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**INSIDE THE
SPIEGEL TENT**

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as Scene Change powers up

Hills SVL Group fires up
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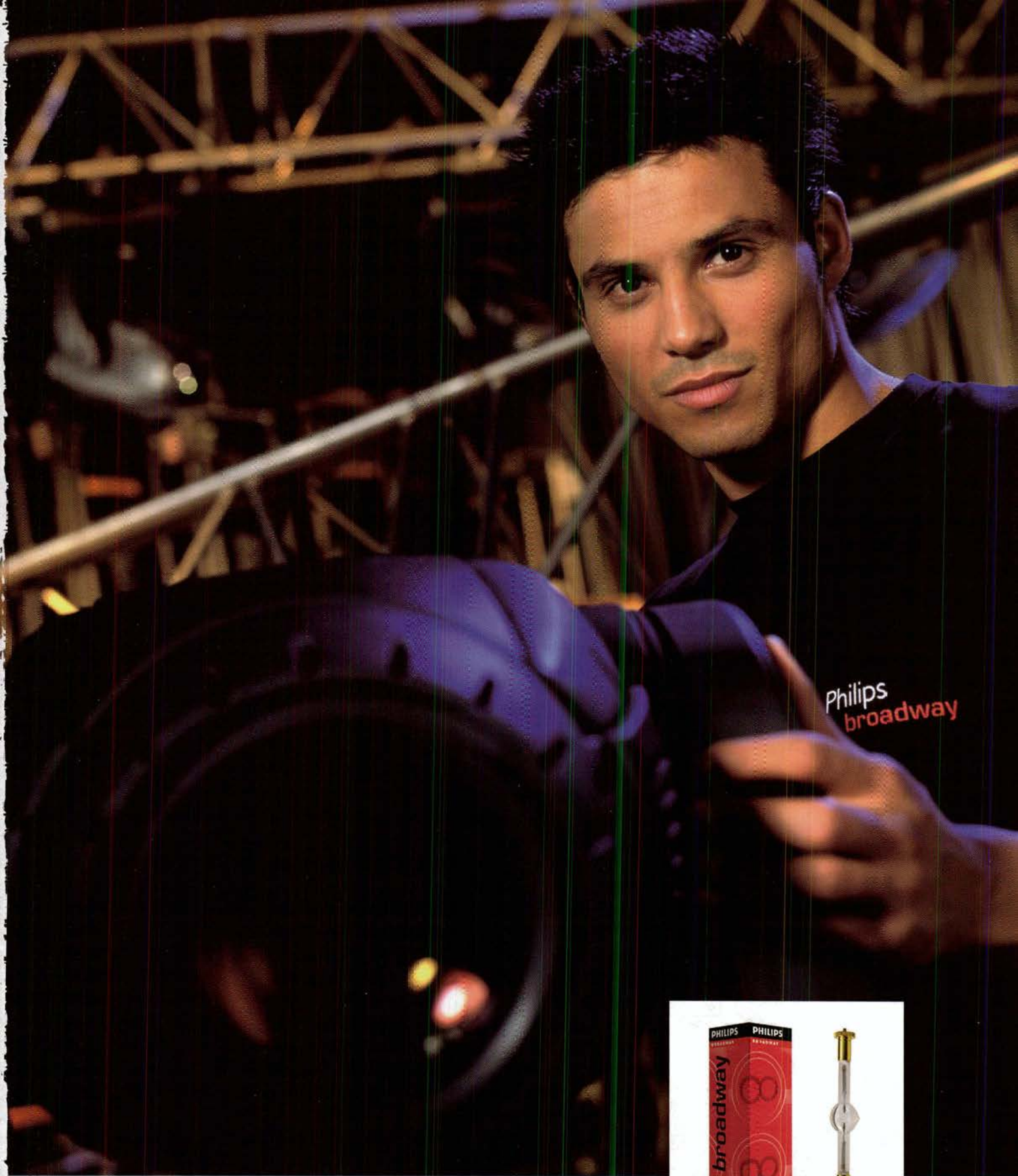


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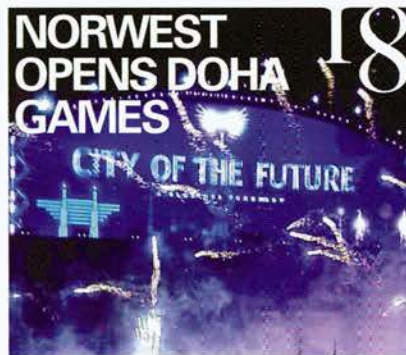
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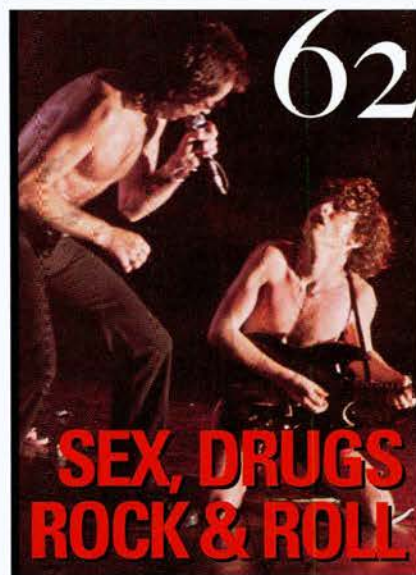
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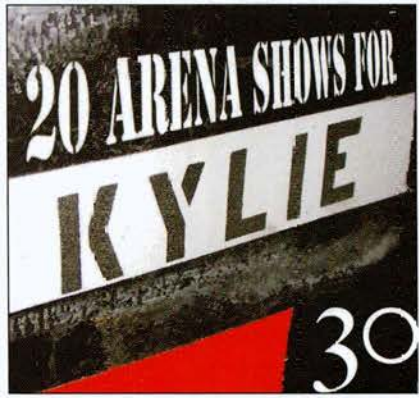
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BIG TOUR



BIG TV



HOW TO



SOLDERING MADE EASY!

Audio Justice: Case N° 1



There are a hundred good excuses for using the old industry standards: 'I didn't think anyone would notice,' 'I did what everyone else was doing,' 'I didn't have time to test anything new.'

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EDITORIAL

GOD STEPS UP

If ever there was a growth market, for want of a better term, it's Christian Youth. The year closed with Hillsong adding a chapel and lodging plans for another convention centre, this time in Sydney south. They bought a large site and now are wrangling with council to get the zoning sorted. When it is, watch out for something that will raise the bar (again).

Don't think it's a Hillsong (centric) boom either. CCC at Oxford Falls (also in Sydney) just upgraded, Shire (Sydney) will do likewise this year, and Planet Shakers in Melbourne are just about due to go and buy a venue.

While this youth fuelled explosion happens, watch the churches adding TV. Dial into the Christian channel for a reality check on this! Our story this issue about TVS has nothing to do with churches but is a great outline of how to build a professional TV station at relatively low cost.

KYLIE STEPS OUT

Great to see The Boss (as her crew calls her) on the boards again. She wasn't exactly running around the stage, but what a professional! With an exceptional connection to her audience.

Across town the bad boy was lighting up a fag on stage, and inviting 50,000 people back to

room 2 at the Park Hyatt. Robbie Williams is The Man, and his tour eclipsed all the others including U2 for high production values. Our story this issue includes an update on the Michael Chugg school of audience control.

Enjoy the great Bob King pictures as well. Shame Bob was refused entry to Kylie. **Note to promoters: let him in.**

I WAS A ROADIE

Well I still am, and proud of it. The confessions are in this issue, and kids – don't try any of that stuff, because plenty of us died along the way. I am one of the very, very lucky ones. I avoided the worst of it, and lived to tell.

Now it is 2007 and it is suddenly cool to have been a roadie. So many people working in theatre – and in events – came from the road. We used to sort of hide the history, and those who looked down on us are just jealous!

I've got a lot more old photos on my website at www.juliusmedia.com and I need to thank Colin Baldwin for having the drive to collect the pictures a few years ago. Got pictures? Send them to me!

Julius

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.

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NEWS

PRODUCTS AND GADGETS

HOBART MUTINY AS SCENE CHANGE OPEN NEW AV COMPANY

Wow moment indeed for Staging Connections

Market dominant AV company Staging Connections are reeling after the shock defection of their entire Hobart operation to the new competitor Scene Change. Hobart was a profitable outpost and a town that is hard for outsiders to penetrate, so the maneuver sends a strong signal to Staging Connections group headquarters in Sydney.

Scene Change is a new audio visual company headed by former Staging Connections senior executive Peter Kolevas, and one time Staging Connections marketing manager Ian Whitworth. They have considerable capital between them, and what they call a 'non merchant bank line of credit'. Most importantly they have the connections and the desire to launch a new audio visual company against their old employer.

Staging Connections is now a public company in its own right after AAV sold off all other businesses and changed the name of the listed entity to better reflect the underlying business.

Meantime in Hobart the Staging Connections business is now managed by others while the six former staff set about establishing the new business. Some of them are allegedly legally constrained and cannot approach former clients, however Peter Kolevas faces no such

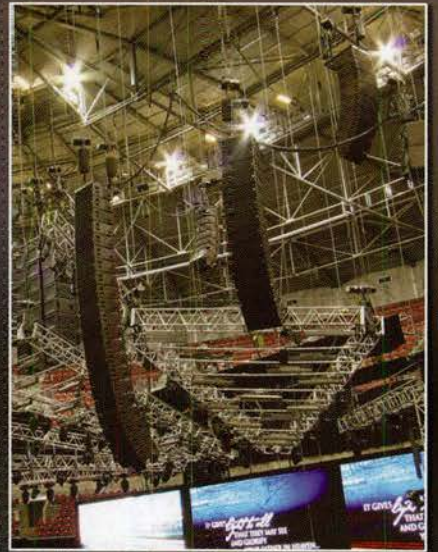


Scene Change Unwraps Christmas Boxes: (L-R) Steve Fraser, Adam Cox, Ben Coombe, Gareth Percy, Damien Free. (Front) Rod Street.





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Peter Kolevas and Ian Whitworth

restriction. He was one of the driving forces at Staging Connections, working alongside founder Gary Hackett and before that with co-founder Terry Davenport in Melbourne.

Peter Kolevas left Staging Connections as one of many former management who walked or were walked after changes at the top of the public company imposed a new structure. The new structure talks in terms of 'human capital' and appears to put weight on management qualifications ahead of industry knowledge. Some of the former key staff were 'retired', some didn't have contracts renewed and crucially, some didn't have a contract at all.

Armed with a years salary, plus significant support, Peter Kolevas quickly found common ground with former colleague Ian Whitworth who is credited with positioning the Staging Connections brand through the 1990's. Ian Whitworth is a shrewd marketer, and this shows in the look and design of Scene Change. The 'Audio Visual Response Unit' tag or the black van with chrome wheels is smart work.

Scene Change will roll out their brand elsewhere and right now are in the talking and listening game. Whether they own all their branches, or follow the collaborative shared ownership model that built Staging Connections into the success story that it was remains to be seen.

www.scenechange.com.au



Tim Banfield from CueAV on the Gold Coast sent us this picture – these guys do get around! www.cue-av.com.au

STAGING CONNECTIONS FACE UNCERTAIN 2007

With projected turnover of \$80 million, Staging Connections appears to be in very good shape. The audio visual services supplier dominates the Australian market, and plans to earn more than half its profits off shore, having invested in operations in Dubai, China and Singapore.

Every new team needs a new start, but the revolving door at Staging Connections is in danger of seizing, due to an apparent belief on the board that humans are capital, and that qualifications mean more than experience. This is at odds with the internecine and chummy world of events and entertainment.

A prime example: two senior account managers decide to move on. The company treats their departure with suspicion - and rather than being sent off with good cheer, they leave under a cloud. In one case, the company demands to know where the account manager is headed, and due to an agreement with the new employer, this information cannot be shared until it has been announced within the new (employers) company. Since the departing Staging Connections staffer will not (cannot) reveal where they are headed, the Staging Connections response is allegedly rather heavy handed to say the least.

Understandably these two different account managers had been offered jobs by the major clients whose accounts they have been managing at

WHERE IS GARY?

Gary Hackett is the man, the central player who built Staging Connections up to dominate the market, and eventually attract the big end of town. He fell off the radar last year, and was seen at ENTECH but not heard. Sources say he has a legally binding restraint in his contract that prevents him from talking to anyone about anything to do with Staging Connections.

He has even declined to hint at when the legal shackles will come off, playing it very carefully. The AAV Annual Report simply says that his employment was terminated on 31 March 2006. "Payment of a termination benefit of 12 month (sic) at the current salary package was made, along with other entitlements at that point in time."

But you can't keep a guy like him down – and he is sure flushed with funds, having taken in excess of \$10 million for his share of the business when it was rolled in to AAV several years ago.

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• FP 6000Q	4 x 1250W @ 4 ohms 4 x 1500W @ 2 ohms

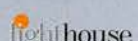
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incorporating



Staging Connections. These are well known firms, whose audio visual event services have been very well looked after by the Staging Connections account managers.

So upon starting work with their new employers it is just a matter of time until the former Staging Connections staffers review arrangements and make decisions about the future audio visual supply arrangements for their new employers. Do you get the idea?

Maybe the most significant departure was the manager whose job was to make sure the five star hotels who host in-house Staging Connections operations run smoothly. This is the engine room of the company. He was allowed to leave, and so no one was left to articulate to the hotels the logic behind the 'Wow' branding expedition which sat oddly with many of the multinational hotels. These properties have clients who are


obliged to use in-house audio visual services, supplied and staffed by Staging Connections. Having those staff walking around the property with 'Wow' emblazoned on their uniforms was not well received in some places.

There are a great many talented staff at Staging Connections, and the firm is hiring plenty more. The staff deserves a board who acknowledge that the events business is not a silo of services attended to by generic human capital. The diverse territories that Staging Connections work within are not a twister board, and staff members are not necessarily happy to be glued to a Blackberry around the clock.

With a wholesale purge of talent all but completed, the shockwaves are still rolling outwards and some of them will turn into little tsunamis when they get closer to shore. These shores are ever expanding, as the company now needs to make

acquisitions work. It is a wide and thin niche business, without benchmarks. All those credentialed corporate types in management will be scratching their heads, looking for key performance indicators and Harvard case studies to help understand Staging Connections.

The board could research what happened last time large public companies got involved in audio visual. Samuelsons had fun buying companies like Jands Concert Sound in the late 1980's, they paid \$7 million for it and when they collapsed sold it back to the current (and previous) owners for half of that. Gearhouse (the UK listed company, not the current Gearhouse) came and went, as did Caribiner.

Meanwhile it will take a lot of commitment and effort to rebuild morale within Staging Connections, and it is not clear whether the board understands there is actually a problem. But there is. 

THE 'L' IN HILLS SVL

Lighthouse Distribution opened in January. Lighthouse Distribution is a new entity from the ever growing Hills SVL (Sound, Vision and Lighting) Group which already includes Audio Telex, Australian Monitor, Australian Audio Supplies and Crestron Control Solutions.

The lighting industry has been a buzz for months with rumours about the new SVL operation and what it may hold. CX has the exclusive on the news after a discussion with Hills SVL General Manager Stuart Craig.

Stuart states "The group has a very strong presence in both the entertainment and architectural markets through Audio Telex and Crestron. Creating a lighting entity to fit in beautifully with the other operations in the group is a very natural development. We open from day one with a very strong technical offering and are very much focused on the product and service offerings we can quickly develop to maximum customer benefit within the group. The ability to offer all Hills SVL customers complete, integrated solutions is now a reality and those customers will benefit financially, technically and logistically."

"Specifically, Lighthouse Distribution will offer three very strong European brands. Clay Paky is a very prestigious line which is experiencing phenomenal growth on the back of their new Alpha Series. DTS is just a great brand from

the heart of Italy. DTS reminds me very much of when Audio Telex took on Lab Gruppen. Here was this fabulous range of products, with a very strong brand in Europe which was just ready to explode globally; I feel the same about DTS. And from the UK comes Optikinetics who just make a really well crafted range of projectors which consultants and architects just love. This is a strong, European offering which sits beautifully with our intended position in the market".

"Quite simply the lighting market in Australia now has a credible choice. Backed by the rest of the Hills SVL Group we have high expectations for Lighthouse Distribution and all indications are that the lighting market is ready for a change."

The National Sales and Marketing Manager for Lighthouse Distribution is Paul Owen who will be well known to many in the industry having been a prominent, influential member of the industry for over 20 years.

Lighthouse Distribution will initially



Clay Paky to feature at Lighthouse.

open in Melbourne, Sydney and Brisbane. Stock will be available from all Hills SVL Warehouses across Australia, including Perth and Adelaide. Audio Telex NZ, based in Auckland, will distribute the same brands as Lighthouse Distribution offers in Australia. 

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VALE PETER HAYWARD (1947 – 2006)

At presstime came news of the passing away of Peter Hayward, chairman and founder of Australis Music Group, past President of the Australian Music Association, long time Executive Committee member, and Honour Roll recipient. Peter played a major role in shaping the Australian and New Zealand musical product markets. Peter was widely considered as one of the most respected business leaders in the music products industry throughout the world. Peter not only developed Australis into a \$40 million musical equipment wholesaler, he was also instrumental in the creation of the Ashton line which is exported world wide.

Peter passed away at his home, surrounded by his loving family.

Peter founded Australis Music in 1973. Over the past 33 years he has made an enormous contribution to the music industry and formed so many close relationships with people from all parts of the world.

