom SR-12 Sound Reinforcement Processor

"Best Known for its conferencing products, Polycom introduced a full-featured, flexible audio processing product for a variety of uses, including church, theaters, nightclubs, restaurants, etc." www.polycom.com

Presonus Studio Live Digital Mixer 16.4.2

"Packed full of features at a great price, this live or studio mixer includes quality preamps, built-in fire connectivity and analog and digital I/O." www.presonus.com

QSC GX Power Amplifier

"Excellent power-to-dollar ratio, the GX series is a medium-powered series of amps designed for the entertainment environment." www.qsc.com



Rane Mongoose CobraNet Remote Audio Interface

"Rane's quality embodies this CobraNet digital audio interface that is designed to work in conjunction with Rane RADs and Tracker software at up to 24-bit 48 kHz." www.rane.com

Renkus-Heinz IC Live Column Line Array

"Impressive was the sound of the digitally steerable, column-arrayed IC (ICONYX) Live demo — no matter what kind of music and level was cranked out of 'em." www.reinkus-heinz.com

Shure UR1M Micro-Sized Body Back Wireless System

"Tiny body back, but big sound for any wireless configuration." www.shure.com

Surgex SEQ Surge Protection/Power Conditioner

"Perfect for sound reinforcement or installs where the highest degree of surge protection is needed as well as advanced filtering of audible AC line noise." www.surgex.com

Wheatstone IXO Commercial Audio System Solution

"Long-time pro audio player Wheatstone implements a powerful, DSP-based mainframe router system that can be configured for almost any installation from churches, to halls to large venues — with complete control of such tasks as mixing, EQ, dynamics processing, etc." www.wheatstone.com

Yamaha IM8 Analog Console

"Ensuring that the small to medium venue analog niche is not forgotten, the smartly priced Yamaha IM8 series consists of a high performance, full featured analog consoles available from 24 to 40 channels." www.yamaha.com/proaudio

Yorkville VTC

Elevation Series Line Array

"Quality line array designed by Tom Danley that can be configured for almost any size venue." www.yorkville.com



by Rob Tavaglione

Chandler Limited TG1 Abbey Road/EMI Series Limiter/Compressor

This recreation of the classic and rare EMI TG12413 is a sturdily built, incredibly flexible limiter/compressor with unique "rack appeal."



Ironically, our modern digital production environment has made most things retro and analog very desirable again. This trend can be easily recognized in the line of classically inspired products from American manufacturer Chandler Limited.

Case in point is the TG1, a limiter/compressor emulating the EMI TG12413 Limiter that was so abundantly used at Abbey Road Studios, built into EMI consoles and heard

on countless records by the Beatles, the Rolling Stones, Pink Floyd, and others. The original TG12413 was actually made to replicate the sound of the Fairchild 660/670, with its ability to warmly color the sound and its propensity for "pumping." It's a worthy heritage and these are lofty goals, indeed; does the Chandler TG1 really claim such hallowed ground?

| FEATURES

According to Chandler, the stereo/dual mono TG1 (\$4,080 list) "has been remade from the original design information and circuit board drawings as provided by Abbey Road and EMI to ensure extreme authenticity!" This EMI/Abbey Road Series product is built right with a solid steel, industrial chassis and nothing but top-notch components both inside and out. This includes all discrete circuitry, transformers on both input and output and a diode network for gain reduction; such diode networks create a smooth, pleasing distortion (i.e., many older Valley People products). This design was selected to emulate the prevalent Fairchild 660s and 670s of the day with transparency at conservative levels and a certain "squishy" quality at more extreme settings.

The TG1's look is classic with a pair of unique, kidney-shaped VU meters for gain reduction and colorful "chicken head" knobs on a 2U chassis. The rear panel

sports nothing but a pair of XLRs for I/O and an XLR4 jack to connect the TG1's PSU-1 power supply. Each PSU-1 can power two Chandler units (convenient should you get hooked and buy a second unit). The front panel contains the two meters, a power switch, a stereo or dual-mono selector, two THD/Limiter switches, two bypass switches, two input knobs, two stepped output knobs and two six-position release knobs.

The TG1 also offers a unique feature

FAST FACTS

APPLICATIONS:

Studio, project studio

FEATURES:

stereo/dual mono compressor/limiter; "to spec" recreation of the EMI/Abbey Road TG12413; all discrete circuitry, input and output transformers, diode network for gain reduction; XLR I/O; "THD" mode.

PRICE:

\$4,080

Contact: Chandler Limited |

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PRODUCTPOINTS



- Very flexible application as limiter or compressor
- Sturdily built with quality components
- Incredible "rack appeal" for your clients



- Sensitive operation requires skill and patience
- Price, albeit warranted

SCORE

The TG1 is flexible enough to accomplish most of all dynamic control tasks; it is expensive and worth every penny.

beyond its gain reduction "raison d'être" — a mode called THD. In this mode, signals run through all the TG1's circuitry except the threshold of the compressor/limiter, imparting anything from a subtle hi-fi sheen (à la the transformers) to a maximum of two percent distortion (reportedly double that of analog tape) by driving the input hard.

IN USE

With a hopping schedule and no time to waste, I had to jump right in with the TG1 on a critical tracking date, applying it to my stereo drum overheads (using a Sennheiser MKH 8040 pair, ORTF configuration, and Earthworks 1024 mic preamps with thick Monster cables) directly to my multitrack. This gorgeous signal path picked up ridiculous amounts of drum detail and realism, but the TG1 proved to be the "color" of the rig. I was hoping for just a little grit and saturation, so I hit the front end hard, selected the limiter and got about 9 dB of gain reduction. However, the release was pumping too much so I slowed it, but the slowest release setting reduced some of the color and excitement factor. I backed off on the input a touch and settled on a release of 4; that got me some pleasant aggressiveness without audible pumping.

I also tried a number of parallel processing tasks with the TG1 using the subgroup inserts of my Soundcraft Ghost mixer with mostly great results. A stereo subgroup of drums was subtly enhanced with the TG1 set for THD — bypassing the working parts, but gaining a little extra presence that could be helpful. Set on compression, the TG1 could simply do no wrong no matter how I set it up; whether hitting it hard with a slower release for rock 'n' roll aggression or lightly tapping the front end and allowing a faster release, this is simply a dream compressor for drums and vocals. Set up as a limiter, I had much less pleasing results, too much of that trademark pumping was easily achieved; you'd have to watch input and release to get usable limiter settings. Don't get me wrong, I found a wealth of sounds here, too, but I'm just pointing out that care is required.

Bass guitar and synths are massaged by the TG1 in ways that are so good they're almost sexual. I tried every setting the TG1 can

Already distorted guitars will prefer compressor settings over limiter ones, but either way the TG1 never got muddy like some compressors do on guitar tracks.

do with bass guitar, and I found merit with nearly all of them. Whether compressing or limiting — dirtily with fast releases or cleanly with slower ones — this box screams "bass guitar!" This much flexibility in dynamic and tonal shaping is a mixer's delight; just be prepared to tweak around for a while as you'll probably enjoy the myriad of combinations she can grant the curious.

The TG1 can do some very nice guitar things in this parallel manner as well. I found myself using it gently as a compressor with moderate release as a nice glue that held my guitars together without tearing at their delicate balance. Already distorted guitars will prefer compressor settings over limiter ones, but either way the TG1 never got muddy like some compressors do on guitar tracks.

Inserted on your mix, the keyword for the TG1 is caution. Although subtler settings are easily achieved, be careful to avoid hitting the front end too hard or allowing too quick a release. If



you are looking for some bite or edge, just watch the relationship between input and release times; their interactive nature will allow success to the patient.

SUMMARY

There's no doubt about it: the TG1 is the real deal and is flexible enough to accomplish most of all dynamic control tasks. Fact is, every studio needs one, but the list price will be a barrier for many users. The TG1 may be expensive, but it sounds expensive — much like the aforementioned Fairchild 660/670, but at a fraction of the price — whether lending your mixes subtle sheen, some aggressive rock 'n' roll grit or pumping your overheads in a way that would make Ringo long for the throne again. In the age of digital production, it's nice to have such a "retro" piece that's not virtual, not looking at obsolescence, and permanently desirable.

Rob Tavaglione is owner of Catalyst Recording in Charlotte, N.C. Please contact him with your questions or comments at rob@catalystrecording.com.

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NEW PRODUCTS

WORXAUDIO M80i Install Line Array



WorxAudio Technologies has introduced its M80i install line array. A member of WorxAudio Technologies' TrueLine Series, the M80i is a two-way, compact line-array loudspeaker system designed for a variety of sound reinforcement applications, including corporate/industrial presentation venues, performance venues and clubs, houses of worship, theaters and AV production.

The M80i incorporates a medium-format, 1-inch, exit-compression driver coupled to a stabilized proprietary FlatWave Former (wave-shaping device). Dual eight-inch cone transducers coupled to the (A.I.M.) Acoustic Intergrading Module reportedly help to provide a balanced sound with a frequency range that spans 300 Hz to 18 kHz.

PRICE: POA

CONTACT: WorxAudio | ☎ 336-275-7474 ➔ www.worxaudio.com

FUTURE SONICS Atrios Rev 2 Earphones



In response to customer feedback and based on its continuing research, Future Sonics has released the Atrios Universal Earphones revision 2 edition, featuring updated QuietCables II microphonics, reducing cabling for reportedly better audio quality, more flexibility, less tangling and more comfortable fit around the ear (or hanging from the ear), along with a redesigned cable slider for positioning cabling behind the ear.

Additionally, Future Sonics now cites a TrueTimbre frequency response of 18 Hz-20,000 Hz, further extending the low-end linearity of the original Atrios models. The Atrios uses a single-driver design, with no crossover. Several fit options are included for the user, and the drivers can be fitted to a custom ear mold for users who wish to upgrade.

PRICE: \$199

CONTACT: Future Sonics | ☎ 877-FSI-EARS ➔ www.futuresonics.com

AUDIO-TECHNICA AT2035 and AT2050 Mics



Audio-Technica has launched its AT2035 cardioid condenser microphone and AT2050 multi-pattern condenser microphone, both side address with a larger diaphragm and extended feature sets compared to their 20 Series brethren (the AT2020, AT2010, AT2041SP and AT2020 USB), at only modest increases in price.

