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**CHOOSING A
PA** for the
Olympics

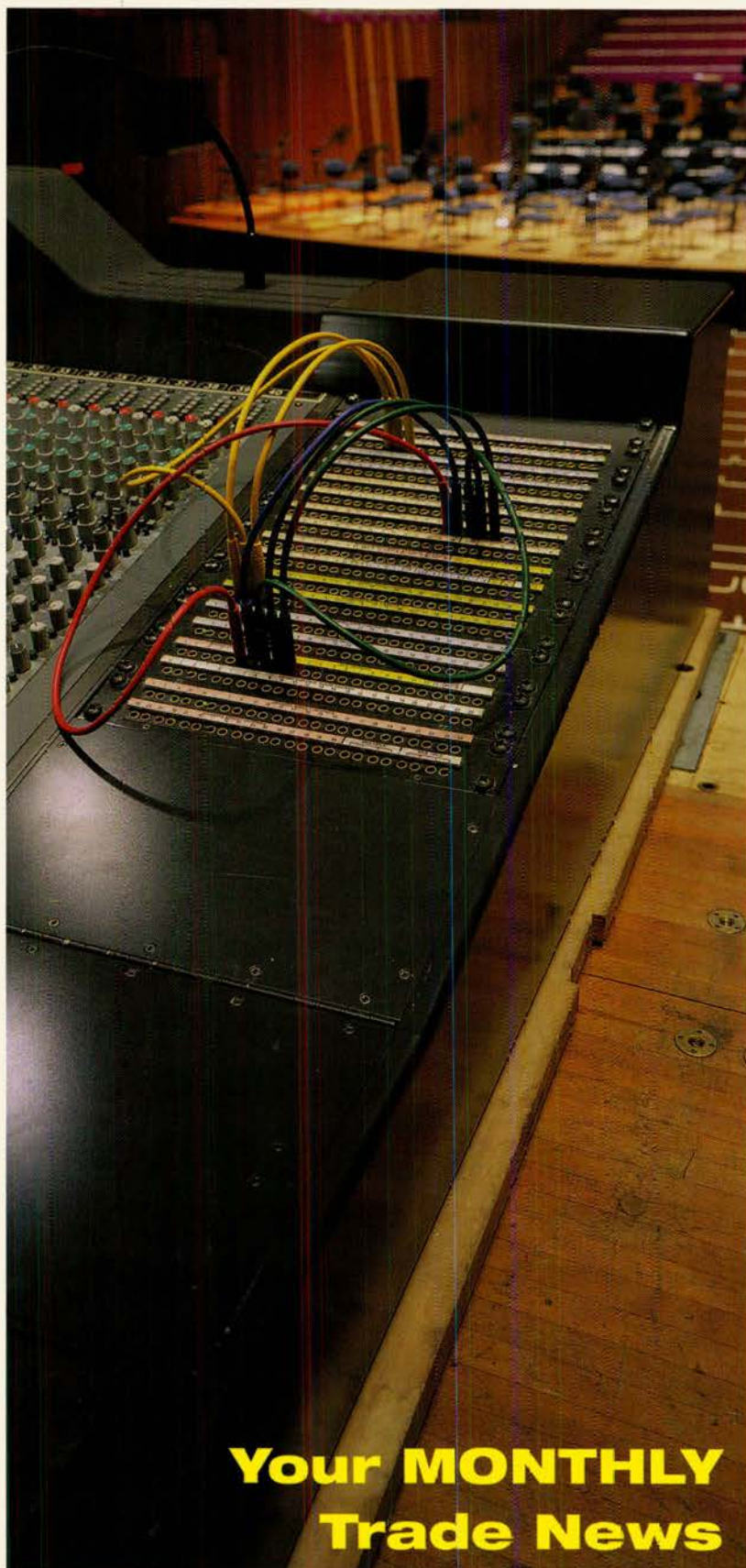
BUYERS GUIDE:
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LX:
**Promotion
Projectors-**
the market
report

ISSN 1320-5595



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Trade News**



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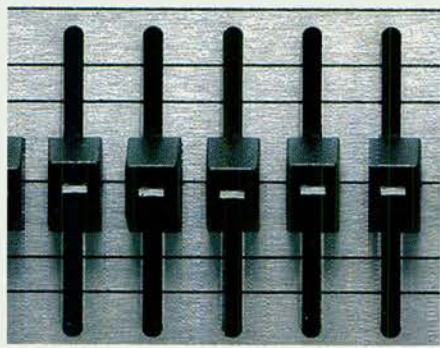
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#68. August 1999
The Entertainment & Presentation Technology monthly



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COMING IN CONNECTIONS:

SEPT: Film & Broadcast Pro Audio Feature

Buyer's Guides: Microphones. Fresnos & Floors. **Deadline** 15th August **Onsale** September 8th.

OCT: Post & Music Studio, Replication, Duplication, & Mastering directory

Buyer's Guides: Amplifiers. Follow spots. **Deadline** 15th September. **Onsale** October 6th.

NOV: Film & Broadcast Pro Audio Feature

Buyer's Guides: Loudspeakers (not studio monitors) and Fog machines. **Deadline** 15th October. **Onsale** November 3rd.

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Connections

THE PRESENTATION & ENTERTAINMENT TECHNOLOGY MAGAZINE

Choosing a PA for Olympics

Open contest has voracious competitors side by side as Bruce Jackson auditions systems

Final decisions on the form and kind of sound reinforcement system to be used for the opening and closing ceremonies at the Sydney Olympics are closer, after an evaluation on site late last month.

The shootout was a side by side comparison of competitive types of speaker and amplifier combinations, provided by audio production companies seeking the prestigious contract.

Olympics audio designer Bruce Jackson was in town for the appraisal, and was joined by key staff including head of technical services, Morris Lyda and production manager (ceremonies), Malcolm White.

Olympics event supremo Ric Birch was present during the shootout.

While the Sydney Olympic Stadium possesses a complex distributed sound system, the audio for concerts which open

and close major events is almost always hired in. At Sydney a system will be used which will originate sound from the concert area, so a ring of portable, low profile loudspeakers will be placed around the circumference of the ground, facing up into the audience. These will likely be reinforced with delayed signals fed to some of the house PA, catering to higher seating areas. The shootout provided the chance to appraise the house PA against portable solutions.

"We made everyone part of the process" said Bruce Jackson. "I gave them a rough specification, and left it to them (the production companies) to come up with a solution. You can't dictate what you need for a job like this. You are kidding yourself, there is more than one way to skin a cat!"

Contenders included Norwest Productions, offering

a system based on EAW KF860 Virtual Line Array cabinets. Two low profile cabinets are stacked one atop the other.

Norwest recently established an alliance with Promix, who are possibly the largest audio company in the world and are in an acquisition phase.

Interestingly, Norwest also facilitated the supply of a Vdosc system, sourced from Laars Brogard in London. Brogard is system provider to Rod Stewart, and a Vdosc user.

Vdosc is a line array similar in execution to EAW's KF860. In a line array the components are spread out horizontally so that when extra cabinets are stacked on top, each component - high, mid or low frequency - is stacked in a vertical line 'array'.

The appearance of the Vdosc created considerable interest, with two large sound (please turn to page 10)

OLYMPIC PA CONTENDERS

Lined up and auditioned at the Sydney Olympic Stadium last month!



Vdosc virtual line array



Bose Fanaray, Crown amps



EAW KF 860 VLA



EV X-Array



Jands Sportster, inbuilt amp

Biggest year ahead for Production Co's

Action across the board as Australia heads into an Olympics events boom

SYDNEY High profile contracts to supply audio and lighting for the opening and closing ceremonies at the 2000 Olympics will be awarded very soon. Competition is intense.

The real money will be made elsewhere, as every kind of corporate event is held ahead of, and around, the games in September. Much of this work will come late, as was the experience at the games in Atlanta.

The action has commenced, with New Years Eve already a production no-go zone. The major audio visual firms are offering top freelance crew up to A\$1,600 to work a 24 hour period. Some Melbourne based tech crew have asked \$1200 - \$1500 to work for the night.

All manner of production companies are already booked out. With every kind of event imaginable scheduled, it seems

that production suppliers may be winners - but surely some promoters will be burned by lack of paying punters.

Widespread expectations of a lull after the Olympics may be short lived, with projections of a major expansion in overseas visitors, fuelled by almost three weeks non stop TV coverage of the Games - and Australia.

• Pull out Hire and Production Directory in centre pages.

Connections

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ETHICS: We operate under the journalists code of ethics, as detailed by the Australian Media Entertainment and Arts Alliance. Respect for truth and the public's right to information are over-riding principles for all at this publication. In pursuance of this principle we have always committed ourselves to these ethical and professional standards:

1. We shall report and interpret the news with scrupulous honesty by striving to disclose all essential facts and by not suppressing relevant, available facts or by distorting by wrong or improper emphasis;
2. We shall not place unnecessary emphasis on gender, race, sexual preference, religious belief, marital status or physical or mental disability;
3. In all circumstances we shall respect all confidences received in the course of their calling;
4. We shall not allow personal interests to influence us in our professional duties;
5. We shall not allow our professional duties to be influenced by any consideration, gift or advantage offered and, where appropriate, shall disclose any such offer;
6. We shall not allow advertising or commercial considerations to influence us in our professional duties;
7. We shall use fair and honest means to obtain news and documents;
8. We shall identify ourselves before obtaining any interview for publication;
9. We shall respect private grief and personal privacy and shall resist the compulsion to intrude;
10. We shall do our utmost to correct any published information found to be harmfully inaccurate.

Publishers note: media ethics

We've survived almost seven years in print media because we have stuck to a plan, which included a clear statement of media ethics. Until recently many peoples eyes have glazed over when I've raised the topic, but events on the east coast of Australia last month changed all that.

A brief recap is that a media commentator was exposed as allegedly having a secret contract with the Australian Bankers Association, where a media commentator would cease attacking the banks, and instead substitute favourable editorial (separate to advertising). In exchange for money.

In Australia this has lead to a great deal of media commentary and exposure of various media deals and tactics. Many media outlets are running scared as all kinds of weirdness is exposed.

So it is timely for Connections to detail just how far media manipulation has reached into your industry in recent years.

BUYING AN OPINION

Last year we exposed a deal where certain parties in the music industry had 'commissioned' a story in another magazine. In exchange for A\$5,000, the magazine had run a story denouncing a government decision to allow parallel import of music CD's. We were critical that the paid article was dressed up as editorial, and indeed appeared in the contents page as a news story.

No comment, correction, admission or note of any kind appeared in subsequent issues of the magazine, nor did we get any kind of letter or rebuttal of our exposure. We don't do paid articles.

BUYING A PRODUCT REVIEW

This sinister development has been around a while. An unscrupulous advertising salesperson, usually with the knowledge of a publisher, promises a favourable product review in exchange for a manufacturer's advertising. The resulting ink is really not useful to the reader at all. We call it 'puff'.

Our advertisers tell us it happens time and time again, and who can blame an advertiser for agreeing to the deal? Many readers actually do see through these kind of reviews, especially when an advertisement for the same product is placed nearby.

But never, ever, not once has this happened in Connections.

THE PR 'SPIN' DOCTORS

A large American corporation invited us on a junket, all expenses paid, business class air travel included, to their HQ. We declined, a colleague on another title elsewhere in the world did attend.

Within three months, 'puff' pieces appeared in titles around the world, all similar, all with the same photos, and all touting the line that the corporation made products which would redefine humanity. Our colleague (also a publisher) dissented and wrote an honest appraisal. But every other salaried journalist took the trip as a good break from the office, got well into the considerable hospitality, tours, dinners etc on offer, and took the easy way out by recycling the 'favourable facts' included on the CD in the huge press kit.

A one off? No way. Happens all the time.

Our response? We haven't accepted an overseas trip since 1995, and if we do, we'll mention it at the end of the story. Any assistance offered is acknowledged in the story, so you know. We may take an offered trip, but will, and do, disclose this.

SO WHAT IS WRONG WITH ALL THIS?

I think it isn't a level playing field unless a media outlet reveals what it will, and will not, do. You, a paying customer/reader, need to know what is and isn't on the level.

Our other paying customer is the advertiser, and they need to know that none of their competition are getting more favour, or paying less, than they are.

-Julius Grafton, Publisher.

APPOINTMENTS

◆ **Peter Altis** has joined GUET as VIC/TAS sales rep. Peter started in June after twelve years with CMI.

◆ public event group is delighted to announce that **Lats Hoffman**, until recently Technical Manager with Cameron Mackintosh Australia, is joining public event group as a partner in the company.
www.publicevent.com

◆ Audio & Visual Innovations is pleased to announce the appointment of **Kerrod Heiniger** as lighting production manager. **Mel Jones** has been promoted to hire manager.

◆ **Les Boros** has joined Sanyo, as National Account Manager for Data Projectors. Previously he was associated with NEC.

MOVED

◆ **Small Systems** have moved to larger premises at Factory 2 53 Stanley street, Peakhurst NSW 2000. Numbers remain the same, phone +61 2 95849999

◆ Change of address for **Skypak Lighting and Sound**, now at: 22 Maud Street, Newstead QLD 4006.

◆ **Audio Solutions** have relocated to Unit 4/184 Gladstone Street, Fyshwick ACT 2609. Numbers unchanged, +61 2 6280-6331.

CHANGE OF NAME

◆ **Australian Entertainment Industry Association (AEIA)** is the new name for the Entertainment Industry Employers Association.

◆ Queensland's Visual Innovations has added Audio to the title, to become **Audio & Visual Innovations Australia Pty Ltd.**

◆ Ramtek cases has become **Tuffa Cases & Cabinets.**

Turbosound celebrates independence

Big Blue introduces black boxes too

It's almost one year after a management buyout took the number one concert loudspeaker manufacturer in the UK out of the corporate clutches of publicly listed Harman International.

Sales Director Bill Woods (pictured) recently toured Australia and the region, and he told Connections the firm is on target and in top order.

Turbosound has for some time been perceived as a top end concert loudspeaker manufacturer, having sold almost 2,200 stacks of Floodlight and Flashlight concert cabinets to rental companies worldwide. Ten percent of these can be found in Australia and New Zealand, where Auckland's Oceania Audio and Brisbane's ACP (Australian Concert Productions) are busy filling riders that specify current Turbosound product. Both firms have expanded inventory in the past 12 months, Oceania adding stock ahead of expanding into the Australian market by opening an outlet in Melbourne.

Other regional members of the Flashlight user group include Pantomine Entertainment in Singapore (36 stacks) and there are 60 stacks in Malaysia, shared between DB Lumens Sdn Bhd and Syarikat Chan Lee.

Second tier Turbosound users in the region include Lots Of Watts and Jands Production Services, both Sydney based, who own older TMS-5 composite systems - a type also in stock at ACP.

But the future for Turbosound lies in diversity downwards from the concert market, and to this end the firm has recently introduced the TCS series aimed at contractors, and the Q-Light Series aimed at the corporate and theatre markets."

The first product in the Q-

Light range - the TQ-440SP and TQ-440 will be in the region this month.



Bill Woods acknowledges that the market is now hyper competitive, but asserts that Turbosound has won and retained business on the strength of its quality.

"Care and attention, detail in manufacturing, and careful checking is everything. We've had many customers for twenty years now, the brand represents a lot of good work around the world. But as the market moves, we need to be more aware of customer expectations".

Ethics footnote: Connections paid for dinner with Bill Woods.

ELFa spin out pro audio division

MELBOURNE: Effective July 1st, ELFa's (Electric Factory) pro audio division, Corporate Audio Services, was incorporated as a stand-alone company.

The move recognises the different marketing channels required for wholesale distribution of pro audio equipment, a different market to musical (MI) equipment, says Chris Cumming, marketing manager.

Headed by Graham Rowlands, Corporate Audio Services Pty Ltd is the Australian distributor for Turbosound Ltd, one of the top five concert audio loudspeaker brands in the world. Other ELFa lines now distributed by Corporate Audio Services include some Sampson UHF wireless lines, some Focusrite and Ashley audio processing equipment.

Electric Factory distributes Alesis, Emagic, Ensoniq, TL Audio, Midiman and many other M.I. lines including Zildjian.

TPAC alive and well....

Tpac in Sydney is alive and well contrary to rumour. Michael Orland is still featured on our PA Page, and is still hiring production to all and sundry. Call them on +61 2 9799-7219

CORRECTION:

NEC and FUJITSU PLASMA SCREENS

Our new sister magazine PRESENTech carries a 'technology tips' article which details the inner workings of plasma screens. In the article, in the section titled 'Short History', our journalist suggested that Fujitsu made plasma screens for NEC and others.

We fully accept that NEC do, in fact, manufacture their own plasma screens.

The publisher apologises to NEC, its agents, distributors and dealers everywhere for any commercial duress this error may have caused.

We similarly apologise to Fujitsu if this has in any way caused them any problems.

A similar correction notice will appear in the second issue of Presentech magazine, out on September 2nd.

Mac G3 strikes back

Readers who've followed our Mac G3 saga will be saddened/amazed to learn that the jolly blue speedbox has departed the land of the living. Conveniently, the failure occurred during deadline.

Apple Technical Support suggested reformatting the hard drive, and if that didn't work, contact the dealer for a technician. But recall, the dealer made ugly legal type threatening noises at us when we ran our G3 review some months ago.

What to do? So the G3 sits sadly aside as we soldier on with the older Mac equipment.

Cheech & Chong

You mentioned Cheech Martin is doing Nash Bridges (*Fry, June '99*) - Tommy Chong, I guess, is doing his own thing. But if you rent the remade "McHales Navy" (with Tom Arnold), you will find Tommy Chong playing a small bit as a small time Cuban black market dealer in Havana.

You may have noticed Tommy Chong's daughter Rae Dawn Chong in a few things (one of which was "Commando" with Arnold Schwarzeneger). As far as a C&C reunion is concerned, don't hold out much hope (unless they both become real broke or beholdin' to the tax man). I read in an interview with Cheech Marin that he and Tommy have had a MAJOR falling out a few years back and haven't spoken for years.

