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AUSTRALIA & NEW ZEALAND

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FROM THE MAN  
WHO'S MADE  
THE MISTAKES

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BALLET GOES LIVE  
ACROSS THE COUNTRY

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SINCE 1990 WITH  
CHANNELS AND  
CONNECTIONS

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**NEWS!** Along with all the latest breaking news, we preview what's to see at ENTECH '08, the newly revised production directory and all the usual suspects.

**CUE03** Entertainment Training Resource

**THE NEWS MAGAZINE FOR ENTERTAINMENT TECHNICIANS AND MANAGERS**

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# OPERA LIVE

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**Sub 12**  
12" Bandpass Subwoofer  
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## Opera Live Series

Active, bi-amped and housed in multifunctional polypropylene enclosures, these speakers come in 10"/1' to 15'/1' configurations with up to 300W/RMS

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Featuring efficient band-pass circuitry and impressive power and performance, these active subwoofer systems deliver high SPL. Available in 12" to 15" configurations with up to 800 W/RMS, all models feature an active mono/stereo x-over.

## Opera Live Systems

Comprising individually powered Opera Live and Sub enclosures, these remarkably efficient three-way active systems provide excellent audio performance and maximum flexibility to boot.

## Opera Live Series

- ▶ Powered loudspeakers for professional audio applications.
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visit [www.cmi.com.au](http://www.cmi.com.au)

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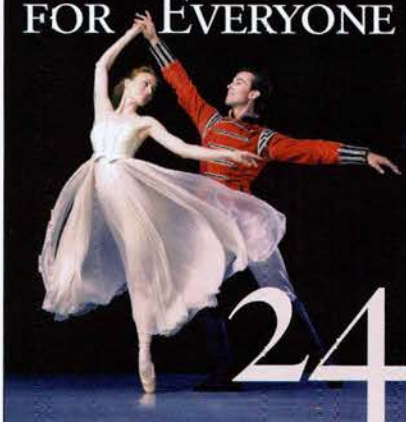
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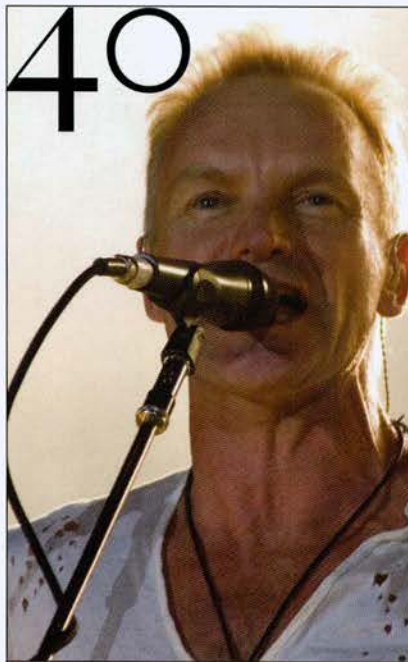
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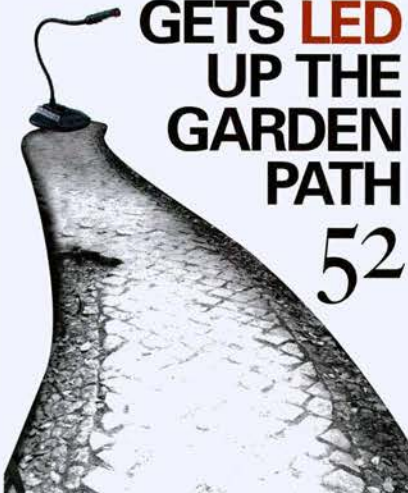
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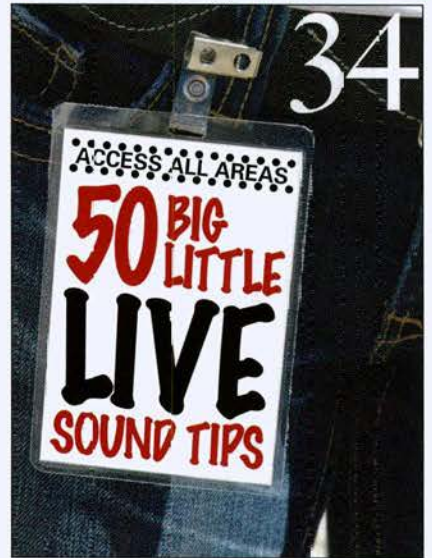
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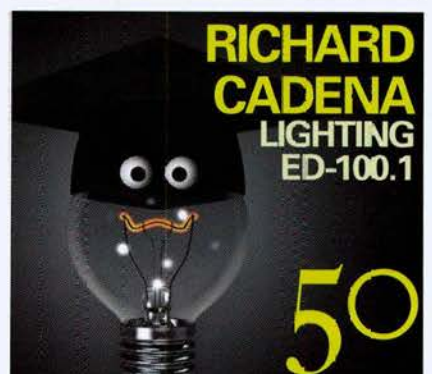
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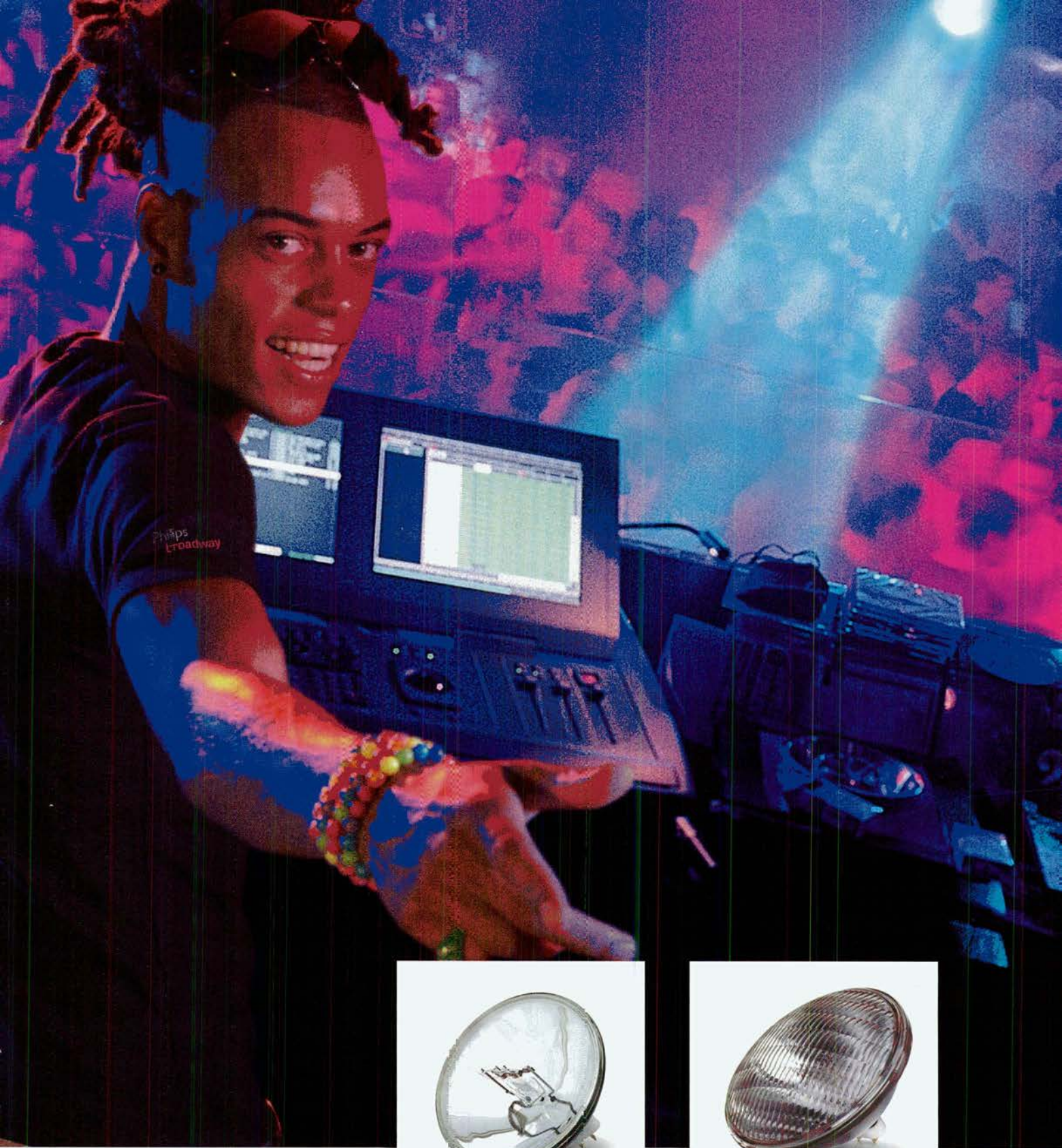
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## **Simplicity is a range of lamps for every event.**

**Philips PAR lamps** now complete the range of quality event lighting from Philips.

An efficient lighting package with high quality Philips' components, all optically aligned and sealed into a robust lamp. In line with the renowned Philips Entertainment Lighting standards, Philips PAR lamps offer the very best quality, reliability and lowest cost of ownership available today. So when you need a lamp that really performs, choose the PAR lamps from Philips.

[www.philips.com/broadway](http://www.philips.com/broadway)

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# CUE03

## Entertainment Training Resource

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

# EDITORIAL

## GOOD GREAT BAD WORSE

We're getting spoiled with great live sound and visuals so when it isn't great the contrast is more extreme. Promoters are already looking at punter refund clauses in artist contracts so they can just hand the money back without negotiations or battles when the sound or visuals (or lack of) generate complaints.

## WANTON WASTE

Imagine doing a Uni course on DJing and Improvisation. Sydney's Macquarie University offer this doggerel to distracted and misguided students who seek to not only waste their time, but also the taxpayer dollar, reassured that surely a University must have it right. Study the social context? Complete and total rubbish.

## BIGGER REBATES COST MORE

In-house hotel audio visual is getting more expensive as big hotels demand a larger commission. CX hears the going rate has jumped from 20 to 30% recently. While the hotels celebrate, their customers will flip as the actual cost of an event skyrockets to adjust for the loss of margins. Watch this space.

## DISASTERS COST MORE TOO

When it hasn't rained much you notice when it does. Likewise power cuts, as soon as the grid starts to fray the finite stock of rental generators will dry up which will hammer the expanding festival market. Memo to production: lock in the genset early and be sure the relationship is solid. Demand = Supply/cost.

## OCCUPATIONAL JUNKIE

The autobiography of guitarist Slash is 400 pages of hard drugs and random sex, summarized by the author such that "virtually everyone associated with Guns & Roses was a junkie at some point". All the more reason to reject an association with any 'artist' showing signs of disrespect and irrational behavior. Protect yourself.

*Julius*

## LIVECASTING – CONCERT OF THE FUTURE BUT NOW

It's hot and new with all kinds of names attached to it. CX's is 'Livecast', which means the transmission in real time of a live event to audiences in different controlled locations, and it's got huge possibilities. This may be the biggest shift in the entertainment industry since the invention of the mic.

Not a simulcast, or a webcast. Pay per view is what you do at home. This is about going out, to an event held at a specific time. But the event is minus the act, it is somewhere else.

A live show can only sell as many tickets as there are seats in the venue, and it can only sell them to people able to get to the venue. Livecasting enables more people to see the show in diverse locations, for more money coming in. It also represents a way to expose new audiences to a particular performance form and ensure an ongoing revenue stream.

The New York Met have invested in the development of opera livecasting and expects to sell more than a million tickets to live cinema screenings of its operas this season – more than the total in-house audience. Locally, the Australian Ballet have joined forces with the Australian Film Commission to transmit Nutcracker to regional areas.

You can expect to start seeing more of it. Most big theatre shows and concert tours in Australia tend to stick to the coastal strip between Brisbane and Adelaide – the country's too big and too empty to be economically toured. But with the technology now available, people in regional Australia can see Livecast shows at their own local venues.

There will be challenges to be met – cameras and live audiences have different needs, and there needs to be a rock-solid reliable way to transport the content. Expect to see a substantial shift in the way the industry works over the next few years...and watch as the demand for vision crew balloons.

*Andy*

# XL8

LIVE PERFORMANCE SYSTEM

## DIGITAL GOES MIDAS

[www.midasconsoles.com](http://www.midasconsoles.com)

VISIT

Bosch Communications Systems  
Stand C28 & Demo Room G05  
Sydney Convention & Exhibition Centre  
Darling Harbour  
11 - 13.2.2008

ENTeCH



 **MIDAS**  
DESIGNED FOR A PURE PERFORMANCE

# CX NEWS

## DEVICES, PEOPLE AND CONCEPTS

### ZEPPELIN CONCERT BIGGEST OF 07



Eighteen thousand fans packed London's O2 Arena in December for the most anticipated concert in recent history. John Paul Jones, Robert Plant, Jason Bonham (son of original band member, John Bonham) and Jimmy Page played a two-hour, 16-song set through a Meyer MILO system provided by UK-based sound rental company Major Tom. At front of house, Big Mick Hughes of Metallica fame mixed the band, while Roy Williams handled Plant's vocal.

You read that right: an entire engineer was charged with the job of one vocal.

The first full concert Led Zeppelin has played since they disbanded in 1980, following the death of John Bonham, was a tribute to the late Ahmet Ertegun, who signed the band to

Atlantic Records in 1969. The 18,000 "chosen" (upwards of one million people registered a lottery for a chance to buy the 18,000 tickets at \$255 a piece) began lining up outside the arena on the Friday before, including a 25-year-old Scottish man who was rumored to have paid \$170,000 for a pair in a charity auction.

Major Tom Ltd., headed by Lars Brogaard, which recently provided the sound system for the sold-out Prince concerts at the O2, deployed a system comprised of 72 MILO loudspeakers and ten flown 700-HP subwoofers per side. Ground stacks included nine 700-HPs per side, and four MICAs per side for outfill. Three Galileo loudspeaker management systems handled 36 outputs.



### ATS LOGISTICS GO CLIMATE NEUTRAL

Australian Touring Services (ATS Logistics) has partnered with Climate Friendly, a climate solutions company, to offer its touring clients the opportunity to neutralise emissions for their road tours.

In addition ATS have taken a significant step toward addressing climate change by neutralising 207 tonnes of greenhouse gas emissions (CO<sub>2</sub>) per year, and is strongly urging its customers, some of Australia's largest concert productions & theatrical tours, to do the same.

Customers that take up the ATS offer will have the emissions from each trip measured and the option to neutralise these through purchasing carbon credits sourced through Climate Friendly from renewable energy projects.

Typical of these is a 30.4 MW wind farm in Turkey with 38 turbines, outputting 108,000 MWh per year with emissions reductions of 74,700 tonnes of CO<sub>2</sub> per year.

Each time a customer chooses to neutralise its tour, ATS will display the Climate Neutral emblem on the rear of the vehicle. "Our hope is that each ATS tour truck you pass will proudly display the Climate Neutral emblem on its rear door – it's a great message to carry about making a difference on climate change," said ATS' Terry Turner.

[www.atslogistics.com.au](http://www.atslogistics.com.au)



### CATASTROPHE LEVELS PART OF HOWARD & SONS

It was heard 30 kilometres away, one blast became many as several fireworks sheds went up in December at Howard and Sons facility in Portland, NSW. The blast destroyed a lot of firework stock just before the busy New Year period.

Andrew Howard states that no one was injured in the incident. The factory was closed at the time and no staff were on the property. The firm were unable to access the property for some days afterwards as unexploded

*Continues next page...*

**iLive**   
digital

Load in... turn on... chill out



*Allen & Heath iLive:  
Easy Listening*

Allen & Heath's iLive digital mixer makes set up in any venue a whole lot easier.

Position the iDR10 rack on stage and an iLive surface at FoH, connect them with a pair of Cat5 cables, and recall your settings from onboard or a USB key.

Within seconds it'll feel as familiar as your old analogue desk, and with sound quality you never thought you'd hear from a digital console.

**ALLEN & HEATH**



ordinance requires caution.

They were able to inspect the site from the air, and established that some containers have been left undamaged with product contained outside the incident area.

Howard & Sons Pyrotechnics Displays have been operating as a fully Australian family owned and operated business for the last 85 years.

[www.howardsfireworks.com.au](http://www.howardsfireworks.com.au) 



## 46664 CONCERT JOHANNESBURG

Gearhouse South Africa supplied design, full technical production and crew to the amazing 46664 Concert staged in Johannesburg's Ellis Park stadium on World Aids Day.

The landmark show featured an address by Nelson Mandela and a dazzling line up of leading local and international performers including Just Jinger, Freshly Ground, Johnny Clegg, Jamelia, Corrine Bailey Rae, Goo Goo

Dolls, Razorlight, Peter Gabriel and Annie Lennox.

The event's striking stage set, lighting and visuality was designed by Gearhouse Director, Tim Dunn (pictured), who created a contemporary and unique look and feel via a gently curvaceous set of epic proportions. Dunn and lighting director Hugh Turner ran the lighting – including over 200 moving lights - plus digital and conventional lighting and ambient LED screens - from three GrandMA consoles at FOH, one of which also dealt with hundreds of audience lights.

LEDVision, one of Gearhouse's sister companies supplied all the LED screens – utilized both for IMAG and as integral elements of the stage set. LED Director, Richard Baker was stationed in one of 3 OB trucks for the show mixing the screens via Gearhouse's new Vista Spyder in 1920 x 1080 pixel HD.

Gearhouse supplied a full audio package built around a Turbosound Flashlight system which produced the perfect sound for the occasion. A small contingent from Britannia Row in the UK joined Gearhouse's audio team for the event, while Sennheiser UK supplied a complete mics and radio package with the support of their South African distributors.

The 70 metre wide stage was based on a standard StageCo configuration with some special elements.

A revolve was the only way to ensure that the music action ran to time throughout the day, and this was custom designed and built by Lee Irving from specialist set/structures company, Gearhouse In2Structures.



*Gearhouse Director, Tim Dunn*

Measuring 18.3 metres in diameter and weighing 13 tonnes, the revolve turned on two 5.5 Kw motors, optimised to perform the manoeuvre in a relaxed 68 seconds.


Gearhouse Power supplied all the necessary production and technical power and distribution, and Gearhouse South Africa's O'er Lapid asked UK-based production manager Nick Levitt to take on the role of the event production director. He worked with production managers Kenny Underwood (UK) and Micky Lehr (South Africa) and stage manager Nick Rea. Levitt has extensive multi-act event experience and has completed numerous projects with Gearhouse over the years.

46664 Jo'burg was watched by 40,000 enthusiastic music fans in the stadium and broadcast live to millions of people around Africa and the world by the South African Broadcasting Company (SABC). 

## ON THE ROAD AT 17

Brad Rogers has recently completed his first tour and he's only 17 years old. The tour, part of Xavier Rudd's White Moth national tour, involved 3 weeks on the road working through-out the eastern states and finishing up in Adelaide, 15 shows later.

Brad worked as Lighting Systems Engineer for Novatech Productions. He did his training with Julius Events College.

"I did get a bit of grief on the first day when the guys found out how old I was, after that they just let me do my work", he said. Brad's choice to pursue the production industry as his profession has been supported by his parents. Novatech endeavour to promote our industry as a sustainable and respectable career path, and staff like Brad then prove this to be true. 



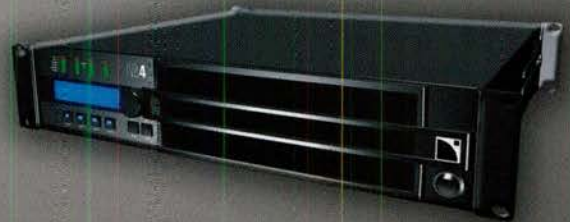
*Standard tour bus posture for crew of any age not engaged in driving said bus!*

# K I V A

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KIVA-2007 RED BULL AIR RACE PERTH  
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# ENTeCH IS HERE

11-13 FEBRUARY, 2008. It promises wall to wall technology with over 500 leading brands and exhibitors at Australia's only entertainment technology exhibition, plus suppliers and service providers from around Australia and the World.

The trade show has always been loaded with solutions and ideas for Clubs & Bars, Churches and Places of Worship, Corporate Spaces, Venues, Broadcasting & Recording and everyone in between.

In 2006, there were over 3000 visitors to ENTECH: buyers, equipment operators, technicians, engineers,

consultants, event organisers, venue managers, architects, designers, installers, contractors, project managers, musicians, DJs, crew, facilities managers, retailers, places of worship, supply companies and media – everyone with an interest in entertainment technology.