The AT2035 is intended for a variety of miking applications, including overheads, acoustic instruments and guitar cabinets. It has a fixed cardioid polar pattern and features specifications, including a flat, extended frequency response (20-20,000 Hz); high SPL handling capability (148 dB, 158 dB with the 10 dB pad); and an element yielding low self-noise (12 dB SPL). The AT2050 is targeted for studio use and live-sound productions with vocals, piano, strings, overheads, guitar amps and more. It offers three switchable polar patterns: omni, cardioid and figure-eight. Its capsule design maintains polar pattern definition across its full frequency range (20-20,000 Hz). The AT2050 has the ability to handle high SPLs (149 dB, 159 dB with the 10 dB pad) with low self-noise (17 dB SPL).

PRICES: \$249 (AT2035), \$369 (AT2050)

CONTACT: Audio-Technica | ☎ 330-686-2600 ➔ www.audio-technica.com

JBL VERTEC VT4889ADP and VT4880ADP Line Array Elements



JBL has unveiled the JBL VERTEC VT4889ADP powered full-size line array element and the companion VT4880ADP Ultra Long Excursion powered full-size arrayable subwoofer. Both models are integrated audio systems featuring DrivePack technology. Co-developed with Harman Pro Group

sister companies Crown International and dbx Professional, the JBL DrivePack electronics modules with integral digital signal processing are purpose built to couple seamlessly with VERTEC loudspeakers.

PRICES: From \$8,999

CONTACT: JBL Professional | ☎ 818-894-8850 ➔ www.jblpro.com

For close to 20 years, Audio Analysts (Colorado Springs, Col.) has provided full audio production for Ringo Starr's All Starr tour outing. This year, the All Starr monitor rig is centered around a Yamaha PM5D digital console and 20 of the company's new T5n amplifiers. Manned by monitor engineer

Aaron Goldstein and front of house engineer Brian Bravido, the monitor rig also boasts Audio



Analysts-designed wedges, wedge cabinets, sub woofers and three-way cabinets.

"We found that the low end was tighter and the high frequency was more present and 'in your face' than any other amplifier we have tested through 'the years,'" states Mario Leccese, VP of Operations for Audio Analysts of the T5n.

Powersoft Advanced Technologies LLC — makers of the K10 live amplifier [reviewed in PAR November 2007] — has moved to new headquarters in Pompton Plains, New Jersey as part of a company expansion. As part of the new move, Powersoft will be entering into a landlord-tenant agreement with B&C Speakers, a premier brand also based in Florence, Italy. This new arrangement will alleviate language issues and create a culture that will both smooth the transition for Powersoft and optimize its effectiveness in the North American market. Their phone number is 973-248.8555.

In April, Harry Connick Jr. and His Big Band performed during the two-hour Concert for Hope that preceded the Sunday Mass led by Pope Benedict XVII at New York's Yankee Stadium in mid-April with the help of Sennheiser equipment. Indiana-based Jonas Productions, Inc., Connick's long-time production sound partner, relying on his tried and trusted Neumann and Sennheiser microphones and RF technology. In addition, Connick's usual touring set-up was supplemented with Sennheiser headphones for the entire band.

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by Strother Bullins

Cerwin-Vega!

Professional Active Series CVA-28 and CVA-118 Speakers

The new Active Series is worthy of an exclamation point!

It takes a pretty confident company to regularly use an exclamation point in its own name. For over 50 years, Cerwin-Vega! — a manufacturer of professional, hi-fi, and mobile audio gear — has generated plenty of exclamation-worthy enthusiasm through their varied product lines.

Led by company founder Gene Czerwinski, Cerwin-Vega! introduced such

pro products as the world's first solid-state amplifier and an 18-inch driver-equipped sound system producing 130 dB at 30 Hz in 1954 and 1956, respectively. The thrills continued with the manufacturing of loudspeakers and other components for companies such as Fender, Sunn, and Vox during the '60s; a 1974 Academy Award for Special Technical Achievement; and relationships with acts such as the Rolling Stones, David Bowie, and Peter Frampton throughout the '70s.

Today, Cerwin-Vega! — now part of the Stanton Group alongside KRK Systems and Stanton DJ — has squeezed its big, legendary sound into a very impressive mobile PA system. The newly unveiled Active Series features a small, powered, full-range top box — the CVA-28 — and three choices in powered subs measuring 15, 18 and 21 inches — the CVA-115, CVA-118 and CVA-121.

In this review, I tested two CVA-28 and two CVA-118 boxes in a variety of applications. And yes, what I discovered did validate typing all these exclamation points!

FEATURES

The CVA-28 is a dual, eight-inch, active, full-range speaker with a continuous power capacity/performance level of 400 watts, 800 watts peak. Frequency response is 70 Hz – 20 kHz (+/- 3 dB), maximum SPL is 128 dB (800 watts), and sensitivity is 99 dB (1w/1m). The CVA-28's top eight-inch M/LF driver offers a two-inch voice coil and a concentrically mounted 34mm HF



voice coil; the bottom eight-inch driver also has two-inch voice coil. Cabinet dimensions are conveniently small; across the front panel, the speaker is 11 inches wide, 20.5 inches tall, and 12 inches deep. The cabinet tapers to an 8.5-inch

width at its rear panel, and it weighs 48 lbs.

The CVA-28's rear panel includes balanced XLR female and quarter-inch TRS inputs; balanced XLR male and quarter-inch TRS outputs; rotary level knob; robust toggle switches for Mic/DI or Line, No Sub or Sub, and Off or Contour selection; voltage selector; power switch; and AC input and thru-put. Various colored LEDs for Signal, Protect, Limit, and Power also reside on the back panel. Above these rear components is the large heat sink for CVA-28's robust amplifier.

The CVA-118 is an 18-inch active subwoofer with a continuous power capacity/performance level of 700 watts, 1400 watts peak; its internal amp is the CVA600. Frequency response is 41 Hz – 135 Hz (+/- 3 dB), maximum SPL is 131 dB at 1200 watts, and sensitivity is 100 dB (1w/1m). Dimensions are 21 inches wide, 25 inches tall, and 23.5 inches deep; total cabinet weight is 115 lbs.

The CVA-118's rear panel includes two balanced XLR female and two quarter-inch TRS inputs; two balanced XLR male and quarter-inch TRS outputs; one male XLR and quarter-inch Link Out outputs with Master or Slave toggle; polarity reversal toggle; power switch; and AC input. Like the CVA-28, various colored LEDs for Signal, Protect, Limit, and Power also reside on the back panel.

Also on the CVA-118 rear panel is a high-

FAST FACTS

APPLICATIONS:

Live — small to mid-sized venues and outdoor settings; Install — DJs and houses-of-worship

FEATURES:

(CVA-28) three-way; dual eight-inch active full range speaker; 400 watts continuous, 800 watts peak; 70 Hz – 20 kHz (+/- 3dB) frequency response; 128dB max. SPL (800 watts); sensitivity is 99dB (1 W/1m). (CVA-118) 18-inch active subwoofer; 700 watts continuous, 1400 watts peak; 41 Hz – 135 Hz frequency response (+/- 3dB); 131 dB max SPL at 1200 watts; sensitivity is 100 dB (1W/1m).

PRICES:

\$849 and \$1,320 (CVA-28 and CVA-118, respectively)

CONTACT:

Cerwin-Vega! | ☎ 954-316-1501 |
🌐 www.cerwin-vega.com

pass filter with four settings: bypass, 65 Hz, 85 Hz, and 130 Hz. Its low pass filter is continuously sweepable from 65Hz to 130Hz via rotary control. (Additionally, the CVA-121 has a dedicated parametric EQ.) To the right of all rear controls, a large heat sink runs top to bottom of the amp's height.

Both the CVA-28 and CVA-118 seem to be built incredibly, and strikingly, well. Cosmetically, they are truly unique; there is no mistaking these speakers for any other portable PA components on the market (see for yourself in the corresponding photos).

The Active Series' thick, multi-ply hardwood cabinetry is available in black "Cool-X" polyurethane paint or carpet coverings. The review units I received were painted, and I'd definitely recommend this thick-coat, ding-repelling painted finish.

The same tour-grade aluminum handles were available on both the CVA-28 and CVA-118; the CVA-28 has one on its right side, while the CVA-118 has two on its left and right sides for fairly easy two-man transport. The CVA-28 comes with rubber feet on its bottom and left side (for wedge/side-firing use) as well as a pole mount on its bottom. The CVA-118 offers a pole mount on its top, allowing CVA-28 full range speakers (or whatever full-range tops you choose to use) to fly overhead. The CVA-28 boxes can be mounted, installed, or flown in various ways via dedicated fly points (for horizontal or vertical suspension), flyware kits, and double/triple speaker mount kits.

IN USE

First off, both the CVA-28 and CVA-118 are relatively heavy in weight. Thus, nearly every user of a CVA-28/CVA-118 component system will need help moving it. The CVA-28 is manageable, movable, and pole-mountable by one person; the CVA-118 is not. If working alone with the system, have a hand truck or dolly handy.

Despite its heft, the Active Series is worth its weight in precious metals, and it doesn't hurt that it looks like a million bucks. During this evaluation, casual observers of all pro audio stripes regularly went out of their way to comment on the visual appeal of the Active Series; "cool" was the common operative word.

Then, once the same folks heard the Active Series in action, the common operative word became "wow." The system was used at both an outdoor gig with a wide audience spread and an indoor gig at a 500-capacity rock club. Both environments seemed ideal for the attributes of the system — a need for bold, clean performance to cut through lots of open air and a loud bar crowd, respectively.

