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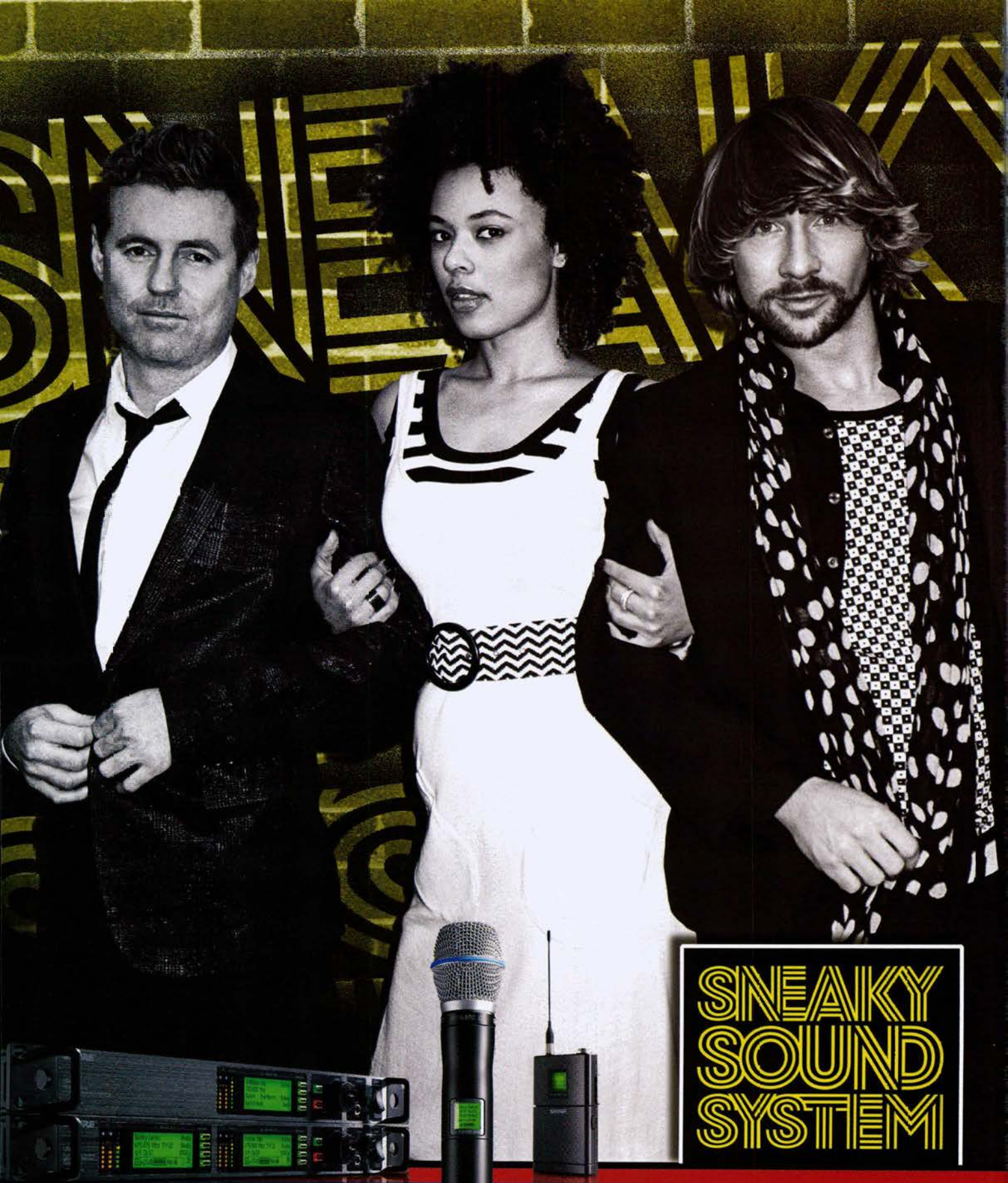
INSIDE
ST MARTIN'S
THEATRE
& THE GROVE
STUDIO

REVIEWED
YAMAHA DSP5D
GRASS VALLEY TURBO
ALLEN & HEATH ZED
MARTIN MAC TW1
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NEWS! Backstage and up in exec row, CX has all that is new and all that is news. Devices, tools and concepts to help make those cold winter days brighter and warmer.

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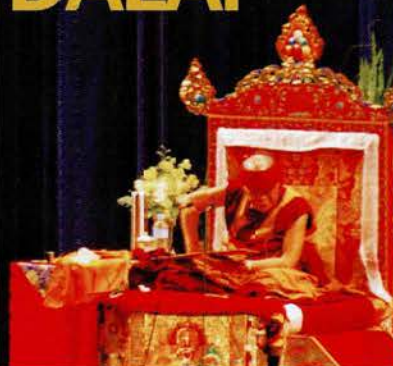
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Australia and New Zealand's Complete Sound Vision and Lighting Distributor brings you **FUSION** Magazine



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ANZ Stadium Lightens up with Clay Paky & DTS



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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

SECRET PRICE

Everyone has a bother button or two, mine is pressed when a moving light importer says that we can't publish the price of their device. I can do what I like, within reason. I think it's very reasonable that you know the ballpark telephone number of the device. Everyone with ten grand to spend is smart enough to understand the difference between retail and trade pricing.

OILY RAG

My profile of St Martins Youth Arts Centre in this issue reminded me how lean the pickings are out there in subsidized theatre. The small team at St Martins have a neat and tidy operation, all the gear is maintained well, and if they need to spend a dollar the need is studied from four sides. More power to all those out there, making a go of things with insecure funding.

ENDANGERED

Carbon trading will push power costs skyhigh and then lighties will stop using discharge lamps. Nothing is more ridiculous than an arena full of humming moving lights, all lit up and dows'er'ed shut for hours before a show. Things that dim electrically use less juice. Real soon electricity use will be costed into shows and venues will on-charge the power.

CHUGGI

He was at the Norm Sweeney fundraiser then the Golden Stave - and can usually be found when a cause is worthy. But now he says he is planning to spend more time at home with his new wife in Thailand. Music promoter Michael Chugg is one of my favourite people, because he is real. We need more risk takers and deal makers with a conscience. Nominate your fav person (and why) to me, email juliusmedia@mac.com

Julius

NICE PEOPLE

Somehow, this issue has become the feelgood issue of CX. In the depths of winter, when lots of us are lumbering about in two coats sniffing and muttering, there are people out there ready to put their hands up to do something for others. As you read about the Golden Stave, the Norm Sweeney benefit, Adrian's recovery and the great things St Martins and The Grove are doing, be thankful that there are people out there who do so much good. Too much media attention goes to those at the other end of the spectrum.

NICE WORLD

You don't have to be a rocket surgeon to figure out that there's something going on with the environment. Even if you only ever read the really big words on the front page of the paper, you know we're staring down the barrel of some pretty big problems. The politicians have got some big environmental issues too - like if they do what they need to for the environment they'll be so unpopular that they'll never get another gig. So they gibber wildly at one another about fuel excise and coming up with a plan sometime in the next election cycle, all the while desperately hoping no-one notices that nothing's getting done.

We've had it. CX, unwilling to wait for government, is starting to take steps of our own. The editorial team are reducing car use in favour of bicycles, we're trialling some LED downlights in the office as long term replacements for incandescents, and we're endorsing products and operators with an environmental edge. If your organisation is getting stuck in, let us know what you're up to.

After all, when the world breaks down and the power gets too pricey, ours will be one of the first industries to go.

Andy

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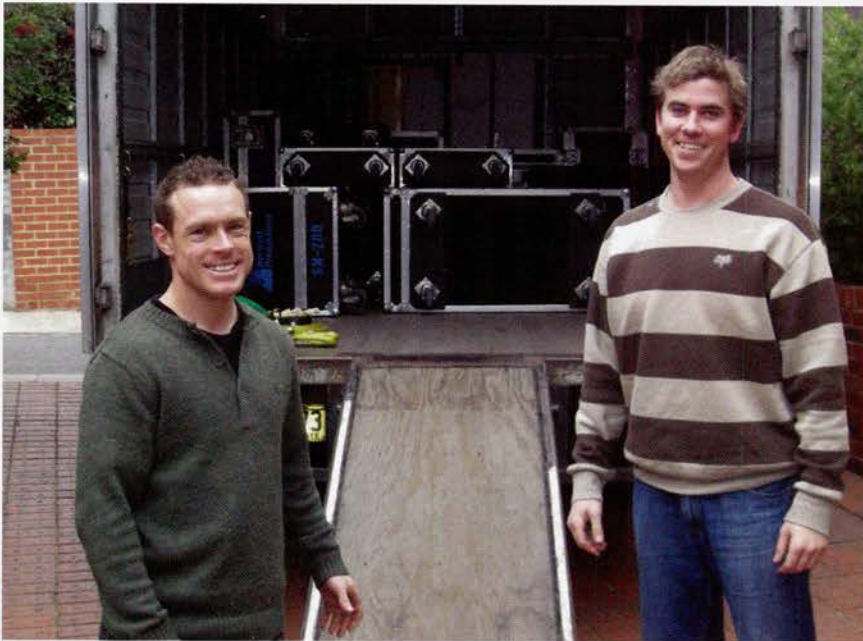
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CX NEWS

DEVICES, PEOPLE AND CONCEPTS

NORWEST BUYS OCEANIA AND MCLEAN AUDIO

Growth cements claim as largest live sound provider in Australia and NZ



Some Norwest Melbourne crew, Tom Oliver and Terry Ferguson are about to be joined by many others.

Big audio just got louder with the expansion of Norwest Productions, the professional audio production firm that did sound for the past two Olympic games ceremonies. Originating in Sydney, Norwest now operate in Auckland, Wellington, multiple locations in Melbourne, Brisbane, New Caledonia and Beijing.

Earlier this year Anacacia Capital invested in Norwest, giving founder and owner Chris Kennedy some return on his life's work and connecting up some extra professional business management expertise. Anacacia is a boutique investment firm who are fussy about where they invest – they did a lot of research before buying into Norwest. They must have like what

they got, since they have now assisted Norwest with these two very significant acquisitions.

First of these is McLean Audio Services in Melbourne, where owners Richard Bilinski and Karin O'Cain have wholly sold their 20 year old audio firm into Norwest. "We were looking for a going concern sale, to keep the staff," Richard told CX. They plan to remain with the firm, which is located close to the CBD.

Until now Melbourne has had a finely balanced assortment of professional audio firms, the largest by far of which was Johnston Audio Services. Thereafter in no order were Norwest (Melbourne), Powa Audio, Deluxe Audio, and Oceania Audio's

Melbourne branch. Oceania are New Zealand's largest audio co.

Norwest recently became Australia's largest audio company in their own right, on the back of world events like the Asian Games (ceremonies) in Doha, and those two Olympic gigs. That was prior to these acquisitions.

Now Norwest's Melbourne operation is much closer to Johnstone Audio in size, combining Oceania, McLean Audio and Norwest's Melbourne arm into one. As to which audio firm gets located where, the likelihood for the near term is that Oceania will move in with Norwest, at Moorabbin.

Norwest and McLean Audio run Rental Point software for inventory, so integration is not likely to be an issue. As to inventory, the new audio conglomerate has some choices to offer clients. Before we talk gear, lets hop over the ditch to the East Island, where Oceania have ruled the NZ scene for rather a long time, or at least 1979. Now Norwest own the firm.

Headed by Greg Peacocke, who started the firm with Paul Jeffery, Oceania do sound, lights, staging and sales from HQ in Auckland and a satellite office in Wellington. There is a small outpost in Noumea New Caledonia as well.

"We were desperate to sell, and he (Chris Kennedy) was the only person silly enough to buy," quipped Greg who has a neat turn of phrase. "I'll stay on here until the flies follow me in," he added. "There's two madmen at the helm now. Let's sail!" For the record, Greg Peacocke is aged 55 while Chris Kennedy is in his early

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Greg Peacocke (Oceania) says he will stay on.



Simon Garrett heads Oceania Lighting - a strategic asset.



Richard Bilinski (McLean) plans to stay.

60's. They both look ten years younger, and both have little sons at home keeping them young.

"I still work the shows, mix and load the truck. It looks a bit like the old boy (Chris) hasn't loaded a truck in a while. Neither has that other one" referring to Jands Production Services CEO Eric Robinson.

Oceania have more than 30 staff, and their business is broken into lighting, audio, and sales - which are broader activities than Norwest. Lighting accounts for a large 25% of Oceania's work. Greg says that some of his sale proceeds have been re-invested in

Norwest shares and indeed some of his staff have purchased shares in the conglomerate as well - for cash.

"I've had interest before, from Staging Connections and from TR Corporation who are behind Vidcom in NZ. But when things are steered by an investment company instead of another sound company, it isn't long until things turn to custard," Greg says.

In pure audio terms, the Norwest group now owns staggering numbers of current model Meyer, Adamscon, EAW and Kudo line arrays, alongside an A to Z of slightly more mature loudspeaker inventory including E.V.,

Funktion One, and Turbosound concert PA systems.

Consoles? Choose one. The audio production landscape now is divided into those with VDoc (Jands and Johnstone) and Norwest with everything else.

So what now for Norwest? Chris Kennedy isn't saying - on the record - but something you won't see anytime soon is a corporate management team wearing suits. The firm is cashed up and ready to keep expanding, and it doesn't take too much imagination to see Perth appearing on the company map sometime very soon. **CX**

STAGING RENTALS INTRO ALLYSTAGE

Staging Rentals and Construction Services introduce AllySTAGE - the aluminium platform system. Two decades on, hundreds of wooden risers are making way for a new staging system at market leading staging firm Staging Rentals. They have designed and now manufacture the system, based on their own design.

Founder and director, Meri Took told CX the firm polled its customers and found they were disposed towards a new system - even though in many cases you don't see the structure of a stage, only the surfaces. But a stronger, faster, lighter system makes sense in some applications, despite the considerable development costs.

Staging Rentals now have an engineered solution for all the standard riser tops in a 600 x 1200mm grid - at almost any level height. It is also easy to put wheels on the system, which they have already done for a roll on, roll off stage at a State of Origin football match.

Perspex tops are available, and the



system is load rated at 5.5kpa - far more than most applications require. It is a complete system and includes BCA compliant handrails that are as aesthetically pleasing as they are practical.

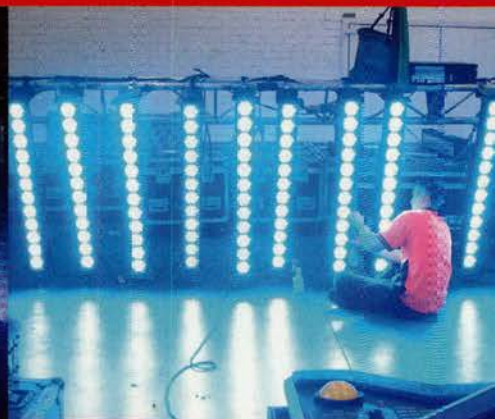
S.R. are Australia's largest supplier of stages and have more than 5,000

drapes in stock. It's a business that doesn't require much electricity! They have a sophisticated custom manufacturing division, building sets for tradeshows, television and special event.

Staging Rentals & Construction Services is proud to announce a change in the ownership of the company. **CX**

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CHANGE OF OWNERSHIP AT STAGING RENTALS



David Comer.

Managing Director David Comer is now a joint partner in the national business. David Comer has been a shareholder and a Director of Staging Rentals & Construction Services for five years.

Meri Took, Director and Founder of Staging Rentals & Construction Services will continue to be actively involved in all aspects of the business.

The formalisation of the partnership represents a new chapter in the company's progress. David Comer believes it shows a strong determination for growth and a commitment to remain an industry leader.

'I am delighted with our continuing partnership. Meri and I have a shared vision for the future of the company. I know that together with our extraordinary team of dedicated individuals, we have the formula to see Staging Rentals remain at the top of our game,' says Comer. 

CMI APPOINTS NEW HI-TECH PRODUCT MANAGER



This Jase dude appears to have left the road...

Originally from Perth, Jason Hearn began experimenting with synths and computers in the early 80s. He's embarked on a varied career - including Graphic Design - to fund his lust for gear. In 1993 he formed one of Perth's first live performing dance music bands, Sensory Overload. Eventually he went solo under the moniker, Jase from Outta Space

Concurrent with his music career, Jason has worked in music resale. He relocated to Melbourne in August of 2002 to become Product Specialist and Technical Support person within MusicLink's Audio Technology department. There, Jason was responsible for Technical Sales and Dealer/User Support and Training for products including Ableton, Arturia, CME, Echo, Korg, KRK, Line 6, Mackie, Propellerhead, Steinberg, and Vestax - giving him a vast knowledge of the hi-tech products sector.

Jason joins the team at CMI to establish a new Audio Technology product department in the role of Product Manager and is looking forward to working with CMI's dealers from all sectors of the marketplace to grow their businesses through sales of hi-tech studio production/performance hardware and software solutions.

Jason maintains a firm belief that today's traditional VJ customers who write and perform original music are tomorrow's hi-tech studio recording customers. 




This is our Top of the Month. James Den-Ouden sits next to another handy device, the 20kVA heater. Yep, plug this puppy into a three phase outlet, and listen to the sound of the power meter spinning off its axis! But wow - it works. Spotted backstage somewhere.

CHAINMASTER HAS ARRIVED

ULA GROUP has been appointed distributor for Germany's ChainMaster range of electric chain hoists and chain hoist controllers, bringing this brand to Australia for the first time.

The ChainMaster range of high-powered electric chain hoists and chain hoist controllers comprises over 200 models.

Established in 1993, ChainMaster was at that time, the first in the world to develop an electric chain hoist system that was capable of satisfying the stringent German safety regulations.

For your chance to be involved in ULA's ChainMaster Technical Workshops or to book a demonstration contact ULA - 1300 ULA GROUP : 1300 852 476. 

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COST: \$100 INC. GST

AUDIO NETWORKING



In this 3-hour course, you'll learn the fundamentals of creating audio networks using CobraNet and EtherSound, the digital transmission protocols that have revolutionised the design and construction of distributed audio systems. You'll build simple networks that transport audio via Ethernet infrastructure while learning about the operation of Yamaha's DME Series programmable DSP range and network audio interfaces. This course is suitable for any system designer, integrator or installer interested in upgrading their skills or seeking an introduction to digital distribution protocols.

COST: \$50 INC. GST

PM5D V2 AND DSP5D



In this 3-hour course, you'll learn the operation and new features of Version 2 of one of the world's most popular digital mixing consoles, the PM5D, and its new expansion unit, the DSP5D. Topics will include how to expand a PM5D's mono input channel count to 144, as well as using a DSP5D as a remote stage box and digital multicore, connected to FOH by a single piece of Cat5.

COST: \$50 INC. GST

QLD	Rockhampton	Digital Mixing 101	Thursday 11 September
	Mackay	Digital Mixing 101	Saturday 13 September
	Townsville	Digital Mixing 101	Monday 15 September
	Cairns	Digital Mixing 101	Wednesday 17 September
	Brisbane	Digital Mixing 101	Tuesday 7 October
		Audio Networking : PM5DV2 and DSP5D	Wednesday 8 October
NSW	Newcastle	Digital Mixing 101	Tuesday 14 October
	Sydney	Digital Mixing 101	Tuesday 21 October
ACT	Canberra	Audio Networking : PM5DV2 and DSP5D	Wednesday 22 October
VIC	Melbourne	Digital Mixing 101	Tuesday 11 November
		Audio Networking : PM5DV2 and DSP5D	Wednesday 12 November
WA	Perth	Digital Mixing 101	Thursday 20 November
SA	Adelaide	Digital Mixing 101	Friday 28 November
TAS	Hobart	Digital Mixing 101	Tuesday 9 December

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DBX DRIVERACK PX ARRIVES

Powered speakers are a beautiful thing. Everything you need bundled into one simple, tidy, portable package. Just grab 'em and go, right? Well, you may think your powered speaker system is complete, but you're missing half the picture. Now dbx have created a processor specifically tailored for powered speakers. Utilising their highly-acclaimed DriveRack technology, the

PX picks up where your powered speakers leave off.

The PX is said to be the first processor in the industry specifically tailored for powered speakers. Although powered speakers by definition require no amplifier or external processor, the DriveRack PX is a good addition to any powered speaker setup, as it hosts a number of features that offer louder, cleaner, better sound than had previously been possible from the system.