"People enjoy ENTECH for all sorts of reasons," says Louise Brooks, event organiser for Exhibitions and Trade Fairs Pty Ltd. "Visitors come to see the latest developments in entertainment technology. Industry groups use ENTECH as a forum for their conferences and as a chance to

network. Buyers attend to research products, services and seek advice from world-leading businesses. Others attend for the free educational demonstrations and our Seminar Programs."

The ENTECH BAR is sure to be the social hub at ENTECH. Sponsored by Staging Rentals, ULA and Harry the Hirer, the BAR will be a place to rest, refresh and catch up with colleagues. Expect to find CX there most of the time.

The best news about ENTECH is that entry is free after trade registration.

More news at

[www.entech-tradeshows.com](http://www.entech-tradeshows.com) 

## DEMONSTRATION ROOMS

Bosch Communications Systems will be demonstrating the latest powered and non-powered speaker systems from EV and Dynacord, putting new loudspeakers from EV ZX, Dynacord D-Lite and Dynacord Varline through their paces.

Jands offer demos that have a seminar feel. They include: The Wireless Jungle, explaining some of the 'dark magic' and common myths – plus possible future changes to the wireless landscape. Another is Demystifying the world of Dimming: Sine Wave vs SCR and the true Meaning of risetime.

They'll also run sessions on JBL powered loudspeakers and the debut of the new 1500w washlight from Vari-Lite, the VL3500 Wash.

Yamaha offer four seminar streams which cover their console technologies and audio networking. Intro to PM5DV2 and DSP5D is a hands-on session on the features and operation of the PM5DV2 and DSP5D. This session suits those experienced in the operation of digital mixing consoles.

PM5DV2 and DSP5D Masterclass (Advanced) is for those already familiar with the PM5D.

Live digital mixing with M7CL and LS9 is for people with possibly no digital console experience, and covers front of house and foldback.

Finally, the Network Audio Workshop deals with design and construct using CobraNet and EtherSound networks for live sound.

Yamaha ask attendees to register their interest at <http://www.yamahamusic.com.au/produ>



Entech '06. Photo by Eventpix.

cts/commaudio


Not in a demo room, but on one of the larger stands at the show: ULA will hold demonstrations throughout the show, as well as training sessions scheduled throughout the three days. These sessions will include:

An introductory session to Wireless Solution W-DMX Technology hosted by Niclas Arvidsson, International Sales Manager from Wireless Solution. This 1hr session will be held daily.

A demonstration on the new Robe ColorWash 750AT Tungsten as well as

Robe's Media Fusion Software, hosted by Robe General Manager Josef Valchar and ULA's Simon Pentz. This session will be held daily.

An introduction to LED in Entertainment – focussing on the advances in and benefits of LED technology as well as showcasing the latest in iLED products. These sessions will be held twice daily.

The Avolites certificate course including an introduction to Pearl Tiger Console - this course runs for three hours and will be held daily. 



**PM5D V2**  
FROM \$58,500 INC. GST



**Remote PM5D**  
\$30,000 INC. GST

## Simple. Reliable. Profitable.

### Simple.

The DSP5D is the remote stage box solution you've been waiting for. Simply connect via Cat5 to expand the PM5D V2.

### Reliable.

Yamaha has gained unmatched experience through its 20-year digital mixer history. The PM5D V2 and DSP5D build on this experience to deliver world-class performance, every venue, every tour.

### Profitable.

With up to 144 channels of inputs and incredible new features including Virtual Soundcheck and Yamaha's Add-On effects on board, the PM5D V2 and DSP5D offer unbeatable return on investment.



# YAMAHA

**CO**  
commercial audio

For more information on the PM5D V2 and DSP5D, go to:

<http://www.yamahamusic.com.au/products/commaudio>

Or contact us: 1800 805 413 | [jason\\_allen@gmx.yamaha.com](mailto:jason_allen@gmx.yamaha.com) | PO Box 268, South Melbourne VIC. 3205

## ENTECH SEMINAR NEWS

There are two streams of official seminars at ENTECH 2008. ALIA, the Australasian Lighting Industry Association offer a seminar program on Monday February 11. Technologies For Worship Magazine will run a three day TFWM Conference geared towards educating Houses of Worship on technologies that can be used in ministry.

**ALIA sessions** are limited to 60 participants and cost \$15 per session for ALIA members, or \$30 per session for everyone else.

### Monday February 11th

- 11am: What You Really Need to Know about Testing and Tagging
- 1pm: Starting Out in Lighting Design
- 3pm: Networks and Protocols - the Glue that Holds Complex Systems Together

For further updates on these seminars, or to book, visit the ALIA website [www.alia.com.au](http://www.alia.com.au)

### Technologies for Worship Magazine

offer sessions each day, for \$45 each session.

### Monday February 11th

- 10:30 am-12:00 noon: Building Design for Contemporary Worship
- 1:00 pm-2:30 pm: Dynamic Praise and Worship
- 3:00 pm-4:30 pm: Building A Video System

### Tuesday February 12th

- 10:00am-12:00 noon: Editing Part 1 - Software Interface, Media Capture and Basic Logging
- 1:00pm-2:30pm: Editing Part 2 - Editing with the Timeline, Transitions and Graphics
- 3:00pm-4:30pm: Introducing Change Without Offending Almost Anyone

### Wednesday February 13th

- 10:00 am -12:00 noon: Affordable High Definition Video?
- 1:00pm-2:30pm: Producing a Worship Service
- 3:00pm-4:30pm: Defining the Role of Technical Director in Today's Contemporary Houses of Worship

More info and bookings:

[www.tfwm.com/Conferences-entech2008-seminars](http://www.tfwm.com/Conferences-entech2008-seminars)

# EXHIBITOR NEWS

The **ULA** stand at Entech 2008 will be the largest lighting stand at the show with hundreds of products on display. Featuring new products from brands such as Robe and Avolites and focussing on new technologies from iLED and Wireless Solution. Major products to be launched at this year's Entech are the Robe ColorWash 750AT Tungsten, Robe's Media Fusion Software and the Avolites Pearl Tiger Console.

**JANDS** are easy to find, they are right next to the front door. Jands have been appointed the exclusive Australian agent for Pathway Connectivity Solutions- the leading data communications company in the entertainment lighting industry. Jands also represent leading audio, lighting and staging brands including JBL, Crown, Shure, Vari-Lite, ETC and their own Vista lighting control technologies.

**ELECTRIC FACTORY** will be demonstrating the TASCAM DM-4800 Digital Mixing Console, one of the most powerful portable digital consoles available today.

**MTA SALES** will be exhibiting the HME DX200 Digitally Encrypted Wireless Intercom System, offering high performance, reliable and secure wireless communications at a reasonable price.

**AUDIO TELEX** offer Turbosound's New Range of Impact Speakers, Meet Turbosound's very own sound guru, Tim McCall. Also shown: Lab.gruppen's new Powered Loudspeaker Management System combining technologies from two of the leading innovators in the live event production industry: Dolby Lake and Lab.gruppen. Visitors will also see the latest from Rane, Australian Monitor, Ampetronic, Beyerdynamic, MediaMatrix, Renkus-Heinz and Mipro.

**ALTRONIC DISTRIBUTORS** will showcase the Creator range of audio and video matrix switchers for use in commercial audio / video installations.

**ROLAND SYSTEMS GROUP** will be showing off their M-400 V-Mixing System, a live mixing solution built on the success of their Digital Snake products by adding 48 channel digital console, using only a single cat5e cable to connect from stage to FOH.

**SPEAKERBITS** will be demonstrating the qualities that have made them the trusted and

authorised factory repairer for heavyweight speaker manufacturers like Bose, ElectroVoice, JBL, Nexo, Peavey, Tannoy, RCF and more.

**JULIUSMEDIA** will be on hand to talk about Technical Training and of course CX Magazine. They will be in the Media Zone where you can find other industry magazines.

**EVENTQUIP** will be showcasing the new Framelock Crowd Control Barrier, a 'world first' fully-integrated Framelock Fence Barrier, Framelock Barrier Counters and barrier accessories.

**OSRAM** will be showcasing their Xstage, a new lamp line especially suited for event and architecture lighting. On the basis of the established XBO lamp series, the new xenon short arc lamps are optimised for outdoor use.

Among the range from **BALANCED TECHNOLOGY** will be the Satellite from i-Pix Digital Lighting, a 42 watt RGB wash fixture. Nicolas Moreau from Enttec will show the new Open DMX Ethernet (ODE), as well the RDS range of RDM-enabled DMX splitters.

**BOSBOX** will be bringing their tough range of Portable Socket Outlet Assemblies (PSOA) to ENTECH. Bosbox PSOAs are built from high-impact polyethylene, and comply with AS/NZS standards for safe, temporary onsite power wherever it is needed.

Pro audio specialist **NATIONAL AUDIO SYSTEMS** has two stands at ENTECH 2008. One will feature their professional audio products - including the Chiayo portable PA range - while the second is dedicated to the "awe inspiring" d&b audiotechnik Concert Sound range.

**BOSCH COMMUNICATIONS SYSTEMS'** stand will be home to Electro-Voice, DYNACORD, MIDAS, KLARK TEKNIK, TELEX, BOSCH Praesideo, BOSCH Plena & BOSCH Congress, some of the world's leading manufacturers and suppliers of professional audio, wireless and communication equipment.

**LIGHTHOUSE DISTRIBUTION** have Clay Paky's New Range of Alpha 300 Moving Heads. Lighthouse Distribution will also exhibit the latest from Italian manufacturer DTS. DTS manufacture high quality lighting fixtures at a fraction of the cost one would expect to pay for this quality. The XR Series of moving heads will



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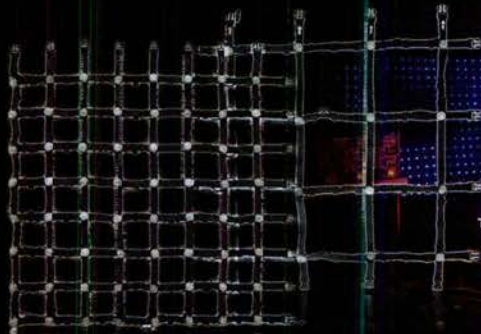
## NEW Color Split - Twice the possibilities from a single LED fixture



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Any Dream Will Do BBC1 Show. Color Web 250. LD Mark Kenyon, Programming Roger Wilkins. Courtesy of Richard Martin Lighting. Copyright Phil Dent.

## Color Block - One fixture, endless solutions



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Massive Attack Collected International Tour 2006. LD Vince Foster. LED Visual Effects Design United Visual Artists. Copyright UVA.

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\*Magic Amber is the term used for the unit's ability to bring in Amber when mixing colours that require it

be on display for visitor demonstrations.

No word on whether the Waffles will return to the **TECHNICAL AUDIO GROUP** stand. Each ENTECH features a side show where TAG and the Sydney Convention and Exhibition Centre partake in 'frenzied negotiations' where TAG are made to pay the centre several bucks for each waffle served free (and made by TAG) to their clients. Something to do with foregone catering profits. Ask TAG how this year's round went.

Premium musical instrument and professional sound equipment manufacturer Peavey will be represented by **AUDIO PRODUCTS GROUP**. Among the range will be the Peavey FX series of analog/digital hybrid mixers, the VSX26 loudspeaker management system and the VR112 array speaker and VR218 subwoofer.

**AMBER TECHNOLOGY** is exhibiting the new Stereo Bus Compressor and VHD Input modules for the renowned Sold State Logic XLogic X-Rack modular rack system for the first time. They will also carry a comprehensive range of Trantec wireless systems, and the latest products from TC Helicon and TC Electronic.

**MADISON TECHNOLOGIES** will be demonstrating high resolution video systems from Hall Research Technologies, as well as an extensive range of broadcast and audio visual products from Belden Cables, Clockaudio Microphones, DigiDesign live consoles, Bittree and connectivity options including Amphenol, Neutrik, Cira and LEMO.

**SYNTEC INTERNATIONAL** will be representing products from Audica Professional Sound Systems, designed for installation into retail spaces, cafes, restaurants and venues where quality background music is required. Other brands on the Syntec stand will include Tannoy, Sennheiser, Apart, Ashly, Fostex Net Cira and Klein+Hummel.

**CLEARLIGHT SHOWS P/L** will be exhibiting Hippotizer V3 with HippoNet for remote access to multiple machines which can be controlled from any machine on the network or from a remote laptop or Pc on the HippoNet. PixelArt is a 1080 x 90 batten that has 432 individually controllable pixels at 15mm pitch. The Leap Frog96 is Zero 88's new console. Also at Clearlight are Luminex data distribution systems, Apollo DMX

controllable moving yoke, Capture 2005 design software and Swefog's DMX hazer with no heat up time.

**CRESTRON CONTROL SOLUTIONS** will show the latest Cisco IP Phone 7970G with a 5.6-inch touch screen. Crestron's DVPHD is an advanced multi-window digital video processor and touch panel interface. Finally the MPS-200 is a complete presentation control and signal routing solution for boardrooms and classrooms. Integrating the control system, multimedia switcher, audio processor, and amplifier into a single 2-space rackmount package, the MPS-200 eliminates the need for separate components without forfeiting performance or flexibility.

**GROUP TECHNOLOGIES** will show DiGiCo's D1 and D5 consoles, Nexo speakers, and Camco's new Q-Power Series of high-output 4-channel power amplifiers. The Q-Power 6 and Q-Power 10 are both 19" 2RU 4-channel amps using class D and class H technology respectively and benefitting from developments in CAMCO's proprietary dual-voltage SMPS with automatic voltage selection for 120V/230V operation.



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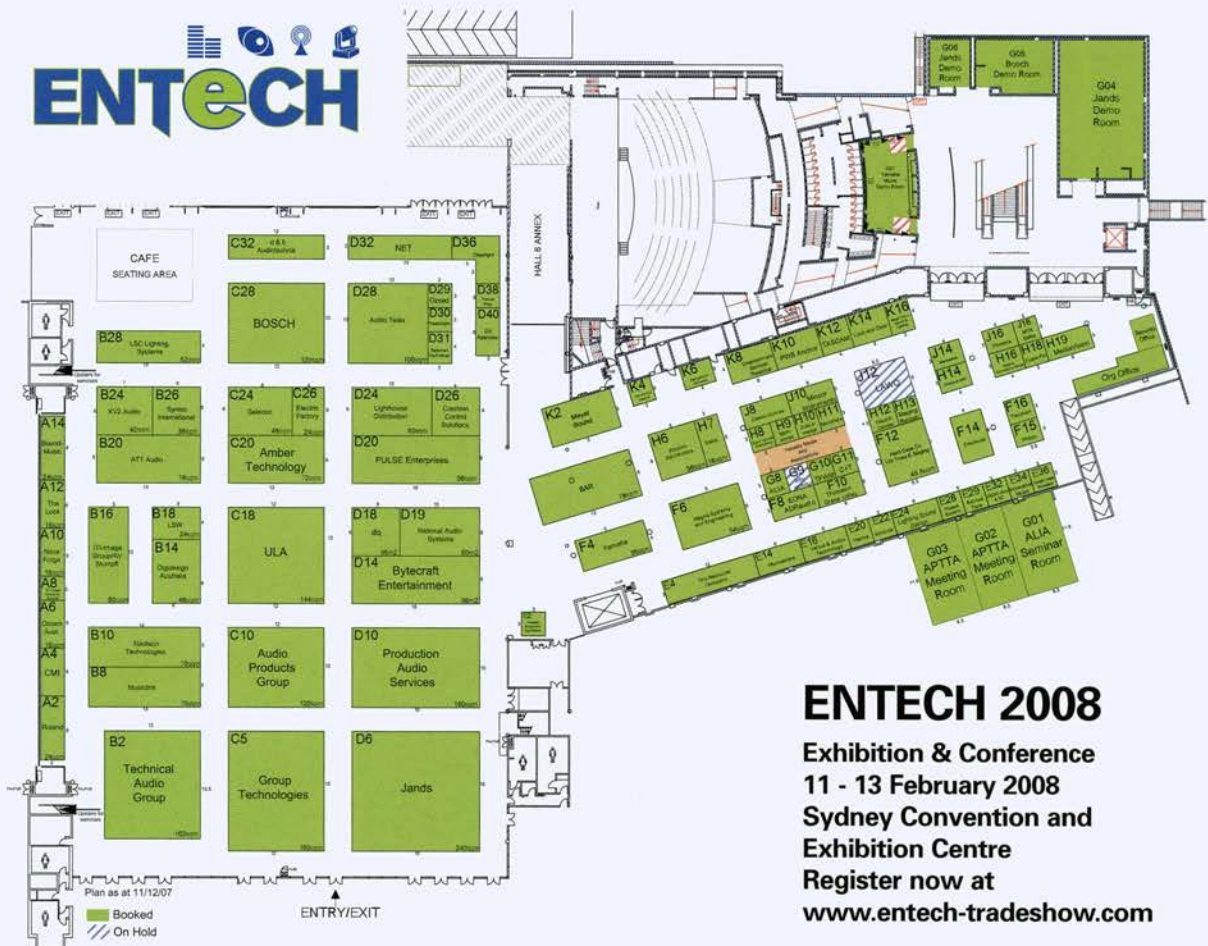
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<b>ART 312 A</b>	12" + 1"	300W	50W	127dB	19kg	680H 405W 345D
<b>ART 315 A</b>	15" + 1"	300W	50W	128dB	20kg	680H 405W 345D
<b>ART 322 A</b>	12" + 2"	350W	50W	128dB	23kg	680H 405W 345D
<b>ART 325 A</b>	15" + 2"	350W	50W	129dB	24kg	680H 405W 345D
<b>ART 522 A</b>	12" + 2"	500W	25CW	130dB	<b>18kg</b>	680H 405W 345D <b>*NEW</b>
<b>ART 525 A</b>	15" + 2"	500W	25CW	131dB	<b>18.5kg</b>	680H 405W 345D <b>*NEW</b>
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*\*All power specifications measured in continuous RMS power.*

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- 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 O1V/36 (40 consoles)
- Digico D5 112/EX
- Midas XL4, XL3
- Midas Heritage 3000, 1000
- Midas Verona, Venice

## ENTECH HISTORY

ENTECH was created by the team behind this magazine, at a time when there were other trade shows but none that drew together lights, sound and later on: vision. ENTECH was modeled on PLASA, the most successful trade show of its kind. We also led the way on banning noisy disco trade show stands which have now mainly gone from the world scene.

### 1994 SYDNEY EXHIBITION AND CONVENTION CENTRE

The first edition, in one hall. There were more lights than sound, since at that time the AES also ran a trade show and the exhibitors were divided. The awards were held at a film studio in Alexandria. Show manager: Rob Walker.

### 1996 SYDNEY EXHIBITION AND CONVENTION CENTRE

Two halls but half of one was given over to seminars and an ill fated DJ competition that fast ran out of control when someone gave thousands of tickets to the public. Awards night was held at the Metro. Show manager: Caroline Grafton.

### 1997 MELBOURNE EXHIBITION CENTRE

Held alongside the Venue Management Association trade show. The awards were held at the Forum Theatre with all kinds of catastrophes. A good debut in Melbourne, but the show didn't return. Show manager: Caroline Grafton.

### 1998 SYDNEY EXHIBITION AND CONVENTION CENTRE

Touted as the last until 2000, and this time all the audio guys were onboard as the AES trade show had faded away. The Awards were at the Metro again, with Dr Karl redefining physics. Show manager: Caroline Grafton.

### 2000 SYDNEY SHOWGROUND AT HOMEBUSH BAY

An experiment with a venue located out of the city, made possible by the impending Olympics near by. We toured the Stadium, and had shootouts in the woodchop arena. Awards were held in a pavilion, hosted by Merrick and Rosso. Show manager: Caroline Grafton.

### 2002 SYDNEY EXHIBITION AND CONVENTION CENTRE

Feeling like déjà vu, but a strong show in 2 halls with a large and expensive 'History' display soaking up excess space. The Awards were at the Metro and featured the M.C. staging a hijack to make his own awards for DJ excellence. Crazy stuff. Show Manager: Louise Brooks.

### 2004 SYDNEY EXHIBITION AND CONVENTION CENTRE

The changeover: ETF had just purchased the show, and it was also the first time in Halls 5 and 6, more closely matching demand for floor space. Demo rooms were rolled out. No awards so CX Magazine was no longer punished for the perceived slights of ego maniacs who disagreed with the voting. Show Manager: Louise Brooks.

