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*New RSS REAC gear
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*JBL LSR2328
Monitors*

*Leon Audio PPT
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Sennheiser e965

*Hall Research VHD-
180 Scan Converter*

*Prism Sound Orpheus
+ 2 new lighting books!*

CUE03 Entertainment
Training Resource

ISSN 1320-5595

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NEWS: TOO MUCH NEWS - MORE ON THE NEW AWARD, EVERYTHING FROM ISE AMSTERDAM, NEW PRODUCTS, NEW IDEAS AND NEW WAYS OF DOING THINGS. ALL THE GOOD STUFF...AND MORE!

THE NEWS MAGAZINE FOR ENTERTAINMENT TECHNICIANS AND MANAGERS

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BETA MICROPHONES

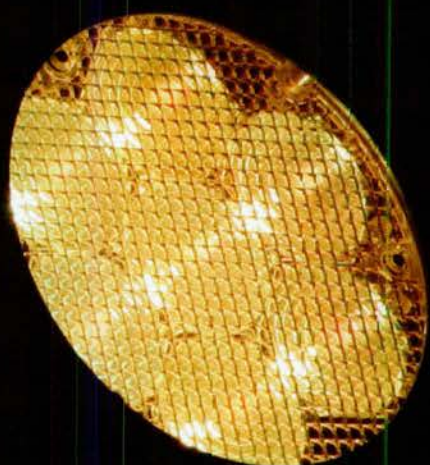
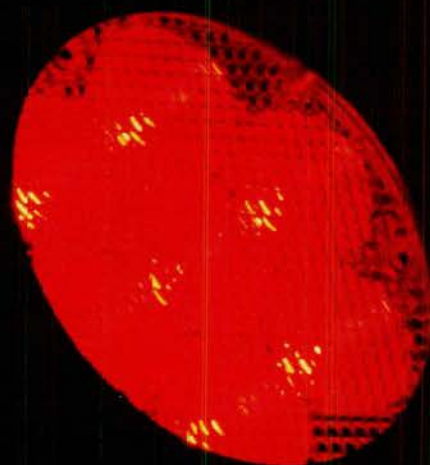
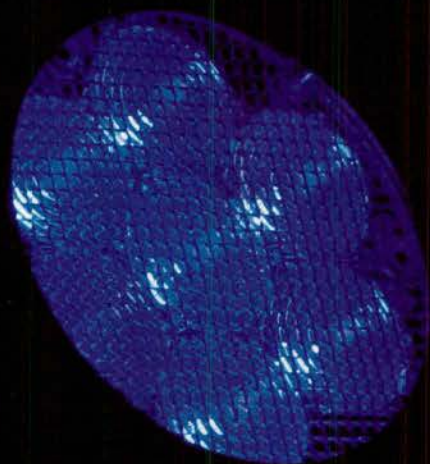
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VARI*Lite

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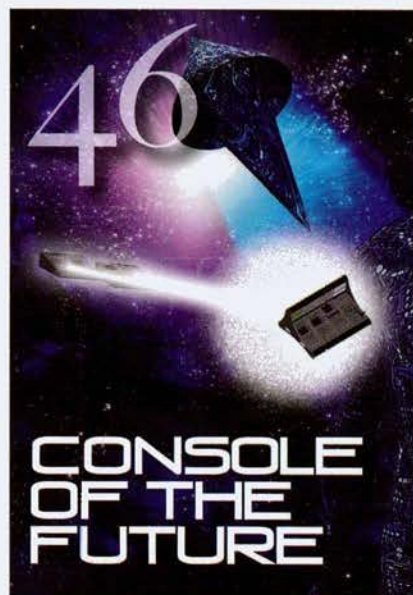
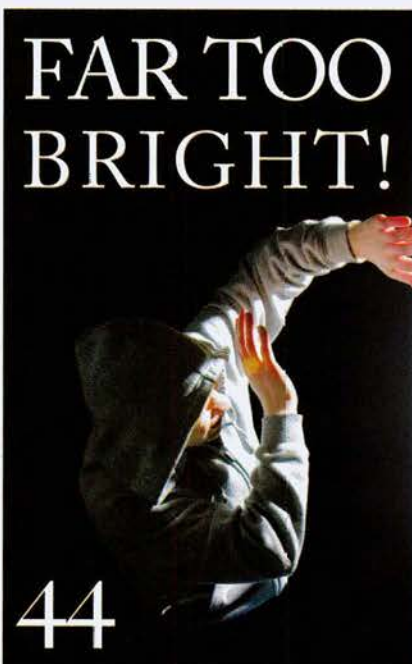
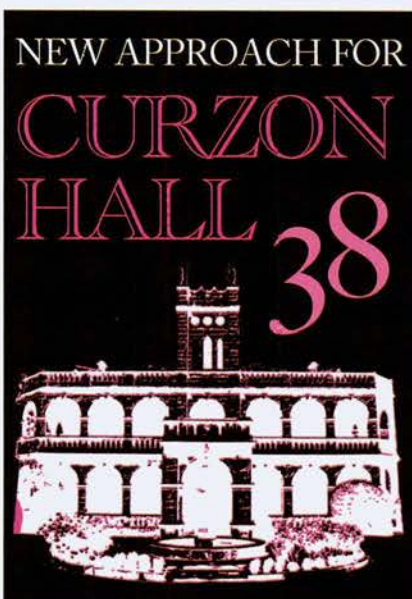
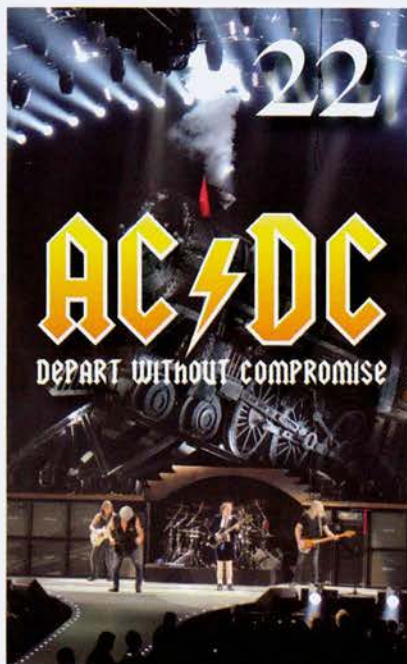
NEWS

SHOW COSTS TO ROCKET AS NEW INDUSTRIAL AWARD BITES



- 8 AV industry healthy
- 10 Touring crew shortchanged under new award
- 10 Strand and Selecon cement union
- 12 Work for free curtailed from July
- 12 ISE wrap
- 14 AV market grows as broadcast stalls
- 16 Soundcraft Vi1 – small but big
- 16 Christie MicroTiles
- 18 Vale Simon Leadley
- 19 Vale Ross ‘Bullbar’ Hunter
- 20 Two major industry events collaborate on joint positioning
- 20 ARX adds switcher
- 20 Australian XTA distribution change
- 21 Yamaha announces “LS9 School”

FEATURES



50 Mastering the Past

MEGA TEST

- 54 RSS FEAC System
- 56 Prism Sound Orpheus
- 57 Sennheiser e965
- 58 Hall Research VHD-180 Scan Converter
- 60 JBL LSR2328 Monitors + MSC1 Controller
- 62 Sony HVR-HD1000P Camera
- 64 Book review: Concert Lighting by James Moody
- 64 Book review: A Practical Guide to Stage Lighting by Steven Louis Shelley
- 65 Leon Audio PowerPoint Controller

REGULARS

- 28 Richard Cadena
- 34 History
- 36 Dr Danger!
- 53 OH&E Agony Aunt
- 66 Classifieds



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ISSN 448-2010

CX Magazine is published every six weeks by Julius Publishing Pty Ltd ACN 117 748 777

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Newsagent distributor: NDD Publishers PA: Monique Wilson Web by ThinkFirst Print by Superfine Design by Bite Communications



CUE03

Entertainment Training Resource

This magazine contains much information which is a direct resource for anyone studying from the new Entertainment Training Package, named CUE03. From 2006 we will start to map certain articles direct against the relevant Unit of Competency within the package. This makes CX magazine a very cost effective resource for schools, colleges, and universities. Note that we offer a copyright release where articles in CX Magazine may be photocopied and distributed to students within an accredited course.

EDITORIAL

AMSTERDAM

John Garfi filed reports from Integrated Systems Europe for this issue. John is the sales manager for ENTECH-INTECH, and comes from the AV world. His reports make a good read, so we have added him to the roster here at CX. He promises to file from sin city when he travels to InfoComm in Vegas soon.

GOOD TEACHER

Random words of encouragement for Suzy Brandstater, entertainment teacher at Picton High School in NSW. Although a poor rural town, students from Picton High are working everywhere in the industry, and have a great reputation with employers. Which is all because of great teaching,

BAD TEACHER

Far too many kids leave high school with a Certificate Three in Entertainment, Theatre and Events (Live Production) and cannot set up a mic stand. Or don't know what 3 phase means because the dimmer used was a Quadpack. This has reached epidemic proportions and needs to stop.

MORE GIRLS NEEDED

We have 25% girls in our technical production course, up from 10% four years ago. Amy McDonald from Norwest stars in a SkillsOne internet TV clip (skillsone.com.au and then seach musos) which is great. We all need to do more to balance things up. What do you think?

STABLE GROWS

For the first time in years we have a reliable roster of writers here at CX! No aspersions on anyone, but it is harder than you think to retain good writers who deliver on time. Thanks to all the new blood, and thanks to my colleague and editor Andy Mackenzie who keeps it together here.

DOESN'T MAKE SENSE

Interesting thought that struck me while trying to watch something on telly the other day:

Where do the networks get off starting and finishing things late? If we started a live show ten minutes late, we'd be for it!

It just seems really odd that the live industry - with all the things that go wrong around us - manage to get shows up on time, but the telly people - dealing mostly with recorded content - can't.

Go figure.

GETTING IT RIGHT

Points to the crew who looked after Buena Vista Social Club at Sydney's Enmore Theatre. I've heard a bunch of reports of this show from punters of a range of ages and backgrounds, and they all sing the same refrain - the lights weren't flashy, they just lit the band nicely. And the audio? One punter said "It was great. Nothing was too loud, but whatever I was looking at, I could hear."

GETTING THE GOOD GEAR

Having inadvertently volunteered to mix monitors for the CX 20th birthday shenanigans, I've started debating what gear I want with both Jimmy and Julius. The one big thing to come out of all this talk is that there's some seriously awesome gear available nowadays - and it's all designed to make my life easier. Suits me.

ADDED DOUG

We just got word from Doug Parkinson that he can play at the CX 20th Birthday extravaganza on Saturday August 21st. His band joins with Kere Buchanan's Back On The Block, loaded with 15 pieces of session band excellence. You can come along for free, if you are a friend or subscriber. See <http://cx.myevent.com> for more.

Julius

Andy

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CX NEWS

DEVICES, PEOPLE AND CONCEPTS

SHOW COSTS TO ROCKET AS NEW INDUSTRIAL AWARD BITES

Abnormalities for touring crew, but double time on Sunday means it will be a quiet night

CX surveyed the live production industry at presstime to confirm that new penalty rates taking effect in July will have a deep impact on show costs. With few exceptions employers have paid technical crew a relatively flat rate irrespective of time of day.

"We get paid slightly above award rates but we do not get any penalty rates at all. If we work over 12 hours or don't have a 10 hour break in between shifts they leave waiver forms next to our time sheets and we are obliged to sign them", a crew member from a major convention centre told CX. Like all others quoted in this story, their contracts forbid media contact which means we have de-identified them.

"We get no penalties for working Sundays and a very minimal percentage increase if the majority of our shift is after midnight."

Conditions vary in council owned performing arts venues. "Under the local government award, some casuals earn more than I do", an operations manager said. "And the new award will only move the goal posts a little."



But every shire and council seems to have a different approach.

"We currently have a system of working short weeks when we can but still being paid for 37.5 hrs which leaves us owing the centre hours. But if we work between 37.5 and 42 hours and we don't have hours we owe to "payback" then we don't get paid at all for those hours" reports a larger city venue worker.

"We don't get overtime unless it's on a Sunday (time and a half). We have no arrangement for extra pay if we don't get regular rostered days off, no missed meal allowance and no tool allowance".

CX has sighted a variety of contracts, workplace collective agreements and Enterprise Bargaining Agreements supplied by readers. In every case the new Live Performance Award 2010 will force changes to pay structures, as it dictates the new national minimum level of pay and conditions. Where an existing agreement exceeds any of the new Award provisions, that part of the existing agreement may stand.

Continued page 10 ▶

AV INDUSTRY HEALTHY

INFOCOMM release milestone report in Amsterdam

BY JOHN GARFI

InfoComm have been the peak industry association for the professional audio visual industry for two decades and have expanded their reach with a groundbreaking study of the global AV industry. The survey was released at the Integrated Systems Europe convention in Amsterdam.

They found the industry is worth more than the broadcast technology industry – with growth of 10% projected across the next several years.

"We had lots of anecdotal information before, but we didn't have the metrics" said international director Terry Friesenborg. "We knew that we had a big industry, but now manufacturers looking to globalise their business can go to a bank and show them the numbers."

The study values the industry at EUR66.4bn (£57.8bn or \$96bn AU) by 2012, while the broadcast technology industry was last worth EUR18.2bn – according to the International Association of Broadcast Manufacturers.

Good news for Australia and New Zealand is that the general Asia region can expect growth of 15% over the next three years, excluding Japan.

Pro AV Services such as programming, maintenance and training are the hotspot for growth across all markets, ahead of actual product sales.

Digital signage is an important, global trend; in most regions, digital signage is starting to take off. AV integrators have been making inroads in the digital signage industry and the consensus is that AV professionals are gaining share. AV integrators report their digital signage business has increased in excess of 40%.

Just as "anywhere computing" is becoming increasingly prevalent, pro-AV is heading toward "anywhere AV." End users and vendors alike are drawn

Continued page 10 ▶

PRODUCTION VALUES UP COSTS DOWN



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Continued from page 8

TOURING CREW SHORTCHANGED UNDER NEW AWARD

Meanwhile a strange provision in the new Live Performance Award 2010 abolishes all penalty rates and overtime for touring crew in return for a 17.5% loading – and appears to permit less than a ten hour break.

All other crew are paid immediate double time for the following shift if not allowed a ten hour break – but not touring crew. This provision seems to carry the imprint of Live Performance Australia, the peak industry association for venues and producers.

- **SEE ALSO:** OH&S Agony Aunt on page 53. CX

AV INDUSTRY HEALTHY

Continued from page 8



Crowds line up for Integrated Systems Europe.

increasingly to “cloud” solutions that provide greater flexibility and fewer constraints.

To obtain the report, contact: Jonathan Seller, Regional Director, Australia and

New Zealand +61.2.8206.0979.

Email australianz@infocomm.org

John Garfi is the sales manager of

ENTECH-INTECH. He attended

Integrated Systems Europe in Amsterdam. CX

STRAND AND SELECON CEMENT UNION

For decades they were the most committed rivals – two leading makers of theatre lighting equipment, one with almost a hundred years of market dominance, the other a challenger from the back waters of the Pacific.

Theatrical designers chose the safest option, and Strand Electric seemed an impossible target for Selecon who kept developing equipment and expanding markets. Then Strand lost their way in a corporate mess that started with Rank Industries and ended up with Genlyte Corporation collapsing into the arms of Royal Philips Lighting.

Then Philips breathed new life into Vari*Lite and Strand, and acquired Selecon along with Australian lighting control firm Dyalite.

Now Philips has announced the appointment of Bytecraft Entertainment as their Project Partner. They will be responsible for Strand Control project solutions and have access to all the Philips Selecon entertainment and display lighting lines. Current long-standing Philips Selecon Dealers also now have access to much of the Strand Lighting product ranges.

Jeremy Collins, GM for Philips Entertainment comments, “This reorganisation recognises the long association that Bytecraft has with our Strand Lighting business. They provide the skilled engineering support required to deliver the more advanced stage and studio systems for which Strand has had a long and successful worldwide reputation, such as the multi-million dollar Doha Convention Centre currently being installed in Qatar.

“Now, as Philips Entertainment partners, the existing Selecon network have



access to a whole new range of products with which to support their customers. As we look forward to delivering exciting new solutions under the Strand and Selecon brand through 2010 our customers will be well served by these knowledgeable and dedicated entertainment lighting professionals.”

The Vari-Lite range of moving lights continues to be distributed in Australia by Jands Pty. Limited.

To help manage this business growth, Peter McKenzie, Philips Entertainment Australia Market Manager has been scouring the country for a new team member to join him - Paul Lewis is now a technical sales specialist based in Sydney.

Peter comments, “After searching the continent Paul Lewis came to our attention via one of our valued clients and, in fact Paul was a client himself several



years ago when the Martin Place Studios for Channel 7 were established. As the lighting director on the Sunrise morning program Paul was instrumental in the fit out of this studio complex. So, after his name came up, we touched base and he decided to take on the new challenges that this position presents.”

www.seleconlight.com CX

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Gavin Tempany, FOH - Eskimo Joe

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Tony Bryan, FOH - Grinspoon and Birds Of Tokyo

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Chris Thompson, FOH - Hilltop Hoods

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Chris Braun, FOH - Blue King Brown

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was very clean and smooth. Happy to use
it again anytime.”

Brad Parker-Black, FOH - Daryl Braithwaite



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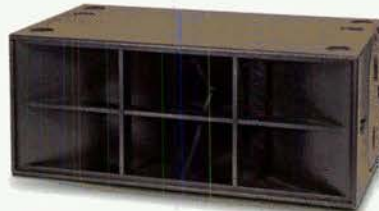
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WORK FOR FREE CURTAILED FROM JULY

Play for free also risky for venues

A Sydney production supplier contacted CX alarmed because a number of young freelance technicians claimed they worked for free for several production firms.

"I paid my own airfare to NZ and worked for two weeks on (tour name deleted)", "I volunteered every Saturday at a hire company without pay" were some of the claims on one C.V.

Most employers contacted by CX said they had not heard of the practice. "I have not heard of such practices – that doesn't mean they don't exist. For the record, AV1 pays all casual staff an hourly rate for all hours worked, with a four-hour minimum call. Any travel expenses or otherwise are reimbursed weekly", said Keith Wootton, Managing Director of AV1.

"I have to tell you I am surprised to hear of this sort of thing happening. I have no

first hand knowledge of it myself but, in our case, we struggle to find good people and all the ones we do find wouldn't consider working without being paid. Obviously if some companies are doing this it means their cost base is lower than ours and they are competing unfairly", comments Chris Kennedy, CEO of Norwest Productions.

While two Sydney based firms turned up on several C.V.'s as using unpaid 'volunteer crew', the practice has only been legally gray. But from July national minimum rates of pay mean any employer taking on interns or work experience students needs to ensure proper documentation covers them, or a claim for pay can rightly be made afterwards.

Work Experience and Internships are a valuable exchange between workplaces and students when managed properly. On the other hand CX recalls many event

management students from several colleges being obviously exploited as runners and floor staff on at least one major national annual event, yet they were covered by college insurance and apparently monitored by the college. In this case they were yelled at and treated badly with some kind of tacit agreement between the college and the producer that only the fittest would survive.

With minimum pay and conditions now detailed for all workers in entertainment and events, justifiable pay claims will inevitably follow where an informal or badly documented 'work for free' arrangement doesn't meet the expectations of the worker.

The final point was made elegantly by Paul Wheeler. "I do place work experience kids and I am careful to check their college insurance. If not and if they had a major accident I think I would be in very bad trouble while they would be screwed. Who wants that?"