This Active Series system's impressive, full-frequency performance was immediate; together, the CVA-28 and CVA-118 behaved like someone had sculpted your house mix for an hour. Ultra-highs — cymbals, strings, vocal transients, etc. — were direct, powerful, clean, and pleasing. Midrange was smooth and solid. Its low-end — ah, the low-end of Cerwin-Vega! — was uniquely striking; it enveloped the crowd in both environments and never seemed too loud (but it was quite loud!) with a smooth thump that would punch you firmly in the chest, if warranted. The CVA-118's variable LPF and HPF settings were flexible enough for my gigs' needs, which also included between-set iPod background music that varied widely across the pop music spectrum — reggae, rock, country, and bluegrass. (Yes, summer outdoor events can offer a mixed bag of listeners — gotta keep it universally interesting). Importantly, the system offered very low inherent noise; it ran quietly as a mouse in between musical selections.

I also used the CVA-28s as full-range standalone loudspeakers for rehearsal PA, on-stage reinforcement (sidefill and wedge), and — in "little-to-no drums" applications — the full PA. I really enjoyed

using the CVA-28 pair even without their sub brothers. You can plug mic/DI-level signal into their rear XLR and a pair takes up very little space in a subcompact car trunk — great for those smaller gigs.

A couple of small design-oriented issues troubled me about the boxes; while I (and everyone else) loved their striking grilles, it's possible that something long and sharp could penetrate its rather large vertical gaps. I found myself turning them to face each other in transport to avoid this from happening. Is it possible that, in future runs, Cerwin-Vega! could discretely insert a thin "under-grille" mesh behind its great front grille? Secondly, in my opinion, any component over 100 lbs. that can be considered for use as a 'portable PA' should come with casters as a standard. The CVA-121 has four removable casters; I'd recommend that the CVA-118 have them, too.

Most importantly, the Active Series is a nearly custom-like PA system, configurable for virtually any small to medium live gig. Usefully, the Cerwin-Vega! website offers a handy Q/A guide to which, and how many, components are best suited for your unique gig. Check it out: <http://www.cerwin-vega.com/configure.php>.

SUMMARY

I can whole-heartedly recommend a Cerwin-Vega Active Series system to anyone needing a truly professional mobile PA who cannot stand to be ignored; this PA will get sufficient public attention, I guarantee you. It's compact yet hefty, smooth and discrete yet powerful, and, luckily, it's a bargain for its build quality, design, and grade of components. And yes, it's worthy of one more exclamation point!

Strother Bullins is the Contributing Editor for Pro Audio Review.



by Will James

QSC Audio Model GX5 Power Amplifier

The GX Series offers the reliable performance you can expect from QSC at a budget-friendly price.



FEATURES

QSC sent us the Model GX5 for testing. It is the big brother to the Model GX3, a slightly less powerful version of the same power amp. The GX5 has a rated power output of 500 Watts RMS output at 8 ohms, both channels driven, and 700 Watts RMS at 4 ohms, both channels driven. There is an internal crossover that allows you to employ the GX5 as a single power amp for a modest small portable system by providing a frequency division at 100 Hz; this would allow you to run two 8 ohm subs in parallel on side A, and run two passive top boxes at 8 Ohms each, in parallel, on side B. If you choose not to avail yourself of the crossover, you may disengage the switch on the rear panel, and the run the GX5 as a straight two-channel power amp.

The brushed aluminum front panel is concise and attractive. It contains two louvered sections, one on each side, for ventilation. The right side draws fresh air in with a generous fan assembly, and exhausts air on the left side. Between the vents resides an On/Off switch and the respective Left and Right volume controls. Between the rotary volume controls are L/R "signal present" green LEDs as well as L/R "clip" red LEDs and a blue "power on" LED.

The rear panel is home to the input connectors, which are XLR, TRS quarter-inch and RCA, with a set of each above for Left input and a set below for Right input. For outputs, the GX5 employs concentric NL4 and quarter-inch combo connectors, arranged as the inputs are — above and below — along with the standard binding posts found on most power amps. The rear panel also provides the IEC power connec-

GX5 — GOOD FOR THE GIGGING, PA-TOTING MUSICIAN, TOO

As Will has described, the QSC Audio GX5 is an affordable amplifier that performs well in "full professional" applications. However, it is not only a good choice for the full-time live sound professional; it is an ideal choice for the budget-restricted gigging musician who often runs his own sound, and/or lugs his own monitoring rig to clubs ... and much more. Thus, it's totally worth its "under \$500" list price.

In my own experience, the GX5 excelled from gig to gig with a very mixed bag of small/mid-sized live mains and monitors — the brand-new, high-quality JBL MRX512M wedges, a venue's older, yet good-sounding Peavey SP2 mains, down to a pair of super-cheap, beat-up Kustom wedges, just to name a trio of serendipitous GX5 pairings.

The SP2 mains were used for an outdoor amphitheater "park" show on a hot afternoon; they were driven quite hard by the GX5 for three hour-long sets in which there was nary a sound system hiccup. Both the SP2 mains and MRX512M monitors are equipped with NL4 Speakon input connectors — great for pairing with the GX5. However, I ultimately used nearly every input and output GX5 configuration while gigging with foreign wedges at small, dark clubs/bars with questionable PA options; so, thankfully, the NL4/quarter-inch combos are offered on the amp.

For the first half of this eval, the GX5 traveled in its original shipping box — I'm glad it did. It may seem to be no big deal, but the elementary "hookup examples" schematic on the back of the box was very helpful to me and especially to those assisting the load-in/load-out process (some of which also ran house sound and, in one case, tended some bar, too). As a musician who regularly travels with his instrument and some level of sound reinforcement, this schematic may be a good thing to cut, laminate, and carry as the amp is loaded into a permanent rack; in the midst of setting up your rig, it's cool to point to the GX5, its schematic, and say, "Oh, it'll be simple to set up — just look at this!"

— Strother Bullins

tion, a power reset breaker, and a handy legend containing both input and output connector configurations and output power ratings.

According to QSC, the power supply type is Class H, and the entire amp weighs in at 26 lbs. Dimensions are 19 inches wide, 10 inches deep and 3.5 inches (two rack spaces) tall. Power consumption is 6 amps/15 volts and the cable is terminated with a standard 15 Amp Edison plug.

QSC continues on page 61 ►

FAST FACTS

APPLICATIONS:

Live, concert sound, installed sound

KEY FEATURES:

two-channel; 500W RMS at 8 ohms, both channels driven; Class H power supply; built-in crossover; XLR, TRS quarter-inch, RCA Left and Right inputs; concentric NL4/quarter-inch and standard binding post outputs; 26 lbs, 2U high.

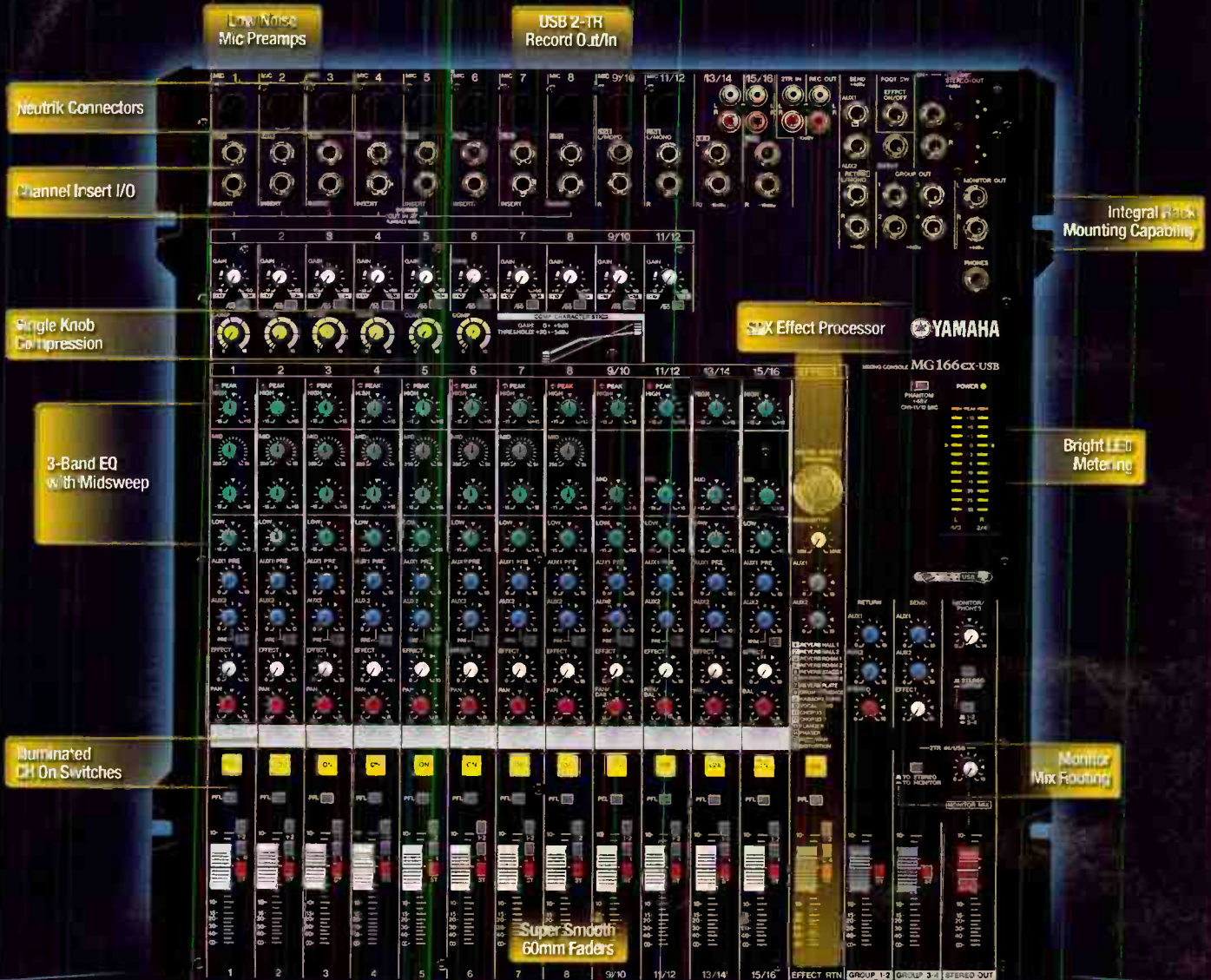
PRICE:

\$499 list

CONTACT:

QSC Audio | ☎ 800-854-4079 | ☞
www.qscaudio.com

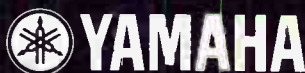
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*USB models also come with Cubase AI4 recording software

**Estimated street price



by Tom Young

A Week In The Life — Gear Essentials

Working with Tony Bennett has always afforded me the ability to work some pretty diverse types of shows and venues, usually drifting pretty far from the stan-

dard tour-bus type of routed gigs. Below is a general diary of what goes on a typical couple of weeks for me. I always make notes using my Outlook before the show with contacts and pertinent equipment to be supplied and then after the show; as years go by, I can go back and refer to them on the experience and venue.