Australis and the Hayward family have asked people not to send flowers, but instead, if you wish, please make a donation to Redkite (Foundation for Children with Cancer). You can make a donation online at www.redkite.org.au

Our condolences go out to his wife Naomi and four children, Nicole, Morgan, Katherine and Elizabeth. 

A.T. AND GRIFFITH UNI

Australia's Griffith University is the largest provider of creative and performing arts training in the country and its Brisbane South Bank campus hosts its Queensland College of Arts, the Griffith Film School and the Queensland Conservatorium of Music. It is located on the Brisbane River, directly opposite the city centre and the seat of government.

Professor Paul Draper leads up Digital Arts at Griffith. This encompasses all those creative elements who work with digital sound, multimedia and performance production. "We've just installed a state-of-the-art Blackbird line array system in one of our premier performance theatres, the Ian Hanger Recital Hall. This is a difficult space because it has to respond to a wide

range of sound reinforcement demands - from large university lectures, music theatre, jazz and rock, to classical music and external corporate hire. The Blackbird system is just outstanding in all settings and we are thrilled to have such high quality sound in the venue."

The Ian Hanger Recital Hall is a difficult space because it is located in a busy university setting with needs that change on a daily, even hourly basis. The Conservatorium delivers some 280 public concert events each year and, throughout every day, the theatre changes purpose from lecture to workshop to performance.

The Acoustic Technologies system installed at Southbank Campus includes 16 x Blackbird TLA306 Line Array Elements and 2 x TLA306 Bass Modules.

www.atprofessional.com.au 



Harry Lloyd-Williams from AT with Professor Paul Draper.

STRAND LIGHTING – LIGHT PALETTE 2006



At the recent LDI show, Strand Lighting showed off the range of consoles that have replaced the 300 and 500 series consoles. The smaller "Palette" range of consoles is already making in-roads into Australian


venues. These are now being complemented by their big brother – Light Palette. The Light Palette console will come in three hardware configurations – Classic, VL, and Live, controlling from 3000 channels at the entry level and software update-able up to a whopping 32,000 channels of lighting.

Hog II users will be very pleased with a moving light control system that makes the transition to this console simple. The moving light controls are both very powerful and very easy to understand. Bringing moving light control to a historically theatrical brand has been a priority for the Strand Lighting software development team. By starting with the lighting control software developed by Horizon Controls, they already had a fully operational and battle-tested basis from which to build. With the added features and

ideas that made the Strand Consoles the number one choice for many theatrical productions around the world, the new hybrid software inside the Light Palette and the Palette range of consoles will be a "must see" for anyone contemplating a new lighting control console.

The big advantage from this development process is a very solid and reliable console from the first version - so early adopters will not have to go through the difficulties that beset so many other desks as they come to the market.

Strand and Bytcraft presented the console in a series of trade previews in Adelaide, Brisbane, Melbourne and Sydney in early Bill Richards - one of the creative brains behind the project, stepped through the touch screen features and showed that the system is very user friendly.

www.bytcraft.com.au 

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Incorporating



NOVATECH BUYS THE VENUE!

Adelaide based Novatech Production Services has just purchased the new Digidesign VENUE Series "D-Show" console for its live touring shows, studio broadcast and live outdoor festivals and special events.

Purpose-built for live sound, the D-Show is a modular system that can be custom configured to suit a range of live sound applications. Its basic components include the D-Show mixing console, FOH Rack housing the system's mix engine, a Stage Rack with recallable, remote-controlled preamps and a multi-channel digital snake system allowing for transport of up to 48 signals bi-directionally over (up to) 150 metre distances.

Novatech upgraded its order to take advantage of the system's architecture, purchasing an additional stage rack and snake card system (allowing for the full 96 inputs), a sidecar for the mixing console, a FOH 10x card (allowing integration of outboard equipment with digital connections whilst expanding the I/O capability at FOH with eight balanced analogue inputs and outputs), a ECx Ethernet Expansion card for remote control of all console functions via

wireless Ethernet, the FWx Record/Playback option for up to 18 channels of audio record or playback with Pro Tools, and four D-Show Mix Engine DSP cards.

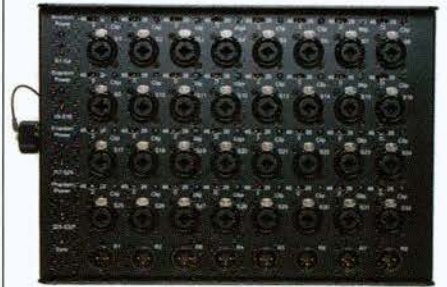
Novatech states that the D-Show console's key features include Virtual Sound Check whereby the FOH Engineer can get the exact sound required without needing the band play for hours to an empty venue, and also the sheer versatility of the system will place this console in a league of its own.

Novatech recently tested the D-Show console at the Annual Carols by Candlelight in Adelaide with great success. Mixed by Grant 'Tosh' Walsh, the D-Show system (used with Novatech's KUDO line array system) performed flawlessly.

Managing Director of Novatech Production Services, Leko Novakovic said "...we have been looking at digital consoles for quite some time. We wanted a console that fits our varied requirements without compromising on premium quality. The D-Show fits this bill perfectly and is backed by the world's best audio engineers and touring bands. We are certain that we have finally found the right console that fits our needs". 

www.novatechproductions.com.au

LIGHTVIPER: SOUND AT THE SPEED OF LIGHT



Group Technologies announce it has been appointed official Australian distributor for FiberPlex's LightViper range of Fiber Optics for the Pro-Audio industry. The LightViper range includes Optical Snake Products, Breakout Cables, Fiber Cable and a range of Accessories to complement the line up. Moreover, Mic/Line Level Analog or AES3 Digital Audio can be transmitted via the Fibre system, and customers have the choice of different Fibre connectors making LightViper one of the most versatile and cost-effective systems available. The LightViper product is very affordable, with complete systems starting at \$12,000 (AUD). 

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Grant Walsh mixes in Adelaide.

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In the seven years since we introduced the wildly popular SR24.4 and 32.4 VLZ-Pro mixers, a lot has changed. So we knew our new mid-format live sound mixers could not merely offer incremental improvements. They needed something monumental. And by "monumental," we mean "Onyx."

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Better still, the Onyx 24.4 and 32.4 are robustly over-built and rigorously tested for the unspeakable tragedies which await in the world of live sound. Check out these next-next-next generation consoles online at www.mackie.com/4bus. Or simply visit your authorized Mackie dealer for an Onyx 4-Bus mixer demo today.

ONYX 24-4

ONYX 32-4



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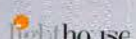
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Incorporating



CLARIFICATION: MEDIA MATRIX AND AUDIO TELEX

In the article about Hartley Peavey in the November 2006 edition of CX, we highlight the success of the Peavey MediaMatrix system. It is Audio Telex (not APG) who is the exclusive distributor for Peavey MediaMatrix and for Peavey Architectural Acoustics in both Australia and New Zealand.

www.audiotelex.com.au



NORWEST OPENS DOHA GAMES

The 15th Asian Games were officially opened in December by HH Emir Sheikh Hamad Bin Khalifa al-Thani at Doha's Khalifa Stadium. In a breathtaking ceremony, a movie was cast on the world's largest LCD while a spectacular live show featuring hundreds of performers was taking place on the field.

Artistic director David Atkins, in charge of the creation of the opening and closing ceremonies at the Sydney Olympics in 2000, devised a show under the theme of Qatar reaching out to Asia, celebrating its history, its culture and the spirit of the games.

Several top stars performed during this opening ceremony such as

Chinese pop star Jacky Cheung, Spanish tenor Jose Carreras, Bollywood singer Sunidhi Chauhan as well as Lebanese artist Magida El Roumi.

The show was broadcast live in 60 countries throughout the world, and the 50 000 spectators enjoyed the KUDO sound system design by Audio Director Bruce Jackson, and, Audio Design Consultant Scott Willsallen.

Australian based sound company Norwest Productions supplied the 112 L-ACOUSTICS KUDO cabinets, to be used again on December 15th during the closing ceremony.

www.norwestproductions.com



AVOLITES TRAINING COLLEGE

ULA Group announces the opening of the new Avolites Training College which will be dedicated to training of existing industry professionals as well as members of the public in Avolite consoles. The ULA Group have scheduled these training events for Melbourne and Sydney.

The classes will vary from one day to three day events and will cover aspects of the new Avolites Pearl2008 and Expert control consoles. Each class will comprise of a small number of students, who will receive hands on training from industry professionals.

These training events will be held in ULA's facilities. All courseware has been developed by Avolites specifically for the new College.

To register for these new courses or find out more, visit the ULA website:

www.ulagroup.com



AMPHENOL UPDATES

Amphenol have recently made some significant improvements to their website; with their audio catalogue in html format as well as downloadable pdf files. They have also recently expanded their DMX range to include Adaptors and Terminators.

Further details:

www.amphenol.com.au



PLANETSHAKERS CHURCH MOVES WITH MARTIN

True to name, you'd be forgiven for thinking that every Sunday at the Dallas Brooks Centre in Melbourne was host to earth rumbling construction.

In fact what you'd be feeling is the high impact presentation of probably Australia's most explosive and fastest growing church – Planetshakers.

Venture inside and you will now see that Planetshakers have taken delivery of the first stage of a new moving light system comprised of 6x Martin MAC550's, 4x MAC600's and a Unique Hazer.

This marks step one of a comprehensive intelligent lighting system, with the addition of more fixtures and LED's imminent in the near future.

Holding conferences all over the globe, with the local national 06 conference in January having attracted over 25,000 people, Planetshakers is well versed in the value of quality equipment that can deliver and outlast.

"Our decision to go with Martin MAC's was not only based on their performance, but their ability to cope with our various setups and transporting each week. Another factor was our longstanding relationship with Forefront Productions and their recommendation of the backup & service etiquette of local Martin Lighting importer Showtech" said Planetshakers' production manager, Brian Vayler.

"It's not just our service ability that's crucial with the purchase of assets like moving lights, it's the importer's ability to support the product that is essential. That's why we have no hesitation in recommending Martin Lighting to our clients" says Forefront's Nick Burns.

This latest purchase comes ahead of the next Planetshakers conference to be held throughout Australia in January 2007 which will attract in excess of 30,000 attendees, featuring a full compliment of Martin Lighting

in venues: Vodafone Arena Melbourne, Brisbane Convention Centre and Challenge Stadium Perth.

www.fpp.com.au

www.planetshakers.com

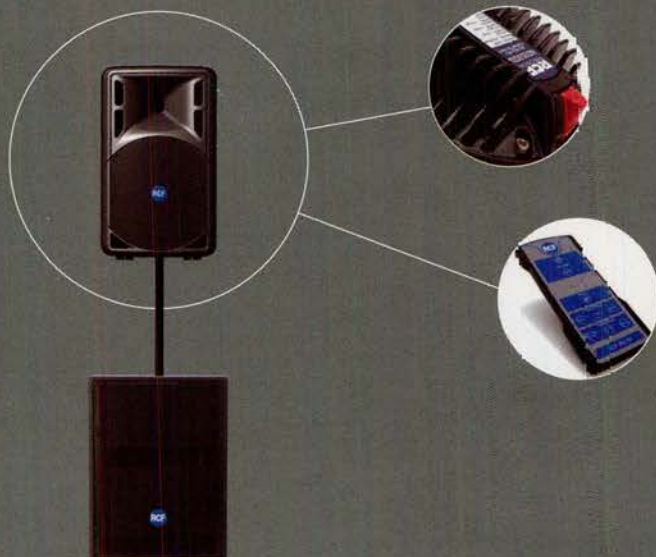


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Check out the feature packed Art 705AS self powered 800 watt RMS compact sub bass module.



NORWEST GET FP+ SERIES

The new Lab.gruppen FP+ Series of touring power amplifiers are now available with Norwest Productions placing the first order in Australia.

Twenty-four FP10000Q, 4-channel amplifiers were recently delivered to Norwest and put immediately to use on The Schools Spectacular at the Sydney Entertainment Centre. The Schools Spectacular is a major event featuring a 1200-voice choir, an 80-piece orchestra, 1500 dancers, rock, jazz, brass bands and soloists.

The Lab.gruppen FP10000Q is a touring amplifier delivering 4 x 2100w at 4 ohms or 4 x 2500w at 2 ohms. The amplifier weighs just 12kg in a 2RU chassis and features an in-built amplifier monitoring port as standard. The new FP+ Series effectively allows more than a 50% reduction in rack space measured against the popular fP Series amplifiers - already a standard in touring amp space and efficiency.

Norwest Productions have offices in Sydney, Brisbane and Melbourne and have been a committed Lab.gruppen user since the brand was introduced into Australia in 2002. This latest purchase sees Norwest with 1.4 million watts of Lab.gruppen amplification in their inventory.

www.audiotellex.com.au



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OSRAM INTRO LED STRIP FOR ADVERT SIGNS

These are cool for club and show designers – the compact size of the LED modules enables you too install them even in narrow letters or elements. Other benefits of LED modules include their high breaking strength so costs and breakages are reduced during storage, and the simple installation making the new modules easier to install while saving time.

www.osram.com.au



SONY INTRO HDCAM STUDIO RECORDERS



Sony has introduced the new HDW-D1800 and HDW-1800 HDCAM studio videotape recorders featuring 2-3 pull-down output and HDV 1080i stream recording options.

Building upon the features of the well-established HDW-2000 series, the new recorders are designed to reduce the cost of entry to HDCAM production while still providing the necessary features needed for multi-format workflows.

"Sony's creation of more affordable HDCAM VTRs suits a range of mastering applications and are ideally suited for cost-conscious producers wanting to utilise the benefits of HDCAM," said Nick Buchner, Product Marketing Manager, Sony Business Solutions Division.

"The HDW-D1800 and HDW-1800 HDCAM studio videotape recorders offer more broadcasters and independent post-production companies the opportunity to ingest and output material in well established formats."

The HDW-1800 model is a studio edit recorder with HDCAM recording/playback capability while HDW-D1800 model also offers powerful legacy playback of Digital BETACAM and MPEG IMX format tapes with an internal up-conversion capability. This allows flexible use of acquisition tools in the field, and easy integration into existing editing environments.

The HDW-D1800 and HDW-1800 will be available at suggested retail prices of A\$62,700 and A\$51,700 GST inc respectively.



BOSCH REV UP WITH MIDAS

Richard Ferrida, from Midas is upbeat about the firm now being part of the Bosch conglomerate. "They are very, very organized - amazingly so", he told CX at a recent XL-3 demonstration.

"Bosch direct 10% of their earnings into research and development. They are more interested in long term growth. They turn over 48 billion Euros, they have grown every year since inception. 93% of the shares are vested in a charitable trust. They have a reputation for engineering quality and expertise".

It sounds like a love-in, but Richard has already seen that Bosch have not done what most multinational firms do, they have not marched in and sacked the management. "The HQ is still at Burnsville (USA), there's been no head rolling. Just listening".



PROFESSIONAL AUDIO SYSTEMS

THE NEW NEXIA VC AND NEXIA TC DIGITAL SIGNAL PROCESSORS WITH BUILT-IN WIDE-BAND ACOUSTIC ECHO CANCELLATION.



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OUT'N'ABOUT



JANDS HOLD OFFICE OPENING SOIREE

Late November Jands hosted an Office Opening to celebrate their acquisition of a premises to service the Victorian market. Situated in the budding Port Melbourne area – the new building houses several resident Jands staff, together with new warehouse and engineering facilities.

The evening was specifically designed to thank the Victorian entertainment industry for all their support over the years, as well as to showcase the on going and increasing commitment Jands has to the State.

"The function allowed Jands staff the opportunity to spend time socially with the vast majority of our Melbourne based colleagues," said David Bell, Director of



Nina Finn, Manny and Gayle Gauci-Seddon, Les Brazil.



Peter Trojkovic, Andy McIntyre, Paul Mulholland.



Jodie Archer, Michael Rutledge, Tristan Millar, Sue Mulholland and Gary Dryza.



Jeff MacKenzie, David Bell and Peter Holmes.

Sales and Marketing at Jands. 'The strength of our business is built on a combination of the brands that we represent, the value that Jands adds and most importantly on customer relationships that have grown over the years.'

There was a real industry feel to the night, with over 80 people attending from all markets, including the audio, lighting and staging sectors. Everyone enjoyed a BBQ and a few drinks, with Jim Beam, a marketing partner of Jands even kicking in with a couple of cases to say congratulations! This was well appreciated by all in attendance and if anyone went home hungry or thirsty we'd be well surprised!

Jands would like to thank all that attended and have supported the company, and the industry, over the last 35 years. May there be many more prosperous years and continuing good relationships to come. **Cheers!**



Sponsored by Jim Beam.



Mark King, Rob Walker and Ian Harvey.



Norwest Productions



Norwest have expanded their Lab Gruppen inventory to 196 units with the purchase of 24 FP+ 10000Q amplifiers.

- L'Acoustics KUDO (118 cabinets)
- EAW KF760/761 Line Array
- Funktion Resolution Concert System
- EAW KF750, KF730, KF850
- EAW SB1000, BH760 subs
- Acoustic Technologies Blackbird Line Array

- Adamson Y10 Concert System
- Dolby Lake Processor
- Lake Contour, MESA
- XTA DP428, DP226, DP224
- Optocore Digital Network
- LabGruppen fp6400
- Camco Vortex 6
- Crown Macrotech VZ5002

- Yamaha PM1D, PM5d
- Yamaha M7CL, DM2000
- Yamaha 01V/96 (40 consoles)
- Digico D5 112/EX
- Midas XL4, XL3
- Midas Heritage 3000, 1000
- Midas Verona, Venice

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Tony Lofts, Nine Finn, Michael Lasa, Jeff Bolt, Steve James.