CX

ISE WRAP

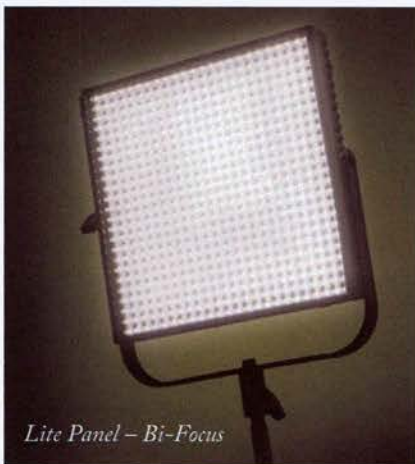
Hot Vision Devices

By John Garfi

Amsterdam was the place to be for ISE. Here are some hot new products to consider:

BAKO LED

These guys are looking for Australian distribution. Check out their range! They have 3D screens as well. Use this web address, otherwise you'll end up on the Chinese language site: www.jkled.net/en/index.asp



Lite Panel – Bi-Focus

CHRISTIE

A big name in vision, they have a new MicroTile product. It is a 'building block' screen system of 400 x 300mm 'boxes' that combine DLP and LED technology but



with NO LAMPS to replace!

The tiles also feature a shallow depth of 260mm and require just 50mm of minimal clearance for rear ventilation. Christie designed them to be serviced from the front. The tiles are "self-aware" – meaning that colour calibration needed to keep conventional "video walls" looking uniform, is automatically completed by the sensors built into the MicroTiles.

Walls of tiles are controlled by a simple unit that processes the signal from the most popular digital signage and media players.

COPY LAMPS

Do not buy these! The after market for remade, refurbished and rebranded projector lamps has exploded, which is what they often will do as well. Be very

careful replacing expensive lamps. www.whichlamps.com have useful info about what should, and should not, be inserted in your device.

LITE PANELS

These LED source TV lighting panels are finding friends in places like The Pentagon and The White House. Seemed like a good idea to me as well, and a new version does spot and flood from the one panel.

www.litepanels.com

HITACHI

Probably only useful for education but hey – that's the fastest growing AV market in the world! Hitachi have expanded their ultra short throw line with some models that can shoot an 80" image from less than 1 metre away.

CX

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Spring Awakening - Lighting Designers Kevin Adams

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AV MARKET GROWS AS BROADCAST STALLS

By John Garfi

Just a few years ago broadcast technology meant military tough gear with Pentagon prices. A name brand camera cable could cost \$1,000. Prices were equally crazy 20 years ago in professional audio, but today a mixing console costs up to 20 times less.

Now AV is starting to look like the place where broadcast vision is headed. At Integrated Systems Europe trade show in Amsterdam, digital signage and LED screens were getting fed by high def video. Even iTV displays are getting video made in HD, even if not required for the device. And personal TV will not really get going until phone screens get larger and chew less battery life. They will.

How about cameras? Until recently you had three categories. Punter, Prosumer, and bust the bank broadcast. That has all been turned on its head in the past two years. Pro broadcast featured cameras like Sony's HVR HD1000P do almost everything you need – but the guy in Amsterdam needed to give me smelling salts. It only costs around A\$2,000. Look at it! Sure the case is plastic, but wow, a Carl Zeiss lens and the picture quality is great.

I don't have the statistics but I am feeling that there are more and more semi-pro TV suites being built every day because everyone recognises quality now that we all have hi-def flat screens at home.

Out there in screen land, the rush to get prices down has left a lot of people dizzy. Barco bought Element Labs just after the trade show was over. Touch screens are getting bigger. 3D is already here, and the consumer guys are working on displays that do not need glasses.

Every nook and cranny in Amsterdam had parts of the puzzle filled in. Almost all the audio names were there, because you need to get easier control and faster editing. It seems like just yesterday we had 2 Bose 802 speakers on a stand, and that was the 'A' in audio visual. (Bose were there too! The 802 lives on!)

Control is the big deal with AV, but the real hot item at ISE was the Audio Video Bridge. I'm not technical enough to detail this, but essentially manufacturers are sweating on a new standard that synchronises audio and vision on a network called AVB. There was a lot of tech talk on this is ISE. The standard (802.1) rests with the IEEE, so look that one up.

My objective at ISE was to sell the INTECH side of ENTECH and build




Sony's HVR HD1000P came: a looks like 10 grand, costs 2.



My favorite stopover.

that side of the show since that's my day job. ENTECH had strong Infocomm ties with the 1998, 2000 and 2002 shows but it fell off when the show changed hands. But at Amsterdam I quickly saw a lot has developed and the ISE markets are populated by a lot of the people we already know at ENTECH. Plus some we didn't but now I do know them.

I was run off my feet at ISE – it is a very important trade show for AV, and could not be in a nicer town than Amsterdam. Girls on pushbikes! If you've been there, you know what I mean.

John Garfi is the sales manager of ENTECH-INTECH. He attended Integrated Systems Europe. His fare was paid by ETF. 



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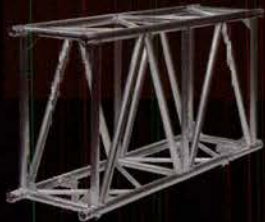
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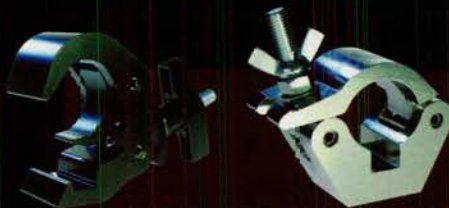
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SOUNDCRAFT VI1 – SMALL BUT BIG



What's really cool about the Vi1 is the new widescreen Vistonics interface, which will be instantly familiar to anyone who's driven a Vi6 or Vi4, as well as retaining the same 'walk-up' user-friendliness of the other Vi consoles.

This new development displays all

parameters for 16 channels side by side, on a single 22" Vistonics touch screen. The upper half of the screen handles the Output section control as well as Cue List or Menu displays. Parameter control is via two rows of 16 rotary encoders. Exactly the same channel functionality as the

Vi6 and Vi4 is available here, along with all the same core snapshot, talkback and monitoring facilities.

As standard, input to mix capacity is 46chs, but by adding a stagebox (compatible with the existing Vi racks), simultaneous channel count increases to 64. Channels are routable to 24 multifunction busses, plus LR and Mono Mix busses.

Up to 8 of the busses can be configured as Matrix mixes, each with up to 16 sources.

The surface is just over a metre wide, and includes 16 motorised channel faders with fixed and user-definable layers, 8 output/VCA faders and 2 master faders.

The Vi1 inherits many of the facilities of its larger siblings, including Soundcraft FaderGlow, 4 stereo Lexicon effects engines, BSS Audio graphic EQs on all output busses, and integral dynamics on all channels.

The desk is compatible with Vi4 and Vi6 show files through the Virtual Vi offline editor, which is available as a free download.

www.jands.com.au



CHRISTIE MICROTILES

Redux for the cube, done right with no lamps to replace

The video cube was always a superior form of projection device offering unbeatable resolution and great brightness. But you needed a lot of depth, and then there was the expensive projector lamp that would need to be replaced. LED and larger Plasma screens saw cubes fall off the radar.

But Christie, established since 1929, have rocked the AV biz with a wholly new category of product for installation displays and even road work. Their new MicroTiles are modular, digital display tiles that can be stacked and clustered like building blocks to create a digital canvas of any size, any shape and in any space.

They are unique because they use an entirely new, advanced optical design that produces unparalleled levels of brightness contrast and color reproduction. The groundbreaking LED and DLP based system is designed for long, reliable commercial use in public areas, with no lamps or other consumable parts to replace. The LED light engine, a key component of MicroTiles, is rated at 65,000 hours to half brightness usage, or nearly 7.5 years of continuous operation.

MicroTiles promise the widest possible viewing angles, and a near absence of seams on display walls, with only a 1mm gap between the tiles. They can be assembled and re-assembled into any size,



shape and space, forming a continuous digital canvas. Each tile has a screen size of 16 inches (408mm) wide x 12 inches (306mm) high, and the tiles also feature a shallow depth of only 10 inches (260mm) and require just 2 inches (50mm) of minimal clearance for rear ventilation. They weigh just 9kg.

Tiles simply lock together like building blocks and can be wired in seconds, without any manual addressing or image alignment. Best of all, built-in sensors monitor each tile's performance, allowing the system to be "self aware" - automatically adjusting brightness and color matching during setup and continuously over the lifetime of the display.

Christie's advanced optical design

creates a superior image, combining a balance of high brightness (800 nits), deep contrast and unparalleled color range (115% NTSC-1953).

To play video or data on the tiles, you simply connect a PC or other media player to the ECU using the single-link DVI connection provided. If your content exceeds the limit for DVI (i.e. approximately WUXGA at 60Hz), simply increase the number of ECUs connected to the display.

CX can see some exciting possibilities for this product.

Christie recently appointed VR Solutions as Australian distributor. Phone: +61 07 3844 9514.

www.vrs.com.au





YAMAHA

commercial audio



LS9 SCHOOL - FREE LS9 TRAINING

Join the Tour in Australia in 2010!



If you've been looking for focused, hands-on training on Yamaha's most compact and accessible live digital mixing console, the LS9, it's time to join the tour!

Yamaha's Commercial Audio trainers are visiting Adelaide, Brisbane, Canberra, Hobart, Melbourne, Perth and Sydney to conduct intensive 3-hour training seminars on the operation of Yamaha's incredibly popular LS9 digital mixer. LS9 School will provide the ideal opportunity for live sound technicians, theatre staff, concert tour operators, entertainment venue personnel, broadcasters and church technical staff to gain valuable hands-on experience on the LS9 console.

Sessions will have a maximum of two participants per console.
Entry is by approved application only.



DIGITAL MIXING CONSOLE **LS9**

About the Yamaha LS9

Available in a small-format, 16-fader, 32-channel chassis (LS9-16) or a mid-sized, 32-fader, 64-channel format (LS9-32) with an identical core interface, the LS9 is the ideal high-quality, affordable and easy-to-use dedicated live digital mixing console. In addition to generous I/O, comprehensive built-in EQ, dynamics and effects capabilities, as well as an optional digital multicore solution, the LS9 features a highly useful and exciting feature: real-time MP3 recording and playback via USB!

LS9 School will cover the following topics:

Selected Channel, I/O Patching, Layer Select, Channel Job, Virtual Rack (incl. Effects and Graphic EQ), Bus Setup, Sends On Fader, Scene Operation, User Defined Keys, USB Recording & Playback, PC Synchronisation, Offline Editing (Studio Manager), Digital Multicore (SB168-ES), and more!

For venues, dates, session times and application details, please go to:

www.yamahamusic.com.au

For further enquiries, please contact Yamaha Commercial Audio: (03) 9693 5272 | jason_allen@gmx.yamaha.com

VALE SIMON LEADLEY

Leading Australian Music & Sound Craftsman and "Computer Whisperer"

Simon Leadley was one of Australia's leading audio and music for film craftsmen. He was a founder of Trackdown Digital, now a world renowned orchestral recording facility in Sydney. Simon was a "Computer Whisperer" who had a sixth sense for how to do things smarter and break through many of the outmoded conventions in his field of expertise.

Simon Charles Anthony Leadley was born in Henley on Thames, UK on October 28, 1956. He came to Melbourne, with his parents, brother and sister as Ten Pound Poms. When he was seven his family moved to Sydney. He attended Vauluse Boys High School and then UNSW, studying electronic engineering.

He played rock guitar in a number of local bands, touring the country. It was when he set up one of Sydney's first recording/rehearsal studios in Oxford Street in 1976 that his career path began to really take shape.

This small, three man business quickly evolved into one of Sydney's premiere contemporary music rehearsal/demo studios with clients such as INXS, The Divinyls, Midnight Oil, Icehouse and Do Re Mi to name just a few.

The next step for Simon was to create Sydney's first half inch 16 track recording studio underneath Hutchings Keyboards

in Bondi Junction. This studio became the recording home of a significant proportion of the Sydney independent music fraternity. It also became one of the first studios in Australia to master their albums using digital technology.

Simon then moved his focus to film and TV audio and music. This began with a move to Camperdown where Simon introduced digital technology to Australia's largest children's animation production company, Yoram Gross Films. He started with sound and soon had almost all the studio's animation and editing processes running digitally – this helped increase Yoram Gross's production output five-fold. This time also saw Simon driving the audio production for animated versions of Blinky Bill, Flipper and Skippy.

It was 1998 when the Australian live action film industry truly recognized Simon's extraordinary skills. He was asked to set up a music for film division at Australia's leading feature film audio production house, Soundfirm, at Sydney's Fox Studios. Over the next ten years Simon was music editor for films such as Dark City, Master & Commander, Happy Feet, The Bank Job, Australia and Moulin Rouge for which he received a Hollywood technical Oscar (AKA an MPSE Award).

The pinnacle for Simon was the creation of the Trackdown Scoring Stage at Fox Studios. This room has become recognized as one of the five best orchestral recording rooms in the World. It has been a favourite home for music groups as diverse



as the Sydney Symphony, the ACO, The Whitlams, John Mayer, The Angels and many more.

Simon was also a keen snow skier, SCUBA diver, ocean swimmer and bike rider, having completed many Sydney to the Gong rides, Bondi to Bronte swims as well often being spotted on the black runs on the Australian and New Zealand slopes.

Simon Leadley passed away on February 24, 2010 from cancer. He is survived by his partner Kerry, his brother Philip, sister Sally and father Tony.



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VALE ROSS 'BULLBAR' HUNTER

Ross Martin Hunter passed away February 19, 2010.

He was the loving partner of Jennie and loving husband of Bonny. Beloved son of Voi and Stuart (deceased). Much loved brother of Todd and Marc (deceased) Hunter from Dragon.

Also brother to Brett (deceased), cherished step-father of Pixie and grandfather of Corey. He was aged 51 years.

"I was shocked to hear of Ross Hunter's sudden passing on the weekend", said Jim Blackfoot. "He was a legend among roadcrews worldwide. Best wishes to his family and friends".

Ross was an event, tour, production manager and L.D. who lived in the Blue Mountains of N.S.W. He still worked with Dragon.

"Thank you for all the love we got to share", wrote his wife Bonny. "Thank you for always being there for me, and thank you for the last incredible 30 years; good and bad. And most of all; thank you for making me your wife. Forever, you will be in my heart and soul; my guardian angel; I'll love you for always".

"He is Marc and Todd Hunter's (Dragon) younger brother", wrote Brett Fitzpatrick who is an Australian tech now living in Canada. "He was a lighting guy when I first met him but a great guy to have on your crew. His work ethic was very professional and he always had a sense of the ironic situation we quite often found ourselves in. I had worked with him a lot in the mid 90's".

Stephen Askins wrote: "R.I.P Ross. Mate, I remember all of the shows we did at Panthers & Fairfield RSL together. The sense of humour you had even on the dullest shows made the gigs so much more fun. Miss you heaps; love to all your family and my friends in Dragon".

Rik Bernards says that Ross talked specifically about the need to reaffirm to those important to you that contact mattered. "For the greater part of my time on earth I have loved and admired you, respected you, and marveled at your contribution to my general well-being. At times I've argued with you, yelled at you, been yelled at by you, laughed with you, gotten drunk with you, envied you, consulted with you, and philosophized with you".

"Through it all I'm a better person than I ever would have been had we not had the immense good fortune to meet. Thank you for the education, the food, the love and the ever present reminder that music connects us in a way that the phone never could anyway. The Vodka, Cointreau, lime and lemonade is on me".

Ross was farewelled at Balmain Leagues club, and at a service in Owharo NZ.



VERSARRAY



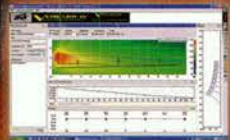
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TWO MAJOR INDUSTRY EVENTS COLLABORATE ON JOINT POSITIONING

The Australasian Media and Technology week

Organisers of the co-located SMPTE and ENTECH INTECH events have launched an exciting umbrella positioning that unites the two events to promote the best in pro audio, lighting, audio visual, Media and broadcast technologies.

SMPTE Conference and Exhibition is the premier event for suppliers to the motion picture and television industries in the South-East Asian region. SMPTE has a defined focus and visitors attend from the motion picture/film, digital media, television, radio, ICT, pre and post production industries. Attendees are also from the display and projection, video production, pro-audio, multimedia, editing, test equipment, SFX and lighting industries.

ENTECH INTECH is the longest running trade show within the stage and lighting sector in the Southern Hemisphere. ENTECH's industry audience includes those working within the professional audio, lighting, broadcast, audio visual, staging products, integration and corporate AV, supplies and services industry.

The two events remain independent and will operate separately within the industry to develop relevant content for both SMPTE and ENTECH INTECH Exhibitions and Conferences, which will run concurrently at the Sydney Conference and Exhibition Centre on July 19 - 22,



2011.

The newly developed positioning is The Australasian Media and Technology week, beginning in Sydney in July 2011. The co-located events will be a biennial showcase and gathering of industry professionals.

The positioning is designed to facilitate cross-promotion of each event in the lead up to 2011. The development of an umbrella positioning across the two brands of SMPTE and ENTECH INTECH will assist in promotion and communication with all visitors, especially those based interstate and overseas.

This collective initiative has been established by the many hard-working stakeholders eager to share in the success of the highly-anticipated event.

"We are excited that the ENTECH event will be beside us during SMPTE11. With approximately 15 per cent of the visitors attending both events, this will allow time-poor visitors to be able to see an amazing array of technologies under one roof. Having the SMPTE and ENTECH

conferences running simultaneously will also give industry professionals greater opportunities to learn and develop their careers", said Ward Hansford, SMPTE's Australia Chair.

"The combined efforts and determination of the event organisers of these events will see the dawn of a new era in trade events for the industry," said Gary Fitz-Roy, CEO of Expertise Events, the organisers of SMPTE Conference and Exhibition.

Robby Clark, Event Director for ENTECH INTECH said, "We are working with Expertise Events and the SMPTE Board to create a sustainable multi-platform event that will provide real return on investment for exhibitors and genuine attending value for visitors from Australia, New Zealand, South East Asia and beyond."

The Australasian Media and Technology Week, encompassing both SMPTE and ENTECH INTECH will host a range of technical conferences, educational workshops and seminars, as well as networking dinners and functions. CX



ARX ADDS SWITCHER

Here is the "Q Switch" – a quad channel stereo switcher that joins the AudiBox range from ARX. The Q Switch may be used in two modes, 1 : 4 for selecting Powered Loudspeakers, Sub Woofers etc, or 4:1 for selecting multiple signal sources in Broadcast, Installation, Studio applications

The Q Switch accepts balanced and unbalanced signals.

www.trc.com.au



AUSTRALIAN XTA DISTRIBUTION CHANGE

XTA Electronics have announced the appointment of CMI as their distributor for Australia.

XTA's Sales and Marketing Director Bill Woods takes up the story: "CMI have been successfully representing our sister brand MC² Audio for over a year now during which time we have seen sales grow rapidly. When the opportunity arose to discuss XTA distribution I immediately contacted CMI's CEO Peter Trojkovic to ask if he would be interested in representing both MC² Audio and XTA Electronics. I am delighted that he immediately agreed."

"From our perspective appointing CMI as the MC² distributor makes complete sense as more and more XTA and MC² products are developed firmly aimed at the system integrator and that are empowered by our iCORE

software. Already a client will be able to monitor and control racks of MC² Ti Series amplifiers in an installation, programme and fine tune settings on an XTA DC1048 controller and monitor gains on the outputs of an XTA NXBoB Dante breakout box – all within our iCORE software. As the year progresses more products from both manufacturers will appear within iCORE making the integration of MC² and XTA products even easier."