It includes stereo or mono

subwoofer support. With the included dbx M2 measurement mic, Auto-EQ corrects for audible deficiencies in the room environment. dbx's patented Advanced Feedback Suppression (AFS) suppresses feedback, allowing operation at higher sound levels, while the patented Subharmonic Synthesizer extends bass response for enhanced bottom end. With all that, you also get classic dbx compression and the protection offered by graceful PeakStopPlus limiting.

www.jands.com.au



SENNHEISER INTRO HIGH-PERFORMANCE IEM TWIN TRANSMITTER

In Ear Monitor users now have up to 100 mW of power for transmitting monitoring signals thanks to the evolution wireless SR 350 IEM G2. The new twin transmitter is expanding Sennheiser's most successful monitor system, guaranteeing a much greater range for wireless monitoring along with huge flexibility.

"The output power of the SR 350 IEM G2 can be switched between 15 mW and 100 mW – offering an optimal fit for stages of all sizes," explains Stephan Scherthan, Industry Team Manager for the music industry. "The menu control is as user-friendly as ever,

thanks to the backlit graphics display which lights up red during peak warnings."

The twin transmitter with HDX compander can be used with the EK 300 IEM G2 and EK 3253 monitor receivers. In total there are 1440 UHF frequencies available for interference-free transmission. For a direct choice of channel, every transmitter has eight channel banks, each of which has 12 pre-sets, as well as a bank with up to 12 user-selectable channels.

There is an option for the high-performance twin transmitter to be controlled and programmed via the NET 1 network system; both transmitters can be listened to through separate headphone sockets.

www.syntec.com.au



Ken Dwyer, CEO of Audio Products Group.

AUDIO PRODUCTS GROUP SIGN DURAN AUDIO

The complete range of AXYS sound reinforcement systems is now available in Australia and New Zealand following the signing of a distribution agreement between Audio Products Group and Duran Audio.

Based in The Netherlands, Duran Audio is one of the world's leading developers of powerful and compact sound reinforcement products and public address systems.

Duran Audio's range includes the AXYS Intellivox line of loudspeaker arrays. It provides the perfect solution to one of the most difficult challenges facing today's sound system designers, namely designing an intelligible sound reinforcement/public address system for a large reverberant space. Intellivox products use Duran Audio's Digital Directivity Technologies – Digital Directivity Control (DDC) and Digital Directivity Synthesis (DDS) – which allow the installer to control the vertical directivity pattern of Intellivox products and aim the sound squarely at the listener.

"Duran Audio is the world's most innovative designer of high intelligibility loudspeakers for public places and we're very proud to be representing the company in Australia and New Zealand," said Ken Dwyer, Managing Director, Audio Products Group.

www.duran-audio.com



HILLS SVL OPENS ITS SEVENTH OFFICE

Hills Sound Vision and Lighting announce the opening of a Canberra office. Hills SVL say they have the largest distribution network in the industry, with seven offices and warehouses across Australia and New Zealand.

The opening of a Canberra office will add to this substantial network giving customer's the knowledge that someone will be there in real time specifically to service their SVL requirements.

We are pleased to announce the addition of a new team member to run the Canberra and ACT Operation. Gordon Anderson will take on the ACT

Manager role with years of audio and automation experience and a wealth of knowledge to back it. Gordon is a prominent figure in the industry due to his considerable work with CEDIA and Infocomm over the years. These skills equip Gordon to better understand the needs of dealers and end users with first hand knowledge of their experiences.

"Canberra was the perfect choice for our new office as the city is booming with audio visual and lighting integration projects. By providing an office with warehouse facilities, we will give our customer's peace of mind that we are dedicated to their future success" says Stuart Craig, Hills SVL General Manager.

www.hillssvl.com.au



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32-Channel M7CL: \$24,000

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M7CL Digital Mixing Console

The time to go digital is now...

If you're planning to build or upgrade a mid-size sound system – installed or portable – now's the time to move up to a top-performance, easy-operation digital system based on the M7CL. This is one digital mixing console that lets you concentrate on sound without being overwhelmed by the technology.

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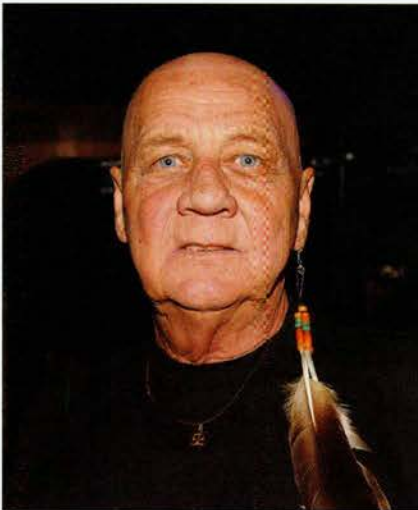
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NORM SWEENEY HONOURED



Chugg offers the love. Pic by Bob King.



Norm Sweeney accepts the love. Pic by Bob King.



Hines, Cadd and Perko share the love. Pic by Bob King.

FUNDRAISER CRANKS IT FOR A VETERAN ROADIE

Until his recent cancer diagnosis, Norm Sweeney was the last of the great Australian roadies of the 1960s still working. He started out in 1966 with Max Merritt & The Meteors before signing on with Billy Thorpe & The Aztecs, a relationship that lasted on and off for 39 years, until Billy's untimely death in 2007. Norm also worked on tours by many famed overseas acts including The Rolling Stones, Fleetwood Mac, ABBA, Joe Cocker, Alice Cooper, Bad Company and Frank Zappa. Up until his recent illness, he still toured with Brian Cadd and Rose Tattoo.

In June some of Australia's greatest rock musicians got together at

Sydney's classic rock pub the Bridge Hotel to help him out, assisted by Michael Chugg, Marcia Sutherland and Glenn A. Baker. The show kicked off with a set by John 'Swanee' Swan, who was in fine form and sang several of his hits including 'Lady' and 'If I Were A Carpenter'.

Next up was Jim Keays — himself still recovering from treatment for pancreatic cancer — who performed a rousing version of "Turn Up Your Radio" and "Because I Love You".

The legendary Dinah Lee got everybody bopping with her classic hits "Reet Petite" and "Don't You Know Yockomo", followed by a fine set from Richard Clapton.

Next up was the incredible Doug Parkinson, who delivered towering renditions of some of his best-known songs, including "Dear Prudence", his Southern Star Barc hit "I'll Be Around" and a truly gorgeous version of "Blackbird". This was followed by a special performance of The Bee Gees "To Love Somebody" sung by the all-star trio of Doug, Brian Cadd and Marcia Hines (who made a surprise unscheduled appearance).

Caddie had the crowd in the palm of his hand with a brilliant set of his favourites including "Ginger Man" and "Let Go" and this set was definitely a highlight of the night.

Next up was the great JPY, still

looking and sounding fantastic, and backed by the wonderful All-Stars, including Warren Morgan and Ronnie Peel. Squeak's rendition of "Love Is In The Air" included a surprise cameo 'dance' performance by a bare-chested Michael Chugg, who flounced on stage with a shirt tied around his head, camping it up hilariously.

The final numbers of the night featured The Aztecs (Morgan, Wheeler and Matthews with Phil Manning) plus special guest vocalists Danny Young and his dad JPY.

Danny tore the place up with his powerhouse performance of "Somebody Left Me Crying"; this is the fabled opening song from their 1971 Melbourne Town Hall live album, on which Warren Morgan played the Town Hall organ, and cranked it up to the point that (according to Warren) it cracked the foundation in the neighbouring Commonwealth Bank, earning them a lifetime ban from the venue. JPY returned to close the night with the anthemic "Most People I Know".

The night was a great success, and at last report the benefit had raised more than \$20,000 for Norm's treatment. Milesago wishes Norm all the best for his treatment and recovery. (First published on the excellent www.milesago.com website. Thanks to them.)





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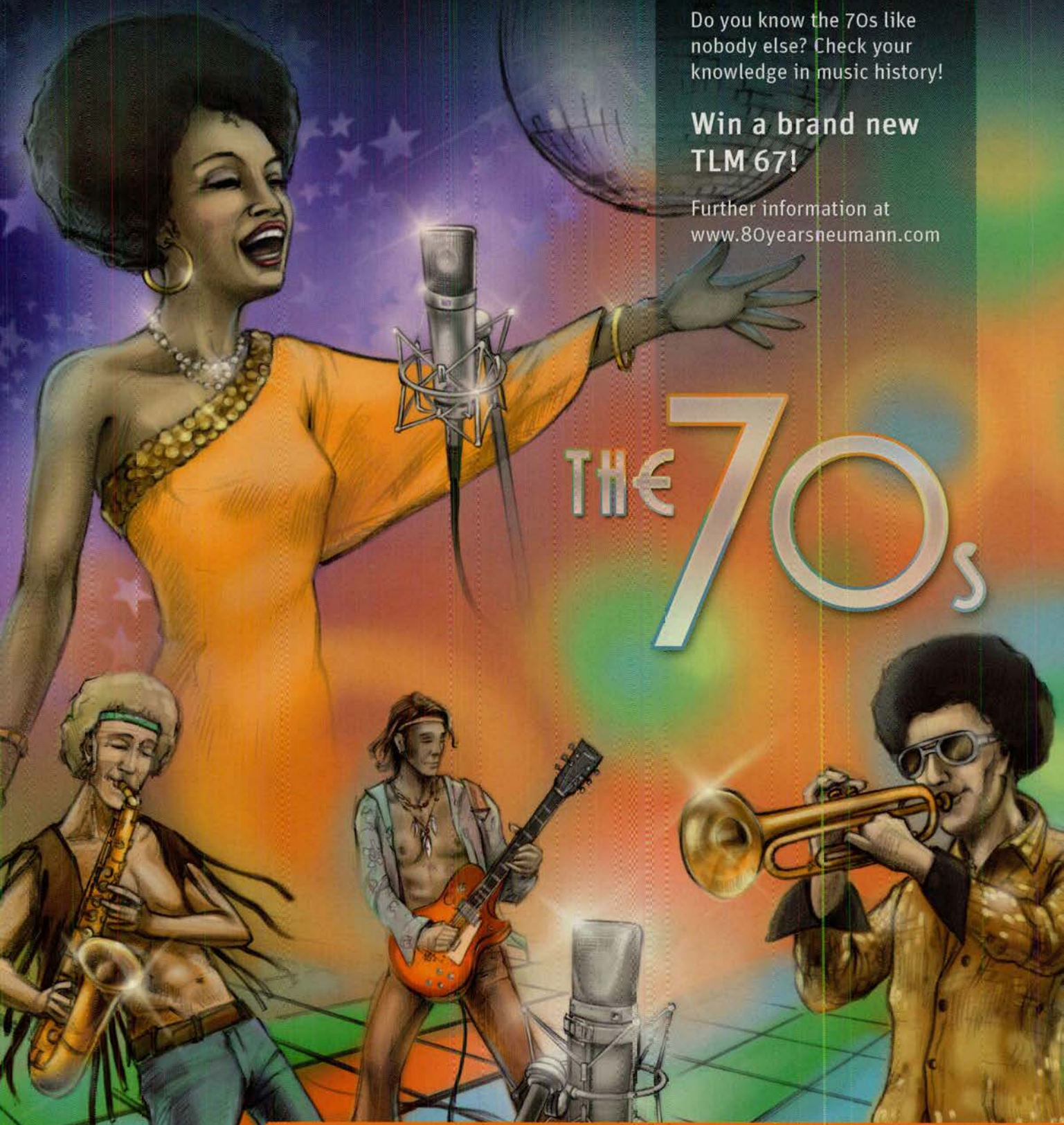
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Michael Montgomerie-Williams, Wayne Grasser and Jade Cclar at the ULA Robe Digital launch.


ROBE'S DIGITAL ROADSHOW

The latest additions to the Robe family have reached Australian shores and have toured the East Coast in the Robe Digital Roadshow.

Melbourne's Queens Bridge Hotel played host to the first leg of the roadshow. On show were the new Robe DigitalSpot 3000 DT and the DigitalSpot 7000 DT. The attendees were also treated to the Australian debut of the new Robe REDWash 3•192 which utilizes the new Luxeon Rebel LEDs. Also on display was the

Robe ColorWash 750 AT Tungsten following on from its debut at this year's ENTECH.

The Digital Roadshow continued on to ULA's Sydney facility. On hand to present these fixtures was Robe's Managing Director, Joseph Valchafi, who was delighted by the level of positive feedback he received about the Robe products in Australia. "Australia has really embraced Robe" says Josef.

The Robe's then travelled on the following week to events at the Gold Coast's Convention Centre and Brisbane's Powerhouse Theatre. 



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Norwest Productions



Used on Linkin Park and Iron Maiden Australian tours

Due to popular demand, Norwest Productions has increased its rental stock of Adamson Y-Axis Line Arrays. Stocks of this product is now, 32 x Y-18's, 56 x Y-10's, 16 x Massive T-21 Dual 21inch Subwoofers and introducing the Adamson M15 concert wedge. One of the flattest response wedges with rock solid bottom end and crisp clean top end in a light weight low profile wedge. Norwest now have 24 of these in its rental stock.

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- Midas XL4, XL3
- Midas Heritage 3000, 1000
- Midas Verona, Venice



Regal Theatre Technical Manager Barry Brody.

NEW DIMMERS FOR PERTH'S REGAL THEATRE

Since the theatre's conversion from a cinema to a live theatre in 1977 the Regal has become Perth's most popular theatre with well over two million people having attended the wide variety of entertainment offered.

For years the theatre has been getting by with a fairly old dimmer system and control desk - 140 channels of Strand JTM Dimmers (120 channels of 2.5K and 20 channels of 5k) and a Strand Encore. Not surprisingly the theatre's Technical Manager Barry Brody was keen to upgrade!

"I have known Tony Davies from Chameleon Touring Systems for over twenty years and we got together at the ETEC tradeshow earlier this year," commented Barry. "I had been intending to upgrade systems at the Regal Theatre for some time, years in fact, which I had shared with Tony. He was able to introduce me to the guys from Jands who all gave me great advice and help with the project so I would like to thank Tony in the first place."

Barry further comments that Sam Bertolini, Jand's Account Manager for Western Australia, was another great guy to deal with.

"Being an independent theatre my budget was non-existent and I was literally watching every cent," he said. "Sam was very understanding with how many times I changed my mind and with the fact that I had to keep going to management with all details to run out what was best for us. I have to say that the Regal Theatre Management John Thornton and Stan Brc have been nothing but supportive and encouraging of the upgrade and they made it easy by trusting my decisions"

Today the theatre proudly boasts seventeen Jands HPX 2 AZ 100 2.5K Dimmers which give full cover of all five lighting bars on stage and the front of house positions. They also give three racks that can be placed into any of those areas or be used on the stage deck.

"Our intent was to become more flexible with where our dimmers could be placed and to get rid of some of the old patch bay areas," added Barry. "The upgrade included the purchase of two Jands DD6-2 for DMX distribution and we also did some DMX patching around the stage area and on the first landing, again giving us some more flexibility and efficiency."

The old Strand console was replaced with the ETC Congo JR with a wireless remote and 2 x 20 channel fader wings.

"I had some long conversations with Tim Kennard from Jands regarding my choice of console," said Barry. "As anyone would know that has bought one, especially for other people to use, there are a thousand miles of opinion! In the end I went with a console that had the flexibility that we require. It was easy to use, familiar to touring companies and shows and which fit into my non-existent budget. My LX crew has been excitedly pouring over it since it arrived!"

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ART 322 A	12" + 2"	350W	50W	128dB	23kg	680H 405W 345D
ART 325 A	15" + 2"	350W	50W	129dB	24kg	680H 405W 345D
ART 522 A	12" + 2"	500W	250W	130dB	18kg	680H 405W 345D *NEW
ART 525 A	15" + 2"	500W	250W	131dB	18.5kg	680H 405W 345D *NEW
ART 705 AS	15"	800W	TBC	130dB	37kg	590H 435W 600D

**All power specifications measured in continuous RMS power.*



JANDS VISTA PROVIDES REMOTE CONTROL IN NEW ZEALAND

Trust those canny Kiwis to come up with an innovative way to use a Jands Vista. Nick Abel of Auckland-based Oceania Lighting, in conjunction with Auckland lighting installation company Entertainment Lighting Solutions, had to install a medium-sized lighting rig into a nightclub venue in Taupo, a three-hour drive away.

Obviously, he needed lighting control that was reliable and not in need of constant twiddling. The venue did not have room for a bulky lighting console, so Nick had to come up with an original way to control the lighting. His solution lay with the Jands Vista software and M1 playback control surface. Designed to be used with a computer, the M1 gives you all the playback benefits of a Vista show in a compact and portable package that's perfect for trade show booths, hotels, clubs or any venue where space is tight.

"The venue already had a computer system that controlled the Cloud Music jukebox system and so decided to install the Jands Vista software on the back of their system," he explained. "We programmed it so that the DJ's and operators could access the M1 to only control the lights without damaging the programming or deleting anything. Basically we can lock down what they have access to on the playback wing. It provides a fool-proof lighting system with the advantage of having a Jands Vista M1 controlling it."

The advantage for Nick using the Cloud Music system is that they run their own virtual network throughout New Zealand so for projects like this, where the venue is a long way from their offices, Nick can go into Cloud's Auckland office to dial in via the rVPN to change any aspects of the lighting control.

The rig consisted of five moving heads, some scanners, LED pinspots, LED PARs plus a smoke and a haze machine.

"It's not a huge rig but we really needed a decent control system that D.J.'s could easily use," commented Nick. "We've had a lot of positive feedback from the client but the great thing about the set up is that it's tamper-proof and user-friendly"

The collaboration with Cloud has proved so successful Entertainment Lighting Solutions is about to install a similar system into a venue at Wanaka, near Queenstown.

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GREAT LOOK FOR VINTAGE OSMONDS

Scarey we know, but The Osmonds are on the road – and this is their 50th Anniversary Tour. The pictures show a fabulous use of large screens live.

Their lighting was designed by Mike Frogge, who's worked with Donny Osmond for many years.

All lighting was controlled from a WholeHog II console, chosen specifically because of its availability in Asia and Australia where the family

did one show only, in Perth.

The challenges on the UK leg involved covering the 7 Osmonds with 4 follow spots and ensuring that they were evenly lit at all times. They are perfectionists when it comes to the show which featured 20 songs in the 2-part set, encompassing over 30 Osmonds classics including the medleys. Some of the lighting was triggered by timecode from the Burford video server that had been specially customized by Donny Osmond, who was actively involved in the show's video.



TRUE SOUND PRODUCTIONS RISING

Towards the end of last year, Queensland saw the rise of a new rental company with a big inventory. True Sound Productions in Ormeau (halfway between Brisbane and the Gold Coast) is able to cater for any requirements when it comes to production - whether for 50 people or 50,000.

Managing Director, David Thorndike, is a true audio enthusiast and has based his inventory on current industry trends. He wanted a point of difference to the other big companies in Queensland, so he opted for the HK Audio Cohedra and Cohedra Compact. Since they came onboard as an HK Partner, David has worked with other companies in the network and has started to build a strong client base.

Early this year David supplied some of the stages at the Queensland Future Music Festival. True Sound also helped BE Productions with the Newtor's Playground Festival in Athurst with the large HK Audio inventory they have acquired.

In True Sound's warehouse, you will find 48 Cohedra Cabinets, 24 Cohedra Compact, 4 x SL218A's the self powered 2 x 18, 2 x Dæcon systems, over 20 Contour monitor speakers with DSM-2060 controllers and a collection of LUCAS systems for smaller applications.

'I have plans to end up with 96 Cohedra Cabinets which will give me the opportunity to do the biggest shows the country has to offer' says David.

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SECRET LISTENER: CHAKA AND MARCIA

-By reader: name withheld

I was in row X at the Enmore Theatre for Chaka Khan and Marcia Hines. Ms. H has bass, guitar, keys, percussion and drums and was very good. But after a while I started to be irritated by the right hand conga which was (BONK!) way too loud (BONK!) and remained that way.

Maybe I was in a node? Went for a walk to the bar and ordered a (BONK!) VB, walking back around the other side of the venue and past the FOH mixer where a guy was nose down in the screen of the Yamaha M7CL. BONK! I was going bonkers.

The lady and her band were totally excellent, and the audience loved her. The changeover was done, and on came the legendary Chaka, looking booty-full in a leather Kat suit. She had an MD guitarist on stage right in white, keys, bass, drums, 2nd guitar and backup singers stage left.