-Bob Toth, email

Poor service in Melb

I just wanted to state for the record the appalling service received from some of the so-called production company industry leaders in Melbourne.

Having recently got the go-ahead on a large contract, I set about contacting the various suppliers for quotations to provide the necessary equipment and services to do the job.

Now, I do not mind if people are not interested or are too busy to quote - but what I do object to is being told the paperwork will be on my desk the next week - only to discover it is not and the person has gone interstate.

Not an isolated incident, and in the case of one company, they had been chasing me for work for a year! I will not forget this appalling service.

-'Amazed', email

VHF Wireless shutdown

Last month Channel 7 Brisbane starting testing Digital TV with about 2 kW. Within a few hours we had three calls about problems with VHF radio microphones.

This is only one station at very low power.

- Brad Johnson
BJ's Sound & Lighting, QLD

Caution- mains testing

Andy Ciddor's July 'Tech Talk' about multimeters failed to mention that what you REALLY can't do with one is test mains circuits safely. There are several characteristics a meter must have to be safe around mains voltages.

The probes should have finger guards, and the plugs fully shrouded in case they pull out during use.

It should be impossible to touch internal metal parts so no test sockets for components.

Battery access must require a tool since batteries connect to live parts of the meter.

Current ranges should be protected by high energy fuses.

Finally, the 'unusual' property of tungsten mentioned by Andy is shared by virtually all pure metals.

It is ideal for lamp filaments due to its very high melting temperature.

- Phil Allison, NSW.

First ethernet audio

We were the first to bring CobraNet to the marketplace, but the first ethernet audio network was actually at the Sydney Opera House, not the

Olympic Stadium (Connections, April).

- Clare Climaco, QSC.

Looking good

Orland's July column raises a couple of points.

Corners on speaker boxes look great, but once they wear the plastic types pop off, leaving exposed screws that sharpen themselves dangerously. The steel ones are no better, they twist and tear into knife edges.

Letting people put staples into speaker boxes isn't good either, as they eventually rub into sharp points.

I've got the scares to prove it!

As to using velcro to hold speaker foam, you really need the 'arrowhead' version but it is VERY expensive.

- Duncan Fry, VIC.

Looking to get in

I've been interested in the industry for a long time. I truly love reading your 'LIVE' section.

There is a lack of education facilities in the field of sound or lighting on the Gold Coast or in Brisbane.

I would pretty well do anything to get into the industry, I am keen, a fast learner, honest, reliable and work well under pressure.

Any ideas?

- Sven Markus Jordan, QLD.

• We get a lot of mail like this, and usually tell people to contact the various production companies and to keep trying. If you can help Sven, contact the editor on 02 9876-3530.

Write: PO Box 439, Epping NSW 2121 Aust, or mail@conpub.com.au

MAJOR EVENTS

- PLASA, Sept 5-8, 1999. London, Earls Court. www.plasa.org.uk
- INFOCOMM ASIA, Sept 15-17, 1999. Singapore. Ph. +65 297-2822. www.icia.org
- AES 107th, Sept 24-27, 1999. New York. Fax +1 212 682-0477. web: www.aes.org
- REPLITECH ASIA, Nov 10-12, 1999. Hong Kong. www.kipinet.com
- LDI Nov 19 - 21st, 1999. Orlando. Ph +1 212 229-2965 web: www.etecync.net
- NAMM, 3 - 6 Feb 2000. LA. www.namm.com
- ENTECH 2000, March 5th - 7th, 2000. Sydney Exhibition Complex at the Olympics, Homebush Bay. Fax +61 2 9876-5715. web: www.conpub.com.au
- MusikMesse, March 15- 19th 2000, Frankfurt. www.messefrankfurt.com
- SIB, Mar 26 - 29th, 2000. Rimini, Italy. Ph +39 541 711711. www.fierarimini.it
- NAB, April 8-13th, 2000. Vegas, USA. www.nab.com
- NSCA, April 27 - May 1, 2000. Las Vegas. Ph +1 904 273-2760 www.nsca.org
- PLASA Shanghai, June 7-9. +44 171 370-8231. www.lightandsound-shanghai.com
- WORLD LIGHTING FAIR, June 22-24. Tokyo. www.wlf.co.jp
- SMPTE 2001, July 10-13. Sydney. Ph +61 2 9939-4445. www.smpite.org

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COVER STORY

OLYMPICS PA COMPETITION

from page 5
companies in the region rumoured to be poised to purchase a considerable number.

Jands Production Services fielded a new proprietary powered speaker system called The Sportster, loaded with JBL components and a Crown amplifier. It was devised for the opening of the Stadium earlier in the year, and is mounted on a custom dolly complete with low profile wheels, designed to operate on the grass or sensitive running track areas. The dollies are designed to be towed like airport luggage vans to enable quick set-up and pack down times, as well as ease of handling, say Jands.

Each cabinet is remotely controllable via Crown's IQ-PIP/DSP circuitry, allowing EQ, limiting, delay times and gain corrections to be made and preset stored. Power and dual redundant analogue audio feeds are quickly made, and a rollout of twenty cabinets were cleared from the field in just three minutes at the opening.

According to JPS audio director Peter Ratcliffe, part of the design brief was that the entire enclosure could withstand any inclement weather that would be encountered. On the sound check day, it rained solidly for 8 hours, however all internal parts of the cabinet retained their weatherproof integrity.

The PA People were involved, both as audio custodians of the system installed by themselves at the Stadium, and also as condenders for the gig. They supplied some Bose Panaray prod-

ucts for the comparison, on a custom designed trolley with Crown amplifiers inbuilt. The Sadium speaker system is also made up of Bose loudspeaker products.

EV's X-Array PA was also represented, supplied by L & W Productions. Three X-Array boxes side by side on a trolley occupy roughly the same footprint as a Jands Sportster.

"It was a heavy duty comparison" says Bruce Jackson, "but it ended up more like a convention than a competition. It was an enjoyable process, and everyone got along - helping each other with bits of gear where necessary. Peter Ratcliffe was playing around with his SIM software, and Vdosc sent a guy out from Germany".

The winner will be announced



Morris Lyda, Ric Biru and Bruce Jackson

in a matter of weeks, so that budgets can be nailed down.

"It's not a simple decision, we are looking at the depth of support a company can give us - there is not just one factor".

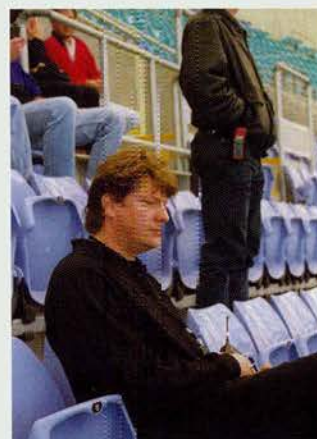
Detail augers well for Olympics

COMMENT by Julius Grafton

This PA system appraisal, or 'competition' at Sydney was almost unique in major event planning. For starters, the Sydney Olympic Stadium is complete and in use. The chance to audition different portable systems in the venue, and to involve any production company with an interest, is almost unheard of.

It removes the chance that a system which may perform well on specification, could fail to deliver in practice. It happens.

Best of all, the PA contract selection process is now transparent to all, in what appears to be a very fair and even handed process. It has also drawn ideas and solutions from all contenders, which may be incorporated for the betterment of the event. Win Win!

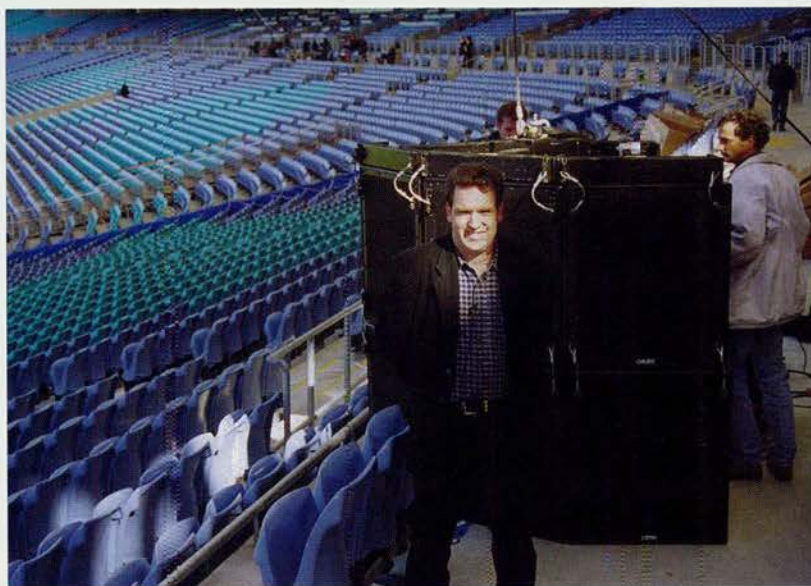


SOCOC Production manager (ceremonies, Malcolm White

EAW's Australian agent Graeme Stevenson (below) with KF 750's, flown and dem'ed for fill to the end temporary stands at the Stadium.



The waiting game. 60 assorted technical experts were on hand to ensure the best performance from the systems on hand.





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CIRCLE MONITORS: Don't let the size of your wallet affect the quality of your monitors

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accuracy, detail and power, HHB's excellent Circle 5 studio monitors are now joined by three new Circle speakers. The new HHB Circle 1 Powered Sub-Woofer combines a 100W amp pack with a low moving mass 12" driver and active 5

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The new HHB Circle 3 active and passive desktop monitors pack an amazing punch, despite their diminutive size (just over 10" / 270mm high), and are ideal for use in applications where space is limited.

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PRO AUDIO NEWS

AUGUST 1999

EV Sx80 mini system 2000

Electro Voice have introduced a new model to their successful System 2000 range, which utilises X-Array technology. The Sx80 is a high powered mini PA loudspeaker which delivers 175 watts continuous or 700 watts peak, says EV.

It comes with EV's DH2005 titanium diaphragm, in a 1.25" diameter exit throat compression driver coupled to a 90° (wide) x 65° (tall) dispersion constant directivity horn. This itself features EV's Ring Mode Decoupling (RMD) technology, which was developed to smooth the mid/high response on the X-Array concert system.

Sx80 also features an electrical protection circuit which doesn't rely on a light bulb, says EV.

- Price: A\$699 each.

- Info: Aust: EVI +61 2 9648-3455, or www.eviaudio.com.au



Circle joined as HHB expand lines

HHB have finalised a complete range of compact studio monitors, with the CIRCLE 3 joining a larger CIRCLE 5 model released earlier this year. Circle monitors come in active (internally amplified) or passive (you supply the amplifier) variants.

Circle 3 is a true desktop monitor. It combines a highly linear, custom designed 5.5" (140mm) bass/mid driver with a ferrofluid cooled soft domed tweeter. Standing just 1-6" (270mm) high, the 60 watt monitor is claimed to be 'very accurate'.

A controlled order crossover aligns the audio characteristics, (or sonic signature) of the Circle 3 with its larger brother, the Circle 5. The active Circle 3 takes inputs as balanced XLR or unbalanced RCA.

Finalising the range is the Circle 1 powered subwoofer (pictured with five Circle 5's, above, which employs a 12" (300mm) woofer to really sort out your low frequency requirements.

In Australia HHB is distributed by AWA Audio Products. HHB expert Michael Guest says that the Circle 5, launched earlier this year, is a big hit. "Most people are frankly amazed at how little they cost. Now with the launch of the Circle 1 sub we can offer a professional 5.1 surround sound monitoring solution at a price not previously associated with accurate monitoring".

Prices in AU PER PAIR are: \$2,099 (C5, passive); \$4,199 (C5 active); \$1,299 (C3, passive); \$2,499 (C3, active) and \$3,999 C1 active sub.

Info: www.hhb.co.uk. In Australia call +61 2 9578-0112.

NEW IMPROVED SHURE DIGITAL EQ & FEEDBACK REDUCER

Shure has released Version 5 of its unique DFR11EQ digital EQ/feedback reducer - with new hardware and software which promises to enhance the performance of virtually any audio system.

The DFR11EQ Version 5 combines a user-selectable 10-band parametric or one-third octave graphic equaliser with an effective feedback reduction system in a compact package that also includes limiting and

delay modules.

Central among its new features are the addition of an onboard limiter for a higher level of sound system protection and a notable increase in delay time - up to 1300 milliseconds compared to a maximum of 100 milliseconds on Version 4. Both are controlled via separate windows within the redesigned software interface. It can be operated on its own or via PC control.

- Aust: Jands; +612 9592 0909.

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Eminence Speaker Corporation was founded in 1966 in Eminence, Kentucky - thus the name! The company, owned by the Gault family, has grown to be arguably the world's number one loudspeaker manufacturer, currently building over 2 million loudspeakers a year.

Eminence now claim that two new models are the best speakers in the world. The new Kilomax 15" and Kilomax 18" (pictured) esoteric high power bass speakers deliver 1,000w RMS.

They are constructed utilizing the following components: a Kapton coil former, Polyamide-imide coated copper voice coil, APS ferrite magnet, Die-cast aluminium chassis, Plasticised cloth (linen) cone edge, and a

Kilomax alloy heatsink.

Eminence has produced loudspeakers for over 30 years, developed a manufacturing capacity of over 10,000 pieces per day (and growing) with over 5,000 unique loudspeaker specifications on file.

- In Australia contact Central Musical Instruments on +61 3 93152244.



Broadcast Audio
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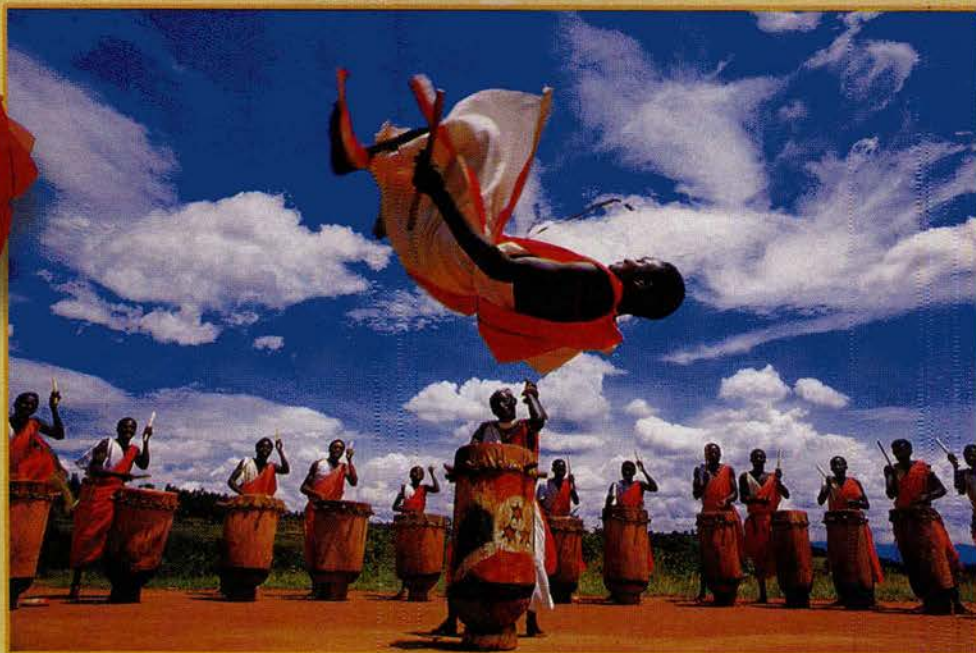
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Jeff Thomas ◊ FOH Engineer, The Dave Matthews Band

"Self-Powered speakers mark a new beginning for both Meyer and the live sound industry."

Mark Frink ◊ MSL-4 Review ◊ Mix Magazine, August 1996

"Only Meyer Sound's Self-Powered Series guarantees us a world-class sound system preferred by most artists and producers."

Marcio, Nelson & Marcos Pilot ◊ Loudness Sonoriza, Brazil

"Setting up 18 stages in one week... we never could have done it without the Self-Powered Series. Nothing is easier to use, easier to maintain, or sounds as great."

Miguel Lourtie ◊ Systems Engineer - EXPO '98 ◊ Lisbon, Portugal

"The sound was amazing, incredible... the music almost came at you in 3-D! ...Simply, I have never experienced speakers like these before."

Mike Klasco ◊ UPA-IP Review ◊ DJ Times Magazine, May 1998

Imagine what you'll be hearing...



Supernova Digital Audio control system

Reviewed by Sid Kidman

A star system gone into thermal overload? Not quite, but Supernova is pretty impressive anyway. LCS (Level Control Systems, of California) produce this modular system to take the sweat out of complex sound productions. With a price tag of twenty thousand dollars for this two rack unit piece of hardware, only the serious need to apply, but a little research reveals some real value.

This review of the LCS LD-88, and the Wild Tracks 16 track hard disk record/play expansion card, was performed over two sessions with the help of Harley Richardson at the premises of Richardson and Devine, Newstead, Brisbane. They represent LCS in the region.

The LD-88 is diminutive in relation to its power.

The output was in stereo, fed to a pair of pretty respectable Meyer monitors, and our source inputs were voice, CD player, and Wild Tracks itself.

Using the LD-88 requires some preparation with the manual, which currently comprises 128 pages of text and diagrams, and is well laid out. Once the basics are grasped, operation with the computer interface is straight forward for most of the normal mixer type functions. Further study with the manual reveals a rich potential for exciting possibilities with respect to routing, EQing, and building of scenes. No more need for separate channels for support acts, preliminary shows, etc - just hit the cue list.

The output sound is definitely in the 'good' category, as expected from quality 20 bit processing and 48 kHz sampling rate. The issue then becomes exactly what tricks this equipment can perform.

FEATURES

The LD-88 has eight analog inputs and eight analog outputs, and up to 16 units can be bussed together for 128 ins and outs.

Each unit has nine DSPs, eight running at 50 MHz for sound, and the ninth running at 60 MHz for auxiliary functions such as cueing and full MIDI functions. Processing is 32 bit floating.