WEEK OF JUNE 16-20, 2008

I had advanced the show scheduled on June 17 for the Cannes Lions International Advertising Festival in France since April via email and phone. It is a private show sponsored by Sony/BMG and Yahoo in a ballroom for invited guests. My production contacts were Sarah Fraser, the event planner from Eventures, and Serge Kolpa, the production manager hired for the event.

A picture was forwarded of the room that caused some issues. The room contains columns that go down both sides of the room; this limits the stage size that must be contained within the pillars (16' x 12'). My initial thoughts were the sound system would need to be more distributed to cover the entire room. I then received a list from

the sound provider of proposed equipment:

Main PA:

8 ARCS — L'Acoustics
2 SB218 — Sub Bass NEXO
4 LA24 — Amp Racks 2 x 1400 W @ 4 ohms L'Acoustics

Monitors:

6 PS15/PS10 — NEXO

Upstage Side-fills:

2 CQ1 — Meyer Sound 100°

Downstage Side-fills:

2 CQ1 — Meyer Sound 100°

Drum fills:

1 700hp — Meyer Sound

Console:

Yamaha PM5DRH

LOAD-IN

When I arrived for load-in the room, was smaller than was represented in the picture and in discussions with the technical staff from France. It was only about 120' x 60' with the columns in the picture *definitely* causing a site line problem by dividing the room into thirds. By just stacking the PA as intended with 3 x 3 wide of the Arcs (six per side) on top of the subs, it would not work. If the PA were configured like that, two of the PA speakers would be firing directly into the columns. So instead, we stacked three



Cannes Ballroom Before Setup

L'Acoustics Arcs on top of a sub in a vertical column aimed just inside of the column. For another subwoofer on the outside of the room, I positioned a Meyer CQ-1 to cover from the outside walls to the column.

An interesting side note: something I had never seen before in the US was the way the piano movers loaded in the piano. In France, they use a device made in Italy called a "Piano Plan" (see picture). It is a



Piano Plan

\$30,000 motorized movable dolly that goes up and down a truck ramp that turns and goes up and down requiring none of the usual back muscle.

SERVICE AND UNDERSTANDING

Unless you are doing a tour that falls within a certain type of traditional venue (theaters/arenas), all shows are designed and equipment-specified for what works best in the venue. This requires advancing and understanding of the physical space and musical act, which is why touring engineers are employed to provide the best service and understanding on how to communicate the act's musical interest in the required physical environment. Keeping notes after each show on my laptop is a nice way to develop a personal database of venues.

Tom Young is lead engineer for Tony Bennett.



Tony Bennett's Band Post-Setup

JBL Continued From Page 34

er cone directly into the front-baffle housing, and place heat sinks within the ports to improve cooling. In fact, EON started a revolution within the portable-sound market that resulted in a new market for us – it has become the best-selling powered speaker in pro audio history.” “Thanks to the product’s combination of power, light weight and affordability,” says Simon Jones, Director of Portable PA Marketing, “the introduction of the EON Series facilitated the migration of powered loudspeakers into the mainstream professional audio realm.”

RE-EMERGING FOR RECORDING, BROADCAST AND POST/FILM

And there is one important market segment in which JBL Professional has recently re-emerged as a market leader. While the firm addressed the needs of the recording, broadcast, and post/film industries back its infancy, and had secured high visibility for its initial offerings, there was a period when this reputation flagged. “But with recent developments in our LSR Series,” Gander counters, “JBL claims

a significant share of the studio monitor market, which is now 95% powered.” Introduced in 1998, “Linear Spatial Reference Technology put the name JBL back on top in the studio-monitor business,” Gander continues. “LSR offers smooth response, low distortion and consistent performance – a perfect combination for that challenging application.”

“LSR was a true breakthrough,” emphasizes Peter Chaikin, Director of Recording and Broadcast Marketing. “We made a conscious decision to reclaim our dominance in the powered near-field studio-monitor market. New transducers and enclosure designs ensure that these monitors give exceptional accuracy and sound neutral at the mix position. Again, we use JBL dual voice coil/Differential-Drive design for the LF drivers to provide longer excursions and to dissipate heat – which can be a major problem with smaller speakers. The exact geometry of the wave guide, the interaction of the woofer and tweeter, and the network are designed to provide an accurate lis-

JBL continues on page 61 ►

1993 - JBL develops new “rapid flare” low distortion compression driver and matching family of horns.

1995 - JBL introduces the revolutionary EON System powered loudspeaker, with multiple patented design technologies.

1995 - First-ever patented dual coil Neodymium Differential Drive Loudspeaker for pro sound reinforcement.

1996 - HLA Series with patented Space Frame array element design, multi-band waveguide and composite subwoofer enclosure introduced.

1999 - JBL is the official “Sound of Woodstock” — first in 1969, then in 1994 and again in 1999.

2000 - JBL announces VerTec™ Line Array System, which debuts at the Democratic National Convention.

2000 - JBL introduces the EVO intelligent loudspeaker system with DSP self-control.

2001 - JBL VerTec system used for Presidential Inauguration, Washington, D.C., for a crowd of 300,000 persons.

2002 - JBL VerTec system used for major special events including the Superbowl, the Grammy Awards and the World Cup Opening Ceremony (Seoul, Korea).

2002 - JBL’s John Eargle, Mark Engebretsen and Don Keele receive a Scientific/Technical Award from the Academy of Motion Picture Arts and Science honoring their development of cinema loudspeaker systems using constant-directivity horns and vented-box low frequency enclosures, first embodied in the JBL 4675.

2002 - JBL’s Bernard Werner and William Gelow receive a Technical Achievement Award for “the engineering and design of filtered line arrays and screen spreading compensation as applied to motion picture speaker systems” as employed in JBL ScreenArray cinema loudspeaker.

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Roadworthy yet refined, Community’s elegant M12 stage monitor provides exceptional performance in a stylish, low-profile package.

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CONTRACTING

The latest news and products

NEW PRODUCTS

SABINE SGM Series Phantom Gooseneck Microphones

Sabine has released a new series of microphones with built-in signal processing: Sabine Phantom Gooseneck Microphones. These microphones are designed to solve a myriad of problems that can occur with podium or gooseneck mics; most importantly, they feature an integrated infrared sensor that automatically activates the mic based on the presence of a person in front of the microphone.

The SGM line comes in two versions. The 45-Series includes all the features of Sabine's Phantom Mic Rider Pro inline mic processor: Automatic Gain Control (AGC), Plosive/Proximity Effect Control, and the Infrared Gate.

The 40-Series of SGM mics only includes the Infrared Gate. The SGM Series gate is adjustable; users can program the time to turn off the mic after a person walks away from the mic and how close to the mic a person must get before triggering the mic to turn on.

PRICES: \$269 (40 Series), \$299 (45 Series)

CONTACT: Sabine | ☎ 800-626-7394 ↻ www.sabine.com



YAMAHA MADI and EtherSound Expansion Cards



Yamaha Commercial Audio Systems has introduced new expansion cards that will enable MADI and EtherSound input and output connectivity. The MY16-MD64 card (pictured) adds 16 channels of MADI input and output connectivity to Yamaha professional audio devices accepting mini-YGDAL expansion. Users can add up to three MY16-EX expansion cards to the core MY16-MD64 card and increase the MADI channel capacity up to 64 channels.

The MY16-ES64 card adds 16 channels of bi-directional EtherSound connectivity. Users can add up to three MY16-EX expansion cards to the core MY16-ES64 card and increase the EtherSound channel capacity up to 64 channels.

The MY16-MD64 card provides failsafe redundancy with automatic switching from optical to coaxial input and outputs in case of accidental disconnection. In addition to direct connection to other Yamaha professional audio equipment, the MY16-MD64 cards and MY16-EX cards communicate seamlessly with MADI devices from other manufacturers.

PRICES: \$1,549, \$499, \$1,699 (MY16-ES64, MY16-EX, MY16-MD64, respectively)

CONTACT: Yamaha Commercial Audio | ☎ 714-522-9011 ↻ www.yamahaca.com

MACKIE Designs FRS Series Power Amps



Mackie has entered the lightweight power amplifier category with its FRS Series — the FRS-1300, FRS-1700 and the FRS-2800. FRS Series amps combine Mackie's Fast Recovery circuitry with a switching power supply for portable applications.

The series includes a 6-segment LED meter per channel, defeatable clip limiter, subsonic filter, and onboard protection circuitry (short, under-impedance, over-current and thermal). The three models feature rated output of 1,300W, 1,660W and 2,800W respectively @ 4 ohms bridged.

PRICES: \$519 (FRS-1300), \$649 (FRS-1700), \$769 (FRS-2800)

CONTACT: Mackie Designs | ☎ 425-487-4333 ↻ www.mackie.com

JBL 8100 Series In-Ceiling Loudspeakers



JBL has introduced the new 8100 Series, full-range in-ceiling loudspeakers with high sensitivity, low distortion, and smooth frequency response. The 8100 Series lineup includes two models: the 8124, a four-inch loudspeaker with extremely wide coverage and the 8128, an 8-inch loudspeaker that offers extended bass response and higher SPL output.

Both speakers feature high sensitivity for maximum system efficiency and full-range response, making them ideal for small to medium background music systems. Low-saturation transformers with taps as low as 0.75 Watts allow the use of many speakers on 70V/100V distributed loudspeaker system lines. The 8100 Series are "open-back" ceiling speakers with pre-attached dog-ears, offering an affordable solution for commercial applications that do not require backcans.