John E'ignam and Bruno Capelli.

ULA OPEN IN SYDNEY

ULA have opened a new Sydney office near the airport. The multi-story building is part of a new development, and features three showrooms in the same style as the recently opened ULA Melbourne. The firm has added considerable inventory into NSW with parts and warehousing on hand.

ULA originated in Melbourne before moving head office to Queensland, and have had an office in Sydney and a larger facility in Melbourne since inception. The new Sydney outlet better serves the large market there, and is managed by Con Nomikos who has now been joined by extra staff.

www.ula.com.au



ULA Sydney.



Con Biviano, Con Nomikos, David Felgar.



John Grimshaw, Paget Blackburn, Peter Huntington, Mark Hammer.



Nadine Weaving.



Clive Dale, Claudia Biviano, Sam Brewer.

ULA HOST ROBE LAUNCH IN MELBOURNE



Andrew Stanley, Aaron Humber – Cliftons, Ales Grivac – Robe CZ, Con Biviano, Josef Valchar – Robe CZ, Warren Maher – Cliftons Owner, Troy Ruse and Blair Terrace.



Simon Matthews (Xhibit), Mark Journ (Moretons) Andrew Johnson (Xhibit), Ben Richie (Xhibit). These are the same Clifton's clients.



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MIDAS XL-8

Julius Grafton has a first look at the new uber top end digital live sound control solution.



By **JULIUS GRAFTON**

Midas XL8 has had quick success for a high end mixing console, with every one of the ten consoles that Midas can make each month and shipped since September 2006.

CX caught up with a console, or system as it should be known, and we can report the system has serious claim to the top end of the sound reinforcement market. It has and will find favor on tours, theatres, and even in some broadcast environments where complex signal routing and military ruggedness is required.

In Australia Jands Production Services have ordered the first system, which should be delivered by about now.

The first glance at the XL-8 from a distance shouts 'look at me' and audiences in arenas will be in no doubt the show was mixed on Midas, since the back of the console is designed like the front grill of a large truck, with a large MIDAS XL8 emblazoned.

XL8 is colourful, with user selected colours denoting channel buttons and VCA groups, and auxiliary selection

also colour driven with backlight attenuators. The five 14" DVI VGA screens sit in a recessed area to minimize sightline obstruction with little focused LEDs embedded to light the control surface. It is a visual delight.

All the processing is done outboard, the system is made up of five elements, or six if you include the full size third octave graphic equalizer controller that can be plugged into a USB port anywhere in the system.

Parts of the system plus together with Cat 5 cable, and the control surface or console comes with a fibre optic multicore that is capable of handling 192 channels in both directions, meaning 192 times two. A pair of fibre cables are used, so that there is redundancy if someone cuts one cable.

Redundancy is everything, with two processor interface units and a spare processor module in the main rack, which requires nine processor units to deliver the console's full 96 inputs and 53 outputs. A tenth processor unit is supplied as a redundant spare.

On the back of the console are two separate mains power feeds, so you can draw from two discrete mains

sources. Each of the five parts, or modules, has its own power supply. Every signal interconnect has an X and a Y connection, so things are replicated.



Midas Splitter

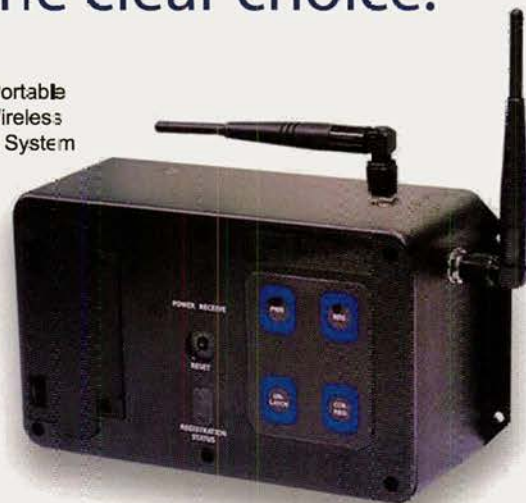
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The DX200 system is supplied complete with light-weight, rugged belt packs featuring voice prompts, rechargeable batteries and a 4 port battery charger for reliable and cost-effective operation.

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Richard Ferriday (Midas) and Phil Webb (APAC Audio).

NEW WAYS TO MIX

I think the best thing about XL8 is the way that you can mix a show on the 12 VCA masters, and also pull together all the assigned channels for each VCA onto the adjacent channel faders. Think of it this way: VCA one is drums. The VCA master fader affects all the drum channels you have selected to that VCA. Imagine there are 8 drum channels.

Now hit the button above the VCA fader, and suddenly the 8 channels to the left of the VCA section have become the drum channels. Now hit the Vocal button above the vocal VCA. Six vocal channels appear on the six channels nearest the VCA section.

IT'S AN EASY WAY TO MIX.

You can do it the way other people do it, and go hunting for the channels on the control surface. There are 24 channels represented with faders, LED ramps and quite extensive controls. Unlike virtually all other digital systems, you don't need to assign a page or a layer, you can 'slide' along in increments of 8, so channels 1 to 24 are available, and if you choose the next 8 channels, you see channels 9 to 32. Slide again and the 24 console channels now represent channels 16 to 40.

Funny how Midas, Soundcraft and Allen and Heath all arrived at the colour concept in the same year... Assigning colours to groups and



Note the coloured illumination (red) at the bottom of the two aux controls. Different Aux groups are coloured different. Pretty!




sends is a great idea, and the use of coloured rings around the auxiliary encoders is brilliant.

A simple KVM connection lets you connect your laptop through one of the 14" monitors, and through the onboard keyboard and mouse. This 'cleans up' the mix environment, and gives the engineer a more centralized environment where Smart and things of that nature can be seen and controlled from the console surface.

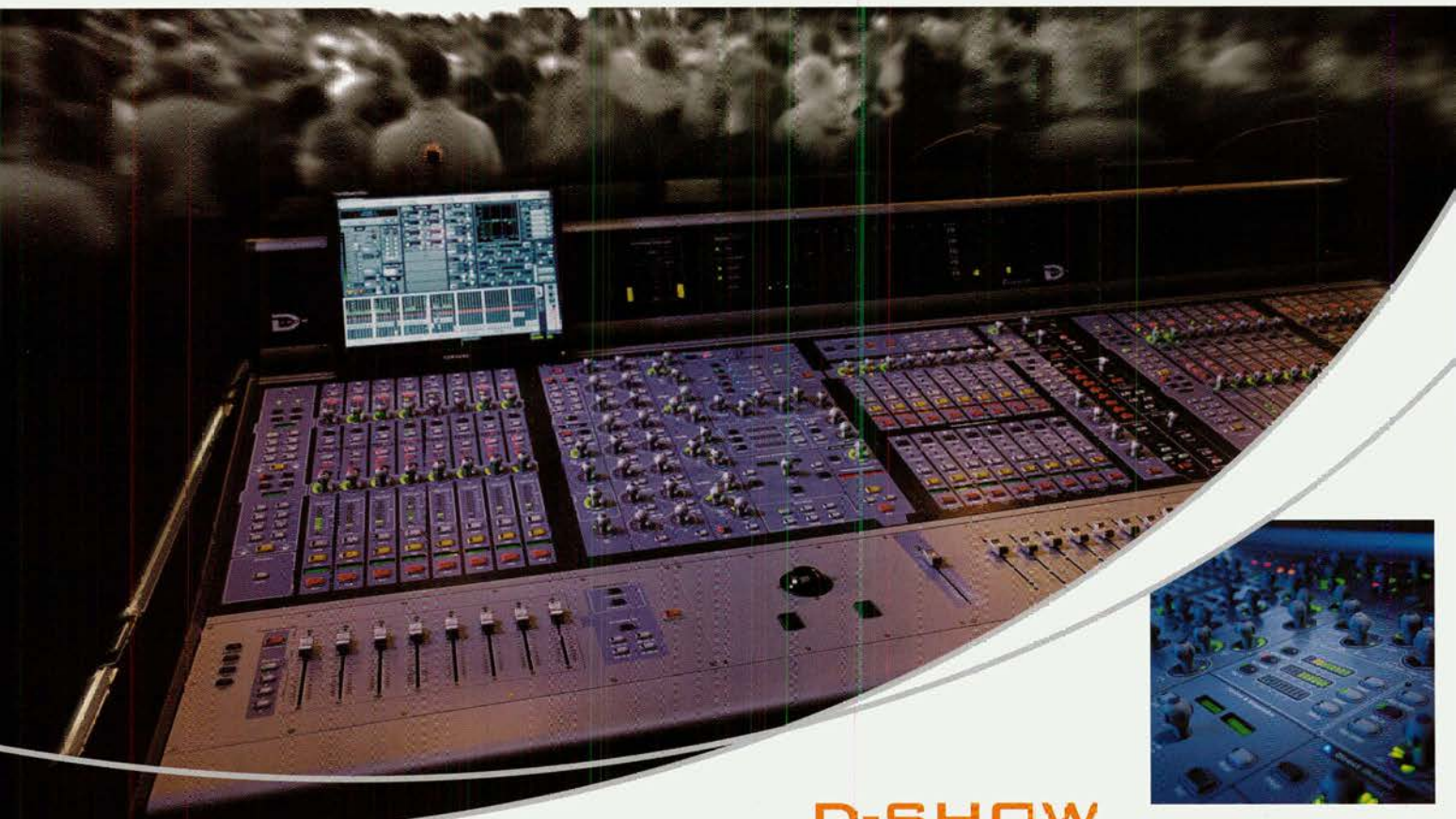
Midas supply powerful equalization and insert effects capability, XL8 should be capable of use without

outboard devices – which saves considerable time and floor space. There are 16 stereo effects units of various kinds already loaded.

XL-8 is a powerful package, but I felt at home with it, and confident I could mix from the get go.

Midas don't expect to sell too many XL-8's, the top of the market is quite defined. But they do intend rolling out son of XL-8, and whatever form that takes, it will almost certainly be slap bang in the middle of the market. Expect some exciting times... 

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The D-Show™ mixing console was developed with input from leading mix engineers around the world. D-Show offers an intuitive and manageable interface to enable control of a large number of inputs from a smaller mixing surface. With the industry's easiest, yet most comprehensive graphical user interface, D-Show™ software sets new standards in efficiency and workflow. Just a single button push or click from any screen gives you instant access to any function of the system.

D-SHOW PROFILE™

D-Show Profile™ is the brand new addition to the VENUE family. It's essentially the "little brother" of the D-Show™ mixing console, offering all the quality and features of its "big brother" but in a more compact size. So it's perfect for small to mid-sized environments and applications such as houses of worship, corporate events, theatres, nightclubs, and remote broadcasts who require a space-saving and affordable console but refuse to compromise on superb audio quality.



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The CT 112 & CT 115 are Hi Powered passive speaker cabinet that may also be configured in bi-amp mode. Offering an extended low frequency range and featuring a dual-purpose housing, it can serve as a FOH speaker as well as a stage monitor.

The CT 108 is an extremely compact, passive public address / full-range speaker cabinet. Featuring a dual-purpose housing, it may be employed as an FOH or delay speaker as well as a stage monitor.



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The Homecoming Tour was Kylie Minogue's greatest Australian moment, selling 20 arena shows and probably hitting the record books for merchandise. It sat alongside The Boy from Oz arena edition (also run in 2006) as a large, well oiled theatre-arena-concert fusion spectacle. Production values were exemplary for both these shows.

Kylie had 12 first rate dancers plus one impossibly talented dancer/acrobat, Terry Kavasnik – under the direction of three choreographers and creative director William Baker. The show had a four piece band, plus three backup singers.

Costumes were a significant component, overseer by Kylie's wardrobe person, plus three others. Hair and makeup was a department of two others.

The show ran as two halves with an intermission, and the flavor was dance party. The sound was calibrated that way, and the lights and video emphasized the overtly camp and physical theme.

The 33 crew flew in late October for a rebuild at Fox Studios. They met up with the local crew of 15, from the production companies – Bytecraft (lights), Jands (sound) and Big Picture (video). A week later the 32 person band party arrived, and four days of rehearsals started in the Sydney Entertainment Centre, before the first show on November 11th.

Rehearsals were overseen by another nine creatives, including lighting designer Vince Foster, show designer Alan McDonalds, and Steve Anderson, the musical director.

A five person documentary crew was also on the tour, with a total traveling component of 93 people plus promoter staff from Frontier Touring Company. The tour went from the Sydney Entertainment Centre (three shows); to Brisbane (3 shows), Sydney Acer Arena (3 shows), Adelaide (2), Perth (3), and ended in Melbourne with 6 shows, the final of which was on December 17th.

CURTAINS

At 8.15 the show opens with the reveal, after several minutes of crowd teaser shots on the outboard projection screens. Kylie arrives from a central lift, and the trusses are dressed and lit with silver panels with LED bars flashing bright underneath.

It's a bright, dazzling opener and Kylie moves in measured steps as the dancers make it all look tight. The show moves well, with the star (the boss, as the crew call her) conserving her strength but connecting directly with the audience. She has a facial expression that is warm and confident.

The band were led by drummer and musical director Andrew Small, located with the keyboard player at upstage stage right on a riser, with the three female backing singers, bass and guitar stage left. Between the two band risers were stairs left and right that met with a central bridge above band level.

Down at stage level, a central lift enabled the whole dance troupe to enter together, with smaller lifts either side. A catwalk into the audience

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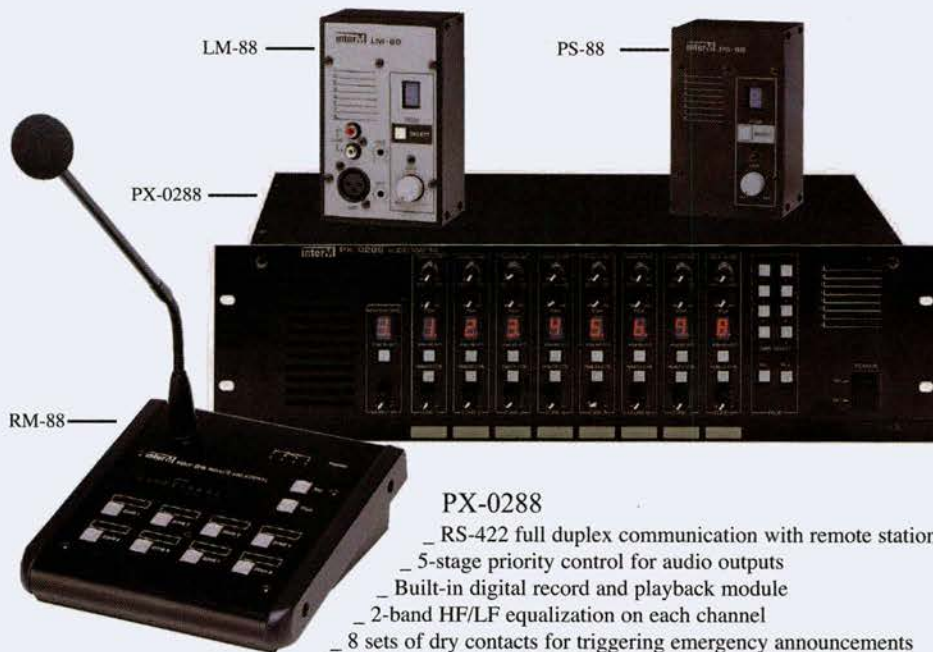


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interM



Monitor rack, with Sennheiser receivers and Aviom distribution.

ended with a smaller circular stage, again with a small lift for entrances and exits.

LED screens fly in and out, in front of a LED curtain. The trusses are flying as well, and most of the lighting movement is from trusses themselves moving, complete with LED strips underneath; plus the LED screens.

Four follow spots are on a house truss; with more on stage.

AUDIO

Unlike most of the rest of the production, the audio team are Australian and have been working for 'the boss' for a long, long time. Monitor engineer Rod Materson has been there for 16 years, working for other acts like Silverchair and INXS in between times.

Front of house engineer Chris Pyne is also a long time Kylie employee; and his system engineer Tony Szabo originates from Sydney although he has been London based for some years.

They worked with a local crew of four from Jards Production Services, led by Pat Richardson. Jards supplied the V-Dosc PA.