### 2006 SYDNEY EXHIBITION AND CONVENTION CENTRE

The first fully owned and managed ETF show, again in Hall 5 and 6 and the last show where JuliusMedia provided the conference and seminar program. When the curtain fell on day 3, it was judged the most thorough and balanced mix of exhibitors yet seen. Show Manager: Louise Brooks.

### 2008 SYDNEY EXHIBITION AND CONVENTION CENTRE

The next edition! Show Manager: Louise Brooks 

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# LETTERS, FLAMES, PRAISE & EMAILS

## SOUND AT CONCERTS (1)

Canberra is such a funny place for concert goers. Earlier this year I attended the INXS/Simple Minds/Arrested Development gig at the AIS and could fair dinkum swing a semi trailer in the place prior to Simple Minds and it wasn't until INXS "kick"ed in that the place started filling up. For the record the sound and lighting was generally superb except for Simple Minds. Their frontman Jim Kerr was lost a bit at times but that seems to be their sound as I have seen them twice previously and it was the same. Otherwise it was a most enjoyable and terrifically produced show. Money well spent.

Move forward several months and it's Alice Cooper time. Again 30 minutes before doors opened and another 30 minutes afterwards the place was almost empty. What's going on Canberra? Yes it was 5 degrees and yes AIS is not the greatest of place to find parking etc but really? The support act played to an almost empty room.

Then on came Alice with all his theatrics and lighting. A Vdosc system driven by Crown/LabGruppen amps and powered by the new Yamaha PM5D desk and you'd think this show would be something special. A standard 2 guitars, bass and drums backing band (no keys but plenty to be heard via samples... what the?) and a frontman worthy of god status and the recipe should have been for success.

Initially I thought maybe the crap sound was just where I was sitting. The vocals were washed out by screaming guitars for the first 3 songs. I was about at an angle of 30 degrees to the side of stage and just in front of the line array but decided to move elsewhere because in Canberra you can! It's Canberra after all!

So I went and plonked myself down next to the sound dude, thinking if it's going to sound good anywhere, then here is the ideal spot. Nope, if anything it was worse. The sound rumbled as the bottom end throbbed and the rest was guitars and guitars. He didn't seem to care either. Looking more like he should have been up on stage playing lead guitar with his 80's David Lee Roth hair cut, he just manipulated a few sub groups and spent the rest of the time trying to look good.

I felt like telling him to take 10db out of the drums and guitars and let Alice be heard but figured what the heck, they probably treated this gig like a \$\$ spinner and basically were there to clean up and get the hell out. Such a disappointment for me as I spent most of the show analysing the sound rather than enjoying the show. Maybe I was being anal about it but geez ya wanna hear some of the vocal a bit above the roar of guitars occasionally. Was it like this at any of his other shows?? Any comments??

The lighting guy on the other hand was working that grandma like it was his last show on earth and to be fair the lighting was spectacular.

I then had the pleasure of attending the "War of the Worlds" concert at Acer in

September and all I can say is what a pleasure it was to see and hear something done right. Was this a Clair Brothers system? I am not sure but from where I was sitting it absolutely superb. A 40 piece orchestra and a dozen musos on stage backing some of the best voices in the country and every note and accent was clearly audible. The lighting was spectacular and the show was worth every cent. I couldn't praise it enough. Even the merch was reasonably priced!

So there ya go why if one sound guy can get 50 people on stage sounding correct why the hell can't another get 5 right? Go figure.

**Jeff White**  
Whitenoise Pro Audio

## SOUND AT CONCERTS (2)

I was fortunate enough to see one of the best bands in the world play at the Burswood Dome and that band was Linkin Park. The tour sound was provided by Norwest Productions and for the show in Perth, the P.A. utilized was an EAW Line-Array P.A. (KF-730 I think) with KF-650's providing the side fill.

I was told by one of Norwest's staff that on the east coast, the P.A. was a Adamson Line-Array which unfortunately never made the trip to Perth due to cost and time constraints.

But never the less, the EAW P.A. absolutely kicked butt on the night. Every single instrument sounded great coming from that P.A. even so that when the drummer kicked his kick drum, it felt like someone was punching me in the chest which I loved!

At the FOH position, I saw a Midas H3000 which may have been the band's console for the show and a separate digital mixer for Chris Cornell.

A great night with a excellent sound mix and a top performance by Linkin Park.

**David from Salter Point W.A.**

## "I WISH THEY WOULD DO IT" CATEGORY

Digidesign have had wonderful success developing digital Mac and PC based work surfaces for Protocols for Recording and now the Live world.

The idea of having everything in the box with a work surface controlling it is great. However they have never taken on the most obvious application for this technology that nobody has yet touched : Broadcast.

When are Digidesign (or their competitors) going to develop and release a serious software package and work surface for the radio broadcast studio? Come on guys.. It can't be that hard. We're sick of all these Klotz and other panels that use technology from the 1980s doing everything "onboard" and still need so much outboard to make them work it's almost worthless having them. A nice work surface linked to a PC via USB, and sound card, and a "radio studio in a box". Get

working. If you're really ambitious, include a wizz bang set of processor and compression plug ins aswell, so you can put Orban out of business at the same time. We want it out by 2008. Big Cash waiting.

**Paul Matthews**  
PA Matthews Audio

## LED CAN AND GEL HOLDER

In the PLASA Short Bites (News: CX 15 Oct 2007 p14) you reported on a Showtec "PAR can loaded with LEDs so that you get 300 watts equivalent..."

You then posed the question: "So why the colour frame holder, if the LEDs can colour mix?"

Having already started using a few similar LED PAR cans (without colour frame holders) on a trial basis, I have at least three possible answers for you!

1. I feel obliged to share with you one of my very practical 'dirty little secrets' to help answer why I would find the colour frame extremely useful! Lee 228 'Brushed Silk' is a wonderful linear diffusion material that 'stretches' a light beam in one direction while narrowing it in the orthogonal direction. Thus it helps produce a somewhat oval beam shape (like a PAR can beam shape) from a circular beam shape (as you might start with from a circular flood like a PAR 38 ES garden flood).

This is extremely valuable in certain situations - such as we have in small community theatres - for example, where the light bars are between fairly long (or 'deep') border material that would otherwise catch spill light. The oval beam produced from a combination of a PAR 38 ES round flood lamp mounted in black-painted soup cans (!) plus Lee 228 stretches the light beam across the stage (left-to-right) while reducing the light spill (up and down stage) onto the borders.

In our particular case, the same light spill situation could be improved for the LED based PAR lamps by the use of Lee 228 - mounted in a colour frame!

2. There are occasions where a softer beam is necessary, so some grade of frost (from almost clear to heavy frost) would be very useful in front of a LED lamp.

3. Depending on the colour temperature required (more particularly for film or TV work) there could be instances where it would be helpful to be able to use one of the many colour temperature correction filters, such as Lee 204 Full C.T. Orange (converts daylight to Tungsten 3200K, mired shift +159) or Lee 202 1/2 C.T. Blue (Tungsten to Daylight 3200K to 4300K, mired shift -78) for example. This could be true for the LED lamp also.

Thanks for your continued great work (and Andy's too!) on CX mag in general and the 'News' section in particular.

**Charles Monticone**

Got an opinion? Write to us  
at [cx.mag@mac.com](mailto:cx.mag@mac.com)

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# PROFILE: JOHN BAYLEY

**J**ohn Bayley is Head of Production for the Sydney Festival, Australia's largest annual cultural event. The 2008 festival programme is 22 days long and includes 103 events totalling 300 performances in 22 venues across Sydney. 780 performers from 14 countries will appear in the Festival. In addition, over 150 000 Sydneysiders will be invited to a massive outdoor opening night party, Festival First Night.

The job of producing an event like this never stops. From February to August each year John works with Production Manager Katie Pack and the Domain Manager Iain Morrison on the tasks of budgeting and scheduling. They provide technical advice, visit, find and create new venues for the festival to inhabit and work on the complex systems required to effectively delegate the management of this event to a team of part-time Event Managers.

From August to December he moves into delivery mode, adopting a technical director role and handing off the events to others – which John says is one of the hardest parts of the job. During the lead up and the run of the festival, John is the guy at the top of the troubleshooting tree, the man with whom the buck stops.

And after the festival? "My wife finds me useful as a door stop or pot stirrer, in fact any task that does not require a functioning nervous system..."

Before he started with the festival, John was Technical Director at the Sydney Theatre Company and had been very happy there for ten years. But when Chris Sharp, then General Manager of the Festival, called John was excited by the opportunity to expand his range. Since that phone call John's done seven years of the festival, each bigger than the last.

John lists his inspirations as all the directors, actors, artists and technicians who are enthusiastic and engaged with their art and have the drive to follow their vision. He makes particular mention of playwright Tom Stoppard "The Sydney Theatre




**“(I am)...the handbag for the fabulous Cassandra who has always worked a foyer better than me and the proud father of two teenage boys who introduced me late in life to sport.”**

Company sent me to pick him up from the Airport when we were doing a new production of Arcadia. His first question was to ask how it was going in the theatre. When I told him we were about to start a technical rehearsal he insisted we went directly to the theatre where he worked until he dropped from jet lag, winning the admiration of all of us and solving each of the script areas we were hung up on. That charming, committed man changed the way I approached my work permanently.”

On the subject of family, John describes himself as “the handbag for the fabulous Cassandra who has always worked a foyer better than me and the proud father of two teenage boys who introduced me late in life to sport.” He identifies the high point of his sporting career as his

management of the under-6 soccer team who made it through the season undefeated despite having to learn all the rules themselves.

Over the course of his career, John's had some amusing moments and he clearly enjoys telling the story of the day he had to give a major French director some bad news about a technical request. "When I arrived for the meeting I was told she was just back from the dentist. The French crew who were setting up onstage burst out laughing. When I asked the translator what had caused the hilarity he said 'They say she has had her teeth sharpened for you.' It turned out to be the truth..."

And advice for people considering a job in the subsidized sector? "Give it a go. You won't be rich, but you might one day get profiled in CX!" 

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If you've been delaying a move to digital because of interface or operational issues, the wait is over. The Yamaha M7CL Digital Mixing Console offers professional digital console performance and features for live sound in a 32- or 48-channel system that can actually be easier to use than a conventional analogue console. It sounds great, too.



## Yamaha Centralogic™

Yamaha's Centralogic interface takes the most direct approach to giving you maximum operational ease and efficiency in a digital console. Rather than trying to simulate the feel and workflow of an analogue mixer, Centralogic goes straight to the heart of the matter, simplifying digital operation to the point where it is actually as intuitive as analogue.



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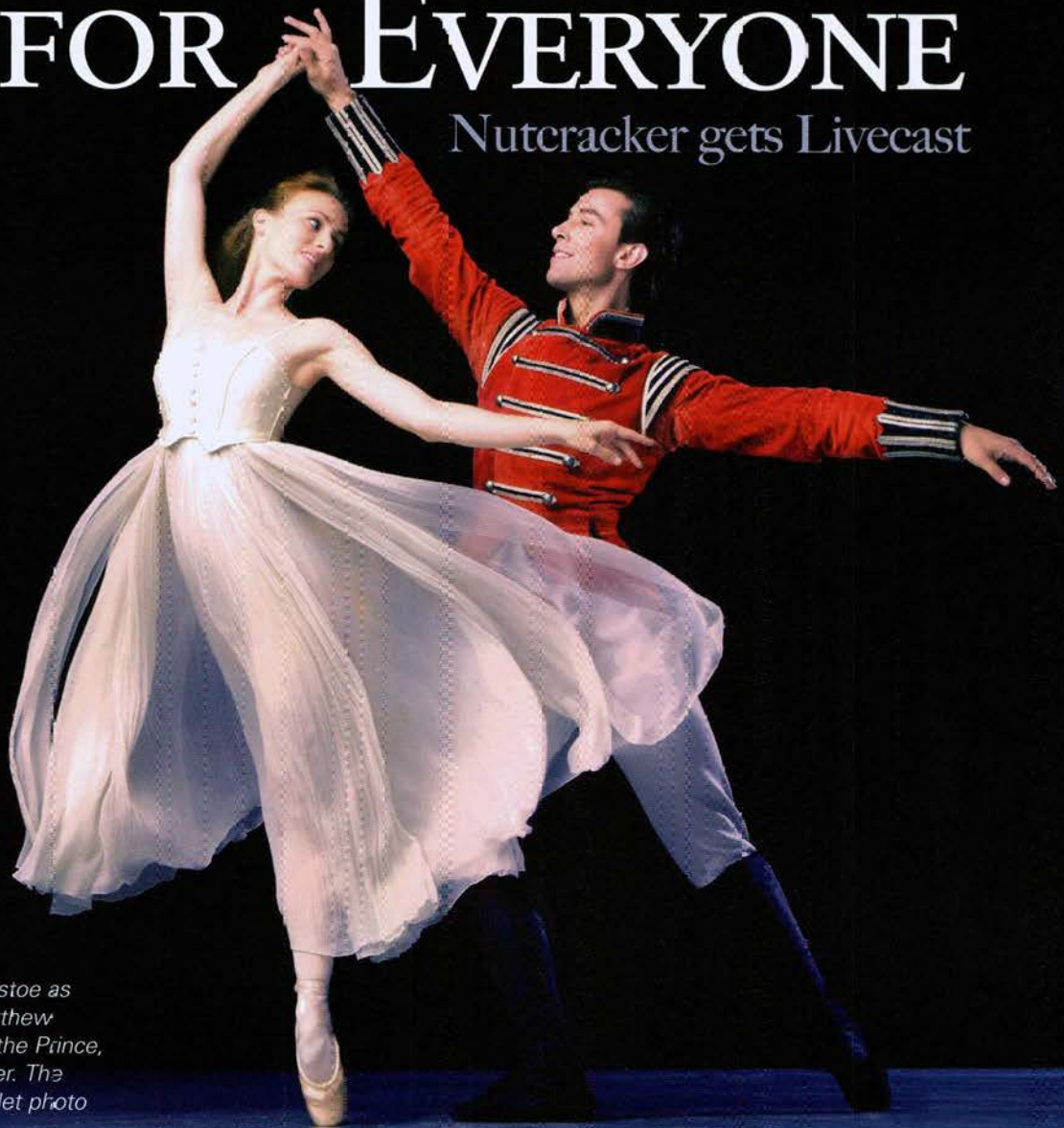
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# BALLET FOR EVERYONE

Nutcracker gets Livecast



*Madeleine Eastoe as Clara and Matthew Lawrence as the Prince, The Nutcracker. The Australian Ballet photo Justin Smith.*

This is a story about an old art form and new technology. It's a story about the blurring line between live and screen, about bringing entertainment to a whole new audience, and about the new model in mass marketing shows. Andy Mackenzie and his team of ballet consultants braved the Sydney storms to sit on the steps and see the future.

## THE CONCEPT...

Is fantastic. All over Australia are people in remote areas with very limited access to live entertainment. Most people in the bush, even if they can afford a ticket, can't afford to drive for a day and a half to buy it and another day and a half for the actual show. Performance companies and major acts, on the other hand, usually can't get outside the major cities – something about the economic viability of the act outnumbering the audience.

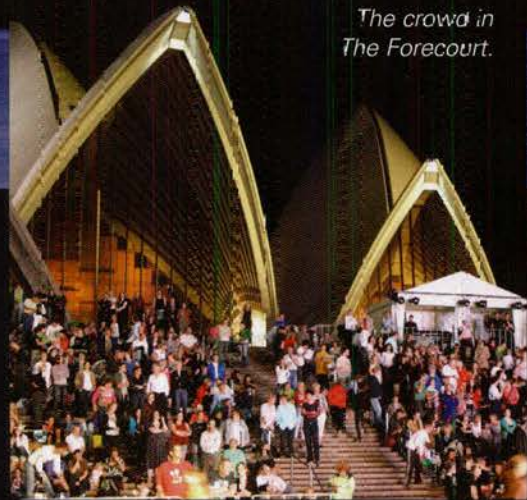
So how do we bring these disparate parties together?

Part of the solution lies in the Australian Film Commission's new Regional Digital Screen Network. The AFC have been instrumental in setting up eight regional cinemas with digital decoders and matching projectors to allow them to show movies from digital format (specifically JPEG2000, for those who care) rather than 35mm prints. The key point behind this is that digital movies are cheaper and easier to duplicate, store and transport and are also far more durable than film – all good points when you're running a cinema a long way from anywhere else.

So, in theory, if we make a recording of a live production and encode it correctly we can send copies to all these regional cinemas and make the people happy. And even if it ended there, it would be a good thing but... there's more. Not only can we send the footage for later viewing, we can have the people in the country watching at the same time as the people in the city, because there are so many satellites orbiting the planet that it's a wonder we can see the sun and they're really good at getting digital code to remote areas in real time.

Here's the plan then: Put a bunch of cameras in the auditorium and mic up for recording. Do a great live audio mix and a similarly brilliant live vision switch, combine the two, encode the result and squirt it up to a satellite. The satellite fires it back down to earth, where it is gathered up, decoded and shown by the RDSN cinemas. What could possibly go wrong?

*The crowd in  
The Forecourt.*



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After the rain - the covers came off, and everything still worked! Pic by Tony David Gray

## THE SHOW

The Australian Ballet's new production of Tchaikovsky's Nutcracker has been getting great reviews, and I'm happy to be able to report that fact. Given my renowned expertise in the world of ballet I won't insult the company by venturing to critique their performance, but I took my team of expert consultants with me (wife, mother-in-law and Offspring) and they all agreed with the people from the papers.

I do feel qualified to comment on the production side of things, and everything I have to say is positive. The set, lighting and costume design are all beautiful and the show has a fantastic visual impact. The use of traditional theatrical techniques like flying sets in and out adds to the 'real production' feel of the show – and it's all done so smoothly and neatly. Big, big ticks all round.

One of the few negative points resulting from the marriage of stage and screen is that the techniques of the screen (close-ups etc) don't always gel with the conventions of the stage. Makeup is one obvious example. In the ballet, as in any other

live theatrical performance, makeup is intended to exaggerate facial features and expressions to make them more accessible to the audience in the auditorium. Zoom in close and the makeup starts to look a little clunky and obvious. Similarly because the lighting is designed to allow for the needs of a live audience, the contrast sometimes comes over a bit strong on screen. One newspaper review the following day commented on screen noise in some of the darker passages but that's the price you pay for the extra gain the cameras need to work with low light conditions – and there's no way to get more light without compromising the live audience experience.

There's no obvious remedy for this – light the show and do the makeup to suit the camera, the live audience would suffer. Trying to compromise and meet somewhere in the middle could result in everyone losing something of the show. My gut tells me that we should stay true to the live audience and not try to make the show into something it's not, and I suspect that most of the audiences around the country would agree with me. If you were doing the same kind of thing with a concert or a typical

musical these would be much less significant issues – they tend to be more brightly lit and use more subtle stage artifice.

## THE EXTRA STUFF

Using this kind of distribution also gives an opportunity to deliver additional stuff to the screen audience. On Friday we were treated to various pre-recorded packages including the show in rehearsal, interviews with the principals and the conductor and so on, as well as live crosses to backstage and to the Orana Cinemas in Albany, WA who were screening the same stuff at the same time. This provided pre-show and interval entertainment and gave the show a real feeling of immediacy.

Another great extra was the cunning decision to delay the telecast – not much, just five minutes – to allow the principals time to take their curtain calls inside before scurrying out to endure a whole more adulation from the crowd in the Forecourt. I'm pretty sure this almost popped the brains of a number of the kids watching. While this only works for the audience right out the front of the venue, it brings the feeling of involvement to the other screen watchers in the other states.