CMI CEO Peter Trojkovic continues: "We started working with Bill and the guys at MC² just over a year ago and we have been delighted with the products but also the business ethics they maintain – which very much reflect our own. The addition of XTA to our portfolio is another great step for our company especially in our installation market. We are confident that with the imminent arrival of the DC1048 from XTA and the Ti Series from MC² we will have an even more compelling story to tell".

www.cmi.com.au



YAMAHA ANNOUNCES "LS9 SCHOOL"



Yamaha Tour in 2010 with Free LS9 Console Training

Yamaha Commercial Audio is pleased to announce LS9 School, an Australia-wide

training tour with in-depth seminars focusing on the features and operation of Yamaha's popular live digital mixer, the LS9.

Yamaha's Commercial Audio trainers

will be visiting Adelaide, Brisbane, Canberra, Hobart, Melbourne, Perth and Sydney to conduct the free hands-on training sessions on the LS9 - Yamaha's most compact digital mixing console for live applications. Sessions will be 3 hours in duration and will be repeated at 10am, 2pm and 6pm on the day of training.

With a maximum of two participants per console, attendees will have ample opportunity to mix multitrack and become familiar with the operation of the LS9.

After a successful 2009 in which Yamaha conducted intensive LS9 School seminars in Brisbane, Sydney and Melbourne for new and existing LS9 users, Yamaha is looking forward to expanding its reach in 2010 to participants in even more cities Australia-wide.

LS9 School will provide the ideal opportunity for live sound technicians, theatre staff, concert tour operators, entertainment venue personnel, broadcasters, church technical staff and live audio enthusiasts to gain valuable hands-on experience on Yamaha's ever-popular LS9 digital mixing console.

Entry is by approved application only. For venues, dates and application details, please visit:

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AC/DC

DEPART WITHOUT COMPROMISE

© Photo by Mark Fisher @ Staffish

In 2001 CX called them the loudest band in the world. The Black Ice world tour will see them sit unchallenged as a stadium spectacular. AC/DC didn't compromise when they cut their teeth in Australia in the 70's. Nothing has changed except mind-bending success.

By JULIUS GRAFTON

The only trajectory for this rock band had been up – more sales, more audience, and more production values. Which is why they toured with a vintage mixing console at FOH.

Behind the band are the Young brothers, who have a control ring around them that most celebrities can envy. It lets them do as they like, which happens to be to give their fans value. This comes as a two hour show with almost every hard rock theatrical element.

Fire. Pyro. Confetti. Smoke. Lifts. Props. Inflatables – check, Rosie is looking pretty good after 30 years

backstage. Marshalls – 20 quads on stage. Ramps. And unbelievable volume. Which presents a problem.

The show starts when the stadium lights get killed – hard to synchronise, so one side goes off and the other follows 15 seconds later. Cue the video – three LED screens, one each side and one in stage centre blast an animated locomotive clip. The audio thunders with chugging and squealing of steel brakes on tracks. Girl engine drivers and a devil-like Angus flash as the centre screen splits and the locomotive prop crashes into position.

Rock and Roll Train thunders out, our seats are 300m back and it reads 101 dB(A). The sound is OK, considering the stage level. Sound engineer Paul



Andy Walker and Paul Swanee.



Paul and system engineer Chris Nichols

Boothroyd is on his second world tour with the band, last here in 2001.

IS THIS THE END?

Singer Brian Johnson is an old guy, even by CX standards. He doesn't need to work, his book *Rock and Rollers* outlines the impossibly cool car collection he has stabled in Florida.

The Young brothers who started it all in 1973 are enjoying the trappings of their wealth and work. Angus lives in Holland and Malcolm in the USA, with a house at Balmain he visits every Christmas. Bass and drums – anyone close to AC/DC lives very well indeed.

You can't get AC/DC on iTunes. They sell albums. They don't do media unless

it is considered and controlled. And until now they've toured when it suits them.

This tour is costly for the band since they need a day off after each show. This pushes up venue and site costs, and the crew love it. Work, off. Work, off.

Another thing about AC/DC is that they don't telegraph their punches. So whatever I write here, it's just an educated guess.

WHY THE CLASSIC P.A.?

The E.V. X-Array point source, point-and-shoot P.A. was designed in the 1990's. They used it last tour. "It worked really well, and it's still available. The band wanted a PA that looked like a PA.



CRANKING UP THE MONSTER P.A.

The audio day starts at 2pm or earlier if it is a setup day. System engineer Chris Nichols and his two crew walk the arap racks, individually winding up every amp. Then he runs low level pink noise for 20 minutes, to warm everything up and dry out any moisture.

Low tone bursts follow, and a full line check is done before the stage is given over to the stage monitor dept. They in turn have a lot of wedges, flown side fill, floor mounted side fill, and drum fill. This is the most stage monitor intense show I've ever seen.

The drummer wears in-ears, singer Brian Johnson wears one ear in. Other than that, the whole band rely on loud wedges and fills.

All work must be done before doors at 5.30pm. The band never sound check.

So here it is", says Paul Boothroyd.

Paul is a gentleman, and he won Sound Engineer of the Year award at the TPI Awards in London in the last year. He also works with Paul McCartney, a troubadour of some repute. In fact, the current AC/DC tour of the planet dovetails with Paul Mac dates. So Pab, as he is nicknamed, is working very hard. As hard as someone who has a day off after each show can work.

It is almost strange to not see a line array in pride of place. But the X-Array is snuggled next to an i-4 line array with i-4 bass array that does the sides. And under is a staggering lump of subwoofers which are flown.

"They can't be on the deck. It would cause too much distraction for the band". The subs are neither Clair Brother's i-4

AC/DC = EXCESSIVE SPL AND NO DUTY OF CARE

CX has formed the view that the Black Ice tour, possibly the most successful rock tour ever, in terms of revenues, is run on a flawed premise. Any other show with a wall of Marshall amplifiers – and there are plenty of them – will never use them all. They are there for show.

AC/DC's Young brothers are famous for never, ever compromising anything. They use every stage amp, turned up loud.

This is out of step with modern reality.

Although my boys (Harrison, 8, and Jackson, 13) had ear plugs that knocked levels back 20 dB, I wonder how many others did. There was no note on the tickets, or at the venues about noise levels. Ear protection was not available, or on sale at the venue. Our seats averaged 102dB(A) meaning we were over exposed after 12 minutes, or 3 songs. We were at the back: SPL nearer the stage may have reached 120dB(A).

The 'wall of guitar sound', absurdly admirable last century and a major feat of physics, screws up the overall sound in the venue, makes it hard to get enough vocal, and is just too much. 'Rock and roll ain't noise pollution' was an AC/DC song.

I'm not talking about noise annoyance for neighbours several kilometres from an AC/DC venue.

I'm talking about hurting the people who pay the band to play.

Julius



The Midas Pro 40 console.

nor E.V. X-Array DNA. They are EAW SB-1000, a sub that CX has experienced often and a sub that delivers absolutely tight low end. AC/DC have 36 each side, in cradles. This is low end that would blow more than candles out.

So the eclectic mish-mash of PA, some E.V., some JBL (the Clair Brothers i-4 is JBL loaded) and some EAW is a first. Before now sound designers have preferred that all speaker elements be of the same voicing.

But things go seriously retro at FOH.

MEET THE PRO 40

Pab has found and unearthed a Midas Pro 40 console, the pro mixing desk he cut his teeth on in the 1980's. It has virtually been rebuilt, and is on its best behaviour. But of course any old console comes with quirks.

"There was something going on", he says of early production rehearsals. "If I adjusted input gain on the Pro, it could be heard on the (Midas) Heritage 4000 monitor console. This flocked the technicians, who did not agree about why.

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This is the engine room driving Angus' rig.

"We were going on the open road across the world, so what if?" Pab said. A solution emerged when some techies decided the issue was an impedance imbalance between the Fro 40 and the Heritage 4000. Despite the fact that they were both transformer isolated.

A Midas XL8 input rack was inserted between the stage microphones and inputs and the console train. Inputs went in to the XL8, then out again, now electronically isolated, to each console via copper analogue multicables.

Out at FOH, the 36 channel Fro 40 is a happy camper. Nicknamed the Vellcette, after a classic English motorcycle, it does the job in style. Briefly it has four auxiliary sends per channel, with another four fitted above the channel strip (XL4 style) where the meter bridge has been remodelled.

There are 12 sub groups, some matrix modules and – that's it!

Channels feature sweep EQ and some have a retro fitted Parametric EQ where the channel sweep has a dual concentric

pot with the Q control underneath. Our pictures show the difference between normal and optional Pro 40 modules. For good measure there are a couple of Pro 20 modules with bugger all EQ on board.

MIDI, PLAYBACK, AND SAMPLES

None to be known. The band play rock. There are two Marshall zones, one for Malcolm and one for Angus, with an Ampeg bass rig in between.

The 'Hell's bell' is sampled, since it can't deliver SPL like the band require. That's it, aside from the cannons which blow Maroons (percussive pyro) for the last song, 'For Those About To Rock'.

At the mic line Angus' guitar registers 120dB(A). At the end of the very long catwalk I measured 104dB(A) courtesy of the guitar tech, who may not have had the amplifier farm turned all the way up. This is before the P.A. is turned on.

It is so loud that the mix tent has ended up hard left (stage right) away from the throw line of the lead guitarist's Marshalls. "It got too loud in the tent, so we moved it", says Pab.

Add on Malcolm Young's equally equipped rhythm guitar rig, with bass, and you have a stage level that is unprecedented in Australian rock history. The late and great Billy Thorpe was loud, but he never had the scope these guys have.

For Pab this means being a passenger.

LOUD – THE WORD

Vocal channels are muted and unmated. Pab is a human noise gate. "Every word on Brian's mic I push his fader up and

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The delay towers are also home to the followspots.



Dickie the drum tech fronts a terrifying foldback system.



The vintage analogue theme carries on into the outboard racks.

then back”, he says. He is on/off/on all night. Then there is the fader riding, to ‘push’ each vocal part. This is how you overcome massive volume off stage.

Out away from the stage is more P.A. Two main delay towers are loaded with 12 i-4 line arrays and four followspots. Two more ‘gay delay’ towers have six line arrays on each. These do the rear seats – the ones I sat in, with my family, where it averaged 101 dB(A), about 300 metres back.

At that level we had 12 minutes safe exposure time before the standard was broken. Jack and Harry had 20dB silicon ear plugs, so they were safe. Karen and I relived our inner Bogan and went bare. We had tinnitus to spare for a day after.

Pab is the sound guy from central casting when it comes to all this. “How

LIGHTS THERE WERE FOR DAYS – we really noticed. The video was on the money. Every tech dept worked hard and produced a great show. Did you know they have industrial air conditioners backstage with big, 1m diameter ducts to each side so the band can try to stay alive? It all came on a boat from overseas, including the generators. Massive rock, not dirt cheap.

loud is it, in the tent?” I ask. “No idea”, he says.

“What problems have you had around the world?”

“None!”

He let slip that Brisbane (forthcoming) presented problems, but then clammed up.

“We work with locals. We have a lot of control over the P.A. In the first song we have spotters out there in the venue, they report back to Chris (system engineer) what we need. We don’t claim to be the loudest. The sound needs to be big and punchy, not offensive. We have coverage, and we have control.”

No one wants to talk about the noise outside the venue.

Sydney acoustic consultant Scott Willsallen was working on sound in the upper seats at Sydney’s Olympic (ANZ) Stadium. The touring crew had optioned in a pair of Jands line arrays for each side, to serve those seats beyond the reach of the touring PA. These were the responsibility of Scott.

“Someone is monitoring outside, I have no idea who”, he said. “I have no idea what the limits are outside”, he told CX.

THE SHOW

Support band Wolfmother shriek and scream, but with no video screens they are only playing to the first 20,000 people. Most of the rest queue for a long time to get more beer or buy T shirts. It seems like every second person has little light up devil horns (\$20).

AC/DC do all the old stuff except ‘Long Way To The Top’, which is the signature song of the late and great Bon Scott, who played bagpipes on the track.

‘The Jack’ features a request from the singer for those with them to show them, many comply but only females with bare breasts make it onto the screens. ‘Let There be Rock’ has a long and spellbinding guitar solo.

‘For those about to rock’ has the cannons, and then it is all over.

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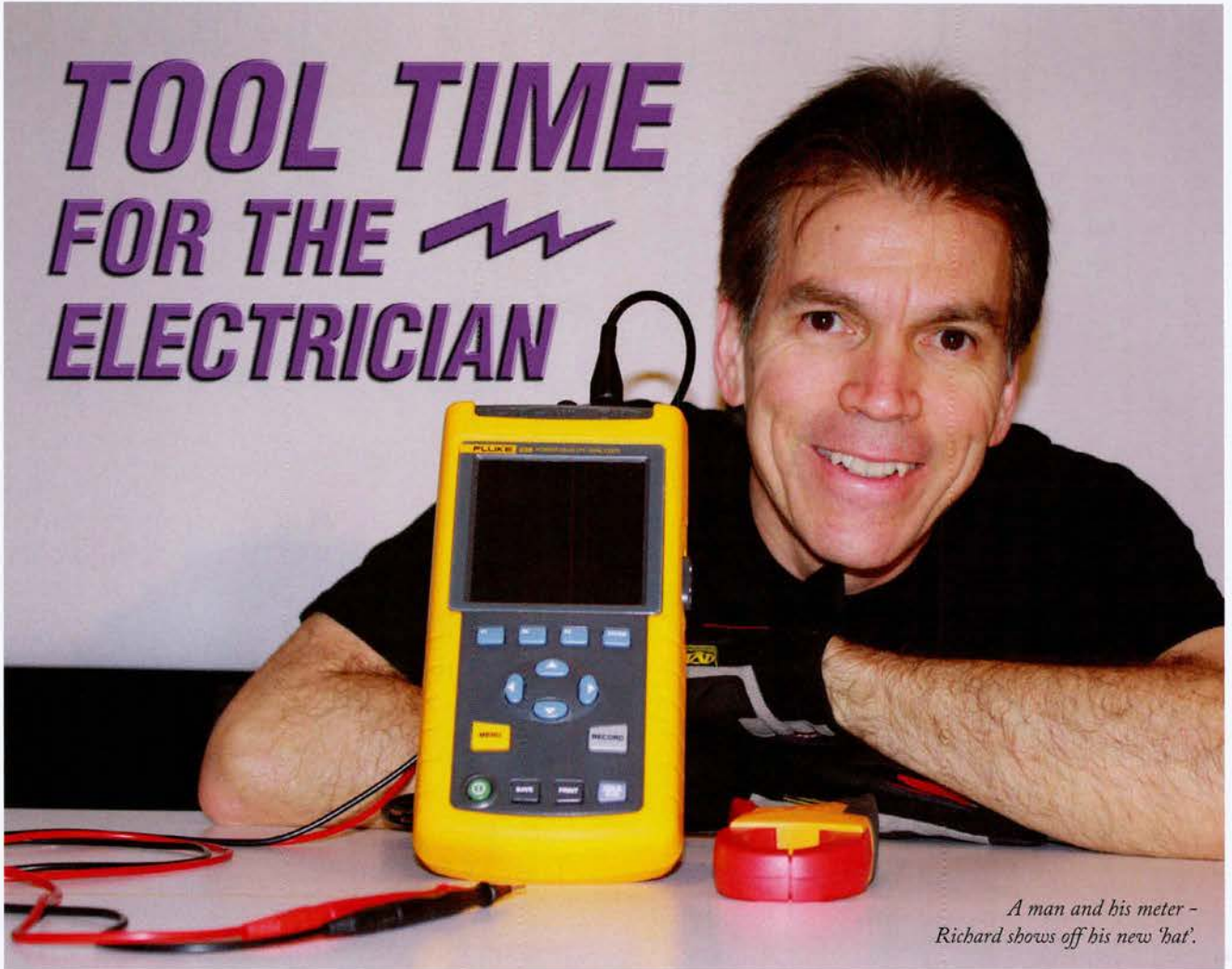
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TOOL TIME FOR THE ⚡ ELECTRICIAN



*A man and his meter -
Richard shows off his new 'hat'.*

By RICHARD CADENA

"I began wearing hats as a young lawyer because it helped me to establish my professional identity. Before that, whenever I was at a meeting, someone would ask me to get coffee."

- Bella Abzug

Yesterday I went to a meeting carrying a Fluke 43B power quality analyzer. I had just bought the instrument and it was the first time I had the opportunity to use it. I was asked to evaluate the wiring of a portable power distribution system and I brought it along because I wanted to be prepared for anything. It turns out I wasn't prepared at all for the greeting I received.

"Anyone who carries around a power quality analyzer is definitely a friend of mine," the tech said.

It was an unintended but welcome consequence of spending a couple of thousand dollars on a very good tool. It was my "professional hat" of sorts, implying that I might know what I was doing. At the very least, no one was going

to ask me to fetch coffee. Whether or not I know what I'm doing is debatable but what's not debatable is that I have learned a lot about power quality since I bought the instrument and read the user manual and application guide.

The power quality analyzer looks much like an ordinary multimeter, perhaps a bit larger, and it has a 3"x3" LCD display. It's actually a combination of a dual trace oscilloscope and multimeter. With it, you can measure voltage, current, resistance, capacitance, and more. So what makes it unique? Glad you asked.

The unique thing about this instrument is that it not only measures voltage and current, but it also measures power factor, harmonic content, K-factor, and more in a power system. With the LCD screen you can actually see the waveforms and all of the accompanying distortions.

Power factor is a very important concept in power distribution. It affects the amount of current drawn by a load, which determines how you size your power distro. To understand how it works, look at the illustration of the power triangle on this page. The wattage of a particular load is shown by the green

arrow at the bottom of the triangle. The length of the arrow tells you the relative number of watts. That's known as real power.

Some loads have inductance or capacitance as well as resistance. For example, a motor, like a chain motor, has internal windings that act like inductors. Those inductors store some of the electrical energy in the form of a magnetic field. At some point the magnetic energy is returned to the source (minus the losses due to the resistance of the copper, which contributes to the inefficiency of the system). So when the current flows to a motor, it draws more current than it actually uses in order to energize the magnetic field.

The red arrow at the right of the triangle represents the amount of energy that is stored in an inductive or capacitive load. All of that energy will eventually be returned to the source (again, minus the losses due to inefficiency). That's called the reactive power or the volts-amps reactive (VAR).

The blue arrow represents the product of the voltage and the amps drawn by the load. Since the load draws more current

than it actually uses (due to the reactance, which is another word for the inductive or capacitive part of the load), you can see that the volt-amps (or VA) is greater than the wattage of the load. The VA is known as the apparent power because it's the amount of power flowing to the load, even though the load is not using all of it.

Now look at the angle between the watts and the volt-amps. That's the phase angle between the voltage and current in the system. The current waveform lags behind the voltage in an inductor and the voltage waveform lags behind the current waveform in a capacitor. The amount of lag or lead is called the phase angle. If the phase angle is big that means that the reactive power is also big because there is a lot of inductance or capacitance in the load. That causes a lot of energy to be stored in the load and the amount of real power being used by the load compared to the apparent power is small. If the phase angle is small that means that the reactive power is also small because there is not a lot of inductance or capacitance in the load. That also means there is little energy being stored in the load and the amount of real power being used by the load compared to the apparent power is about the same.