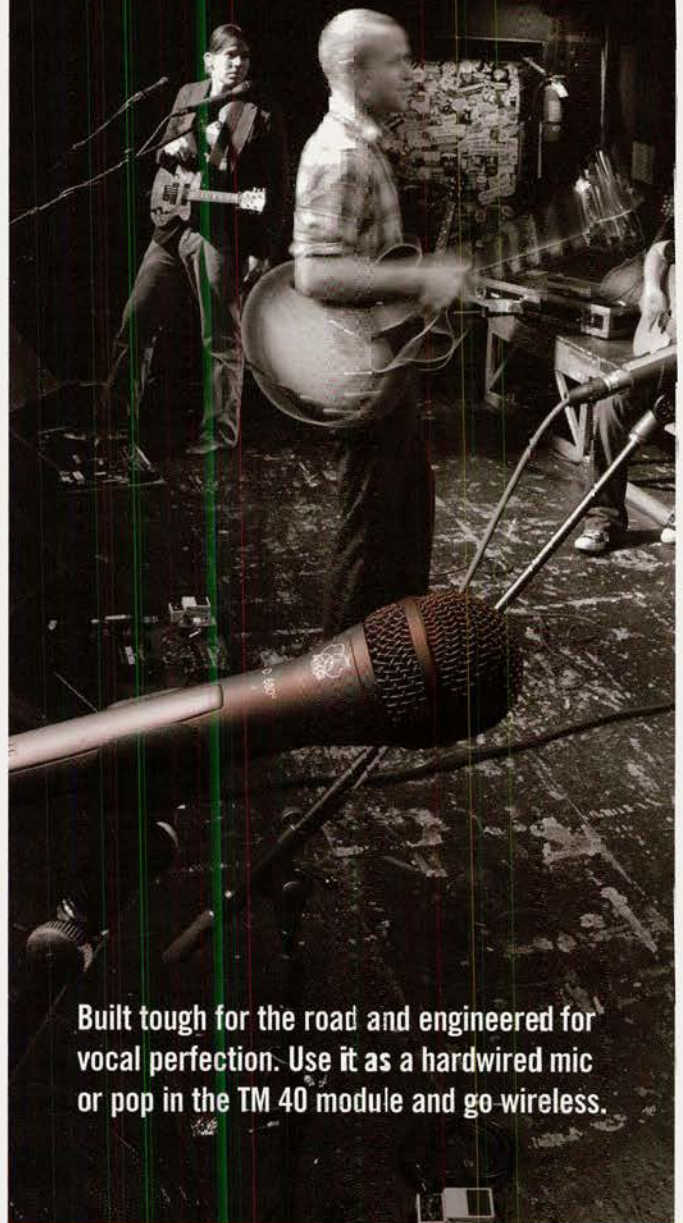
Chris told me that he works with about 52 lines from the stage (inputs) for the D5 console. "Steve (Anderson, musical director) and the drummer (Andrew Small) want dance club mayhem, so that's the theme. It sounds like the record". It sure did!

"There are three bass lines - from the electric bass, the sequencer and the Roland module that does the keyboard bass. It's bigger than Ben Hur, the sound leans towards dance. 85% of it is played live, there is programmed percussion, orchestra and loops. The backing vocalists are recorded live on DigiTracks, and reinforced."

Chris is from Brisbane, and I think I saw part of the

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How Many Sends Is Enough?



According to Carey Davies, Allen & Heath's head of design, 'the evolution of multiple wedge and stereo in-ear systems means the required size for a typical monitor console has jumped dramatically.'

So, how many sends? 16 is his answer and he's designed the GL2800M to prove it.

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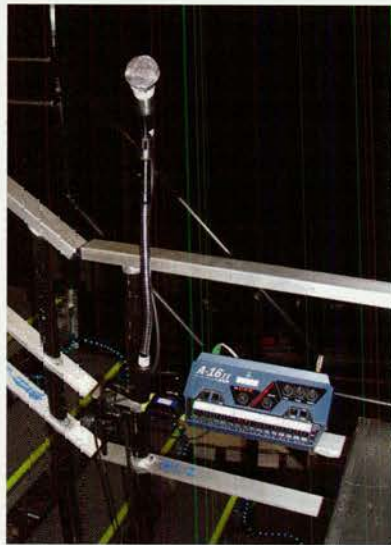




Touring sound crew, Chris Pyne (FOH) and Tony Szabo (System engineer).



Monitor engineer, Rod Matheson.



The 'ta'k to Rod' mic, plus an Aviom personal monitor control surface.

reason for his success. He methodically racks over the mix from the previous show on DigiTracks, the multitrack recorder made to be used with the D5 console. "I spend at least an hour a day going through it", he explained. He has been touring for a mind boggling 23 years. "It's like running away to the circus!"

Meanwhile Tony Szabo is fiddling and tweaking the Lake processors, and is raving about the wireless controller, 'the best in the business', he enthuses. The adulation continues, he ranks David McGraph at Dolby (Lake) in Sydney as a brainiac. The business of tailoring a line array into a venue and making sure each seat gets the best distribution in what Tony does best, and he has toured the world doing just that. He tends to work with Chris Pyne a lot, they will both be out on *Il Divo* as this magazine hits the streets.

Backstage, Rod Matheson is pondering what constitutes good stage monitors. "It's all in the EQ", (equalization) he states. "How you tune the wedges is everything - you tune correctly to suit the act, and work on getting them flat." He explains his version of flat is not the technical flat response curve that some people think is the holy grail of sound - no system sounds good when it is pushed and prodded into a flat line. "It just depends on the act".

Rod did Silverchair: "serious chunkin', 120dB for all. The drummer had ear plugs with 2 double 18 subs, and 2 mid high boxes! The bass player had six wedges plus sidefill....."

His monitor career spans a long, long time in Australia and around the

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world, and when not 'out there' he runs a café as well.

On the Kylie tour there is little to worry about in terms of noisy wedge type monitors, drumfills or sidefills, since only the dancers need to hear amplified wedges. These take the form of little Meyer UPM-2 boxes tucked around the set where the audience can't really see them. The rest of the performers have in-ear monitors inserted.

This is a show with barely a few wireless channels in use. "If you don't need wireless, then don't use it", is Rod's advice. The backup singers, and musicians, are all wired – their in-ear monitors run into a wired beltpack, which is fed from an Aviom personal monitor mixer. This system has 16 channels which originate from Rod's Digo D5 console, configured for stage monitor use. Using an Aviom, each performer has some choice in what is mixed into their ears, and at what level.

"I just send off some Cat 5 cable and away we go", Rod says. There is a backup line run to each Aviom, so if the unexpected happens and the Aviom stops, the artist or a backline tech can plug a direct feed into the beltpack.

In wireless 'the boss' as Rod calls Ms Minogue prefers a Sennheiser SKM 5000 N – featuring the Neumann KK105 S capsule and dressed in either a silver or a gold glitter cover, depending on the song or the mood. This transmits to a EM 3000 receiver.

"I run it pretty flat for her into the in-ears", Rod told Sennheiser UK. "It's really smooth, right through the frequency range; there is an incredible linearity to the sound," continues Rod. "I like the bottom end response being really warm and the Sennheiser RF really transmits that sound quality from the capsule. Also there is very good feedback rejection as well as great sound quality. Kylie walks out along a huge catwalk during the show, right out in front of the PA and the mic copes with it."

Front of house, the improvements are just as obvious for Chris Pyne: "My first impression was that it was incredibly smooth. A lot of RF systems we've used in the past have had frequency boosts in places that are not particularly good for Kylie – she's got a vocal power band around the 1 to 3 kHz mark and a smooth capsule like this really helps with that. The overall sound quality is considerably better than what we've been used to. The RF seems to be considerably more sophisticated than other systems; it has none of that processing edge to the sound that is so often apparent with wireless microphones."

RF performance is the big issue for Rod, he worried at the start that The Boss might get out of range on one of her scripted journeys involving a moon, a flying suit, and a bunch of LED modules that tag along and get in the way of the line of sight. But, "the RF is bullet proof", he says.

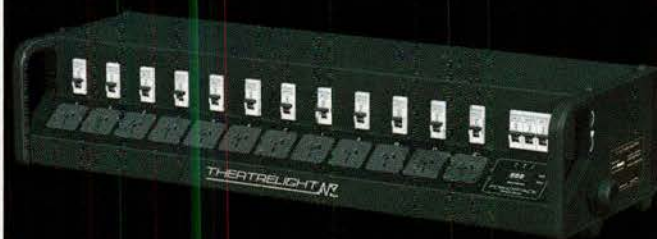
Some of the monitor sends and returns started to boggle me, because with a lot of channels and a stack of busses a large format digital console opens a lot of possibilities. One is that the performers 'talk back' to Rod through the cue buss, there are strategically placed microphones around the stage for that purpose. They are always on, the performer has been entrusted to activate an old fashioned switch on the microphone, speak their wishes, and turn it off again. That's the theory.

Aside from that, Rod has some processors (like a TC M500C reverb) and some sweeteners (Avalon 737 in line vocal preamp) and he says he is fully equipped to deliver "deluxe magic fairy dust".

It's that kind of show.



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WHEN IS AUDIO NOT AUDIO? WHEN IT'S DIGITAL VIDEO...

Jimmy D takes a look at an installation where he discovers the normal rules of audio and video don't always apply. Or rather, they apply to each other.



There was a time within living memory, when community TV was one of those things you only bothered tuning into if the TV auto-tuned it. TVS (Television Sydney) is Sydney's sixth free-to-air TV channel, broadcasting on UHF channel 31. TVS is allowed to run up to seven minutes per hour of 30 second TVC's (called "Sponsorship Announcements"), and to sell up to 8 hours per day of program airtime to commercial program producers.

The playout facility is based at UWS Werrington Campus, and is all dancing all digital. A system of digital content, programmable playlists and remotely accessible systems allows the station to run un-staffed if necessary. TVS is a digital ready channel as soon as some bandwidth is available to them.

CONTENT AND HOW IT BECOMES DIGITAL

TVS operates on a computerised playout system called Playbox, which is from Bulgaria. The system allows media to be digitised, edited, scheduled, and played out automatically. Unlike humans this baby

runs 24/7 without caffeine.

Programming content arrives at TVS in one of several formats:

- Betacam SP (Analogue)
- Digi-Betacam (Digital)
- DV-CAM (Digital)
- Data DVD (Digital)

Since playing all these different formats on the fly would be completely impractical, the media is converted into a common format. In this case, MPEG with embedded audio.

Upon arrival the tape based media is digitised at one of three Captureboxes by the pres operators. TVS has the latest in digital videotape players, to accommodate the aforementioned formats. This process is similar to dubbing VHS tapes to DVD so it happens in real-time, the difference being the fact that the tape is being dubbed into a computer. When this is complete, the content ends up as an MPEG transport stream file (TS), which is then transferred to the main video server. If the media arrived as a data DVD, then the file is simply copied across the gigabit network into the video server. Easy huh? From this point, the content is digital and

portable. It can be copied from machine to machine in faster-than-realtime.

As soon as they hit the server the MPEG clips are available to two Final Cut Pro workstations (über-fast Mac G5s with spiffy video cards). The Final Cut boxes main task is building promos for "what's on tonight" style station breaks. Completed promo clips end up back on the video server. The video server is a big black box with 16x 400GB SATA drives in a Raid array, 7 cooling fans, and very fast ethernet.

Listbox is Playbox's answer to building playlists. It allows the operators to schedule what will show on the channel at what time, on a day by day basis. Show a bit too long? No problems, Listbox has an inbuilt facility to edit the MPEG clips into bite sized chunks.

So, we've got a playlist. The thing which combines the playlist and media clips into a video signal which can be put to air is creatively enough called Airbox. TVS has two them. The Windows based Airboxes load up the playlists generated in Listbox, and use them to access the content on the media server. One playbox plays the media from the video server, while the second unit copies all the required files to its local hard drives for redundancy. From there it's off to transmitter central.

INFRASTRUCTURE

The technical infrastructure at TVS was designed by Les Bishop of Digital Space Media.

Let's start at the beginning – power. TVS like all good TV stations runs on electricity. In the event supply to the university is cut, a diesel generator kicks in. Since generators don't start instantly, a UPS and some changeover switching keep things ticking over until the diesel kicks in. The UPS is about the same size as a small fridge, and is capable of sustaining a 12 channel dimmer rack at full load for about 17

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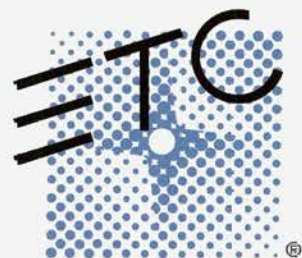


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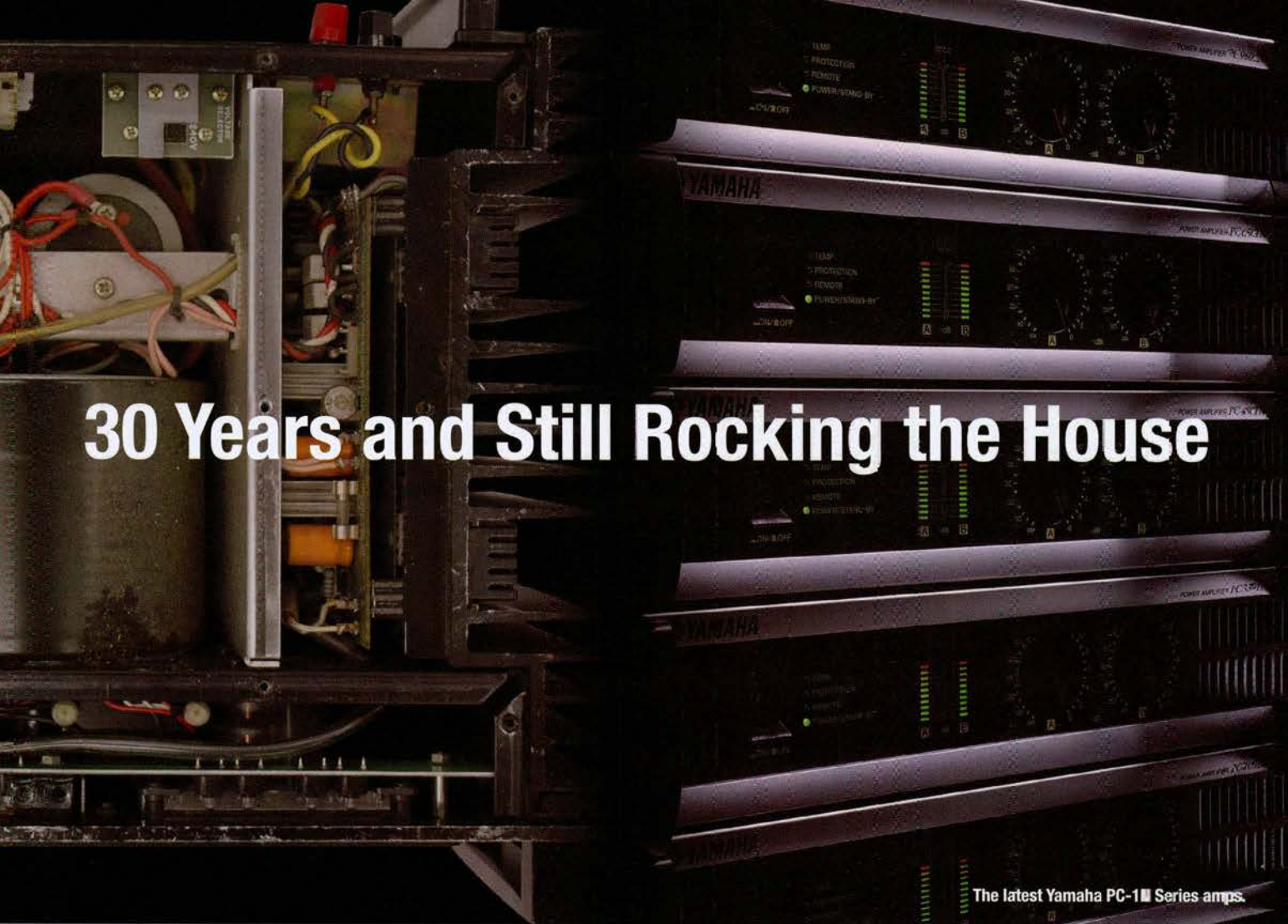
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minutes. A pair of air conditioners keeps things cool inside the rack room, and these also run off the UPS and generator. Much of the equipment is equipped with dual (triple on the video server) power supplies, and these are fed from separate phases.

In the rack room, the core playout facility equipment is built into 3x full height racks on a raised computer floor, inside a locked equipment room. The racks are split into 3 sections; one for computers, one for vision equipment and distribution amps, and one for audio and off-air/satellite receivers.

The Captureboxes, Airboxes, Vision mixer, Aspect Ratio Converter, Framestores and Final Cut boxes run into a TALIA 16x16 SDI router, via a patchbay and distribution amps. From the router, you can route virtually any signal to anywhere in the station. Usually, both Airboxes are routed to a digital Panasonic MX-70 vision mixer which is located in the pres suite, between the Airbox screens, keyboards and mice. Also connected to the vision mixer is a weather computer, which provides weather info on a nice overlay, and updates via the internet. The Airboxes communicate with the mixer via a custom software interface, developed by Digital Space Media. This allows the Airbox computers to trigger events such as cross fades from the schedule.

The whole picture transmission path runs in serial digital video (SDI). SDI for those who are yet to meet it is possibly one of the coolest video transmission formats around. You get component quality video, 4 groups of 4 audio channels, (plus 4 data channels thrown in) all down one piece of coax cable. SDI is a format which saves cable, time, and money, avoids picture quality losses, and doesn't have picture sync problems. How far can it go? It converts to fibre very easily, so even distance is not really an issue. I like SDI very much.

For sources such as satellite receivers, video is converted from composite or component video into SDI and the accompanying audio is embedded into this SDI signal. This process is achieved by way of embedder units, which are in slot/card or standalone form. Once audio has been embedded it largely follows video, since it's not actually audio anymore, but an audio channel of a digital video signal. In order to monitor the audio signal, a de-embedder is required, and as such several of these feature in the installation to allow monitoring of program and transmission audio.

Monitoring is basically the only place where vision runs analogue. Presentation monitoring is a 42" plasma screen, fed by 2 video quad splits running over another quad split. So that's 10 different feeds showing up on one screen.