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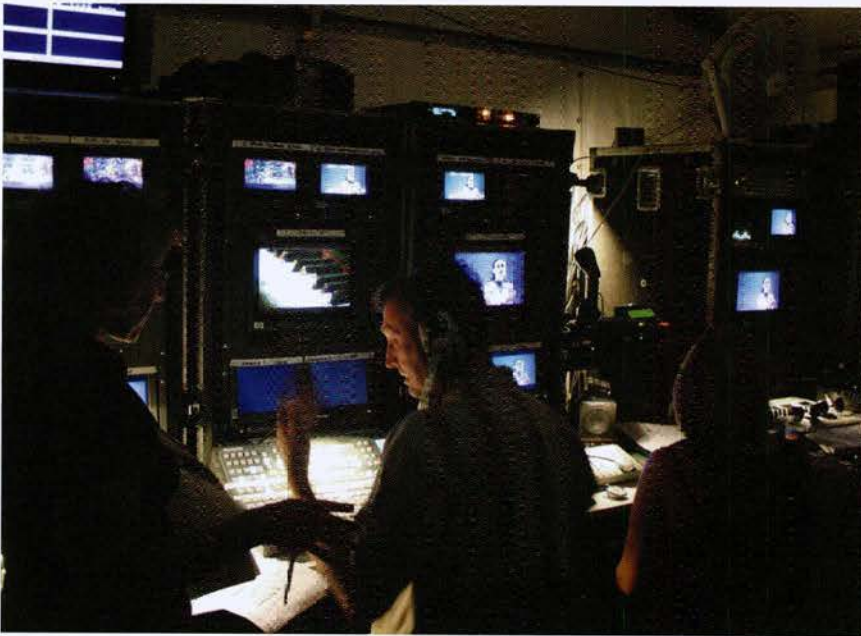
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All go for Dennis Murphy et visic: Control.



Backstage vision switching position.



Innovative microphone techniques no. 1 - Ribbon mic under a chair for the french horns.

### THE EXECUTION

Was brilliant, and my respect for all the people involved is only increased by the fact that an hour and a half before posted starting time it was raining so hard that the old guy up the road was building a boat and getting animals. Somehow the crew managed to keep everything working and get the show up anyway – okay, it was a little late but that was only because the first horn player got stuck in traffic, abandoned his car and arrived on foot and out of breath.

Cortingency planning was a critical part of the preparat on for this event, and every time I asked anyone a question starting with “So what

happens if...” the response began with a reference to some kind of redundant link. Some sections of the audio system were covered by as many as three additional links, and to the best of my knowledge none of them failed.

One of the important points about making this work was complete separation between the live production and the production for screens. Inside the Opera Theatre, it was business as usual with the exception that a select few people in the audience had TV cameras. The lighting and audio in the theatre operated exactly as they will do throughout the run of the show, allowing the live audience to enjoy the show unhindered by the goings-on around them. Getting audio and vision to the outside world was the tricky bit...

### AUDIO

Audio was managed by Tony David Cray, head of the SOH recording facility, and was a fairly complex business, even by the standards of someone used to mixing orchestral works. The shape of the orchestra pit in the Opera Theatre presents the first challenge for anyone trying to get audio out of it – it’s a deep, deep pit, filling almost the entire space under the stage, and its construction makes it impractical to lay the orchestra out in a conventional manner. This results in the brass and woodwinds being off to one side of the pit, rather than in the centre, changing the acoustic balance of the space.

Tony started by putting in mics for each section and a couple of more directional mics to pick up the leaders of each section. This allowed him enough control over the mix without the loss of cohesion that can result from close micing everything. There were a couple of innovative techniques in his mic setup, including a boundary mic on the floor for double bass and a side address ribbon under a chair for French Horn, that may seem odd to the casual observer but got the sound he wanted from a complex acoustic environment. Kids take note: Just because no-one else does it a particular way doesn’t mean you can’t try it. These mics were completely separate from those used for reinforcement in the theatre, since the requirements were different.

All the mics were connected up to

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### Katherine Cinemas 3

Katherine, Northern Territory

### Cinema Augusta

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### Majestic Cinemas

Singleton, New South Wales

### Forum 6 Cinemas

Wagga Wagga, New South Wales

### Regent Theatre

Yarram, Victoria

one of the many Euphonix mobile racks that populate the House and thence fibre-linked back to the Euphonix Series 5 console in the recording studio. This is where the mix for the satellite transmission and the Forecourt was done. Tony explained to me that to meet the expectations of a screen audience, "We're making this big – we're aiming for it to come across like a film score". This involved a stereo mix that could be tied into the satellite transmission as well as the 'four point none' surround mix for the audience on the steps. Stereo was the chosen format for the transmission because while the satellite link can support surround encoding, some of the regional cinemas are equipped slightly differently from others and stereo

was seen as a safe option that would work for everyone.

The 'four point none' surround system in The Forecourt is a very clever idea to deal with putting together a mix for an audience spread across a wide, shallow area. The main stereo mix is sent to the Meyer arrays either side of the screen and also sent to a Pro Tools convolution reverb. For those unfamiliar with convolution reverbs, the idea is that you sample the impulse response of a particular space and the reverb engine processes this into an algorithm that can be used to emulate that specific environment – much more sophisticated, subtle, tuneable (and of course DSP hungry) than conventional reverbs.

For this particular event the impulse response of the Concert Hall was used with a slight reduction in 'size' to equate to the smaller space of the Opera Theatre. The output from the convolution reverb was the only thing sent to the surround arrays. It may not sound like it would make much difference but it does. The stereo mix opens up and really creates a sense of space without any loss of clarity or intelligibility – and when I went a-walking, I found that it works for every seat. In order to effectively mix for this arrangement, the monitors in the studio were reconfigured to positions approximating those of the Forecourt arrays.

Attention to detail was the hallmark of the audio on this production, and showed in every aspect of how it sounded. The stereo mix didn't place the instruments as they are laid out in the pit – instead everything sounded like it was where you would expect to find it in a conventional set up. The audience mics were up when they should have been, and not when they shouldn't. The orchestra mics got turned down at the right times to avoid the sounds of muttering and paper shuffling that are invariably produced by an orchestra between pieces. The mix was dynamic, as all good mixes should be, changing as required with the light and shade of the score. There were even mics set up to capture the sound of feet on the stage – but only when it was wanted. When the rats and soldiers were thumping about you could hear every footfall, but the various fairies still floated silently like...well, like fairies, I guess.

The goal was to produce audio



Sunset screening on Sydney Harbour. An idyllic afternoon for the ballet fans.  
Pic by Tony David Cray.



Tony David Cray - self portrait.



Fuzzy talkback mic won't damage the console surface. Nice 'des.

suiting to a film score and in my opinion that was not merely achieved, but exceeded. The amount of planning, rehearsal, preparation and sheer dedication to the quest for a perfect outcome paid off bigtime.

## VISION

Vision was supplied and operated by Big Picture Australia who provided 8 cameras, two control systems, a dirty great big LED screen and a host of people to make it all go. They had to interface with the satellite and audio people and deal with the complexities of combining the live hosting material with playback and the (slightly) delayed livecast from inside the House.

In the Opera Theatre, there were five cameras with operators along with a remote camera in the orchestra pit. The operator at vision control has the ability to pan, tilt, zoom and focus the remote, which allows it to be put into environments where a camera operator may be impractical or simply unwelcome (probably both in this case). This collection of source material went back to a portable OB set up in a little corner backstage, affording director Simon Francis and his assistant Madeline Holder CCU and switching control. All the content from the Opera Theatre was switched at this point before being sent as SDI via the installed fibre optic links to the Forecourt control position.

The portable OB system lives in a collection of quite substantial racks but has significant advantages over an OB truck – it can get into places that a truck can't, and the crew don't have to run cables thousands of miles to get to whatever remote location the truck's ended up in. From the brief look I had I also suspect that the system is scalable and that bigger shoots would simply mean the addition of one or more racks.

Out on the Forecourt Dennis Murphy, along with producer Janine Cooper and Jenny Walters from the Australian Ballet, was ensconced in a nice white tent with yet more control racks. As the vision director for the fully packaged show, Dennis managed inputs from two cameras (one for Gretel Killeen's live hosting and one for crowd shots), playback and the satellite downlink connecting Sydney with Albany as well as the

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**DAMAGE**

SDI feed from the team inside.

The audio and video signals from inside were delayed 5 minutes using an EVS system, not for any technical reasons, but simply to allow the big finish with the principals appearing live on the stage on The Forecourt. This meant that the event planning was crucial as the delayed signal had to mesh correctly with the additional content, both live and pre-recorded.

From this control position, the whole show was put together and fed to the screen and to the satellite truck supplied by Global Vision. In addition the Big Picture team generated the audio mix minus necessary to make communication between the location hosts backstage, in The Forecourt and at Orana Cinema possible.

The screen was big. Really big, given the environment it was being used in. When Opera Australia did a similar thing in The Forecourt earlier in the year, Big Picture supplied a screen 8 metres wide. For this one, the screen was 12 by 9 Lighthouse R16 panels, for a whopping 12 metres wide by 6 metres high – as close as you could reasonably expect to get to the 16:9 format going out on the satellite feed. While the screen size may sound excessive, it wasn't in practice. Because of the nature of ballet as a performance, there are less close-ups and mid shots than you would expect in other theatrical forms and using a smaller screen makes the performers too small to be easily watchable.

## THE WEATHER

As mentioned previously, about two hours before the show the heavens opened and unceremoniously dumped about six weeks worth of rain in about forty minutes. Throughout the downpour, the vision and audio crews on the Forecourt sat huddled in their little tents hoping that: (a) the bloody weather would go away, and (b) everything would still work afterwards. It is safe to assume that the satellite guys were thinking similar dark thoughts with particular reference to trying to make a link through the middle of an electrical storm.

Amazingly, the bloody weather did go away, everything did still work and the satellite link was a success. The only noticeable ill effect after the rain was a little bit of hum appearing

## SYDNEY OPERA HOUSE CREW

### NUTCRACKER LIVE SITE

**Technical Producer:** Tony David Cray

**Recording Engineers:** Jason Blackwell, Tod Deeley

**Technical Support Supervisor:** Bruce Cook

**Technical Support:** Cameron O'Neill, Anthony Lorraine, Joe Monteverde

**Forecourt Stage Managers:** Sara Peterson, Maree Kanowski

**Forecourt Sound Supervisor:** Richard Fenton

**Forecourt Sound:** Jeremy Christian, Julian Hewitt, Jeff Hardge, Jan Rosenthal, Steve McMillan

**Forecourt Lighting Supervisor:** Chris Venn

**Forecourt Lighting:** Marco Del Vento, James Jablonski

**Forecourt Staging Supervisor:** Adam Crome

**Production Management:** Trevor Ahern, Sara Holt, Kathryn Hindley

### THE NUTCRACKER

**Opera Theatre Sound Supervisor:** Tim Austin

**Opera Theatre Lighting Supervisor:** Rod MacKenzie

**Opera Theatre Lighting:** Paul Najor, Graham Buck, Ange Sullivan, Oscar Meek, Lindsay Williams, Danielle Williams

**Opera Theatre Staging Supervisors:** James Minogue, Mark McLeod, John Lavery, Tom Cole

**Opera Theatre Staging:** Anthony Arnold, Tony Paterson, John Campiao, David Orbach, John P Lewis, Will Gregory, Simon Wheatly, Jiri Hemzal, Alan Alderson, Sean McLeod, Adam Paine, Lou Rosicky, Andrew Shanley, Sophie Westgarth, Dean Pearson, David Williams, Rick Wright, Simon Ridgeon, Barnaby Hallam, Brendan Taylor

## BIG PICTURE CREW

### FORECOURT

**Director:** Dennis Murphy

**Technical Director:** Matt Dorn

**CCU Operator:** Mark Thrasher

**Camera Operators:** Jason Holland, Gideon Jennings

**LED Technicians:** Fob Nelson, Peter Edwards

## OPERA THEATRE

**Technical Director:** Steve Thompson

**CCU Operator:** Dane Liepins

**Camera Operators:** Bob Frankel, Mark Walkden, Paul O'Loughlin, Ross McLoughlin

**Transport:** Darren Brain

intermittently on the screen, but it had the look of being one of those problems that appears for no reason and goes away as soon as you try to find its cause. In the time frame available and the prevailing conditions, it would have been nothing short of idiocy to go looking for the problem – it was dark, everything was wet, the show had started before the problem appeared and any kind of messing about could have opened up a whole new world of awfulness. Sometimes, you just have to put up with it.

## THE EXPERIENCE

It was a very different way to see a live show, and it felt different. There's something primal, something visceral, some deep human connection that happens in live theatre and I don't know if there will ever be a way to capture that and bring it out on screen. On the other

hand, we got a whole lot of stuff that the people in the theatre didn't get in terms of the additional material, the pre-show and interval packages and so on.

Certainly the audience as a whole responded really well to the whole thing – I did a quick informal poll of some people on the way out of the show and no-one was being negative despite having damp bums from sitting on the steps. On the contrary, many people were excited by having been to see something that they otherwise may have been unable to see, and this has been echoed by people attending the regional screenings.

And next time I see something like this coming up...you better believe I'll be there. Maybe it's not the same as being in the theatre, but that doesn't make it bad – just a different way of experiencing something great.



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SOUND TIPS

Julius shares 50 great live audio tips to make you a better sound dude or dudette... By JULIUS GRAFTON

## SWEET SPOT

Sitting in the sweet spot without having walked around to hear the differences is not helpful. Proper engineers know the differences in a venue – some seats get sound radically different to others.

## RUMBLING BASS

Getting enough low frequency info is important, but if the lows are rumbling and sustaining everywhere then get some EQ to work and tighten it all up. Feeding subs from an auxiliary can help because you can take the low frequencies out of the main PA if necessary.

## CHANGE OF PACE

An up tempo song before a ballad means it is time to change the mix settings. Continuing the mix out of a dance track into a ballad will sound like death by drumkit. Take the cue from the difference in style from the musicians, and get the drums back and the harmonies up.

## REVERB THE CHORUS

With an ensemble of more than 2 voices, leave the reverb off the lead vocalist. Thickening the harmonies without the main voice adds texture and interest.

## STEREO THE MIX

Make slight left and right bias to stereo instruments and drums. It adds interest and depth to the mix.

## DON'T MIX IT IN

When it's AC/DC and the guitars hit the sound desk at 120dB, do you really need them in the mix at all? Try listening to the band with just vocals first, then mix in what appears to be required. Don't start with balls to the wall – there's no where else to go.

## DO MIX IT OUT

If the brass sounds bad, take it out! If you don't have something in the mix, consider reducing the input gain hard left, so you can still show some fader level for when the girlfriend glances over your shoulder. They will bust you if their loved one has no fader action.....

## DO MIC IT UP

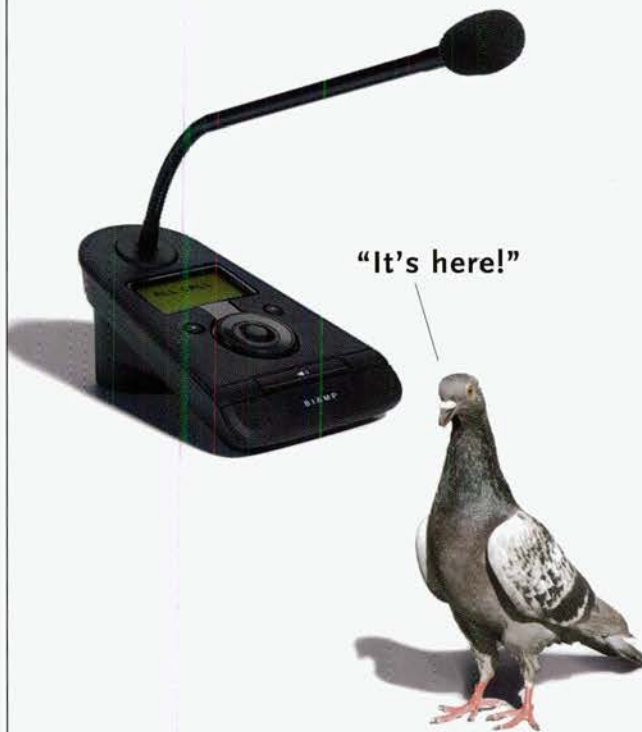
Even when you KNOW you'll not be mixing any guitar into tonight's show, put a mic and stand on there. That gives you ammo when you politely tell the guitarist to turn down. If they THINK it's in the mix, they just MIGHT listen to you!

## WHERE THE GIRLFRIEND SITS

Best seats: at the mixing console.

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Worst: in those free seats the promoter releases at the last minute up on the side of the venue. Remember that girlfriend / friend comments to the band will often be taken more seriously than they should be.

### FEEL IS EVERYTHING

Consider the nature of the set and unless the band is 100% thrash, put some light and shade into the mix. The best engineers have a strategy for every song. You need to take the audience with you, and be sympathetic to the bands intended 'produced' sound.

### MAKE SMALL TALK

Always engage each band member in some kind of communication each day. They need to feel they can communicate with you. Many engineers exist wholly because their musicians need a familiar face out there, less so that you are actually good at mixing.

### TRY TURNING IT DOWN

Far too many shows, large and small, occupy the 90/10 zone. This is where the system will run to 90%, so the engineer puts it there. Get it right and then turn it down. Do it.

### PLAN THE SYSTEM

It may appear to be too much trouble or extra cost to put some delay speakers into a venue. But wow – what a difference. JAS did it with V-Dosc for Powderchair at Acer Arena and the difference was really worthwhile.

### SQUASH THE PEAKS

If you don't have enough insert compressors, then put a stereo limiter over the left/right main outputs and set a 4:1 limit so that the shouting is contained. If the subs run out of an auxiliary output, all the better – the low end won't trigger the limiter.

### WORKLIGHTS

Always have them in place early in setup, and at the amp racks. The lighties will kill the house lights just when you need to repatch. A head torch (like miners wear) is a great accessory; I wear mine on my belt, readily at hand.

### ALTERNATE POWER

Have a separate supply on the same earth point scoped out for when it is needed. And have the circuit breakers and earth leakage

breakers you're using now identified clearly for when they pop.

### THREE MICROPHONES

Line up your vocal microphones and see if any are wildly different in gain and EQ. If so, you may have a bad cable with an intermittent balanced line. If you need to push up the input gain, consider that the problem may ignite a massive blast of extra gain when you least desire it.

### THE AMP IS AT 100%

Power amplifiers have no preamp, they are designed to be used with the volume control is fully clockwise. A V8 engine should run on 8 cylinders. Only reduce gain here where absolutely necessary, otherwise you're pushing noise.

### UNITY IS UNITY

The 0 dB or Unity position on a fader or volume control is the desired place to set the thing. Boosting output gain on – say – a system limiter, will boost noise. System noise is annoying to audiences and ultimately a waste of headroom.

### HEADROOM IS EVERYTHING

Running a system into hard limiting sounds terrible as some peak limiters operate very crudely. Overloading an amplifier will cause damage to the speakers or burn them out. Cardboard speakers CAN catch fire!

### THINGS DO BREAK

Mixer outputs, amplifiers, outboard, even microphones can all operate but produce bad sound. Compare good with bad and don't accept the bad: replace it.

### TIME MAKES IT GOOD

Always allow enough time to properly test every part of your sound system, otherwise you'll be trouble shooting on the fly.

### MARK IT AS BAD

If something is faulty, for goodness sakes tape it up and write 'faulty' on it. I hate finding the same problem twice.

### CHUCK IT OUT

If you replace a used battery, get rid of it. Nothing is worse than good and bad batteries all mixed together.

### HEADPHONES

How can you find a problem channel or source without headphones? How can you quickly

discern the dud harmony in a new ensemble? I always carry my own. Make sure they are fully enclosed to reduce outside noise.

### MARKER

The permanent marker and white electrical tape – don't leave home without it! Like a torch and a set of headphones. Plus your favourite CD, with which you can better reference different sounding rigs in different rooms.

### JAZZ IS DIFFERENT

Not really: all my advice applies uniformly across all music types. The mission is the same: produce reinforcement of what the musical director intends the act to sound like.

### WHEN ALL ELSE FAILS

Your job is simply to get intelligible vocals to every audience member. No one gets shot for doing that.

### THE WORST THING

Is feedback. It hurts ears and equipment. It hurts reputations too, so keep it to an absolute minimum.

### COKE

Plus anything remotely similar is not to be used. And on the same theme, if it's sweet and fizzy then don't put it anywhere near the equipment. I have a list of fantastic sound engineers who've all managed to spill a drink into a console. I know this, because the console repair guys get \$50 from me for everyone they do in..... [julius@juliusmedia.com](mailto:julius@juliusmedia.com)

### MUTE

Is what you do when it is not in use. Especially if it is wireless and has walked backstage to compare notes with its colleague about how stuffed the audience are, or worse: how the sound person is a gronk.