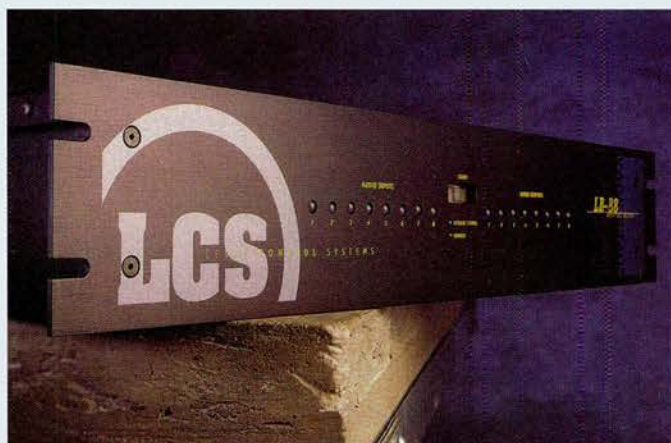
There are 5 parametric EQs on each input and six on each output, while each input can have up to 170 ms of delay, and 490 ms for each output. This is not quite as versatile as "Merlin" (a different approach but same flavoured unit, reviewed in Connections, March 99), but is still very good, and more versatile than the top end desks the LD-88 will replace.

Yes, it can - and does - replace your mixing console.

Setting up a mix becomes very fast once one gets one's head around the manual and the concept of virtual groups and sub group control. Another interesting feature is the triangulation of sound sources, and virtual sources, (ie: the speakers to which the various outputs are routed) to a produce genuine mobile sound source. This system of mixing naturally lends itself to surround sound such as 5.1.1.

ADD WILD TRACKS FOR REPLAY

Wild Tracks is an excellent addition to LD-88. Basically it adds a further 16 tracks, but in the sense that these tracks are pre-recorded, as cues. Whilst the hard disk (size optional up to huge) is linear in stor-



age terms, the provision of RAM buffers ensures instant start for any cue. The recording is accurate enough for studio, but it is not optimized for studio work.

Basically, the LD-88 with Wild Tracks, can provide complicated automated mixing of complete shows for events and displays, in such places as a Disney site or a Las Vegas attraction. Or, a museum multimedia type display, or at a theme park.

Once programmed, it can run automatically and with security, but with instant operator over-ride or intercession via the computer interface, or one of the dedicated eight channel RIF - 108 interfaces. It can be controlled via RS-422, or RS-232, from very remote distances. To help shape the sound for the beautiful sound system now set up at the Sydney Opera House, (see Connections, July 99), the sound department have invested in the Supernova System.

Since we are all getting smart in this country in order to make a buck, soon the odd LD-88 with Wild Tracks should start appearing in the inventory of smarter hire companies.

- Contact Richardson & Devine, Ph: +61 7 32524433.
- LEVEL CONTROL SYSTEMS Ph: 818 836 0446
- www.LCSaudio.com

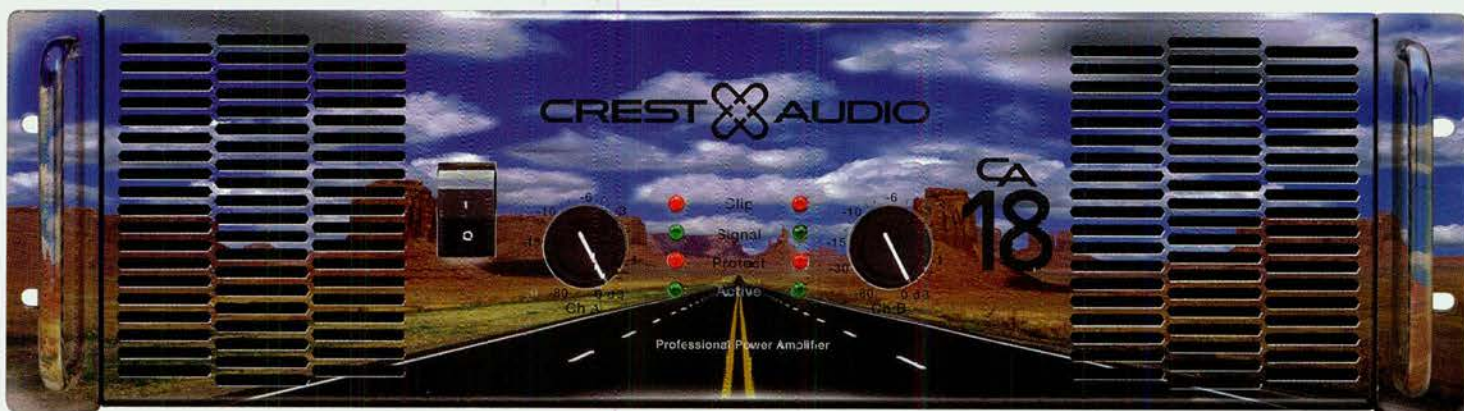
FOOTNOTE: Significance of 32bit floating point

32 bit means 32 bits are processed at one clock signal. Think of a row of 32 little cupboards, each either full or empty. At the arrival of the next clock signal, which will be one fifty millionth of a second after the previous signal, if the chip runs at 50 MHz, the doors fly open and each cupboard is either filled or emptied again. The size of the biggest number that can be handled is $2^{32}-1$, or 4,294,967,295 approximately 4.3 billion. That is when the floating point (the decimal point) is at the right. When the floating point is all the way to the left, the smallest number is $2.328306437 \times 10^{-38}$.

So big, so tiny, why? The answer lies in the accuracy required when some calculations (operations) have to be repeated possibly thousands of times. Small errors are accumulated through the process of truncation. The larger the bit processing, the smaller the sum of truncation errors.



road tested



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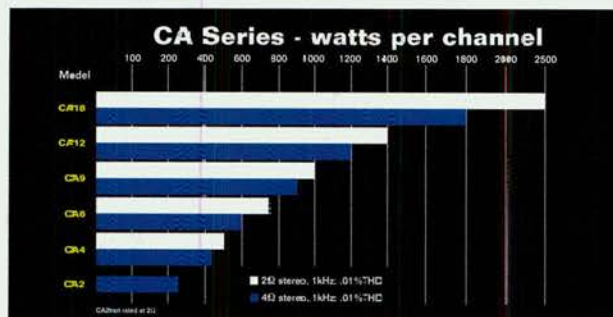
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ASC / Wendt Two Channel Location Sound Mixer

Reviewed by John Grimshaw

The latest offering for the location sound recordist is this very compact and rugged two channel stereo mixer. Made by Wendt Inc in the USA, the MX2 mixer is the full featured little brother to the four channel MX4.

Features

Each of the two XLR inputs have optional phantom power and a three position gain control switch. The unit has an in built audio limiter which can be turned on or off as required. The front panel has two very smooth level control knobs, and a five segment LED VU display for each channel. Both inputs can be panned to left, centre or right outputs using a three position switch, and there is a tone generator for setting a 0dB level on your recording device.

There are plenty of output options packed into this little box. These include balanced XLRs, 3.5mm jack mic out (for mini DATs, MDs etc) and both 3.5mm and 6.35mm headphone jack outputs (either one of these could be used as an unbalanced line out).

The unit has an in built mic to "slate" your recording, and is powered internally using 6x AA batteries, or by an external 9 to

12V DC power source. A "Batt Test" button uses one of the VU meters as a very handy volt meter. The headphone level is controlled by a separate knob on the input side of the box, where there is also controls to dim the "ultra-bright" LEDs used on the front panel.

The unit comes with a specially designed, locally made pouch. The pouch itself has some very useful features, including side entry velcro openings for the inputs and outputs, a plastic top cover to protect the main controls while still allowing clear vision of the VU meters, a front pocket is conveniently sized for the Sony portable DAT machine and includes opening to allow a cable to be internally run from the mixer to the DAT/MD.

The rugged design is obviously built to

last, with a solid metal case surrounding the delicate components inside.

In Use

We tested the mixer by using it for the location sound in a documentary style video recording of classroom work. The mixer proved to be simple and lightweight enough to allow the boom microphone operator to control and monitor the sound, as well as handling the microphone. In fact, I had not even looked at how to make it work before the shoot, and in the two minutes I had to set it up, the simplicity of the unit became very obvious.

The resulting sound off the tape was very good, and subsequent tests using a DAT machine were equally impressive. After using the device four times, for an hour each time, the batteries still had plenty hours of life left in them. Each AA battery measured about 1.47V after testing.

Design

The mixer was designed in collaboration with Wendt Inc in California, and Geoff Grist of Audio Sound Centre in Sydney. The intention was for it to be a companion to a portable DAT (Sony TCD D8) and the portable mini disc range. The overall result is the MX2, with all the features of the MX4 (except stereo mic ganging and analogue VU's). As is often the case with little brothers, the MX2 also ended up a little "quieter".

To take the "portability" idea one step further, Mr Grist and a local canvass bag manufacturer co-designed a suitable bag for the mixer, which he is now selling back to Wendt Inc for their local and international sales. A\$3,050.00

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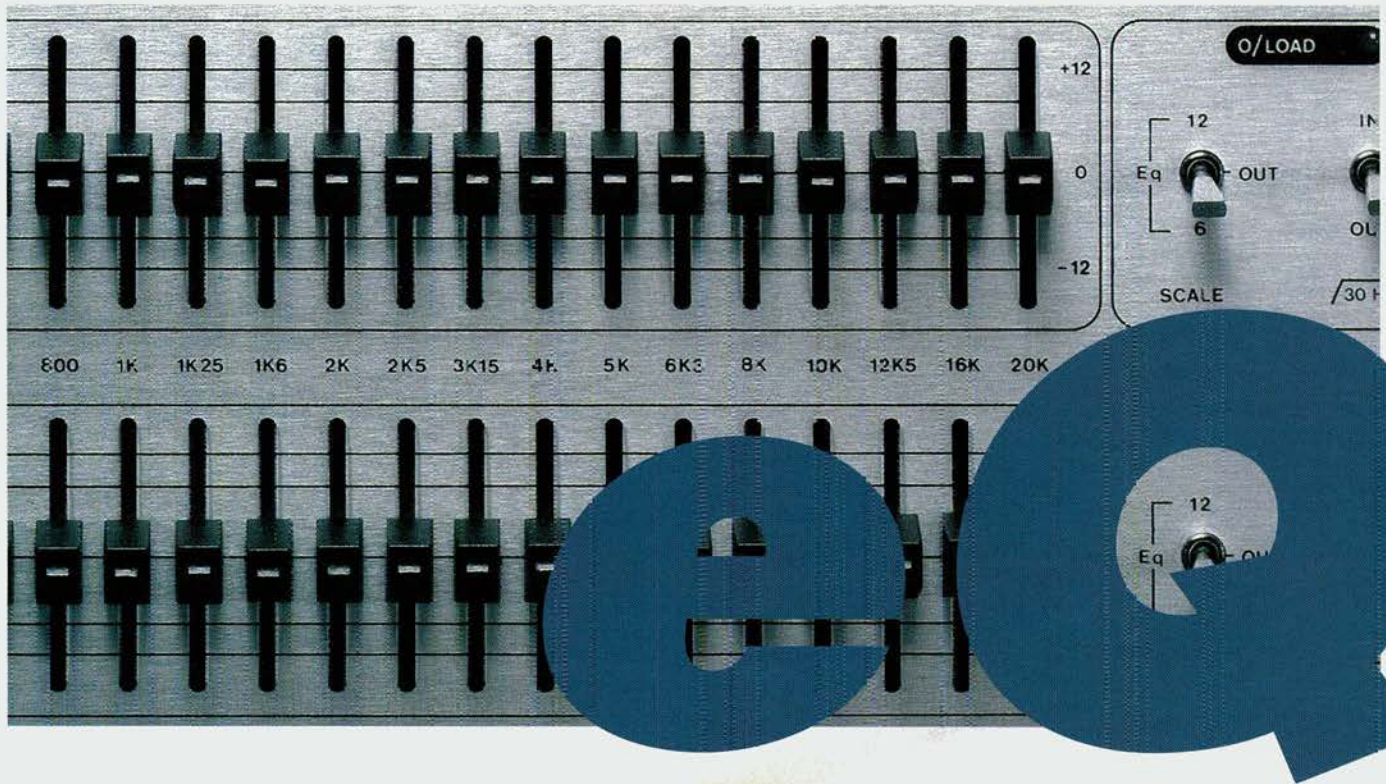
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Feedback & Equalisers in the Sound Engineer's Playground

By John Matheson

One thing sound engineers are always playing with is equalisers. Controlling feedback, for example, ringing out a foldback wedge or equalising a lectern microphone, is one of the reasons we are always playing with them. It may surprise you to know that the mechanisms involved in feedback have a lot in common with playground swings.

Suspend your disbelief for a few moments and I will explain why.

Imagine your kid, let's call him Tim, is on a swing.

Tim wants the swing to go *real* high. How do you achieve this - with one big push? Obviously not. It takes several successive pushes to get the swing up high, and not only that but you have to time the pushes exactly, even if this happens subconsciously. Trying to push whilst the swing is away from you will have no effect and you may just fall over!

Let's take a moment to understand the mechanics involved. Firstly the swing is a stored energy system, a pendulum in fact. The amount of energy stored in the system is a function of Tim's weight and the height of the swing at the extremes of its arc. This is why it takes several pushes to build up the height; each push is adding a little more energy to the system.

Referring to a little high school physics, $F = MA$, or Force (your push) equals Mass (Tim) times Acceleration. In a swing, acceleration is greatest in the middle of changing directions, ie at the end of each arc. It is no coincidence that this is when we have to push. Force must be in phase with acceleration for maximum effect.

The swing is also an oscillating system with a fundamental frequency determined by the length of the pendulum. The natural frequency of oscillation is not affected by how hard we push or how high the swing rises, which is kind of handy if you wanted to make a grandfather clock, but I digress.

So Tim is happily swinging away and we decide to reduce the driving force, ie push less hard. What happens? The swing settles to a new level 'amplitude' of oscillation where the rate at which energy being removed from the system, by friction losses and air turbulence, is equal to the rate at which we are adding energy with each push. The swing is at equilibrium.

So how do we stop the swing when Tim shouts, "I want to get off!"?

Easy, we push it with much the same force we used to start it swinging in the first place - but, and here's the critical difference, we push it at a different time in its cycle. In other words, we change the phase of the driving force.

Let's leave the playground to the kids and return to the world of sound engineering. It is a commonly held belief that feedback in a sound system is a result of excessive gain at one frequency and can be controlled by reducing the gain at that frequency. And yes, those two statements are true, but there's more to it than that.

Energy storage mechanisms are commonly implicated in feedback. An amplification system with an open microphone and energy storage resonant mechanisms is hypersensitive to going into feedback, because it only needs a succession of little pushes to build up to a large signal amplitude at the resonance(s). If the rate at which energy is being added is greater than the rate at which it is being lost, the amplitude will continually build. Conversely, a small reduction in the rate at which energy is added can tip the balance in the other direction.

Foldback Not Feedback

Some years ago I designed some foldback wedges using a reputable brand of bass driver. These wedges had a tendency, when pushed, to feed back at 3kHz. The twelve-inch woofer had a rated frequency response to 5kHz, but as we all know, it would have sounded pretty poxy up that high and was thus crossed over at 1kHz. The brand name of the driver is irrelevant. All similar drivers have similar properties.

How loudspeaker manufacturers achieve extended treble response from such large and heavy diaphragms (and why they would sound poxy if we used it) is to do with the dust cap behaviour. The dust cap is designed to resonate or "ring", typically with a fairly low "Q", to peak the response over an extra octave or two. However, if excited with an impulsive input, such as a step

please turn the page



Pf-215

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SPECIFICATIONS

Model	Pf-012	Pf-115	Pf-215	Sub-15
RMS (Average) Power Handling ^a	250 W	300 W	500 W	300 W
Program Power Handling ^a	500 W	600 W	1000 W	600 W
Peak Power Handling ^a	1000 W	1200 W	2000 W	~200 W
Frequency Response ^f	60 Hz - 20 kHz	50 Hz - 20 kHz	50 Hz - 20 kHz	45 Hz - 500 Hz
Nominal Impedance ^g	8 Ohms	8 Ohms	4 Ohms	8 Ohms
On-axis Sensitivity 1 W/1 M	99 dB SPL	100 dB SPL	102 dB SPL	~00 dB SPL
SPL at full power				
(RMS/Program/Peak)	123/126/129 dB	125/128/131 dB	129/132/135 dB	125/128/131 dB
Nominal -6 dB Beamwidths ^h	Horizontal			
(average, 500 Hz to 8 kHz)	90°	100°	100°	
Enclosure Material	Vertical			
	85°	80°	80°	
Enclosure Material	Complex Aggregate Board	Complex Aggregate Board	Complex Aggregate Board	Complex Aggregate Board
Colour	Grey Carpet	Grey Carpet	Grey Carpet	Grey Carpet
Transducers/Replacement Parts	LF Section	P-12/GM P-12	2 x P-15/GM P-15	P-15/GM P-15
	HF Section	M-3/GM M-5	M-5/GM M-5	
Connector:	Section	NL4 wired as ±1	NL4 wired as ±1	NL4 wired as ±1
(2 paralleled Neutrik Speakon)				
Dimensions (H x W x D)	59 x 42 x 35 cm	66 x 48 x 39 cm	104 x 48 x 39 cm	66 x 48 x 39 cm
Weight	21 kg (46.2 lbs)	28 kg (61.6 lbs)	41 kg (90.2 lbs)	26 kg (57.2 lbs)

^aBased on a 2-hour test using a 6 dB crest factor bandlimited according to IEC 268-1 (1985). All power ratings are referred to the nominal impedance. ^fConventionally 3 dB higher than the RMS measure, although this already utilises a program signal. ^gCorresponds to the signal crests for the test described in ^h10 dB, Half space anechoic. In practice cable and connector impedance has to be added to all impedance values. ^hAverage of one-third octave band measures.

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SOUND PRODUCTS

waveform, the dust cap in the case of this driver would ring at approximately 3kHz. You could hear it and see it in amplitude versus time (energy decay) curves, but it didn't show in frequency response plots.