PRICES: \$34 (8124) and \$45 (8128)

CONTACT: JBL Professional | ☎ 818-894-8850 ↻ www.jblpro.com

Held at the luxurious Grand Okanagan Resort and Convention Center in Kelowna, British Columbia, the 2008 Telus World Skins Game VIP Gala dinner was hosted by sports agency powerhouse IMG for their sponsors, players, media and VIP clients of this world class golfing event. The goal of Kelowna-based production company Northwest Global



Entertainment was to create an "ultra lounge" style venue for the guests at this event. With a crew that included Steve Williams (FOH Engineer) Jose Antunes (System tech) and Matt Perry (Systems Tech), Northwest Global provided a system consisting of Martin Audio W8LM and W8LMD Mini Line Arrays with WSX subs; Martin Audio MA 4.2S and MA2.8S power amplifiers with Martin Audio DX1 Speaker Processing. A Midas Venice 320 was also used as the console.

EVI Audio Japan has installed a Midas XL8 Live Performance System, a Heritage 3000 and a Klark-Teknik Helix EQ system comprising DN9340E dual EQs, DN9344E Quad EQs, and DN9331 Rapide controllers into a new Tokyo commercial and arts complex, the JCB Hall. With a capacity of 3,100 seated around three balcony levels, the new venue—part of the Meets Port business development at Tokyo Dome City—is designed to host events ranging from circuses, musicals, concerts, fashion shows and exhibitions through to sport such as boxing, wrestling and martial arts.

The 17,500-seat Jobing.com Arena in Glendale, Arizona recently upgraded its sound reinforcement system with a major commitment to L-ACOUSTICS line arrays, subwoofers and amplifier-processors. The new system comprises a total of 72 dV-DOSC active two-way, 12 dV-SUB and 16 SB28 enclosures, with complete rigging. All of the L-ACOUSTICS cabinets are powered by a total of 19 L-ACOUSTICS LAB four-channel/1800W amplified controllers.

“The Serato Rane Series Dynamic EQ is fantastic. This is one tool I want to take with me **everywhere.**”



:: GREG NELSON, FOH: Pearl Jam and Incubus

AVAILABLE IN YOUR CHOICE OF FLAVORS - **SOFTWARE OR HARDWARE**

A screenshot of the Serato software interface, showing a compressor and dynamic EQ plugin with various sliders and graphs.	A photograph of the Rane C4 Quad Compressor hardware unit, a rack-mounted device with multiple knobs and buttons.
<p>serato™ RANE SERIES COMPRESSOR TDM Plug-In</p>	<p>RANE C4 QUAD COMPRESSOR with Dynamic EQ</p>

www.serato.com

www.rane.com

IN THE CONSOLE OR IN THE RACK

by Dan Wothke

Taming The Driving Factor — Drums

The driving factor for all Contemporary Worship is drums. Tempo, feel and dynamics are all established and maintained through the drummer. As the band weaves their musical masterpiece, drums lay the solid foundation for the mix to be built upon. As engineers, drums dictate our noise floor and minimal SPL levels from which we build our mixes. Incorporating even the simplest kit is a major challenge for SPL and, especially, sonic bleed.

This issue evaporates directly in proportion to the distance between the first row of seats and the position of the drums on stage; large houses-of-worship (HOW) setups have less of a challenge as a result. For the rest of the HOW — ranging from small to mid-size facilities — drums and their SPL levels are at the forefront of what we hear.

THE ELECTRONIC WAY

With the development of samples and the myriad of layouts, electronic drums would appear to be the natural choice for combating the high SPLs associated with acoustic drums. The price for a top-notch electronic kit immediately puts it out of the budget for most HOW.

However, the primary factor that immediately detours the electronic drumming option is the drummer. I have yet to meet a drummer who loves — or really even likes — to play a set of electronic drums. Generally, the art of drumming is lost with electronics, as a good drummer will use discrete parts of the drum for musical applications; hitting heads in different spots with varied attacks can create organic nuances that no electronic drum can accurately recreate.

It's the same thing with dynamics. Next to time, dynamics is probably the number one job of a drummer during a worship set. If the drummer is not at home behind the set, then the entire worship experience suffers: the sound, the performance and ultimately the mix.

Plus, one of the joys of mixing is microphone selection and placement to capture

the drums; this is also lost when using an electric set. So if your HOW has a drummer that loves the electronic method, can play them with conviction and the result is a good sound and performance by the entire team, consider yourself fortunate ... and in the minority.

STOP THE BLEEDING

An average drummer playing an acoustic kit at full strength can produce anywhere from upper 80 dBs to over 100 dBs of SPL while covering the entire 20 Hz to 20 kHz range. There are varying factors involved including the drummer, room size, shape, absorption co-efficiency and ceiling height, so those are "ball-park" numbers. The specific numbers for your situation can be realized with a simple SPL meter and the drummer laying down a beat while you walk around the room to check levels. The resulting number is your starting point for mixing. Throw in some electric guitars, a bunch of open mics for vocals, and a bass and pretty soon your levels are likely out of control.

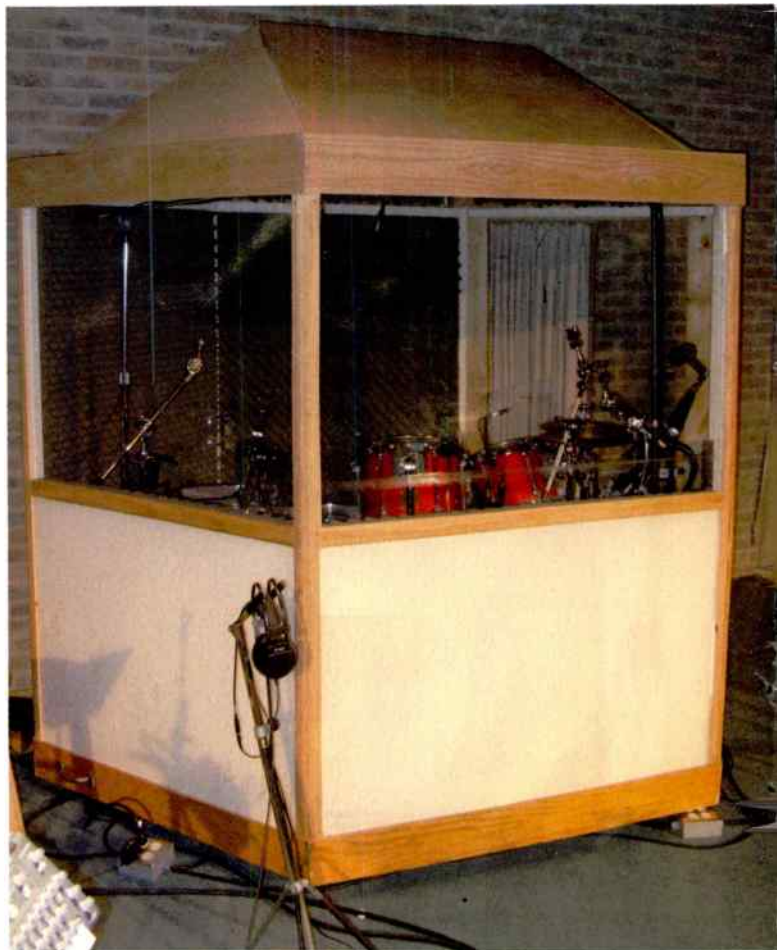
The key to getting the drums to a manageable level is isolation. Sufficient isolation will significantly lower your predetermined noise floor, reduce bleed and allow you, the engineer, to get back to mixing and away from fighting

levels (so as to not make some poor kid's ears hurt). So, the next logical step is HOW (pun intended) to isolate.

CUSTOMIZING YOUR ISOLATION

If your HOW is in an established building where you are the only tenant and you have good access to a backstage then a custom isolation booth is possibly the way to go. The tenant factor is important because a custom booth is not one that is easily disassembled from week to week. The "backstage factor" is required because, like any multi-function HOW, the stage has to be cleared from time to time to accommodate weddings, funerals, dramas, etc. (For example, see the pictured custom iso built for Belmont Church.)

The first step is to scour the congregation for a good carpenter. Once you have the necessary manpower, make a road map for what you need. Casters are great but your iso booth should not easily roll around while the drummer is playing. A six-foot, sand-filled



The Custom iso Built For Belmont Church

floor is optimal to give the drums a solid foundation to live on. A hollow floor will have its own inherent resonate frequencies

and introduce a whole new set of problems.

Next, what's a way to isolate the drums from the front, yet keep sight lines open? A clear, solid surface panel — such as from ClearSonic — or a custom frame with Plexiglas are both good options, depending on the ability of aforementioned carpenter.

Finally, the last piece of the isolation puzzle is some type of "lid." The key here is enough physical headroom to allow for overhead miking and so the drummer doesn't feel completely trapped while inside. A heavy curtain can serve as a good doorway to allow access and easily closed to reduce bleed. Rounding out the booth is some sort of acoustic foam to line the back wall and around the front of the drums and a fan to create some needed airflow. This option will

I recently worked on a stage install for exactly this type of HOW — a home for Sunday worship doubling as a wedding reception hall on Monday through Saturday — which was set up in a rectangular-shaped room (roughly 40 x 80 feet). We decided on the ClearSonic IsoPac A (pictured here) for isolation of the drums.

ISOPAC-KED

The IsoPac served two purposes. First, it was fairly easy to set up and tear down on a weekly basis. Second, the drums were isolated, which was a must to keep levels manageable for this room. ClearSonic was also the isolation of choice for a touring group where I served as their FOH engineer. We did evening concerts in churches every shape



The ClearSonic IsoPac A

The first step is to scour the congregation for a good carpenter. Once you have the necessary manpower, make a road map for what you need. Casters are great but your iso booth should not easily roll around while the drummer is playing.

serve as great isolation by providing for the look of the booth to be consistent with the rest of the stage, allowing for the choice of paint color, wood grain and style.

DRUMS ON THE MOVE

For a HOW that is on the move, the aforementioned ClearSonic (www.clearsonic.com) is a manufacturer of portable isolation enclosures specially designed for drums, amplifier stacks, and more. They have basic options with just a front Plexiglas cover — the ClearSonic Panel, or CSP — or a full enclosure including a lid and rear wall, which features their SORBER absorption panels.

and size imaginable; having the ClearSonic isolation gave us a common starting point and setup for each concert. When the night was over, the Plexiglas and foam panels fit into a padded carrying case.