A cool thing I discovered was that since a lot of the equipment is TCP/IP enabled, there is an engineering PC

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which is configured to administrate the router mainframe and panels, the framestores, aspect ratio converter, and MPEG encoder. What MPEG encoder I hear you say? React or!

PICTURE DELIVERY

Once the pictures leave the router and hit the transmission path, they are sent into a broadcast grade MPEG encoder which converts the SDI into data. This data leaves the encoder encapsulated in an IP video stream. From here, this data then travels through a microwave link via a repeater, and into Broadcast Australia at Gore Hill. The link is transparent, and is treated just like a long piece of Cat5 cable. At the Gore Hill end, an MPEG receiver converts the IP video stream back into SDI, composite video and analogue audio. The pictures then route via a patchbay and vision switcher into a 20 kW DMT transmitter, liquid cooled, and occupies precisely two full height racks, plus a frame about the same size for the cooling system pumps. Heat exchangers are mounted outside the building. Physically it's very compact for what it does (and it's digital ready!). Also at the broadcast site is a backup media server, loaded with content ready to play in the event there's a problem with the MPEG stream from TVS. This media server is fully remotely controlled by TVS, and its play lists and content can be transferred via the microwave link or ADSL back up.

REDUNDANCY

I've already covered what happens if there's a blackout, but what about if a piece of gear fails? Let's look at some examples:

Distribution amp, and audio embedder/de-embedder card spares are kept on site, and are hot-swappable.

If an Airbox fails, you can switch to the backup one remotely. If the vision mixer fails, it can be bypassed and the Airbox routed directly to line. In the considerably unlikely event that the router fails, you can patch around it. Or bypass it via a manual changeover switch.

The MPEG player at the transmitter site can be remotely accessed via a VPN, as indeed can much of the equipment at the payout site. In other words, most problems can be fixed remotely. I could go on about the redundancy level of this system, or just say they let me unplug about 90% of the gear in the rack room, and the station was still on air.

I asked Les from Digital Space Media where the future is headed, and he explained that the digital revolution now extends even into the world of analogue. MPEG is in, tape is out. He also pointed out this is the beginning of digital convergence, with media being brought to a common standard also to aid in delivery via other formats such as websites, Podcasts, and even the Fumble mobile phone.

SO WHAT HAVE WE LEARNT?

Digitised media is more flexible than analogue. It allows us better content delivery options including broadcast, web streaming, even viewing on 3G mobile phones. All at the same time. Once media is in one digital format, converting it to another (or even several at once) is relatively simple,

and again can happen in faster-than-realtime. We can push digital media around as data from location to location a lot faster than we could do this in the analogue domain. Given the proliferation of the MP3 format, it seems logical that video would at some point follow suit.

Digital transport formats such as SDI and MPEG streaming allow for savings in installation time and cabling by combining picture, sound, and control into one cable. Therefore these methods are more efficient than their analogue counterparts. Transferring broadcast quality pictures over long distances is easily achievable provided a suitable data network is in place. Signals such as SDI require an SDI capable monitor or a de-embedder to view and hear.

It seems all roads in audio and video land now lead into the digital domain.

Since digital equipment tends to be more internally complex than analogue, mechanisms must be put in place to minimise system failure, and compensate if such a failure occurs. Redundancy planning is a major part of any good system design, this is especially true where computers and other digital equipment are involved. **CX**

Some of the items used in the TVS payout centre installation

- Over 3.8km of coaxial cable
- Over 900 BNC connectors
- Over 2km of twin core shielded audio cable
- Over 600m of data cable
- Over 139 IEC power cables
- Some 2000 cable ties
- Around 200 cups of coffee (estimate, actual may be higher).

Interesting Facts

- From the day of approval, the facility was built (including air conditioning, wall modifications and power) and was operational for testing in 7 weeks. On Air ready in 9 weeks.
- TVS was the first television channel in Sydney using IP video encoding to deliver signals to a transmitter
- TVS can store over 500 hours of content across its servers
- TVS was the first in the country to use liquid cooled DMT transmitters in a metropolitan city.
- TVS is one of the only channels in Australia that can be totally operated by remote control for on air and maintenance.
- Program guide for TVS is available at www.tvs.org.au



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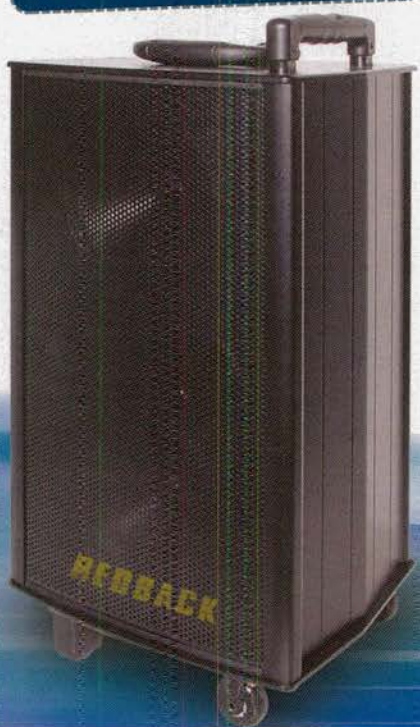
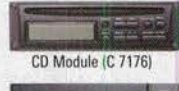
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INSIDE THE SPIEGEL TENT

The Spiegel Tent gets around. It will spend January in Hyde Park as part of the Sydney Festival, then travel east for The Auckland Festival in March.

By ALICA BEE

The Spiegel Tent gets around. It will spend January in Hyde Park as part of the Sydney Festival, then travel east for The Auckland Festival in March.

The antique Belgian mirrored tent is a circular wood construction, with a dance-floor in the centre. While it's not a circus style canvas walled tent, a velvet and brocade canopy is protected under a big top roof.

It has booths around the outside,

with glass and mirrors. Around the top of the room are stained glass windows, which graces regular 7PM shows with natural lighting in summer.

The timber in The Spiegel Tent is made up of 3000 pieces that interlock without nails or screws to hold it together. "It's a gigantic three-dimensional jigsaw puzzle that's transported in 2 forty-foot containers and travels between the northern and southern hemisphere via ships,"

described regular front of house engineer Siiri Metsar.

The tent was built in 1920 when non-amplified big bands would entertain. "It's a surprisingly dead environment, which is good, it's a lot better to have a dead environment than a reflective environment," explained Siiri.

"There are some low frequency problems because the booths become sort of bass traps sometimes, so watch out for that,



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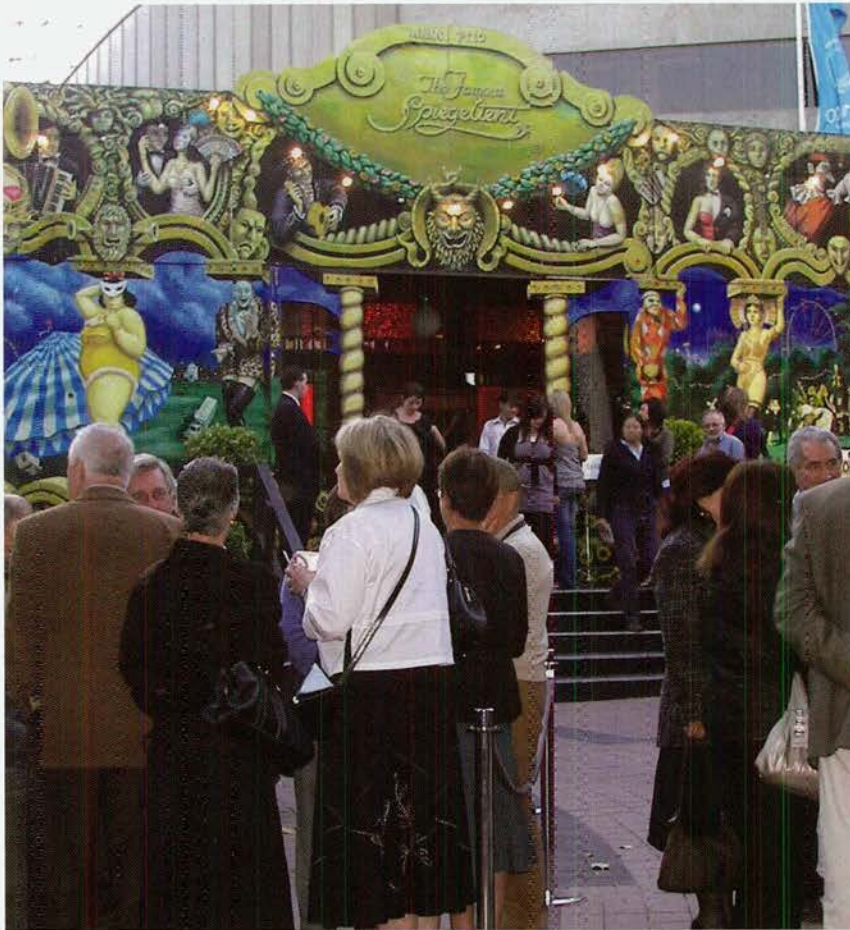
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and it's also a little bit awkward to get sound to a circular room so we've done our best."

With the Southbank residents behind, the Melbourne legal limit of 97 decibels is strictly adhered to with a limiter.

The sound aim is for a pleasant listening experience in a concert setting. "We want a clear vocal range to be well heard," said Siiri. And there hasn't been any complaint about the sound level from the audience.

Siiri first stepped inside The Spiegel Tent ten years ago when she was touring managing folk singer songwriter Penelope Swales. In 1997 she became Assistant Engineer for a season in Edinburgh. She has worked The Spiegel Tent for all of its six years in Melbourne. She will travel with it to Sydney for the January shows.

As house engineer Siiri often works with other sound professionals that specialise for the acts. "I prefer to set up the stage 'cause I know where all the loops are and the patching boxes, and it's quicker if I just do that, and they can muck around tuning the front of house," said Siiri.

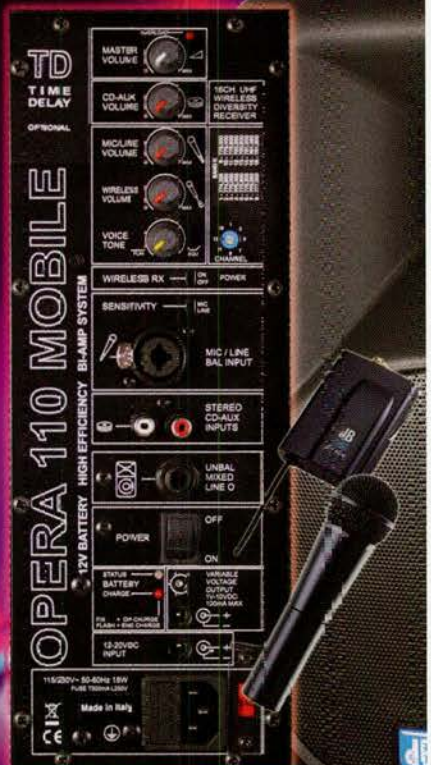
In the Melbourne season, The Spiegel Tent presents 2 shows a weeknight, with afternoon swing and dance on the weekend.

"Some days it feels a bit like factory work especially when we have a many bands and quick turnovers and you just get a band on, you get them off, you get the next one on, you get them off, and you have to work very quickly and you don't generally have a lot of time to sit and chat to the band members which if I'm doing other gigs in pubs or something that's what you get to do that's part of it, that's the social life," said Siiri. "But here it's just you get them off stage as quick as you can and you don't see them again. Sometimes it can feel a bit that way but I love it, it's great I love the fact that the audience are listening that's a ways really inspiring, that's what you aim for as a musician and as a sound engineer."

Siiri Metsar will be finishing overdubs and mixing the new Neil Murray album from Woodstock studios in February. Siiri is an engineer for hire, and works at Woodford Folk Festival, Maldon, and had spent 10 years as staff of Port Fairy Folk Festival. Her next gigs include Adelaide Fringe and The Melbourne Comedy Festival.

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Additional functions include digital keystoning, a CMY colour mixing system, strobe effects, analogue iris, zoom and focus, digital iris and digital framing shutters. Supported video formats include MPEG1, MPEG2 & Quicktime, image formats Targa (TGA), JPEG (JPG), Bitmap (BMP), PNG. S-Video & VGA inputs for direct video streaming to data projectors are handy for performing presentations; S-Video and composite live streaming can be used for graphic engine effects and other live video processing.

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Kate Miller Heidke performs.

THE SHOW

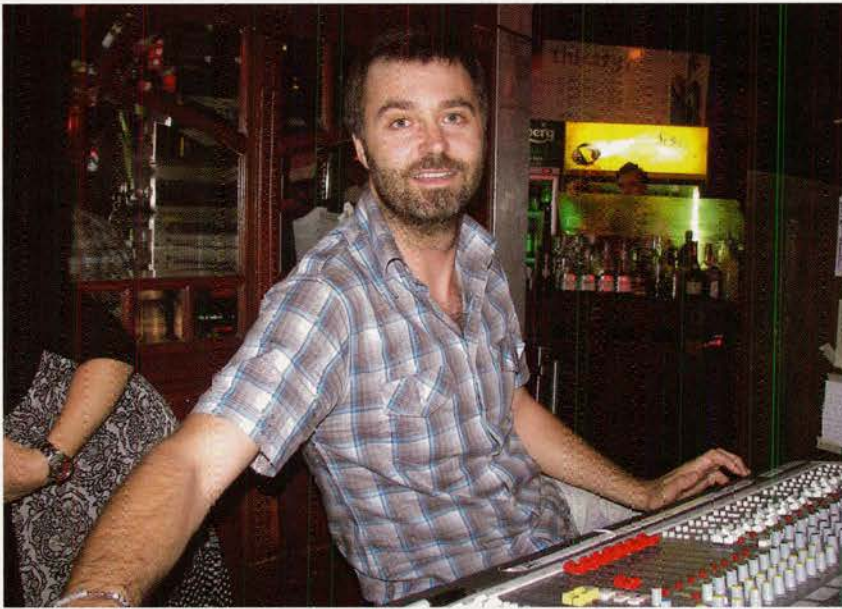
Kate Miller Heidke trained in Classical Voice at the Queensland Conservatorium, and has a 3 octave vocal range. "Kate has an incredible dynamic range, um, an extremely sweet soft voice, and an incredibly shrill powerful high voice. So that's the biggest character about her voice, the incredible range of dynamics and the tone of her voice," said sound engineer Ben Hurt. "Kate's quite hard to categorise, I think I would call her theatrical pop".

For Kate vocals Ben used a Shure Beta 87 condenser microphone. "I do a lot of riding of Kate's vocals during the gig because of her dynamic range and I use a technique of sidechain compression on the vocals which is not a usual thing to live but it means I'll buss the vocals through one of the groups, and put a compressor on the group. Because she has two vocals mics as well, for the keys and when she's standing up, that allows me to compress both in the same way. The way it works is that you can have uncompressed signal with a compressed one, and by having the two together you can bring up the quieter stuff but still leave a lot of the dynamics in the voice. It just sounds a lot more natural, particularly on a wide dynamic range," explained Ben.

Ben Hurt manages Newmarket Studios in Melbourne where he acts as studio engineer. He also does live sound for diva Katie Noonan of George.



Backstage space is at a premium. Note EPA compulsory level sensing limiters from Rane.



Sound engineer Ben Hurt.



Siiri Metsar at the mix position, and not a black t-shirt in sight!

House Sound Director Siiri Metsar's audio system comprises ARX PowerMax2 15' and horn cabinets as well as triple bandpass PowerMax Subs. Two PowerMax2 cabinets flown from the posts directly cover the audience seated on the dance floor, while two more are angled outwards slightly to cover the raised outer circle booth areas. A PowerMax Sub each side supplies enough bottom end to keep both cabaret performers and DJs happy.

Six PowerMax3 wedges cover the stage monitor requirements, controlled from the Front of House mixer.

The mix position is directly opposite the stage, slightly to one side to avoid the risk of being in a low frequency peak or dip room node. The desk is a 32 into 8 Allen & Heath GL3300, while the available effects include Yamaha SPX 900, Rev 7, TC Electronic, and Roland Dynamics control is handled by dbx and an ARX EQ00 provides overall frequency control.

For amplifiers Siiri has standardised on ARX SX3000 models which makes for easy reconfiguration and patching when necessary. ARX Power-Pro system controllers provide a tailored response and system protection, and also provide sub crossover functions.

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SOLDERING 101:

The beginner's guide to soldering leads

By **ANDREW MACKENZIE**

Soldering 101: At one point or another, just about everyone in the entertainment industry needs to make or repair a cable. Andy Mackenzie explains the tools and techniques to do it right.

THE TOOLS

You will need a few basic tools to get a good result:

- A soldering iron – this could be a mains powered or low voltage type, but the mains powered versions are usually cheaper. The key points to look for are a reasonable sized tip and a good reheat speed. If the tip

on your iron is too small, it won't heat the work effectively but if it is too big it will be too hard to control. You don't need a swanky temperature controlled iron for doing cables but it may be a good investment if you plan to do any circuit board work. There are also little gas powered irons on the market which you can use, but I've had mixed results with these. If your soldering iron doesn't come with a stand, buy a separate one, which should include a sponge for wiping the tip on. Make sure the sponge is wet and give the iron a wipe every now and then and the tip will last much longer.