Incidentally, a step or impulse input is kind of like whacking Tim's swing to full amplitude and letting it go to see how it behaves. Of course the swing will undergo a damped oscillation at its natural resonant frequency, which is just what the dust cap does. Energy is more often stored in vibrating mass/spring/damper systems than pendulums in electro-mechanical systems such as microphones and loudspeakers, but the relationships are the same. Figure 1 depicts a damped oscillation.

EXPERIMENT

As an experiment, I tried damping the dust caps in some wedges with a doping compound. I applied enough thickness of damping so that ringing was no longer evident in the step response of the driver. This had no measurable effect on the frequency response of the system; after all it was crossed over at 1kHz, well below the dust cap resonance.

But when I compared the feedback sensitivity of two wedges, one standard and one with a woofer with doped dust cap, there was a staggering difference. The standard wedge wanted to feedback at 3kHz, whilst the modified wedge easily achieved six decibels more level before feedback without equalisation! It was possible to get similar levels once equalised, but a lot more work was needed on the untreated wedge, and thus its sound was rather more lifeless.

So now you can see why energy storage mechanisms play a role in feedback.

The question is, how can we apply this newfound knowledge? After all, if the public address system starts screaming in the middle of a conference, you can hardly whiz up to the loudspeakers and dope their dust caps! To be honest, I'm not sure it has any application under those circumstances.

Phased By Graphic Equalisers?

A sound system below feedback is where the rate at which energy at every frequency is being removed from the loudspeaker/room part of the system faster than it is being added back by the microphone/amplification part. A system at the point of feedback means that at one or more frequencies, it is close to an equilibrium point, like when Tim is swinging away happily without increasing or decreasing in amplitude. You will be able to hear persistence or "ringing" in the sound at the frequencies about to feed back. If the gain is pushed any further, it tips into a building up of energy and (often very quickly) squeals.

Come with me back to the

playground for a moment.

What happens to Tim and the swing if we push it half as hard (-3dB); does it stop swinging? It will settle to a slightly lower amplitude. But what happens if you reduce the pushing force *and* push at the wrong time (or pull instead of push)? The swing will decline in amplitude much more rapidly.

This is exactly what happens when you move down a fader on a graphic equaliser (or alter any other type of equaliser). Not only the gain changes, but the phase changes as well. This is true for every frequency near, but not exactly equal to, the centre frequency of the filter in question. What's more, the phase changes over quite a broad frequency range, which is very handy if you happened to grab the wrong fader!

The effect equalisers have on signal phase, explains why a small change in equalisation can bring stability to a ringing sound system particularly where the distance between microphone and loudspeaker is fixed, such as lectern microphones. Figure 2

depicts typical 1/3-octave equaliser amplitude and phase responses.

One consequence is that sound engineers become very clever at guessing feedback frequencies, or so they think! Depending on how crappy your equaliser is, you could be out by a band or two, or even three bands, and still improve system stability with a small adjustment. (I'll write more about equalisers in a future article.)

Gaining More Out Of The Loop

Loop gain is a nebulous quantity that is used to define how much gain before feedback is available in a sound system; the more the better. Loop gain reduces for each open microphone channel, so mute any not in use. This can be a problem for conferences where you don't know who is going to speak next. In that case, have all of the faders down a few dB's so as not to miss someone starting to talk completely.

One source of stored energy in sound systems is the Helmholtz resonators fitted to the top of dynamic microphones to peak (extend) high frequency response. If lots of loop gain is needed, use condenser microphones. Or at the very least, try to limit the number of different types of dynamic microphone in use to

preferably just one type. That way, at least, they will all respond to the same equalisation.

Keep microphones and loudspeakers separated and pointed away from each other. How far apart you can take this with a benefit in loop gain depends on the "critical distance" in the room. The critical distance is the radius of distance from a sound source where the reverberant sound field (contributed by the room) becomes as loud as the direct sound from the loudspeaker.

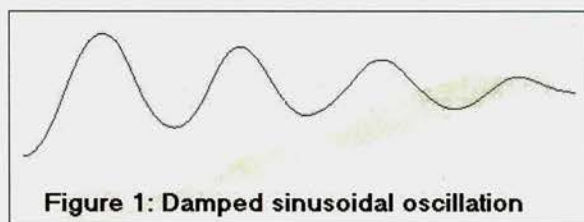


Figure 1: Damped sinusoidal oscillation

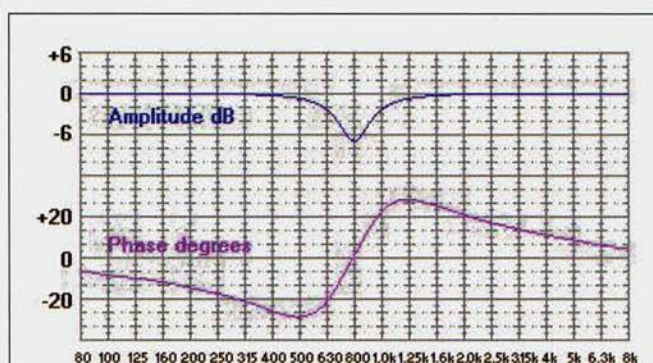


Figure 2: Amplitude & phase response for a 1/3 octave constant "Q" filter at approx -7dB

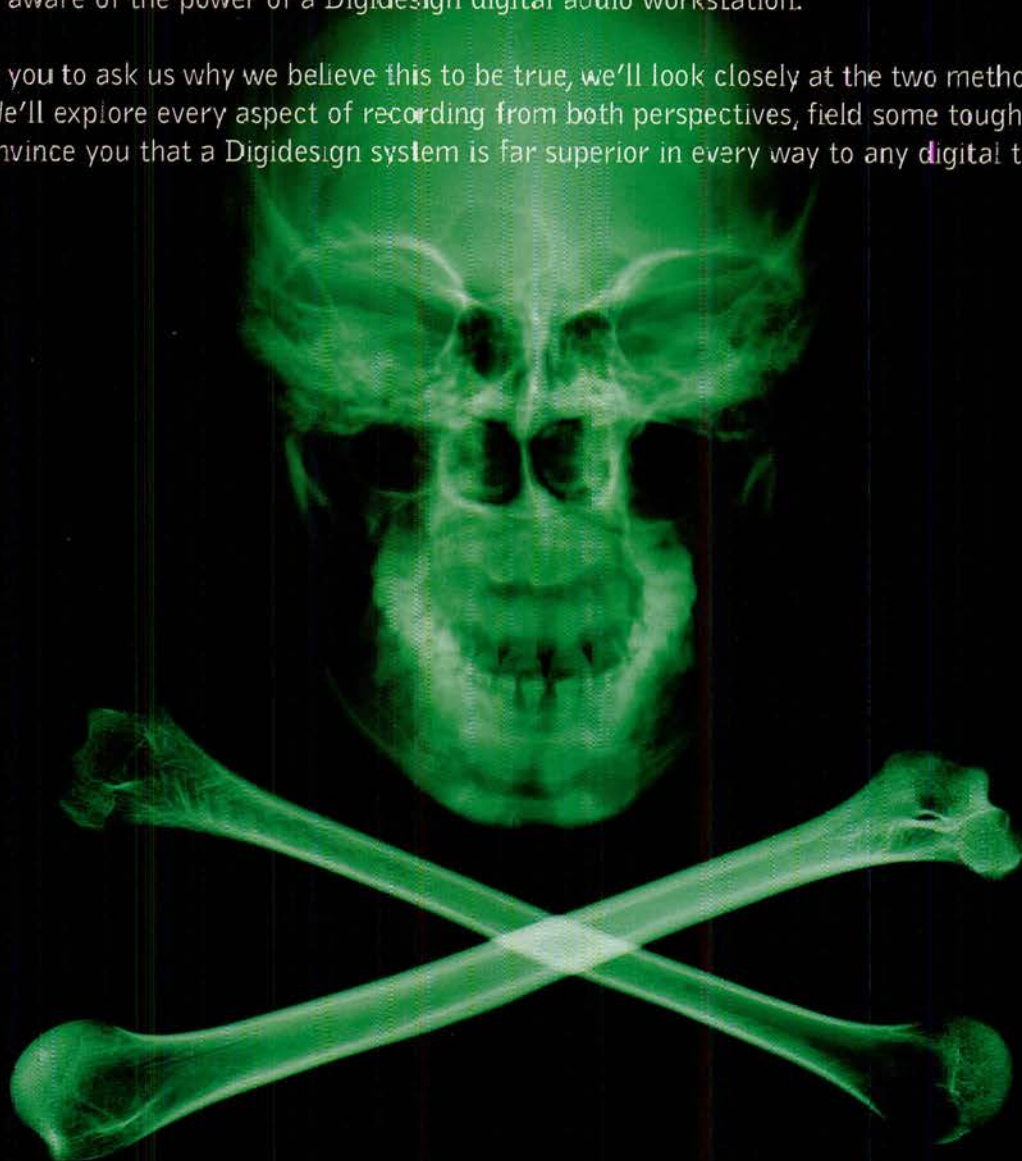
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Is Tape Dead?

Tape is fine for some things — sealing up boxes, taking some ring out of a snare drum, posting messages on a computer monitor. But using it to record music? Haven't we moved past that yet?

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Unfortunately, the more reverberant the room, the shorter the critical distance.

Using directional microphones increases loop gain, because the microphones discriminate against sound from directions other than their axis (front). The degree of discrimination is given by their random energy efficiency, which is 4.8 and 6.0dB for cardioid and hyper-cardioid patterns respectively, compared with omnidirectional.

If you are building a public address system, you can go on a search and destroy mission for any energy storage mechanisms that will impact on the system's performance. This means any resonances in or near the loudspeakers and microphones. Use your ears and tap and scratch things. If they sound resonant or hollow, or worse "ring", then there's energy storage involved.

And finally, reflections near the loudspeaker can also contribute to stored energy. Anything in front of, or nearby to, a loudspeaker is suspect. Even the loudspeaker cabinet itself is a box of resonances. Flush mounting loudspeakers into walls is the ideal method of controlling a whole range of problems and will improve loop gain, provided the baffle is sealed to the wall.

Ringing Sound Out Of Horns

One of the ironies of life is that high "Q" (so called controlled directivity) loudspeakers are often specified for improved loop gain in difficult or reverberant environments. But guess what, high "Q" loudspeakers almost always have high levels of energy storage and often perform quite poorly, just where they are expected to excel.

Try this: tap the side of a naked high frequency horn.

Invariably it will ring like a bell.

Make a mental note of this frequency.

Play some snare drum through the loudspeaker system with horn reassembled.

Listen carefully and you will hear the same frequency "ringing" as you noted earlier, clear as a bell (pun intended) unless it is a very well damped horn. Now open a condenser microphone and push the system into instability. I'll bet that one of the predominant feedback frequencies is that same note.

Well - isn't life full of little coincidences!

I once gave advice for a PA system for a 1,000-seat town hall, which was very reverberant. The loudspeakers specified were Tannoy SuperDuals, quite deliberately chosen for being the amongst lowest "Q" PA loudspeakers on the market. Yet combined with reasonable condenser microphones there is plenty of loop gain available, even for a quiet talker standing behind a lectern.

There are three secrets to this success. Firstly, the Tannoy SuperDuals are a low stored energy system, at least by PA standards. Secondly, only one cabinet a side was needed for coverage, which eliminated all of the phasing between boxes and the consequent messy side lobes, another source of feedback. Thirdly, there is nothing near the loudspeakers that would upset their native behaviour or polar response.

What's more, because the power response of a low "Q" loudspeaker is, by definition, more even than a high "Q" one, the total energy across frequencies radiated into the room is more even, and the energy of the decay of the reverberant sound field is more even. All in all, the low "Q" system will sound more musical and need less equalisation than a high "Q" system, but more on this in the future.

John Matheson designs electro-acoustic systems for Bassett Acoustics. Call him on +61 8 8363 1000.

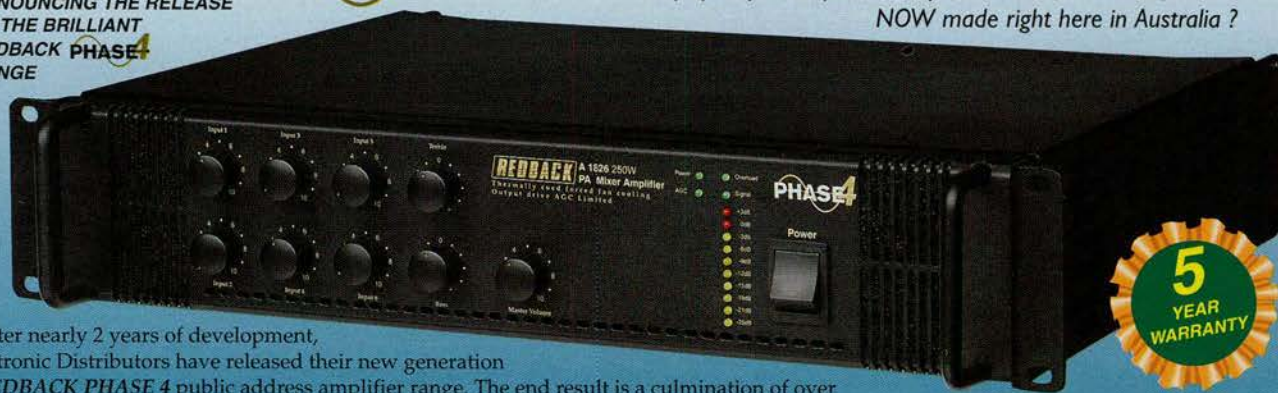
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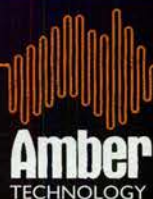
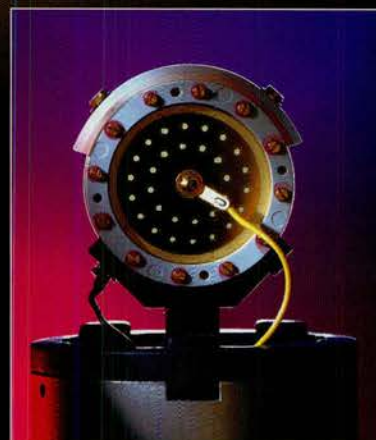
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A \$5.3 MILLION DISCOVERY IN DARWIN

By Julius Grafton

Finding one of Australia's premier nightclubs is just one of the many surprises you'll encounter when you set foot in Darwin - the capital of Australia's far north. *Discovery* is one of the newest nightclubs in Australia.

Martin Audio was first choice for sound, largely on account of the F2 system in Heaven (Adelaide) which was installed in 1997. Adelaide and Darwin have a close relationship - maybe because each city is at an opposite end of a huge pair of states?

Like Heaven, the main audio system in *Discovery* was designed for dual use, nightclub dance floor and as a FOH (front of house) venue system for live acts. With a FOH format, *Discovery* can create the atmosphere of an event with the stage and the numerous entertainment concepts planned as a single point of focus.

Acceptance of the 'house' system by fussy touring artists was a prerequisite, as the design of the venue did NOT allow for touring PA's to be brought in.

Martin's Wavefront 8 concert system was selected. Twelve Wavefront 8C mid/high concert cabinets were flown in two clusters 2 wide/3 high either side of the stage.

With their 3-way all horn loaded design, the W8C's project mids and highs to all areas of the cavernous main venue. Bass is provided by eight WSX 7-foot folded horn subwoofers. Known as 'The Monster Sub', the WSX works best when two or more are located together with their horn mouths coupled.

Discovery located a single block of eight WSX's in a specially constructed concrete bunker under the front of the stage. Even in such a large venue the amount of bass is staggering with useable extension below a 'mountain moving' 24Hz.

The Wavefront 8 system is powered by QSC's MXa Series amplifiers with a total of four MX3000a's on the subs, and three MX2000a's and six MX1500a's on the W8C's.

An LA Audio DigEQ stereo digital equaliser handles room equalisation enabling operators to select preset EQ curves for different music genres, as well as a live FOH setting. A BSS OmniDrive attends to crossover functions with an Aphex Dominator providing a 'brick wall' limiter. An Allen & Heath GR1 routes inputs from various sources, DJ booth, paging mic and live mixer, to the main system and elsewhere in the venue.

Despite being 12 meters away, the W8C's still deliver around 125dB on the dance floor at cruise setting. Consequently a pair of Martin W0.5's are an important fixture in the DJ booth for monitoring and cueing.

Entry to *Discovery* is via 'The Lost Arc' which is itself a second venue ideal for smaller concerts with a capacity of up to 200. Martin Audio was again selected with four mid/high W2's suspended at stage left and right accom-

panied by two WS2 double 15" subs. Four Martin WM0.5 8" 2-way mini floor wedges provide stage foldback.

Amplification is also QSC's MX Series with two MX3000a's, an MX2000a and a MX1500a. Speaker control functions are handled by an ATC EC23 studio crossover with EQ and Limiting by two LA Audio EQ231 and a ECL2 respectively. An Allen & Heath WZ16:2DX rack mount mixer provides ample channels, EQ and foldback sends.

Both systems were installed by locally based Top End Sounds who were delighted to see a project of this size and significance in Darwin. According to MD Colin West 'It has been a privilege to bring this kind of technology to Darwin. Everything at *Discovery* is world class and the standard of audio surpasses any nightclub venue in the country. I have no doubt that *Discovery* as a venue and as a spectacle adds significantly to the prestige of Darwin.'





Vince Haddad (Show Technology), Col West (Top End Sounds), and Tony Russo (TAG) at Discovery in Darwin

The custom made building took 12 months to complete. It includes 5 bars, tiered balconies, 3 private boxes a large stage area, plus the cafe/bar intriguingly called "The Lost Arc".

Top End Sounds also designed and installed the lighting for both rooms. Sixteen Martin MAC 250's create the lightshow.

"This is the first club in the Southern Hemisphere that uses this number of MAC 250's," stated Colin West of Top End Sounds. "I chose MAC's because they are reliable and have so many functions. Show Technology have great service and back up, Vince Haddad flew over and really helped out, I have to give that guy credit."