Granted, not all drummers will jump for joy to be isolated from the rest of the group. They may banter with you about losing the feel of the performance, the importance for playing to the room and feeding off the other musicians. I then often draw the comparison to cutting a live record in a studio; from a sound perspective, this is really no different because we want — no — we need to have the

elements of our mix at a manageable level. Our services are not concerts, and — although I use the word, 'performance,' our services are not a performance — it is important that we play well, but not for our own sake. We worship for reasons much bigger than ourselves, which is why we must all make some sort of compromise in order to create an environment conducive to worship for everyone — from newborns to the elderly. If they continue to banter, just smile and hand them a brochure of some electric drum set that you have been researching as an option. That should get them contently back into the iso booth.

In the coming months I'll be discussing other ways to better manage stage noise. Got a suggestion or creative way you have dealt with the drum isolation? Please drop me a line at dwothke@yahoo.com.

Dan Wothke is the Media Director at Belmont Church in Nashville. He invites you to contact him at dwothke@yahoo.com.

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UPSAMPLER

Capsule Reviews and Product Review Updates

sE Instrument Reflexion Filter

sE Electronics USA | 617.623.5581 | www.seelectronics.com

When the sE Reflexion Filter (RF) came out a couple of years ago it was one of those clever devices that made everyone ask why nobody thought about that a long time ago. The more recently released Instrument Reflexion Filter (IRF, \$199 list), a mini version of the Reflexion Filter, makes you ask the same question again.

The 6.5 inch by 8 inch apparatus is light enough to be supported on a conventional microphone stand using the clamp assembly that is attached to the end of a gooseneck that in turn attaches to the back of the IRF with a thumbscrew. The IRF provides two services. First, it reduces off-axis sound such as room reflections and ambient noise by shielding the rear and the sides of the microphone. Second, it reduces the amount of instrument bleed into other mics.

The IRF uses a unique multilayer absorber material that provides the sound absorption of acoustical foam from a much more compact material. The IRF is designed with a central tube and a spring-loaded plunger to allow end-firing microphones such as a Shure SM-57 to be



set back into the IRF so that the acoustic screening can work as effectively as possible. The IRF's gooseneck is a bit flimsy for my taste and depending on the weight of the mic, I more often than not found myself keeping the included foam bung in the tube and then adjusting the IRF independently from the microphone rather than using the device to both absorb sound and hold the microphone.

I typically use the Royer SF-12 for overheads when tracking drums. The SF-12 is in essence two figure-8 ribbon microphones, 90 degrees off-axis in a single enclosure. The SF-12 is magic when you are tracking in a decent sounding room and often it works well in bad sounding rooms (the smoothness and round top-end of the ribbon often warms up an edgy, brittle sounding room) but there have been several occasions when tracking in overly harsh sounding rooms with low ceilings that the mic hasn't been usable. I found that by eliminating most of the unwanted reflections, the IRF is a lifesaver in these situations. I recently tracked in one such bad sounding room and the SF-12 along with the IRF completely changed the sound of the room, resulting in amazing sounding overheads.

I often have difficulty with phase correlation when simultaneously recording acoustic guitar and vocals, especially if the singer moves their head around quite a bit while singing. Using a single IRF mounted to the vocal mic stand to isolate the vocal mic from the guitar resulted in the best sounding acoustic guitar/vocal recording that I've ever recorded.

The IRF is an amazing bang for the buck but ultimately I'd rather spend a bit more money and have something somewhat more robust. Additionally, I'd actually love to see an IRF-mini that would be somewhat more effective on drums. Hat bleed into the snare mic and cymbal bleed into tom mics are two of the biggest hurdles in tracking drums and while I did have good results using the IRF on toms, the contraption is simply too big to work with the snare drum.

— Russ Long

STUDIO | Feature

TRENDS Continued From Page 21

Andrew Wild: The reason that Euphonix sets apart from other I/O is that it's all MADI-based and very high quality for professional applications. Our System 5 and S5 Fusion consoles have DSP cards with MADI in and out and our converters are designed for this format as part of these systems. MADI transports up to 64 channels down a single coax cable at 48k. Our I/O modules convert from analog and digital to MADI and back. You can get MADI cards for a computer so that you can actually connect our I/O to a PC or Mac that has a MADI card in it, but that's a lot of I/O going into a computer. Most people moving to DAWs don't have that much I/O.

The build quality is also important: the products are designed to go into a broadcaster's mobile truck that's bouncing around the country, or in critical film and live installations where quality and reliability are paramount. People who know our converters find that they

are very high quality and sound very good. However, they're not the sort of converters somebody in their home studio would use, mainly because they are designed for high-end applications.

PAR: How does Euphonix handle I/O interfaces for DAW?

AW: All of our consoles and controllers support the EuCon high-speed Ethernet control protocol, which can connect with Macs and PCs and control any applications that support EuCon, HUI or Mackie control protocols. Through EuCon, our consoles can control Nuendo, Cubase, Logic Pro, Pro Tools, and Apogee's Maestro over high-speed Ethernet. If somebody uses one of our control surfaces with a DAW they can choose whichever I/O they like the best. They can decide if they want Apogee, Pro Tools, PreSonus, or another manufacturer.

But we made a special effort with Apogee to allow our consoles to control Apogee converters via EuCon as their I/O interfaces are a perfect fit with our systems and are extremely high audio quality. You can control levels, mic pre controls and so on in the Apogee I/O through EuCon from our control surfaces. That lets us tightly integrate our products with Apogee I/O. That's how we handle I/O interfaces for DAWs.

PAR: What technological developments in terms of converters is Euphonix paying attention to these days?

AW: The main thing for us is not so much building our own converters. What's more important is to be able to integrate our consoles to other people's converters. We think that's the way of the future, and our clients should be able to choose from a range of converters. If we, through EuCon, can control converters from our console, it gives the client a much better solution. We're very good at making consoles and control surfaces; Apogee is very good at making I/O. So EuCon connects our consoles to digital audio workstations with high-quality converters.

QSC Continued From Page 52

IN USE

I completed a series of different applications for the GX5 in air-conditioned ballroom events. We employed it as a monitor amp for Manhattan Transfer, with side one driving a 12-inch woofer and side two powering the two-inch compression driver on our Yorkville TX2 monitors. The GX5 performed admirably as a monitor amp, providing very clean, responsive power with exceptionally clear qualities in the mid-range department. We further used the GX5 as a subwoofer amp, driving a pair of our unpowered A-Line Acoustics LS218 subs. This amp thumped along quite nicely, handling 40 Hz with ease with a nice attack on kick drum.

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JBL Continued From Page 55

tening window."

The recently added Room Mode Correction for the LSR6300 Series reduces LF anomalies at the mix position caused by room modes. "A built-in 1/10th-octave parametric EQ lets users correct problems below 100 Hz," Chaikin advises. "The RMC Calibration Kit enables users to identify problematic room modes and tune their systems."

The LSR4300 Series monitors, introduced in late-2005, provide lower-cost alternatives to the LSR6300 Series. "We use different transducers but offer similar performance parameters," Chaikin says. "While the LSR4300 Series provides excellent accuracy and output, the LSR6300 has greater maximum output capability. The LSR4300 Series also uses DSP to provide remote control of major system parameters via a USB connection and can be networked via standard CAT5 cabling – a great advantage for 5.1-channel systems."

GOOD AUDIO SCIENCE

And if there is a single aspect of the "JBL Design and Development Philosophy" that sets it apart from the immediate competition, sage observers would identify the dedication that its staff have towards the practice of good audio science. Harman International's business campus in Northridge, CA, features a calibrated playback room in which new loudspeaker designs are critically analyzed and the results are used to develop enhanced technology solutions.

"Based on a variety of carefully formulated, standardized listening tests. We use this playback room and our Multichannel Listening Lab to carefully measure the subjective and objective performance of JBL and competitive loudspeakers," says Dr. Sean Olive, Harman's Director of Acoustic Research. Through extensive and continuing research, we have discovered, for example, which parameters of spectral balance are correlated most closely to listener preference, in terms of both positive and negative assessment of sound quality. We are always working toward discovering principles that help quantify the listening-evaluation process. Such fundamental research is considered essential for improving the performance of professional loudspeaker products for use in recording studios, performing-arts centers concert venues, stadium arenas, motion-picture theaters and other applications."

Mel Lambert has been intimately involved with production and broadcast industries on both sides of the Atlantic for more years than he cares to remember. Now principal of Media&Marketing, a Los Angeles-based consulting service for the professional audio industry, he can be reached at mel.lambert@mediaandmarketing.com.

When reviewing power amps, I believe that there are a few examinations that really put a product to the test. Being an Arizona-based company, I especially enjoy heat-torture testing a power amp; call me twisted, but I like to run an amp at impossible loads in life-threatening heat (power amp life-threatening, not human life-threatening), and see if it keeps coming back for more.

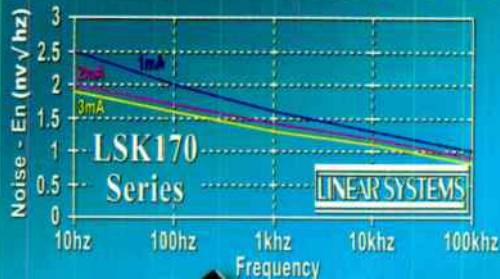
Recently, the publisher of Pro Audio Review asked me if this review was ready and I told him, "Not until I do the heat torture." On the 4th of July, we were doing full roof, stage, lighting and audio production for Ricky Skaggs in an Arizona outdoor show. Average daytime temps were around 95 (it was a mild 4th) and the amp was placed in a rack along with the older QSC PowerLights that I described earlier. We used the GX5 to drive the double 10-inch woofers in four of our unpowered A-Line line array boxes. The rack sat directly in the rays of the sun, pumping out frequencies of 80 Hz to about 800 Hz. The GX5 cruised along all day and night long — never being anything but slightly warm and never sounding anything but clean and clear.