Lights were murky dark, strange given this was a black act, but it all worked and what a great mix by a dude on the PM4000. That Nexo line array PA works so very well at Enmore. I loved Chaka, who has had her battles and earned her stripes.

A word about The Enmore: this place should be put on the national register as a treasure. If anyone ever complains to council or starts carrying on, I'll be at the front of the picketline protecting the place. The Iron Duke Hotel next door is great as well, drop in there for a drink at interval. I'll be in the back section at the table nearest the door. **CX**

MEYER 24-HOUR SUPPORT PHONE LINE

Meyer Sound has announced the launch of its 24-hour worldwide technical consultation phone line, a new addition to the company's comprehensive customer support program.

"We take pride in giving our customers 100% confidence when using our products, and knowledgeable support when they need it," says John Monitto, Director of Technical Support. "It is important for us to work closely with our customers and give them the attention they deserve."

For Meyer Sound's 24-hour technical consultation service, call +1 510 486 0657. **CX**



Here is the stage at World Youth Day in Sydney – 60m x 40m and a six crane lift for the roof. That makes this the largest stage we've seen in Australia. Any advances on that?



MADISON MIXES IN A MIX RACK

Recently, Madison Technologies appointed a group of resellers to distribute the DigiDesign VENUE series, to make the product range more readily accessible across the country.

Now available in this series is the new DigiDesign Mix Rack, a new compact

option for the D-Show control surfaces, which brings features affordably to everyday production companies.

Operators who use high end systems, can have the same interface for their smaller and lighter budgeted projects. Now, it's simply about choosing the number of inputs and outputs and expandability, while the core audio engine and features remain unchanged. Offering flexibility, the most impressive feature of the Mix Rack is the full cross compatibility of show files allowing seamless integration with Pro Tools, D-Show and D-Show Profile consoles.

This capability and simplicity opens up a whole new world of applications and future proofing for investments. This compatibility extends to the Plug-in architecture which opens up to over a hundred manufacturers of studio quality audio processing and more than a thousand audio processors. **CX**

www.madisontech.com

PEMAA UPDATE

The Production and Events Managers Association of Australasia website is up and running. It allows the membership process to be automated and an extranet area so members may exchange information.

PEMAA would encourage anyone who has not joined to join and to encourage others to apply. The current issue of Industry induction changes will affect us all and PEMAA is involved in the debate currently writing to State and Federal Ministers to lobby for our industry not be considered as part of the Construction Industry so we may continue on our road to regulation. We need membership to be credible in this very important debate.

www.pemaa.com



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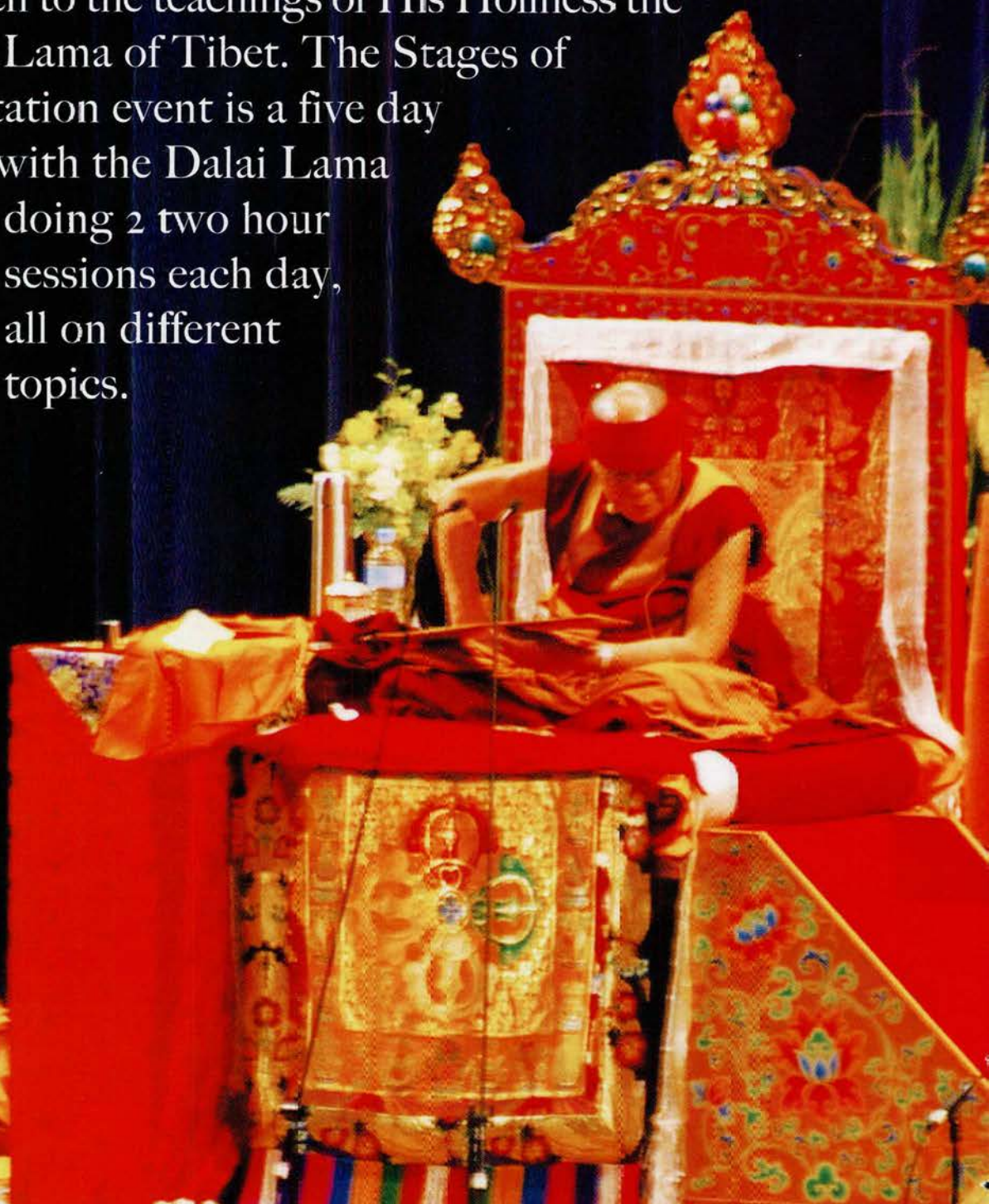
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The Dalai

Buddhists and those interested in Buddhism came to Olympic Park in Sydney last week (11th - 15th June) to listen to the teachings of His Holiness the Dalai Lama of Tibet. The Stages of Meditation event is a five day affair with the Dalai Lama

doing 2 two hour sessions each day, all on different topics.



in the Dome

In spite of all the controversy surrounding the Tibet/China issue at the moment, the show still had to go on, albeit with vastly increased security levels. So there were still the usual production and venue logistics to be coordinated, crews to be briefed and technical systems to install, just like any other event.

Haycom's Sydney office project managed the event for the Dalai

Lama in Australia (DLIA) organisation at the Sydney Showground Dome. Although this room has a great load in, large capacity and very good ceiling height, it does present its own set of challenges to the technical side of things. The exceptionally high ceiling (with its tricky rigging loadings) and very difficult acoustics meant that a fair bit of thought was required on just how to go about getting the

show staged.

As any audio engineer who has worked this room will tell you.... this is not an easy space!

It is about 90 metres in diameter and in the centre rises to a height of approximately 45 metres. It's also practically a perfect hemisphere with a cement floor, exposed beams and hard surfaces everywhere. Add to this the issue of the keynote



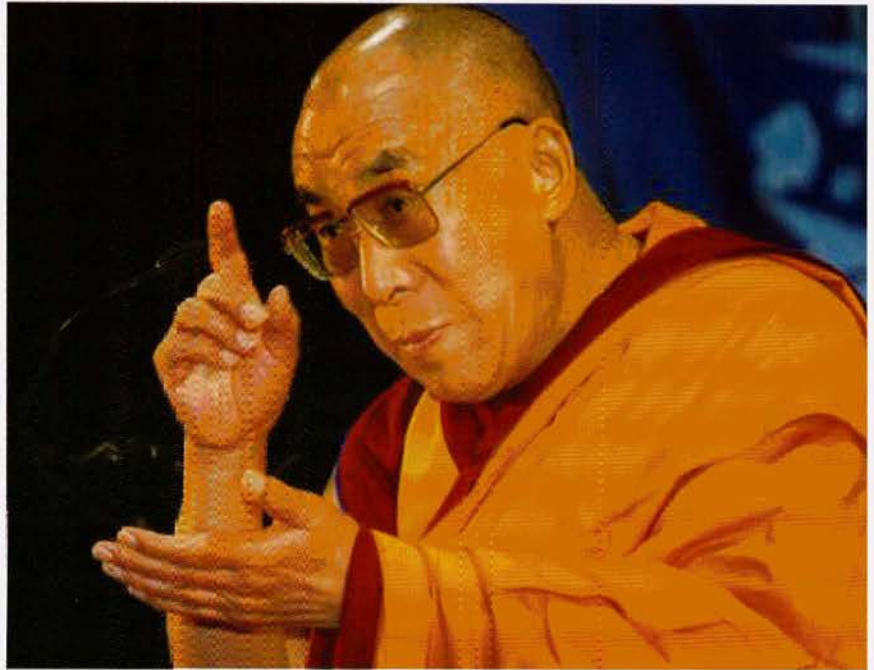
presenter speaking English with an accent, the need for him to be understood while presenting complex philosophical ideas and you have some serious audio planning to do. The goal being to achieve intelligible sound in every seat.

In order to understand the room acoustics a little better, an expedition was mounted by acoustician Garry Hall and his assistant Phil Meltzer one morning to burst some weather balloons and record the resulting audio decays and impulse responses in different areas of the room. Garry was on recording and Smaart duties, Phil was chief balloon burster! Measurements were made at 10 different points in the room (R1 – R10). The data was then processed and the information gathered was put in the hands of Ease modeler, Tim Kuschel, to try and plan where best to spend the limited amount of funds available for acoustic treatment.

Before the Ease modeling was even started it was obvious that the audio would be a challenge. Just a quick listen in the room would tell you that! However, the computer told that all the measurement points showed multiple reflections at long delay times. One area though was particularly bad (the R8 measurement). About 15m from the rear of the audience, smack in the middle of the popular C reserve seating, the reflection coming in at 190msec was 10db louder than the source sound! A lot of it was in the low mid range too which would make it difficult to reduce with the draping that was the most readily available and cost effective absorptive material.

Haycom had planned to drape the ground level vertical wall of the 6m high mezzanine area from the start, however the Ease model showed that more effort would be required than just that. Additional 6m drop draping was ordered to hang from the 15m high tubular beams above the mezzanine with both of these drape lines covering more than a 160m semi-circle at the rear of the room.

Also, Tim recommended adding more draping above the 80m long x 9m drop of blue drapes on the main upstage truss. This would try to minimise any rearward reflections lobing off the centre cluster and out-fill speaker then returning to the audience off the backstage wall. Another 36m x 6m of blues were added here to give upstage draping to



Dalai Lama presenting



All in readiness

a height of 15m.

After a couple of revisions, the audio design finally settled on by Phil and Michael Wilkie from Coda Audio was a centre array of 8 x Meyer M3D's, two out-fill arrays of 6 x Meyer Micras each, 6 x Meyer MSL-4's as room delays with Meyer UPM-1P's and UPA-2's as front-fill and ground level out-fills. Michael then used Meyer's MAPP Online Pro to do the coverage predictions and determine the angles required on the flown systems. The main array of M3D's was chosen because of its cardioid pattern at low mid and low frequencies, making it the ideal speaker to reduce the reflections off the backstage wall.

The design was now ready but how would it perform in the real world?

The answer is.....very well indeed! After time aligning and tuning with

the acoustic treatment as described above, most of the room was working well. Intelligible speech and a good sound had been achieved in about 90% of the seating. The main source of grief now was still the R8 area. There were still reflections here that seemed to be coming mainly off the mezzanine wall and a lot of the energy was in that predicted low mid frequency range.

At this point it was too late for more Ease or MAPP so it came down to experience and a decision was made to add six 6m x 3.6m free standing drapes at the back of the last seating blocks at the rear of the room. These stood about

3m - 4m off the mezzanine wall. A little wireless tweaking from Des O'Neill on the Meyer Galileo processor of the relative levels and EQ of the main array and the delays



The crew's gotta eat!

went on as well to try and improve things as much as possible.

And it worked! The source to reflection ratio had improved to the point where speech became intelligible. Still a few reflections evident but not obtrusive any more.

Client happy, audio mission accomplished!

What about everything else you ask? Yes there was more than just audio involved in the show.

The Dome is not an easy venue to rig in at the best of times due to the high ceiling in the centre of the room and the dead hung central lighting and sound grid. So Michael Diener from Pollards had his work cut out from the start.

Of course the audio boys didn't make life easy for him, testing the load limits by wanting to use eight of the heaviest boxes around and putting them right in the middle of the most loaded up area of the rigging plot! However, he did the maths and moved points around until it all came in within the ratings, including managing to put in three parallel upstage trusses all within 1200mm of each other.

The brief for lighting was simple.

His Holiness the Dalai Lama does not like bright lights in his eyes. When the lighting is too bright for him he puts a visor on to shade his eyes. The organiser had stated she didn't want to see His Holiness wearing his famous Visor at all.

He lasted 12 minutes.. then he started rummaging around in his "Dalai Lama bag" (as he called his little burgundy carry sack that he brought onto stage each time) and out it came. This in turn gave rise to a good-natured sweepstake to see how long he would last at each session. Garry Hall - audio - won easily. (Damn audio, even infiltrating the lighting write-up!!!)

At the end of each session His Holiness would start to pack his "Dalai Lama bag". He would go his notes and the visor. Then he would wait for his translator to finish delivering the English version of his last speech

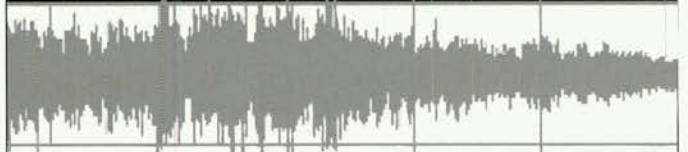
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A show like this doesn't put itself together. The Dalai Lama crew.

before departing. The removal of the visor and the subsequent "hat's off" call from camera director Denis Murphy became the signal that the session was about to close and all crew should be on standby.

The Lighting System itself consisted of almost all analogues, a rarity in this day and age. There were only 4 moving lights in the rig (MAC 2000) to cover the "what the" additions. The main grid was smothered in various sized fresnels to cover everything and to get level for the cameras. The irony is that the front truss and forward side washes were used less and less in order to keep the light off His Holiness. The Big Picture cameras adjusted easily to the ever decreasing light level.

Batteries of profiles were there to cover the numerous amounts of Thangkas (Buddhist wall hangings), His Holiness' Throne, Canopy, and Florals that graced the stage.

In order to have more control of the ambient lighting than the venue system gives, Haycom supplied lighting for the entire seating block of 6200 chairs. The challenge initially was to evenly light the six thousand strong audience. The majority of fixtures were hung out in the room as a result. After working with Pollards on getting a symmetrical truss configuration, a fairly even spread of 1.5K Q1's and 8 lites was decided on. Sometimes you don't need to reinvent the wheel. If anything it was too bright according to some attendees.

Lighting Nirvana was achieved by Steve Leiter, LD, when His Holiness did not wear his visor for two of the last three sessions. It is rumoured that Steve's next incarnation will be

CREDITS:

Client

Project and Technical

Management

Account Management

Project Managers

Rigging

Cameras Direction & PPU

Simultaneous Translation

Audio Systems

Audio Analysis

System Design

Audio engineer

System engineer

Radio mics/backstage liaison

Lighting Systems

Lighting Design

and operation

System tech

Vision Systems

Vision Director

System tech

Staging Supervisor

Lynn Bain, GM for Dalai Lama in Australia

Haycom Sydney Office

Olivia Wilson, Haycom

Phil Meltzer

Simon Powell

Michael Diener, Pollard Productions

Denis Murphy, Big Picture

Lateral Linking

Haycom and Coda Audio Services

Tim Kuschel, GUZ BOX design + audio

Garry Hall

Phil Meltzer and Michael Wilkie

Garry Hall

Des O'Neill

Eike Germann

Haycom

Steve Leiter

Matt Fordham

Haycom and Big Picture

Rodney Apps

Charles Lawler

Darryle Alexander

as a Grand MA.

Understanding a foreign accent is made easier if you can see the speaker's face and mouth as they are talking, and the 75m distance from the stage to seats at the back of the hall meant that video screens were an absolute necessity. Two 27' x 15' screens (with Christie HD 12k's) flanking the stage were supplemented by three 16' x 9' (Christie 6's) relay screens further down the room. The middle relay screen being raised higher than the outer ones so that the main audio line

array could cover the area it was designed to audio being demanding again!).

All the projection screens were to show the same images at the same time, so vision control systems could be kept fairly lean. Most of the vision was to come from a 4 camera shoot supplied by Big Picture with a couple of laptops providing housekeeping and some Buddhist texts via PowerPoint. Projectionist and vision operator Rodney Apps ran the primary signal via SDI with back-up lines to each projector on component.

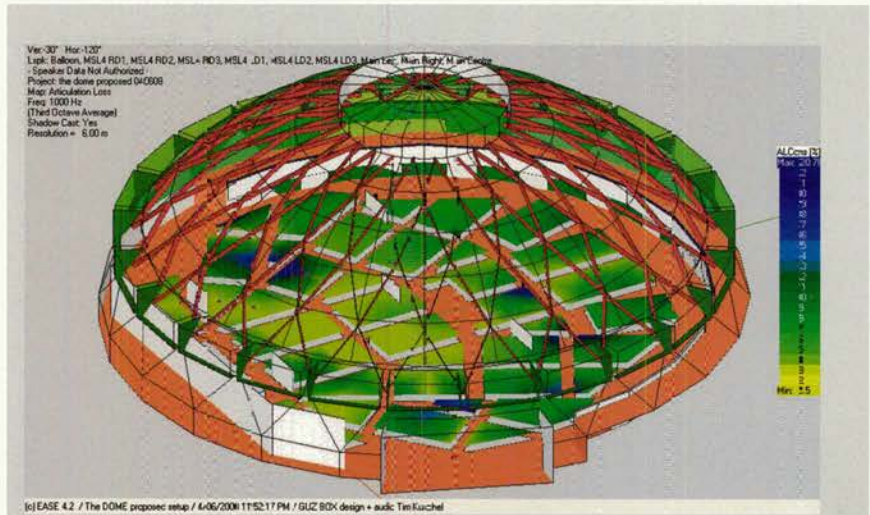
Budgets didn't allow for hot back up projectors in the air, but a spare Christie 16k and spare globes were kept on site. None were needed. Lots of good Karma floating around this show!

Big Picture's cameras provided images both for the in-room screens and for a DVD being produced by Peter Holloway for DLIA. Each day's sessions were available for purchase on DVD by the attendees the next morning.

The screens all looked very sharp with emails of appreciation for the clear vision being received by the organiser.

A veritable army of Haycom staging crew under the guidance of Simon Powell and Darryle Alexander helped set up the various hangings, props and flooring that made the stage set look sensational. The Monks and Nuns in charge of the various ritual objects on stage were very meticulous in where and how things had to be on stage. Ever seen a Buddhist Nun in jeans 8m in the air on a boom lift platform adjusting a banner?

Photos speak louder than words when it comes to sets but it really



The ALCons mapping shows how a difficult a room for audio this is.

was something special.

Overall, the show went extremely smoothly. Adapting to last minute changes of the schedule due to His Holiness' ever changing commitments was handled well by a crew with many years of experience under their collective belts. A whole extra session even being added on the Saturday evening when the Dalai Lama decided he would like to give a

public talk. The organisers and ticketing people had to move into overdrive to cope with that one!

Probably the best testimonial to the success of the event is that all the technical crew would do it again at the drop of a hat, and there were some very experienced heads on that crew who've seen just about all that entertainment and events have to offer.