All the moving yokes are mounted on a circular truss, located in the center of Discovery. The truss can move up and down (up to 8 meters) and even tilt. The movement provides spectacular lighting angles for stage and club and adds more variation for the lighting controller.

The venue also features tiered levels which focus all the attention on the stage and dancefloor. This neat and tidy format was made ideal for day functions such as performances and conferences.

Knowing that versatility was important, Colin West chose Clay Paky Goldenscan HPE's. Several 500W Strobes, UV Canons, JEM ZR22 Smoke machines and other fixtures are all controlled by the Martin Light Jockey. This is the first time Light Jockey has been used as a club controller in Australia.

The Club Lighting Controller "Lurch" (why Lurch, you may well ask...) has become a guru at the software after only a few short weeks.

Finally, anyone who knows Darwin fully understands that the air conditioning mechanic is the most important trade. Discovery has more air packs than a small city, all installed behind the upper facade. Impressive!

Lighting Specification

- 16 x MAC 250
- 4 x Clay Paky Goldenscan HPE
- 8 x Geni Giga Strobes (DMX)
- 4 x UV Canons
- 8 x Molfays
- 16 x Geni Ignitor Tubes
plus matrix hub
- 2 x JEM ZR22
- 1 x Martin Light Jockey
- 32 x Par 64 Cans



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Studio ROUNDUP

ARIAs voting fumble

SYDNEY: Despite being held up as the most influential and credible awards for the Australian recording and music industry, the 13th annual ARIA awards are off to a bad start this year. The Producer of the year and Engineer of the year categories were subject to a revote, after Jamie Fonti was left off the original nominations.

Jamie produced and engineered two of the outstanding debut releases of the year from Primary - Young, and Tearing me up.

The revote was sent to eligible

participants in an industry panel, many of whom had already voted by mail. The revote was required to be faxed to the returning officer, and will likely reduce the overall vote.

Notable nominations this year for Engineer include:

Paul Kosky (Weir - Killing Heidi); *Magoo* (Loverama - Custard); *James Roche* (Waiting for the Day - Bachelor Girl).

Producer standouts include: *Josh Abrahams* (Sweet distorted holiday - Josh Abrahams); and *The Rockmelons* (Time of our Lives - Marcia Hines). **-JG**

Europush

The Ranch in Kangaroo Ground (Victoria) has turned its services over almost completely. Norman McCourt is pictured at right in Europe, representing Australian artists and songwriters through 'Australian Music Marketing Abroad'. The studio now concentrate on preparing albums and samples for potential overseas signings.

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The Truly	Band	Greg Dixon(E)	Demo
Hunchbacks	Band	Greg Dixon(E)	Demo
Martin Kay	Artist	Greg Dixon(E)	Demo
Richard Otmar	Richard Otmar	Greg Dixon(E)	Demo
Damen Gerard Studios Elia Green Tel: (02) 9660 8776. 24/32 Track Studio			
Noiseworks	Band/Russell Pilling	Russell Pilling	Live Recording/Mix
Natural Jug & Juice	Band/Russell Pilling	Russell Pilling	Album
Craig Calhoun	Artist	Russell Pilling	Album
Protocol	Band/Russell Pilling	Russell Pilling	Demos
Johnny Gretch	Pete Wells	Russell Pilling	Album
David Hinds Recording Studios David & Lyn Hinds Tel: (02) 6581 1235 16 Track Digital			
Balance	David & Lyn Hinds	David & Lyn Hinds	Album Tracks
David & Lyn Hinds	David & Lyn Hinds	David & Lyn Hinds	John Oxley Motors Jingle
Enrec Studio Steve Newton Tel: 0418 683 431. Digital			
John Williamson	Artist	Steve Newton (E)	Demos, Live comp mix.
John Williamson	Artist	S. Newton/A. Buckton	Demos (York St Auckland)
Festival Mastering Bianca Tel: (02) 9395 8070. Mastering			
Smudge	Nic Dalton	William Bowden(E)	Single
Ronin System/Magic Dirt		William Bowden(E)	Single
Craig Obzy	Craig	William Bowden(E)	Single
Groove 21/20	James Ingram	William Bowden(E)	Single
Amiel Daemion	Josh Abrahams	William Bowden(E)	Single
Festival Studio Bianca Tel: (02) 9395 8070. Recording			
Gerling	Steve Foster	Steve/Matt Lovell	Single
Tony Lee Scott	Daniel Denholm	Daniel/Matt Lovell	
Universe	Steve Balbi	Tony Wall/Matt Lovell	Single
Whittams	Daniel Denholm/Rob Taylor	Daniel/Rob	Album
Marcia Hines	Paul Gray	Paul/Matt Lovell	
Fishtank@Festival Josh Abrahams Tel: (02) 9395 8069.			
Amiel Daemion	Josh Abrahams	Clare	Album
Gerling	Steve Foster	Steve/Clare	Single
Josh Abrahams	Josh	Josh	Demos
Groovetown James Nowiczewski (02) 9672 3513 Protocols Mix			
The Kosmos Kids	Wave Entertainment	J. Nowiczewski/S. Nowak	Television Production
Australia's Wonderland	S. Nowak/J. Nowiczewski	S. Nowak(PR)/J. Nowiczewski(E)	Atmospheres Show
Lipstick	Band	James Nowiczewski	Album
Hindsong Studio David & Lynn Hinds Tel: (02) 6582 7070. Digital Project Studio			
Balance	Balance	Balance	Demos
Hullabaloo Geoff McGarvey Tel: (02) 9906 2933. 2 ProTools Suites, Audio Post Production			
E-Trade	The Attik	Geoff McGarvey	TVC

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Studio ROUNDUP

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ARTIST	PRODUCER	ENGINEER/PROGRAMMER	NOTES
Disney	Andrew Doyle	Glenn Heaton	Theatre Show Soundtrack
ABC Audio	Danny White	Dan Bowers	Various Childrens CDs
Sex Gods	P.Northcote/G.Duff	Glenn Heaton	EP
JMF Recording Studio Fran Esther Tel: (02) 9790 4097. 24 Tk. 2", 32 Tk. 1" Digital, 24 Tk. ADAT			
Sij	Band	Guy Saminaden(E)	Album
Melissa	Artist	Ralph Esther(E)	Demo
Cold Turkey	Band	Guy Saminaden(E)	Demo
Kilawattz	Band	Mike Ward(E)	Demo
Joanna Capetanakis	Artist	Ralph Esther(E)	
Nu-Town Studio Greg Hopping Tel: (02) 9516 3306. 32 Tk. Digital Pop/Dance Recording and Production			
Jacqui Hall	Artist	Greg Hopping	Demos
Mark Edwards	Greg Hopping	Sofie Loizou(PR)	Demos
Gina Beers	Greg Hopping	Sofie Loizou(PR)	Demos
Anita Spring	G. Hopping/Kyle Neven	Sofie Loizou(PR)	Demos
Mikey	M. Lawrence/M. Zetner	Michael Lawrence	Album
Paradise Studios Bill Field Tel: (02) 9357 1599 Fax: (02) 9357 1841. MCI JH 16/24, Studer A800			
Toni Collette	Artist	Dave Trump(E)	EP/Demos
Greg Arthur	Bobby Gebert	Michael Henshaw(E)	Album
Pennidreadful	Cameron McCauley/Band	Cameron McCauley(E)	EP Mixing
Vicious Hairy Mary	Tim Whitten	Tim Whitten(E)	Album Mixing
Emma Pask	James Morrison	Michael Henshaw(E)	Album Record & Mix
Q Recording Richard Muecke Tel: (02) 9212 4851. SSL G+, 24 Tk. 2"			
Anthony Warlow	Peter Casey	Glen Phimister(E)	Album
Cruel Sea	Band/Paul McKercher	P. McKercher(E)	Album Tracks
Jimmy Barnes	Mark Opitz/Jon Farriss	M. Opitz(E)/Steve Jones(P)/J. Farriss(P)	Mix for Video
INXS	Andrew Farriss	Richard Muecke	O'Dubs & Mix Single
Utopian Babies	Paul Gomersall	Paul Gomersall(E)	
R & R Recordings Robert Zimola Tel: (02) 9672 4494. 16 Tk.			
Eye Cue	Peter Saunders	Rob Zimola(E)	Corporate A/V
Darrel Pritchard		Rob Zimola(E)	Demos
Sparkler	Band	Rob Zimola(E)	Demos
Edward Murphy		Ed Murphy(E)	Demos
Rockinghorse Anthony Lycenko Tel: (02) 6688 4005. Neve V60 Custom, Studer A820, ProTools Mix 24			
Pirol	Christian Pyle	Anthony Lycenko(E/PR)	Album Mixing
Chencab	Band	Anthony Lycenko(E)	EP Mixing
The Olympic Bid	Murry Burns/Marcus McBain	Greg Courtney	Single
Sony Studio Sarah Tel: (02) 9383 6320. Music/Video Production			
Danielle Greenwood	Charles Fisher	Simon Tonx(E)	Singles Tracking
The Catholics	Lloyd Swanton	Ross Ahern(E)	Album Tracking
Human Nature	Andrew Klippel	Simon Tonx(E)	Album Tracks
Leonardo's Bride	Band/James	James Cadsky(E)	Album
Tim Draxi	Ron Creagher/Ross Ahern	Ross Ahern(E)	Album
Sound Level Studios John Soane Tel: (02) 9552 3200. 24 Tk. DA88 - Paris Ensoniq HD 16 Tk.			
Peter Davis Starless	Peter Davis	Jorden Brebach	Demos
David Tice "Headhunters"	Dave Tice	John Bee	Demos
Cellfish	Sean Lowry	Jorden Brebach	Demos
Bulletproof	Jamie Clifford	Jorden Brebach	Demos
Blue Birds	Shaune Wallrighter	Patrick Salloch	Demos
Soundwarp Meredith Brooks Tel: (02) 9905 7144. Mastering			
Zoltan Zavos	Artist	Meredith Brooks	Editing
The Fool	Dave Stanley	Meredith Brooks	Album
Sasha	Norman Lee	Meredith Brooks	Restoration (78 rpm)
Noel Evans	Artist	Meredith Brooks	Album
Acquiesce	Hugh Wilson	Meredith Brooks	Album
Studios 301 Mastering Jacqui Espie Tel: (02) 9211 7301. CD Mastering Facility			
Insurge	Kalju Tonuma	Steve Smart	Album
Dearhunters	Cameron McCauley	Don Bartley	Album
Regurgitator	Magoo	Steve Smart	Single
Karma County	Band	Don Bartley	Album
Alex Lloyd	Artist	Steve Smart	Single
Top Cat Recording Studio Brad Wann Tel: (02) 6628 0843. 24 Tk. Analogue - 24 Tk. Digital & Mastering			
Sphank	Band/Brad Wann	Brad Wann(E)	Album Mixing
Geraldine Loong	Brad Wann	Brad Wann(E)	Album Tracking
Eagle Buns	Band	Brad Wann(E)	EP Tracking
Grant Schwarz	Artist	Brad Wann(E)	Album Tracking
Daniel	Brad Wann	Brad Wann(E)	EP Tracking
Trackdown Digital Mike Duffy Tel: (02) 9550 6890. 2-64 Tk. Digital, Post Audio & Music			
Flipper	YG-EMTV T. Ryan/T. Lista/D. Candusso(E's)		Audio Post Prod'n
Parliament House	Narrow Casters	Torel Lista(E)	Voice Over & Editing
John Hawkesworthy	Artist	Tim Ryan	Recording & Mixing
Cut	Guy Gross	Guy Gross (E/PR)	Film Soundtrack
All Nites	Band	Tim Ryan (E)	EP Recording & Mixing
Velvet Sound Recording Studios Dave McCunn Tel: (02) 9267 2915. 32 Ch./24 Tk. 2" Analogue			
Indecision	Charles Fisher/Femi Jiya	F. Jiya(E)/Band(PR)	Album Tracking
Dropweight	Band	Adrian Grigorieff(E)	EP Track & Mix
Skunkhour	Steve James	S. James(E)/Band(PR)	EP Tracking
Montana	John Haeny	John Haeny(E)	Album Mixing
Euphonic	Band	Tony Wall(E)	EP

Queensland

Vandersound Studios Eric Vandersande Tel: (07) 5546 8100. All Digital & Valve ADAT/XT 02R CDR HDR			
Ian Francis	Eric Vandersande	Andrew Hines (E)	Mix Album
Pre-Dance School	Andrew/Eric	Andrew Hines (E)	Mix/Master CD
Arrowmist	A. Hines/Kyran Halpin	K. Halpin (E)	Mix/Master EP
Peter Perini	Peter/Eric	Eric Vandersande (E)	Mastering Demo
Colleen South	Eric Vandersande	E. Vandersande (E)	Record, Mix, Master Demo



Barry Humphries (and Dame Edna Everage) dropped into Satellite Recording Studio in Perri recently to record a series of radio commercials. These were to promote a new Blinky Bill learning CD ROM for 'little possums'. The project was produced by Belinda Roberts - Roadshow, from her Melbourne office via a conference call. Satellite: +61 8 9470-4003.

Screen Sound Awards underway

The second annual Screen Sound Awards will be delivered on October 16th at the Sebel in Sydney.

Nominations for the fourteen categories closed July 30th. They include TV/Video and Feature Film awards.

"Until last year, the sound industry in Australia was never recognised" said the President of the ASSC (Australian Screen Sound Guild), **Ross Linton**. "Our aims are to have our sound technicians awarded merits by their peers; to create support for our craft throughout the industry; and to ensure the evening is fun!"

Celebrity presenters are a feature of the ASSC Awards, as members call in favours - and the awards has attracted an 'A' list of sponsors - 17 to date.

Fun it was, last year the sellout dinner didn't end until well the next day, Sebel staff struggled to clear the ballroom - only to have the infamous bar at the Sebel swamped with celebrating sound types.

The awards are voted within membership of ASSC, the guild itself is building membership and truly is the peak industry body for screen sound.

Details: +61 2 9958-5596.

David Hinds Moves

New name and new location for **Hindsong Studio**. Now located at 121 Matthew Flinders Drive, in gorgeous coastal Port Macquarie NSW 2444, you can call David or Lyn on +61 2 6582-7070. Watch these pages for pics and details of the new studio.

Damien Gerard parks at Glebe

Until further notice, **Damien Gerard Studio** is now located at 98 Glebe Pt Rd Glebe NSW. Call +61 2 9560-8776.

MAD CDs

Peter and Clive, formerly of ACDC have launched their own CD audio, CD rom and Cassette production company. **MAD CDs** is the result of a combined 30 years experience, they say. Contact them on +61 2 9572-9669 or drop into 132 Percival Rd, Stanmore, NSW 204E.

PARIS IN TASMANIA WOODSTOCK LOFT

Longford, Tasmania, has added the Ensoniq Paris hard disk recording system to its 24 track ADAT rig. Call Doug Kelly on -61 3 639-2277.

News: mail@compub.com.au or fax -61 2 9876-5715



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PRO TOOLS 4.3.1 SOFTWARE UPDATE SUPPORTS MAC G3

Nothing about the new Apple Mac G3 computer is simple. Some users and some software vendors have experienced a variety of problems transitioning to this new ultra fast platform.

DigiDesign's Pro Tools now supports Apple's new Power Macintosh G3 computers, greatly expanding the list of approved CPUs for the Pro Tools product line. The software update also enables PostConform, Digidesign's EDL import/autoconform software, to operate on Pro Tools|24 and Pro Tools|24 MIX systems.

Pro Tools 4.3.1 supports the full line of Apple's new G3 computers. In order to use Pro Tools|24 and Pro Tools|24 MIX TDM hardware with the new G3 computers, users are required to have a compatible floppy drive and a SCSI accelerator card. Machine Control users will additionally need a USB-to-Serial port converter box. For MIDI applications, Digidesign will be distributing Griffin Technology's gPort universal serial adapter (\$59, US), which enables use of any Mac-compatible serial MIDI device. Specific system requirements can be found on Digidesign's website (www.digidesign.com).

Pro Tools 4.3.1 also adds Pro Tools|24 and Pro Tools|24 MIX support for PostConform, a stand-alone application that seamlessly integrates with Pro Tools by auto-assembling master tapes into Pro Tools session files*.

PostConform automatically records and "spots" source audio (such as production dialog, sound effects and music) into Pro Tools Session files* according to industry standard edit decision lists.

** PostConform is limited to recording 16-bit sound files and to creating Pro Tools 3.1 Session files (which can be opened by any subsequent Pro Tools software version).*

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CD Coasting and Toasting

A users guide to CD Burning - by Dean Preston

One of the fundamental laws of CD burning is as follows: for every 10 CD's that are burnt, one will be a coaster. About 2 years ago, I decided to invest in a CD writer. Initially I thought the process of writing audio information to CD would be rather simple, but I was wrong. Yes, the process itself is fairly straight forward, yet I found myself at one stage writing more coasters than I was writing actual complete audio CD's.

One of the main problems was that after writing 2 or 3 CD's the writer would come up with write errors and stop a quarter or half way through the writing process. Since audio CD's read and write data information at the beginning and end of the CD, the writing process was incomplete and I would end up with a CD coaster.

One thing that consumers should be aware of is that CD writers aren't really made for mass production. By that I mean runs of 500 or more. It's cheaper to get a CD manufacturer to do runs of 500 or more mainly because by the time you pay for the CD's, artwork, printing on the CD and a case it works out considerably less than if you were to burn 500.

My problems began when clients would ask me for between 3 and 300 copies of their master CD.