If you know a little bit about the

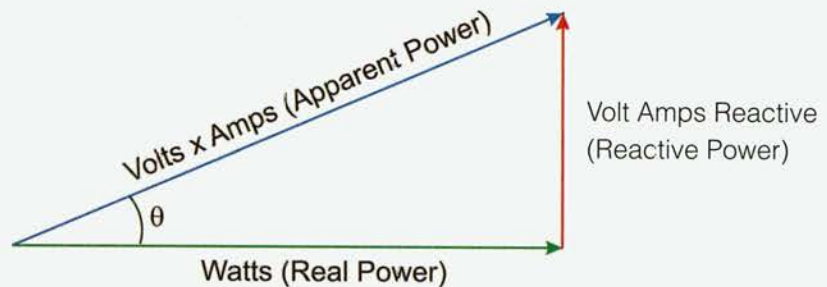
relationship between the sides and the angles of a right triangle (Warning: If you're squeamish about math, skip the last part of this sentence because another word for "the relationship between the sides and the angles of a right triangle" is "trigonometry.") then you know that the cosine of the phase angle θ is the ratio of the real power to the apparent power, which is also known as the power factor.

Think about that. If the phase angle is 0° , then the real power and the apparent power are the same, and the power factor is 1. As the phase angle approaches 90° , the power factor approaches 0, meaning that the real power is also 0 watts. The ideal situation is when the system power factor is 1 because that means the system is drawing only enough current for the

real power and there is no "extra" current being drawn due to the reactive power.

Up until recently, I thought the only way to measure the power factor was to use a dual trace oscilloscope and compare the voltage waveform to the current waveform. And since most field techs I know don't carry an oscilloscope around with them it was not practical to measure the power factor. It used to be that when people asked me about how to measure the power factor in an electrical system I would show them pictures from my dive vacation in Mexico and then sneak out the back door. Now I just show them my Fluke 43B.

What's your reactance? Let the author know by emailing readena@austin.rr.com. 



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WOMAD 2010



Dub Colossus in action.

The first Adelaide WOMAD was in 1992 and it was held every two years until 2002 when it became an annual event. Since then, WOMAD has grown consistently and it is now one of the world's premier music festivals.

By **STEPHEN DEAN**

In the past, this event has been held over 3 days. This is the first year that the event has been spread over 4 days, and this is due to the popularity of the event growing over the last few years and also to coincide with the 50th anniversary of the Adelaide Festival. The event is staged over multiple stages spread around Botanic Park to take effect of the landscape. This year WOMAD is using 7 stages spread out through the garden. 3 of the stages share the same backstage area.

As you can imagine the logistics of organizing such an event is quite a work load. But from what I observed it was

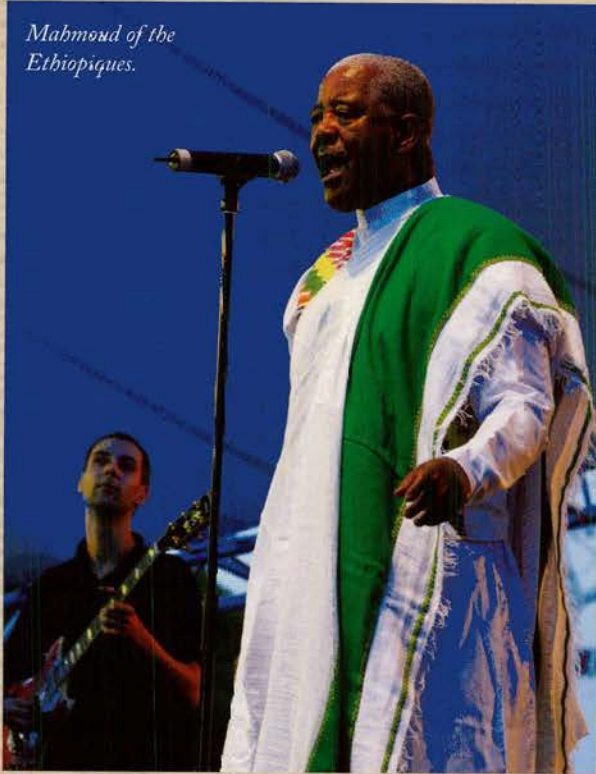
ably handled by the production team. Adelaide is very blessed to have such an amazing event and it has always been well supported by the South Australian community.

There are 3 companies supplying the audio and lighting this year for the event, they are Novatech, AJS Lighting Sound Events and CODA Audio Services. Novatech have grown from a small family business to a very major player in Australia. They were the preferred lighting supplier. AJS is also one of the major PA companies in Adelaide; these guys supplied some of the smaller stages. Coda Audio have been around since the 1990's and provide top notch audio to a lot of festival and theatre productions etc

in Sydney and nationally; they supplied audio to the main stages.

When you look at an event of this magnitude you realize that there are going to be some compromises in the tech areas. With such a large number of artists performing over the 4 days you cannot offer them a full concert performance. You can offer great audio and a generic lighting set up. I can imagine the amount of planning that the production manager, Paige Goodwin, and her production team have had to deal with. If you look in the program you get an idea of what a mammoth task this was. When you see that there are 7 stages and a large variety of stalls all vying for attention, each of course having its own

Mahmoud of the Ethiopiques.



special set of needs.

All of the equipment is top notch as you would expect from such an event and the crewing was also well organized. Scheduling also seemed to work very well with reasonable change over's. With the wide variety of acts and musical instruments there was the odd problem but by and large it was handled with professionalism. The acts came from countries from all over the world. We were treated to the delights of such artists and groups like; The Armada – a rock base with middle eastern influences, featuring Jeff Martin formerly of The Tea Party, Ethiopiques – music that spans the range from Afobeat to the blues, Mariem Hassan – who hails from the western Sahara region and sings in her native tongue songs that are traditional and spiritual, Ojos de Brujo – a fusion of hip hop, rumba and flamenco beat. And then there were stalwarts such as the legendary Ravi Shanker and the likable Tim Finr. And that is only the tip of the iceberg where the musical acts were concerned. There was also poetry, dance and street theatre. One amazing act was the stunning Kathakali Dance Ensemble, this Indian dance drama troupe take up to 4 hours to apply their makeup. So you can see there is something for everyone, this is a great way to find out about other cultures and their music. There was also plenty of world food for the tasting as well. WOMAD is also a green event, with power bought from renewable sources, there were recycling bins throughout, water minimisation techniques were also used. The event has tried to minimize its carbon footprint on the earth.

Even though there were 7 stages in the festival most of the public congregated around the 3 main stages. These stages also had the biggest production values - not that there was anything wrong with the smaller stages as these also for their size had good production values.

Stage 1 was the main stage. The stage, as can be seen from the photos, is the Sound Shell and has a unique shape. The shape of this roof allowed for some nice use of City Colours and MAC's projecting some simple but effective gobos onto it. This was not too over the top and certainly

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The Sound Shell formed an excellent projection surface.

provided a nice back drop to the variety of performers. Some MAC 250Beam provided great front light that could do the usual sweeps over the audience; these do give a very nice beam of light. MAC 700s provided some great backlight which made the performers pop from the backdrop and instrument amps. The line array here was the Meyer Milo System. This system has a very pleasant transparent sound to it. It seems to have a

reasonably flat response and did not seem to colour the sounds of the instruments in any way. The horizontal dispersion of the line array was well used with the outer cutoff points being in the right place so as not to cause havoc with the other stages and also other events and performances happening during the festival.

Stage 2 was also host to a wide variety of artists. The Meyer MICA system here was also a delight to listen to. Front of

house was mixed on a Midas XL 200. It was a very clean, loud but not too loud PA with a very nice bottom end. Lighting used similar equipment to stage one and controlled it with a Hog 1000. It had a clean look that illuminated the artists well and complemented the music styles.

Stage 3 also used a Meyer line array. Again the sound was consistent and good quality. The lighting here also consisted of movers and par cans and was well executed.

There were also a variety of different PA's on the other stages. One of the notable ones was the d&b Q1 series line array supplied by AJS on the Moreton Bay stage. It was a very nice sounding PA, it was the first time that I have heard the audio from one of these systems and I was pleasantly surprised. Audio was very clean and even with no coloration.

Over the festival weekend the sound was consistent. There was the occasional burst of feedback and the bottom thump was a bit much but overall the coverage of the audience area was smooth without nasty surprises anywhere. You could feel the bottom end without it being too over the top most of the time. This is a tribute to the systems that had been supplied by Coda for the event.



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Meyer was the brand of choice on the three largest stages.



A little bit of rain wasn't going to put the fans off.

As I wandered around the various stages I was pleased with the diversity of the acts and how a large range of age groups were enjoying this sample of world music. It just goes to show you how we are willing to listen to new music and not just be content with mainstream content. This festival is very much a family type event. And the vibe that I received from the audience was really a pleasant feeling, laid back and caring is the only way I could describe it. Also the mixing of traditional instruments with contemporary musical instruments was very prevalent and shows how music is continually evolving and musicians are willing to experiment and try new things.

As a technician I had a great deal of admiration for the amount of organisation that has gone into the planning of this event. There are a lot of details that had to be worked out. My impression was that it all ran very smoothly and considering that at the time of WOMAD 2010 in Adelaide there was a Festival of Arts and a Fringe Festival and Future Music all happening at the same time. And not forgetting that there is also a car race being set up nearby.

And sorry to the rest of Australia, you cannot have any of these events. Adelaide does them all so well and at the same time - it is like a bit of a techie's Olympics.



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history



Welcome to the 'what once was' section of CX where we plumb the back issues to compare now with then. Always a sobering experience, especially when the one doing the plumbing is the one who put together the magazine way back then.

15 YEARS AGO CONNECTIONS MAY 1995

Continuing our series of good, bad and dreadful covers this one scores on the dreadful scale.

RECORDING INDUSTRY ASSOCIATION FORMED

Named the Australian Professional Recording Society, it was a solid attempt to influence the government to force up local content. Another issue was sales tax: before the GST there were varied rates of sales tax and studios strangely paid the top rate.

AES HELD SYDNEY CONVENTION

1,370 attended the AES 5th Australian Convention at Sydney's Darling Harbour. Fifty firms exhibited in one hall, it was the last time the convention was held in Sydney – it moved to Melbourne for the last showing.

PEAVEY, CREST AND JANDS

Brands moving around – Jands stopped making amplifiers and started

distribution of Crest. Peavey appointed Audio Telex to handle pro audio alongside existing distributor Australis. Later on, Peavey acquired Crest while Jands turned to Crown for amplifiers.

SONY DO DA-88

15 years ago Tascam's DA-88 8 track digital cassette recorder was the ducks-guts for broadcast. Sony licensed the thing from Tascam and released it as the PCM-800. It had an extra connection on the back, and sold for 20% more. But because it had SONY on the front, it sold well.

BEAUTY AND THE BEAST

Unlike most mega musicals, the Australian season allowed local sound design. Jands designer Peter Ratcliffe turned to Meyer Sound for the first time, with 32 UPA and UPM cabinets joining inventory.

ALTERNATIVE NATION

Bigmoneylouza was our rude headline for this attempt to muscle in on the success of Big Day Out. At \$70 the Alternative Nation ticket compared poorly to BDO at \$48. Mist fog and steam rose from the muddy masses. If Sydney was wet, Melbourne was mudstock. Our writer Natalie Apostolou summed it up neatly: "Getting pissed in the back of dad's Volvo, odourising it with heinous quantities of dope fumes, and moshing inanely is the nirvana of social descent." Who says we have low standards here at CX?

SUPERSTAR HEAT

David Morgan was the American sound designer for the 1992 Jesus Christ Superstar arena tour. He wrote in to take issue with our reporting of the theatre version. "I was hired 2 weeks before the tour. It was a bittersweet experience for me. I will always cherish those five and one half months in Australia. The vast lighting rig left no room for PA clusters.

The horror of using 100 metre speaker cables. In-ear and wired headphone monitors vetoed. I personally never recovered from the shock of learning a sixty cab stage monitor system had been approved. A monitor system producing 102 – 105db (a) at our front of house mixing position...." CX still remembers the show – it was an enormously challenging design with old technology – S4 speaker cabinets!

WHAT WE PAID

- Martin Roboscan Pro 518 \$3,299
- ProLite 650w Profile \$375
- QSC USA 1300 amp \$2,150
- 16 channel Phonic mixer \$3,395

TEN YEARS AGO CONNECTIONS MAY 2000

Great cover, an art shot of an old Pattern 23 profile spot, set into a baby poo brown cover with minimalistic text. We were revealing a makeover – a new look, designed by Julius who did the layout on Pagemaker, working around the clock. New for this issue was the removal of the dedicated lighting section. 'An end to lighting apartheid', we said. We got some flak at the time.

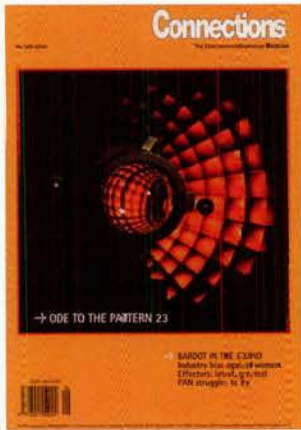
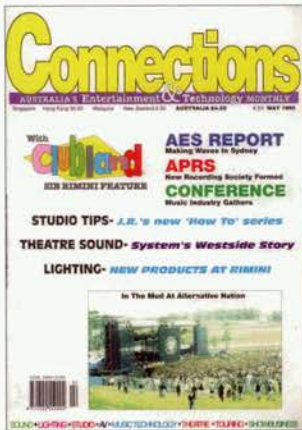
This issue also marked a dark time inside the publishing house as the decade long founding partnership exploded along with the 20 year Grafton marriage. A very tough time, floods back by looking at the mag.

MACKIE TAKES OVER EAW

Mackie were on the acquisition trail – and this was the start of a difficult decade for the Seattle firm. As to whether EAW or Mackie benefitted, it seems to our eyes that of the two, EAW had and still has the 'smart stuff' when it comes to product.

DEFAMATION ALERT

We reprinted a page after nasty words from a movie producer. Transpires a film sound guy lashed out at a film gaffer



with noisy HMI lamps. Sound guy suggested people 'boycott' a certain rental firm. Problem was between sound guy, gaffer and rental firm. Connections waded into the mess and faced with a certain writ we changed the article.

12.5% WOMEN

A letter sledged us for interviewing just one woman out of 20 people we quoted from ENTECH. Our reporter Madeleine Murray replied that there were only 2 women available and one of them pointed to the guy she was with and said 'ask him'. "It was mostly men. Besides, I'm trying to find a husband", Murray joked. We reported just 12.5% of attendees were in fact female.

RASH OF DIGITAL PROCESSORS

Turbo, Crown and EV all put new digital loudspeaker management systems onto the market. There must have been a new DSP chip come on the market earlier.

POPSTARS IN THE STUDIO

We had a terrific feature with GREAT pictures of the pop act known as Bardot, in the studio at Tiger (now Albert studios).

NORWEST FOR OLYMPICS

Big news was the appointment of Norwest Productions for the forthcoming Olympic Games opening and closing ceremonies in Sydney. "It's a long way from booking bands for corporate gigs to running a world class audio company". Julius commented on Norwest CEO Chris Kennedy.

ODE TO THE PATT 23

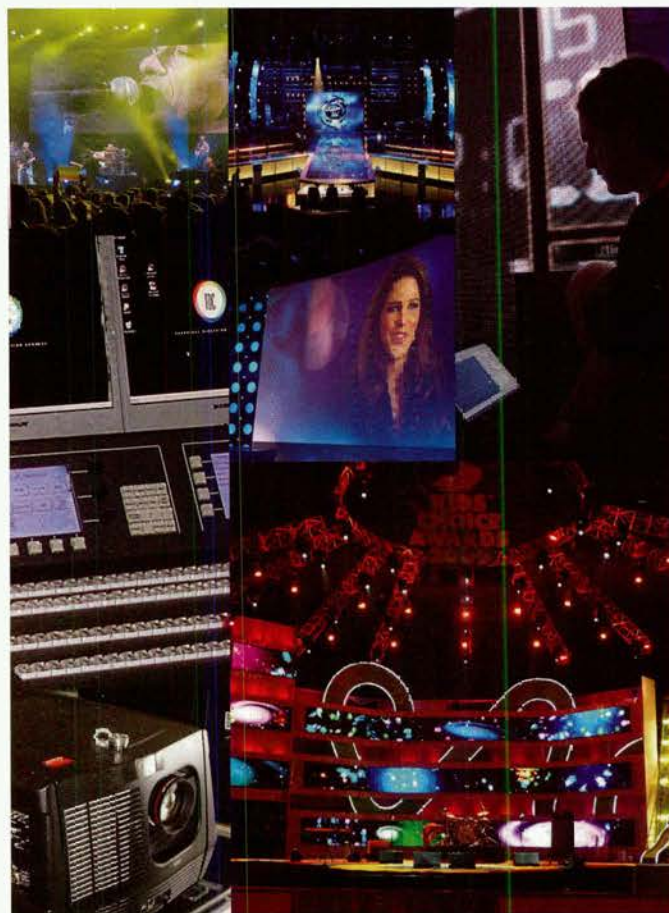
We listed all the variants and the history of what we still feel is the sexiest theatre light ever made – the Strand Pattern 23. Did you know there was a Patt 23 F variant with a Fresnel lens? Or a 23 W with a wide lens?

PAN TRIES TO FLY

Sydney was home to a world premiere of Pan, The Musical. We went backstage to find the producer Kerry Jewel locked out, and German investors taking control. Meantime the tech crew slaved to get the thing up, complete with morster crocodile. It crashed soon after.

WHAT WE PAID:

- Duracell Procell batteries, AA 0.42c, 9V \$1.52
- Spirit Live Digital Mixer \$10,995
- Yamaha SPX990 effector \$1,895



Technical Direction Company

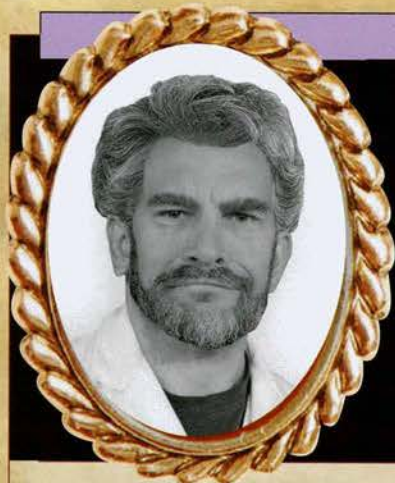
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Dr Danger's CONSOLE CRUSHER

Put six tonnes of truck, a disused audio console and Dr Danger all in the one place, then stir...

By DR NIGEL SHORTCIRCUIT

ONCE UPON A TIME... It all started innocuously enough. Science Boy turned up announcing that he'd 'acquired' a Mackie mixer that no-one wanted any longer, and that he thought I might like to perform experiments on it.

"You could run over it with the truck," he suggested, skipping gaily down the corridor to Archchancellor Grafton's palatial suite of offices.

Sure enough, within seconds I had the Archchancellor on the phone. "Science Boy says you're going to mash a mixer." Outmaneuvered, and not totally opposed to wanton destruction anyway, I had little choice but to comply. So I tottered off to get the beers in and tell lies to someone until they lent me a truck.

THE [UN]SCIENTIFIC METHOD

I returned to find Science Boy and a number of unsavoury types (students or some such) hanging about, armed with cameras and associated paraphernalia to ensure that we captured all the results of our little experiment.

The plan was very simple. We would put the console on the ground in front of the truck, and I would roll gently over it. Then we'd check on the results and come up with some tremendously

scientific explanation for whatever we discovered.