- Some solder – This should be flux cored 60/40 lead/tin or the equivalent lead free solder. This is designed specifically for use in electronic equipment. Other grades of solder are available for other purposes including plumbing, glazing and so on. Most of these are not suitable for cable work.
- A pair of small, really sharp side cutters – For cutting and stripping the fine wires to be soldered into the connector. Don't use these for cutting other stuff or you'll wind up buying a new pair every couple of weeks. You can also buy a variety of purpose-built wire stripping tools but while you're welcome to form your



Not really child's play, unless the child is gifted....but wash hands, cos lead is bad for anyone!

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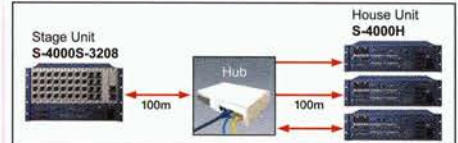
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HOW TO

own opinion on these, I've never met one I liked.

- Something to hold your work still – I've tried a number of things but the one that works best is a small vice designed for a drill press. This is heavy enough to stay still, but I can move it around if I need to.
- Something to prevent you from inhaling toxic fumes – even if you're using lead free solder the fumes from the flux are still pretty unsavoury. Wherever possible work in an area with good cross ventilation, otherwise use an exhaust fan or hood.

All of this stuff is available from your local electronics shop. While you can probably get most of it from the hardware shop, the staff may not have the answers to specialist questions. Some gear may even be available at the two-dollar shop, but tools bought from this source are not always the best investment.

THE TECHNIQUES

A step by step guide to doing it right.

1. Lay everything out where you need

it and switch the iron on so it can heat up.

2. Prepare the connector. Disassemble the connector, paying close attention to how it goes back together – sooner or later you will need to know. Thread any bits that need to go onto the cable now to avoid disappointment later and put the other bits where you won't lose them. Fix the bit you're going to solder into the vice.
3. Now you need to 'tin' the contacts – this means flowing a small amount of solder over the surface to be joined. Hold the hot end of the iron against the contact and allow it to heat for a moment, then feed the end of your solder into the point where the iron and the contact join. It should melt and flow smoothly over the surface. If it doesn't, you may need a bit more heat.
4. And then to the cable. Paying close attention to the dimensions of the connector (remember this has to fit inside the backshell) strip the insulation from as much of the cable as necessary. It may take a bit of

practice to get this part right, but persevere. Use your razor sharp cutters to put a groove in the insulation all round the wire, then simply pull it off the end. It sounds really simple, but it's a bit fiddly so don't start practicing on the really pricey cable.

5. Tin the ends of the cable. Same process as tinning the connector, but take care not to melt the insulation off the wire.
6. Double check that any bits of the connector that need to be put on the cable before soldering have been, and are in the right order.
7. Flow a bit of extra solder onto the connector pins. This should be done quickly to avoid boiling all the flux out of the solder – you're going to reheat this to join the wires on.
8. Reheat each pin in turn and connect the appropriate wire. As soon as the wire is immersed in liquid solder, take away the iron and hold the joint firmly until the solder fully hardens. Any movement at this point will result in a fragile joint which could let you down any time. The solder on

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the joint should be smooth and shiny – if it looks crystalline or lumpy, it probably needs more heat.

9. When using connectors that have closely spaced pins or are likely to be subject to high voltages or currents, you should shield the pins with a bit of heat shrink. Just put heat shrink over the wires before you solder them, then pull it down over the pin straight after you solder. The residual heat from the soldering will do the shrinking. In my experience this isn't necessary for things like microphone leads as long as you don't leave great long bits of unshielded wire loose in the back of the connector.
10. Get the other bits of the connector and put it all back together.

THINGS NOT TO DO

Breathe solder fumes. They can be really toxic, so always work in a well ventilated area and use an extractor if you need to.

Eat solder. Or even suck it. Or eat after using it without washing your hands. Lead is bad for you, and if you get enough of it in your system it can do horrid things to you.

Pick up the soldering iron by the hot end. I did this once by accident and it really hurts. Always put the iron in its stand and watch what you're doing.

Forget to put the bits on the cable before you solder it on. Depending on the number of pins in the connector, this can cost you hours of work and too much emotional stress.

Tap the iron on the joint. Either hold it on or take it off. Tapping it just gets you an ugly solder blob with zero reliability.

Put the soldering iron back in the tool box while it's still hot enough to damage your other tools.

Put the soldering iron in your pocket while it's still hot enough to damage you.

Check the heat of the iron with your tongue. You wouldn't think I'd need to tell you this...



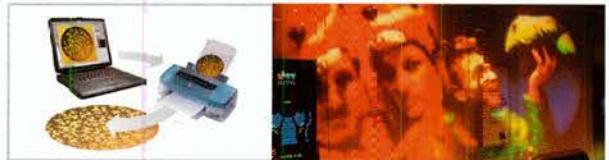
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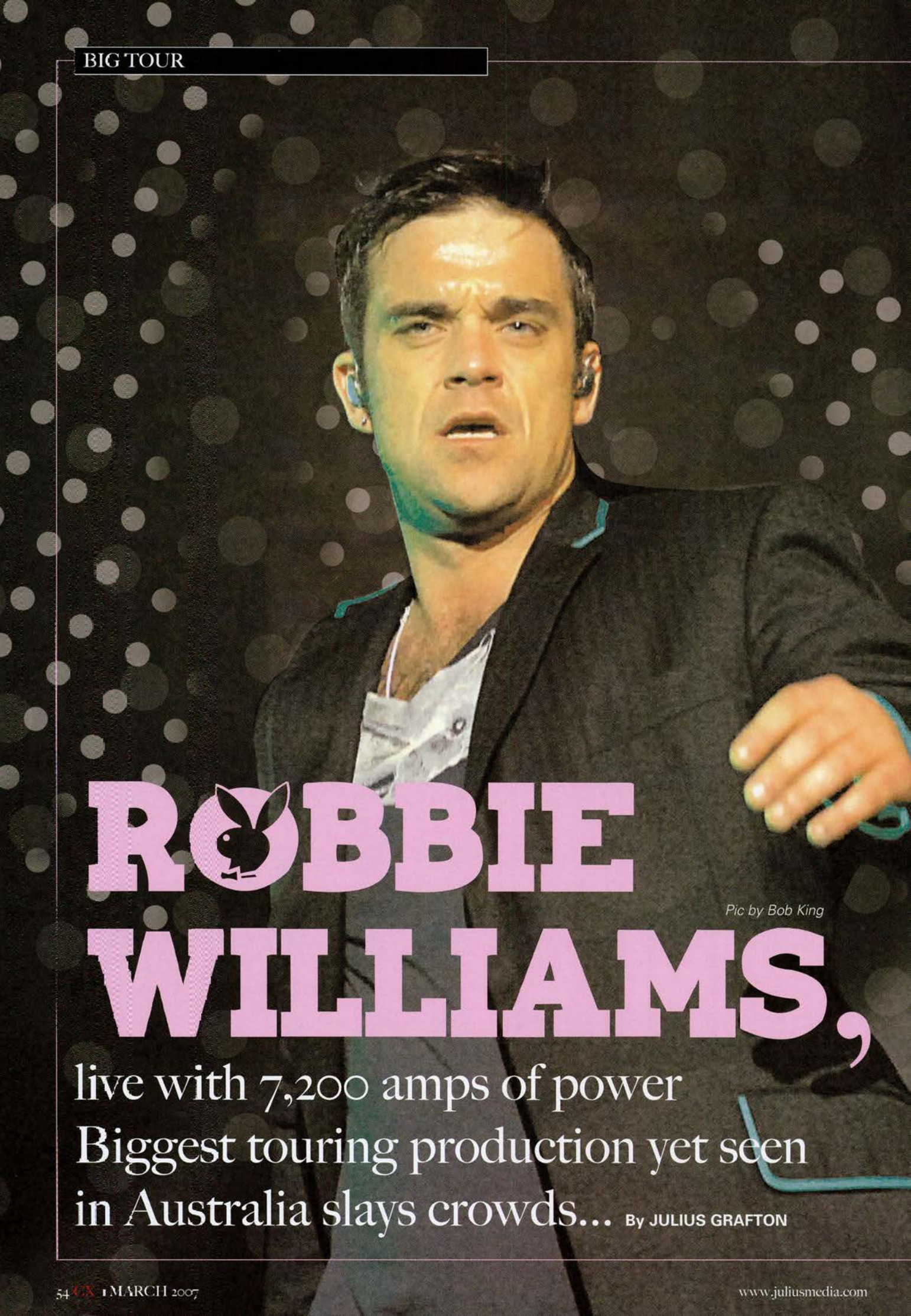


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SELECON

A photograph of Robbie Williams performing on stage. He is wearing a dark suit jacket over a white shirt with a loosened collar. He has a focused expression and is looking slightly to the left. The background is dark with many small, out-of-focus lights, creating a bokeh effect. The text 'ROBBIE WILLIAMS,' is overlaid in large, bold, pink letters. The letter 'O' in 'ROBBIE' contains a black Playboy bunny logo. The text 'live with 7,200 amps of power' and 'Biggest touring production yet seen in Australia slays crowds...' is in white. The byline 'By JULIUS GRAFTON' is also in white. The photo credit 'Pic by Bob King' is in a smaller white font. The page number '54' and date '1 MARCH 2007' are in the bottom left, and the website 'www.juliusmedia.com' is in the bottom right.

ROBBIE
WILLIAMS,

Pic by Bob King

live with 7,200 amps of power

Biggest touring production yet seen
in Australia slays crowds... By JULIUS GRAFTON

Every girl I know thinks Robbie Williams is the man. 'All he needs to do is crack that cheeky smile and he's got me!' Chicks and chooks everywhere swoon, and guys can only stand back and admire the action. Your standard, sweet innocent daughter / girlfriend / wife / mum appears capable of crossing the line and giving out. For The Robbie.

"You and me, Park Hotel, room 2", Robbie instructs a pretty young thing mid-show, while 49,999 others look on agape. A little later he calls for the lights to be turned off. The generator farm kicks down five hundred RPM in relief. "Now you're in the dark with Robbie Williams and given my reputation, you should be worried", he quips.

Sydney's first show dawned overcast and during the chargeover from support Sneaky Sound System, the crew rolled out the transparent rain covers for the kit, keys and backline. "If it rains, the gear is fine and the rest of us get wet", says Production Manager Bob Roberts.

Outdoor show crew watch weather or radar, tuned to the local forecaster website. This show has a wind limit of 72kph, whereafter certain things are curtailed. This day the wind is negligible and the rain doesn't really threaten. The temperature is perfect.

At 5pm the doors open at Aussie Stadium, a football stadium close to the city. The massive queue snakes in, Area A gold ticket holders run down the tunnels to be met at the stadium floor by the sight of the stage set to dwarf all others, truly the most impressive 340 tonnes of steel I've yet seen in the entertainment biz.

Those first arrivals, having spent some time outside, are also met by a virtual army of security and the barked instructions of promoter Michael Chugg who does not mince words.

"Don't run!" he yells. "DO NOT RUN. Walk to the front of the stage, over here" (gesticulates, cigarette in one hand, microphone in the other) "and SIT down on the grass. I mean, the TerraPlas. Sit down and you will not get trampled". They do it.

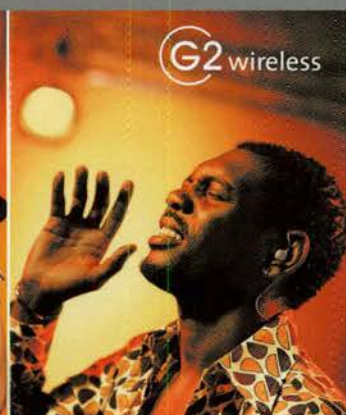
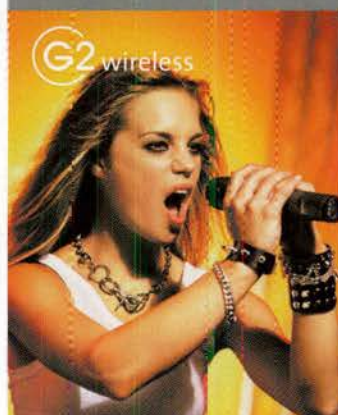
"You in the black - the big girl with the white hat. STOP RUNNING! You're wobbling everywhere" to which the crowd boo and hiss. "Shuddup you lot, behave. I've got the microphone", Chugg yells, smiling. The overseas crew are flabbergasted, they have never seen anything like it.

I have, which is why I am impressed that Chuggie has a G-rated act these days, barely one F word escapes his lips, but then there is one, and he actually apologizes for it. The guy is getting milc,

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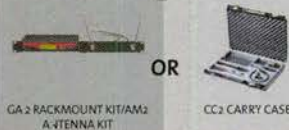


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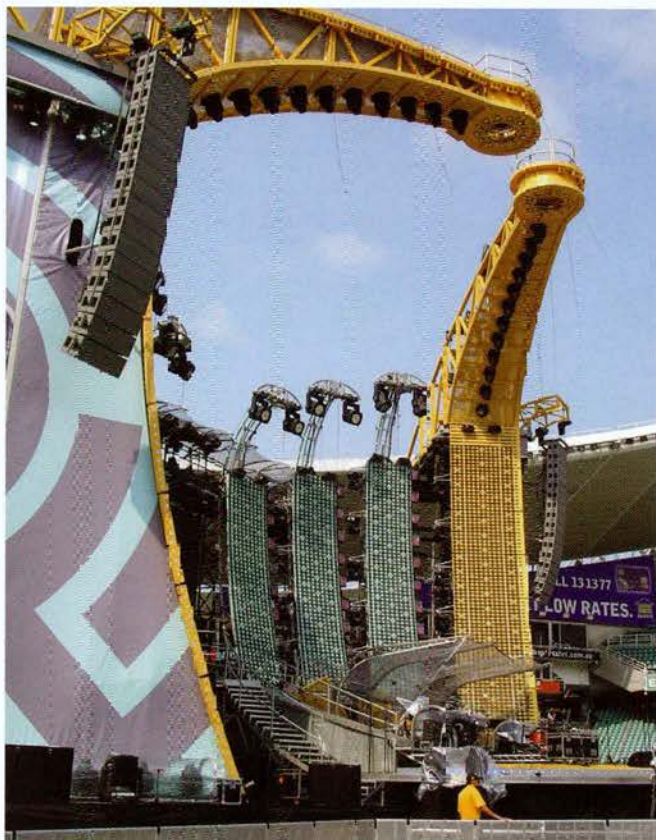
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Soon the first hundred punters, sitting at the front of far stage left, start to grumble that they are first, but they have been shunted to the front side. They can see that later arrivals will score the central position. Suddenly a solid block of crowd jumps to their feet and make a break for the middle, running around the security guys.

Mid inhale, Chuggie notices and chokes..... "STOP! STOP RIGHT THERE! (Cough, cough)... You lot GET BACK over where you came from, or I'll chuck you all out right NOW!" Amazingly they do stop, and sheepishly scuttle back to where they came from.

So goes the sideshow, which is actually crowd control done the right way, because Chugg is seriously considerate of 'the kids' as he calls them, and has been in the massive outdoor concert business longer than anyone else. If anyone is going to get injured here it'll be over his dead body.

SCORPION

The stage is dominated by two large yellow steel curved vertical crane like structures standing 26 metres high that almost meet in the middle. These 'scorpion' heads sit on top of 350 tonnes of steel that makes the rest of the stage, and which is one of two sets of steel on the tour. Running down to the stage floor from each Scorpion are a bank of Barco LED O-Lite blocks.

There is no stage roof, a new trend that opens up the design possibilities. Six structural 'ribs' which are tall, hinged architectural set pieces are arranged in a gentle upstage curve, either side of a rear centre LED screen. The ribs are also loaded with Barco O-Lites, a staggering total of 6,500 blocks are installed, each block is about 90mm x 120mm in size.

"Bono (from U2) said on TV that you couldn't do Perth, but we are", says Wob Roberts, thanks to having two steel teams on the road so the Adelaide steel could be built while the Perth shows were underway. Then a travel day, with pre-rig happening later on the second day allowed production set up on the third day.

Using two stages meant that Brisbane could be pre-fabricated during the Sydney dates, and the Sydney steel could then go to Melbourne for buildup while the Bris-vegas shows were happening.

The tour utilized no less than 55 trucks, an Australian record, that required for the first time ever the services of both competing trucking conglomerates. ATS were the primary provider, but ran out of trucks somewhere around the high forties, and needed to co-opt Show Frieght. Australian tour manager Jon Pope called CX to make sure we got that straight.

"It's the biggest tour I've done", he says, "there were 39 separate arrivals in Perth alone. One day alone I had seven runners in Perth, eighteen in Adelaide, and two in Sydney".

There's something wildly impressive about a well oiled touring crew, when they insert a massive production onto a set of pre-rigged steel in just one working day. Starting at 8am, the whole shooting match is ready for programming and testing around 4pm. 240 crew meals were cooked that day.

Next day is show day, with pyro test at 1pm, audio test at 2. Pyro on this tour is a significant entity, along

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with fire and carbon dioxide bursts from gas accumulators. The opening sequence is like heaven and hell combined, with parts of a mega sporting spectacular and moments from a war. Amongst the chaos enters the star, shot up a very fast lift to the centre of the trust stage.

At the end of the Australian tour much of the steel was set to be scrapped, a pending decision was to be made on whether the conditions of import (customs carnet) would allow the stuff to be sold instead. Otherwise it was off to the bone yard for much of it. "Why would I waste oil shipping it back to the other side of the world to be scrapped there?" lamented Wob Roberts.

LIGHTS

How to best describe this light show: huge, colourful, bold, and integrated with the video.