SUMMARY

As I said, I expected great achievements from this power amp given the reputation of QSC Audio, coupled with my own prior QSC experience. I was not let down. The GX5 performed without issue. It is a stout little power amp, delivering plenty of power with plenty of speed. It is light in weight but not a lightweight in the general power amp world. The QSC Audio GX5 earns my full respect as a good quality amp that will, I believe, deliver many years of power at a most reasonable price.

Will James, owner and chief engineer of Atlantis Audio and Lighting, is a regular contributor to Pro Audio Review.

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BEHRINGER EUROPOWER EP2500

FEATURES: Two-channel, parallel or bridged mono, 1,200W per channel @ 2 ohms, 2,400W @ 4 ohms bridged; selectable limiters per channel; signal and clip LEDs; low-frequency filters (30Hz or 50Hz) balanced XLR or 1/4" TRS



inputs; Neutrik Speakon outputs.

PRICE: \$519

CONTACT: Behringer at 425-672-0816, www.behringer.com

CARVIN DCM2500

FEATURES: Two-channel; 500W per channel @ 8 ohms, 850W per channel @ 4 ohms, 1,250W per channel @ 2 ohms, 1,700W @ 8 ohms



bridged; high-transparent 50V slew rate; M/F balanced XLR inputs; 5-way binding post, Speakon, 1/4" outputs; limiter; ground lift; paralleling, bridge switches; recessed attenuators; LED indicators; soft start; advanced protection relays; variable-speed fan; 3U

PRICE: \$599

CONTACT: Carvin at 800-854-2235, www.carvin.com

CREST AUDIO CC 5200

FEATURES: Two-channel; Class H output stage; 1,200W per channel @ 8 ohms, 1,900W per channel @ 4 ohms, 2,600W per channel @ 2 ohms, 5,200W @ 4 ohms bridged mono; combination XLR and 1/4" TRS inputs. Binding posts and Speakon outputs; ACL, signal, active and temp LED indicators



PRICE: TBA

CONTACT: Crest Audio at 866-812-7378, www.crestaudio.com

CROWN Macro-Tech i Series

FEATURES: Two-channel; Class I circuitry; standard Ethernet networking and Harman Pro's HiQnet and System Architect software; (MA-5000i) 1800W per channel @ 2 ohms



(with 2565W 20mS burst), 4000W @ 8 ohms bridged; (MA-9000i) 2500W per channel @ 2 ohms (with 4570W 20mS burst), 6000W @ 8 ohms bridged; (MA-12000i) 3500W per channel @ 2 ohms (with 5900W 20mS burst), 8000W @ 8 ohms bridged.

PRICES: \$4,255, \$5,200, \$6,855 (MA-5000i, MA-9000i, MA-12000i, respectively)

CONTACT: Crown Audio at 574-294-8200, www.crownaudio.com

D.A.S. PowerPro PS-1400

FEATURES: Two-channel; 450W per channel @ 8 ohms, 700W per channel @ 4 ohms; 1,400W @ 8 ohms bridged mono; low-noise fans; low-weight toroidal transformer; ground lift; voltage sensitivity; rear switches; 2U



PRICE: \$850

CONTACT: D.A.S. Sound Products at 305-436-0521, www.dasaudio.com

DYNACORD Power H Series

FEATURES: Two-channel; (Power H 2500) 850W per channel @ 8 ohms, 1,450W per channel @ 4 ohms, 1,900W per channel @ 2 ohms; (Power H 5000) 1,500W per channel @ 8 ohms, 2,500W per channel @ 4 ohms, 3,500W per channel @ 2 ohms; 3-stage Class H; auto-switching 100V-250V, 50Hz-60Hz;



remote DSP, diagnostics via IRIS-Net; 2U **PRICE:** \$3,800, \$4,400 (Power H 2500, Power H 5000)

CONTACT: Dyncord at 800-392-3497, www.dyncord.com

ELECTRO-VOICE TG-7

FEATURES: Two-channel; 2,500W per channel @ 4 ohms, 3,500W per channel @ 2 ohms; 3 step Class H topology; microprocessor-controlled management; optional RCM26 module for remote IRIS-Net supervision



PRICE: \$4,450

CONTACT: Electro-Voice at 952-884-4051, www.electrovoice.com

FACE AUDIO F1200TS

FEATURES: Two-channel; stereo, parallel mono and bridged modes; 650W per

channel @ 8 ohms, 1,200W per channel @ 4 ohms; Class H; advanced protection circuitry; balanced XLR, 1/4" TRS inputs; Speakon, binding post outputs; power up/down muting; clip limiters; 2U

PRICE: \$1,169

CONTACT: Face Audio at 877-525-1163



FBT Kempton KA Series

FEATURES: Two-channel; 500W per channel @ 8 ohms, 840W per channel @ 4 ohms, 1,100W per channel @ 2 ohms; 1,500W @ 8 ohms bridged, 1,950W @ 4 ohms bridged; Class H; selectable 30Hz low-pass



filter; stereo, parallel, bridge switch

PRICE: \$589

CONTACT: FBT USA at 800-333-9383, www.fbtusa.com

INTER-M Q-4300

FEATURES: Two-channel; 750W per channel @ 8 ohms, 2,600W @ 8 ohms bridged mono; variable speed fans (front-to-back); XLR, 1/4" TRS inputs; Speakon, 5-way binding post outputs; on/off muting; advanced protection circuitry, 2U

PRICE: \$2,360

CONTACT: Inter-M Americas at 562-921-0313, www.inter-m.net



LAB.GRUPPEN FP10000Q

FEATURES: Four-channel; Class TD; 1,300W per channel @ 8 ohms, 2,100W per channel @ 4 ohms, 2,500W @ 2 ohms; 5,000W @ 4 ohms bridged; adjustable gain, voltage peak limiters; detented front



controls; protection indicators; network monitoring.

PRICE: \$6,945

CONTACT: Lab.gruppen/TC Electronic at 818-468-8432, www.labgruppen.com

L-ACOUSTICS LA4

FEATURES: Four-channel, two inputs; 1,000W per channel @ 4 ohms; onboard DSP with preset library; sophisticated driver protection system; Ethernet I/O ports for remote control/monitoring; LCD; 2U.



PRICE: \$5,775

CONTACT: L-Acoustics US at 805-604-0577, www.l-acoustics.com

MACKIE FRS Series

FEATURES: Two-channel; 1,300W, 1,660W and 2,800W @ 4 ohms bridged (FRS-1300, FRS-1700, FRS-2800, respectively); Fast Recovery circuitry with switching power supply; 6-segment LED meter per channel, defeatable clip limiter, subsonic filter, and onboard protection circuitry (short, under-impedance, over-current and thermal).

PRICES: \$519, \$649, \$769 (FRS-1300, FRS-1700, FRS-2800, respectively)

CONTACT: Mackie Designs at 425-487-4333, www.mackie.com



MARTIN MA Series 18K, 12K, 9.6K Digital Power Amplifiers

FEATURES: Two-channel; 20,000W @ 2 ohms bridged; Switch-Mode, PWM technology employs 95 percent input power; Power Factor Correction steady current

draw; mains voltage variation immunity; DSP via front panel LCD; RS 485 interface; optional SHARC card

PRICE: POA

CONTACT: Martin Audio at 519-747-5853, www.martin-audio.com



NADY SYSTEMS XA-1100

FEATURES: Two-channel; 300W per channel @ 8 ohms, 475W per channel @ 4 ohms, 730W per channel @ 2 ohms; 1,100W @ 4 ohms bridged; detented volume controls; balanced XLR, 1/4" TRS inputs; binding post outputs; ground lift switch; dual-speed

cooling fans; soft-start; noise-free on/off; DC offset; advanced circuitry; 2U.

PRICE: \$499

CONTACT: Nady at 510-652-2411, www.nady.com



PEAVEY Commercial Series CS 4080 HZ

FEATURES: Two-channel; 2,040W per channel @ 4 ohms, 1,250W per channel @ 8 ohms, 4,080W @ 8 ohms bridged; two



variable speed fans; speaker protection; 2U.

PRICE: \$1,599

CONTACT: Peavey at 601-483-5365, www.peavey.com

POWERSOFT K3 Digital Amplification System

FEATURES: Two-channel; 2,800W per channel @ 2 ohms; XLR inputs, Speakon outputs; Power Factor Correction (PFC); LCD matrix interactive display with load impedance, output power, mains voltage measurements per channel; digital gain control and max output power select per channel; remote control with RS 485 interface.

PRICE: \$5270, \$5800.00 (standard and K3DSP)

Contact: Powersoft at 973-785-1105, www.powersoft.it



QSC AUDIO Model GX5

FEATURES: Two-channel; 500W RMS @ 8 ohms, both channels driven; Class H power supply; built-in crossover; XLR, TRS quarter-inch, RCA Left and Right inputs; concentric NL4/quarter-inch and standard binding post outputs.

PRICE: \$499 list

CONTACT: QSC Audio at 800-854-4079, www.qscaudio.com



YAMAHA P Series II P7000S

Features: Two-channel; 3,200W @ 4 ohms bridged; lightweight; Speakon, 1/4", 5-way binding post outputs; XLR, 1/4" TRS inputs; high-efficiency EEEngine; sweepable high-, low-pass filters.