### POSTFADE

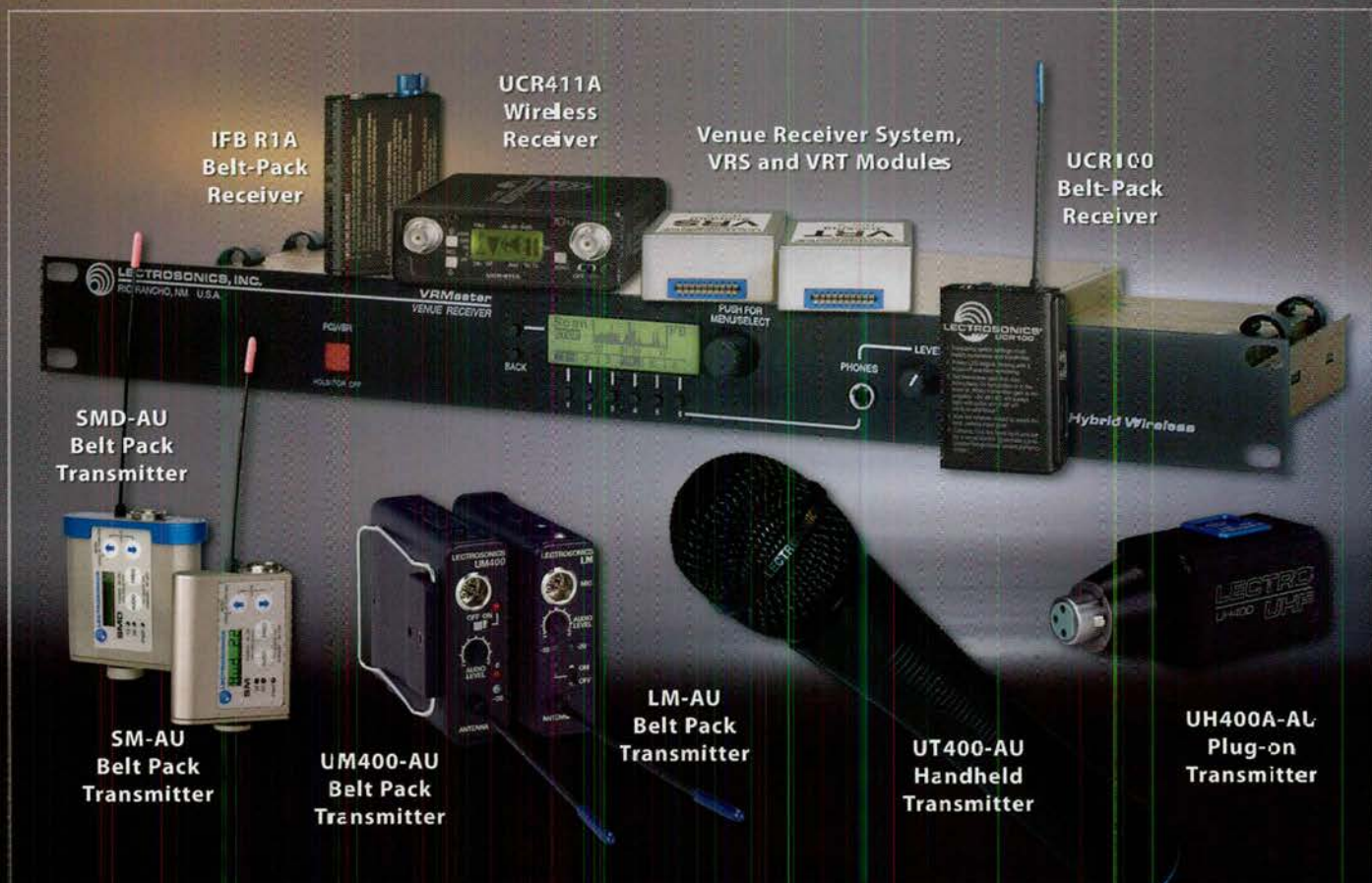
Is the auxiliary send that goes to the subwoofers, because you really don't want it going there when the channel fader is at zero. Hint: if you want to ONLY send the channel to the sub bass, unassign the fader from the mix.

### PREFADE

Is the auxiliary that feeds any stage monitors, because you really DO want it going there irrespective of where the channel is at. And remember the flipping EQ usually affects the auxiliary send too.



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*Beer is what you drink AFTER the show.*

### BEER

Is what you drink after the show. My worst night was at the Capitol Theatre, mixing on a JM7 and missing two cues. Which corresponded with the two empty cans of Fosters sitting on TOP of the effects rack. Very unprofessional. Very 1982.

### SAND

Destroys equipment almost as fast as salt. Approach any beach gig with maximum caution and planning and do not let crew drag wheels through sand! Wind and storms happen more often on the coast as well. Really, be ready for anything there!

### SNOW

Usually comes with great slipperiness and very low temperatures. Most equipment is rated to work between 5 and 40 degrees. Pay attention! Some arctic roads are salted, salt will eat almost anything.

### RAIN

You can do a show in the wet – the dangerous equipment is the stuff that works at 240 volts, like amplifiers and mixers. They MUST be covered! Microphones and smaller speakers don't kill, but you don't want to get them wet if you can help it.

### SUN

It might melt, warp or stop if it is in direct sunlight. Same applies to performers! Amp racks may need

additional external fans – take some anyway. Black metal gets too hot to touch – take gloves.

### WEIGHT

Think about it as you load a truck or container, if all the amps, steel and cable racks are at one end with the light stuff at the other, it'll all fall over some time inconvenient. The airplane load master works hard on all this. So should you.

### ETIQUETTE

If you've been invited aboard the band's vehicle, then their rules rule. If they want to chill, or to rage, they can. Go with the flow, better still: find out in advance what the behavior is so if you need to sleep you can.

### DEBRIEF

Always get backstage about 10 minutes after the musos, and always give them objective comments – not gratuitous crap. They stop listening to crap – they may not like what you tell them, but if it's objective they'll respect you.

### COURTESY

If the bard wants something like a desk CD, make sure they get it or explain why it didn't happen. If they invite someone on stage to jam, accommodate the randomness and never complain.

### RELATIONSHIPS

Watch out for other bands and crew; venue staff; record company

iggers and generally everyone. Treat everyone the same irrespective whether you think your band love or hate them. Never hit on anyone wearing a backstage pass!

### RELATIONSHIPS # 2

Try not to be the chump who the singer or band use to select and fetch audience members for a backstage visit. That's the job of personal security or the tour manager. It comes with too much risk of every kind.

### HI-PASS

Every vocal channel should have the sub-low frequencies shut down using the hi-pass switch. Bass, floor toms, kick and keyboards should very not be hi-passed.

### CHECK

Every speaker individually well before the house come in. Surprises await you if you do not. Also test the system at maximum power for at least 3 minutes, but warn the rest of the crew and the venue first. A full test can reveal major problems.

### POINT

Aim speakers carefully at the audience, not at the back wall. Walk in and out of the coverage pattern to hear how effective the speaker is, on and off axis. Don't be afraid to move things and change things.

### NEGOTIATE

If you encounter a difficult system engineer, take gentle control but do ask them for their suggestions. There are some out there who intimidate others, we are still searching for them and getting rid of them out of the industry. We all exist to serve the audience.

### EXIT THE INDUSTRY

The sad thing is that some people stop getting work and they don't know why. But the rest of us do know why. I find that very depressing. If you are rude, obstructive or difficult then I can happily advise you that your days are numbered.

### GET PAID

For goodness sakes negotiate the fee BEFORE the gig. The value of the service diminishes once given. I think that's called the 'prostitutes' law'? Anyway, agree the fee up front and avoid unhappy times later.



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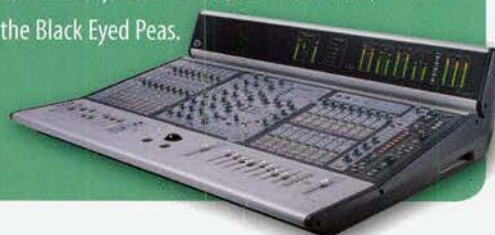
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# PUTTING ON THE RED LIGHT

Roxanne, Message In a Bottle, Invisible Sun, Every Breath You Take, Don't Stand So Close To Me... everyone has a favourite Police song but few fans under 30 would have seen the golden trio perform them live until now.

Mark Cunningham reports on the reunion tour they said would never happen...

Where teenage girls once fainted, men in their forties now weep to the strains of a live soundtrack that could almost be a musical diary of their lost youth. Such is the emotional power of the old guard reunion phenomenon.

Cards on the table... I'm an original Police fan. I saw them perform in a sweaty London club a few months before 'Roxanne' stormed the charts; I saw them a further 12 times before their mid-'80s split, bought every album and single on the day of release, and even pulled pints for the bass player and his milkman brother during a protracted residency in Geordieland. In short, I reckon I'm fully paid up.

The announcement of The Police's reunion resonated with the same measure of excited disbelief that accompanied Pink Floyd's Live 8 miracle, and indeed the news of Led Zep's Ahmet Ertegun tribute at London's O2 Arena. Coming 30 years after the band's formation, the internal bickering and 'artistic differences' have dissipated enough for Sting (56), Stewart Copeland (55) and Andy Summers (a respectable 64) to tread the boards once again for their first full-length tour since 1984.

Age does not appear to have badly affected the band's performance and unique chemistry. Their time apart has given them a greater respect for their back catalogue and the experience that they now bring to the fore has resulted in a more assured authoritative on-stage aura. On some levels, they're even better than they were first time

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around, and that's saying something.

It was in September that I finally caught up with The Police's production team, led by the affable Charlie Hernandez. A stellar CV and positive word of mouth earned Hernandez (Aerosmith, Ozzfest, David Bowie) the role of production director and a seat opposite tour manager William Francis in the production office, where stage manager Dug Wuest also pitches camp.

Initial band rehearsals began in Italy at Sting's 900-acre Tuscan estate, Il Palagio, where The Police prepared for their opening spot at the 49th Grammy Awards in Los Angeles last February. "We then shipped out to Vancouver where we moved between three venues for different aspects of tour rehearsal," explained Hernandez.

"The preparation and logistics came together really well in Vancouver. About a mile away from where the band were rehearsing, we found a disused railway track in the Squamish National Reserve that we used to test-build the Stageco stage. Eventually we were able to bring all the elements together at GM Place for final programming and dress rehearsals, and then play the first show of the tour on May 28."

Hernandez is proud of the supplier choices he made, including Clair Brothers Audio, Screenworks (video), Upstaging (lighting and trucking), Tait Towers (set construction), Stageco (staging), Mojo Barriers (barricade), Hemphill (bussing), Rock-It Cargo

(freight) and CAT Entertainment Services which supplies power for each show, worldwide.

In Europe, Transam and Beat The Street handle the trucking and bussing respectively, Clair's Swiss office Audio Rent provided the PA, and Neg Earth assisted Upstaging in replicating the lighting specification identically with regional stock.

Said Hernandez: "The Police were one of the first bands to play everywhere and anywhere, including some of the most exotic places in the world. This time round, in designing the show, we didn't want to restrict that capability."

"It's important to us that the kids in Giants Stadium, Twickenham, Paris and Rio see the same show. Therefore, we're using 'gold standard' vendors who have a global network that can replicate the design without compromise. That's key to the whole thing."

Some suppliers, such as Stageco, were automatic choices for Hernandez, also credited as set consultant. "We worked with Tom Bilsen and Hecwig de Meyer from Stageco's Belgian HQ and Marylou Figley at their US office. Their technology, their application of structural design, rapid deployment, work ethic and level of support is without rival. I can't say enough about those guys."

Hernandez hesitated, smiled and commented that he didn't intend this interview to become a commercial for the staging specialists. Nevertheless... "I always use them

whenever I can and somehow they always seem to top their previous project."

Stageco is involved on all outdoor shows, which account for around 50% of the world tour. The system is the firm's Classic 4 Tower Roof with a few adaptations. While the standard version comes with a 20m x 27m performance area, The Police needed 22 metres of width. "The 20m version meant the rigging would be too wide; the 25m version could not take the required rigging loads, but they wanted a larger area than the 20m offered, so it was a compromise," said Tom Bilsen. "We created a new skin for the roof, with new trusses, and have built two systems for the USA with three for Europe, with possibly another two to be added."

Hernandez commented: "The Police have such a long history with a lot of the chosen companies and there's always been a sense of family and loyalty, so they were very happy to maintain these relationships. We've created a very comfortable 'bubble' for the band — a calm and productive environment that, regardless of any exterior variables, remains consistent for the time they spend in each venue."

Even though some former production vendors were invited back to party with the legendary trio, very few crew members from the original Police touring days — other than the backbone stalwarts — remain for the reunion. The absence from the entourage of LD Nick Sholem was

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particularly eyebrow-raising. Sholem, who designed and piloted the band's lighting from 1980 until the split, did not even receive a courtesy call let alone an offer, which suggests that the 'sense of family' didn't extend to all corners.

"That was prior to my involvement with the project and I'm not sure what the story is there," Hernandez advised.

With the Stones, Genesis and Live Earth already contributing to one of his busiest rock'n'roll touring years in recent memory, Patrick Woodroffe miraculously still had time to take up where Sholem left off two decades ago, and work with regular assistant Adam Bassett and lighting director/programmer Danny Nolan to create a stunning show for The Police.

"This has been an interesting project," Woodroffe told me. "They approached me in late February/early March which was fairly late in the planning stages. I was told that they didn't see themselves touring with a huge, complicated production; they wanted to keep it simple and fluid."

"But as soon as I spent some time with them I realised that they did want a great show, with lighting and scenery that reflected this time in their career. That took a little getting to because it had been so long since they last worked together; they all

had different preconceptions about what they were after. In the end, the result was pretty successful."

asked Woodroffe whether there was a big temptation to design a retro-styled show. "It was a question of balance, really," he replied. "I very much wanted to present them as a band in the 21st century as opposed to simply resting on their '70s and '80s laurels. On the other hand, it would be foolish to think that they were doing anything other than getting back together again and playing all of these great songs."

"I think we got it right. The oval stage set [featuring a custom 70' x 40' Tomcat oval truss] is very simple with an elegance that reflects where they're at. We did refer to some of the older looks they had back then with a lot of white light and what was in effect a modern day version of a truss with PAR cans on it. But we also had some highly choreographed lighting with the latest fixtures on board, and I think the mix of the two approaches works very well."

Woodroffe gained an appreciation of the band's current mindset when he visited them during the Italian rehearsals, and then met up with Danny Nolan at Upstaging's base in Chicago. "Upstaging rigged a mock-up of the stage set and set up the lighting system in their facility, and we spent a great five or six days

where we were able to clearly plot the show using the set list we were given. There were only two or three days of production rehearsals in Vancouver for Danny to complete his work, so it was good that we organised everything ahead of time."

## LIGHTING KIT

Interestingly, many of the lighting fixture choices were also featured in Woodroffe's design for Genesis. Brazil-based Brit, Danny Nolan explained "The LittleBigs 3.5 Xenons are our main instrument for the strobing searchlight effects across the audience. For profiles we have two different types — the Robe ColorSpot 2500E ATs for the strong beam and gobo effects around the oval and on the moving trusses; and the smaller Martin MAC 700s which fill in the holes and sit on ribbon lifts that go up and down at the back of the stage."

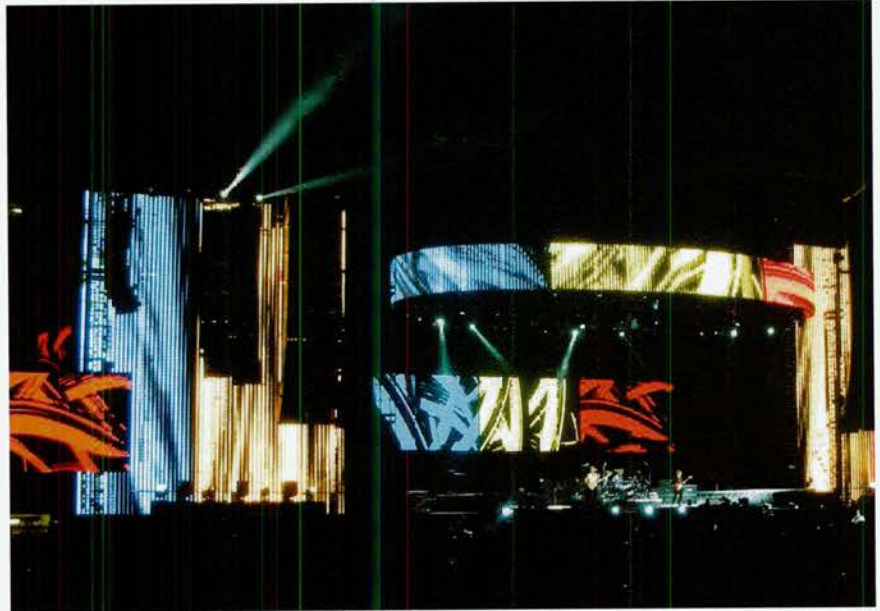
Moving to the wash lights, Nolan has MAC 2000s for additional audience lighting and Coemar Infinity Wash XLs. "The 2000 has a great zoom from wash to tight spot and the best amber from any 2K wash light. I also really like the Coemars — they're a great, bright wash light with three very nice beam effects which we use. We have over 50 of those for the outdoor shows, and we also have MAC 250s which we use for

architectural purposes around the front of the stage. They are nice, compact lights which look very good in this application.

"Being as we wanted to bring in some '70s/'80s reference, we also relied on some older effects such as the [Mole-Richardson] Maxi 12s and Mini Brutes which open the show with lots of white tungsten light. Added to these we have three 5kW beam projectors, one for each band member, which appear halfway through the show for a cameo retro look."

Other fixtures in the spec include Martin Atomic 3000 strobes, High End DL.2 projectors, PixelPars and Omni Floods.

MA Lighting is one of the tour's sponsors and the company's support of the grandMA lighting consoles has been greatly appreciated by Nolan. "The operation of the grandMA has been solid as a rock and that's why we chose it. MA's Daniel Ridano came to rehearsals to assist with programming and set-up, and including back-ups we have two grandMA full-size consoles, four MA mediaPCs running grandMA video software and five MA NSPs.



"We also have this great, high speed data network [MA-Net] that's all run through fibre optics from the desk to both sides of the stage. I think it was a step forward for Upstaging who embraced our ideas from the very beginning and have also done a fantastic job."

Nolan produced some of the video graphics himself at home in Brazil.

These graphics are cue'd from the MA and feed the lo-res side screens, a circle containing 250 2m hi-def Element Labs VersaTubes above the stage and the three Toshiba 10mm HD LED screens behind the band.

Said Nolan: "I'd worked a lot with content from media servers before and what we tried to do with this was not be too specific, but instead



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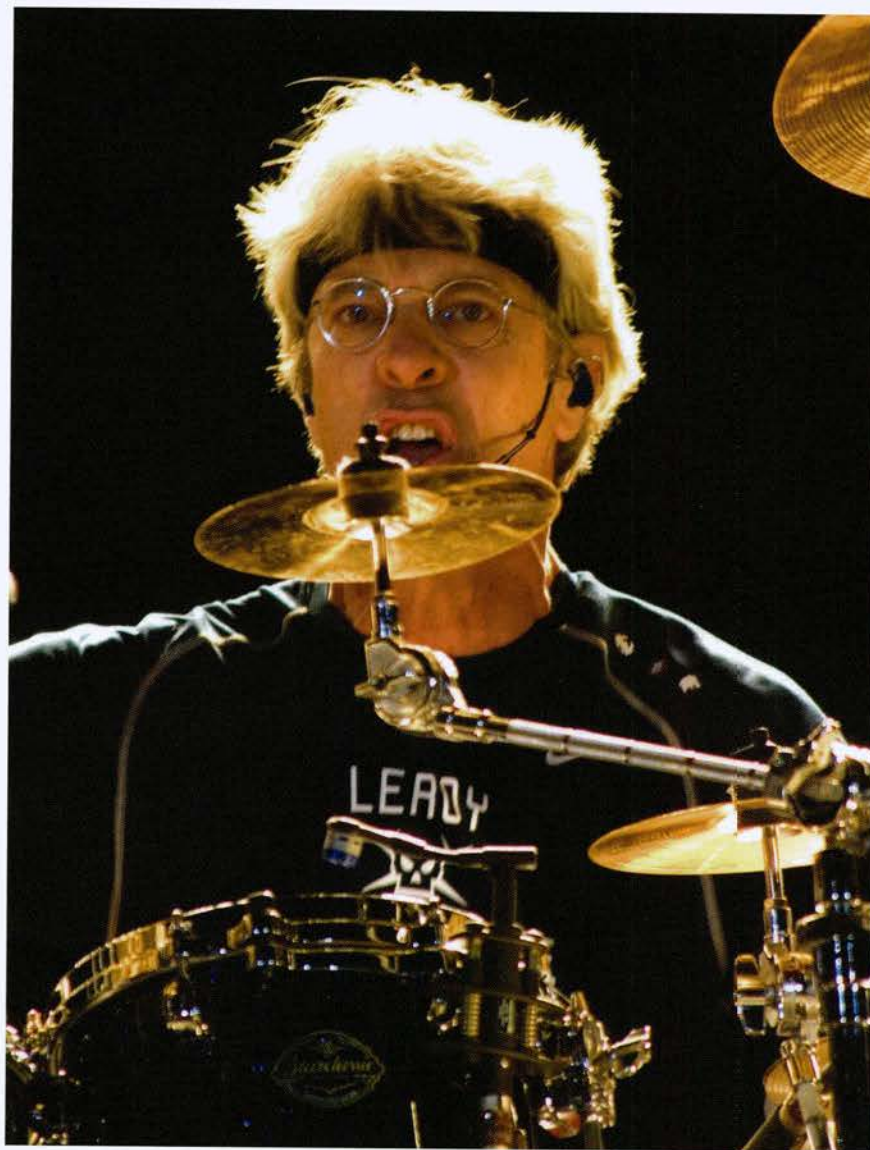
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use lots of paint effects, patterns and textures — some retro, some edgy, some modern — and on the outdoor shows it's a lot more effective.