Al Gurdon designed the show, and his associate Rich Gorrod toured it. He told CX that they needed firepower for some shows that were partially run in daylight. They have firepower. In fact, they have more power than I've ever seen at a show – six x 700 amp per leg Aggreko generators run the whole show.

That is 7,200 amps, or 1.7 megawatts, enough to drive a town like Dubbo.

When the six monster generator sets arrived they were met by the show crew with 40 tonnes of touring power distribution and cable, pre-assembled and loomed for minimum hassles on site.



RW with part of the choir. Pic by Bob King



Bruce Johnson (sound company owner) with FOH engineer Dave Bracey.

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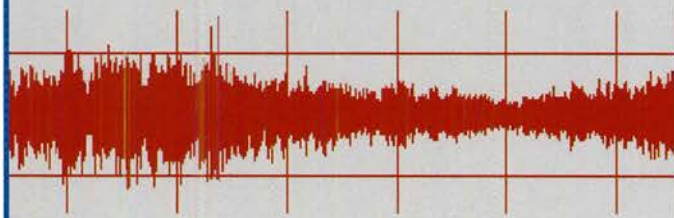
PMD 671

PMD660

The new PMD660 from Marantz is a scaled down version in size and functionality of the popular PMD670, portable digital recorder. Features include non-stop recording with 4 hours battery life and EDL marking system for creating new files-on-the-fly during recording for easy file selection during playback.

PMD671

The new PMD671 from Marantz is the new top of the line portable digital recorder. Additional features such as 24/96 kHz recording, read after write monitor and shift time playback, as well as all the same features of the PMD670 make the new PMD671 a much sought after digital recorder.



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Johnson Audio Services crew Doug Pringle, Peter O'Leary, Jack Bair, Conor Dunne.

Every light, or element, is individually addressed for DMX and for power. This makes it easy to tech things when the rain comes, as it does. This staggering matrix means that there are 34 DMX streams in use, for a theoretical 17,408 channels. That lot are addressed by a Vari-Lite Virtuoso EX-1 console.

There are 274 floodlights inserted amongst the Barco O-Lite blocks, and around 122 Martin Atomic strobes, most in and around the O-Lites. Along with an arsenal of exotic

equipment, the O-Lite ribs and Scorpion tails make for a HUGE wall of lighting that carries video effects outwards from the central LED wall; and shoots blocks, stripes and blasts of colour on command.

The Atomic strobes have a colour changer on the front, so they each require five channels of control. Each strobe requires 15 amps of mains power – which gives an idea of the intensity! But wait, there's more: 6 x Hungaro Flashes were installed at the top of the tusks. These 85kw

monsters have a 63amp connector on them. They are more commonly used for lightning effects on movie sets.

More electrical exotica: 16 monstrous Synrolite B52 movers, atop towers above the tusks and the PA towers. These appear as menacing alien predators, looking down from on top of the mother ship. Or something like that.....

Moving lights? 42 x VL3000 Spots, 88 x Mac 2k washes (Fresnel Lens), 28 x VL5a's, and 14 x VL2000 washes. Did I hear you ask if there were any conventional dimmers? Yes, 300 channels thereof.

8 x 2.5k Nova Lites were seated behind the ego ramps on either side. 6 x DMX Dominators c/w DMX dimmer shutters were on the floor of the PA wings. 8 x Coemar Supercycs sait in front of the PA scrim Macs. 18 x 8lite DWE Moles with Wybron Scrollers were behind the set gauze offstage.

8 x Citi Colours backlit the O-Lite panels.

24 x Thomas Pixel Pars rigged off the Top of the O-lite frames.

80 x Colour Blocs were used for downlighting the Scorpion Gauzes and PA header truss scrim.

129 x Colour Blasts were scattered around.

Finally there were twelve followspots, six centre rear and three each in what looked like a precarious enclosure at the top of each PA delay tower.

The lights came from Chameleon Touring Systems, and Jamie

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Centofanti was the Chameleon Systems Tech, with Jeff Pavey crew boss. Four more Chameleon crew worked the tour, along with the lighting team from overseas which numbered seven.

DEPARTMENTS

With a bunch of live cameras and crew, plus and LED walls provided by Big Picture Australia, video director Ruary Macphie sent I-Mag to the two outside video walls and mainly graphics to the central wall. Song lyrics sometimes came up, as did effects and live footage.

The video was processed so that effects could run outwards from the central LED screen, onto the O-Lite ribs. It was all harnessed in such a way that lights and video fused together.

Aside from the six international video crew and six Australian video crew headed by Stephen Pippett, there was a five man pyro crew led by Nicolai Sabottka, who has a the job every boy dreams of – blowing stuff up, and lighting fires. Sigh.

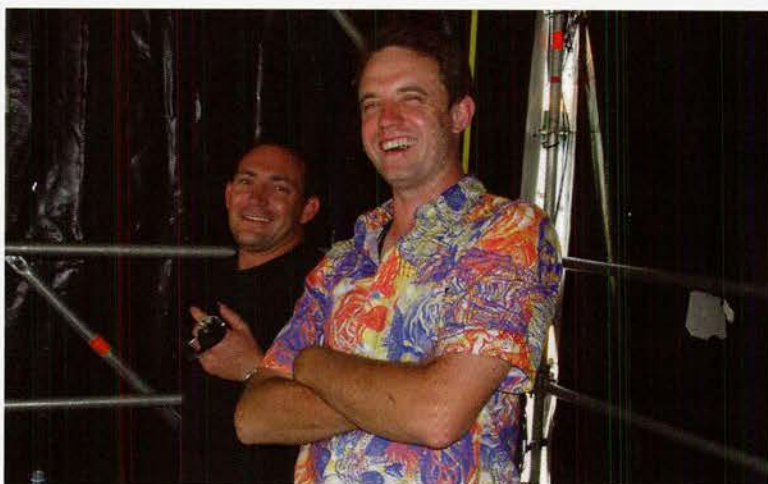
Five carpenters and a Foy (flying) operator were on the international list, along with an army of steel crew, ten for each of the two stages.

More credits? Four riggers, two wardrobe, and five backline tech's. Two chefs, five security, one generator dude, two merchandise handlers (with a locally employed army to sell it all), two In Ear Monitor technicians and a freight specialist all made the trip from Northworld.

There were management staff, managers, a creative director (Lee Lodge), and Mr. William's personal assistant Josie Cliff who has been with The Man for many years now.

The band were made up of three guitars, keys, bass and drums with six backing vocalists.


Local crew included Jon Pope as tour manager, Wayne Skals as



Jamie Centofanti (Chameleon, Systems Tech) with lighting operator Rich Gorrod.




Robbie's Angels. Pic by Bob King.



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Production Manager, Dugald McAndrew (assisting), and promoter staff from Chugg Entertainment.

SOUND

What a big sound – I was taken aback, since venues like Aussie Stadium are carefully noise monitored at the perimeters, and excess volume drifting over the fence is rewarded with a stiff fine for the promoter.

Johnson Audio Services provided equipment and four crew, headed by Jock Bain who has many years experience in the UK audio markets. JAS supplied a large V-Dosc PA which comprised 84 boxes, of which 32 came out with the show, custom painted silver and flown as part of the stage set. JAS now own a substantial number of L'Acoustics V Dosc cabinets.

48 JAS Wayloud Dual 18" subs (24 of which were flown) and 18 L'Acoustics ARCS cabinets made up the house PA, powered by Camco and Crown amplifiers.

The house system layout was

designed by touring system engineer Sherif El Barbari, who worked with Jock Bain to get each venue sorted out. In full flight the sound was fat and full, I monitored it at various positions through the venue.

My seats were at the side, up high and under the curving roof sound is never brilliant. I spent the whole U2 Zoo TV concert up there in the early 1990's not understanding anything, whereas this show was intelligible in the worst seats and sounded fantastic almost everywhere else.

Robbie Williams' sound engineer is an Australian, Dave Bracey. He mixed the show on a DiGiCo D5 console, his personal console of choice. JAS supplied one D5 for the tour, monitor engineer Gareth Williams also uses a D5.

JAS owner Bruce Johnson is a D5 fan, he purchased the console for the Oasis world tour last year, and reports never a problem with the exception of a quart of beer that a cunning Oasis aficionado managed to propel through the beer barriers at a


stadium in Europe.

"It stopped the console, but of course the system kept going, since the console is just a work surface", Bruce confirms. "I was able to control the main vocal by turning up and down the insert preamp! Next day I got another work surface, business as usual. If that happened to an analogue console it would all be over".

Dave Bracey is also convinced the console is a winner, he simply prefers it to anything else. He was also very complimentary of JAS and the state of the system. "It was all better than brand new. There was no preparation time, so we just needed everything to be done exactly as we asked for it – and it was. I have a lot of faith in them (JAS) and it all works perfectly."

Dave has spent the last decade in the UK, mixes Robbie Williams a lot, and does other large acts. He spent the early days of his career mixing bands like Divinyls in Australia, and much prefers the work opportunities in Europe.

Meanwhile Bruce Johnson has built a formidable network of contacts via his Oasis tours, where he mixes FOH for the UK band. Those world tours leave a lot of idle daylight hours, which Bruce filled by visiting every audio production company he could find to evangelize his Melbourne based audio company, run for him by general manager Larry Ponting. The networking pays off, as JAS have grown at a fairly staggering rate, and now have a world class inventory and courtesy of this tour, a track record as a V-Dosc provider.

JAS also supplied some Wayloud foldback wedges for the band members not on In Ear Monitors. 



Opening fireworks. Pic by Bob King



The Man in action. Note the wet weather cover for the backline. Pic by Bob King



Production manager Wob Roberts.



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SEX DRUGS ROCK AND ROLL

Stories of a roadie.
How I survived hedonism, explosives
and road crashes on tour



By JULIUS GRAFTON

When former Chase roadie Gerry Georgettis took his life in dramatic style early last year, media from around the world picked up the story. How could a seemingly placid, stable theatre manager go suddenly crazy and burn down a car dealership in Miami; then hang himself in a cramped airplane toilet?

What darkness exists in a human heart, some of the more intuitive media asked? Gerry's brother Joe summed up at the funeral – "He liked beauty, and he liked the beast"

How does the music industry affect those who serve? Tour veteran Michael Lippold put it this way: "A call from my older brother has helped put things into perspective; he pointed out that we 'roadies' are different to the norm, somewhat like the Vietnam vets, damaged by their experiences, some physical, some mental, some both. The vets have done something about it and it is time that we did the same for our 'brothers'."

So what was it like, through the halcyon days of the Australian music industry, when guys like Michael and Gerry rose up? Gerry went on to tour manage Bon Jovi, and work with the elite. Michael worked for Midnight Oil around the world. I did the highways the back alleys and saw Australia driving the truck.

CAMPBELLTOWN, 1975

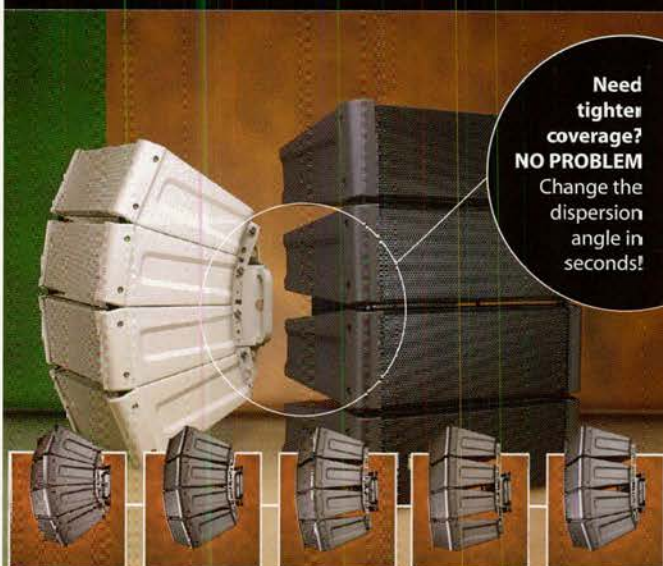
The Flexible Clipper coach roared up to the civic centre leaving a trail of black diesel smoke. Built in the late '950's, these American long distance coaches were used by Ansett around Australia, and AC/DC had purchased a well traveled version for use as a tour bus and truck. The bands gear was in the back, and a roller door was installed at the side, in front of the rear engine compartment.

The Flexible part of the Clipper name was not a typo, there was a trademark issue that resulted in the strange name. The coach itself was a thing of awe, with a swept rear end below a big air intake scoop. In AC/DC use, the bus carried backline and a smallish PA system.

The bands crew was accustomed to working fast, since the band was on board. Bon Scott would leer out the windows at girls, waving a bottle of Red Label, with a fag hanging out of his mouth. It was handy at the end of a gig to retire to the bus while the crew loaded in.

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Rightly known as *The Loadin From Hell*, this is one of those gigs you never forget. Innisfail Town Hall.

consequences, and I think there were few. The parade of gorgeous young (and some were too young) women were essentially competing to get laid. We assisted them in their endeavors.

Sex, dope, rock n' roll = teenage heaven. That's what was on the cover of the Daddy Cool album, and those were primary drivers in our lives. The free love, drop out movement from California hit Australia in 1971, and we were all of that era. People would get naked, and get stoned, without much provocation. The movie 'Almost Famous' does a good job of capturing the mood.

Our lives were flipped upside down, the world was straight and conservative, TV was black and white, and it wasn't that long ago people wore hair cream and danced under fluoro lights to cheesy pop groups wearing badges that said 'I like Swipe'. We had long hair. We were anti establishment. We were in the rock industry. We got arrested.

DRUGS

Literally everyone smoked dope, pot, ganja, weed, cannabis, bongs, joints and spliffs. Sometimes all at once. LSD and Acid were cornerstones of the 1970's, Heroin was not on the scene, nor was Cocaine. Alcohol was part of the mix, but most gigs were in halls that were not licensed.

There were some disothèque venues that programmed bands, and towards the end of the 1970's the pubs started to open up in a big way as audiences grew up, out of the school halls.

The police were very interested in long haired hippy rock types, and would routinely pull us over and search us. There were no breathalyzers so we were more prone to drink driving. Sydney to Melbourne was a bottle of Southern Comfort away. We had just escaped the draft, which Whitlam abolished in the early 1970's, where they would have a lotto style draw of birth dates and conscript the winners for a year in Vietnam. Returned soldiers were pilloried as murderers and didn't go to rock gigs.

Sex was happening everywhere. The worst thing that could happen was you got venereal disease and had to visit the Blue Light Clinic. The pill had liberated women and the media was full of free love and desire. Number 96 was a TV soap that featured women taking off their clothes in every episode. If you couldn't get laid it was because you were too afraid to ask. Guys virtually did just that: see a girl at a gig, sidle up and suggest a walk outside. Code: have sex.

Girls didn't think of themselves as groupies. They would try and do anything to get close to their idols. Crews were well placed as intermediaries. Pants down, transaction, introduction, motel room number. Next! Load out.

On the road we would pull into a town, circumnavigate the main street, and roll up to the hall. There was always a hall attendant to open up, and usually the place smelled of fresh floor polish. The timber floor was all pristine, and there was usually a plaque above the stage commemorating the fallen.

By the end of the night we would be in some fibro motel room with a ceiling fan and a breakfast hatch on the wall, keeping the rest of the place

awake with booze and girls, yelling and smoking. Sometimes an enraged father would arrive with a couple of uncles, looking for Diana, Darlene or Donna. Sometimes we would get run out of town by the Police.

Some of the bigger bands played extremely hot gigs packed with thousands of punters. There were no controls on venues, no noise laws that anyone bothered to enforce, and no reason to cool down a hot crowd who would drink more. Press reports had some rock stars needing oxygen side stage. We carried a tank alright, but it wasn't oxygen, it was nitrous oxide. You could buy it anywhere they sold industrial gas, no questions asked. Sucking a face full of that stuff gave you a rush but it also knocked you out. I had a balloon full one night after a gig, and woke up after hitting the floor being tenderly ministered to by a girl – her care extended beyond a bandaid.

Memo: some girls respond well to blood.

PRIMITIVE

We were. But the conditions were too. Air conditioning was not available. Deodorant was Uncle Sam, or Brut 33. The truck was petrol engined with four on the floor. Power brakes were a luxury, power steering very optional. The truck cabin had a vinyl bench seat, no heater, no radio, and no air vents.

The phone was made of Bakelite and phone numbers had 6 digits. To call interstate or overseas you needed an operator. Air tickets were crazy expensive, exactly the same price on TAA or Ansett. Even the flights left at the same time, we had a two airlines system that was totally regulated. Two competing DC 9's would take off from somewhere ridiculous, like Prosperpine, and land at the same time in Brisbane.

There were no faxes, we used a Telex machine that fed out typed telegram style messages – or we sent a Telegram, and a kid on a bike would deliver them. The last telegram I ever got was from a girl – "I hate your guts", it read.

We wore Denim, and T shirts, and running shoes. Our long hair was greasy and the food was too. McDonalds had just opened at Yagoona in Sydney, KFC had been going a while. Fast food was actually made by a guy in a blue coat at a suburban takeaway and washed down with a milkshake.



Timeline somewhere at 2am

At the gig there was no three phase power – we scrounged single circuits from around the place, running long leads. Soon we needed more, the Miniser 10 dimmer and the new Jands dimmer needed 3 phase, so we made single phase to 3 phase adaptors. But to get real power, you needed to tap into the switchboard at the gig. We did it live, with the master switch on, screwing bare wires into the back of the porcelain fuse holders.