On cue, I rolled the truck forward. Shutters clicked, flashbulbs popped, students gibbered, and the poor old Mackie emitted a faint grinding and crunching. Experiment complete, I started to back the truck into the driveway again – to a chorus of more crunching, grinding and gibbering.

"By gum," I thought, "we may not be doing very good science, but at least what we're doing, we're doing a lot of."

Round the block I went, failing to find anywhere to park. So I came back and backed in again. More crunching – the idiots had carelessly left our experimental console on the road!

THE RESULTS

As some of you may have already guessed, the damage to the console was clearly and immediately visible. It was comprehensively crushed, and some of the plastic trim bits and knobs had disappeared mysteriously. Surprisingly, the innards were nowhere as badly damaged as I expected – a more expensive mixer using vertically mounted channel boards and deep faders would have fared much worse!

It wouldn't pass audio, but then it wouldn't before either, given that the power supply was shot. Most of the faders and pots still felt OK – as OK as you'd expect for parts of this vintage, anyway. You wouldn't get it going again, but a suitably deranged enthusiast could probably pull a fistful of usable spares out.

WHAT HAVE WE LEARNED?

Hands up all those who are surprised that six tonnes of truck crushes fragile things deliberately placed in its path...

Nobody? There you go.

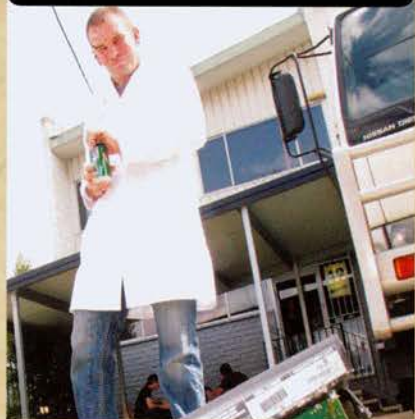
Many people, including me, would see the real lesson here in how the mixer came to be placed in the irresponsible hands of Science Boy. Its previous owner, having found out what it was going to cost, had decided it was more cost-



Mass vs Mixer? No contest.



Job Done. Thirsty work though...




effective to replace it.

Yes, ladies and gents, that's right. A twenty-four channel console gets chucked out because of a dead power supply. Life is cheap for mass-market hardware.

The technology that makes it possible to produce and sell things so cheaply also makes it much more difficult to repair them economically.

Sad but true...

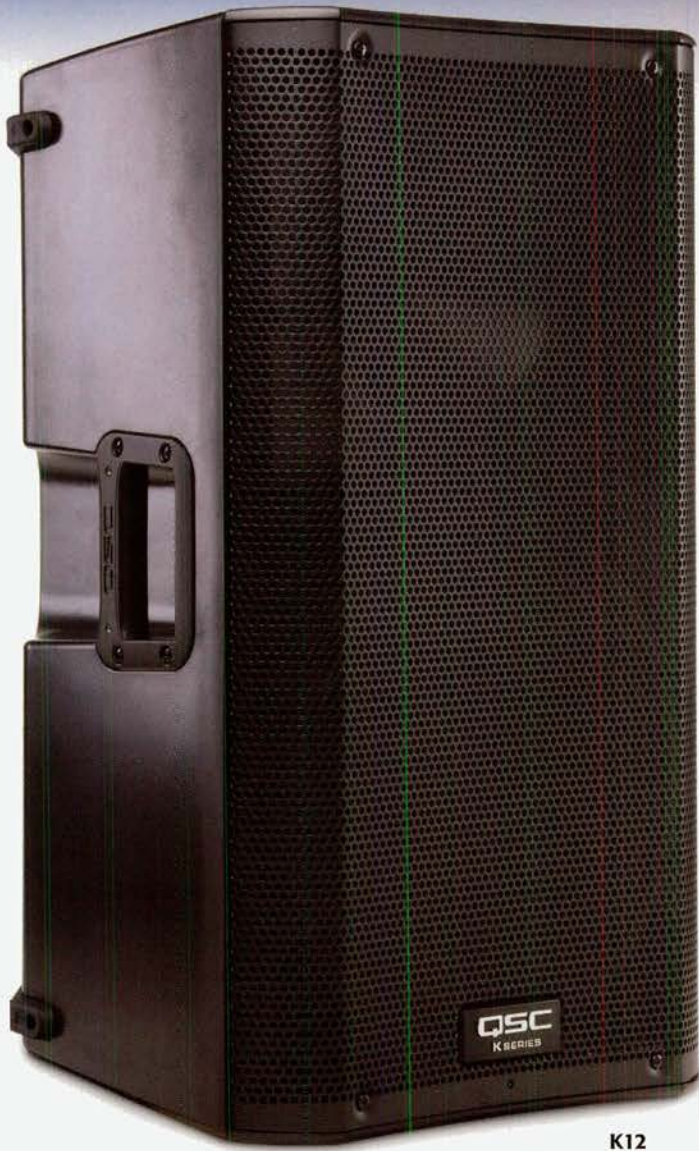
BACK TO PROPER SCIENCE

In the absence of further ridiculous distractions, we'll be getting back to proper science (the kind with a purpose) next issue. Don't be afraid to email me your ideas (dangerousnutter@gmail.com) and make sure you sign up for the CX 20th anniversary party - you could win a splendid second hand Mackie mixer! 



Smooth fader action...

1000 WATTS



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K8

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K12 shown as monitor

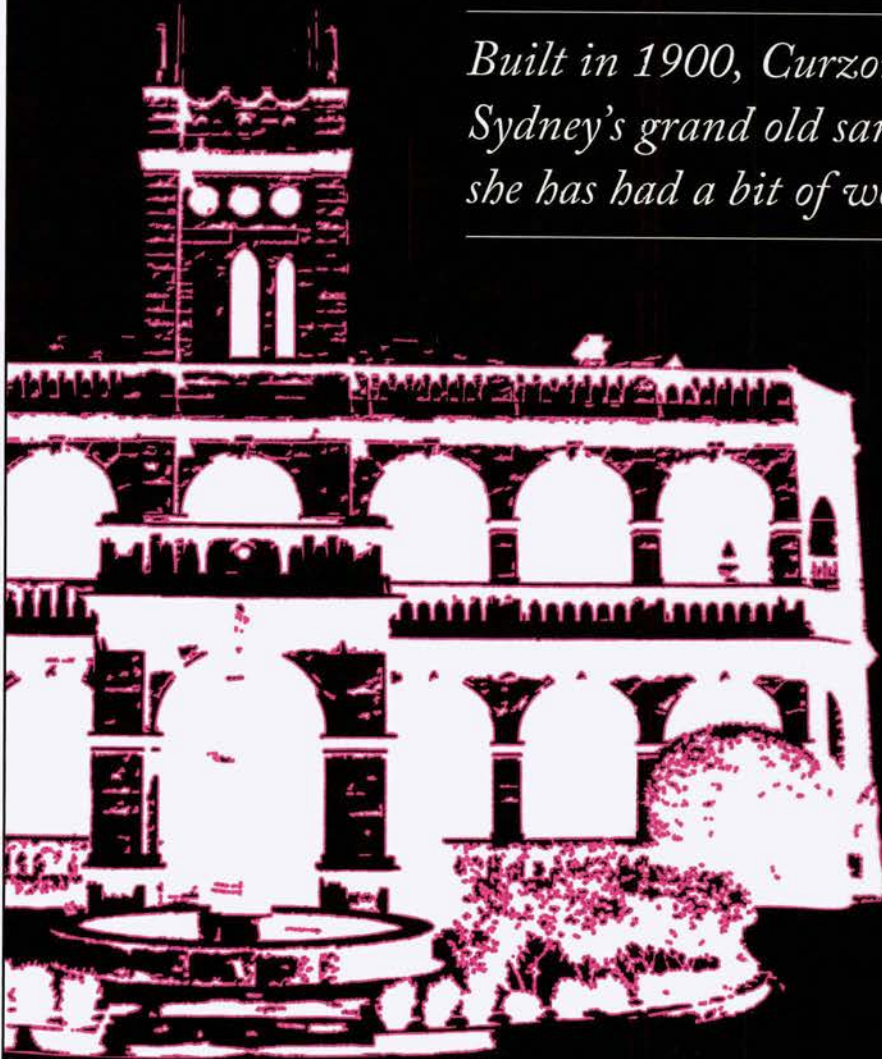
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NEW APPROACH FOR CURZON HALL

Built in 1900, Curzon Hall is still one of Sydney's grand old sandstone ladies – although she has had a bit of work done recently.



By **STEPHEN BRUEL**

The stately Marsfield mansion recently opened Lady Mary's Pavilion, a new multipurpose and multi-configurable function centre connected to the original residence via a glass walkway. Staying true to the 100-year-old façade on the outside, it is the new AV installation and the ability to control the audiovisual, lighting, rigging, video and audio via a wireless touch panel that sets this function centre apart from the rest.

Curzon Hall is owned by the Navarra Venue Collection, a family business with interests in two other function centres;

the Conca D'oro in Riverwood and the Le Montage in Leichhardt. Venue Manager of Curzon Hall Marie Florio was keen to offer the corporate clients in the area, particularly the North Ryde CBD, a venue incorporating a blend of old world charm, open garden areas and the latest in technology, particularly in the areas of sound and AV.

"The costs of external companies to bring in their own AV and sound equipment can be quite high," said Florio. "Therefore by installing this sophisticated system in our venue, it enables us to provide an all inclusive package to our clients. By dealing with the venue directly it saves the client time, money and

gives them peace of mind with superior products."

Florio decided to use Sydney-based Total Concept Projects (TCP) for the total audio and visual design, build and installation of the new Pavilion. According to Florio, TCP have been involved and are familiar with the Navarra Venue Collection for a long time, having undertaken work previously at Le Montage.

"TCP provide the services and equipment we require and also have a very good understanding of the clientele we attract," said Florio. "They are also able to deal with all requests and provide the high level of service we are renowned for."

TCP Founding Director Anthony Musico was keen to be involved in the project. Starting TCP in 1984 with partner Richard Skarznski, TCP's past clients include designing and installing AV equipment into the Sydney Olympic Aquatic Centre, Department of Defence HQ and the Crown Convention Centre in Melbourne. One thing Musico was particularly interested in about this project was the aims of the client and being involved from the very first step. According to Musico, the design took 4-5 months and the build around 6 months, once the building was in a state to facilitate cabling.

"The brief we received from Navarra was to give them a room that sounds and looks amazing and is therefore easy to sell to clients, so we designed the room accordingly," said Musico.

"Being a 'greenfield' site, ie built from the ground up, we were able to be actively involved with the architects, electrical engineers and builders, allowing building plans to cater for our requirements from the get go, as opposed to retro fitting



later, alleviating a lot of potential problems.”

To satisfy the client’s brief to help attract the corporate sector, Musico decided not to go for a typical wedding reception venue with big box speakers. Instead Musico used forty Electro Voice (EV) EV12 C12.2 ceiling mount full range speakers. Each pair are powered by its own Dynacord Paramus PCL1415 four channel 100W amplifiers, 20 in total, with each pair’s output directed by an EV NetMax N8000 front end digital audio control processor.

“The beauty of this set up is that we can pre-set delays to any configuration of the room however we want,” said Musico. “This provides an even audio coverage throughout the entire room with no areas louder or softer.”

The microphone set up includes EV REV-D dual channel wireless microphone receivers, EV REV-BP wireless belt packs, EV RE92TX lapel microphones, EV REV-HC5 wireless hand held microphones and EV CLA-4 hi gain antennas.

“All microphones and audio inputs are sent directly into the NetMax processor and switched out to the various outputs and amplifiers,” said Musico. “This also includes audio zones on the lawns, in the back garden, gazebo, and the amenities.”

Bosch Communications Systems supplied the EV and Dynacord equipment and Bosch Senior Engineer Bryan Davidson was also involved in this project from the outset. With a solid working partnership with TCP over many years including previous installs the Brisbane Tennis Centre, Brisbane International Airport, Jupiter’s Casino on the Gold Coast and the AAMI Stadium in Adelaide, the project was in good hands.

“We chose Bosch for two main reasons, we work well together and we also have a lot of experience with the Bosch product range,” said Musico. “Bryan helped come up with a fully integrated solution, and also modelled the room using EASE computer modelling software for audio.”

An AMX NI-4100 Netlinx integrated controller driven by two AMX MVP-3400 wireless touch panels provides the brains behind not only the audio system, but everything else as well.

“There are very few venues that have their entire AV, lighting, rigging, video and audio all being able to be controlled by wireless touch panel,” said Musico. “You can therefore take control of the room from anywhere within the room.”

The lighting system consists of 10 Coemar ProSpect 250 units and eight colour changing LED chandeliers. All



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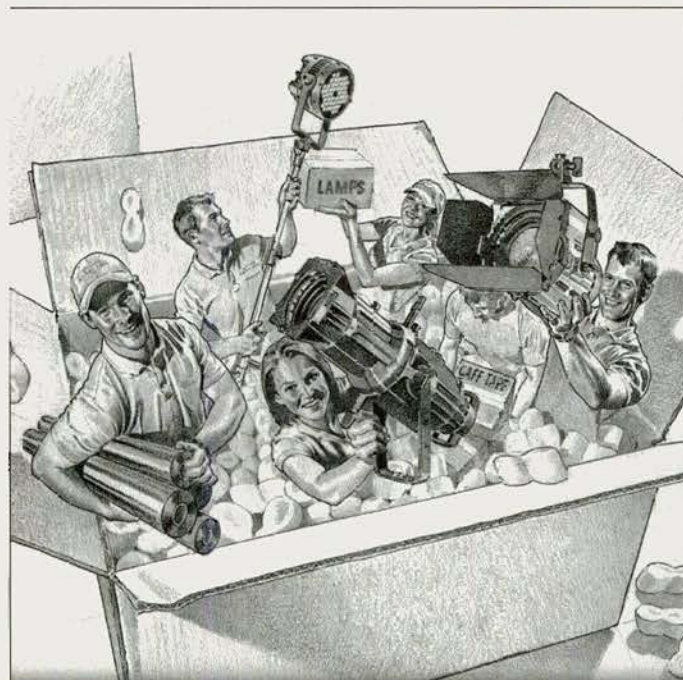


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lights and power up dimmers.”

There are 8 wall boxes and 6 floor boxes around the venue with each offering audio in and out, VGA and video, and run on CAT6 back to an Extron Electronics MTPX 1616 switcher. According to Musico, the audio outputs allow a cameraman to plug in his transmitter, pick up an audio feed from the system and record directly to video camera without having to run cables everywhere.

“All VGA and video signals are converted to CAT 6, and all reticulation is done via CAT 6,” said Musico. “It’s cheaper as far as cabling is concerned, you get better distance for video signals and there is less interference as all cables are skew corrected. The pictures are always rock solid and you have the advantage of being able to run longer distances without having to amplify.”

Lady Mary’s Pavilion has four NEC projectors and four Screen Technics projection screens, and can be physically split into two rooms (Sabrina’s View and the Sir Philip Lounge) creating either a ‘landscape’ or ‘theatre’ mode. When not split and in full ‘theatre’ mode, the screen can be raised all the way to the ceiling to allow people at the back of the room the opportunity to view.

When in ‘landscape’ mode, the screen housing is able to be lowered two metres from the ceiling of the Sir Philip Lounge before the screen deploys, saving people towards the front from straining their necks. According to Musico this makes this a ‘...unique facility.’

“Of course the projectors are controlled by the AMX controller,” said Musico. “As are the motorised blinds.”

TCP has designed and installed an integrated AV, audio, lighting and rigging system that is not only simple to operate via the wireless AMX touch control panel, but also inline with Curzon Hall’s request for a system that is unobtrusive, blends in with the old world charm of the site as a whole, satisfies their clients demands and potentially saves them some money.

“These days a venue has to be flexible enough to cater for multiple events and facilitate multiple AV companies,” said Musico. “If you win over the AV company you’ll book the room because a lot of it comes down to cost. If an AV company has to spend two days to do a set up, whereas if we give them a room they can be in and out of there in a day, that minimises the cost to the client, the AV company is happy because they have the infrastructure and do not have to run wires everywhere, they like the room and recommend it to their clients.”

According to Musico, 12 half tonne Lodestar motors are concealed in the roof for larger events and productions.

“When they have a large function like a car launch or a fashion show for example, AV companies can bring in rigging and trusses, drop motors down to them through holes in the ceiling, pick up the trusses and raise them to the ceiling,” said Musico. “A DMX and 240v infrastructure in the roof allows technicians to remotely patch moving

lights and power up dimmers.”

There are 8 wall boxes and 6 floor boxes around the venue with each offering audio in and out, VGA and video, and run on CAT6 back to an Extron Electronics MTPX 1616 switcher. According to Musico, the audio outputs allow a cameraman to plug in his transmitter, pick up an audio feed from the system and record directly to video camera without having to run cables everywhere.

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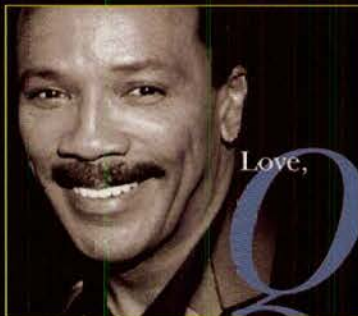
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BACK IN BLACK T-SHIRTS

Thanks for your support – I'll wear it tomorrow



By DUNCAN FRY

Support bands for big shows – do you still need them these days? Have the days of a support act gone? They're a hangover from the early days of touring concerts. Back then you might have two or three local support acts and a couple of imported headline acts on the show. Each band or artist played a twenty minute set, gradually warming up the crowd for the headliners, who would also play a twenty minute set.***

Compare that to the current situation where it's common for the headliners to play two hour sets. In effect they are their own support act!

At Status Quo last time, the painful grating sound from the heavy metal three-piece support band would make a dead man's ears bleed!

"I haven't paid a hundred and twenty bucks to have my ears rooted before Quo comes on," I said to the other guys, who

agreed and we went out into the foyer until they finished, along with the rest of the audience!

Perhaps the answer is what I like to call the Dire Straits solution. On their Brothers In Arms tour they had a string quartet as a support act, but not playing onstage – playing in the foyer as the audience came in! Complying with the letter of the law, if not the intent. It seemed to work, though, and everyone was happy.

Anyway, since it's a compulsory union requirement for overseas bands touring here to have a local support act, that's not going to change anytime soon. And it's a good one. It gives local artists and bands an opportunity to show how good they are in front of a bigger audience than they might otherwise play to.

But the band has got to sound as good as they possibly can, for the gig to work for them. So the front of house mixer has to be able to put a good mix together with

the equipment and limitations they're given. You're limited on volume, effects and lights. Half the system (if you're lucky), bric-a-brac level limiting, minimal channels, some lights. And someone who can do all that is as rare as rocking horse shit. Pardon my French.

That's not fair, I hear all you young gun mixers say. Why?

Because no one wants the support band to be better, bigger, louder than the headline act. It's cruel but it's true. Think Hendrix supporting the Monkees on tour. That lasted about 3 gigs before The Daughters of the American Revolution complained he was too suggestive (or so the story goes) but the truth is he was blowing them off the stage!

So you've got to work with what you're given. If there's a hard limiter – and there will be – don't push everything right up against it. It's like mixing at a club that has a PA system that cuts out if you trip the volume controller. So ease the



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volume back; you're never going to fill the stadium so don't try. Aim to get a good mix happening – some vocals, a good blend of instruments, something that is good to listen to. That way you'll keep the band's existing fans happy, and you might win over some new ones for them.