"Kevin Williams [video director] and I worked on these aspects from the start and it's been a good, complementary partnership. Lighting via media servers has invaded the video world in many respects, but Kevin and I have a great respect for each other's work, and I hope it shows in the results."

## SCREENS WORK

Kevin Williams did a five-week stint for Screenworks as Eric Clapton's touring video director immediately before heading out with The Police in the same role. How did he get involved? "I recently got married to an American girl and moved out to California," he told us, "and the Police job came from Charlie Hernandez through Screenworks, who are a great bunch of people."

The video production combines live camera with keyed or full-frame graphics that have been generated in HD and stored on Doremi Nugget MPEG2 HD servers, plus other graphics cued from within the grandMA lighting control system.

As Nolan explained, most of the video graphics are abstract and the main package, created by Jim Gable, Sting's video director of the last 12 years, kicks in from the second number — 'Synchronicity II' — with a punkish explosion of ripped colour.

Williams cuts the show from a Ross Synergy 2.5 MDX console, mixing the graphics with live images captured by seven manned cameras and four remote-controlled Sony robotic cameras located around the stage.

Toshiba 10mm LED panels form the main and side hi-res screens; there are two additional 48' x 40' custom Screenworks lo-res screens behind the PA and the VersaTubes

exist at the front of the stage for lighting. Said Williams: "During the indoor shows, the screens that are on stage normally go above the VersaTubes, but for the bigger outdoor ones, they're behind the band.

"The lighting department controls the lo-res visuals. We take their feed into our system, convert it and upgrade it to HD, then put it out there when needed."

Williams continued: "We do four wide cuts during the show. Initially the concept was to have one band member on each screen but it looked too static so we now cut the screens as if they are four different programs. Grit (Greg) Frederick, our crew chief, cuts that fourth element, which is on the side screens.

"Jim 'Coach' Malone is our very experienced engineer who makes the cameras look great every night, then there's myself and Krystena Lee Rice who look after the dolly camera at the front, Scott Lutton who does the hand-held on stage, Arnold Simmons and Lucas Thrasher on the front of house cameras, and 'Chalky' who does the 'slash' camera amongst the seating."

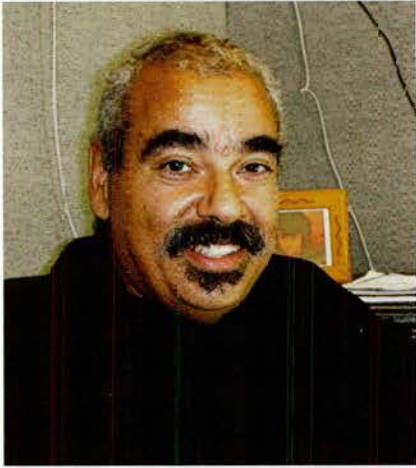
A little creativity is applied to the live images. As well as full colour, some songs have monochrome camera feeds, while others are blue, possibly to match the 1979 Regatta De Blanc album cover. A VT sequence of stills is yet another part of the mix, specially-made for the moody classic 'Invisible Sun'.

## AN ANALOGUE ONLY ZONE

"They play, I mix," was Mike Keating's response when I asked him about the approach to the FOH engineering job. It was at that point where I anticipated one of 'those' difficult interviews but I couldn't have been more wrong.

A formidable bear of a man, Mike Keating has been at the FOH sound controls for Sting since the bassist's early solo career. When Sting would peel off the occasional Police classic, did Keating ever wonder what it might have been like to have had a crack at his old band. "Oh sure. Absolutely! Often!"

Has the reunion lived up to Keating's expectations? "Musically, in some ways, although that's an unfair question. To consign this band to the past, Sting had to pay the best musicians he could find to be his



Production team leader Charlie Hernandez.

sidemen, and now he's back with these guys who are great in their own right. The question is, how does Sting feel about it?

"At the moment I don't know if this'll be the last tour Sting does with these guys or if he can't wait to do another one. But they're all getting on great and it's a special place to be. I'm having lots of fun and I have the best PA on the road."

The PA is Clair Brothers' JBL-loaded i4 line array system in a



FOH engineer Mike Keating.

combination that matches around 80 i4 cabinets with 74 old-school S4 sub-low enclosures when on stadium duty. "Normally, the i4 system comes with the i4B sub, although I wanted the old S4 sound which has a more rounded bottom end that I really love, especially when Sting puts his foot down on his Moog Taurus bass pedals! The system doesn't have the articulation of a line array but put the two elements together and you have the best of both worlds."



Kevin Williams, tour video director.

The bottom end of the PA is powered by QSC amplification, the mids and highs are driven by Crest, and the entire system is processed by Clair (Lake) iOs.

If there's one subject guaranteed to get Keating hot under the collar, it's digital mixing consoles. He hates the concept, plain and simple. "I am never gonna use one out of choice. Of course, I'm occasionally faced with them at festivals, but they're just not user-friendly or fast enough,



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Monitor mixer Ian Newton.



Lighting designer Patrick Woodroffe.

and you can hardly see what's going on with the screen displays when it's bright. Any time my PC crashes or locks up, I'm THAT much further away from using a digital desk. I wouldn't trust one further than I could throw one!"

Keating's antidote is a totally analogue Yamaha PM5000. "I love the Midas XL4 and Heritages; I haven't seen much of the XL8, but as a Clair Brothers employee of many years, if I have a console that works perfectly every time we load in, I don't see the sense in telling Clairs that they need to buy me an XL8. We'll leave that to all the independent engineers to demand the latest and greatest. For me, the PM5000 is more than fine."

The band line-up suggests he

doesn't have many inputs. Wrong. "The desk is full: 65 inputs!," laughs Keating. "There's a lot of percussion along with some percussion backing tracks on things like 'Walking On The Moon', plus a full complement of outboard processors with Lexicons for days."

Keating's favoured limiter is the Empirical Labs EL-8 Distressor of which he has five, using them on the bass guitar and bass drum amongst other applications.

Another favourite is TC-Helicon's 'intelligent harmonizer', VoiceWorks. "It turns one voice into as many as four, male or female. You have to program the key of the song into it as well as where you want it in the mix. You hear it working as a harmony effect in 'Can't Stand Losing You',

'Invisible Sun' and 'De Do Da Da'."

Sennheiser e865 condenser mics are on all the vocals, with Copeland taking a headset option. "The prototype was initially developed for Sting and it gives us a rich, natural sound," said Keating. Other mics include a Shure Beta52 on Stewart's bass drum, a Neumann KM 184 on bottom snare, hi-hats, cymbals and various percussion, an SM57 on top snare, Beyer Opus 87s and 88s on the toms, Sennheiser 421s on timpani, and Audio-Technica AT4050s on drum overheads and guitar cabinets.

Returning to my almost damning opening question, Keating finally answered: "The big difficulty here is that you have three guys on stage and if anybody screws up there's nowhere to hide it, plus you can't really lose somebody in the mix, so the concentration factor is pretty high. This is a rock show and the audiences want to hear it like it was back in the '70s and '80s, so the closer we can get to that, the better."

## MONITOR WORLD

Mixing monitors is Ian Newton whose career in the wings has spanned such demanding artists as Take That, Madonna and Oasis. A guitar-bass-drums trio might suggest a more basic on-stage requirement than the aforementioned, but is that so with The Police? "Yes and no," replied Newton. "The problem we have to overcome is that the band's

mic line is in front of the PA on the stadium gigs. That doesn't make things easy, but it's Mike who has to do most of the troubleshooting with that."

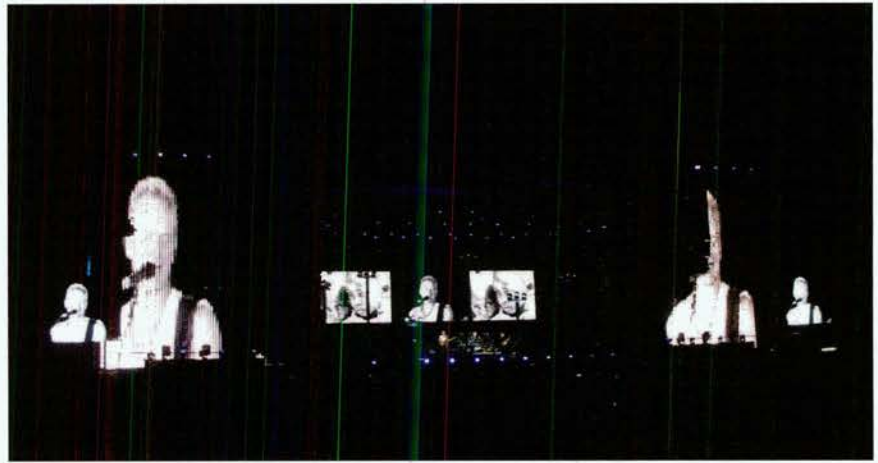
While Keating prefers Yamaha's analogue option, Newton is mixing on the company's PM1D digital desk. "Why? I don't know... it just suits the gig. I'm familiar with the desk and when we went into rehearsal for the Grammys, that was the desk I was going to use. It works fine for me."

Does he get into heated debates with Keating about digital consoles? "Not really, and in some ways I see his point. Computers worry me sometimes! However, there have been many times in the past when I've been using an analogue desk, punching through cue after cue, and dialling up effects, when I've thought, 'I wish I could hit a switch and everything would just recall'. I can do that now."

The monitor system combines Sennheiser G2 in-ears with wedges. Sting and Andy have Clair 12AM wedges and R4 sidefills, and Stewart has IEM and a drum stool thumper. Sting uses Future Sonics moulds and Andy and Stewart both have Ultimate Ears. We have Sennheiser all over the stage, because as well as the mics and in-ears, we have their guitar packs. They give us great support."

## SAFE & SECURE

Showsec was tasked with providing all artist and production area security for the band's UK dates. Showsec's operations director Mark Logan co-ordinated and designed the



staffing and security management procedures of the tour, drawing from the 2,000 fully trained staff based in nine offices around the country.

A large pool of the staff held SIA close protection qualifications, ensuring that the plethora of stars attending the London shows, including Naomi Campbell, Bob Geldof and Richard E. Grant, were looked after as effectively and professionally as possible.

Whilst in the UK, the band benefited from the seamless continuity that Showsec has built up with promoter Live Nation after many years of working together. "We have a close working partnership with Phil Bowdery and Andrew Craig from Live Nation," said Mark Logan. "The liaison between myself and the tour security director, Scott Nichols, was also very close as we have previously worked together for many artists including the Rolling Stones and U2."

Led by crew chief Jarcen Tap, Mojo Barrie's installed 260 metres of its aluminium barrier system at Twickenham, and equipped it with four 'lateral' gates to safely control the flow of the crowd in and out of the VIP 'golden circle'. Mojo also installed barriers around the two mix towers in the middle of the crowd, which benefited from around 10,000 temporary seats from Arena Seating.

The Police's arresting show fulfilled all my hopes and exceeded all my expectations. For me the highlight had to be 'Wrapped Around Your Finger'. With Copeland providing a mesmerising backdrop of exotic percussion, the band's sensitive approach to this often-overlooked gem was the ultimate proof that old dogs can indeed learn new tricks.

The tour ends in New Zealand and Australia in January/February, and there are whispers that their first studio album since 1983's Synchronicity might be on the cards. **CX**

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# ALL I EVER NEEDED TO KNOW ABOUT LIGHTING I LEARNED IN ED-100.1

“As the circle of light increases,  
so does the circumference of  
darkness around it.”  
– Albert Einstein

By **RICHARD CADENA**

I was fortunate enough to start in the lighting business when my own personal circumference of darkness was oh so small. I didn't even know enough to know how little I knew. I was in the lighting business a long time before I stumbled across the secret to understanding the relationship between the five lighting metrics. It's called ED-100.1.

“ED-100.1 Light & Color” is a little book sold by the Illuminating Engineering Society of North America Lighting Education ([www.iesna.org](http://www.iesna.org)). Though the organization's reach does not extend to Australia, I did some research and found that the physics still applies. The course is available to anyone with an Internet connection and a credit card.

The entire course is excellent, but if you do nothing else, buy, read and understand pages 1-12 to 1-16 – the part that explains the five lighting metrics. You'll learn in just a few minutes what it took me years to find out; the five lighting metrics holding the key to understanding all you need to know about lighting.

What are the five lighting metrics? They're the fundamental ways that light can be measured and quantified. They tell us how much light a source produces in total, how much light is

falling on a surface area, how intense the light is in a certain direction, how much light is bouncing off of a surface, and how much light is reflected and transmitted through a surface. In lighting terms, these are known as luminous flux, illuminance, luminous intensity, luminance, and luminous exitance. Before you turn the page, give me five or ten minutes to illustrate these seemingly complex but rather simple concepts.

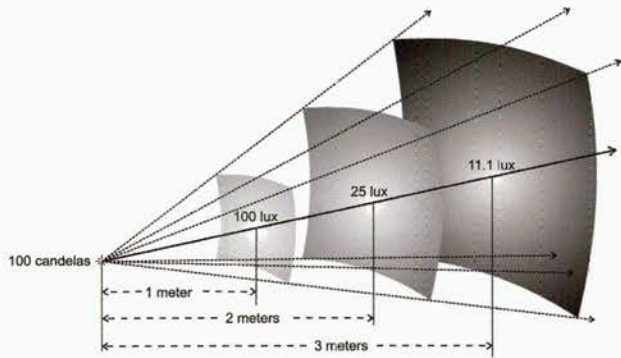
Luminous flux is simply the rate of flow of light. The yard stick that we use to measure it is called a lumen. If it helps you visualize the concept you can think of light as a flow of particles. Then the light flux, or luminous rate of flow would be the total number of particles emanating from a source at any one time. It's a bit more complicated than our simplified visualization of “particles” of light, but we'll leave that in the circumference of darkness for the time being.

Now imagine that those tiny little particles of light are projected against a wall. If they all hit the wall within a very small area then that area would be lit up very brightly. If, on the other hand, they spread out across a very large wall then it wouldn't be as bright. How many light “particles” fall in one area determines the brightness in that area. That's called the illuminance and we measure it in lux

or footcandles, depending on which side of the Pacific Ocean you reside. In numerical terms, the illuminance is equal to the luminous flux divided by the area.

The force with which our imaginary particles of light are leaving the source is the luminous intensity. It's much like the water pressure in a hydraulic system or the voltage in an electrical system, except in lighting terms, the intensity can vary according to the direction we're looking at. If we think of a typical household light bulb, the base blocks the light in that direction, so the luminous intensity is zero. That's an example of its directional dependency. Luminous flux is measured in candelas, and one candela is defined as a source that produces one lumen at a one-square-foot spherical surface one foot away from the source.

Let's keep our imaginations fired up for this one. Suppose now that the stream of particles emanating from our lamp source is as sharp as a laser beam. In fact, let's imagine that they are traveling in a perfectly parallel beam, neither converging or diverging. That means that we could measure the illuminance one meter from the source or 384 million meters from the source on the surface of the moon and it would read the same (except for the light that bounces off of the



$$\text{Illuminance (footcandles or lux)} = \text{Luminous intensity (candelas)} \div \text{Distance}^2$$

particles in the earth's atmosphere and in space). But in real life, the lights we use typically diverge and the light spreads out as it travels. How much it spreads out, of course, depends on the distance it travels and the angle of divergence.

Suppose we have a source with a luminous intensity of 100 candelas. At one meter away from the source, if all the light falls on a one-meter-square surface, then it is producing 100 lumens, by definition, at that surface. Therefore, the illuminance is 100 lux. (Illuminance = luminous flux ÷ area).

If we double the throw distance, then the area will increase by a factor of four. Why? Because the area of a circle is pi ( $\pi$  or 3.14) times the square of the radius. If we double the throw distance then the radius doubles; then by squaring it, the area becomes four times as large.

Looking at our relationship between illuminance and area, we can see that the illuminance falls off exponentially in relation to the area and the throw distance. If we put all of this together we can get to this relationship:

$$\text{Illuminance} = \text{luminous intensity} \div (\text{distance})^2$$

That little line is what's known as the inverse square law, and it says that the illuminance drops off exponentially with the square of the throw distance but it's directly proportional to the intensity. It's an important relationship that will explain lots of lighting phenomena.

There's one more little observation that ties all of this together. The area of a sphere is four times pi times the square of the radius of the sphere ( $4 \times \pi \times r^2$ ). So if a sphere has a radius of one meter then the area is four times pi, or 12.6 square meters. Then a 100 candela source at the center of that one-meter sphere would produce 100 lux at the sphere. Since we know that the illuminance is equal to the luminous flux divided by the area, we also know that the luminous flux is the illuminance times the area. So we can calculate that the luminous flux from that 100 candela source is 100 times 12.6, or 1,260 lux. So if 100 candelas is 1,260 lumens, then one candela is 12.6 lumens. Now when we're given the luminous intensity, we can convert it to luminous flux and vice versa.

Now that we better understand these lighting metrics, we can turn our attention to the light "particles" that we have been imagining. It turns out that light behaves as both a particle and a wave. If that's difficult to understand, then you can better appreciate Einstein's comment about the circumference of darkness. In other words, the more you know, the more you understand that there is even more to know and understand.

Whether this article increases your circle of light or leaves you in the dark, e-mail the author and let him know: [rcadena@austin.rr.com](mailto:rcadena@austin.rr.com).