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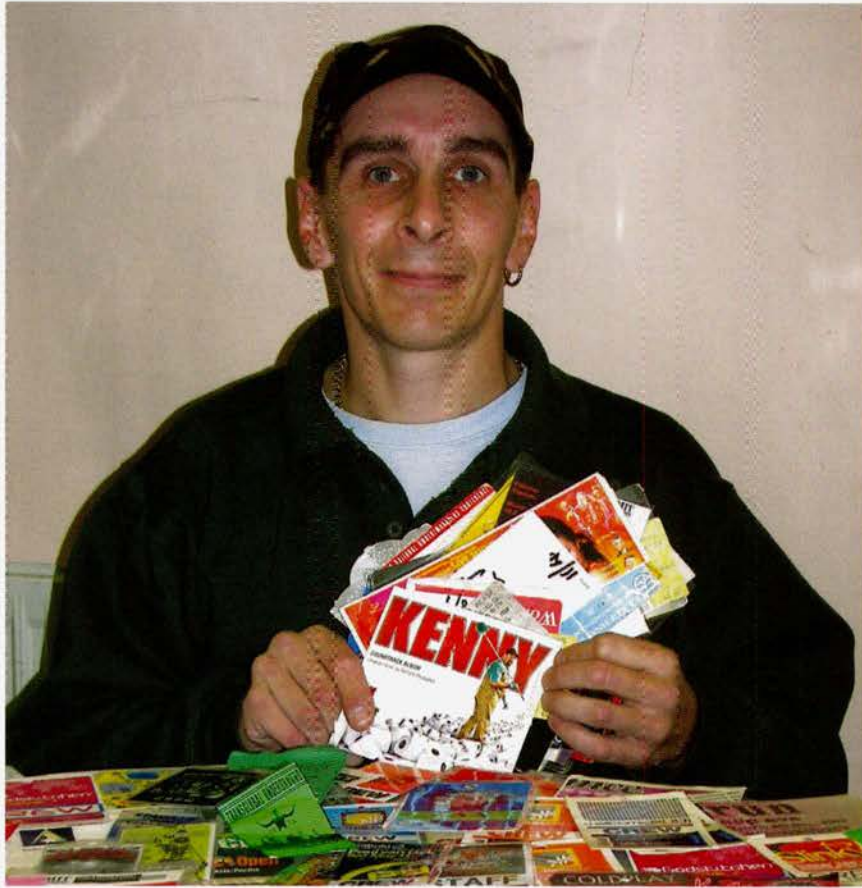


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PROFILE: ADRIAN ATKINSON



By ALICIA BEE

Lighting technician Adrian Atkinson's field of expertise involves climbing to the roofs of some of Australia's biggest venues.

But most recently he worked as the follow spot on the Kiev Ballet at the Palais Theatre, in St Kilda. His was a sit-down job, from the top balcony in the technical room, where he worked as part of a team of four on spoken cues from the lighting director.

"(It's) Good to be out of hospital and back in the workforce, or at least partially in the workforce" said Adrian of his return to the desk.

A car accident on leap year day, February 29 last year, forced him into hospital, then onto a rehabilitation program to find his legs again. The accident crushed Adrian between the side of the car and the gear lever, leaving him with a broken pelvis, ribs and shoulder. Along with the broken bones came internal injuries - ruptured

kidneys, liver and pancreas. He still has a double necklace of interlocking pins that form a belt around his pelvis. But then, it has only been 15 months since the accident.

Since then he has worked on Rage Against The Machine, Matchbox 20, Lionel Ritchie, Foo Fighters, The V Festival - Duran Duran, My Chemical Romance, Alice Cooper, UB40, The Wailers, Arrested Development, and Maxi Priest. But he missed out on many big events, "yeah, heaps!" said Adrian, who is used to being a part of all of the show action.

Well known in the Melbourne event industry, Adrian has many friends. Before the accident Adrian had a small part in the feature film *Kenny*, when friend Shane Jacobson put him in front of the camera. The brief scene consumes 10 seconds of film, and took only one take. It happened when the *Kenny* team were filming some scenes at an event. Adrian had said 'hello', and they then added some dialogue to the scene, making it up on the spot. Those

that know *Kenny*, may remember a security guard asking Kenny to move the toilets at the air show. That guard was Adrian.

Adrian has a positive outlook about his recovery. Though he sees his injuries as an ongoing problem, he is walking around with a limp - and back to normal weight.

He says he experiences pain in his right foot and pelvis when he walks, can only carry about 10kg, and can't use ramps. Which means he can't load at the start or end of the day. And while lifting is a problem, trolleys aren't always a viable option for the venue workspaces. However, he has been climbing ladders, and says that he had scaled, "three story ladders, three times a show, twice a day," for the duration of a run of dates.


Though he missed out on the first period of filming, Adrian got to be a part of Spielberg's production *The Pacific* as planned. He had been working on studio filming work since last November, spent "several days at a bench," and is not worried about being chained to a desk job. *The Pacific* finished filming at the end of April. "They were fantastic," Adrian said of Rigging RX - his employer for *The Pacific* "they kept me going with special tasks, kept me employed, (and) catered to my needs."

Adrian sleeps, waking twice a night, and will be having further 'work' done soon on his injuries. "I'd like to get my arm sorted out," he says casually in cockney English accent.

Adrian says he is on the "roller-coaster of the hospital ride," and has commitments between his GP, the hospital, and rehabilitation centre, with support from the TAC (Victorian only Transport Accident Commission).

He is close-lipped about work, and upcoming gigs are, 'classified.'

Adrian wants to give thanks to his friends for support. He would also like to thank Weasle and Trog from Gigpower for being his long-term employers.

"They got me working so I was doing 'high-level' work, like cherry picking with a climbing harness - they asked, and I have gone 'yeah-I'll do that,' and they've got me airborne again." 



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GIGS OF OUR LIVES

SPLIT ENZ / CROWDED HOUSE – NEWCASTLE EARTHQUAKE 1989



Neil Finn on the 'End of the Decade' tour

By MIKE EMERSON

At the turn of the decade, 1980's going into the 1990's, Crowded House were booked by Promoter, Andrew McManus, to perform an "End of the Decade" concert at Darling Harbour in Sydney. Also appearing, and in fact headlining, were legendary New Zealand band Split Enz, who reformed specially for the occasion 5 years after their breakup in 1984.

The two bands, shared numerous personnel and crew, notably Neil Finn and the late, great Paul Hester. It was decided to do a mini tour of four shows, which would get the bands warmed up for the New Year's Eve gig. They were supported on the tour by Boom Crash Opera. On December 27th, the three bands, a full-sized coach for the crew, one semitrailer and one eight tonne truck, set off for Mudgee. I had previously been

Production Manager on a couple of Crowded House Australian tours, and was appointed in that role again for these dates.

The Mudgee gig was a total blur. Trying to fit 3 acts of that size into a pub was always going to be excruciating, to say the least. We also discovered that this was a later gig than previously advised. It would be at least 3am before we would finish the load out.

Alarm bells went off in my head. The next day, we were doing the Newcastle Workers Club. I called together the bus and truck drivers and looked at the map. It was at least a five-hour drive from Mudgee to Newcastle. We wouldn't get to our hotel in Newcastle until 8am and the load in the next day was booked for 10am. By the time we got to bed, we would be lucky to get an hour's sleep. But Newcastle was a difficult load in, with three flights of stairs. We had a huge day in front of us tomorrow.

I made an executive decision, rang Newcastle, and changed the load in time from 10am to 11am. Two hours sleep is better than one.

We made it into Newcastle and finally hit the sack at about twenty past eight in the morning. For some reason that I'll never know, I set my alarm for exactly 10:27 am. Just time for a quick shower and walk the few hundred metres to the workers club ready for the 11am load in. Or so I thought. At 10:27 a.m. my alarm went off. I rolled out of bed and tried to stand up, only to find my legs buckling underneath me. I knew I was groggy from lack of sleep, but this was ridiculous. The whole room was swaying. I pulled back the curtain and saw a plume of smoke in the distance. Was it an explosion? No, an earthquake!

Moments later, people were running down the corridor, banging on the doors and yelling "it's an earthquake you have to evacuate – NOW!". I quickly pulled on a dirty T-shirt and jeans and ran down the fire stairs to the entrance. No shower today! The hotel staff ushered us outside onto the footpath. We would not be allowed back inside to get our bags in case the building collapsed.

There was nothing else to do but walk down the street to the gig. There were cracks in the footpath, and everywhere the sound of sirens wailing. A shop verandah was leaning down precariously. Best not to walk under that one.

We reached the Newcastle Workers Club and saw our 2 trucks parked on the roadway outside. I had done the gig many times before, and although there were many people milling on the street outside, when I looked up at the building, it appeared the same as always. What I didn't

THURSDAY DECEMBER 28		NEWCASTLE	
Newcastle Workers Club			
BAND TRAVEL: Depart total 1pm		Coach to Newcastle	
CREW TRAVEL:			
HOTEL: BAND Sabel Townhouse 23 Elizabeth Bay Rd Elizabeth Bay		CREW Ambassador Hotel cor King & Steele Sts Newcastle	
TEL: (02) 358 3244		(049) 263 777	
FAX: (02) 356 3791/3571926		(049) 264 379	
TO VENUE: 166 kms			
TO AIRPORT:			
CHECK IN:			
ROOM RESERVE:			
COMMENTS:			
VENUE: Newcastle Workers Club Union Street Newcastle		CAPACITY: 2400	
TEL: (049) 262 700			
BACKSTAGE #: (018) 346 555			
PROMOTER: Ken Conway/Andrew McManus			
PHONE: (02) 358 4377			
SOUND CHECK: 4-4.30 Split Enz 5-5.30 Crowded House 6-6.30 Boom Crash Opera			
DOORS OPEN:			
BAND ON STAGE:			
COMMENTS:			
AFTER SHOW: Band drive to Sydney Crew stay in Newcastle 3.30am crew drive straight to Mascot Airport Sydney			

1989 Newcastle Worksheet

realise was, I was looking at a facade. The front brick wall of the building had stayed intact, but behind that, the top floor auditorium had collapsed down into the second floor gaming lounge, which had collapsed down into the first floor, bars and restaurants, which in turn had collapsed down to the underground car park. But at 11am, on the 28th December 1989, we could only see what looked like the good old Newcastle Workers Club, and our trucks parked outside.

Where was our semi driver, John 'Face' O'Shannessy? The driver of the 8 tonner was present and accounted for. Hopefully, 'Face' was somewhere downtown, having breakfast. Some of the crew investigated nearby cafes, but to no avail.

Outside the workers club, emergency vehicles were gathering and injured people started to emerge from the building. It was clear this was a major catastrophe, but still the front wall of the buildings looked intact, and we had no idea of the devastation behind. I found a manager from the Workers Club, and introduced myself as the Production Manager for Crowded House / Split Enz.

In the spirit of "the show must go on", I asked him "do you think we can still do the gig tonight?" He looked at me incredulously, and explained that there was no building left behind the front wall, and that there were possible fatalities inside. Definitely no gig!

The crew spread out and continued the search for 'Face', but as time wore on it became apparent that he was probably inside the building when the earthquake struck. John O'Shannessy, 'Face' to his mates, was one of the 13 people who died at the Newcastle Earthquake, which struck at exactly 10:27am on December 28th, 1989. Nine of those thirteen dead were inside the Workers Club.

Remember that we had changed the load in time from 10 to 11am that day. Up to 30 loaders, plus a virtual "who's who" of Australian crew, including; Steven Swift (LD), Julian Spink (FOH sound), Bob Daniels (Monitors), Michael Waters, Jock Bain (sound), Garry 'Brick' Chamberlain (lights), Peter 'Sneaky' McFee, Paul 'Arlo' Guthrie (stage / backline), myself, and others would have certainly been on those 36 stairs, and on the casualty list if we had stuck to the original load in time.

Imagine though, the extent of the tragedy, if the earthquake had struck 12 hours later. Over 2400 punters, all of the musicians, crew, plus wives and girlfriends. The international music community would have been indelibly changed if we had lost Crowded House at the height of their career, not to mention Tim Finn and Split Enz, and others

Footnote. The crew spent the rest of that day sitting on the median strip of King St. Newcastle. We were not allowed back into the hotel in case of collapse, but the staff retrieved our bags and delivered them to us at the



The author today

VALE JOHN 'FACE' O'SHANNESSEY.

About the author: Mike Emerson is Technical Manager at Acer Arena, Sydney, and holds a Masters Degree in audio design from Sydney University. He has been in the music industry for over 30 years, as a Sound Engineer and Production Manager, and has been lucky enough to work on concert tours to over 25 countries

street outside. The crew coach had returned to Sydney, and didn't make it back to Newcastle until nearly 5 in the afternoon. The drive to Coffs that evening was under a pall of gloom. The rest of the tour continued, but the "End of the Decade" concert was not the joyous occasion we had hoped for.



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THE GROVE

Reborn and rebuilt with added spirit

By JULIUS GRAFTON

Bass player Gary Beers built Mangrove Studios at the heights of his times with INXS. It fast became a very desirable musician's escape, located within an hour of Sydney - just off the Newcastle freeway.

A few years ago he sold out, after seeking someone with musical veins to take over. They needed significant money as well, since the spread sits in bushland and includes a large house as well as the residential studio complex. The buyer was Mark Zschech who has firm links with the recording industry.

Mark purchased the facility, and appointed Kathy Johnston as Studio Manager. Kathy had visited the studio before, and been captivated by the vibe. It sits on a gentle slope high above the Central Coast with distant ocean views. The road winds through a state forest, and the land is typical Australian bush. There are no near neighbors.

CX visited between projects, and we had to wait five weeks while The Butterfly Effect recorded a new album. The band were resident in the main studio building, which has three guest rooms and common areas. Their producer was holed up in a separate cottage just across a pond which has its own resident wildlife, including a lazy python which remained asleep through our visit.

Down the driveway is a golf green, a swimming pool, spa and the residence. It has a 'B' studio attached.

There's some real extra nice touches at work up there.

One of them is the Music and Justice initiative. They explain it thus:

"At the Grove we believe in music and justice. Every dollar that is spent at The Grove will be used in some way in assisting others to make great music or to improve life for those in our global community who don't have the same opportunities as us."

It isn't an empty comment; Mark and his wife are known as very active with Compassion and Hope Rwanda –



Producer Andy Sorenson and session guitarist David Holmes



Josh and Kathy



Grove Producer cottage

and they've helped other organizations along the way. They are Christians, and their approach appears in the not so fine print on the Grove paperwork. It refers to the studio having a relaxing and positive spiritual environment.

When Gary Beers sold Mangrove and it became Grove, there was some chatter across the music industry about the studio 'going Christian', but that didn't stop Eskimo Joe cutting a platinum album there. The list of regular ARIA award winners who recorded at Grove has grown ever since, so there is an obvious feeling that the studio works really well for everyone.

RECORDING AT THE GROVE

Kathy Johnston heads the small team, which includes Josh Telford and Trent Dobson as Assistant Engineers. Bands come in for a day or a month, and find the place waiting and the coffee machine turned on. They can buy Grove label wine or beer as well, so it isn't a dry joint.

Out on the deck is a pile of gymnasium gear, and a BBQ. There



Eric the Death Adder

are shops and takeouts just ten minutes down the road, but while at The Grove, it's a bush retreat with a kind of Santa Fe rancho resort vibe.

Just recently the control room was rebuilt, with the ceiling raised and new acoustics calibrated by Michae Fronzek. The main recording space is a generous 50 square metres and has several windows overlooking a green pasture. Windows to the outside world are rare in studios - many of which remind me of run down casino lounges complete with cigarette burns and chewing gum lumps on the carpet. But not at The Grove.

The main console is a SSL 400CC

series with Ultimation and total recall. Monitoring is through Genelec. Tracks can go to ProTools or analog tape or even Sony 48 track DASH. Producers get picky and persnickety about studio equipment - we don't - so check the rather long list of outboard and microphones at the website for more tools.

What really matters bigtime in a studio is vibe, and to keep the creative flowing. This is where Grove wins out.

It's great to see Gary Beers' dream taken to the next level, and that the Christian Cringe is a thing of the past.

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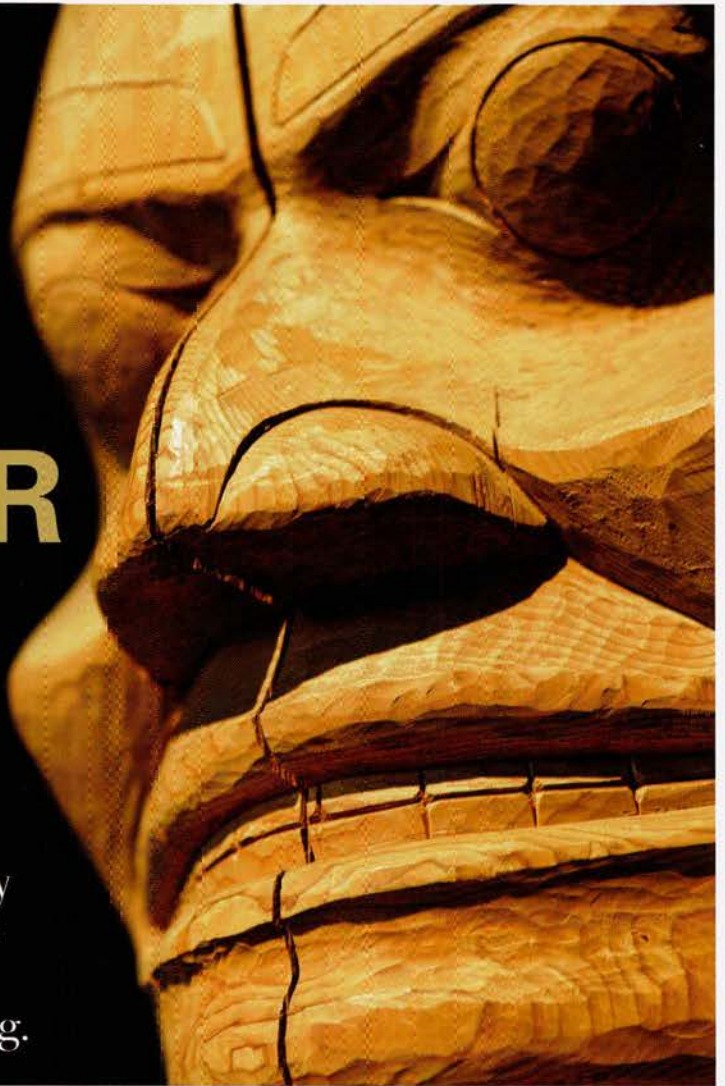
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THE INSTALLER

TOFU THE WAREHOUSE GUY

Across the great southern land, out there every day and many a night is the installer, who not only unpacks far too many cartons but also has the joy and pleasure of responding when things go wrong.



I can talk about Tofu because he's gone now, back to his island home. He worked for one of the suppliers and we loved him dearly because he had invented a way around their inventory system.

It worked like this: we order four amplifiers, 600 watt models. They have three in stock, so one is on backorder. Tofu then gets his container unloaded and ships us the backorder, except where it says 3 supplied and 1 on backorder, we get 3 more! The invoice says 1.

When things are really frantic, Tofu broke with tradition and gave us the stuff without paperwork. Then we would get the same stuff delivered by road four days later, when the paperwork caught up. Tofu was oblivious to the *déjà vu*.

For the first six months or so, we just stockpiled the excess stuff, waiting for the distributor to catch up. As the blunders continued, we reasoned that they had no actual system in there, so we started to specify some of the scored stuff into

future jobs.

That distributor had nice offices, the CEO drove a 200 grand euro car and the reps were churned every year when they didn't meet targets. They were tight with warranty, put us on stop credit at 45 days, and the sales manager was a drunken brick who groped the staff. It looked to us like Tofu was balancing up the universe.

He went home suddenly one Easter, and we decided to buy elsewhere once they hired a storeman who could count.

Tofu was just a boofhead, whereas another distributor we knew had a crook in the store. This crook would offer you a special, and of course the minute he did it to us we blew the whistle. Strangely he survived another two months, and of course through that time we had woefully bad service which was our reward for having standards.

Maybe there is a God of Warehousing. Because we profited from Tofu we ate the hassles with the crook, albeit that he worked for a

different company, until they overhauled the warehouse and put in video surveillance along with new staff.

Despite the distributor and rep bashing we dish out in this column, we actually don't like changing suppliers too often, because our quotes are set with a brand or product and sometimes are alive for up to a year before a project is finished.

There's a list of things we like in a distributor, starting with good service. This means being efficient and diligent. Then we like to pay no more than our competition, so being transparent in the deals is important. Next comes the rep: the honest ones who are not lazy always win. If it is delayed, then tell us now, instead of waiting for us to ask you. Prompt shipping and proper after sales service is the hardest to get right. Finally if the company owner is a nice human and treats his people as people and not 'staff', then we are completely won over.