I was pondering the support band concept as the Amazing Harris Tweed Band and myself pooled our pension cheques and went off to see AC/DC at Etihad Stadium in Melbourne's Docklands.

I hadn't been there since 2000 for The Ultimate Rock Symphony band, because I'm not a footy or cricket fan, and none of the other acts appearing there since that time had made me want to cough up half a week's wages just to help them pay off their mortgage.

However my thoughts on it hadn't changed. As a music venue it makes a good sports stadium. It's huge, boomy and impersonal, but at least it has plenty of food, drink and toilets.

Just don't start me on trying to get out of the parking lot afterwards!

But I digress, so back to the matter in hand.

The support band for Acca Dacca was going to be Wolfmother, with their new lineup. None of us had seen them live, so we were all looking forward to it.

Their sound was a huge disappointment, though. We could hear Andrew Stockdale's voice, and his guitar, and the kick drum. That was it. You could see the others flailing away on keyboards and bass, guitar and the rest of the drums, but for all we could hear it might as well have been a solo gig.

From where we were it was hard

to tell if the cause was over-limiting, inexperience on a big system or just a bad night for the guy at the desk. Still, you know what they say – if there's a choice between a stuff-up or a conspiracy, it turns out to be a stuff-up every time! Very sad for young Aussie talent, though, so we went out to have a couple of drinks and reminisce about when we last saw AC/DC.

"I've never seen AC/DC before," said RH Positive, bass player for the Tweedz. "So I'm really looking forward to it"

"I haven't seen them since they did the Lou Reed support in 1974," I said. "It was their original singer Dave Evans in the band then. I can remember them playing 'Baby Please Don't Go' but not much else. Still, it shows how you can remember some support bands!"

GT (Golden Tonsils, the Tweedz singer) leaned forwards in his chair and slapped down his trump card.

"Well," he said, "It's been a while, but I haven't seen them since they supported my band in the 70's! I wonder if they still remember the gig?"

After Wolfmother finished, the sea of black t-shirts wearing illuminated red devil's horns started to sway, and then the video screens lit up with the intro video to the show. This featured cartoon versions of the lads driving a runaway steam train and being distracted by voluptuous vixens, until with a crash the video ended and Whammo – the real train crashed through the back of the set and onto the stage, where it lay smoking throughout the show!

The crowd erupted and the show was on. That has to easily be the best opening to a concert I have ever seen!

I think for just about everyone at the Melbourne concert, the show was exactly what they had come to see. Loud, yes, but great audience coverage, big and clever lights, and big video of topless girls in the audience. What more could you ask for?

Sure, the guitars were loud, but they weren't too loud. I couldn't help thinking Angus must have helped sell a shitload of SG guitars for Gibson!

And yes, the vocals were not quite loud enough in the mix, but I felt that might well have been deliberate. We had gone to the concert fearing it might be their last tour here, since Brian (still the 'new' singer after 30 years!) had said he wanted to stop touring. Surely the strain of cranking out two solid hours of heavy duty vocals at every show had to be taking a bit of a toll on the voice. Well, that and the sixty Capstan ciggies every day!

But he did a great job, wandering happily around the stage looking like a Geordie rolling home from the pub, and was a neat foil to Angus' onstage antics.

The merchandising was way too expensive, though. Twenty bucks for a lanyard or fifty for a t-shirt was just greedy.

I think everyone went home happy, anyway. Maybe even happier had they played 'It's a Long Way to the Top', but you can't have everything. 'Always leave 'em wanting more' has been the show biz rule for a long time.

As we wandered back to the carpark for our 2 hour wait to get out, with our ears lightly zinging, I said to the boys "Jeez, I hope I'm still playing in a band when I'm that age...wait a minute – I am!"

***The Beatles played for 20 minutes each night when they came here in '64. True! CX



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FAR TOO BRIGHT!

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By JULIUS GRAFTON

Seems like only yesterday the L.D. for Taxi Ride was showing me his circular video screen and long throw projector. That tour was the first time I'd seen High End Catalyst shooting little video packages, cued from a lighting desk.

Almost ten years on and the LED is omnipresent, obliterating video. With the LED has come power – unprecedented power – to get massive lighting levels on stage and on screen.

Now audiences are getting fried. I saw it myself at Tom Jones in Sydney; where my date and I were squinting and turning our gaze away from the stage far too often. Sunglasses would have been handy.

LED intensity is a big deal.

LED LEVELS

"Typically for TV shows we run LED screens as low as 5 & 6%", says Joe Bonanno from Big Picture.

"For concert stage LED indoor, we

tend to run the LED at an average of 10% of max brightness, sometimes lower, rarely much higher than 15% subject to the light show and the LD."

So these screens can go bright. Very bright. The intensity rating measure for LED screens is nits. A 'nit' is one candela per square metre. LED screens in TV situations run between 300 and 500 nits. Outdoors in sunlight they run between 4,000 and 5,000 nits. The massive range of intensity is one of the big charms of LED technology.

Trouble is, the Lighting Director can dial up more. And in live entertainment, 'more' is a heady drug. Sound engineers are getting whacked for running shows too loud – at least there are laws about sound exposure.

INTELLIGENT INTENSITIES

"The Touring dudes do whatever they want – generally the screen is set to max for them as they have the brightness control on their desk", says Michael

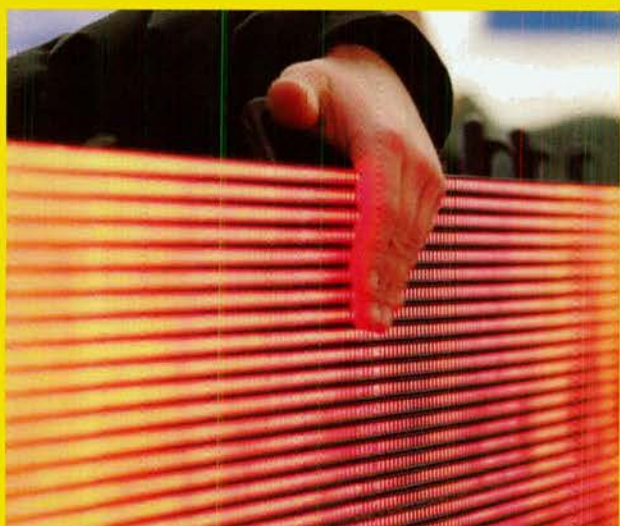


Hassett from Technical Direction Co.

Then there is the ubiquitous LED strip, which in the case of the Tom Jones design, sits between the LED screens onstage. They punched hard and people's faces squeezed up every time. Audience blinders were always a one trick pony but the LED strip, with zillions of DMX options for colour, patterns and yes, intensity is a weapon that should come with a warning.

"For outdoor applications during the day and subject to the position of the sun, the LED screens will run at 50 to 100% brightness. Often you have to change the settings many times during a day", says Joe Bonanno.

"I agree there is nothing worse than LED that is being driven unnecessarily bright- it hurts and takes away from the content", he concludes. **CX**



WHAT MORE DO WE WANT?

Recently CX has been unloading on the audio fraternity for making everything too damn loud, now the lighties are copping it. So what is the problem?

The problem is an arms race that's racing out of control. Everyone wants to claim their product as the biggest, loudest, brightest, fastest and best. The same situation that's created excessive sound levels has also created retina burning light shows.

Consider: the current state of the art in big lighting are the big movers – VL3000s, Macs, Robe 2500s. The Martin and the Robe both use the same 1500W Philips lamp, while the VL uses a 1200W lamp, also from Philips. Any one of these exceeds the light output of a Philips 3000W Xenon follow spot lamp!

PROBLEMS

There are a couple of problems here. Problem number one is that while these monsters might be CK for big stadium shows, that's not all they get used for. The pinnacle of light output performance tends to be packaged with the best of everything else, so people wanting the latest bells and whistles go for the biggest lights – however small the venue.

Problem two is the natural inclination to run things to their capacity – people don't generally think to turn things down if the option of turning other things up exists. So we turn up the wash to get really good colour density, then turn up the profiles because they're not cutting through the wash that well. The brightness of the profiles makes it hard to see the LED screens clearly, so we push them a bit harder. All the light from the screens is washing out the colour in the wash, so we turn the wash up a bit...

Eventually, something runs out of headroom and the escalation steps – leaving us with the same show, but at far greater intensity. The power grid gets pulled down, the audience can't look directly at the performers, the camera guys are reduced to stuffing ND filters into the cameras to avoid over-exposure.

Hardly an 'everybody wins' scenario.

So next time, try turning things down instead of up – you'll be amazed at how easy it is to get a show that's easier on the eye.

And don't be afraid to use lower powered hardware. Ours isn't the only arms race, but even the world's military aren't dumb enough to think you use the biggest weapon on every job...

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Technology moves forward in leaps and bounds. The impossibilities of 2000 are the mundanities of 2010. As old ways of thinking are slowly broken down, CX dusts off the crystal ball and takes a look ahead at the...

CONSOLE OF THE FUTURE

By **ANDY MACKENZIE**

Trying to predict the future is fraught with danger – especially trying to predict future technology in an era when technology is rolling forward at an unprecedented rate. But enough of this negativity – we're going to try anyway, starting with a quick look at some of the new realities.

Reality #1: Analogue is dead

And it's only going to get deader. The current state of play sees some things still done in an analogue world, but that will rapidly change – for a whole fistful of reasons. While the practicalities of an analogue world mean that things that interact with reality – microphones,

cameras, displays, etc – will always be, analogue, digital systems will move closer and closer to the periphery. Already you can buy a microphone that needs no preamp because the signal is digitised straight off the capsule. They may not be selling huge amounts yet, but they will...

Digital technology, apart from all its obvious practical benefits, is appealing to manufacturers and consumers alike because the hardware is so damn cheap. There are big costs in R&D, and code, but once the code is paid for the costs drop rapidly – look at the price of any digital system now vs its equivalent five years ago. The higher hardware costs of analogue systems mean that while people will continue to use them for as long as they work, their replacements will be digital.

Reality #2: Our computers are crap

Compared to what will be available in the immediate future. Look at the capabilities of your handy iPhone (now free on the \$49 cap...) as compared to the Pentium 1 that had us all gobsmacked only fifteen odd years ago – and remember the price...

Memory is cheap and easy, so is processing power. Both are getting smaller and more power efficient. Current computers can already deal with the demands of audio and vision, later models will do so easily. I don't even bother mentioning lighting here because control data takes so much less computing power than content.



Reality #3: Flexibility is king

In the olden days, we had no choice but to use the technology that was offered to us. In an analogue world, every switch, fader or whatever had its own single, permanent purpose. Digital systems brought with them the possibility of configuring our own control surfaces – any control can be assigned any function.

Configurability is addictive. Watch the difference in the way people use digital controllers. Dinosaurs like me tend to use devices with minimum user configuration; it seems inappropriate, even immoral, for me to tell the device how to behave. Those who've grown up in the digital era are far more comfortable with assigning functions to wherever they want them.

Reality #4: Ethernet is here to stay

I've no doubt there are already people out there scoffing at this remark. Ethernet is definitely not the best option for transporting audio, video, or whatever. The lighties are quite happy to use it because it's got capacity to spare for control information. The thing to remember is that at the moment, ethernet struggles for capacity in terms of content, but this won't last forever. As computer systems get faster, we will demand faster networking – and we'll get it.

This is the fundamental advantage ethernet has over everything that competes against it. The whole world takes an interest in the development of the technology, because everybody wants it. This also pays dividends in terms of the easy availability and low cost of hardware.

Ethernet will evolve. We'll get better bandwidth, and hopefully we'll see the demise of crappy cat5 cable (currently ethernet's biggest single weakness).

Reality #5: Lines are blurring

The most obvious blurring of the lines is in the convergence between lighting and vision – LED screens that are both screens and lighting devices, lighting designers specifying and using video content – but there are plenty of other interactions going on between production departments. The days when lighting, audio and vision could turn up in separate trucks and get through the day without making eye contact are, for the most part, gone.

In the ever-expanding world of corporate production, it is commonplace for one operator to manage lights, sound and vision for a gig. No shortage of inconvenience here, with all

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these different devices that somehow need to fit on the desk with their controls reasonably accessible. Employers in this market look for multi-skilled crew, and are unlikely to object to having multi-skilled gear as well.

Whatever happens in the future, it's going to happen within the parameters set up by these realities. The gear we use is going to be based on small, high powered computers linked together by ethernet or its descendant and offering enormous user configurability across a wide range of functions.

LET'S TAKE A PUNT

First up, let's get this out of the way. The console as a concept isn't dead. As long as we need a person to operate things, we need to provide them with a control surface. There is likely to be a fundamental shift in the way we interpret the concept however. Stand-alone devices are unlikely to be long for this world once computer technology gets to the point that a single computer can manage the processing requirements for a venue or show.

If we can do all the processing at one point, all we need is appropriate controls for that point.

The monitor console need no longer be separate from the FOH console – it can be just another control surface for the same device. Even the old arguments about who controls the mic preamps will have died with the demise of analogue preamps. For that matter, there's no good reason that the lighting and vision can't be controlled through the same system.

And once it's all part of the same system, there's absolutely no reason that the controls can't get shared around differently. Maybe it's convenient for the lighting and vision operators to have a fader to control the lectern mic, just in case the audio operator's wandered off somewhere and an unexpected announcement comes up. Maybe it's convenient to assign one fader to pull the house lights and the walk-in music at the same time.

A MODULAR SOLUTION

Everybody wants different controls on their console. I listened to two people talking about Yamaha's M7CL the other day – one reckons it's tops because you get a fader for every channel, the other couldn't care less about all those faders because he only uses the middle bit. These two guys would, given the choice, build completely different consoles.



A single console frame can accommodate multiple systems. This one combines lighting, audio and vision into one for a single operator

Mine would be different again.

So why not build it like that?

Build a pile of different modules – some with faders, others with screens, buttons, rotary encoders, and a combination of the above. There's probably a fair argument that all this stuff will be replaced with touchscreens and similar, but I think that most people are happier to have real, solid controls – the kind you can be sure of even when you're not looking. Screens can offer some things, but not all. Screenprint nothing on the surface, but associate every control with some kind of little display that will tell you what it's being today.

Make the modules in standard sizes so they can be mounted in racks, wall plates or console frames according to convenience. Build different sized frames so people can have different sized consoles.

That way the guys doing the big shows can still have consoles much like the ones they're using currently. The guys who have to control lights, vision and audio all at once can at least have everything in one place and laid out in a way that makes sense. The people who need lots of control surface for programming but very little for playback can swap the frames out for smaller ones. Function venues still get all the joy of little AMX/Crestron type touchscreen interfaces tied into the brain.

HOOKING IT ALL UP

It won't be hard to make it work. The central computer – and what the hell, technology's cheap, lets put two in one box with separate power supplies but parallel hookup so we've got redundancy – controls everything. We use a drag and drop interface, probably using some kind of super multi-touch screen, to configure whatever virtual devices we want and to tell it what control surface modules to expect.

Hook up all the modules with whatever

ethernet system we're on (don't worry about power, it's all supplied over ethernet) and hit one button on each so the central box can ID it, and you're up and running. In a permanent installation or touring show, the modules retain their ID so you just have to fire up the computer each time.

In a hire or production company, you assign them during the system prep. It's actually not inconceivable that some modules could work wirelessly (with batteries – this isn't magic). Imagine the convenience – you can't quite hear/see what you need to from your desk, so you pull the wireless module from the frame and go somewhere that you can.

It's simple, it's practical and completely configurable. It's also easily upgradable – just buy new modules or software to add capability. The heart of this system is the software – operating systems and add-ons – much like it is with PC based stuff now. Hardware's just hardware. Buying new word processing software doesn't mean buying a new keyboard.

The smart manufacturers will work together to build suitably generic console modules, I/O boxes, etc and then give up on hardware altogether to concentrate on giving the system brains.

Imagine something like QSC QSYS or BSS Soundweb – either sold as software only, or as processor boxes with embedded software. Tie in video and lighting control...

THE NEAR FUTURE

All this is just over the horizon. Manufacturers are already working towards increasing integration – very little of the technology here doesn't already exist or almost exist. What's going to make the difference is when a bunch of manufacturers see the benefit in working together to build the ultimate in entertainment control systems.

Roll on the future...



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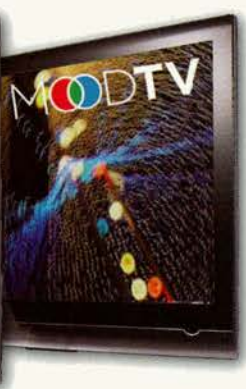
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MASTERING THE PAST

Digging up the old dream



Ben's Calf (l to r) Darren Munt, Stephen Bruel, Thomas Green and David Praganell.

By **STEPHEN BRUEL**

I had a dream.

If you are reading this article then you may have shared a similar dream. It involved playing in the world's most popular band, earning ridiculous money, having way too much fun, fame, more money, supermodels, buying houses for my friends, and then retiring to a beachside mansion at age 30, complete of course with the pre-requisite spectacular view, pool bar, staff, and the latest and greatest 2 inch tape 24 track home recording studio with George Martin on 24-hour call by private jet.

Unlike Noel Gallagher's, my dream did not come true. However, I am not looking for sympathy, as I had a go and had a great deal of fun trying.

THE DREAM

It was Sydney in the early 90s and my band Ben's Calf, like a lot of other original bands at the time, rehearsed more often than we gigged, played to an ever-diminishing audience in venues further from the cool part of town, and on more and more nights at the wrong end of the week. We got offered a record contract to a small indie label that went broke, someone slept with someone else's girlfriend and it was all over.

So life goes on.... Catching up with some mates recently over a few beers, the topics of why the Cronulla Sharks have failed to win a premiership (sadly I am a life member of this club – another crushed dream), the downside of aging (is there a good side?) and 'you should put your old band up on myspace for a laugh' were raised.

And it got me thinking – is it possible to 'bring to life' old budget-conscious

analogue recordings; how do you go about doing this; and is it worthwhile if the end result is only going to be an mp3 anyway?

WHAT NEXT?

To help get some answers I enlisted the help of Matthew Gray from Matthew Gray Mastering. With a client list including producers/engineers Caleb James (Rhubarb and Alex Lloyd), Lachlan 'Mago' Gould (Midnight Oil, Regurgitator, Spiderbait and Jebediah) and Powderfinger guitarist Ian Haug (Powderfinger, Pete Murray and The Grates), I knew if anyone could enhance these old recordings (colloquially known as 'polishing a turd') Matt could. Luckily for me, even with work pouring in, Matt found time to take up the challenge.

Originally recorded on 16 track ½ inch multitrack tape (it was thought too expensive at the time to purchase the masters – dohhh!) for an EP that was never released, I had previously transferred these recordings from cassette to 16 bit wav files a few years back for preservation purposes as the sound was getting noticeably wobbly. I uploaded these digital files to Gray via secure server as part of his online mastering service.

MASTERING IDEAS

"It was quite obvious on first listen that this recording had never been mastered," said Gray. "There were inconsistencies in levels, frequency and balance as well as a reasonable amount of noise which needed to be cleaned up."

Gray decided that the levels needed to be raised but also felt the dynamics could be improved in order to bring some life back into the drums and music in general. He also noticed a lack of lower subs and

clarity in the high end.

"I usually like to start with a quality digital EQ to make EQ cuts in problem areas but with Ben's Calf, the midrange and low mids were quite nicely balanced so there was only 1 or 2 very small EQ cuts made for each song," said Gray. "With the song Falling For You, I had a single cut at 166Hz by 1.5dB to clean up some of the low mid build up which helped the bass guitar definition.