PRICE: \$969

CONTACT: Yamaha Corporation of America at 714-522-9011, www.yamaha.com



YAMAHA Tn Series

FEATURES: Two-channel; 2,300W per channel @ 4 ohms, 5,000W @ 4 ohms bridged (Tn5); 2,000W per channel @ 4 ohms, 4,400W @ 4 ohms bridged (Tn4);

1,400W per channel @ 4 ohms, 3,800W @ 4 ohms bridged (Tn3); 26dB input gain; copper-plated transformer;

EEEngine technology

PRICES: \$2,399, \$2,999, \$3,799 (T3n, T4n, T5n, respectively)

CONTACT: Yamaha Pro Audio at 714-522-9011, www.yamahaca.com



YORKVILLE AP1020

FEATURES: Two-channel; 400W per channel @ 4 or 2 ohms, 800W @ 4 or 8 ohms bridged; toroidal transformer; recessed knobs; front-panel status LEDs; balanced XLR, 1/4" TRS inputs; Speakon, binding post outputs; advanced protection circuitry; user-defeatable peak limiter; soft turn-on circuit; variable speed fans; rear-mounted ground lift, impedance switches, 2U

PRICE: \$695

CONTACT: Yorkville at 716-297-2920, www.yorkville.com



PHONIC XP1000

FEATURES: Two-channel; 400W per channel @ 4 ohms, 560W per channel @ 2 ohms; switchable input peak limiter, selectable high-pass filter (30Hz, 50Hz); Fast Recovery design; level and clip LEDs; XLR and 1/4" TRS inputs; Speakon and 5-way binding post outputs; 2U



PRICE: \$469

Contact: Phonic America at 13-890-8872, www.phonic.com

SAMSON SX3200

FEATURES: Two-channel; Class H rail-switching amplifier; 750W per channel @ 8 ohms, 1100W per channel @ 4 ohms; dual variable-speed cooling fan; Speakon and 5-way binding post outputs; XLR and 1/4" TRS inputs; 2U



PRICE: \$829

CONTACT: Samson Technologies at 631-784-2200, www.samsontech.com

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Letters

Continued From Page 7

<http://www.proaudioreview.com/pages/s.0026/t.2984.html>
The Liquid Mix will give you all of the Liquid Channel's compressors and all the EQs, but no pre-amp emulations. Plus, the Liquid Mix is very inexpensive. Maybe you should buy a nice preamp and a Liquid Mix? Ideally (for maximum flexibility), combine a Liquid Channel and Liquid Mix. Such a setup would also provide total recall — very nice if a client had you re-do a portion of a VO and consistency was required.

I hope this helps and best of luck to you. Keep on reading PAR and we'll keep the reviews coming!

Regards,
Rob Tavaglione
Contributing Reviewer, PAR

A CLARIFICATION FROM HOT HOUSE'S RICHARD ROSE

Dear John,
I was very pleased that Nelson [Pass] and

I had the opportunity to express our feelings about properly amplifying studio monitors both passively and actively in last month's "Powering Studio Monitors" feature [PAR May 2008]. We both seem to be on the same crusade. However, my heart sank when I got to the final paragraph on page 34 and discovered that a critical sentence and a half had disappeared, making what was an emphatic summary for your article into a rather disjointed statement. The omission erroneously linked separate thoughts regarding speakers and amplifiers in a confusing manner.

Thanks,
Richard Rose
Hot House Professional Audio

Here's Richard's response in its entirety:

PAR: Has the move to an overall more digital/workstation-based recording environment affected your designs?

Rose: Not at all, since we already offer something for every type of environment. Our products have always been designed around very targeted applications, each conceived for a specific purpose, and not just the same old speaker that's bigger and louder or smaller and cheaper as you go up and down the range. You'll note there's very little "family resemblance" between our various monitors, and by design, the only thing they have in common is the presentation at the mix position... regardless of what kind of music they're reproducing, how far away they may be, how loud they need to play, or how large a room they're in. And everyone's used to big amps sounding bigger (louder, fatter and too often, less refined), and small amps sounding smaller (thinner, but maybe a little cleaner). When designing along traditional lines, there are reasonable technical explanations for this. But in a perfect world, large, medium or small, an amplifier should just amplify. And there should be no difference until you run out of headroom period!

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“Fallout Shelter” | Roger Powell



SINGLE: “Fallout Shelter”

ALBUM: *Fossil Poets* (Inner Knot)

DATES: Recorded and mixed by Gary Tanin in 2006 at GT Labs in Milwaukee, WI

PRODUCER: Gary Tanin and Roger Powell

ENGINEER: Gary Tanin

MIXER: Gary Tanin

MASTERING ENGINEER: Gary Tanin

OTHER PROJECTS: Tanin worked with artists such as the Bodeans, Jerry Harrison, Daryl Stuermer, Victor DeLorenzo, XPensive Dogs, and Monovox.

STUDIO MONITORS: Yamaha NS10 and JBL SB-1 subwoofer (via 200Hz crossover) with a Sony STR-AV770 amplifier, Auratone Sound Cubes

VINYL LISTENING ROOM: Pioneer SX-828 amplifier, Micro Seiki DD-40 turntable, Audio-Technica cartridge, Klipsch Heresy and Acoustic Research AR4X monitors, TEAC PD-165 CD Player (for pre-master listening)

STUDIO WORKSTATION/CONTROLLERS: Digidesign Pro Tools|HD running on a Mac G5 with the Digi 002 Rack

SELECT PRE-AMPS: Digi 002, PreSonus BlueTube

SELECT MICROPHONE: Shure SM57

SELECT MIX PLUG-INS: Tel-Ray Variable Delay (Moog), WAVES Enigma (guitar)

SELECT MASTERING PLUG-INS: (24-bit Vinyl and 16-bit CD versions) WAVES MaxxBass, WAVES L2 Lin multiband compressor, WAVES L2 Linear EQ, WAVES L2 Ultra Maximizer; PoWr Dither Type 1 (16-bit version only)

PRODUCER'S DIARY

Strother Bullins is a music and pro audio industry writer based in North Carolina.

Roger Powell — primarily recognized as the keyboardist for Utopia, a prog-rock band led by Todd Rundgren from the mid-1970s through the mid-1980s — can once again be heard in all his creative glory on *Fossil Poets*, a synth-based, self-described “retro-future” progressive album produced with engineer/musician Gary Tanin. Also an inventor, Powell — a protégé of the legendary Bob Moog — created the ‘Powell Probe,’ the first remote handheld polyphonic synthesizer controller back in the day. So, as you can imagine, the minds behind *Fossil Poets* have much to offer in the way of fluid textures, trippy beats, and otherworldly soundscapes.

‘Fallout Shelter’ is the album’s schizophrenic guitar-heavy selection featuring the deft guitar stylings of Greg Koch. “Greg’s hands, guitar, and rig was the tone,” explains Tanin of Koch’s Fender Stratocaster tracks. “I used a SM57 on his Fender Custom Vibrolux amp and recorded his Fender Cyber Twin amp direct through a [PreSonus] BlueTube pre-amplifier.” Meanwhile, Powell laid down his tracks with a MOTM Modular (custom built) synthesizer, Moog Voyager (for lead lines), and the Korg Electribes Production Station.

For the most part, the sounds and effects of the performed tracks comprised the final mix, although Tanin notes that the Tel-Ray Variable Delay and WAVES Enigma phaser/flanger were used on Moog and guitar, respectively; the Enigma “mangled the guitar track as chorus end with a bit of medium delay,” offers Tanin.

Tanin also mastered the project, doing a discrete session per format, CD and Vinyl. Most notably, the WAVES L2 Lin multiband compressor was used to add “a few dB at high-mids and at the low end, leaving low-mids untouched.” Further, the L2 Ultra Maximizer was used at a light -3.0 threshold — “basically no limiting, just leveling,” offers Tanin.

In today’s online music marketplace, it could be argued that any song available via iTunes — like ‘Fallout Shelter’ — can be considered, by definition, a single. Thus, the music of *Fossil Poets* offers the best of both format extremes: the immediacy and convenience of a downloadable single, and the glorious analog listening experience of the LP (on limited edition blue vinyl, no less).



Roger Powell with Gary Tanin at GT Labs



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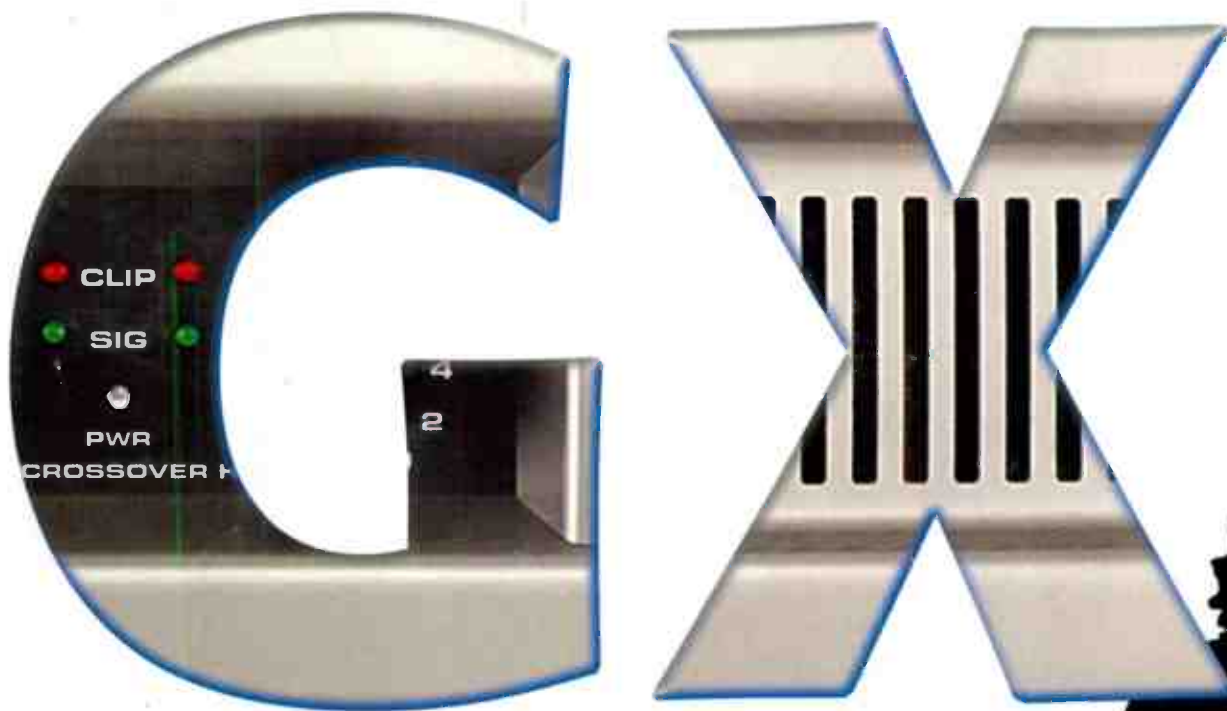
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