There was no FM radio, only AM with the radio station names printed on the tuner dial. 2SM, 3XY ... those radio stations had immense power, and the DJs would routinely turn up at gigs in their tight denim flairs and walk out with a stray woman. We wore platform shoes, men had perms. We all had too much hair, everywhere.

Bands would play for \$80 (support) through to a couple of hundred bucks for a headline act. Crews were paid about \$10 a night in the early 1970's. The bridge toll in Sydney was 20c.

Legends were born, but some were killed off early.

DEATH

Safety was not a concept. There were a series of road accidents – the most horrible involved two Swanee crew members whose UD truck ran off the Hume highway and burned down to the wheel hubs.

Because we were ready and willing to drive overnight after a gig, usually fuelled by drugs and booze, we were more prone to dying. It helped if the band paid for the drugs and booze, somehow that seemed honorable. Death seemed less fatal then than it does now.

It was ridiculously easy to smash the car, truck or van. My Kombi came to an early end on the Bulli Pass when I ran into a truck. I remember the random thought at the moment of impact: 'Gee, that truck is INSIDE the Kombi,

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The standard chariot of the 1970's, the Ford F350 truck. Fast in a straight line, no brakes, no cornering recommended. No heater, no radio..... bench seat excellent for nocturnal diversions.

on the passenger seat". I could reach over and touch the side. Then the Kombi fell over. I walked away, not scratched, covered in glittering windscreen shards and soaked from the rain.

One night my Ford F350 2 ton truck ran off the road and brushed an overhanging tree branch as it careened out of control. I had been asleep behind the wheel, and the overhanging branch gave me enough of a wakeup to somehow bring the thing under control and not hit a tree.

I found out how a rental car will spin out of control. I did it once on the Pacific Highway and once on the New England Highway. Somehow there was a break in the oncoming traffic both times. I also found out that those speed advisory signs on corners actually mean something when I overshot a corner and again - there was a break in the oncoming traffic.

Fall off a tall ladder and not break anything? Get hit over the head with a steel bar and just bleed without brain damage? Maybe I was brain damaged.

In the late 1970's Heroin entered the scene and there was a rash of death associated with the drug as people calibrated the dose. For all who died there were many left wrecked or just left behind.

A lot of brains were fried by drugs, plenty became alcoholics, and some people were just taken out back and bashed senseless by uncles or fathers or bouncers or gangs. A bashing was seen as something routine and I don't really remember anyone afraid of being charged with assault. You were judged by how you handled yourself, how you handled your liquor or alcohol, and how many women you laid.

Those of us who established roots left our beloved at home to become 'rock and roll widows', forced to be happy with the occasional phone call. Some of them burned the relationship candle at both ends; free love usually meant no responsibility. Women with women. Wives with mates. Mates with wives. Men with men. Animal sex - I kid you not.

Insidiously there were underage girls everywhere, and no one seemed to go to jail in those days. There was a totally alien and almost unrea attitude to morality which we have been forced to dramatically reprogram since.

There was no responsibility for anything.

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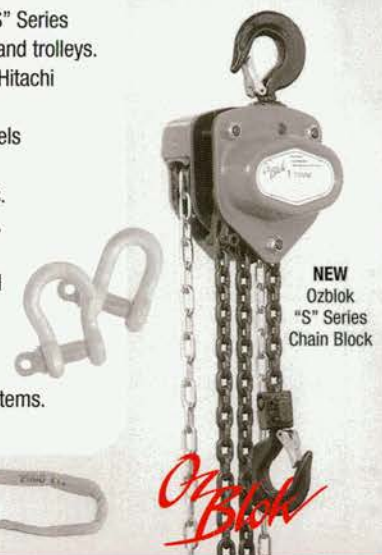
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An example: some genius at Hertz decided to corner the music industry and they hired us Falcon wagons and trucks at flat rate with no excess and a no fault replacement scheme. We put two new wagons into wrecker yards on one trip to Queensland, yelling at the Hertz chick when we were forced to await a replacement for two hours in Kempsey

A Skyhooks crew parked a Fairlane in the motel swimming pool at Coolangatta and complained to Hertz that it wouldn't start because the electrical system was wet. They brought a new one over.

For a while we blew things up, until it got ugly and someone got killed.

I experimented with gunpowder. If you mixed in some magnesium powder it got brighter. But then I discovered the fireworks company would sell flash powder over the counter, so I was typically carrying a kilo of grey powder in my attaché case.

We had flash pots, we had strips of roof gutter filled with a trail of powder. If we didn't have igniters, an old style flash bulb would do it. We had 12v power supplies and a firing board and too much fun. Sometimes the band got more than they bargained for. We didn't care.

My moment of infamy happened at Paddington Town Hall on Sunday December 20th, 1975. Robert King hired me to do lights at his concert and it ended badly for everyone, especially Toivo Pilt from Sebastian Hardy. He was in hospital, and several audience members were treated at the scene. The hall still has a chunk of concrete missing from the balcony.

MONEY

The music industry grew at a staggering rate in the 1970's and the first half of the 1980's. Bands could and did sell hundreds of thousands of vinyl albums and singles, promoters and managers could and did skim plenty of money off the gullible. If you're drunk and stoned it's hard to count.

The audiences were bedazzled by colour TV in the mid 1970's. Countdown came alone and the loud ballsy sound we produced was at a time even cinema sound was basic. We had big bottom end and sizzling highs and our Par cans were bright. We were Technicolor in a monochromatic world.

There seemed to be no stopping



This is how it was done. Unlimited audience, heaps of Par Cans, no moving lights, no computers. Just Misex, playing 'Computer Games'



Just build a scaffold, thrw a band on there, add a little PA system. What crowd control?

the music business.

School and community halls gave way to beer barns and pubs that crammed in 1,500 by the end of the 1970's, when The Angels and Cold Chisel toured, the door gross could be over \$10,000 in cash.

The highways always had a band truck passing by. We used to spot the other crews, meet them at roadhouses, and stop when they broke down. By the early 1980s we were all driving Isuzu par techs, then 8 tonners. Still with no air conditioning, still with vinyl seats. I remember the summer heat in Queensland, windows open, sweat dripping out of my shorts onto my thighs. Bare chested. Sweat. Swigging Fosters down the highway. Driving of course. Cassette tape of Little River Band playing. My girlfriend chucked a banana milkshake out the window, and it blew right

back in. The back of the truck – hot, stale beer smell, sweat, puke, deodor gas on sticky pub carpets. Gaff tape on everything, sharp staples from hastily hung backdrops. Innocently yelling 'hang the blacks' and getting into a fight with a table full of aboriginals in a beer garden.

Big and packed venues like the Playroom on the Gold Coast, Bombay Rock and the Bondi Lifesaver, small and packed venues like the Manzil Room or the Khardoma Café. Strange pubs in country towns, little bowling clubs whose secretary managers had been stitched up by a booking agency into believing that paying \$8000 for a band on a Tuesday would save the place.

There was a lot of cash changing hands, I was always pushing the drug dealer out of the way to get paid by the tour manager. Some people fabricated some extra wild stories

about why and how the money had disappeared. Lies and more lies, promises and unreality. Just show me the money.

It was the cash era, a time before electronic banking, before computers or internets, no emails, no gst, no mandatory reporting if you deposited 20 grand in marked bills at the bank. Mainly the cash was kept out of the bank and dished up in one and two dollar bills stuffed into the attaché case that was de rigor back then

The rip-off's were routine, the cheque always bounced, and promises were thick on the ground. "I promise I'll respect you in the morning....."

There were bikers, fires, fists and guns. Hookers and dealers, groupies and managers, record company staff who really thought they wrote the songs, and booking agents who lied for a living. Dope diesel and degradation. Then there were the rock stars.

Because of the struggles and the violence and the egos there were some people who were complete utter bastards, who practiced the art of duplicity and who just did not care about others. A few still work in the industry and are well avoided by those who remember, most of the rest are dead.

I smelled the turning point in 1982 and got off the road, a road that peaked with Whispering Jack shifting 24 platinum records several years later. Somehow we faded as our audience grew up and had kids.

Aids and random breath testing forced the fun out, Bolivian marching powder (cocaine) and speed made people crazy. I still have a mental list of some guys who made my life hell at some gigs, and I don't seem to run into them anymore since they probably died or are unemployed. How would you feel – tired, exhausted, trying to do your gig, and a guy is yelling spittle into your face

for no reason or trying to take a swing at you? Or telling you that you can't do this or that, turning the PA down, just being ridiculous. Refusing to load out after the gig – the list goes on. I remember them all. Sometimes the best response was a microphone stand over the head. Take a nap, sunshine.

I had teeth broken, carry enough scars, and like most old roadies I have a back injury that flares up when it is cold. And I'm half deaf, with a liver that knows more than most.

We fought, we struggled against the authorities, we exceeded our limits, and we had a burning passion for the music. Ours was a generation with a big gap between us and the confused pre war generation who parented us. Those were not the good old days at all; they were bad times with flashes of brilliance.

Sometimes our curiosity pushes us to gawp at a road accident, or makes us do something thinking better stuff is around the corner. The good times, meeting strange and unusual people, the music – always the music.

I used to cringe when someone called me a roadie. Now I'm proud I was. CX

Photo thanks: these pictures are from the Museum archive assembled by Colin Baldwin, Julius Grafton and Yogi. Some came from Phil Duneski, Jands, and Bob King.



How slow can you go? This old Acco maxed out at 80 kph. Try driving around Australia in that, and sleeping in a caravan every night.



AC/DC Stage Collapse, before the days of engineer reports and that fancy safety stuff.

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1983 – 1985: Typical production in an 8 ton truck, 5 crew plus crew car, 4 loaders

1986 – 1989: Many tours used a semi, 9 crew in 2 x Taragos, 8 loaders

1990: It was too expensive to tour unless you sold Platinum

1995: Production pick up in each city becomes common

2000: The last successful freelance truck and production guy retires

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Lead in your
 pencil, lead in the
 ground. RoHS!



By **DUNCAN FRY**

It was Christmas Eve in the workhouse,
 The happiest night of the year.
 The paupers' hearts were full of joy,
 Their bellies full of beer...
 ...Up spoke a brave young pauper
 A lad as bold as brass
 And said "You can take your Christmas pudding
 And shove it up your arse"*

What happens to old audio equipment? I was thinking about this as I staggered from the dining table after Xmas dinner, to collapse happily burping on the couch while family life went on all around me. One thing about having a little break over Christmas and New Year is the opportunity to lean back, relax and think about things with little in the way of interruptions. I was prompted to think about old equipment by the latest load of concerned legislation (or crap, to use the technical term) foisted upon electronics manufacturers by their elected representatives.

Governments around the world can't resist sticking their noses into places where they don't belong. Over-regulation is the name of the game, and western nanny-state democracies are the usual suspects.

Take the European Union. It has its own parliament that sits in Brussels, nicely insulated from the rest of Europe, and paid for by the hard working taxpayers of the countries who are members. Its sole purpose in life seems to be thinking up ways to make more regulations for the member states to abide by. And the rest of the world, by implication, if they want to do business there.

The latest piece of ham-fisted draconian legislation is called RoHS – Reduction of Hazardous Substances. With a title like that you'd think it was maybe a crackdown on crystal meth or ecstasy production, but that would mean having to do some real work. No, it's aimed at anything with a circuit board inside, and stopping the use of half a dozen toxic substances in the production process, but predominantly lead in the solder.

An admirable intention, you might say, and of course you'd be right. There's no doubt lead is very bad for you. When electronic equipment gets dumped in landfill, they say, the lead in the components on the circuit boards can leach out into the surrounding soil. This legislation is solely aimed at the computer industry, where last year's models are simply thrown away in the endless faster, faster upgrade cycle. The haunting spectre of a mountain of last year's PCs being crushed and buried is trotted out on a regular basis by Euro politicians.

To make it look as though every circuit board ever made was contributing to the end of life as we know it, the legislation has been applied to electronics across the board. Including analog audio, the least likely to offend. We're just caught in the crossfire.

The truth is a little different. Research shows that 80 to 90% of lead in landfill comes from dumped car batteries. And guess what? Car batteries are exempt from this legislation!

The key words in all of this are 'dumped in landfill'. When did you last throw away a piece of analog pro audio

equipment? Judging by the endless stream of 'classic' audio equipment up for auction on eBay, no one does. You sell it to someone else when you don't need it any more, it becomes their 'new' piece of equipment, then they sell it on and the cycle continues.

Other people just hang on to what they've got and keep using and fixing it when it stops. We have customers at ARX whose children's bands are using the sound systems their parents bought twenty-five years ago! No-one throws any of it away.

The RoHS legislation hasn't made it to Australia yet, but plenty of other misplaced ones have.

Outlawing piggyback power connectors, for one. These useful gadgets can't be obtained for love or money anymore, except specifically for lighting purposes, with a permit. If they're really that dangerous, why can you still buy them at all? Or are lighting personnel disposable? Answers on the back of an envelope please. Anyway they're not dangerous at all if used properly. Their problems arose from abuse by contractors on building sites that would put one on each end of a long extension cable, so whichever way the apprentice rolled it out, it could always be plugged into. So we all have to suffer because of idiots who knew the correct usage but chose to ignore it.

The latest is the insulation pieces on the positive and negative prongs on power leads, in case people manage to stick their fingers in there while plugging it in.

Yeah right, people are dying in their thousands from that every day. Personally, I don't know anyone who has ever done that, and no-one that I know knows anyone who has either. Yes, I know it might happen, but only in the same way that an alien spaceship might land on your head and crush you. It doesn't mean it ever will.

It's legislation for legislation's sake. So now we're stuck with plugs with thinner pins (because they have to fit in the same sockets) that bend and snap whenever they meet some resistance. Sounds much more dangerous than before. That's progress for you!

Most people learn from experience. Poke a dog with a stick – get bitten. Stick fingers in a power socket – hurts. You can't teach experience – it has to be learned.


Years ago, like Janice Ian, I learned the truth at seventeen. In my case though, it was about 240V electricity, not ugly duckling girls without clear skin.

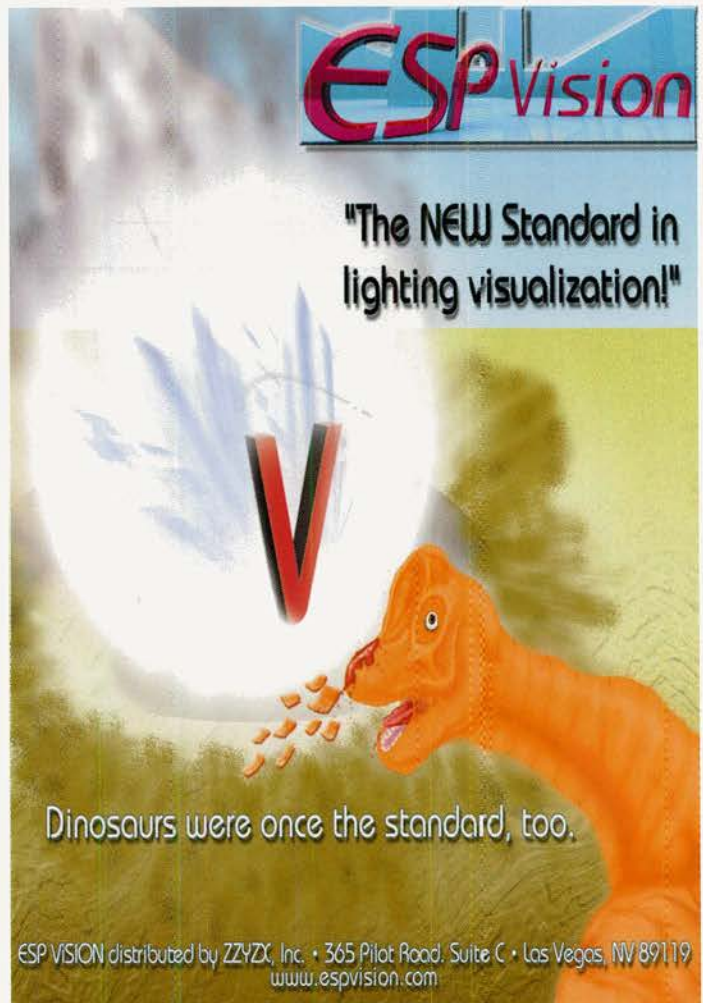
My bedroom was next to the bathroom, and it had no power points at all. How was I going to crank up the trusty Canora guitar and Strauss amp combination without any power? The bathroom, though, had power sockets galore. My plan was to run an extension lead out of one of them, through the bathroom window, and in through my bedroom window. So far so good. I went down to the hardware store, bought a length of 3-core flex and a couple of plugs, and set to work. First I ran the lead between the two windows, then went into the bathroom and put the plug on that end, then plugged it into the wall socket, not realizing it was switched ON.

I then went into my room, and started stripping the insulation off the other end of the lead.

BANG! The electric shock blew me across the room, where I lay whimpering and twitching with an ache in my arms that lasted for a week. I learned about AC power the hard way, but I never forgot.

Now what kind of legislation could possibly teach me that?

* A very short extract from 'Christmas Eve in the Workhouse', a long Victorian era cautionary tale, popularly recited at after dinner evenings around the fireside. 



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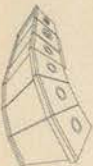
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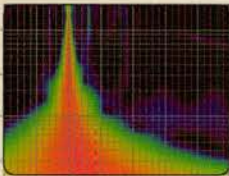
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