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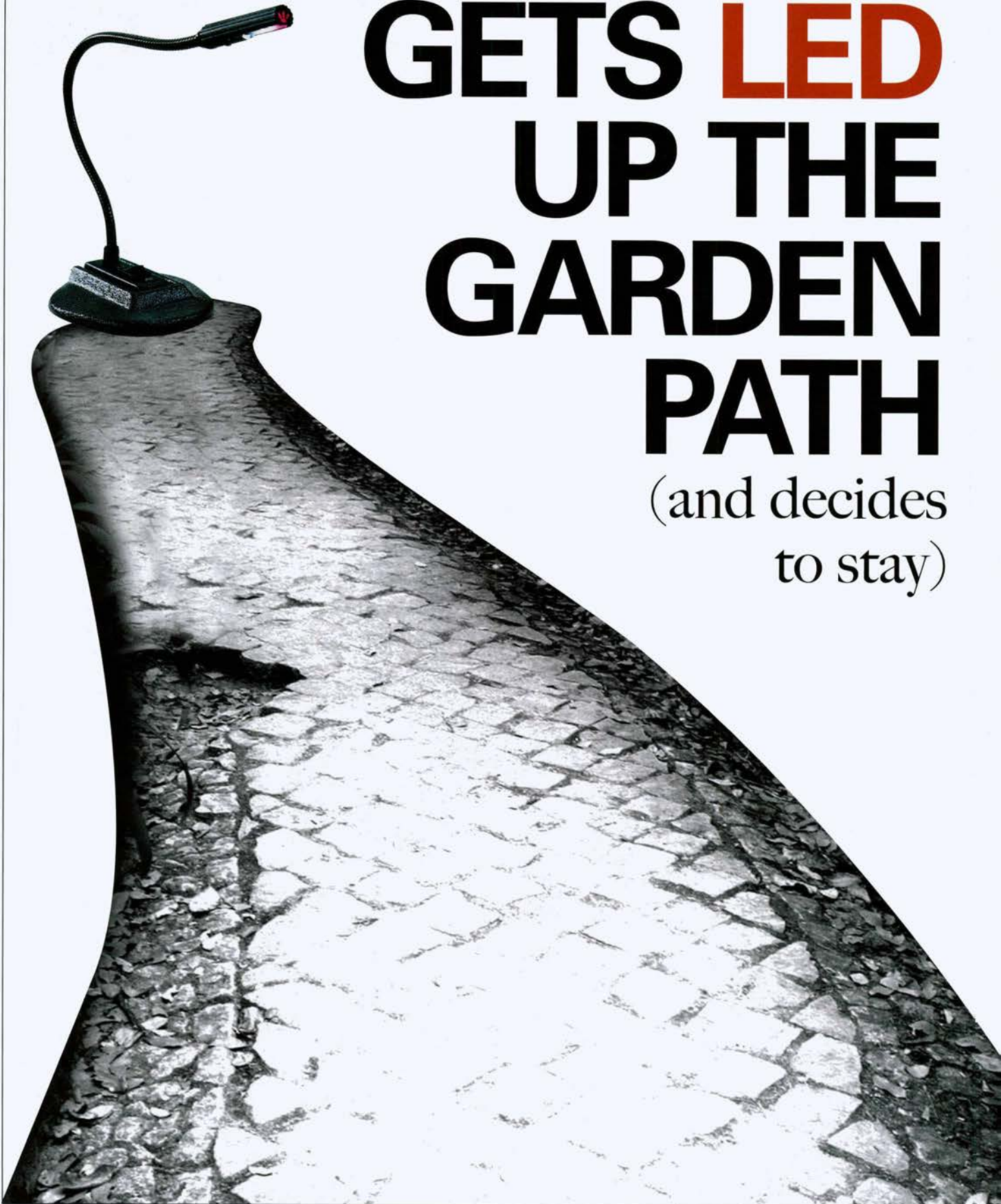
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# THE CXPERT GETS **LED** UP THE GARDEN PATH

(and decides  
to stay)



BY JAMES DEN-OUDE

I remember when Jaycar Electronics first started selling blue LEDs; I think they went for around 10 bucks apiece. I bought one, just because it was so cool. LED is the abbreviation for Light Emitting Diode, and they've been around in one form or another for years. They used to do a lot of mileage as audio meters and power indicators, but recent developments have increased the brightness and decreased the cost, opening up a whole world of possibilities.

## THE JOY OF LEDS

I am a big fan of LED technology. LED has several very notable benefits over other types of light source, especially for use in a production environment. For starters, it doesn't generate heat the same way as conventional lamps do. You can switch an LED fixture on at full intensity for 12 hours and it still won't be warm enough to burn you, or even bother you. No cooling fans mean the biggest noise you're likely to hear from a LED fixture is the scound of your audience going "ooh, aah". The absence of waste heat also points to an absence of wasted energy, leading to my next point.

LEDs cost bugger all to run. The typical lifespan of an LED is up to around the 100,000 hour mark nowadays, or roughly eleven and a half years assuming it's on 24/7 – a far cry from the couple of thousand hours you'll get from other types of lamps. Power consumption is extremely low, which makes it much easier to source adequate power to run a whole lot of LED fixtures, and much cheaper to pay for the power afterwards. There's also the point that unlike discharge lamps LEDs actually switch off and stop eating power when you pull the master fader down.

LED is fast too. You can achieve fantastic flash effects since there is no "warm-up" time per se. The speed at which LEDs are capable of switching on and off also makes them very good for video – more on this later. Probably the only real downside to LED is the whole issue of colour temperature, and the fact that white LEDs can look cold. As we'll see though, this needn't be so much of a big issue. Read on as we look at some of the coolest of the cool...



Color split

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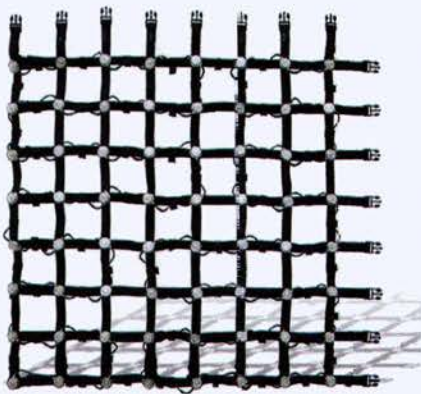
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Colorweb 125

## ARCHITECTURAL AND DISPLAY LIGHTING

Starting with the simple and inexpensive, we have the LED down light. This is a replacement for a standard halogen down light, but it's much more clever. The unit is equipped with an RGB LED lamp, which permits RGB colour mixing, controllable by the optional infrared remote unit. The LED Down light retails at \$79.99, and if you buy ten units they'll include a free remote. This one's distributed by LSW.

The Traxon Mirror 64PXL Wash is a fixture, which functions as a regular mirror when turned off, and acts as

an LED lighting fixture when switched on. The 64 individually addressable pixels and the on-board Smart Chip allow the creation of different colourings, images, moving text and even video displays. The Mirror 64PXL Wash offers a high degree of installation possibilities and can be interconnected with other units, allowing great design flexibility. The unit is auto-addressing and DMX512 controllable. The Mirror 64PXL is available through ULA.

Lighthouse Distribution have Florence by CLS - a 3W Luxeon based LED fixture, housed in a CNC machined aluminium enclosure. A variety of mounting plates are available to hold between one and five Florence modules, and CLS make a DMX controllable dimmer/driver unit from which up to 33 modules can be driven. Colour options are cool white, amber, and warm white, and the standard 4° lens can be replaced with a 6° lens if required. Installation is dead simple, and because the heat output is negligible these units are suited to being positioned as close to anything as you want - ideal for displays.

If you're looking for something to control your LED installation, take a look at the Pharos Lighting Playback Controller (LPC). It offers integrated

control of LED fixtures including full motion live video and image mapping to DMX, all via a time line programming interface. The design and features of this controller make it ideal for fixed installations and it offers the additional benefit of being remotely accessible via integrated web interfaces. LSC systems are the distributors.

## COLOUR WASHES

First up is the i-Pix Satellite. The Satellite is a 42 Watt RGB self-contained LED wash fixture with power and data daisy-chaining ability, and the potential of running over 50 fixtures off a single 10 Amp feed. Features of the Satellite include ultra-smooth dimmer response and super-fast strobe from separate control channels; flicker-free on-camera response; stand alone mode with master/slave ability; and clip on beam shaping frames, making the Satellite a very versatile LED wash fixture. Suggested applications include as a truss tone, wash unit, sidelight or chase/blinder unit, in TV, film, concerts, theatre, events & exhibitions environments. The Satellite costs \$2,502.50 inc GST. You can get more information from Balanced Technology.

How about a LED wash light which



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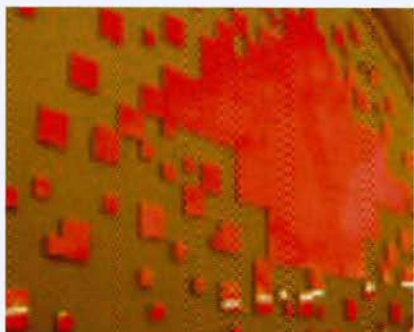
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i-Pix Satellite



Mirror 64PXL. Turn it off, it's a mirror...



...turn it on, it's an LED panel.

## DAISY CHAINING DEVICES

One thing you may have noticed about most LED fixtures is the increasing popularity of PowerCon as a power connector – which is available in two variants; one is blue, and the other white. The blue one is for power input, and the white is a loop output. Of course while it's possible to daisy chain a huge number of LED fixtures, this should always be done with reason so as to avoid overloading your supply cable (however unlikely this is when dealing with LED fixtures). Also keep in mind that if one device in the chain trips out an RCD or something similar, you will lose everything on that line. The same applies for DMX512, which should only ever pass through a maximum of 32 devices without it being buffered it through a splitter or opto-isolator.

can project split beams? How about the Chroma-Q Color Split? The Color Split features large dual side-by-side RGBA cells, allowing the choice of a single colour or split colour effects from a single LED fixture. A wide-angle lens in one cell evenly washes the lower portion of a wall or drape while a narrow lens in the second cell projects the beam higher. Four

control modes are available including RGB, HSI, RGB (Magic Amber) and RGBA (Magic Amber). The latter two of these automatically add amber to the colour mixing process to achieve a better range of warmer colours, and an increased colour rendition index. 99 Selectable effects in standalone mode, as well as DMX512 control are standard, as are loop-through power and DMX connectors. RFP on the Color Split is \$3240, and you can get them from JANCS.

PixelRANGE make a lot of LED product including the PixelLine Micro W, which features 22 high intensity K2 Luxeon emitters. The unit has an RGBA colour mixing system, allowing for 4.29 billion colour combinations. It runs on DMX512 in 8 or 16 bit mode, and has an internal effects generator which is capable of over 1000 different effects. It's also capable of operating in standalone master/slave mode, and connection is simple with data and power loop-through connectors. The PixelLine Micro W is capable of being used as a wash or blinder, and with the addition of the diffusion filters can be changed from 6° to 40° beam quickly and easily. Clearlight Shows are the distributor for PixelLine.

## SPARKLY EFFECTS THINGS

Next cab off the rank is a replacement for one of my favourite effect lights, the humble moonflower.

These effects look great when you gang up a bunch of them at the back of a stage and project them through some haze, but the problem with them is that the things are too damn fragile. Enter the solution to this problem in the form of Photon and Photon-X. These new fixtures utilize a special Fresnel style lens that condenses, magnifies and projects the output from each LED in the form of wide individual light beams. Being LED based, there are no moving parts to replace or fall off. The fixtures are lightweight, portable and can operate in sound active, standalone or full DMX mode. The Photon is the smallest and lightest of these two fixtures, weighing 1.8kg and fitted with 84 red, green and blue LEDs. The PhotonX at 3.6kg is the bigger brother, with 162 LEDs and a larger fresnel lens creating more powerful beams and greater output. The Photon and PhotonX are distributed by LSW.

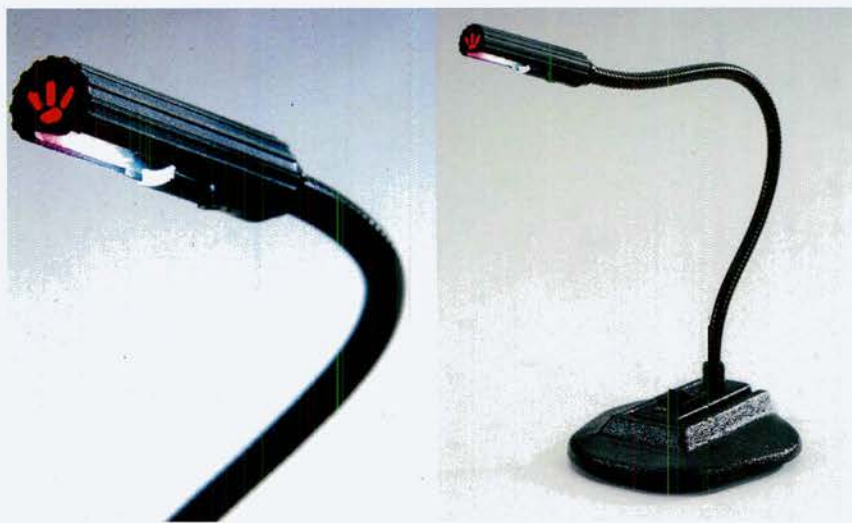
Another cool product from PixelRANGE, distributed by Clearlight Shows, is the PixelArt, which is basically a long flat panel comprising 432 individually controllable pixels arranged in a 72 x 6 matrix with 15mm spacing. It's designed to accommodate video, with support for DVI and RGB/VGA input. The power and proprietary cat5 data bus have loop-through connectors, and you can rotate the thing through 90° increments and the video orientation

will remain correct. Each unit can be mapped to any location in video space, and at approximately 4000 NITS (at full white) the pixels are incredibly bright.

Neo Flex tubing is a product that looks like lots of fun. It's a flexible tube arrangement which you could do just about anything with. It comes with a choice of supply voltages and colours and also has some programmable RGB options. It's IP65 rated so you can stick it pretty much anywhere, within reason, and it promises a whole lot of potential for neon lighting props and effects without the expense of getting glass tubes bent up. This one comes from Image Envirolife.

### THINGS THAT MOVE

What!? You want it to move as well? Enter the Studio Due D-Color, a moving head LED fixture. Possibly one of the most versatile products around, the distributor, Show Technology, informs me that "The D-Color directs its powerful output around to unlimited positions; curving, rolling, erecting and rotating around its 540° pan and 170° tilt movement. High powered 3watt Red, Green and Blue LEDs are joined by 4 amber LEDs, allowing the colour temperature of the beam to be warmed up, making this unit ideal for many applications where natural tones need to look their best such as nightclub dance floors, television applications and adult entertainment venues." As we see, the D-Color has come up with a way around the



Littlite LED Lampset.

"cold" LED look. And it moves too!

Or what about something super-fancy? The DTS Delta R is an LED fixture offering everything from 7 day automatic timed event programming and standalone master/slave operation, through to user interchangeable optical units to adjust throw distance. 40 x 3W RGB LED modules make this unit bright. Very bright. Delta is IP65 rated, so you could probably put it on the front end of a battleship and expect it to keep working. The head movement is interesting on this unit in that the yoke rotates 320°, and the head tilts 180°, but then the yoke tilts an additional 130° (basically allowing the light to point behind itself on all sides, if that makes sense). If you bump the head out of position, it automatically goes back to where it's supposed to

be. 1 of the 15 DMX channels required to control the light allows linear adjustment of colour temperature. The Delta is also available in a non-motorised version for permanent installations, and both versions are available from Lighthouse Distribution

### PANELS, DRAPES AND NETS

So, we've seen some nice gear you can use as feature lighting, wash lighting, and cheerful effects lighting. How about something for the background? Something like the Martin LC series LED panels. The LC Series is a semi-transparent, modular system of LED panels, perfect for displaying video and images. The LEDs are encased in clear acrylic tubes, making the screens 60%

# CHAMELEON TOURING SYSTEMS

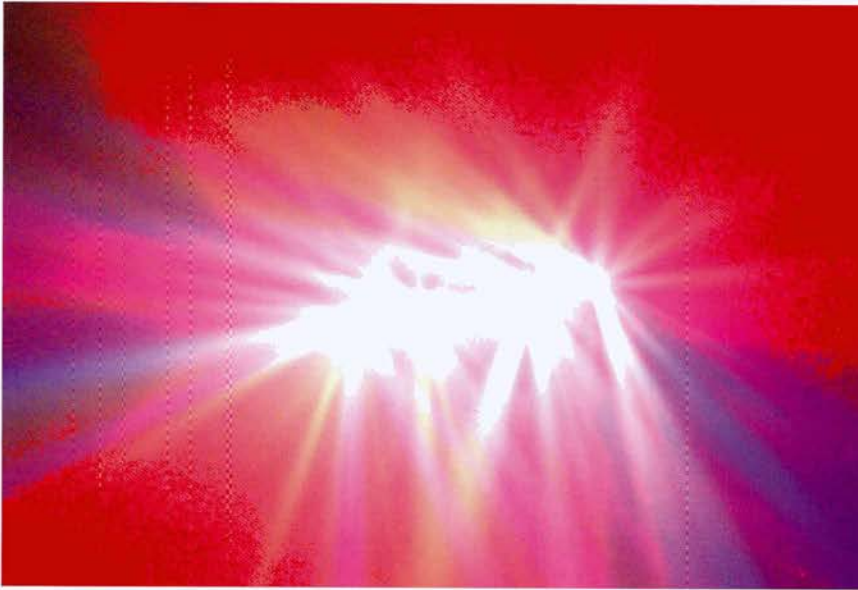
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PhotonX Beam



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Following on from our recent comments about energy efficiency and the new Federal Government's decision to ratify the Kyoto protocol and start actually doing something about greenhouse emissions, don't be at all surprised to see the deferred savings resulting from LED use increasing. As energy becomes more expensive, using less of it becomes more profitable. There are also other environmental benefits arising from the longevity of LEDs – think not only of the spent bubbles ending up in landfill, but of the manufacturing, packaging and transport involved in replacing them.



Neo Flex tubes

transparent and allowing light, air and effects to pass through them. With a 40 mm pixel pitch, the LC offers a balance between high resolution and affordability/weight. The light output is 1800 NITs (Cd/m2) making the LC clearly visible in daylight. From 30 metres or further away, the images displayed on the screen appear seamless, and the viewing angle is 100° (in other words very wide). It can be genlocked with a DVI accessory box, so it's suitable for use in TV applications as well as live productions. The units are modular and can be stacked 7 high and as many wide as you like – they're available in 1m x 1m or 2m x 1m sizes. Power and DVI connections to each module have pass-through connectors to make system rigging quick and easy, and the control circuitry for each unit is built into the base. Again, talk to Show Technology for further information.

If you've already got a drape or cyc, or you need something a bit different

then check out the Chroma-Q ColorWeb. It's essentially a flexible grid, with RGB LED modules at the intersection of each "line" of webbing, and it's a cost effective solution for when high resolution is not required. The ColorWeb 250 has 16 individually addressable LED cells and it's been around for a while, but the newly released ColorWeb 125 offers 64 modules packed into the same space. This increased resolution offers increased flexibility and improved results for displaying more detailed video content. In its most basic control mode, each cell requires 3 DMX channels to operate, however the product best shows its potential when connected to a media server outputting DMX. ColorWeb is modular - the 1m x 1m sections clip together quickly and you can safely go up to 10m in height, and as wide as you like. JANDS can help you out with pricing dependant on the quantity and model you want.

Leaving out the video and just

thinking about making things look nice, the Star Drape is an RGB LED Curtain, suited for all applications from theming to production. The 6x4m black velvet drape contains 128 LEDs per drape, and direct input of DMX512 signal into the StarDrape system controller allows the units to be controlled from any DMX512 controller. A range of parameters can be controlled, including RGB Color Mixing, Strcbe, Dimmer, as well as Auto and Custom programs. The unit requires 10 or 24 channels of DMX512 depending on operation mode, and it's available through ULA.

### CAN'T SEE THE DESK?

Need something to help you see the console which you're using to control all your funky new LED toys? No problem. Littlite have the answer. A recent addition to the range, the Littlite LED utilizes a combination of white and red LED's to deliver a soft white glow over a wide area, without the common "cold LED" look.



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PixelArt



Pharos LPC2



D-Colour



LED Downlight



Star Drape

Features of the Littlife LED include low heat, low power consumption (less than 100 mA at 12v), long life (LED module rated at over 5000 hours) shock and vibration resistant,

and selectable red-only output on lampsets for unobtrusive use. Fully compatible with all standard lighting and audio consoles, the Littlife LED simply plugs in where your old Littlife

### JIMMY'S CHALLENGE TO DUNK

I was very impressed by Mr. Fry's homemade Par 43 can collection. I've never built a Par 43, but if I did it probably wouldn't turn out as nicely as Duncan's did. BUT... I want to see him build a LED Par 43. What do you reckon Dunk, up for it?

used to go, with no adjustments required. And because the hoods are permanently fixed in place, replacement O-rings and lost hoods are a thing of the past. Prices for LED Littlites now range from \$119.90 to \$187.00 (inc GST). Balanced Technology will be more than happy to help you with these.

### WE'VE BARELY SCRATCHED THE SURFACE...

The products listed above are just a taste of what is available. There are LED floor tiles, tubes, and I even found LED Christmas lights this year (still working on finding the associated holiday itself though). Whatever your application, be it stage, installation, bar, nightclub toilet, or just somewhere you need a light that won't burn anything/anyone, there's probably a LED based product that will work for you.

I lied, by the way, cold colour temperature is not the only downside to LED. The other is cost. It's still initially cheaper to go with a conventional alternative. What is commonly forgotten is the ongoing costs associated with maintaining so much of the equipment we use in this industry. For longevity LED based equipment has got the edge over conventional lighting equipment, since you won't need to replace bubbles on a regular basis. For the most part there are no moving parts to break or even maintain - just clean the things periodically.

If my whole "deferred savings" argument isn't enough to convince you LED is a good thing, then consider how much power you used on the last event you lit. Then think about how much you could have saved with some LED substitutes in place, and how helpful that would be for our environment.



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# HISTORY

Where you get to compare today's opulent lifestyle with that of your forebears, who often struggled without mobile phones or internet.