Additionally Gray added a little bit of harmonic distortion to the low end from 200Hz – 20Hz using a multiband harmonic exciter which helped fill in some of the low end which was missing in the original mix. Gray then raised the levels digitally before sending the signal to the Cranesong HEDD's D/A converter that also had some digital valve and tape simulation. Gray used a little of the Triode (valve) processing for 2nd order harmonics, some Pentode for 3rd order harmonics and Tape for saturation and added warmth, mainly focusing on the Pentode to add a little excitement and colour to the midrange.

PROCESSING

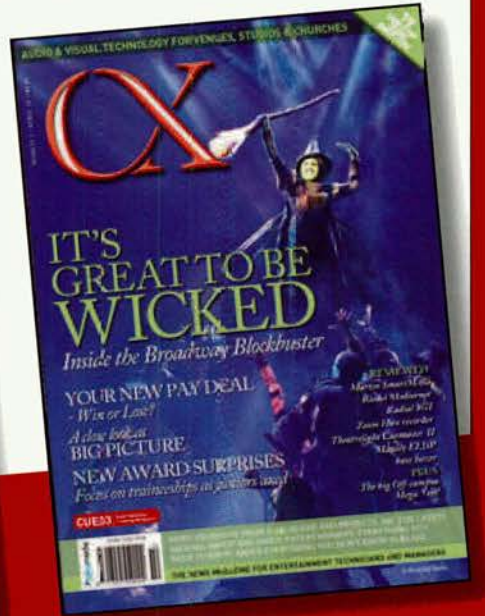
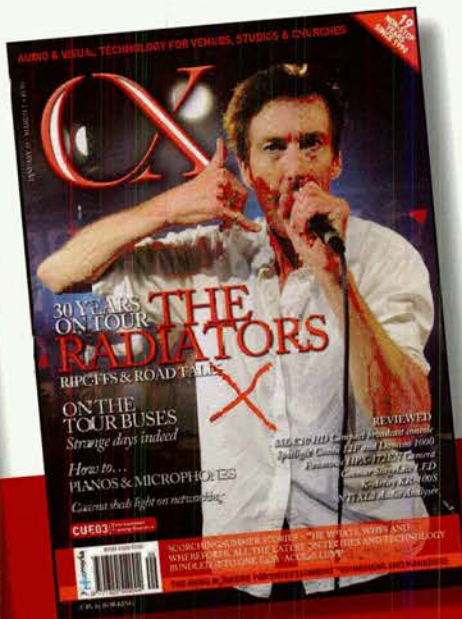
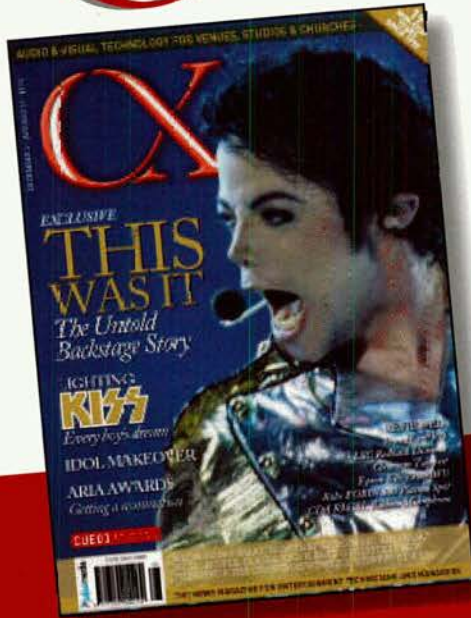
Gray used three analogue EQ's (Sontec MES432-C, Buzz Audio REQ 2.2 and API 5500) each at different points where he felt that the EQ excelled. Starting with the low end he added a 0.5dB low shelf at 100Hz (API 5500) and 60Hz with a reasonably tight Q (Sontec) to bring out the kick drum more. For the mids he added 0.5dB at 1.5kHz (API) and 1dB at 3.4kHz (Sontec) with a medium Q for snare snap, vocal presence and guitar clarity. For the high end he added a 0.5dB high shelf at 5kHz (API) and a 1dB boost at 14kHz (Sontec) on the widest Q to bring out the presence

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and air in the vocal as well as further clarity from the cymbals and hats.

"This really helped to bring the vocals forward and also added some high end sparkle and excitement," said Gray. "One challenge I faced with this job was a request to bring the vocal levels a little more forward and I knew that this was not an easy task to deal with given that there were no stem vocal mixes, and the vocals were quite engrained in similar frequency ranges to the guitars and drums."

For compression and levelling, Gray used an API 2500 quad VCA set to 'old' mode.

"I had it set to 'old' mode which is a more gentle compression action, a light 2:1 ratio, longest attack and 0.1 release but with a hard knee," said Gray. "I find that when it's set up in this way it can often enhance the snap and the punch of the drums, which is almost the opposite of what a typical compressor will do."

Gray preferred longer attack & shorter release times with higher thresholds (barely registering GR on the needles) for both compressors. Gray then captured the signal back into the computer with a Lavry Gold AD122-96 MkIII A/D converter at 96kHz.

"I found that capturing at 96kHz

preserved a lot of detail and it tends to sound more natural like the analogue feed and less digital," said Gray. "Once back inside the computer, I used some light expansion to bring up the transient detail, which helped lift the kick and snare out of the mix a little, and I also find this helps to preserve the liveliness of the track even after limiting."

THE FINISHED PRODUCT

Gray was pleased with the final outcome (as was I) and felt that he managed to make it sound warmer, fuller and louder while adding excitement and enhancing the dynamics.

"It made an old recording sound new and fresh again," said Gray.

So now that these songs have been freshened up, was there any point in undertaking the exercise knowing that they will be crunched down in size and quality through mp3 conversion to suit the mspace format. As a lossy format designed to remove certain information that our ears have difficulty perceiving - usually in the form of high frequency cuts above 15kHz and below 30Hz, according to Gray, a lot of it is psychoacoustic. Gray believes that the better the source sounds

then the better it will sound through the mp3 encoding process and he masters with this in mind.

"One thing I'm mindful of when working with any mixes destined to be converted to mp3 is to focus the high end in the more useable range (mostly just under 15kHz), making sure the critical midrange areas sound well balanced and that the lows are tight and defined," said Gray. "I also try not to enhance the stereo width artificially either to keep the solidity of the mono information intact, as this is one of the more complex problems that Mp3 encoding can affect."

So there you go. The proof they say is in the pudding. You can listen to the mastered tracks at www.myspace.com/benscalf and hey, if you have any old band recordings hanging around, it might just be worthwhile getting them mastered.

Oh...I also had another dream. To write a hit musical depicting greed, office politics and artistic aspirations based around Sydney's Central Station in the late 1980s. Matt also mastered four songs from these digital recordings made 8 years ago. You can find these at www.myspace.com/centralthemusical

OK, now back to reality and paying those bills.....

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With Julius Grafton...



Since that annoying Live Performance Award 2010 suddenly appeared and imposed new minimum pay scales starting July, a creeping reality has infected the Australian entertainment biz.

Aside from the mind-bending rule that says you can't work cheap or even work for free anymore (unless on work experience from a college, school or uni) the big debate has been about the touring crew. They get a special loading of 17.5% to alleviate penalty rates. This appears to be because of the sharp hand of Live Performance Australia, the peak body representing promoters and producers. They seem to me to have had their wishes granted by Fair Work Australia when the award was crafted. Like changing a four hour call to three hours, and so shafting every theatre follow spot operator in Australia.

This 17.5% loading business appears to endorse the current dodgy practice of not allowing a ten hour break. The award generally spans an employer where a ten hour break is not met, by determining that all hours in the day thereafter are at double time. Yay! But not, it seems, for the touring crew. So a casual, a crewing agency worker or a permanent staffer at a gig gets double time if asked to sleep short, but not the touring dudes. Go figure.

Several good honest concert production owners came to our campus recently for an industry summit on this new award, and they expressed confusions about whether or not the touring crew did or did not get double time if they didn't get ten hours off. But the Fair Work Ombudsman has squibbed answering this, and our interpretation supports the bean counters at Live Performance Australia. Touring crew do not get double time if denied a ten hour break. (If this is not correct of course I will correct the record, but I have tried for 2 weeks to get a ruling other than this and it is not forthcoming).

TEN HOURS BREAK


This means you stop work at – say – 2am, and do not start again until midday. In this time you are meant to go to the hotel, have a shower, unwind, sleep, wake, have breakfast and rejoin the fray. A reasonable proposition, but not often met when a promoter schedules Melbourne, Sydney then Brisbane end to end.

You leave the venue at 2am, do the above but catch a flight to the next town well before midday to make the venue at midday. Get the picture?

Touring production system engineer crew need to be there at truck docks both ends, and it is VERY difficult for a production firm to do it any other way. If you have 2 or 4 crew on the road, they usually can't be split into day and night crew to make the ten hours happen.

BUT IT WILL BITE

No one, no time, should EVER have less than a ten hour break between work days. In any industry. I know some people can do it, but I also know a lot of us cannot, self included. And some filthy lowlife peddle speed, pills and other white powder to 'help' their 'mates'. For 37 years I have been so totally against this because I've seen what happens.

So bring it on. Tell me when you are asked to work with less than a ten hour break, so I can add your employer to my expanding shame files. And tell the police every time you see ANYONE dishing out drugs backstage. I'm good at confidentiality. So are the cops. 

The nature of the advice given here is general. Do not rely on this column, and do refer any questions you have to legal counsel before imposing any changes to your venue, job practices or workplace. This column is not legal advice, and should not be taken as such.

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RSS REAC SYSTEM

The RSS digital snake system has always been flexible, and the introduction of some new hardware options has opened up even more options for users.

By JIMMY DEN-ouden

The RSS Digital Snake system is based around their REAC driven digital audio transfer protocol, introduced to the market a couple of years back. The M-400 mixer and M-48 personal mixers followed soon after. The most recent additions to the line are the M-380 rack mount mixer, S-4000M REAC Merge unit, and S-0808 I/O unit.

THE MIXER

The M-380 will seem very familiar to M-400 users – the layout is virtually the same. The M-380 is a 48 channel mixer with 18 busses and 8 matrixes. It supports Stereo and LCR modes. The mixer has 8 on-board mic/line level inputs, plus a talkback mic input – all have phantom power capability. There's also an unbalanced stereo input on RCA connectors. 8 line level balanced outputs are on XLR connectors, and a headphone output, Coax and Optical digital outputs, and of course the usual array of RJ45 REAC ports finish the package. The M-380 uses the same mix engine as the M-400, and runs at either 44.1 or 48 kHz. Typical latency is quoted as 2.8 ms from I/O box input to output.

Access to most features is achieved by pressing the "DISPLAY" button located adjacent to the feature, then using the context sensitive softkeys beneath the display. There's a set of navigation arrows and a big rotary encoder. Patching setup is pretty easy too – there's a dedicated key and the matrix style layout is self explanatory. There's even a "sends on fader" function, or you can use the rotary encoder adjacent to the aux bus selector buttons.

Really, the obvious differences here are



size and the number of faders. Unlike the M-400, the M-380 is rack mountable, and there are 12 faders (plus master fader) on the surface (rather than 24). 6 page/bank keys swap between inputs 1-48 and output faders for the mix and matrix busses. There are also 6 "user definable" pages, onto which you can place input, output, effect return or DCA faders in whatever order pleases you best. Really, the M-380 makes about as much sense as the M-400, which is a lot. All the stuff you need is easy to find and get to, and it works well.

THE NEW I/O KIT

The S-0808 is the baby of the family in terms of REAC I/O units. It's an 8 input, 8 output box. Inputs 5-8 have TRS connectors in addition to the XLRs, and inputs 7-8 can be switched to high impedance mode to allow direct connection of instruments. 8 inputs doesn't seem like a whole lot, but keep in mind that you can use more

than one unit. The S-0808 runs on 12-18v DC, delivered via a 4 pin XLR. Co-incidentally that's the same power supply a broadcast camera uses...

Alternatively, you can power it over the same Cat5 cable that carries the REAC connection. This is where the S-4000M comes into play – 4x powered REAC ports connect to the S-0808 units to allow up to 32 inputs and 4x 8 outputs to be combined into a single REAC port. That single port then connects to the mixer, and is treated as a 32 input, 8 output device. Channel numbers on the S-0808 units are defined by which port you connect them to. There's a helpful diagram on the top of the S-4000M box to tell you how it all works. You can even connect an S-1608 I/O unit instead. The 8 outputs are common on all the boxes – ie: whatever you route to output 1 appears on output 1 on all boxes.

The brilliant thing about the S-0808 is that it's small. Spreading several of these around a stage (or even a venue) would

save you running subtrunks. You run Cat5 cable instead, which is considerably cheaper than multicore copper. Take it a step further, and consider that the cable cost is so negligible that you could leave the cable permanently installed if you planned to go back to do another gig in the venue.

FINAL WORDS

Where will it stop? Perhaps when the folks at RSS run out of good ideas, though it may be a while yet. The new additions to the REAC based range of products are solid, and make the technology accessible and useful to more users. The system is compatible with the rest of the gear in the range, and they've even held onto the EtherCon connectors which is nice. The gear is well built, and it works how it's supposed to. The biggest challenge the system faces is not an operational or functional one – it's simply one of perception.

BRAND: RSS

Model: M-380 Mixer, S-4000M REAC

Merge unit, S-0808 3x8 I/O unit

RRP: M380: \$11995, S4000M: \$2995,

S-0808: \$2495

Product Info: <http://rolandcorp.com.au>

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The M380 jams the M400's controllability into a smaller footprint.

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PRISM SOUND ORPHEUS



How much difference can a converter really make? We find out...

By JIMMY DEN-OUDEM

Prism Sound have enjoyed successes with their ADA-8 analogue to digital converter – a modular unit which can be configured as the user requires. The ADA-8 does a lot – in fact more than some users require. The Orpheus came about to make the same A2D conversion quality available to more users.

WHAT DOES IT DO?

The Orpheus is an eight analogue input/output A2D and D2A converter & audio interface. Control & audio data runs from the computer to the Orpheus over a Firewire 400 connection. RCA and TOSLINK ports allow additional signals to be input, output, and converted. The Optical port can be switched between SP/DIF and ADAT modes, which is clever. A second Firewire port allows multiple units to be cascaded (up to 3) to provide up to 24 channels of A2D and D2A.

Four of the analogue inputs include mic pre-amps with individually switchable phantom power. Two of the inputs can be used for instruments. All of them have

switchable high pass filters, as well as Prism Sound's "Overkiller" – a progressive limiter designed to optimise signal gain without distortion. There's even an RIAA EQ curve which can be switched in to allow direct connection of a turntable to the input pre-amps. The inputs route directly to the DAW inputs, as well as the Orpheus software mixer.

The eight analogue outputs can be linked as stereo pairs in the software control panel. You can route signals directly from your DAW outputs, or from the software mixer. The software includes a mixer which allows you to generate 10 mixes from input signals and DAW sources. Output channels can be paired too. The unit will run at common sample rates up to 192k.

COOL IT!

As with much digital equipment, it is recommended that a 1RU blank be left above each Orpheus unit to allow effective cooling. This is reasonable – since the Orpheus is designed for critical listening environments it's convection cooled to eliminate fan noise. I left the unit running on my desk for a day and it barely broke a sweat.

From the days of analogue, people are used to trying to get the highest signal level through a recording device they can without distorting it. If you do this in a digital system then two things happen: 1) You run the risk of digital distortion, which is much less ear-friendly than analogue kind and 2) you're working unnecessarily hard. It's digital – the rules of analogue noise floor don't apply.

Digital gear requires a wordclock source, and the Orpheus is no exception. It has an internal clock, or you can sync it to an external source via BNC wordclock connectors. It will even stabilize a jittery external clock if such things plague you.

Level controls are done through the software, but you can store the configuration in the internal memory and run the unit in standalone mode. The big rotary encoder on the front can be assigned to one or more outputs so you have a physical knob to turn. Meters on the unit can display either input or output.

SOUNDING IT OUT

I sat down and did some listening to music through the Orpheus. Essentially I used it as a very fancy soundcard, matched up with a pair of Genelec 8030A monitors. I liked what I heard. I must admit to being something of a cynic when it comes to high end audio gear – I think in some cases the quality of the gear has surpassed what most people's ears can hear.

Despite some initial skepticism, I listened more and started hearing new stuff in tracks I thought I knew. The good was very good, and the not so good was very apparently so. Listening to something like Sting really made it obvious how much of a difference good production makes when you can hear what's going on.

The pre-amps are what you'd expect on a device of this caliber. If you have problems with the quality of what you record or listen to while using this device, chances are it's a limitation of something else in your system. All told, the Orpheus does exactly what it claims to – it brings Prism Sound quality conversion to a new level of affordability. As a bonus to this, it looks just as pretty as it sounds. **CX**

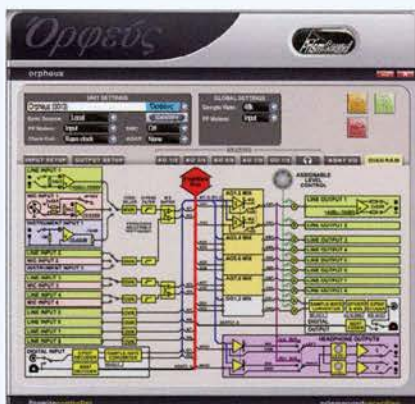
BRAND: PRISM SOUND

Model: Orpheus

RRP: \$5500. CX readers call before 1st June for \$500 off.

Product Info: <http://prismsound.com>

Distributor: <http://cda-proaudio.com>



The block diagram shows plenty packed into the box.

SENNHEISER E965

Condenser microphones have not enjoyed the same popularity as dynamics for live vocal use. The latest offering from Sennheiser is the e965, with features set to bridge the gap between studio and stage

By JIMMY DEN-OUDEM

For many years the condenser mic was confined to the instrumental domain – used on things such as drum overheads, acoustic guitars, and of course the mandolin & harp. The reasoning behind this was simple – dynamic mics just didn't cut it for instruments, while condensers tended to be too delicate for vocalists.

In recent times, the condenser has found its way onto stage in the hands and mic stands of vocal performers. This has brought a number of challenges – handling noise and feedback rejection being two of the most obvious.


The e965 could be considered the flagship of the Sennheiser evolution range, and is clearly a mic designed for vocal use. The large diaphragm condenser element is internally shock mounted to reduce handling noise. There are roll-off and attenuator switches, and a third switch to

select the polar pattern of the mic. The e965 can be switched between cardioid and super-cardioid on a whim. The basket contains an integral pop and windshield, and like most modern condenser mics, the mic runs +48V phantom power.

BASKET CASE

The e965 feels good in your hand. At about 400g it's not light, but nor is it fatiguingly heavy. The construction is beautiful – there's even a rubber "O" ring at the base of the thread to hold the basket steady with no rattles or other movement. The switches for the various features of the mic are cleverly concealed underneath the basket – a few quick twists sees the basket removed and switches easily changed with just a fingernail (no pointy stick required). This is smart thinking, as it prevents uneducated fingers from changing the settings.