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YOUNG ARTS RUN FREE

Smarties' funky theatre is Melbourne's best kept secret



By **JULIUS GRAFTON**

While LaMama was in the news with reports that it would raise \$1.7 million to buy its premises, St Martins Youth Arts Centre and the two venues it manages, The Randall Theatre and the Irene Mitchell Studio were busily pottering along down St Martins Lane in South Yarra. A treasured jewel in the community landscape and a theatre with a forty-year historical legacy, St Martins was built in 1956 for the Melbourne Little Theatre company which operated on the site. Someone donated a nearby church hall, and a small warehouse a few doors up the street, on the proviso that the complex continues to provide arts experiences for Victorian young people. Nowadays the sites are very prime real estate indeed.

The Little Theatre company

floundered and the state government bought the site in 1977 to encourage youth arts. St Martins now receive funding from numerous sources which include local council, Arts Victoria and the Australia Council.

The main building has two spaces – a studio and a proscenium theatre. The Irene Mitchell Studio has a flexible seating plan for up to 100. It has a fixed grid, and loads direct and flat onto the rear of the premises. The Randall Theatre seats up to 348, has a small orchestra pit plus a half fly tower with four counterweight lines plus the house curtain, and around 15 hemp hand lines. Recently a thrust stage option was added which extends the stage three and a half metres, removing three rows of seats.

The Randall has original features – which also means seats, and maintaining these has been a priority



St Martins Church

in recent years.

Tim McNamara is the Venue and Production Manager, and Trevor Matthews is the General Manager. Along with Artistic Director Sarah Austin, Office and Workshop Coordinator Hayley Butcher there's a host of sessional tutors and contract



Trevor and Tim



Tech's eye view of the Randall Theatre

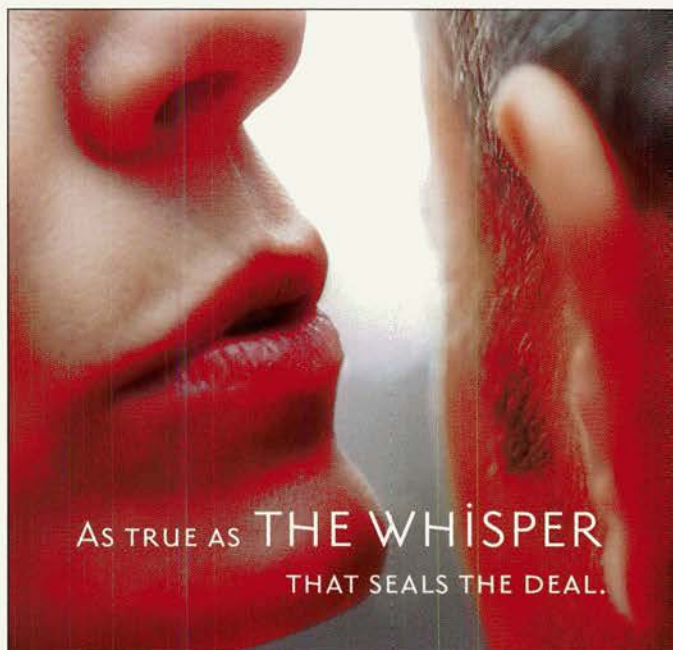
artists, venue technicians and front of house staff. St Martins has over 400 members aged between 15 and 25, delivers over 70 workshops and six productions each year.

THRIVING AND DOWNING

Frank Thring and Bob Downe are just two a umni of St Martins. Along with a string of other notables but I put them in the story because they are both very colourful. "Without St Martins, I simply wouldn't have had a career in professional show business" says Mark Trevorrow, aka 'Bob Downe'.

Under the stage of the Randall Theatre are three dressing rooms and a laundry, and you can almost hear those walls talking. I struggle to think of a theatre complex to compare. St Martins has the elegance and sophistication of a retired diva that's gone straight and started doing community work. And had some work done. Elegantly made up and fragrant. If you get my drift.

You get there from Park Street, South Yarra. Hop off the number 8 tram and walk 50 metres down St. Martins Lane past the recently funkified theatre office building. The theatre has a walkway down the side with the glass entry doors leading into The Gallery, a space suitable for small gigs or just hanging in. The Irene



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View from the stage in the Mitchell Studio...



...and in the Randall Theatre



The Gallery in gig mode

Mitchell Studio entry is hard right and level, while the Randall is up some stairs.

The complex hosts almost all of St Martin's yearly programme and a range of emerging and amateur theatre companies also hire the venue. Corporate hirers could use it more, if they knew it was there.

St Martins Youth Arts Centre is also renowned for its process driven workshops, masterclasses and a summer holidays program which offer a range of training and development opportunities for young people aged between 5 and 25. Kids from these programs filter out into Nida, VCA and shows everywhere.

TECH

There's over 100 lights in stock up in the Randall, and a Strand 300 desk to drive them. Most productions are small, so the house sound system which is made up of a couple of RCF ART speakers and a simple A&H console suffice.


The lights are rigged for a three colour stage wash as standard, and Tim McNamara has been really busy since taking over a year or so back with maintenance. His test and tag and general tidiness are first rate – this is an area many solo technicians fail at, because they don't have anyone looking over their shoulder.

Down in the Studio, there are around 25 lights, on a grid around 4.8 metres up. A really healthy patch bay is supplied, with a gazillion lines for 5 dimmer racks, controlled by an LSC Axiom 36/72.

There is a lot of mains power, in fact St. Martins has a standby generator outside, for reasons that no one quite understands. Because of this the complex features in the city disaster master plan, as a kind of refuge for the local masses in the event of calamity. Remember where it is, and head there when the balloon goes up.

St. Martins is a really important piece of the national performing arts jigsaw puzzle. It is terrific to see how it has survived and the tender loving care that is lavished there on a shoestring budget.

The board have set up a charitable trust, so if your rich aunty is threatening to write you out of her will in favor of something, suggest she gives it all to them. You can make a donation which is tax deductible, and become a St. Martins Patron.

Go to www.stmartinsyouth.com.au or call them on (03) 9867-2477. 



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Pic by Bob King

THE ANGELS ARE BACK!

Rough Diamond lunch kicks off loud sellout tour



Chugg makes Gordon Ramsay sound like a choir boy. Pic by Bob King.



Jack Thompson on harmonica and Nick Lyons on the fiddle performing 'Somewhere Over the Rainbow'. Pic by Bob King.

By JULIUS GRAFTON

'Ladies and Gentlemen, your host: Michael f***ing Chugg'. That set the scene, as music industry heavyweights at the Hordern Pavilion settled into a very long lunch. The Golden Stave lunch has been going for thirty years and has generated over ten million dollars for charity.

Someone came up with the idea at the late and lamented Sebel Town House and since then the lunch has grown to the point it fills the 7000 capacity Hordern, albeit with a lot less than 7000 people, since everyone is seated at a table for ten. This year the place looked amazing, our subtle master of ceremonies thanked the themers who had bright balloons above each table and glittering things everywhere. "Who'd have thought you could make this sh**hole look so good?"

Of course the event would struggle without the patronage of the fabulous Hordern, who have provided a permanent annual home. Hats off to Playbill Events, truly an industry player.

You walk in via a red carpet. Hundreds of people you vaguely know are outside high fiving and air kissing. The venue is set up in par excellence mode, lots of lights from Chameleon, and a sound system from Norwest. Austage threw in video, Staging Rentals did drapes and risers. The production was put together by Mick Mazzone from Mighty Management.

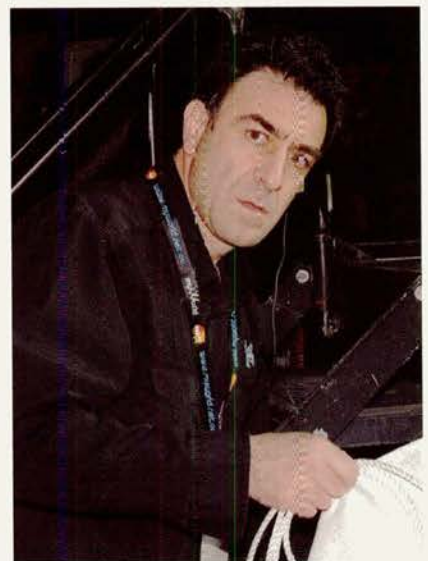
CX took the afternoon off, and enjoyed several beers before the lunch was served. A guy came around with a very small fowl on a fork, but we knew he was an imposter because he had a nose job. Then we made short work of real prawns, chicken and steak – it was good. The drinks flowed fast and furious, I lost count. A taxi took me home later.

A music act started the day, 'Circle of Life' did some Lior King songs. Turns out I knew the singer, Obi Ansah, a young guy from Africa. He was walking around wondering what was going on afterwards, when the auction started. It consisted of a lot of yelling, and a heck of a lot of merchandise. Every table had a coloured paddle, ours was number 76. I hit it from Mackenzie, who was Hahn primed to make some huge bids on my dollar. Pisshead.

Then Stone Parace played, and a buzz went thru the jaded mob that these were a good young band to watch. Cue: more yelling from the stage, more sales of stuff.

Around about dessert time, things were getting a little messy. The bar was a blur of action. I walked over and asked for a drinking straw, on my way to the mens. It was my idea of a joke. The guy looked at me like I was an old music industry coke head. "We don't have straws", he said. Memo to Greg Pullen at the Hordern: good call.

Lets see now, there was Andrew O'Keefe doing a tribute to his late Unca JOK. Australian icon Jack



Aprion: Production Manager, Mick Mezzone. Pic by Bob King.

Thompson created history when for the first time in the 30 year history of the Golden Stave the audience went into complete silence as he performed as a tribute to his mate Billy Thorpe 'Somewhere Over the Rainbow' on harmonica with fiddler Nick Lyons. It was a very special moment.

As the afternoon was drawing to a close, Rhonda Burchmore brought an elegance to the room performing 'Diamonds are a Girl's Best Friend' and 'Dancing Queen'.

After a final fling of Auctions, the tally stood at \$680 thousand. There was nothing left to do but observe The Angels. Obi was flabbergasted as the crowd surged forwards and



Pic by Bob King

participated like we all did many years ago.

The band started with 'After The Rain' and of course it was powerful loud. Chunky, fat type loud. The short set then ran with Long Line, No Secrets, Be With You, that terrible Face song and finally Marseilles. Front man Doc Neeson is not in his old persona which crawled on the floor and leaped off the PA, but his white scarf was there. The guitarist Brewster Brothers were slightly more animated, but still had the dark glasses. Buzz Bidstrup is still the guy who hits a floor tom harder than anyone, and Chris Bailey played bass the same as he ever did. It ended. Ears rang. It was a dark winter's peak hour outside, the wind was blowing. Taxis were scarce. The Golden Stave was over for another year. **CX**



Norwest's audio engine room.

For a big venue, the Norwest sound system looked petite. Such is the power of a modern rig – the 8 x Kudo line arrays and six EAW subs per side absolutely kicked freckle.

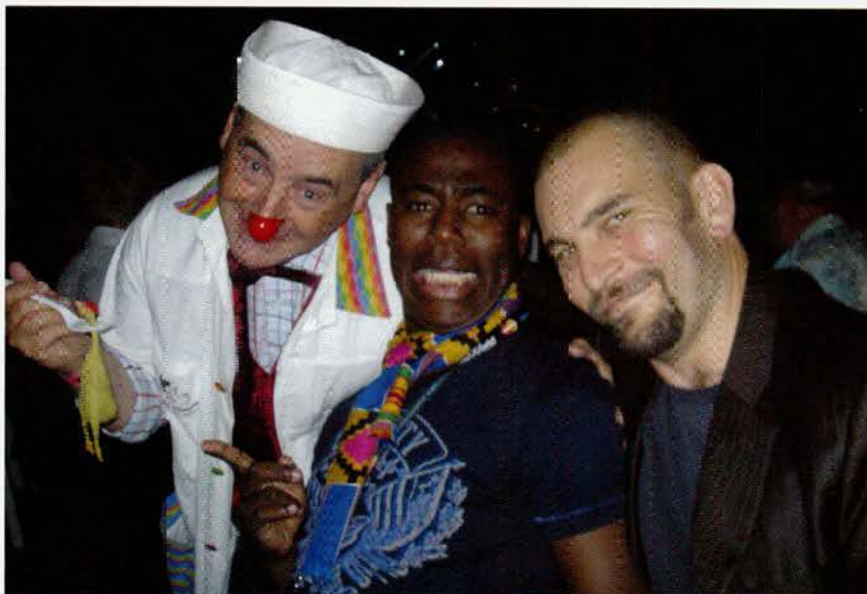
The Angels are touring just now, across Winter, on a run put together by management (David Edwards and Aaron Harvie) and Tony Grace from Harbour. The tour manager is Ben Turner, with FOH duties handled by Steve Godfrey.

The back story is quite well known: Singer Doc Neeson had a major car accident, and was unable to do much for some years. We caught up with him in 2006 and he had been suffering.

Then the original lineup started playing as The Angels Band, and Doc started working as 'Doc Neeson's Angels' with a lineup that included Westfield director David Lowey on guitar. This brought a fringe benefit in the form of his private jet, which sometimes took the band places.

Both bands get legal about the name, and in mediation decided to play together again. Very rock!

For those who were there, The Angels were one of the main pioneers of rock touring in the late 1970's and through the 1980's. Their live show pushed new sound and lighting boundaries, indeed a whole new light was born out of their lightshow. The Raylight had a Par 64 shell with a 500 watt beamlight inside, designed by Ray Hawkins and made by the strange Scientology offspring called Rock Industries.



Andy Mackenzie and Obi Ansa. Lunch is served.

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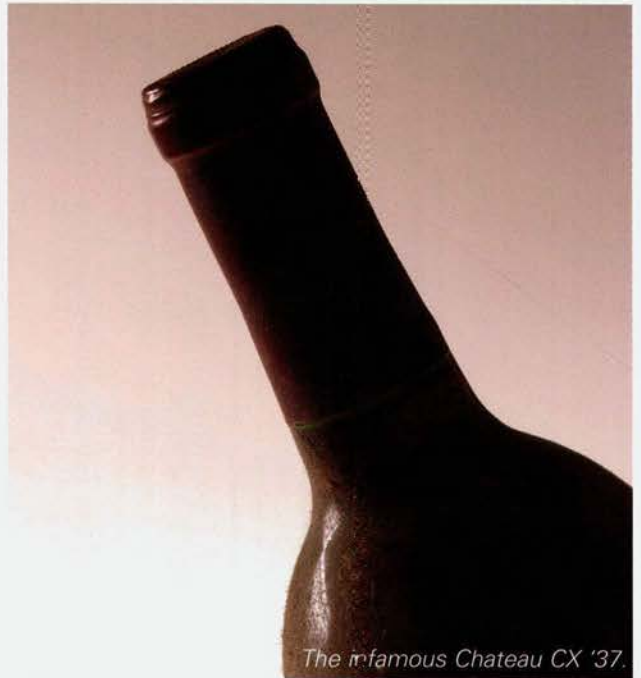
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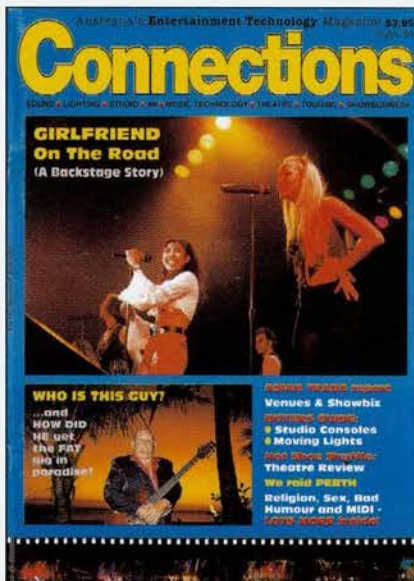
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HISTORY

Join us as we learn the lessons of history, on a magazine tour of the distant past. The archives are under lock and key, protected by the dubious denizen of our subterranean lair. We'd love to say there are racks of Grange down there, but alas – the cellar is dry. What point keeping for tomorrow that which may be consumed today, we say. Plus it's fairly pointless storing beer.



The infamous Chateau CX '37.



15 YEARS AGO: CONNECTIONS AUGUST 93

Wow, on the cover here is Girlfriend the band – chicks on stage! Guess they are chooks now. Big advert inside for the Australian International Music Show at Darling Harbour. Reports of a chandelier malfunction at Phantom of the Opera.

Test and Tag of electrical devices found its way into entertainment, with Brisbane's east Coast Lighting among the first firm to implement what is now common. Queensland legislated the requirement first.

We had a letter accusing us of beating up INXS for being in their THIRTIES and still performing. Connections magazine: ageist? Also letters about another letter writer, one

Shiela Yates, who wrote accusing us of sexism.

AES was due to run in Melbourne, where the first public showdown between the Tascam DA 88 and the Alesis ADAT would happen. Aah, those digital 8 track recorders – anyone still got a working example?

We reported on a boom in export business to Asia, where Australian expertise was on sale. The boom continued for a while, until the Asian Contagion a few years later. But back in '93, it was all blue sky.

WHAT THINGS COST:

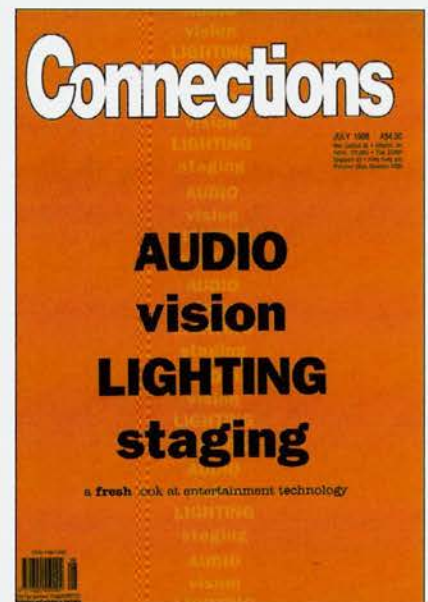
- Yamaha DMP11 digital mixer: **\$3,995**
- Clay Paky Super Scan moving mirror: **\$9,890**
- Inkel 12 channel powered mixer: **\$1,995**

10 YEARS AGO: CONNECTIONS JULY 98

How about this for a boring cover? What were we thinking?

The DVD audio specification was finalized, it's hard to imagine a world without DVDs, but that's how it was ten years ago. We covered InfoComm in Dallas, the huge audio visual trade show.

Adverts in this issue: Wow, a ProTools advert in Connections! Philips audio released an MPEG player for installations, and the tape started to look doomed. Gearhouse were advertising they were ready – with big investments in equipment. Gearhouse Lighting was announced. Spirit Digital arrived, a mixing console that was not going to capture the hearts of the audio



public.

We interviewed Harry Vanda, legend of the music industry and one half of Vanda and Young.

Kylie was on the road, with The Impossible Princess tour. Steve Swift talked about the lights – and the late Rocky McKenzie about the Vari*Lites. And speaking of VL, the end was near for the original company, as they announced a loss. Of course they were sold, and are now a major force.

Selecon did the first demos of their Pacific.

WHAT THINGS COST:

- Jands Event 36 console: **\$4913**
- Numark DM1885X dj mixer: **\$1,475**
- Allen & Heath GL 3000 24 ch desk (used): **\$6,000**
- Rosco Alpha 900 fogger: **\$495** **CX**

LETTERS

Flames, praise & emails!

HEARING LOSS

My hearing is damaged. (CX May) I've known about it for years and made a decision at the time that it would not get any worse than I could help. I would urge any younger production techs to do the same and use ear plugs on a regular basis.

Years ago when I was mixing pub bands all the time (and I still do now and then) I would be loading out of a venue at the end of the night onto the street in the early hours. As the occasional taxi passed I could barely detect the white noise of the vehicles tyres in the road surface. Once I started using plugs however it was like a fresh beginning and a new set of ears after the gig, as I could hear a car coming from miles away it seemed.

Ear plugs have saved my hearing and career for sure. I would personally recommend the fitted moulds as I have 2 sets, one -6db and one -40db (bomb proof) solid plugs that are especially good for when there is a DJ around! These are very easy to take out and put back in fast. The foam spongies however are slow and fiddly to get in and much more conspicuous. Also people will think you are a goon mixing their band with yellow sponge in your ears. Most people won't notice the fitted plugs, if they do and object, then explain the benefits of heightened hearing- or non desensitized hearing if you prefer.