Since CD writing is at the end of the audio chain, getting audio

please turn the page

ARTIST	PRODUCER	ENGINEER/PROGRAMMER	NOTES
South Australia			
"the fridge" Nigel Sweeting (08) 8231 3588 16 Track Non-linear dig - full automation - video sync.			
Diatrobe	Band	Nigel Sweeting (E)	C.D.
Tony Nirta	Artist	Nigel Sweeting (E)	Mastering
Scott	Artist	Nigel Sweeting (E)	Mastering
Humphrey Espanol	Banksia	Nigel Sweeting	Video Post-prod
St. Andrews Orchestra&Choir	Glenni Kempe	Nigel Sweeting	CD
Victoria			
Crystal Mastering Joe Carra Tel: (03) 9326 2318. CD Mastering Facility			
Maladiction	Band/R. Norton	John Ruberto(E)	Mastering Album
The Tragedy	Band	Joe Carra(E)	Mastering EP
Cherry Swamp	Band	Joe Carra(E)	Mastering EP
Sedan	Band	John Ruberto(E)	Mastering Album
Martin Kennedy	Artist	John Ruberto(E)	Mastering Album
Dex Mastering Adam Dempsey Tel: (03) 9372 2266 CD Mastering/Restoration Specialists			
Wonder Pants		Adam Dempsey (E)	Album
Jellybugs	Band	Adam Dempsey (E)	Album
THC	Band	Adam Dempsey (E)	EP
Colin Dix	Artist	Adam Dempsey (E)	Album
Billy Hyde		Adam Dempsey (E)	LP Mastering
Edensound Mastering Martin or Robbie Tel: (03) 9682 9066. CD Mastering, Focusrite "Blue" Suite			
Killing Heidi	Paul Kosky	Martin Pullan	Single B Sides
Elliott Goblet	Artist	Martin Pullan	Album
Michael Thomas	Artist	Martin Pullan	Album
Adam Harvey	Joe Camilleri	M. Pullan/Robbie Adams	Album
Hands	George Papapeprou	Robbie Adams	Single
Lo Ricco Sound Studios Marcello Tel: (03) 9701 6220. 16 Tk. ADAT XT, 24 Tk. Logic Audio			
Brad Meekoms	Artist/Marcello	Marcello Lo Ricco(E)	Album
Russell Murphy	A. Bingham/Marcello/Artist	Marcello Lo Ricco(E)	Album
Kiran Jay Haslam	Artist/Marcello	Marcello Lo Ricco(E)	Demo
Elvina Johnson		Marcello Lo Ricco(E)	CD Single
Anthony Bingham	A. Bingham/Marcello	Marcello Lo Ricco(E/PR)	Demo
Petrophonic Productions Petros Georgiades Tel: (03) 5553 0176. Digital Rec. Studio/MIDI Suite			
Victorian Calisthenics Club	Petros	Petros(E/PR)	Competition Music
Noble Park Calisthenics Club	Petros	Petros(E/PR)	Competition Music

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ARTIST	PRODUCER	ENGINEER/PROGRAMMER	NOTES
Blackburn Calisthenics Club	Petros	Petros(E/PR)	Competition Music
Nick Charles	Artist	Petros(E/PR)	Commercial - Television
Aztec Office Systems	Petros	Petros(E/PR)	On Hold Phone Messages
Sound Around Trevor Cronin Tel: (03) 9531 3891.			
Greg Champion	Rod Coe	Michael Letho	Album
Jenny O'Brien	Artist	Chris Dickie	Album
Duncan Fry	Artist	Trevor Cronin	Single
Quincy's Funk Express	Ben Northey	Trevor Cronin	Live Recording
Studio 52 Paul Higgins Tel: (03) 9417 7707. Studio A: 32 Tk. Automated, Studio B: 24 Tk. ADAT			
Robert Shrigley	Trevor Carter	Tim Cummings/T. Carter	EP
Jed 3		Tim Cummings	Demo
Dean Canan		Andrew Meakes	Album
Mr Joozie	Band/Andrew Meakes	Andrew Meakes	Album
Equinox	Trevor Carter	Trevor Carter	
The Ranch Norman McCourt Tel: (03) 9712 0136. Automated Digital & Analogue 24 Tk.			
Judy's Game	Stewart	Norman James McCourt	Album
Shenanigans	Gary King	Norman James McCourt	Double Album
Rasputan	Morph Music	Norman James McCourt	Indie EP
Frank & Val	N. McCourt	Norman James McCourt	Album
Various	Aust. Music. Mktg. Abroad	Norman James McCourt	PostComm 99
True Form Recording Neil Gray Tel: (03) 9391 0907. 24 Tk. Digital/Analogue & HD			
Plasticine	Cam McKenzie	Ross O'Driscoll(E)	Single
Percolator	Neil/Band	Neil Gray(E)	EP
Soda Racer	Marc Welsh	Ross O'Driscoll(E)	EP
Violette	Neil/Band	Neil Gray	Demos
G.G.F.	Neil/Band	Neil Gray(E)	EP (7")
Wombat Rd. Recording Studio Barrie Clissold Tel: (03) 5145 4204. 16 Tk. An/32 Tk. Digital. Mastering			
Nicky Moffatt	Artist	Barrie Clissold(E/PR)	Demo Tracks
Drama Works 4 Kids	K. Greenway	Barrie Clissold(E)	Video Soundtrack
Gippsland Schools	Sally-Ann Barklay	Barrie Clissold(E)	Live CD Recording
Buffalo Ballet	B. Clissold/Band	Barrie Clissold(E)	Demo Tracks
Zimran	M. Ryswyk/B. Clissold	Barrie Clissold(E)	Album Tracking



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SR-330QX Dual Ch.15 band
SR-331QX Mono 31 band



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DP-275 Active direct box



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Studio ROUNDUP

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ARTIST PRODUCER ENGINEER/PROGRAMMER NOTES

Western Australia

Planet John Villani Tel: (08) 9382 2211. Music & Post, 48 Sony/32 Otari/24 Studer/Sadie Octavia			
Rita Barnett	Alfredo Mallo Bello	John Villani (E)	Album
Kim Taggart	Kevin Peek	John Villani (E)	Demos
Greg Harrold	Kevin Peek	Les Williams (E)	Demos
E. Green	Kevin Peek	John Villani	Single
Vdelli	John Villani/Band	John Villani	Demos

Poons Head Rob & Sam Tel: (08) 9339 4791.			
Fiddler	Rob Grant	Rob Grant(E)	EP
Prickle	Rob Grant	Rob Grant(E)	Album
Ball Point	Rob Grant	Rob Grant(E)	
Dr Twang	Rob Grant	Rob Grant(E)	EP
Fondula	Rob Grant	Rob Grant(E)	Single

Revolver Sound Studio Vic Manfrin Tel: (08) 9272 7505. 32 Tk. Automated Analog & Digital			
Crawlspace	Band/Ben Glatzner	Ben Glatzner	Album Tracking
Hifalutin	Band/Ben Glatzner	Ben Glatzner	Mixing
Flavour Of The Month	Grant Ferstat	Ben Glatzner	Mixing
Plato's Dog	Band/Laurie Sinagra	Laurie Sinagra	Album Tracking
Town Of Bassendean	Gwen Fenech	Vic Manfrin	CD

Satellite Recording Studio Darren Halifax Tel: (08) 9470 4003. 64 Tk. 24 Bit ProTools Mix Plus			
Ozone	Andrew Neil	Andrew Neil	Demo
Antelleian Mor	Artist	Darren Halifax	Album
Mike Burns	Andrew Neil	Andrew Neil	Album
Zydecats	Lucky Oceans	James Hewgill	Album
Yabo	Delson Stokes Snr.	Darren Halifax	Demo

Northern Territory

Masters Studio & Production Lindsay Masters Tel: (08) 8932 1754. 8 Tk. Digital VST			
Eleven Seventy Three	Lindsay Masters	Lindsay Masters(E)	Demo
Karen O'Shea	Artist	Lindsay Masters	Demos

Tasmania

Precision Recording Studio Nathan Johnson Tel: (03) 6427 0906. 16+ Tk. ADAT, ProTools, 16 Tk. Mobile			
Lee Thorpe	Artist/N. Johnson	Nathan Johnson	Solo Album
Shellbacks	Artist	Nathan Johnson	EP/Demos
Simon Astley	Artist	Nathan Johnson	Demos

Studios: don't miss our **STUDIO DIRECTORY**, included in the October issue of **Connections**. Listings close August 31st.

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into my computer was my first problem. One piece of equipment that's a must for quality CD writing is a good quality sound card. Since I had a PowerPC Macintosh, my options at the time were limited and so was the price. These days sound cards are a little cheaper, but back in 1997, \$2000+ was the norm for a good sound card. At the time I was using the Macintosh inputs on the back of the computer which as you probably know aren't of the highest quality!

After looking at several different cards, I decided to go for the Audiomedia III card by Digidesign which I thought was a great deal, and still is. Not only did I get great editing software, I also had a sound card with digital in & outs and some great sounding analog inputs to go as well. Digital inputs are a necessity, especially these days when most of the audio will be coming from DAT or some other digital source. I was ready to progress to stage 2.

Next on my list was a CD writer. A CD writer for a Mac was going to be over a grand, and that was just for a basic model. Anyway, this is where my troubles began. I decided to go for a Yamaha SCSI CD writer which came with a CD writing program called Toast. Three weeks after ordering the writer from the local computer store (it did have to go to Tassie) I get the writer, only it's a Ricoh writer. Sorry, they don't make the Yamaha model writer you ordered anymore. Thanks for telling me guys! OK, I'll forgive, just give me the damn thing! Can anyone guess what happens next?

I get the writer back to studio and connect it up to my beloved Mac. After installing Toast I'm ready to start burning, baby. So far so good. It's all ready to go. I unwrap the blank CD from it's protective casing and place it in CD writer. Within seconds it spits it back out. Maybe I've put it in upside down. Surely I couldn't be that stupid? No, it's the right way up. I try again. Once again it spits it out. OK, I'll have my forth coffee break for the day, read the latest issue of Connections and come back to it in a short while. This time it'll work for sure. I've even got the CD writer terminated. OK. Ready, set, go! Back out it comes. I've just spent \$1500 on a piece of equipment that's about to end up as a fashion accessory around the neck of the salesperson who sold it to me.

To cut a very long story short, there was something wrong with the CD writer. The vendor loaned me a Yamaha model- but only overnight. I had to bite my tongue! Didn't I order a Yamaha model in the first place? After endless amounts of paperwork I was on my way. *(Maybe Dean should name this dealer. -Ed)*

The Yamaha worked perfectly, until I needed to do more than 3 CD's. At the time I had a Power Macintosh 7200/120Mhz PC which was fine up to a certain point. Processor speed isn't really that important when writing CD's, an old 486 can do the job just as well. The problem is that the processor after a while heats up and has trouble processing all those ones and zeros. Unless you have a system like Sonic Solutions which can burn a CD while performing other functions, CD writers usually require that the whole processor is used to do the job. Up until a few years ago, main processors didn't have a fan mounted on them. As programs became more and more complex and demanded more of the main processor (which was wasn't really designed to handle that amount of processing) it eventually would just literally freeze!

Mounting a fan on the processor did help, but it only gave me an extra couple of CD's. I had to do couple of CD's, let the computer cool down, do another couple etc. The fact is that early processors just were not designed for extremely intensive processing. I found that it's also important to defragment your hard drive just before you burn a CD. This stops the hard drive from jumping around too much searching for files. You'll also get the odd faulty blank CD which is also throws a spanner in the works.

• I hope my story has shone some light on the process of burning a CD. Next month I'll look at preparing audio for CD using programs such as Pro Tools and WaveLab. Emails to deanssd@yahoo.com

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DR. G's Gadget Grab Bag

How often have you been faced with a problem, only to discover later that the exact gadget you needed to fix it really did exist. There appears to be no shortage of items as **John Grimshaw** continues his search for new or interesting gadgets and ideas.



DeoxIT & PreservIT Electronic Maintenance Kit

If you have to maintain your own equipment, this kit may be just the thing for you. It allows you to clean electrical contacts, removing unwanted oxidization on contact surfaces. This oxidization adds a resistance to an electrical contact, with can add "crackle" noises to audio, or disruption to data connections.

The second stage of the kit preserves the connection you have just cleaned by protecting against oxidization and lubricating the connection. The kit (right) comes with instructions, and a good assortment of tissues, cloths, swabs and brushes. Larger bottles are also available.

- Audio Sound Centre +61 (0)2 9901 4455
- Caig K-100A electrical maintenance kit \$53.25



when these two irons landed on my desk from Altronics. I thought they would have a hard time matching up against my old faithful iron.

However in this case, the words "Professional Quality" emblazoned on the packaging DID accurately describe the contents rather well. The Solderpro 100 is a 120W, self-igniting iron that is simple to operate. The on/off switch for the gas also ignites the torch, and the iron was hot enough to use before I have time to put the solder to the tip.

The operating temperatures are between 250 and 500 degrees C and controlled by a gas flow control. The grip is solid and well designed, making the tool very easy to operate. The "horse-shoe" shaped collar above the switch prevents the iron rolling away, and allows for the user to safely

put the iron down while it is still running. The only thing it doesn't have is a window into the gas tank so you can see how much gas is left - but a good technician would always have a refilling can available anyway.

The 50W little bother to the above iron is the Solderpro 50. Unlike the "100" this model is not self-igniting, but a cigarette lighter style

Iroda Gas Soldering Irons

I have, for long time, used and sworn by my Weller Pyrophen for all of my soldering jobs away from a work bench. So, I was a little skeptical

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flint is provided. The "50" does have a window into the butane gas tank, so there is no excuses for running out of gas in the middle of a job. It also has a

little stand so that the hot iron doesn't roll away from you when you put it down.

The operating temperatures for this iron are between 210 and 400 degrees C and controlled by a slider that also works as the on/off switch. Being extremely light, this iron will not quickly cause fatigue in your hands, and again the grip is very well designed to sit the iron comfortably in your hands.

- Altronics - +61 (0) 8 9328 1599 or (in Australia) 1800 999 007
- Iroda Solderpro 100 (catalogue no: T2598) \$69.00
- Iroda Solderpro 50 (catalogue no: T2595) \$29.95

Regulated 13.8V DC Power Supply

There are thousands of uses a good power supply of this type can be used for. By itself, there is nothing really amazing about this gadget - except for its price. I have looked around at the options provided by other electronics supply stores, and the typical equivalent prices are between \$110 and \$130. This unit provides up to 8A maximum and 6A continuous. There is also a 2A continuous model.

- WES Components, Sydney +61 (0)2 9797 9866
- Regulated Power Supply (Cat No: RPS612A) \$89.95 (6A Cont)

- Regulated Power Supply (Cat No: RPS212A) \$49.95 (2A Cont)

UTP cable - Video/Audio Baluns

With the growing number of installations where Cat 5 UTP (Unshielded twisted pair) cable is used for computer network and telephone connections, this device could come in quite handy for a number of applications.

This device requires no power, and will send a video signal and stereo audio signal over 3 pairs of cable for a distance of up to 300m for colour video, and 600m for black and white.

(please turn the page)



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Cat 5 UTP cable is much cheaper and easier to install than the equivalent in audio and video cables.

When using this system, there is a small compromise made in the quality of the pictures and audio, but in the tests I made I could not detect this visually.

Using an oscilloscope, I was able to show some "cropping" of the signal, but I was more than happy with the pictures produced. Please note that with the prices below, you will need to order TWO to use the system. One encodes at the video source, and the other decodes at the other end.

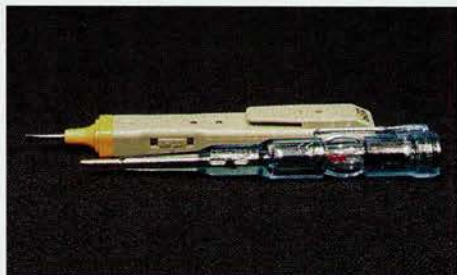
- Jaycar Electronics - all Australian capital cities and Auckland
- Audio/Video Balun (Cat No: QC-3424) - \$89.95ea
- Video only Balun (Cat No: QC-3422) - \$59.95ea

Multifunction Testers

This item was recommended by a friend of mine who has worked as a theatrical lighting technician for numerous years. Typically, a good multifunction tester should at least have contact and non-contact AC voltage detection and a continuity tester. Using this combination, a lighting technician could fault find most problems relating to lighting very quickly and easily.

Jaycar's QP-2260 is a good one at \$12.95, but the sexiest one is the Q-1545 supplied by Dick Smith for a whopping \$9.95. It looks like the conventional old "test pencil", and also doubles as a screwdriver. It should be noted that while non-contact AC testing does prove the presence of the voltage, you should not assume that the absence of detection means there is no voltage - you may live longer if you always assume that there could be a fault with the probe!

The continuity tester uses the tip of the probe and a small metal plate on the side or back to work. As you hold the probe, make contact with the plate and your hand. Then, if you hold one contact of the



item you want to test and touch the probe tip to the other contact a LED will light up if there is continuity. This is a great way to test a fuse, an unplugged light fitting, or any incandescent bulb.

- Dick Smith Electronics
- Voltage tester with screwdriver (Cat No: Q1545) \$9.95

Multimeters

When it comes to multimeters, it is hard to find that balance between features, price, quality and size. Largely, the final choice is up to you, but I have listed here the two smallest "simple" meters that strike the best balance for me.

• Pocket Sized Multimeter

This device is very small and easily fits in your bum-bag. It is able to measure up to 450VAC and DC and resistance up to 32M ohm. It has a diode tester, an audible continuity test and the test leads are permanently attached - making them relatively difficult to lose. The meter pictured here is branded "Wavetek" and is available from RS Components for \$121.30. I have since discovered that a clone version is available from Dick Smith for under \$40.

- Dick Smith Electronics
- Pocket Sized Multimeter (Cat No: Q1577) \$39.90

• Fluke 10 Multimeter

Though slightly larger than the meter above, this unit contains all of the same features with the added ability to measure up to 600V AC

! Testing mains voltages !
Ensure probes have finger guards,
and that plugs are fully shrouded.
Battery access doors should be tool
accessed. Any current ranges should
be protected by high energy fuses.

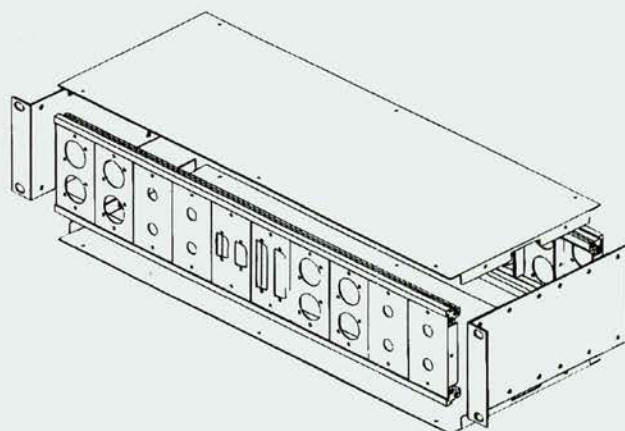


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need it.