At CX we are blessed or cursed with archives, stored under the floor next to the Gimp cage. We're in our 18th year now, but for the sake of neatness our History journey starts 15 years ago. Soon we'll be able to go way back 20 years, when Channels first launched.

## 15 YEARS AGO: CHANNELS, 15TH DECEMBER 1992. THE FINAL EDITION.

It was a little over 2 years old, and had appeared 17 times already. Channels was the enfant terrible of the publishing world, and had become the trade journal for entertainment techies everywhere in Australzealand.

Summer Biz Booms was the cover screamer, with a picture of the Beach Boys outdoors in Sydney. Even then that band were fighting off accusations of lack luster performances from a B line up of some founders. That tour lost money, assisted by strange venue choices like a sporting oval on Sydney's Northern Beaches.

"Channels is no more – Jands explains why" was the editorial by Robert Young. "The idea of an industry relevant magazine arose in late 1990 when Julius Grafton returned to Sydney after a mid life crisis"....

Robert continued on a slightly more serious note: "Jands never really wanted to be publishers, we just wanted a relevant media outlet. We think we ran a fair and unbiased viewpoint and no better proof of this came from the advertisers".

Legal action was launched by Clayton Utz over comments we ran about a staging supplier to Jesus Christ Superstar. The law firm demanded our notes, tapes and files relating to the story, and we said sure, bring a subpoena and come fetch. they

never did - the notes are presumably still in the dungeon.

We announced the new magazine would be called 'Connections', which was quickly tagged 'Terminations' by some less than kind wags at Jands.

No suits at Flying Pig: the Whole Hog was launched at LDI and PLASA before it, and as quick as you can say 'successful launch', Nils Thoujussen had a suit on. Probably from the first sale, since the iconic new lighting console had a sticker price of 25 thousand POUNDS! Ouch.

LDI was in Dallas, Channels was there, as was former lighting distributor Rod Salmon – a co-founder of Show Technology. The Rod advised me he had purchased a business class ticket for \$4,000 and wrangled a first class upgrade. Channels flew in row 79, the smoking section.

Channels also had a stopover in Austin at High End Systems HQ, where we were offered a gig publishing a magazine for them. It was considered and rejected on family grounds.

Lighting class wars were raging with a rebuttal letter from the High End importer, enraged that Martin had advertised their Pro 218 and compared it with the Trackspot. The claim and counter claim culture ran on, and on, for years. Matter of fact, of all genres the lighting importers are still the most strident when it comes to dissing their competition and claiming the high ground.

Not only High End, but another importer also wrote a long and passionate letter about the Pro 218 advert. This guy threatened his firm would re-evaluate their advertising commitments to Channels, and of course was disappointed we chose to run the advert. So we ran it again.

ADAT was off and running and the Tascam DA 88 was not yet on the market. Channels attended an ADAT BRC (big remote control) launch in Sydney where pretty much the entire Sydney recording industry were impressed by four machines that it seemed could really, truly, be controlled as one.

### WHAT THINGS COST:

- Toa 120 w commercial PA amplifier and mixer: \$740.
- Tri Truss: \$350 for 2m from Collins & King.
- SCV DI box \$295 from A.R. Audio Engineering
- Denon pro CD player \$2880 (yes!) from AWA

### 10 YEARS AGO: CONNECTIONS DECEMBER 1997

Big, bold and glossy – with a gatefold cover advertising ENTECH 1998 as well!

Video and Lighting Heading for a Shotgun Wedding was the lead story. We kind of got this one right, despite insisting that a DLP projector on a moving yoke was the answer. The later emergence of the LED meant that we all skipped the projector and settled on the screen – after all, turn off a LED wall and it goes black. Turn off a projector, and the screen is still there, all white.

PA People won the Sydney Olympic Stadium audio tender with Bose, despite the tender specifying EAW. That caused some debates!

Fostex launched the D160 16 track stand alone hard disk recorder, at \$5499. We liked it, a lot. But that market never really caught fire, as



...discovered to their displeasure several years later with the SCR24. Pro Tools was already on the way to becoming ubiquitous. Which means, existing everywhere at once, or appearing to be.

On a similar tangent, Roland launched the VS 840 8 track recorder which had a mixer inbuilt. This did do OK, at around \$2,500.

Also new: Australian Monitor put the AM 1600 on steroids and came up with the AM3002 – delivering 4000 watts at 2 chms. But the future had arrived, and its name was Crown. Or QSC. Or Crest. More power, less money.

Show me at SAF – we saw Technical Direction working at work for the first time, at the Brisbane Convention Centre. They were then a switched on video supplier and are today a much larger version of the same thing. The SAP convention was an eye opener – truly large scale, and truly invisible to anyone other than a SAP client.

The C Tick became mandatory, a designator to show that electronic equipment had been tested for electro magnetic interference. This caught many importers unaware, and we still find things today that don't have the Tick. Or they have a fake one.

Meyer Sound Australia was created, with the same people still in charge today. Meyer had a slightly difficult time with distributors before investing in their own office, and went on to reap the benefits from a bold move.

Mac 500 was launched, joining the Mac 600 wash. Together these went on to fast become the most successful automated lighting products ever launched. At \$7,699 for the 500, and \$9,999 for the 300, the market was forever changed as lighting production houses rushed off to the finance company.

**WHAT THINGS COST:**

- HFB CD burner: \$4,629.
- AT Paragon Monitor Console: Entry level US\$130,000
- Pro Tools IV: \$7,995 (reduced from \$13,995)
- Co-curset Scroller for Par 64: \$1275.



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Sam's Town

# THE KILLERS LIVE AND 'LOW-TECH'

Tin Pan Sally's at it again. This time she headed off to see what kind of a show The Killers put together at Sydney Entertainment Centre.

Staging a rock show that looks like a Western produces an interesting result. Under instruction from the band, The Killers' lighting, set and even sound crews have effectively hidden all technology on stage. This means there are no keyboards and no guitar amps. There are no LEDs and very little video.

The only video used in this show is an opening roll projected by a Barco at front of house onto a kabuki drape. The video technician's job is effectively over before the band takes to the stage. This person is toured nationally. The DVD in question tours internationally in lighting designer and operator Steven Douglas' drawers cabinet. Steven says he is often asked about the media server he uses, and this question he cheekily replies "It's a DVD player."


This should not give the impression that the show is low on production values. Pride of the set is a \$20 000

black silk ruffled drape, the second of its kind and the replacement for the first \$20 000 black silk ruffled drape which returned from the Mexican leg of the tour with a nasty rip down one side. The drape gives the whole set an old western saloon feel.

Everything else in the set is dressed up in the same way. The foldback wedges are encased in wooden boxes ("It gives the band something else to jump on" Steven says). The saloon piano is really just a keyboard inside a wooden frame. The guitar amps and bass guitar amps are cunningly hidden behind a web of fairy lights plugged into hot power. Even the backline techs are hidden. They are not on the ground beside the stage but tucked away in the wings with the monitors engineer so that the look from front of house is clean and technology-free. The entire stage floor is a wooden dancefloor brought in as part

of the set.

The band is lit by a combination of Mac 2000 and VL 3000s, which are used mainly to create static looks. The light show is very much about lighting the set and complimenting the Western theme. As such, there are few visible fixtures on stage. The set includes three Mac 2000s per side as side lighting and a ground row of Macs tucked away behind the band risers. These are frequently used to light up the silk drape, which picks up colour remarkably well for a black fabric and looks great lit up in red and orange.

To complete the set, festoons are slung across the truss and the words "Sam's Town" are lit up on the black drape, outlined by tiny theatre bulbs. This makes the words unintelligible and nearly impossible to read from the pit. "That's okay" says Steven, "All the kids tonight will know what it says. It's on the album." 

## WHAT? NO VISUALS?

**The question:** Is it OK to run a concert in a 10,000 seat venue without screens?

If you'd asked me twenty years ago, I would have said "Yeah, why not" (actually, I would more likely have said "Big screens? What are you talking about?"). At that time, there was no such thing as big screen visuals, no imag, no led walls – none of it. And those who went to concerts in big venues knew what they were getting and expected to have very little to look at. Ticket prices frequently made allowance for it as well, with the seats way up the back being cheaper.

Sometime in the very late 80s or early 90s, vision technology became capable of dealing with a bit of imag, and some people started putting it in on big shows. Consumer expectations being what they are, 'some people' rapidly became 'everybody'.

So here we are now, and it's safe to say that big vision is a standard expectation of the ticket buying public. There are no cheap seats any more, because everybody has good sightlines, and people don't mind paying the price because they know they'll at least be able to see the screens. Unless they turn up to a show and find that there are no screens.

Cliff Richard got hammered for not using screens a few years back, and the Killers should too. Not providing screens is fine when nobody expects them, but when the ticket buyers are accustomed to being able to see and have coughed up accordingly for tickets – it's just not good enough.

I'm happy with the band's artistic decision to go low-tech, but not happy with the way they let the punters down. Stick a couple of imag screens up high so the people up the back can see, put the show in smaller venues, whatever – but do something about the people in the cheap seats.

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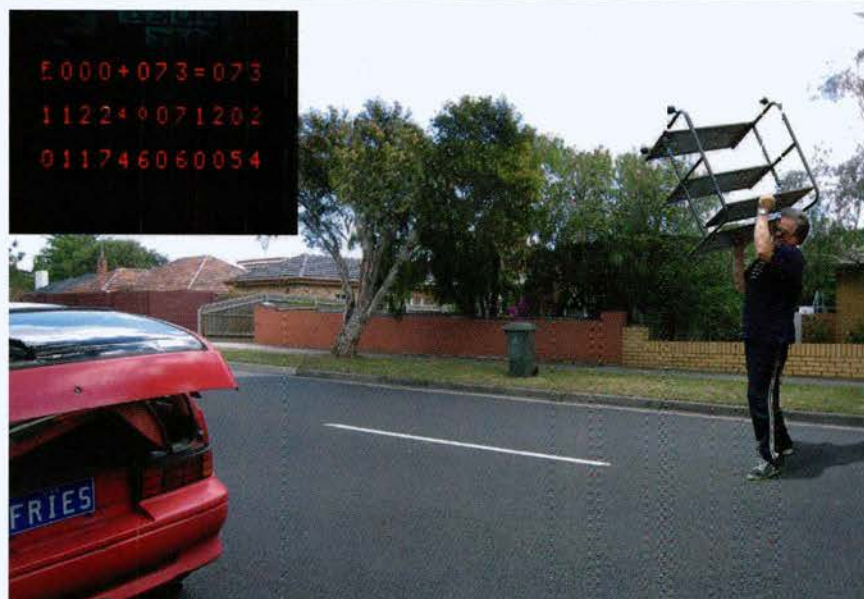
Just before Christmas I finished putting together a CD/DVD bulk duplicator for work, and no, you're not going to see my smiling face standing behind a table full of bootleg movies recorded in stunning WcbliCam™ at the Sunday market any time soon.

I bought three master controllers from an Ebay seller in the US, then on-sold one of them later for the price I paid for all three, leaving me with one and a spare for the bargain price of sweet F.A. My favourite price point, as regular readers will no doubt be aware.

Originally I wanted to buy CD burner drives, but such is the march of progress that an ultra fast CD/DVD burner drive cost almost half the price of a dedicated CD drive. Since I was buying eleven of them, that's a considerable saving where I come from. Plus, pretty soon we'll be handing out DVDs at exhibitions, as the price of blanks plummeted almost down to where they'll be paying you to take them away.

Half a day, a PC power supply and some basic metalwork later, it was up and running like a bought one. And it was so much faster than doing them one at a time on the computer. In fact, I hardly had time to put ten into their sleeves before the next ten were done.

But I needed something to sit it on, some kind of stand that could be rolled around the factory when needed, then rolled away afterwards. Seeing that one decent castor costs upwards of twenty bucks, and one of them in each corner of a stand would appear to be the minimum necessary, I pondered long and hard on a budget solution



*As luck would have it, I had inadvertently parked in front of a Speed Camera, so after an FoI request and paying the usual \$7.50 fee I was able to obtain these pictures of the occasion - and my 'Love, Kylie' undies!*

to my requirements.

Then, driving down the road one lunchtime, I noticed that it was council non-burnable rubbish

collection time again, and people were starting to put out bits and pieces on the nature strip.

Woohoo! My favourite time of the

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year.

Of course, the truth is that most of it is all the stuff people collected from the side of the road the last time there was a collection! You know, all the treasures you proudly bring home, like a warrior returning from the hunt, only to be told "What the hell do you think you're going to do with that crap?" Well, that's how it is at Fry Towers, and I'm sure I'm not alone.

Plus, I've got to say, the council's timing couldn't have been better – just before Christmas. All my Christmas shopping was going to be done in one afternoon's driving!

The key to acquiring something decent, though, is to be roaming around just as the stuff is being put out, so I postponed my urgent visit to Finger Lickin' Chicken\*\*\* and instead went searching through the leafy streets of sunny downtown Highett.

I cruised my little buzz-box slowly down Highett Road; so slowly that I was frequently overtaken by teams of octogenarians and their parents in convoys of motorised wheelchairs, who all had the same idea as me, except they were looking for walking

frames and second-hand (no, second-bum) haemorrhoid cushions. Oh, the horror!

Suddenly out of the corner of my eye, I saw a flicker of movement across the road. A lady was walking down her driveway pushing one of those grey perforated steel computer desks, the kind that everybody buys when they get a computer, only to heave it out a few weeks later when they realise it's way too small for what they really need.

It was just the thing to sit my bulk duplicator on.

I skidded to a halt, and leaped out of the car, dodging the traffic as I crossed the road. As soon as the desk rolled to a halt on the nature strip, I grabbed it and said "Thanks – it's just what I'm looking for", then proceeded to roll it back across the road.

I should point out that I was wearing the standard ARX work attire of an old t-shirt that said 'Could you drive any worse if I jammed that mobile phone up your arse?' and a pair of saggy baggy trackie daks, only \$3 from Dimmeys. (Geez, I love that store – it's like a

hundred 'two-dollar-shops' rolled into one).

Traffic was quite heavy, and when I got to the middle of the road one of the wheels fell off the desk. I bent down to pick the wheel up, then lifted the desk up over my head and started to walk over to the car, which was still idling away peacefully at the opposite kerb.

As I took the first step with the desk over my head I felt my stomach muscles tense, and a 'Twang' as the elastic around the tracksuit pants let go, followed by a breeze between my thighs as the bloody tracksuit pants slowly slid down to my knees!

I spread my knees apart, hoping to stretch the material enough to hold them halfway up, at least, and tried to crab walk across the road, but to no avail as they slowly settled in a neat pile around my ankles!

I've got to say, it's not easy trying to walk with your pants around your ankles and a desk on your head. In fact it's very awkward, not to say downright dangerous, as I found out as I tried to hobble the remaining distance in six-inch steps while not falling over face down on the road,

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still clutching the desk in the air!

All this mayhem coincided with the busiest amount of traffic that sleepy old Hignett Road had ever seen. Cars tooted at me, drivers waved out of their windows whistling and aiming digital cameras, truckies blew their air horns and cheered at me, while mothers covered their children's eyes and hurried them out of the way, glaring at me.

I guess I have been in more embarrassing situations, but I couldn't think of one at the time.

Eventually I made it to the car, opened the rear hatch and poked just enough of the desk inside to stop it falling out, gathered up the remaining shreds of my dignity (and my tacky trackie daks) and drove off to work, where no-one believed a word of it, but laughed themselves silly at my expense anyway.

Have a happy and safe New Year in 2008, and I'll be back real soon with more. There are stories galore at: [www.dunkworld.com](http://www.dunkworld.com) if you need some reading matter for the beach.

\*\*\*What can I say? I don't very often get the urge for a bucket load of chickeny flavoured saturated fat, ('Hi - I'm Dunk's sorta...sorta stop selling this crap') but when I do, the only way to get the monkey, sorry, chicken off my back is to go and buy some. There's definitely something addictive in those herbs and spices, and it's not just the MSG. Drol.



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**CX PRESENTS** the suppliers to the audio visual and entertainment event production industry. This is where you can find transport, sound, lights, vision and other service providers. We've made listings free, and some suppliers have elected to supply extra info or paid for an enhanced listing. If you represent a supplier not shown, or if you want to update information, go to [www.juliusmedia.com](http://www.juliusmedia.com) and navigate to the CX Magazine area. There you'll find a downloads section with an editable Acrobat form. It should be completed and emailed online, or (worst case) printed, completed, and faxed back to us.

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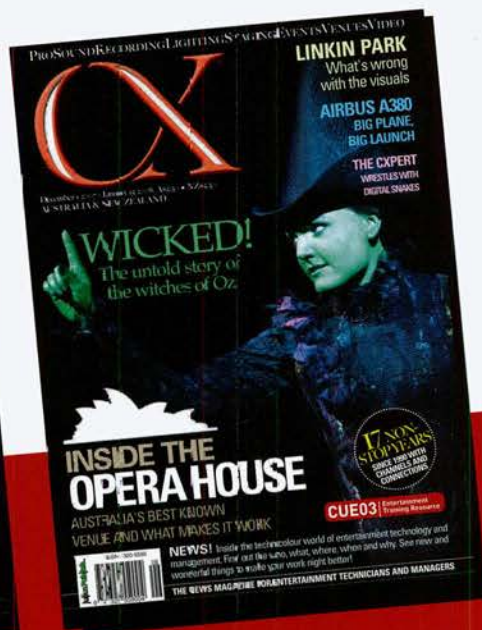
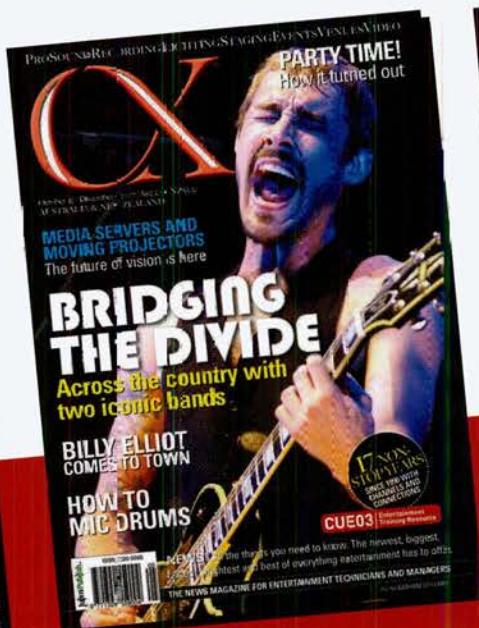
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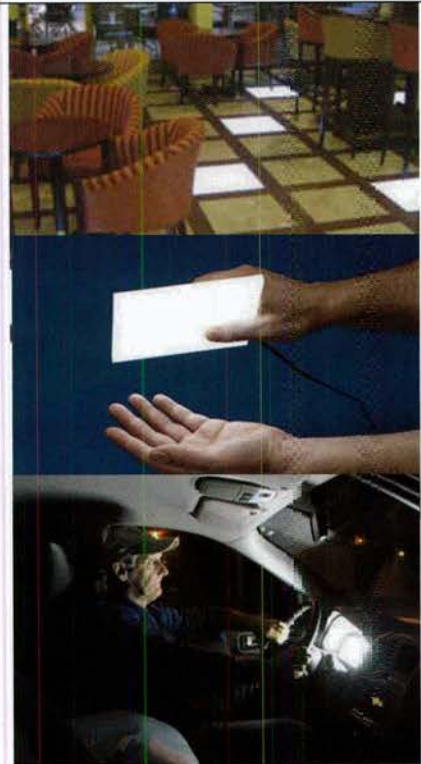
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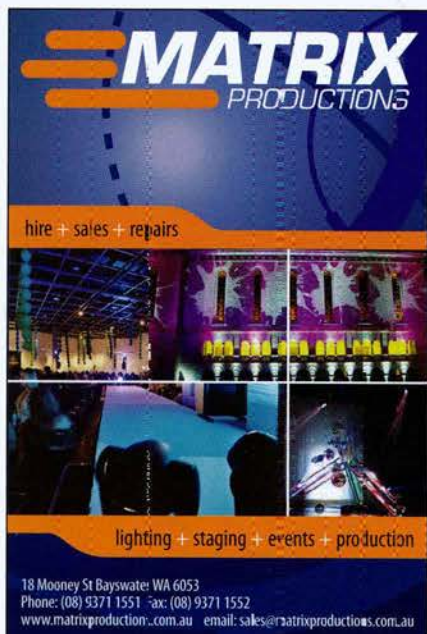
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