- Jim Morley

SMALL PLANET

Richard Cadena is the first person from the USA I have come across to actually acknowledge that Edison did not invent the electric filament lamp. (CX June).

I looked at his efficiency chart and feel he is out of date with the latest trends. Most light sources used commercially are much higher in LM/w than indicated

- Compact fluorescent lamps are between 48-80 Lm/w
- Linear T5 16mm fluorescent (you didn't mention) 96-103 Lm/w
- Ceramic arc 86-97
- Metal halide 70-100Lm/w
- High Pressure sodium (You included low pressure sodium) 50-130 Lm/w

In our Lighting laboratories we have tested many makes of LEDs – particularly white LEDs. Most of the manufactures over stated the lumen output by 50-100% actual measured.

At the time of writing the best LEDs we have measured are at 60Lm/w with a CCT of 6,000. Can you please tell me where you got the 98 Lumens/watt from? As this would make them 40% better than any competitor we have come across so far. If this is the case then they are serious contender in the commercial market also.

- Steve Furzey LFIES (Aust & NZ)

RICHARD CADENA REPLIES: I didn't take any of this info from a manufacturer. I took it from a website that is maintained by an individual who does his own testing. His name is Don Klipstein and his website is <http://members.misty.com/don/>

WHEAT WRITES:

Thank you for doing the piece on me and clarifying my relationship with Tom Misner. There really isn't one, and you are right, I know nothing of his tax history. I seem to be an easy target for the press these days. Thank you for your support.

- Glenn Wheatley



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ELECTRICITY AND WATER: WHAT COULD POSSIBLY GO WRONG?

By RICHARD CADENA

In North America, getting an occasional shock from a 120VAC household mains supply is almost a way of life for some of us. In Australia, getting shocked by 240VAC could cost you your life.

Ohm's law is ever vigilant. A higher voltage across a given impedance produces higher current, and if you happen to be the impedance in question then you'd better hope you have lots of it. It doesn't take much current to change your status from active to "he was such a nice guy." As little as 60 milliamps (that's six one-hundredths of an amp) can cause your heart to go into fibrillation.

In Germany, the utility companies started the practice long ago of earthing the electrical service at the utility pole and at the point of consumption. It saves the utility money because they don't have to run an earthing wire back to the utility pole. Instead, the earth becomes the return path for the current. What could possibly go wrong with that?

If the conditions are such that the impedance is high then, in the event of an earth fault there might not be enough current to trip the circuit breaker. Circuit breakers are inverse-time devices; the higher the current, the faster they trip. So you want a low impedance path back to

the source to make sure the earthing system does its job of protecting people and equipment by tripping the circuit breaker when it's supposed to.

But the Germans are an ingenious lot. Their response was to figure out how to sense an earth fault and shut down the circuit before anything can go too drastically wrong. They came up with the idea of running both the live and neutral conductors through a sensor that picks up the magnetic fields produced by the flow of current. Since the current from the live conductor is flowing towards the load while the neutral current is flowing in the opposite direction, the magnetic fields oppose each other and cancel – as long as they are balanced. But if there is an earth fault, then some of the current would "leak" to earth, upsetting the balance, and the magnetic fields of the live and neutral currents wouldn't cancel. Instead, they would produce a net magnetic field that would overcome the holding force of a spring-loaded tripping mechanism, causing it to trip the circuit breaker.

The difference between the outgoing and the return current is the so-called residual current. A device that is intended to interrupt the circuit in the presence of residual current is a residual current device, or RCD.

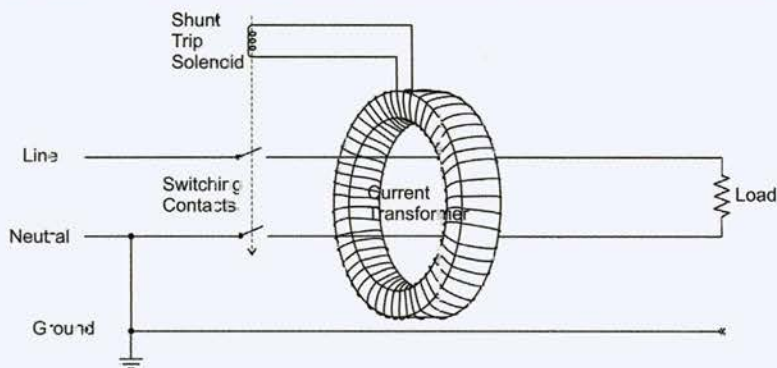
There are basically two approaches to RCDs; some are primarily

electromechanical devices and some are electronic devices. The electronic ones use a donut-shaped sensor, which is nothing more than a current transformer, through which the two conductors are routed. It generates a voltage in the presence of a varying magnetic field like that produced by alternating current. If the net current flowing through the sensor is zero, then there is no net magnetic field, and thus, no control voltage. The output is tied to an electronic circuit that opens and closes a mechanical switch using a solenoid.

The electromechanical variety of RCDs has no electronic circuit. Instead, it has a permanent magnet that holds spring-loaded contacts in the closed position. If there is a fault, the magnetic field produced by the two circuit conductors counteracts the magnetic field of the permanent magnet, which causes the spring-loaded contacts to open and stop the fault before it can do much harm.

Electronic RCDs called ground fault circuit interrupters, or GFCIs, are commonly used in North America. GFCIs are more accurate than electromechanical RCDs – they have a must trip value of 6 milliamps and a must not trip value of 4 milliamps. RCDs, on the other hand, trip at a value of 30 milliamps. GFCIs are considered people protectors and as such, they are designated Class A devices. They are supposed to protect 99.5% of the human population based on many tests conducted on a cross-section of the population. RCDs are designed to protect 90% of the human population.

But as with most things in life, there are tradeoffs. With a must trip value of 6 mA, you're more likely to have nuisance tripping, especially in a damp outdoors environment. Some devices like computers and printers are permitted to have a leakage current of up to 3.5 milliamps. If you connect two computers or a



computer and printer, you've already exceeded the must trip value of a GFCI, therefore, they become unusable.

Also, the electronic circuit in a GFCI requires a constant voltage source. If you tried to put a standard GFCI or a dimming circuit then you defeat its purpose since the electronics derives its power from the dimmed circuit and it would not work properly. With an electromechanical RCD, the permanent magnet cares not about the voltage level and the difference in current would still generate a tripping magnetic field regardless of the voltage. So if you travel to North America to do a show, or if a show travels to Australia carrying their own power distribution, beware of using GFCIs on dimmed circuits. There are specially designed GFCIs with a separate constant power source for the electronics that can be used in certain dimming racks.

To borrow from Dominique Bouhours, electricity is a good servant but a cruel master. There are many ways to protect equipment and personnel from the hazards of electricity, including insulation

(insulate the wires), isolation (keep unqualified personnel away), earthing (to avoid energized metal parts), and overcurrent protection (to avoid overloading and burning up a system). In his book "Undercurrents and Overcurrents: All About GFCIs, AFCIs, and Similar Devices," Earl Roberts explains why RCDs and similar devices are superior to earthing for the protection of personnel.

To paraphrase him, there are at least two things that can go wrong when you get tangled up in a live circuit; you can come in series contact with earth or in parallel contact with earth. Earthing can only protect you from the hazards of parallel contact. In fact, in the series scenario – where current flows from a live wire through a person and then to earth – the earthing wire only makes the situation worse. It helps complete the circuit and you pay the price. In the parallel scenario – where current flows from a live wire in parallel with a person and an earthing wire – the current will divide in inverse proportion to the impedance. So what if you happen to come in

contact with an energized metallic enclosure? If the equipment is earthed and bonded properly, what could possibly go wrong? Not much, unless you are standing barefooted in a puddle of water.

Unlike the earthing system, RCDs will protect you in either of these situations regardless of the condition of the earthing wire or the condition of your judgment. RCDs should always be used in outdoor shows and/or in any situation that might be wet or damp. They are available in duplex receptacles, portable adapters, portable PDs, quad strings, and circuit breakers.

Had RCDs been more widely used in the 1960s and '70s, we might not have lost Leslie Harvey of Stone the Crows, John Rostill of the Shadows, and Keith Relf of the Yardbirds. Back then, little was known about the potential dangers of improper earthing and less was known about RCDs. Today, we know better. Let's not let one more person be injured in an accident that could have been prevented.

Contact the author by e-mailing rcadena@austin.rr.com.



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It may not look much like a battlefield



By ANDY MACKENZIE

When the decision was made to construct a studio in the CX bunker, a clear decision was made that it should be a digital facility – us being mindful of the fact that digital is the way of the future and the studio would be used as a teaching facility. Studio head Rob Zimola has a long history with analogue studios, but this was his first foray into the exciting digital world.

So he diligently did his research, making sure he bought all the right bits of kit to outfit the place good and proper, and then lovingly installed all his shiny new equipment.

And all was well, for a time. But then something appeared that cut to the core of his analogue being. The console started flashing nasty little messages at him. So did the Mac. Then the CD recorder. It wasn't long before every piece of gear that could communicate was flashing these messages, and they all sang

the same refrain '...sync error, sync error...'. But why? In the old, comfortable analogue world, all you needed to do was make sure everything was plugged into the right poles and the earthing was solid.

But it ain't necessarily so in the digital world. All of this digital stuff is completely dependant on a clock pulse telling it when to do whatever it's doing. And so every device has its own little clock inside, ticking frantically away at some obscene speed and making sure that all the

important stuff keeps happening. A problem arises when you try to get digital information to travel between two devices – even if their little clocks are banging away at the same speed (which they absolutely need to be), there's no guarantee that they will be doing it in sync. And if they aren't properly synced, the whole thing falls in a heap.

At this point Rob enlisted my aid on the off-chance that I knew something useful about digitals.

The first and most obvious solution was to have a colossal tantrum, dump the whole mess on ebay and fit the place out as a nice retro analogue studio. We were quickly forced to concede that, while strangely compelling, this solution might be a tad extreme, so we went looking for more options.

Second possibility. Keep all the exciting digital stuff but use analogue interfaces wherever possible. This was also rejected on the grounds that it was a stupid plan. One of the great advantages of digital transport is its awesome noise immunity, and we didn't want to lose that. Also, we would have been replacing one digital problem with another – every time you convert a signal from analogue to digital and back, you introduce a little bit of quantisation noise, and we would have been going back and forth way too many times for that to be okay.

Okay, so our digital problem didn't have an analogue solution. That probably shouldn't have come as a surprise.

We needed to think digital.

So we did. All of these devices have a variety of different sync settings allowing them to be synchronised to the other devices they're working with. We worked out that as long as we were careful about what was switched on at any given time, we could push the little buttons on the console and get it to tie into the embedded sync on whichever signal it was dealing with at the time. This worked, and worked well. There was some minor inconvenience when we switched on, but we were OK with that.

Until we had to switch something

else on. As soon as we added a third device into the mix, it all went sideways again. The console would happily sync with the DAE192 interface, or with the CD recorder – it was only on the matter of all three together that we couldn't get them to see eye to eye. Damn.

The next step was to experiment with using word clock. Word clock is a great idea, and without it most digital studios would almost certainly be smouldering ruins by now. The principle is simple – every device has a word clock input, and a word clock output. You designate one device as the master and all the others as slaves, link them all up with ordinary 75ohm BNC cables just like the video ones, and then there's nothing left to do but enjoy the satisfaction of a job well done.

All of which is brilliant in theory, except that a couple of the devices we were using didn't want to play the game, and had turned up without word clock outputs. No outputs from some devices meant no loop-through, and no loop-through meant that we couldn't get the clock signal to everywhere we needed it. A little research told us that using a simple BNC T-adaptor might work, but it also might not – and Murphy had the message for us on when it would be most likely to fail.

The next theory (I can't remember where we got this one) was that a video splitter might work, since it had BNC connectors on it too, but we were a bit suspicious about whether it would have the bandwidth. It might, but there again it might not, and it just didn't look like a reliable (and therefore viable) option.

Enter Ben. Apogee's Big Ben is a purpose-built system clock designed for people like us. It produces a word clock pulse in any of the standard sample rates up to and including 192kHz, and spits it out through six shiny BNC connectors on the back.

So at last we could hook everything up to the clock at the same time.

Since then, our sync life has been fabulous. What's that, you say? Change the sample rate? Why

certainly – the push of a single button on Ben's cheerful face, and everything else follows. The single exception is the DAT machine – left out in the cold by way of being old technology and having no word clock input. But the DAT machine's only there as a museum piece and because sometimes people turn up with old DAT masters, wanting them transferred to CD.

Sod the DAT machine. It can use an analogue interface.

Everything else works.



This battle may be over, but the war is not yet won. We're still wrestling with a problem generously donated by the manufacturers of a particular third party plug-in package. We tried their demo package and quite liked it but not enough to splash the money on, so when the demo period ended we tried to remove it.

The results were somewhat dispiriting.

The thing has sunk little tentacles right through the whole system and strenuously resists removal.

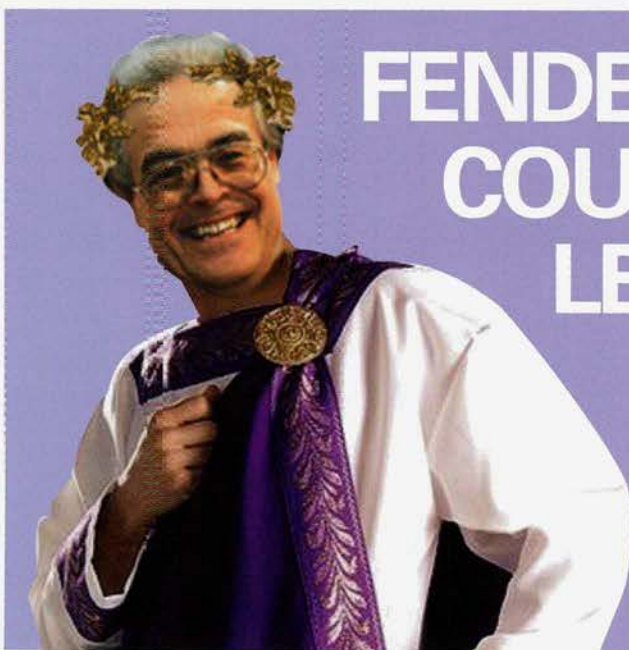
The MOTU interface no longer asks us if we want to buy each of the hundred and some plug-ins each time we switch it on, but this could be simply because the interface flatly refuses to have any dealings with the Mac. The DigiDesign interface came good, but only after about six hours of messing about removing little bits of plug-in poo from all kinds of odd places.

The moral of this story? Never install a trial product that comes without an uninstaller. And ask the sales guy if he's willing to give you a written guarantee that you'll be able to get rid of it if you don't want it.

Otherwise, like us, you may wind up forced to contemplate a clean start with a newly formatted hard drive.

Big Ben - the box that won the battle





FENDERS, ROLANDS, COUNTRYMEN – LEND ME YOUR GEAR

Neither a borrower nor a lender be?
Dream on... What do you do when
someone wants to borrow a piece
of equipment from you?

By **DUNCAN FRY**

I've never been one to shy away from the big issues in life, so let's investigate this particular ethical dilemma.

Imagine this scenario: You're relaxing at home on a rare night off, all your equipment safely tucked away in the warehouse, garage, truck or your front room. Suddenly the phone rings. It's Lend-it-me Larry, a fellow mixer and PA operator.

"Hey Dunk, mate – are you using your Widgetronic 5000 *** tonight? I've got a gig with The Epileptic Hammer Position at the Fudgepackers Arms if I can get one to use, so can I borrow yours?"

Oh no – no: your new toy, just arrived and never fired a note in anger yet. You tactfully try to put him off.

"Sorry mate, it's all packed up in the rack. No: sure I can get to it in a hurry."

But Lazz is not to be put off so easily.

"Don't worry, I'll come and give you a hand – I'm just around the corner!" Damn.

"Have you tried renting one from XYZ – I know they've got a couple?"

"Oh mate, they want a squillion bucks for it – I'll never make any money out of the gig if I have to rent one." In other words, I'd much rather use your money to further my career than my own.

"Yeah well, they are expensive items you know – and very fragile."

"Oh don't worry mate – I'll look after it, and bring it straight back in the morning."

So what do you do? Do you weaken and agree to let this brand new piece of gear walk out the door, knowing full well you won't see it for a week or more until you catch up with Lazz and are forced to beg and plead to get your own equipment back? Just to be a nice guy?

Or do you bite the bullet and say no, knowing full well you'll cop an earful of mewling and puking, followed by abuse, threats, and pathos "Oh mate, how could you do this to me? I thought we were mates. After all I've done for you, and you know the baby's due next week and we need this gig to buy whatever, etc, etc"

Because the thing is, nothing, and I repeat nothing, ever comes back to you in the condition it went out in.

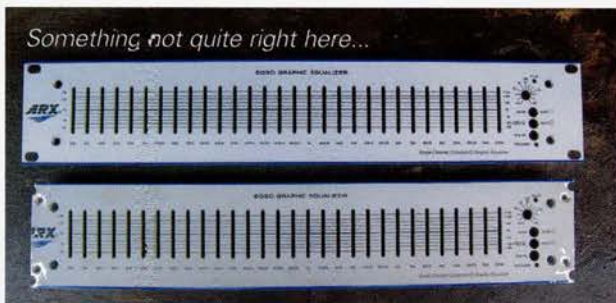
At the very least there will be scratches where it's been carelessly screwed into a new rack; at the worst it could be bent, dented, dead, or full of Bundy and Coke from an over excited punter plonking his drink on the effects rack and then pogo'ing into it during his favourite song.

It's a dilemma. No-one (well, hardly anyone) wants to go out of their way to be a total bastard, because you never know when you're going to need a favour for yourself.

When my truck engine exploded on the way back from Wonthaggi many years ago, I luckily was able to borrow a replacement truck from Colin, now one of my partners in ARX, for a gig in Mt Gambier the next day. With the money from that gig I could afford to repair the engine and then lend my truck to him when his water pump disintegrated one night. So you never really want to close the door on something you may need one day.

But what about Lazz and his desperate need for your Widgetron? My advice is to weigh up the situation carefully. Are you really going to be seeing him around the traps for the foreseeable future? No? Then stuff him, say 'No' and let him go and try to bot one off someone else.

However, if the answer is 'Yes', then you need to be a tad more subtle. If it were me (and it has been on many occasions), here's your answer.



"Lazz, look mate, I tell you what I'll do. And it's only because you're a good mate that I'm doing this. I don't like lending it to anyone because it's so new, but I've been wanting to catch the Hammers at a gig for a while. Last week they asked me to put in a quote for doing their production, so look, I'll bring the Widgetron over to the gig for you, so they can see that I've got one in the rig."

Oops. Suddenly Lazz sees the immediate possibility of his well paying gig disappearing in a cloud of diesel up your exhaust pipe! Faced with this bitter reality, with any luck he'll say "Oh, thanks mate, but don't worry about it – I wouldn't want to put you out. I've just remembered where I can get a 4000 from. It's an older model but I think it'll do. Thanks anyway Dunk, you're a real pal, but I'll be OK"

I was reminded of this when I vainly attempted to tidy up my office the other week. Layer upon layer of assorted crap was unceremoniously dumped in the bin, and then I suddenly came across a souvenir given to me by someone who had unwisely lent a graphic EQ to a 'mate'!

It was an early EQ30, a single channel version of our dual channel EQ60. The mate had his own system, but a dead EQ in it. Bob unwisely lent him a replacement for a week, to put in his effects rack.

Unfortunately for Bob (not his real name but it'll do), he didn't realise that his mate had inadvertently built his rack not on the 19" international rack standard, but instead on his very own 18" rack standard.

And the EQ30, foolishly designed for 19", wouldn't fit.

Now most people, other than complete and utter bloody idiots, would just sit this quite expensive (for its time) piece of equipment on top of the rack, and then pack it away carefully at the end of each night. Oh no, not Tweedle-even-dumber though. He decided to extensively modify the unit to make it fit by sawing half an inch off each side of the front panel of the equalizer, and drilling new mounting holes in it!!!

Look, I know this is hard to believe, but honest Dunk never lies, and to prove it just have a look at the photos. The modified front panel was what I found in my office cleanup.

When he took it back to Bob he said, "Here's your EQ back – thanks a lot. Oh, and it wouldn't fit in my rack, so I've modified it for you!"