• **Backstage work lights** - "Going to blue" backstage could be a little easier if you buy these cheap fittings from any electrical wholesaler, and then paint the glass with Rosco colorine. As there is no real "wear

and tear", the coating should last a long time. When using a 40W standard bulb they are much brighter than the 40W blue party bulbs and you won't need to redip bulbs as they blow. The fitting with glass was around \$10 to \$15. My one pint tin of "Moonlight Blue" colorine (\$25 from Herkes Electrical) is still half full after twice coating 12 glass covers, inside and out.

♦ If you know of any devices that are worth mentioning here (or better options to the ones I have listed), please let me know.

Email: mail@conpub.com.au
(attention Dr. G)

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Fax: Dr G, +61 (0)2 9876 5715

or DC, and it is rated to measure electrical mains. The "Fluke" brand name has long been recognised as a very high quality company, and this unit certainly fits with that description. The RS Components list price is given here, but you should shop around. Please note that the meter shown here is the Fluke 12 which is a slightly more expensive model. Amongst other features, the Fluke 12 also measures capacitance, and can record highest/lowest voltages over time.

• RS Components

• Fluke 10 Multimeter (Cat No: 205-817) \$137.45

NB: The cheapest multimeters I found were under \$20. Both Altronics and Jaycar had a reasonable selection so you may want to have a look at these if you want a simple device as your first multimeter.

Quick and Simple

Simple ideas are very often the best. Here is a quick look at some simple products and ideas:

• **Chalk Chuck** - works like a clutch pencil for a piece of chalk. From the Audio Sound Centre for \$18.30. Ph +61 (0)2 9901 4455

• **90 degree XLRs** - for those time when there is not quite enough room in the back of your rack case to leave your equipment plugged in. Switchcraft brand. Be prepared to open your wallet! They are available from Audio Telex for \$35.14

• **Electrical tape your mag light** - carefully tape the battery end of your mag light with a number of turns of electrical tape. This stops the annoying problem of the torch undoing itself, and provides a source for a short piece of tape just when you

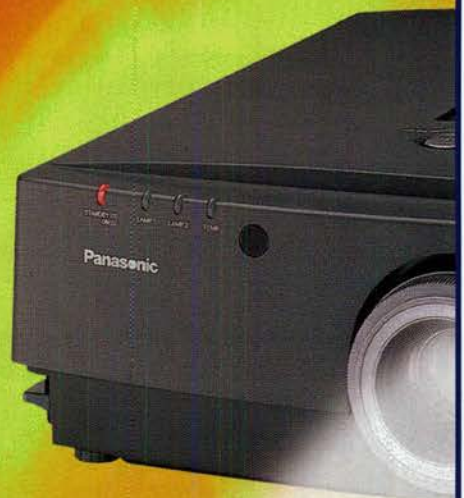
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Focus on a Panasonic Multimedia LCD Projector

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Pack the Esky - it's Wallys World
Part One: Slab Time. By Duncan Fry

Ipicked him up in the old Toyota truck to go up to Deniliquin for a gig with the Jerries, a hard rocking, hard drinking, hard living band led by two brothers, Phil and Johnny.

Wally climbed into the truck with his Esky. I was soon to learn that he never went anywhere without it. A short, stocky, muscular guy, wearing a singlet and armfuls of tattoos, he and his Esky were inseparable companions. He opened it up and I could see it was full to the lid with Fosters cans.

He popped the top on one, took a mouthful, beamed at me and said, "Let's go." I let in the clutch, the old truck shuddered and we were off on the long road to Denni, as it was affectionately known by the locals.

By a conservative estimate, I reckon he polished off a can every twenty miles, which meant that he had got through at least a dozen by the time we got there, allowing for stops for juice, hamburgers, and the odd leak or two.

We rolled up at the gig mid afternoon, and I drove around the back to where the stage access was.

"No, don't stop here", Wally yelled, "Go around to the other side of the pub."

"But that's just the bottle shop", I replied.

"I know," he said, and lifted the lid on his Esky. "See - they're all gone!"

He jumped out of the truck cab, disappeared into the bottle shop, emerging a few minutes later with a wicked grin and a slab in his arms.

"I told them this was for the band", he announced, ripping open the plastic and unzipping a can all in the one practised movement. "Great, eh?"

I thought to myself that the band could count themselves as being exceedingly fortunate if they were ever to catch a glimpse of these cans, but I said nothing.

"OK, now we can load in," he said, and we drove around to the rear of the hotel again.

The stage access door had to be the narrowest door an architect had ever designed, but somehow we managed to squeeze the truckload

of PA system, lighting, and band equipment through it. It was a shit of a place to set up in.

As far as the crew are concerned, the highlights of the night are usually supplied by the audience, and this gig was to be no exception.

A customer had parked himself at a table in front of me, obviously determined to drink himself into oblivion. Suddenly, without any warning, he threw up all over his table. As well as an extraordinary amount of drink, he must also have had quite a substantial meal, because the whole of the tabletop was covered in a great wet frothy, chunky puddle.

He stared at it as if in disbelief, quietly smiling to himself, and then passed out face forward into the steaming mess. His table was one of those typical square Laminex covered single centre log jobs that inhabit every pub from here to Woop Woop.

The weight of his body overpowered the table's feeble centre of gravity, it tilted alarmingly to the right, fell over, and he slithered off it onto the floor, landing right in the middle of the passageway to the bar.

Someone will come and help him up, I told myself. Probably one of his mates or a bouncer. But nobody came to help him. In fact nobody seemed to care at all. They just stepped over him, on their way to get a drink, laughing and joking as if he wasn't there at all. A couple of people actually trod on him, their feet skidding off since he was coated with a kind of glistening vegetable puree.

The band finished, and Wally and I pulled everything down and packed it back into the truck.

"What time are we leaving in the morning?" he asked.

"Oh, I'd like to leave about 8 o'clock", I replied.

"OK he said, I'll come and wake you up. I'm just going to have a couple of drinks with the band."

It was 4 in the morning, and although as a rule it's a good idea to have a P.G.R. (Post Gig Rap) with the band, to bolster their collective egos about how well the night went, tonight I decided that a few hours sleep was far more important. After all, I had to drive the truck back to Melbourne in the morning. So, I headed off to the crew room.

The crew room was an experience in itself, apparently the hotel had had a lot of trouble with road crews wrecking furniture in their room, because this room had none at all. There was a bunk with two beds, and a video game. With no screen, and that was it.

Continued next month



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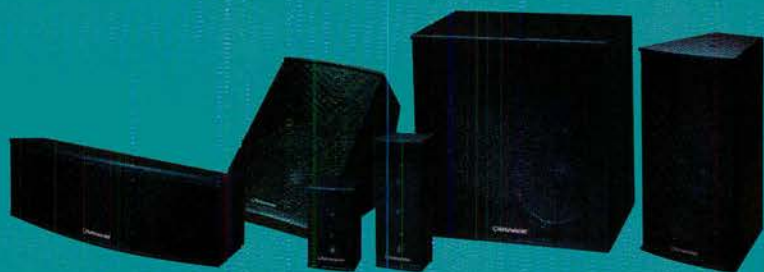
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 Email: info@avsound.com.au
 Web site address: www.avsound.com.au
 Key Staff: Matthew Kline: Managing Director, John Killgallon: Production Manager, Brad Wright: Hire Manager.

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 Unit 13/378 Parramatta Road,
 HOMEBUSH NSW 2040
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 Web site address: www.am.com.au
 Key Staff: Mike Emerson: Manager, Dean Stevenson: Snr Technical Director.

Band-Tech Productions

PO Box 322
 MORTDALE NSW 2223
 Phone: (02) 9580 4838
 Fax: (02) 9580 4838
 Key Staff: Willi Gutwein: Proprietor, FOH Engineer, Graham Rowilson: Systems Engineer-F/Back Engineer, Nick Denning: Lighting Design.

Black Express Light and Sound

275 Homer Street
 EARLWOOD NSW 2200
 Phone: (02) 9559 9363
 Fax: (02) 9558 4923
 Email: candrews@blackexpress.com.au
 Web site address: www.blackexpress.com.au
 Key Staff: Nick Megisidis: Hire Department, Emilio Periera: Hire Department, David Nikotera: Hire Department.

BLM PRODUCTION SERVICES

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 Menai Central, NSW 2234
 Phone: (02) 9541 4888
 Fax: (02) 9541 4199
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Centrestate Sound & Lighting

E2 Margaret Street,
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 Phone: (02) 6362 0587
 Fax: (02) 6361 7875
 Email: censtate@netwit.net.au
 Key Staff: Allan Brown, Proprietor.

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 Fax: (02) 6564 7517
 Email: coastal@nvi.net.au
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Dazza's Sound and Light

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 Phone: 0418 473 657
 Email: DarrenRobertson@hotmail.com
 Key Staff: Darren Robertson: Manager/Owner, John Dimitrievich: System Engineer.

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Phone: (02) 6492 3549
Fax: (02) 6492 3549
Key Staff: Darren Russell: Managing Director/Head of Audio, Rock O'Shea: Head of Lighting, Saul Skoutarides: Head of Staging/Monitors.

Entertainment Installations

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WEST GOSFORD NSW 2250
Phone: (02) 4324 3873
Fax: (02) 4324 5878
Email: nmace@ozemail.com.au
Key Staff: Neale Mace: Manager, Caroline Mace: Account Manager, Glenn Stewart: Hire/Production.

Events NSW (Bowral)

14-16 Loftus Street,
BOWRAL NSW 2576
Phone: (02) 4861 6733
Fax: (02) 4862 3144
Key Staff: Stuart Udy: Manager, Tim Vandenberg: Audio Designer, Andrew Weston: Office Co-ordinator.

Events NSW (Wollongong)

47 Auburn Street
WOLLONGONG NSW 2500
Phone: (02) 4229 6010
Fax: (02) 4227 6644
Key Staff: Stuart Udy: Special Events and AV/Lighting Manager, Tim Vandenberg: Acoustic Design and Audio Manager, Andrew Weston: Rentals Co-ordinator.

Fogg Productions Pty Ltd

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Phone: (02) 9363 9122
Fax: (02) 9363 9201
Email: foggfx@fogg.com.au
Web site address: www.fogg.com.au
Key Staff: Roger Foley: Designer/Director, Chris Richards: Production Manager, Ellis D. Fogg: Head Designer.

Fresh Aire Productions

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Phone: (02) 4625 6067
Fax: (02) 4628 0549
Key Staff: Chris Vine: Manager, Mick Allan: Lighting, Aaron Stone: Audio.

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PO Box 1740
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Email: ils@ozemail.com.au
Key Staff: Jonathan Daddia: Managing Director.

Jands Production Services Pty Ltd

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Web site address:
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Key Staff: John Perez: Director, Stuart Lanham: Lighting, Donald Brierley: Operations Manager.

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Fax: (02) 9651 3217
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Web site address:
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Key Staff: Steven Johnson: Presentations Manager, Trudy Cook: Presentations Consultant, John Eustace: Marketing Manager.

Lightsounds Campbelltown

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LEUMEAH, CAMPBELLTOWN NSW 2560
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Fax: (02) 4627 8655
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Web site address:
www.lotsofwatts.com.au
Key Staff: Philby Lewis: Production Manager, Wayne D'Chong: Audio Sales, Garry Morley: Lighting Sales.

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Web site address:
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Email: saltbush@spin.net.au
Staff: Alan Moran, Duncan Ritchie.



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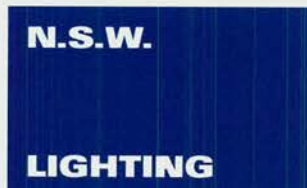
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Phone: (02) 9386 9494
Fax: (02) 9386 9490
Email: events@tpevents.com.au
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Lighting Technician

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Fax: (02) 4862 3144
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Vandenberg: Audio Designer, Andrew
Weston: Office Co-ordinator.

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Fax: (02) 4227 6644
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and AV/Lighting Manager, Tim Van den
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Fax: (02) 9564 3734
Email: premier@premier.com.au
Key Staff: Shane Jacobson: General Manager, Philip Planer: Branch Manager.

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Phone: (02) 4627 8000
Fax: (02) 4627 7555
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Key Staff: Ray Standen: Director, Jill Standen: Office Manager.



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Web site address:
www.audiorecording.com.au
Key Staff: Ian Richardson: Owner, Garry Hall: Production Manager, David Richardson: Systems Co-ordinator.



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Phone: (02) 9901 4455
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Email: asc@audiosound.com.au
Web site address:
www.audiosound.com.au
Key Staff: Nick Blaxell: Rentals Manager, Nick Godoy: Rentals Assistant.



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Michael Wilkie: Director, Leigh
Williams: Administrator.

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Key Staff: Bill Richardson: Managing
Director, Michelle Richardson: Company
Director, Gerry Wilkins: Company
Director.

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Phone: (02) 9699 9921
Fax: (02) 9699 9967
Key Staff: Philip Royston: Director,
Adam Meszaros: Operations Manager,
Steven Boi: Director

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Key Staff: Stuart Udy: Manager, Tim
Vandenberg: Audio Designer, Andrew
Weston: Office Co-ordinator.

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47 Auburn Street
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Key Staff: Stuart Udy: Special Events
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Web site address:
www.lightsounds.com
Key Staff: Lee Clout: Hire Manager,
Steven Voorma: Store Manager.

Lightsounds Sydney City

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Cnr Oxford Street,
DARLINGHURST NSW 2020
Phone: (02) 9357 1771
Fax: (02) 9331 1515
Email: sales@lightsounds.com
Web site address:
www.lightsounds.com
Key Staff: www.lightsounds.com
Key Staff: Edgar Badawy: Store
Manager, David Willis: Assistant.



Night-shift Entertainment Services Pty Ltd

164 Liverpool Road
ENFIELD NSW 2136
Phone: (02) 9744 7777
Fax: (02) 9744 7798
Email: info@nightshift.com.au
Web site address:
www.nightshift.com.au
Key Staff: Steven Tanou: Director,
Steven Dally: Operations Manager,
Shannon Byrne: Technical Director.

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c/- Kennards Self Storage
159 Airds Road
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Phone: (02) 4627 8000
Fax: (02) 4627 7555
Email: RayStandenaudio@bigpond.com
Web site address:
www.users.bigpond.com.au/
RayStandenaudio
Key Staff: Ray Standen: Director, Jill

Standen: Office Manager.

The PA People

432 Liverpool Road
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Phone: (02) 9642 5344
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Email: hire@cstgroup.com.au
Key Staff: Nick Eltis: Hire Manager,
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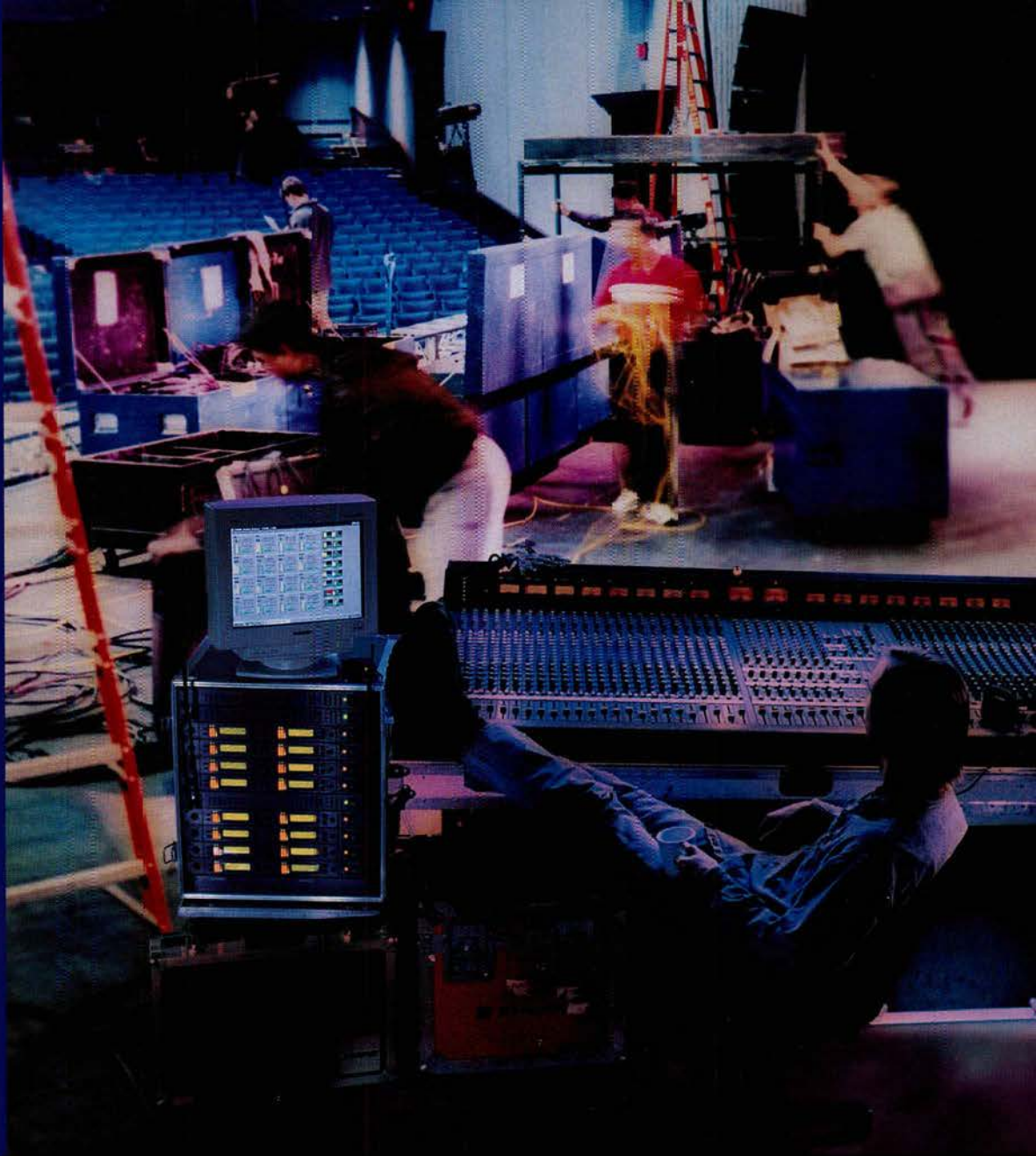
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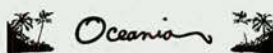
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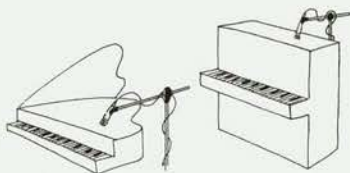
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- MICROPHONES (Part 17)

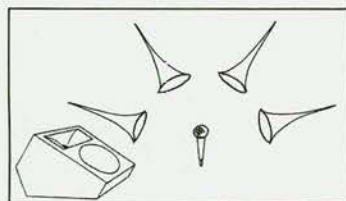
PIANO

Well, we're not talking about classical accuracy here, so we want a fairly bright sound that won't get lost onstage. Hang a microphone over the strings, about two thirds the way from the bass end. If you don't like this sound, move the microphone more towards the centre. If you have a piano dominant solo artist then use two microphones; one a third the way from the bass end, and one the same from the treble end. Keep it well up in the mix.