Plugging the mic in and having a play with it, it sounds good too. I found

I could get a reasonable distance away from the capsule and still have nice full range response. The polar patterns are discernibly different, with each doing exactly what it's supposed to. When in super-cardioid mode, the off-axis noise rejection is excellent. The mic doesn't sound as sibilant as some condensers – perhaps this is in part due to the in-built pop screen, perhaps it's just a function of the capsule. Either way, the response is warm and smooth, with a little kick on the upper end of the mid. This could prove to be a challenge for monitor operators, but the kind of performers who benefit from a mic such as this won't be the ones who need immensely loud foldback. It's a nice solid mic, which is a bit more subtle in flavour than its appearance would have you think. Price wise, it sits about where you'd expect it to. It's not a cheap mic to bolster numbers in a kit, but more something for special occasions. Kind of like a wedding cake. 

BRAND: SENNHEISER

Model: e965

RRP: \$1249 inc GST

Product Info: <http://sennheiser.com>

Distributor: <http://syntec.com.au>

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HALL RESEARCH VHD-180 SCAN CONVERTER



High resolution video on a low resolution display poses something of a quandary to the AV tech, but it seems Hall Research have the answer.

By JIMMY DEN-OUDEM

We've all been there – some genius specified a video system without first engaging their brain. I once worked in a venue with a high quality data projector, to which the only available cable was a single RG59 co-ax. Fine for running IMAG or cameras, but it won't plug into the VGA port on a computer real well. Nor would it produce an image even if it did plug in. This posed a big problem when clients wanted to run PowerPoint presentations on the big screen. The solution was a scan converter.

Scan converters allow you to display a high resolution image on a low resolution display device. Ordinarily this leads to some problems – the device is essentially throwing away picture information to fit the image into the available number of pixels. Translation: loss of quality – especially on text. Bring on the VHD-180.

SOME INTRODUCTIONS

The VHD-180 is made by Hall Research – an American company. Functionally it is quite a simple device – put a high resolution signal in and out comes a lower resolution signal which can be displayed on a PAL or NTSC monitor. You can even use it to record a computer video signal to make a training video.

The VHD-180 is specified to support computer video inputs up to 1600x1200 @ 60Hz, and HDTV inputs up to 1080i. Inputs are by way of HD15



connectors for RGB video, or 3x RCA sockets for component. Both inputs have loop-through output connectors. Video outputs are on RCA sockets for composite and component, with a 4 pin mini-din for S-Video. Power is a standard DC connector, and there's a 9 pin D-sub which allows control via RS-232 (software is included, as is the RS-232 command set). An included IR remote allows full operation of the unit, with basic functionality (aspect, position and overscan) available on the front panel. The folded steel housing is sized such that a pair of units would fit into a 1RU space.

WHAT'S THE POINT?

The point is that the VHD-180 is on the cheap end of the scan converter market, but it performs like it's on the top end. It generates much better pictures than anything else I've seen for the same price, or even twice the price for that matter. I don't have an explanation for how the VHD-180 works so well, just that it does.

Given the initial testing (the ones where everything happens within spec) went so well, I was sufficiently motivated to move on to the next stage. So, in

the spirit of exhaustive testing I tried feeding the VHD-180 with a much higher resolution signal than it's specified to accept. It still produced a picture, and a pretty good picture at that. The same applied even with stupidly high refresh rates – it still worked. I think the specified resolution limitation is more a function of what's actually going to give useful results on a display than limitations of the box itself. It just works well. An internal power supply would be a nice touch, but at least the external switchmode 5v 2A unit would be easily replaced in the event of failure.

The bottom line here is this: If you're displaying high resolution signals, then high resolution displays and signal transport systems will always be a better option. But there are many times when this isn't an option. To my way of thinking, the value for money of the VHD-180 makes it the very next best thing. CX

BRAND: HALL RESEARCH

Model: VHD-180

RRP: \$1,041 plus GST

Product Info: <http://hallresearch.com>

Distributor: <http://madisontech.com.au>



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JBL LSR2328 MONITORS + MSC1 CONTROLLER



The LSR2300 series is the newest addition to the LSR4300/6300 family, and appears to be targeted at the entry level market. We took delivery of a pair of LSR2328P speakers and an MSC1 to see if we believed the hype.

By JIMMY DEN-OUDEM

The first thing that strikes you about the LSR2328P is that it's heavier than you'd expect – 12.7kg to be exact. This is due in part to the 18mm MDF enclosure, the 8" woofer and 1" tweeter. Add to this the fact that it's an active bi-amplified cabinet, so there are two amp modules inside (95 & 70W). Add it all together and you wind up with a speaker with a specified frequency response of 37Hz – 20kHz. Maximum continuous output is >104db from a single unit.

Inputs are available on XLR, TRS, and in a slightly surprising move RCA as well. This is a small detail, but a clever one when considering the domestic & pro-am market's requirements. People at home know how to plug stuff into RCA sockets. There are boost/cut switches which allow you to add or remove between 2 and 3db to the high and low end independently. An input attenuator on the back and reassuring blue light on the front bezel round out the package.

So there's the technical guff out of the way. But as everybody knows, there's more to it than just the technical guff.

HOW DOES IT SOUND?

The LSR2328P monitors surprised me in that they're a bit smoother than JBL's larger scale offerings, although this is not surprising. You don't need quite such excitable top end when you're making sound for one or two people, as opposed to one or two thousand. The LSR2328P makes for quite enjoyable listening at low levels. And if that's not enough, turn them up a whole lot and you'll find they run terrifyingly loud without falling over. Every way beyond sensible listening levels I couldn't get them to distort. I turned them back down and things were once more comfortable and cushy – they sound good. The HF is smooth without being muffled, and they run down a lot lower than expected from an 8" driver – I suspect the cabinet helps quite a bit. The other thing which really stuck out to me was how good the stereo imaging was.

THE CONTROLLER

We also tried out the MSC1 monitor controller. The unit is basically a box with some inputs, outputs, buttons, and a big volume knob. The volume knob is nice – it's rubberized and turns easily with the application of just one finger. The unit



allows a second pair of monitors and up to three sources to be connected, as well as the included reference microphone. A USB port enables connection to a PC (Mac software due for release in Spring 2010 according to the US JBL site).

The reference microphone is included to allow you to use the Room Mode Correction feature, which plays a series



MSC1 has a big friendly volume knob which rotates easily, even using one finger

of test tones through the speakers and calculates room resonances. It then applies suitable filters to the speaker output on the MSC1. You'll need the a computer and some time to make this happen – the whole process takes about 12 minutes and the software for the MSC1 gives really good on-screen pictorial instructions. There's a bit of patching and re-patching involved as the MSC1 figures out what (if any) effect your computer sound card is having on the signal, but once this is done the actual Room Mode Correction feature is quite

fast. You can bypass the applied filters by switching off the MRC button on the MRC1. The notches the computer in our test pulled out seemed sensitive, and the whole system seemed to tighten up a bit when the RMC was applied.

Other buttons on the MRC1 include source selection, mute, EQ, SUB on/off, and output select. There's even a headphone output level too. The unit works well and feels good – and you're not limited to using it only on JBL speakers. I'd like to have seen a MONO button included, but ultimately there are

ways around this. Similarly, the reference mic feels kind of plastic. I suppose JBL could have elected to make a nicer mic and add a hundred bucks to the price, in this case they've probably made the right choice. After all, in a perfect world you'll use the mic once then store it somewhere. That's about the worst of it.

SUMMARY

As I was sitting in the bunker merrily testing away, one of my colleagues wandered past and queried the price of the boxes – I had no idea at this point and could only reply “probably a lot”. Turns out they cost about half what I expected. The LSR2328's are great boxes in their own right, and the pricepoint only adds to the appeal, and the MRC1 is a clever addition to monitoring for those with some acoustic dramas. **CX**

BRAND: JBL

Model: LSR2328P Monitors + MSC1 Controller

RRP: \$899 each for the LSR2328P (\$1798/pr), \$699 for the LSRMSC1 controller. There's also a sub available – the LSR2310SP for \$999.

Product Info: <http://jblpro.com>

Distributor: <http://jands.com.au>

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SONY HVR-HD1000P CAMERA



Take a broadcast grade camera, send it out on a nice romantic date with a handheld domestic camera, and some time later you might wind up with something like the HVR-HD1000P.

By JIMMY DEN-OUDEM

There are essentially three grades of video camera in this world: domestic, professional, and broadcast. The difference in price between each is roughly a multiple of ten each time you step up a grade. The HVR-HD1000P is the entry level unit in Sony's range of professional grade HDV cameras.

The HVR-HD1000P is essentially a shoulder mounted HDV camera. It's got a 10x optical zoom lens which includes an optical image stabilizer. The zoom can be controlled from either the lens handle or the camera carry handle (as can the RECORD function). It records in DV or HDV format onto MiniDV tapes, and can record in either DV or "HD" format. In other words, you can make it compatible with existing DV-CAM gear. There is some conjecture about what makes for an acceptable HD standard – the HVR-HD1000P records 1080/50i in HDV mode, which will satisfy most users. The unit is built in Japan, which provides some reassurance as to quality.

THE VIEW FROM HERE

The in-built viewfinder is LCD based and can be extended sideways from the camera body to accommodate most camera operators' faces. There's a flip-up LCD touch screen on top

of the viewfinder which allows for comfortable tripod based operation as well as controlling most camera functions (including tape transport). The LCD screen can be disabled with a switch on the side, presumably to conserve power.

Power management is advanced – the unit runs from an InfoLithium battery which provides feedback to the user about available run time remaining. If you're just outputting pictures and not using the deck, run time should be at least a couple of hours. Charge time is a little longer, and must be done with the battery attached to the camera. An external charger and a larger battery would probably be good investments. The included shotgun mic plugs into a 3.5mm jack, and yields surprisingly good results. Audio input level is manually adjustable, or you can leave it up to the AGC control – either way there are on-screen meters to show you what's happening. If you want to plug in an external mic, you'll need an interface box to do this – these can be had for about \$200.

Other switchable on-screen features are zebra and histogram displays – a nice touch and not commonly found at this pricepoint. You can also make the camera output color bars. The lens ring is multi-purpose and can control zoom, focus, or exposure. The zoom function is a bit redundant, and I wasn't so keen on the slack response of the manual focus control – the auto focus takes a little while to get there but generally works



Julius College student Amy tries out the HVR-HD1000P.

well. The exposure control seems to be a hybrid of iris and gain functions, and is very good. The camera works well across lots of lighting conditions, even unreasonably dark ones. I was impressed not only with how responsive the manual exposure control is, but also by the fact that the pictures don't seem to grain up too much in low light.

WELL CONNECTED

The camera has outputs for days – composite, Y/C, YUV, and even HDMI as well as DV. There's also stereo line level audio out. I would like to have seen BNC connectors for the video outputs,



The camera outputs both standard and high definition.



Light weight and convenient; placed extra controls make this a great hand-held option.

but the RCA connectors are at least a real format, not some foolish fragile proprietary thing. There's a LANC connector which allows remote lens operation via optional wired zoom/focus controller. The power input connector is a proprietary one and again the more common 4 pin XLR would have been a better choice, but since the battery life is good you're unlikely to need to use it on a gig so it's largely irrelevant. The firewire port is a miniature type – a full size port would be nice but it does the job anyhow.

At 2.7kg, the HVR-HL1000P is boxing in the featherweight division – it's much easier to hold than a full size broadcast camera for long periods of time because it's much lighter. Being shoulder mounted it's also easier to hold steady than a hand held unit. So you get the best of both worlds. You can switch between aspect ratios for both recording and the down-converted outputs.

Using the thing is dead simple – switch it on, insert tape, change any menu settings as required (the defaults for everything are pretty good, except for

the annoying menu “zing” noise which is easily disabled), then point and shoot. Exporting can be done via the firewire port or you can just pull the tape and use a separate DV or HDV deck. It's that easy.

THE REAL DEAL

Does the HD1000P look like a much more expensive camera? Yes. Shoulder mount cameras are generally more convincing in appearance than handheld units based on bulk alone. More is more. It's not a broadcast camera, but it looks like one, and turns out good enough pictures to justify its existence. All up, this camera would suit small production houses who need to supply video to their corporate clients. The manual exposure function makes light work of dealing with varied lighting conditions, it's easy to operate, looks good, and delivers great pictures for the money.



BRAND: SONY

Model: HVR-HD1000P

RRP: \$2035

Product Info: <http://www.sony.com.au>

Distributor: <http://www.sony.com.au>

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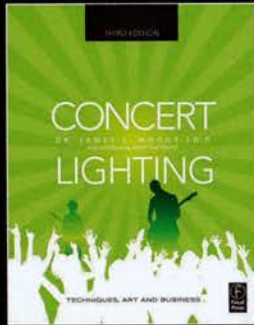
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CONCERT LIGHTING (3RD EDITION) BY JAMES MOODY

This title has been around for a fair while and the third edition is a greatly improved version of what was already a very good book.

It was with pleasure that I turned the first page of this new edition. And as is expected, the text is well written and very easy to read. Reading this book you can sense that James is a master of his subject and that he is a willing teacher. He can also impart his knowledge in a friendly easy to read format that keeps the reader engaged. James' methods are very practical and come from many years of experience - probably the best teacher. He calls on many years both in the industry and teaching. Reading this text you can see that he has done extensive research to make sure that the information in the book is as up to date as possible.

This is a comprehensive book on lighting design for concerts. The text is based around the rock and roll industry with emphasis on techniques and equipment. The topics covered range from pre-production, through to various equipment types - like moving heads, LEDs, lighting desks, dimmers, and truss in individual chapters. These chapters also explain the evolution of these items as well. Even though the book is written by an American and probably mainly aimed at the American market a lot of what is written is very relevant to the industry here in Australia. As this is a global industry, we do need to keep up with what is happening in the rest of the world and this book is fantastic for doing just that.

A really nice feature of this book is the interviews with some of the top lighting people in the industry. The text also looks at the industry from the artist's perspective as well.

This book is a great read, and I recommend it for those just starting out or for seasoned professionals. This book helps you keep your knowledge fresh and is a reminder that the industry is moving forward and that we should try and keep up with the advances that seem to be happening daily. This book should be considered a tool in the lighting technician and/or designer's toolkit. I highly recommend that you beg, borrow, or buy yourself a copy of this text. **CX**

TITLE: CONCERT LIGHTING (3RD ED)

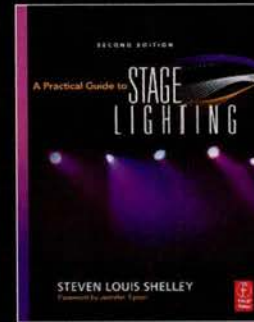
Author: Dr James L Moody

RRP: \$80

Publisher: www.focalpress.com

Distributor: www.dymocks.com.au or online at www.elsevierdirect.com/

by **STEPHEN DEAN**



A PRACTICAL GUIDE TO STAGE LIGHTING BY STEVEN LOUIS SHELLEY

There have been plenty of books written about stage lighting - some good, some bad. How does this one stack up? Read on...

I received what I thought would be just another book on stage lighting, and I was wrong with this assumption. I realised, on reading this book that it is a gem of information. Even though it does refer to the American electrical standards, the rest of the book is very relevant and very useful. Steven, the author, is a very skilled practitioner of lighting and lighting design. He is also the fellow that invented and is patent holder of the award winning Field Templates™ and SoftSymbols™. With over 35 years of experience in lighting he has a wealth of information to pass on to us mere mortals. The book is very easy reading, covering areas such as paperwork, the processes involved in working out what equipment you require, planning bump in and set up, focussing and plotting, and the performance.

This book is very comprehensive in its coverage of the lighting process. It gives you an insight into how things are done on very large shows. All of these techniques can of course be scaled to use with smaller shows. The book covers lots of the basic elements of lighting design - such as beam overlapping, lighting angles, patching. And whether you are new to lighting design or a seasoned professional the information is very helpful. Steven gives many examples using an imaginary musical for which he then goes through the lighting process from design to execution. This book is a real world look at the processes involved with lighting design. It is not a guide to equipment or the design process, it is what is needed to get the design from your mind into the theatre in the best possible way.

This is a must have book to have on the shelf along side Francis Reid and Richard Pilbrow. This book is very entertaining and educational. It is also great as reference material for practising professionals. I thoroughly recommend this book for all lighting people. You will find yourself referring to it again and again. **CX**

TITLE: A PRACTICAL GUIDE TO STAGE LIGHTING (2ND ED)

Author: Steven Louis Shelley

RRP: \$90

Publisher: www.focalpress.com

Distributor: www.dymocks.com.au or online at www.elsevierdirect.com/

by **STEPHEN DEAN**



Powerpoint Controller - controller on left, remote on right.

LEON AUDIO POWERPOINT CONTROLLER

A simple answer to a simple problem that plagues presenters everywhere.

Recently I was at a venue where the presenter wanted to control his PowerPoint presentation from the lectern. The only problem was that the computer was 15 metres away in the bio box feeding the projector directly. We all know as technicians that having to operate a client's PowerPoint can be a real pain. It does mean that your mind might not be on the multitude of other things you should be thinking about.

This is where this device comes in.

Ian De Rieu recognised a need for the presenter to be fully in charge of their presentation and being the tech guru that he is he set about designing one. This unit is a real boon for venues and venue techs. The device is simplicity itself to use. There is a cabled remote that sits on the lectern within arm's reach of the presenter. This is then connected to the controller part by a normal mic lead, so in theory you could send it down a spare channel on your multicore. This controller is then patched into the USB port of the laptop or pc that has the presentation on. The main controller can control up to two computers, so you can have one computer running while another show is being prepared on the other. Or have both running together with one as backup or using both to present a show.

The remote is as simple as it gets, a box with 2 buttons on it, one for forward and the other for back. And if you hold the button down to long it will not jump thru your whole show in seconds. It is very well thought out. Keeping it simple is the way to go when you might have a stressed performer and it certainly takes a task away from the tech so they can concentrate on doing their job properly.

In use this is a great gadget for a venue, it simplifies one task and it is more reliable than using a mouse or wireless remote that you can often buy. Being USB, it will plug into any computer, Mac or PC, and no software to install. This makes it ideal for using with the client's computer. The range is also very good, over 500 metres according to the brochure, you certainly won't get that with a Bluetooth or wireless device. I would recommend that any venue doing a lot of PowerPoint presentations have a long look at one of these. CX

BRAND: LEON AUDIO

Model: Power Point Remote Control

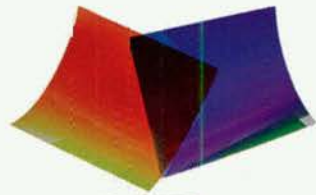
RRP: \$822.80

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ADVERTISING INDEX CX51 • 1 JUNE 2010

20th Year Promo.....	41	Hills SVL.....	11	Selecon.....	13
Amber.....	32	Jands.....	IFC, 3, 52, 61	Setwear.....	66
Audio Products Group.....	19, 33, 47	Julius Events college.....	59	SSE.....	15
Barbizon.....	39, 66	Matrix Productions.....	66	Staging Rentals.....	66
Big Picture.....	55	Meyer Sound Australia.....	5	Subscriptions.....	51
BS Sound.....	66	Murray Tregonning.....	27	Syntec International.....	9, 31
Cases.com.....	66	Nightlife.....	49	Technical Audio Group.....	7, 37, 45
CDA Pro Audio.....	21	Norwest Productions.....	18	Technical Direct on Co.....	35
Chameleon Tearing Co.....	42	Production Audio Systems.....	24	The Resource Corp.....	65
Ear Monitors Australia.....	43	Rentalpoint.....	66	ULA.....	53, BC
ETF.....	29	Riedel.....	25	VR Solutions.....	39
Eventquip.....	63	Roland.....	IBC	Yamaha.....	17
HES.....	57	Rosco.....	65		

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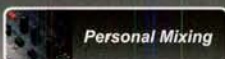
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