If I were him, I'd consider myself extremely lucky not to have the equalizer forcibly inserted where no EQ has been before, giving new meaning to the expression 'fatten up the bottom end!' but Bob was so stunned at this he just sat there staring in disbelief while his ex-mate waffled on, thanked him again, and left!

We replaced the front panel for him, and he let me keep the old one as a souvenir. I told him I'd write a story about it, and here it is.

It's something to think about next time a 'mate' wants to borrow something, isn't it?

**** Obviously a fictitious item, for which you can substitute anything from a Neumann mic to a lovingly restored Space Echo to a brand new Isuzu! Please don't email me asking whom the Widgetronic distributor is!*

But you can email me – dunk@dunkworld.com with your favourite 3 songs for tuning the system. It's a chance to be famous – seize it.

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SPLITTING AUDIO

Ins and Outs to solve modern problems the old fashioned way

By **JULIUS GRAFTON**

New audio folk marvel at how forgiving an XLR connector can be. You plug it in, and pull it out. Audio passes, almost by magic. So how and why do we need to split inputs and outputs?

Almost every audio gig has ins and outs doubled up. Here's some examples, and some tips for making audio life easier.

MIXER TO AMP

Firstly we often loop the output from the mixer through more than one amplifier channel, or more than one powered loudspeaker. You can do this ad nauseum, maybe as many as 30 devices. A line output from a console has impedance which is relatively low. At the amplifier the impedance is relatively high. Life is good in loop-to-loop land when the amps are rated for a volt or less at the input.

Years ago when amplifier sensitivity was around 1.5 volts, you needed more current from the console output. Sometimes a line driver was used, this was often done by boosting the output of the compressor limiter between the mixer, EQ and the amplifier. It added noise.

These days, mixer to amp looping is easy.

MIC TO CONSOLE

Why on earth would you want to split a microphone signal two ways? There's several reasons. One mic can feed two different consoles, with a straight 'Y' lead acting as the splitter. The lead has one female XLR for the mic cable, and two male XLR's to feed the consoles.

Primary reason for this is to feed a separate stage monitor console, so that one mic is appearing in two places, with each mixing console independent of the other. As soon as you do this, take stock of which console is sending phantom power – designate ONE, and only one, for this job.

The common point between the two consoles is the technical earth (pin one on the mic cable), so the second console needs to be on the

same mains earth as the first.

So what if you need to feed a console somewhere a little further away – like a recording console? Chances are it could be on a different earth, so a conventional 'Y' split will induce a whopping earth hum. A technical earth lift switch can sort this out.

It's best to isolate the split, using a transformer or active isolation split, and if you're doing a three way split where there is a front of house, a monitor console, and a recording console, then a proper isolated split is essential.

How about a mic to console split where you feed the one mic into two console inputs? This is a super cool way to mix monitors off one front of house console, if there's enough console inputs. I've done it where the mic is sent to channel one, and also to another channel where I've got complete control over input gain and EQ for the monitor mix.

TWO MICS, ONE CHANNEL

This is a classic where there is an orchestra or a big band or even a choir. If the two inputs are kind of the same, like violins or choir voices, combine the two microphone lines into one input on the mixer. Don't do it with a critical input like a dual lectern mic setup.


To do two mics into one channel, you need a Y lead with two female XLR's and one male.

THE PHANTOM MENACE

Things get gnarly when you need to phantom power a mic, and said mic is on the other side of an isolated split. When using an active isolated splitter system take care, because the splitter itself may not enjoy 48 volts up the mic input.

Fact is, the phantom won't get from the console to the mic if it travels through an isolated split. Matter of fact, phantom and digital multicore is a new problem altogether, especially when some digital multicore systems don't have a phantom switch for every

line and try to do it cheap with one phantom per a group of channels. But that's another problem for another day.

Finally please know that if you've got a digital multicore, or console, then patching multiple inputs and outputs is dead simple. Just set the thing how you want it. 



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MARTIN MAC TW1 80V TUNGSTEN WASHLIGHT

Mac TW1



By **ANDY MACKENZIE**

These tungsten powered washlights are becoming quite the thing lately, and they do indeed have a number of attractions when compared with the more traditional discharge lamp units. Martin have a very deep penetration in the moving light market in Australia, so we're having a look at their version.

BENEFITS

Depending on who you ask, there are a couple of different benefits to using an incandescent light source rather than a discharge lamp. Lots of designers, especially in the theatre, film and TV worlds, appreciate the consistency of colour temperature between these and their conventional dimmed lighting. Others, concerned with the wanton destruction of our habitat, take issue with discharge lamps that burn all the time even when 'dimmed' to nothing. Incandescent lamps use power only when actually emitting light, so over the course of a show, significant savings can be made.

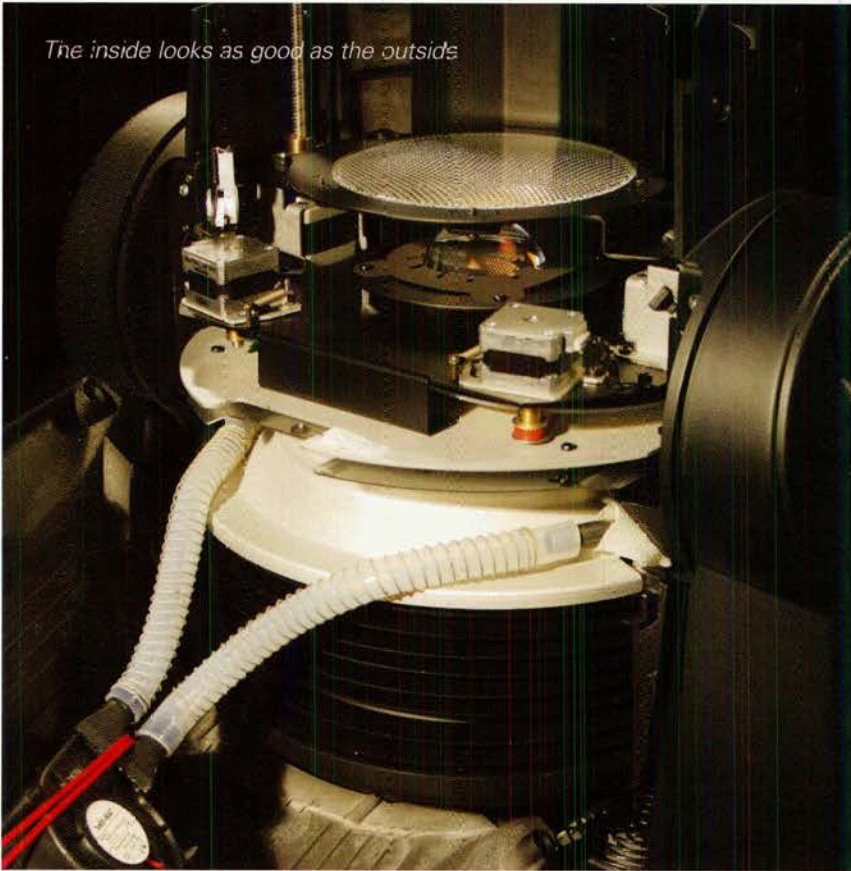
BUILD QUALITY

First up, let me say that the TW1 is a very nicely constructed unit, and is finished well. It looks good even before you turn it on, and when I opened it up to look inside I found similar attention to detail had gone into the interior finish. The menu structure and user interface follows the standard Martin approach, so there are no nasty surprises waiting for you there. DMX connections follow what is becoming a more common convention, providing both three and five pin connectors for both in and out. Also on the back panel is a Neutrik Powercon connector (to allow you to use an external dimmer) and a selector switch to choose between on-board and external dimming.

FUNCTION

In terms of functions, the TW1 travels equipped with pretty much what you

The inside looks as good as the outside



would expect to find. Pan and tilt are 16-bit, suitably smooth and acceptably quiet for the kind of market the unit is destined for. Despite the smoothness of the movement, I still don't think you'd spec this light (or any other filament lamp) into an application where it's going to need to do a lot of movement while lit – incandescent lights have always been a bit fragile when hot.

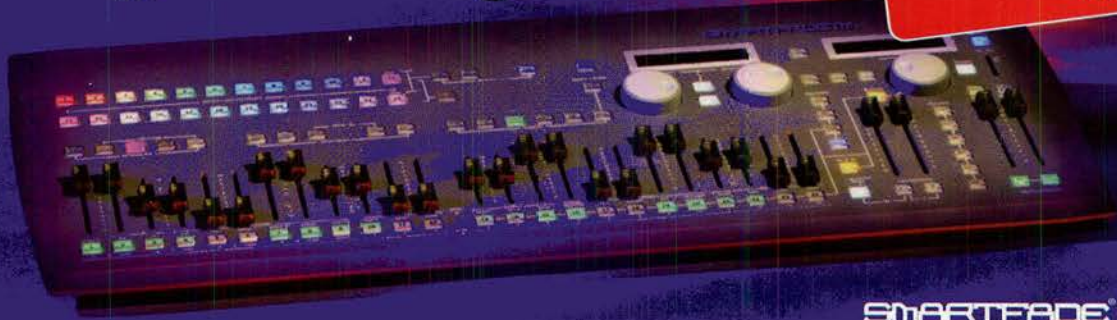
You get CMY colour mixing using the same basic system as Martin's other products. The colours are strong and saturated, even doing a good job of mixing primaries. And there's still plenty of power in the lamp to push through even quite heavy colour.

DIMMING OPTIONS

There are several dimming options available in the TW1, one of which has already been mentioned – you can tie it into an external dimmer. For those uncertain of the benefits of such an action, it allows the TW1 to follow the same dimming curve as the rest of the rig. My guess is that in

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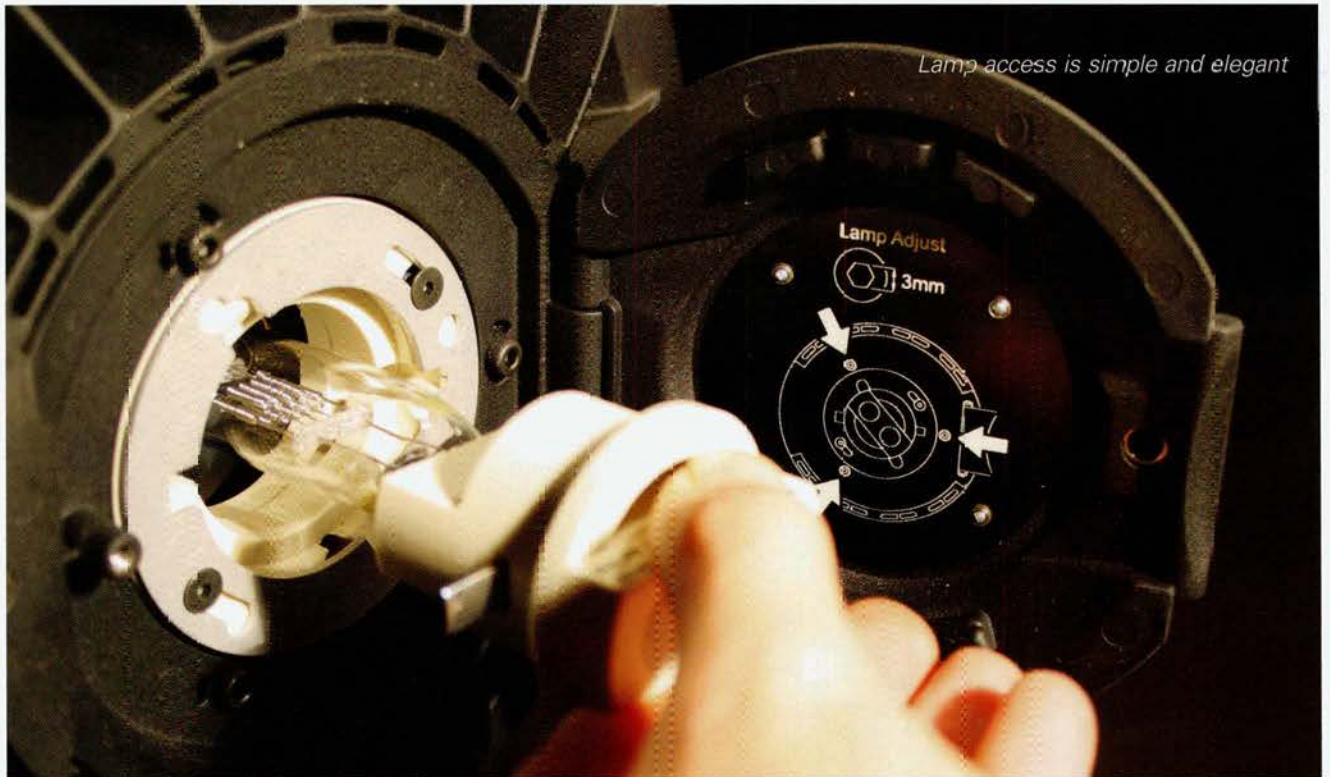
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Lamp access is simple and elegant

the vast majority of cases, this is a feature that will get little or no use but it's nice to have the option.

On-board, you can either use electrical dimming or a mechanical damper which operates the same as any discharge lamp's damper. The electrical dimmer works well, and logic dictates that if you're using a tungsten lamp in the first place then you're likely to use the electrical dimming as well. The one potential benefit I can see in using the mechanical is that the colour temperature remains constant throughout the dimming. The downside of the mechanical system is that the intensity across the field becomes visibly uneven at low intensities.

On the subject of dimming, having two separate intensity controls can lead to some distress for the unwary user. I tested the TW1 using a Hog1000 as the DMX source, and the library file downloaded from High End defaulted the mechanical system as the intensity control and parked the electronic dimmer on a second position lever, both at a default value of zero intensity. It doesn't take a lot of effort to change the file so that the intensity is controlled primarily by the electrical dimmer and the mechanical defaults to wide open, and it makes the system much easier to use. I'm not blaming this on the TW1, just suggesting that you check how the

library file for your console is configured and that it's going to behave the way you want.

EXTRA BITS

The other features you get include the usual zoom and strobe functions, and in deference to the theatre users who form a large part of the target market Martin have fitted a variable speed fan system for quieter operation. The strobe function operates like every other strobe I've ever seen – there's only so many things you can say about the way a light flashes. The zoom is smooth and offers a pretty good range out of the box, but if you need wider or tighter angles there are bolt-on lens kits available to replace the standard one. Having taken to the test unit with a screwdriver I can confirm that there is absolutely no difficulty with the changeover.

One really cute feature is the lamp changing process. You just open a little door on the back of the housing, and there's the lamp base, just waiting to be unscrewed. I like simple.

There are a few other accessories available as well, including top hats and similar accoutrements designed to make the TW1 less visually obtrusive in theatre-type applications. Along these lines, the ventilation of the lamp housing is effectively baffled and allows little spill. While it

would be nice to eliminate spill altogether, the only way to do it would be more fans and more noise – and in the kind of application where I see this unit, I'll put up with a little bit of spill before noise. Realistically, the spill is comparable with what I'd expect to see from any other theatre lamp anyway.

THE PRICE?

Martin's Australian distributors, Show Technology, don't like giving out prices to the media. Their explanation is that their prices are strongly influenced by international exchange rates, so they can fluctuate from day to day. In deference to that, I won't get too specific, but I've heard figures in the realm of eleven to twelve thousand bandicoot about. Pick a good day for exchange rates and you might do better!

THE VERDICT?

This is a great piece of kit – for the price and what it's designed for. I don't think I'd be throwing away all the discharge lamps just yet though, given that there are plenty of applications where you want your fixtures doing bright light and fast movement at the same time. I still don't see the point of the mechanical dimmer but it can be taken out of the picture easily enough, and I guess someone out there might want it for something.



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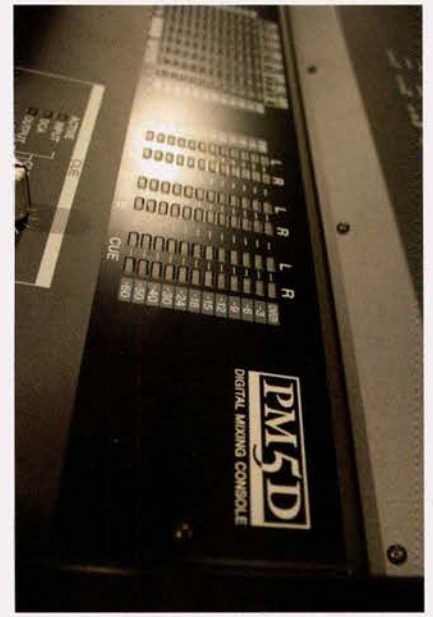


Wall



Stand

YAMAHA PM5D V2 AND DSP5D



By **ANDY MACKENZIE**

THEN...

When Yamaha first released the PM5D in 2004, it was into an uncertain world. Digital consoles existed, sure, but there was plenty of resistance to their use in all kinds of circles. To a greater or lesser extent, most of the digital consoles on the market fell into one of two categories – either small, primarily studio focussed units or the (still relatively newfangled) large format, remote racked monsters.

Into this market came the PM5D. It was to be the digital console that crushed the analogue world before it. The price was competitive with similarly featured analogue consoles and it offered a whole lot of benefits. To start with, it was a drop-in replacement for the console you already had – the inputs and outputs were on the back of the desk, just like on a 'real' one. You got more EQ, more processing, total recallability, a substantially smaller footprint and no outboard racks.

Even Luddites like me were forced

to sit up and take notice.

The console was available in two versions: the standard PM5D, with hardware control over the 48 mic preamps (like a DM2000 or 02R); and the PM5DRH. The RH gave you recallable head amps so when you recalled a scene you recalled the whole scene. Unsurprisingly, the RH turned out to be the more popular version.

...AND NOW

Four years on, the world is a different place. While analogue consoles have not yet been consigned to the dustbin of history, you only need to read a few concert riders to see which way the wind is blowing. Digital consoles have gained the approval of the audio community, and there are no longer herds of us muttering '...over my dead body..'. New players have entered the console market, many of them in the same price and features bracket as the PM5D. Where once it was a sector unto itself, PM5D now needs to fight for its market share.

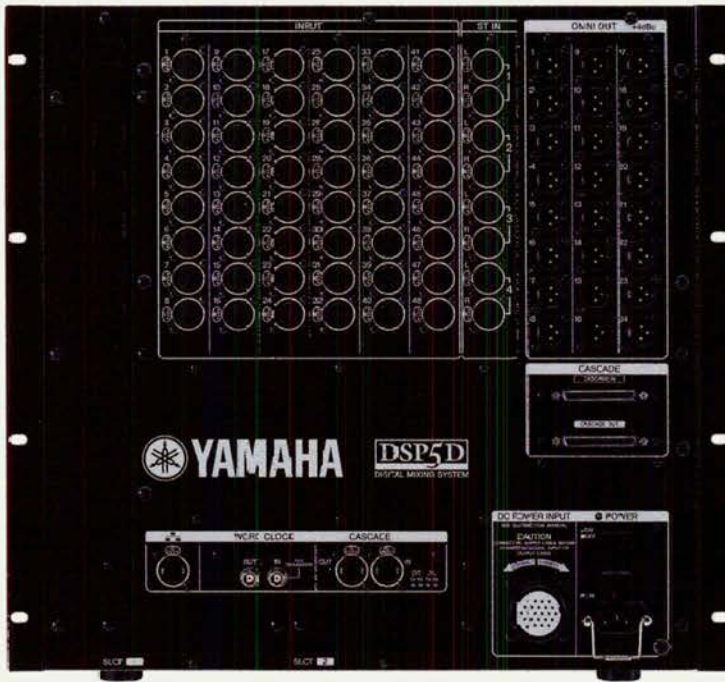
And so we see Version 2 of the PM5D. It still looks like a PM5D,

given that the hardware is unchanged, but a number of aspects of its behaviour have changed. This highlights one of the interesting points in digital console design which was never really an issue in the analogue days. Designers working on hardware need to think about not just what it needs to do now, but what it might need to do later. The crystal balls aren't 100% accurate all the time, so later versions of software make different use of controls than was originally anticipated. There are a couple of instances of this in the new PM5D system, but it's not like Yamaha are the only ones this kind of thing has affected.

The positive side of keeping the hardware unchanged is that it allows existing owners to upgrade their earlier version consoles to the current version, rather than sinking another hundred grand to remain competitive. This kind of loyalty to their users is one of the things that wins a manufacturer the hearts and minds of buyers.

SO WHAT'S CHANGED?

The first big change is that there are



DSP5D - 45 in, 24 out

even more user configuration options. Yamaha have always been strong on surface configurability, providing things like the user defined keys to allow you to get the functions you need close to the surface. With version 2, the number of functions you can use these keys for is significantly increased.

There are also several menu pages full of preference adjustments. These allow you to fiddle about with all kinds of things ranging from simple stuff like which controls cause the screen display to follow through to new features like getting the channel encoders to follow the selected mix send – very handy when you’re mixing monitors. The range of stuff that is now configurable on PM5D is large, and regular users will probably find a selection of settings they like, save them somewhere and use them as their default settings.



The DCU5D converts the cascade link to cat 5 for remote racking

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With two pages of preferences and one of user defines, you can make it just about anything you want

In general terms, it still feels like a PM5D to operate, but I found that a few configuration adjustments made it feel a lot more intuitive. It felt like the console was learning to work with me, rather than me having to learn how to use it.

Another nice thing to appear is a 'virtual soundcheck' function. This is becoming an increasingly popular inclusion in digital consoles, and it's nice to see Yamaha getting on board. The range of effects and EQs on board has also been expanded to increase your range of options there.

REMOTE RACKING

Another thing which has changed is that PM5D has a new friend. DSP5D is an expansion set for the PM5D which opens up a range of possibilities for higher channel counts and remote racking applications.

When the PM5D was first introduced, it included a cascade feature to allow two consoles to be linked for big shows – a common enough feature on the analogue production consoles of the time, this was an obvious inclusion. The DSP5D uses this system to hook up to the PM5D.

Basically, the DSP5D is a console without the console bit. All the inputs and head amps are still there, there are 24 comms outs, and all the AD and DA conversion and processing gets done in the box.

There just isn't any control surface. You can connect the DSP5D to a PM5D using the cascade connections, in which case the PM5D surface can be used to control either its own processing or the DSP5D. You can change which machine you're controlling easily enough, so



Forget what the mute buttons say - 15 is off, and 16 is on

using it as an add-on or remote rack is no problem, but it does appear as a separate device rather than simply additional layers on the PM5D. There are technical reasons for this – the processing architecture of the PM5D is different from typical remote racked units. The busses link as they would in a conventional cascaded system.

If you want to use the DSP5D as a remote rack, you also need to get yourself a DCU5D. This is a nifty little box that links to the PM5D with a pair of cascade cables and thence to the DSP5D via cat 5.

Alternatively you can simply hook the DSP5D up by Ethernet to a computer and control it using Studio Manager. Personally, I hate the idea of using a laptop as a control surface, but I've heard of several people doing it with wireless adapters so they can roam free through the venue. Whatever floats your boat.

TIPS FOR YOUNG PLAYERS

There are a couple of things about using the PM5D with the DSP5D that could turn into traps for the unwary, so I'll mention them here. The first is one of my ongoing gripes with the system – the original PM5DRH came with a switch on the back to allow you to switch the entire phantom

PM5D AT A GLANCE

- 48 mono inputs
- 4 stereo inputs
- 24 m x (auxiliary) buses
- 2 stereo outputs
- 8 matrix outputs
- 8 effects processors
- 12 graphic equalisers
- Compressor, gate and 4-way full parametric EQ on all mono inputs
- Sample rates from 44.1 to 96kHz
- 32 bit internal processing

power bus on or off. No, I have no idea why. The DSP5D comes with the same obnoxious switch buried in the setup screen, and it appears to default to 'off'. This means that you can switch the phantom on the surface, but it doesn't get to the head amps unless you've switched the phantom bus on.

Second point: It's not difficult to forget which machine you're currently controlling, but the good people at Yamaha have noticed this, and made it possible to change the display background colour for each machine. This makes life considerably easier – I colour coded the main console as a cheerful red and the remote rack a soothing blue, thus no more confusion.

Point three. Make sure that you patch the outputs where you want them. The DSP5D has less output connectors than the complete console, so you can't have everything patched at the same time unless you're cunning and stick some kind of output card in one of the slots. Just don't expect the thing to default to the output patch you want.

Finally, and this one counts even

when you're using the desk as a stand alone unit, be wary of the mute buttons on the eight fader master section. These faders act as DCA masters, mix masters, and various other (user assignable) things, and the buttons act as either mutes or 'on' switches depending on which function you've got selected. In DCA mode, the light comes on when the DCA is muted. In channel or mix mode, it comes on when the channel is switched on. The key to dealing with this is to ignore the word 'mute' stencilled on the surface, to ignore the light in the switch, and to pay attention to the little label strip – when it's passing audio, the label glows more brightly than when it's not.

THE VERDICT?

I'll put my hand up right now and say I wasn't a huge fan of version 1. I found the learning curve quite steep after years of analogue console use, and I was befuddled by some of the things I had to do to get it to do what I wanted. So I tended to avoid it as much as possible.

Even on fairly limited exposure to

the new one, I can see that a lot of the frustration I experienced with the previous version has been resolved – some because of changes in the way the console works and some because of changes in the way I work. Setting the console up to behave the way I like a console to behave wasn't difficult, and I was able to use the user defined keys to keep myself out of the menu windows. The few little quirks I noted before gave me some moments, but once you get them sorted out they cease to be a problem.

Would I take it to a gig? Yes. And I would also suggest that even if you were one of the 'don't like PM5D' crowd, you might want to give it another look – it may just change your mind.

And what about the price? The PM5DRH touring package, cased with two power supplies, comes in at \$85k. If you're looking at an installed application you can get it uncased with a single PSU for ten grand less. If you're willing to forgo the recallable head amps the price slips down to \$55k. The DSP5D is thirty thousand with the DCU5D adding three. **CX**

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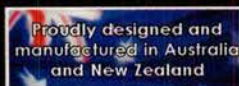
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GRASS VALLEY TURBO iDDR



By **JIMMY D**

Professional video recording has come a long way. Open reel tape gave way to a variety of cassettes, analogue tape gave way for digital formats, and tape is now starting to look like being abandoned altogether. Grass Valley's Turbo is one of a new generation of hard drive based video recorders.

WHAT MAKES A TURBO

The Turbo iDDR is a multi-channel digital video recorder with two playback channels and one record channel, all of which can operate simultaneously. It's equipped with a variety of interface and control options, and video can be recorded into the Turbo in real-time or imported via USB or Firewire.

The Turbo is in essence an up-specced computer with specialised hardware surrounding it and clever software inside. Being such it has all the connectivity you'd expect from such a machine including Firewire, Ethernet, USB, plus monitor, keyboard and mouse ports. The Turbo has a dedicated set of audio and

video outputs for each playback channel. Video is available as SDI with embedded audio, or as analogue in composite, component or Y/C with balanced XLR stereo audio outputs. The same range of connectors are available for the record channel, and audio can be input as either analogue via XLR or digital via S/PDIF. It doesn't end there though – video output is also available on DVI-I. The Turbo can lock timecode to other systems using external timecode via an LTC input, or it will happily run off its own internal timecode generator (TCG). There's a reference input so you can sync video to and from the Turbo to other video equipment.

HANDS ON

Figuring it was important to try and break the thing before I wrote this review, I got a Turbo into college for a week to put it through its paces.

Controlling the Turbo can be as simple as treating it just like a normal VTR. Choose one of the playback or record channels using dedicated buttons, then use the TFT touch screen to load a clip. From this point you can control the channel using

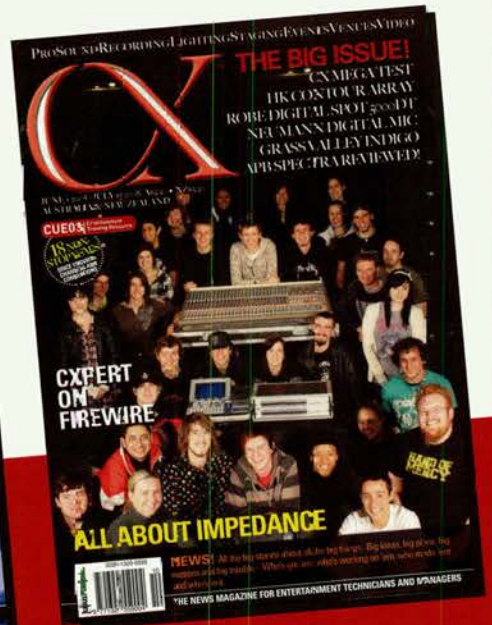
standard transport buttons or the rotary encoder jog dial on the front panel. The jog dial also lets you navigate menu options on the touchscreen, and I really like it. Some time ago EAW released the umx96 audio console with a rotary encoder which simulated end stops and centre detents. The Turbo's jog dial does the same thing and does it well. If you prefer something which feels more like a computer than a tape machine, hook up a monitor keyboard and mouse and use the windows based software "AppCenter".

While you can manage normal operation functions from the front panel, AppCentre gives you full control over all functions of the Turbo in a Windows XP environment. This includes the network and remote setup functions. Network setup is done exactly the same way as on any Windows XP machine. Once this is done, you're in a position to control the unit remotely from other devices. Since I had a Grass Valley Indigo close at hand I decided to give the remote thing a go. The basic setup was easy – setup IP addresses on both devices and link them through a

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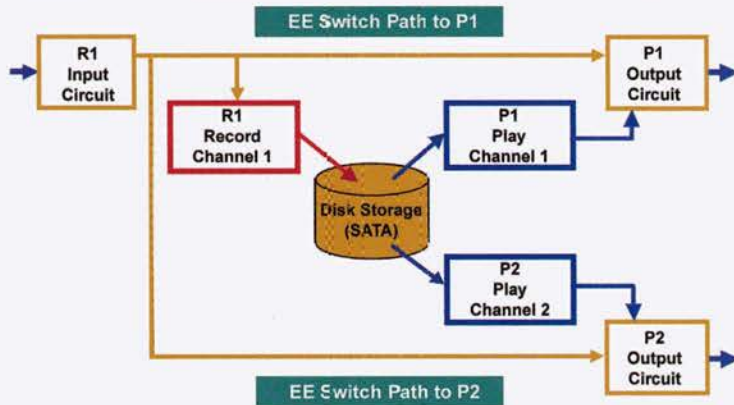
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network switch with Cat5 cables. The next step (which of course being so obvious it took me a phone call to figure out) is to put the channel you wish to control into remote mode on the front panel of the unit. This done, you can use the touch screen on the Indigo to navigate and control playback of the clips. There's support for multiple playback channels and even multiple players. If you're using another type of controller like a Final Cut Pro, the Turbo will operate in BVW interface mode which emulates an SP-Betacam. Separate RS-422 ports are available for both player and recorder channels.

There are a bunch of other ways to control the unit including playlists, and GPI/GPO interfaces. A GPI allows the Turbo to respond to a contact closure with a pre-defined action which you setup in the AppCenter Workstation. Similarly, GPO contact closures can be triggered from events in playlists.

CAPACITY AND MEDIA TRANSFER

Turbo records video in the MPEG-2 Long GOP compression with selectable data rate. This means you can choose what level of compression you want to apply to video recorded by the Turbo. At 15MBs the unit will hold up to 17 hours of video, and at the other end of the scale at 4MBs storage capacity increases to 40 hours. There are a couple of other rates in between

those too.

Video can be recorded into the record channel over any of the video inputs, or even via Firewire. There's an E-E mode that allows you to monitor the record input on either of the playback channels, so you can see exactly what's passing through the recorder. On-screen audio level meters show you when audio is present, and these are superimposed over a thumbnail image of whatever video is active on the channel you have selected. Media on the Turbo is stored in a common pool, so as soon as you start recording a clip you can load it into one of the playback channels and play it out.

You don't have to record video in realtime to use it on the Turbo either, you can import video files directly into the unit as data in a variety of formats. I tried this process with a Quicktime file and it worked fine. There are other formats supported too including AVI, MPEG, GXF (DV), and WMV. A DVD drive is included for file transfers. You can even import still images like JPEG files and the Turbo will convert them into clips (tried this too, also works well).

Exporting recorded files is an equally simple process: connect up an external drive on USB or Firewire, choose the file from the "clips" menu, and hit export. There's a transfer monitor function which tells you how long the process is taking. Your drive needs to be formatted in NTFS, since FAT32 only allows for a

maximum filesize of around 4Gb. Export file formats include MPEG, AVI, WMV, and GXF.

MAINTENANCE AND OTHER FEATURES

One thing I've been told by a couple of people is that the Turbo, like most other disk-based recorders doesn't like having its drive completely filled up. This is no sledge on the machine itself; it's simply a fact of modern computing. Operating systems use things called swap files to run. Swap files get stored on a hard drive; drive run out of space, swap file not work so good. In other words cramming the drive chockers and expecting flawless operation would be unrealistic. The Turbo's not short on interfacing options (you can transfer files over Ethernet too), so employ good work practices and keep only the stuff on there you need to.

Mixed aspect ratios can be a problem, but the Turbo addresses this with in-built aspect ratio conversion (ARC). Clips with different aspect ratios may be played back on the same player channel and configuration options allow you to define how the various aspect ratios will be treated. Since CX relates primarily to live production I've covered the features I'd consider relevant but the list is not exhaustive.

THE VERDICT

I like it. I have friends who like it. It passes everything I tested. The bottom line here is that Grass Valley have come up with a product which is a bit unique, at least in its price bracket.

The number of ways you can control the Turbo make it versatile for a number of applications from editing to live presentations, right through to automated playout systems. The range of input and output options add to this appeal. I'd like to see the Record channel accept audio embedded on the SDI channel, but given the price point the unit sits at I kind of understand why it doesn't. And what is the price point? The Turbo comes in two models, both of which list comfortably under the fifteen thousand dollar mark. It's also worth mentioning that the distributors currently have a special offer which lets you combine a Turbo with an Indigo-HR vision switch for under thirty thousand. That's some serious bang for your buck.



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ALLEN & HEATH ZED

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This one surprised me when I got it out of the carton, because it has an exact set of features that prove someone was thinking at the design phase. This is the 22FX model, with 16 mono channels, three stereo and an effector inbuilt. It has a USB port with in and out digital converters, which is a most excellent inclusion.

Low cost is around 2 grand in this case, and this is one of a family of ZED mixers. This seems to be the new price point for entry level mixing of this size. The ZED is a school church and smaller club mixer and also very suitable for corporate AV.

I hooked the Mac up to the USB port, and sure enough – Mac sent music down from my iTunes or ce I selected USB as an output in the sound prefs. That was easy. There is a USB return control which you can



ZED macro USB.



route to the main stereo faders or into the third stereo input fader.

You can record to your PC or Mac on USB from the ZED as well, and the output choices are the stereo main mix outputs or any of the auxiliaries.

More conventionally, ZED has three band EQ with a wide ranging midrange sweep. It ranges from 120Hz to 4kHz. The low is set at 80, and the high at 12kHz for fizz and sizz. There is a 10Chz high pass switch on all mono channels, to switch out the low end on inputs that don't need low end.

BUS TIME

This ZED has two prefade auxiliary sends, and one post fade for each channel. A fourth bus is labeled FX and sends that channel to the onboard effects engine. Interestingly the third auxiliary bus has no master control, but since it is post the channel faders, I guess this is OK.

All the inputs and outputs tell the story – they are mounted up top of the mixer, which makes it easy to get to them but also easy for dirt to get inside as well. Keep it covered when not in use, folks.

There's a mono out, and an alt out as well which runs to dual RCA connectors. In keeping with our weirdly futuristic retro world where we have MP3 music that is not as good as 13 bit CC, there's a bunch of RCA inputs for the stereo channels. As well as 6.5mm jacks.

Cunning idea: the effects input fader can drive a fourth pair of stereo inputs, so you could return an external effects unit if you can't want to use the 13 effects onboard. If you were silly, you could return both the external and the internal effector to the same channel, but you would be silly since you can turn off the internal effects easily.

SPEAKING OF...

The effects are quite good, and there is a TAP button to dial up the tempo on three of them. There's one and only one 48v phantom switch for the whole console, so take care if needing to power anything with this.

Finally, in keeping with our weirdly retro world, there is a 3.5mm headphone jack just under the 6.5mm one so you can use your toy ear monitors instead of real enclosed headphones.

Styling: distinct and attractive. Feel: solid and durable. Labels: readable. Noise: low (which is good). Other: there's an insert pc nt on all mono inputs.



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SHURE UHF-R AND WIRELESS WORKBENCH

By **ANDY MACKENZIE**

When I first started dealing with wireless microphones, things were a lot simpler. Systems came with one fixed frequency and lots of people managed their frequency allocation using a tried and tested system called 'pot luck'. If you needed to use 8 systems for a show, you took ten, plugged them all in and used the eight that worked properly.

As time went by and shows got more demanding, it turned out that pot luck was maybe not so good a system as we first thought, and people started getting scientific about the whole thing. It wasn't long before the serious players would use a frequency scanner to check the venue when they did their site inspection, then toddle off home to do a bunch of intermodulation calculations before dialling up the requisite frequencies on their swanky new 'frequency agile' systems.

Shure's latest collection, composed of the UHF-R series of wireless mics and their Wireless Workbench software, brings all of this together in an innovative and extremely functional way.



WIRELESS WORKBENCH

The Wireless Workbench is a software package (available as a free download from Shure) specifically designed for the task of RF spectrum planning for the kind of complex shows we do today. Remember, it's not just the mics you need to think about – you're also dealing with in-ear monitors, wireless comms gear, musicians using their own wireless kits and all kinds of other stuff. And of course all this is happening in the little gaps in the spectrum around the TV channels.

Wireless Workbench allows you to simplify this process – with the right interface you can use it to run a

frequency scan, you can punch in any other frequencies you know are going to be used and get it to look up which TV frequencies are used in your area. Then you can tell it how many wireless rigs you want to run, and what models and ranges you have available, before leaving it to figure it all out for you. The software will come back to you with an answer to the two most vexing questions of spectrum planning – can I do it?; and if so, how? As you would expect, it only does all this for Shure's products but if you're using multiple makes and models, you can still punch in the frequencies and use it to check compatibility.

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UHF-R WIRELESS

Then there's the UHF-R wireless microphone systems. These are the flagship of Shure's range, and they're very nice indeed. They're still operating in the UHF-TV band, but where most wireless systems in recent years have been frequency selectable across a range of about three channel spacings these guys can be adjusted across ten. This means significantly more flexibility and a potentially substantial reduction in inventory requirements.

There are a couple of transmitter options available – the hand-held that we had to play with, and a belt pack that we didn't (although I've seen one before and it's design and build quality was the equal of the rest of the range). The hand held transmitter is solid and reassuringly heavy in the hand, and is available with a range of Shure's popular vocal mic capsules including both kinds of 58, 87 and the KSM-9 condenser. The fitting is the same as on their other transmitters, so if you've already got a bucket of interchangeable heads they'll still be useful.

The front panel of the receiver is straightforward, including a minimum of controls to operate the simple and logical menu structure. The large(ish) LCD screen gives a wealth of information including transmitter name, battery status, frequency, transmitter power and so on, while the three LED ramps next to it meter signal and audio strength. The backlit buttons and screen are both stylish and functional – and they keep up the 'shiny quotient' of the system. Antennae can be fitted to the front or back and in multiple system setups you can use an antenna splitter.

Battery life from the two AA batteries in the transmitter is comparable with what others get from 9V batteries, but the AAs are rather cheaper. And while you're in the battery compartment you'll find the IR receiver used to sync the mic to the receiver. You'll also see the mic switch under the end of the battery cover where it can't get accidentally (or deliberately) switched off by performers.

PUT IT ALL TOGETHER...

Where all this gear really comes into its own though, is when you tie it together. The UHF-R receivers are capable of being controlled over Ethernet and will cheerfully communicate with Wireless Workbench. This means that you can use a UHF-R receiver as the receiving hardware for frequency scanning, and also that the computer can give instructions to the receivers. The software can display device information, signal strength, all the stuff we're used to seeing on the LCDs, and can also keep a running plot of the RF signal strength which is fantastically helpful when checking the room for weak points. It all adds up to a very potent little package.

Hook up the laptop to the UHF-R receivers, run a frequency scan, ask the thinking box to figure it all out for you before assigning frequencies to the receivers. Sync the transmitters using the IR, give it all a quick test then go find catering. Sounds like my kind of gig.

AND HOW MUCH DO I PAY FOR THIS UTOPIA?

Well the software is free, which represents excellent value, and the UHF-R dual receiver kit with two hand-helds comes in at around nine thousand. This is quite a lot of money, but still represents good value for a product at this end of the market, particularly when you consider the range of things it can do for your gig.



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