Some people swear by C-Ducers, which are microphone strips that you tape onto the soundboard of the piano!



BRASS - TRUMPET, SAXOPHONE

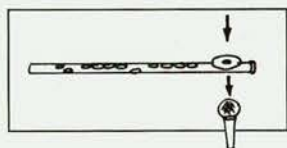


For one trumpet, let it play straight into a vocal microphone setup; for more than one, group them around the microphone at equal distance. If they have their own monitor, most players can balance themselves as they play. Otherwise, if you have lots of spare microphones and channels, you could give them one each. Remember the 3 to 1 rule, though.



For saxophone, either clip a small microphone in the centre of the bell (the big hole in the end), or use a vocal microphone set up as if for a short person. It depends on whether the player likes to roam around while playing or stands still.

FLUTE



Most players will use a vocal microphone, and position themselves so the flute sounds best in their monitor. This position will usually be in a direct line with the mouth across from the mouthpiece.

HARMONICA (BLUES HARP)

This is a predominantly mid frequency instrument, and because players like to cup it in their hands along with the microphone, it's very prone to feeding back, especially in the monitors. So, be wary of any High Mid peaks, roll off the Low and maybe some Low Mid, because all you really want is that 'wail' to cut through. Maybe add some Highs, around 4 KHz, to give the sound some edge.



Since the player is usually holding the microphone, gain ride it if they get too close to monitors or main stacks. Favourite blues harp microphone of many players is the Shure Green Bullet, but experiment with what you have available; frequently the cheaper the better for that 'down home' sound.

For effects, definitely some reverb, maybe a small amount of chorus, perhaps some exciter for sizzle.

Incidentally, if you ever have to mike up a real harp - you know, 7 foot tall with strings and Harp Marx - mike it as you would a piano, only vertically!

SUGGESTED INSTRUMENT MICROPHONES

Shure SM 57 or Beta 57

ElectroVoice N/D357

Beyer M 88 or 201

Sennheiser 421

As you can see the Shure SM 57 figures regularly on these lists. It is a truly versatile instrument microphone, and as its number suggests, is a close relative to the 58. However, with its plastic endpiece it is as fragile as the 58 is robust, so it must be treated well. If the endpiece comes off, don't stick it back on by winding some gaffer tape around it - you'll lose all the bottom end that way. You'll have to find the spring clip that holds it on and re-fit the endpiece. There must be fiddlier jobs than this, but I've yet to find one. I've seen engineers make up their own steel mesh cages to clip over 57s.

The Shure Beta 57 has an all metal end piece, so it might survive being hit by a drum stick for longer!

As a general rule, use whatever works best for you. If you have no choice, then use whatever is handy. Keep in mind that the audience doesn't know a Shure from a Beyer from an AKG from a hole in the ground! If it sounds good to you, use it.

This is extracted from the top selling book: LIVE SOUND MIXING, by Duncan Fry. © D.R. Fry 1998. ISBN 0 646 11235 X. Retail: \$39.00. Available from book stores and music shops everywhere, also through the Connections Shop, call 1-800-635-514.

How to do it

TOM MISNER'S PRACTICAL STUDIO TECHNIQUES

- MICROPHONES (Part 17)

TEN THINGS YOU SHOULD KNOW ABOUT MICROPHONES:

- 1) Dynamic microphones are very rugged and therefore more suitable to live applications.
- 2) Most dynamic microphones have excessive bass frequency response, giving them a characteristic sound.
- 3) Ribbon microphones are delicate and can be damaged very easily.
- 4) Condenser microphones require a power supply.
- 5) Condenser microphones are very fragile and therefore more suitable for studio use.
- 6) Condenser microphones are unable to take very high sound pressure levels.
- 7) Condenser microphones have faster transient response, flatter frequency response and higher output levels.
- 8) Valve microphones offer a 'warm' sound due to the workings of the valve circuitry.
- 9) Valve microphones need an external power supply and are known to be very susceptible to external power fluctuations and interference.
- 10) Most condenser microphones offer a choice of polar patterns.

MICROPHONE APPLICATIONS

The microphone is the engineer's musical instrument, and each type has its own special sound and quality. Certain types of microphone have become very popular because experience has shown that they produce a sound the engineer can work with in the studio.

Over the years I have used the AKG D-12, then the EV RE20, and now the Beyer M 88 on the kick drum. This goes to show there is no single correct microphone for any instrument. The choice is really up to the engineer!

The following are some important things to know when using and choosing microphones.

Directional Characteristics

The microphone's polar pattern is the directional area over which the microphone is most effective and true to specifications. If the sound source is in front of the microphone (0°) it is said to be on axis. If the sound source is 90° - 270° to the side of the microphone it is said to be off-axis. When choosing a microphone for the studio it is also important to consider its off-axis rejection, in other words, the sound it does not pick up. This will be very useful knowledge when recording multiple instruments in the studio, where you are looking for maximum separation of sound.

Many condenser microphones offer selectable polar patterns due to their electrical and physical design. A dynamic microphone can not change its polar pattern. The choice of polar patterns is affected by the operational distance of the microphone to the sound source. The following choices are available:

Close range = Omni pattern

Close/Medium range = Cardioid pattern

Medium range = Super cardioid

Long range = Hyper cardioid

Very long range = Lobe

Proximity Effect

This effect is especially noticeable on cardioid pattern dynamic microphones, and is heard as an increase in bass response as the sound source moves closer. Proximity effect can be very useful when recording vocals, but as soon as the vocalist moves away from the microphone the proximity effect disappears, making the vocal sound thinner. Some microphones have a built in bass rolloff switch compensating for the possible increase in bass response.

Wind Screens

Wind screens are placed in front of the microphone to reduce the wind noise produced when singing and to eliminate the 'popping' sounds caused by pronouncing consonants such as 'p' and 'k'. The wind screen also protects the microphone from moisture and dust particles (condenser microphones are very susceptible to moisture).

Windscreens are made from open pore acoustic foam, or from a round metal frame over which a nylon porous material is stretched. They are placed immediately in front of the microphone.

Shock mounts

Building structures are susceptible to vibrations from distant air traffic, cars, trucks, etc. Many of these vibrations travel through the studio walls and floor, and make their way up the microphone stand and into the microphone - adding a low frequency rumble or hum to each recording. To minimize the effect of vibration, sensitive microphones are often mounted in shock mount holders which provide mechanical isolation.

STEREO MICROPHONE TECHNIQUES

Stereo microphone techniques are primarily used for classical orchestral and piano recording, or for any instrument that the engineer wants to record in stereo. There are a number of stereo microphone techniques to choose from, with the final choice governed by the room acoustics and the placement of the instrument.

XY Technique (Coincident pair)

This technique is well suited for recording an orchestra or other large sound source requiring a wide stereo image, and uses two cardioid polar pattern microphones (usually condenser type). The microphone capsules are placed at 90° to each other, crossed one above the other, facing the sound source. This technique is called a 'coincident pair' because the sound arrives at each microphone's capsule at exactly the same time. The stereo image is created by level differences between the sounds arriving at each microphone.

Near coincident pair

This technique is suitable if the operator requires a larger stereo image, and is a variation of the XY (coincident pair) technique with the microphone capsules facing outward at an angle of 105°. The stereo image is created by level, time and phase differences between the capsules, however, the technique has a 'hole in the center' effect. The reason for calling this technique 'near coincident pair' is because the sound arrives at the microphone capsules at almost the same time.

This is extracted from the top selling book: **PRACTICAL STUDIO TECHNIQUES**, by Tom Misner. ©Tom Misner 1988. ISBN0 646 16704 9. Retail: \$40.00. Available from book stores and music shops everywhere, also through the Connections Shop, call 1800 635 514. Tom Misner is the owner of SAE International.

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ALESIS

Electric Factory +61 39480 5988

Studio 12R Rack mount mixer, 8 mono channels, 2 stereo channels, 2 band EQ, 2 aux sends, phantom power, long throw faders. \$999.

Studio24 Desktop mixer, 8 mono channels, 4 stereo channels, 3 band EQ with parametric mid, 4 aux sends, 2 sub groups, inline design, long throw faders. \$1899.

Studio32 Desktop mixer, 16 mono channels, 3 band EQ with parametric mid and Q, 6 aux sends, 4 sub groups, inline design, long throw faders, high quality mic preamps. \$2499.

ALLEN & HEATH

Technical Audio Group +61 2 9810 5300

MixWizard 16:2DX 16 mono input desk top or rack mount mixer, left/right/mono outputs, digital FX, 6 auxiliary sends, 4 band EQ with 2 mid sweeps, 2 stereo returns, 100mm faders, direct outs, vertical individual PCB construction. \$3595.

MixWizard 14:4:2 16 mono input desk top or rack mount mixer, left/right/mono outputs, 6 auxiliary sends, 4 band EQ with 2 mid sweeps, 2 stereo returns, 100mm faders, direct outs, vertical individual PCB construction. \$3595.

MixWizard 20S 4 mono/8 dual stereo input desk top or rack mount mixer, 2 stereo mix busses, 6 aux, 4 band EQ with 2 sweeps, 100mm faders, direct outs, vertical individual PCB construction. \$3895.

BEHRINGER

Musiclink +61 3 9429 9299

MX9000 24 channel, 48 input in line console with 8 subgroups, 4 band EQ (2 swept mids) with separate EQ on B channels. 6 sends and returns. 24 inserts, direct outs, mic preamps. Phantom power with meterbridge. \$5999.

MX3282A 32 input, 28 channel mixer with 8 subgroups. 3 band EQ (swept mids), 8 sends and 4 returns. 24 inserts and mic preamps. External power supply, with 20 bit multi FX processor. \$2999.

MX2442A 24 input, 20 channel mixer with 4 subgroups. 3 band EQ (swept mids), 6 sends and 2 returns. 16 inserts and mic preamps. External power supply, with 20 bit multi FX processor. \$2999.

MACKIE DESIGNS

Australian Audio Supplies +61 2 4388 4666

Mackie Designs 24 ultra low noise, high headroom mic preamps, 8 subgroups, 6 Aux sends, 100mm logarithmic taper faders, extensive EQ includes true parametric Hi-Mid and Lo-Mid swept, 6 stereo assignable Aux returns, Mix B section, expandable, includes meterbridge, plus loads more. \$6995.

Mackie Designs 16-8 16 ultra low noise, high headroom mic preamps, 8 subgroups, 6 Aux sends, 100mm logarithmic taper faders, extensive EQ includes true parametric Hi-Mid and Lo-Mid swept, 6 stereo assignable Aux returns, Mix B section, includes meterbridge, plus loads more. \$5495.

Mackie CR1604-VLZ 16 ultra low noise, high headroom mic preamps, 4 subgroups, 6 Aux sends, 60mm logarithmic taper faders, 3-Band EQ with sweepable Mids, Control Room/Phones section, Multi-way physical configuration, balanced inputs and outputs, rackmountable even! \$2995.

Mackie MS1402-VLZ 6 ultra low noise, high headroom mic preamps, 4 stereo line inputs, 60mm faders on all channels, extensive Control Room/Phones section, 3-Band EQ, 2 Aux sends, 2 Aux stereo returns, balanced inputs and outputs, rackmountable! \$1495

ROLAND

Roland Corporation

VM-3100Pro Compact digital mixer with 20-channel/8-bus design and full 24-bit resolution; Two stereo multi-effects processors; Scene memory enables storing and recalling complex mixer settings, routings and effects; Full MIDI compatibility with external sequencer; Optical DIF-AT Interface Box adds ADAT(tm)/Tascam@ communication on compatibility. \$2495.

VM-3100 Affordable 12-channel/8-bus tabletop digital mixer; Onboard stereo effects processor with compression, reverb, chorus, delay, and guitar/keyboard/vocal multi-effects; Scene memory; Full MIDI implementation. \$1995.

VM-7200 with VMC-7200 24 fader, 48 inputs; Up to 94 channels of digital automated mixing; Separate console/processor design eliminates need for expensive multi-core be-

tween stage/studio and console; All-digital console with quiet motorised faders; Up to 8 stereo (or 16 mono) multi-effects processors; 5.1 Surround mixing capabilities; Scene memory, onboard mix automation, 24 fader groups, 4-band parametric channel EQ + channel HPF; Processor units can be cascaded for additional I/O capability. \$5,495 & \$6995.

VM-7100 with VMC-7100 12 fader, 38 inputs; Up to 94 channels of digital automated mixing; Separate console/processor design eliminates need for expensive multi-core between stage/studio and console; All-digital console with quiet motorised faders; Up to 8 stereo (or 16 mono) multi-effects processors; 5.1 Surround mixing capabilities; Scene memory, onboard mix automation, 24 fader groups, 4-band parametric channel EQ + channel HPF; Processor units can be cascaded for additional I/O capability. \$4295 & \$5295.

SOUNDTRACS

Studio Connections Australia (03) 9874 7222

Soundtracs RX8 no meterbridge, 24/8/2 - \$4650. RX8 32/8/2 - \$5998.

SPIRIT

Jands Electronics +61 2 9582 0909

Folio Notepad Smallest and most affordable mixer in the Spirit Folio range for Home Studios, Multimedia, Video Post, Location Mixing. DAT quality; impressive EIN and high RF rejection. Four mic and two stereo inputs; Separate Mix and Monitor outputs. \$795.

Folio SX High quality 4 bus (Mix and Sub) desktop or rackmount recording or live mixer. 12 mic and 4 stereo inputs; Ultramic preamps; 3 auxes; 8 direct outputs; Superb low noise, surface mount design; 100mm Faders. \$2495.

Folio FX16 16 mic line input rack mountable console with 3 band swept mid EQ, HPF, direct outputs on all channels, 4 auxiliaries, 100mm faders and a lexicon dual effects unit. Connector panel can be flipped to the rear of the console for rack mounting applications. Also available in 8 channel version (FX8). \$3395.

Spirit Studio Available in 16, 24 and 32 input versions, the Spirit Studio is an in-line recording console and features 4 band EQ with two sweep-

mids, HPF on mic channels, 100mm faders, direct outputs, 6 auxiliaries and 8 subgroups. \$6995.

TASCAM

TEAC +61 3 9644 2442

M-08 12 Input 2 out, 4 XLR Mic ins, 2 Aux sends, optional rack-mount kit. Ideal for multimedia or small PA application. \$525.

TM-D1000 32 mono + 2 stereo inputs/8 buss/6 auxiliaries/stereo master configuration. Motorised faders & Dynamics on each channel with on board Multi FX processors. \$2999.

YAMAHA

Yamaha Music Australia +61 3 9693 5185

O1V 16 channel 4 buss digital mixer (expandable to 24), features 4 band parametric EQ, input delay and comp/lim./expander/gate per channel, 4 Aux sends plus 2 internal FX. 12 Mic/Line (XLR / TRS), 2 stereo line & tape return + 8 digital input & output option offering ADAT, TDIF, AES/EBU and analog formats. Stereo & monitor outputs. Back-lit LCD, 99 scene memories, motorised faders, dedicated EQ, Pan & FX controls, comprehensive metering, HOST control (PC/MAC) & MIDI remote control & device profiles. Two O1Vs can be linked, 12RU. \$4,195.

O3D 16 channel (expandable to 24)/4 buss digital mixer capable of 24 bit recording featuring minimum 32 bit processing throughout. Channels comprise: surround sound panning, 6 aux inc. 2 internal FX processors, 4 band parametric EQ, input delay and dynamics processor, 50 scenes memories with full dynamic automation and motorised faders, backlit LCD. XLR & TRS inputs/outputs, Timecode & wordclock inputs, MIDI control & external device profile to run Protocols etc. EDITOR connection allow hookup to video editors permitting audio follows video editing under the ESAMII protocol, 12RU. \$6,895.

UNDER \$15,000

ALLEN & HEATH

Technical Audio Group +61 2 9810 5300

GS3000/24 24 channel, 8 group, inline twin fader console, 2 patchable valves, 4 band EQ with parametric mids, 6 aux, mute automation with 4

continued over

buyers guide::

STUDIO MIXING CONSOLES

mute groups/127 mute scenes, Midi machine control, 100mm Alps faders. \$13,995.

AUDIO DEVELOPMENTS

John Barry +61 294396955

AD245 PICO Replacement model of the popular 145 PICO, battery or mains powered, two outputs. 6 channel \$8,247, 8 channel \$9,966.

MACKIE DESIGNS

Australian Audio Supplies +61 2 4388 4666

Mackie Designs 32-8 32 ultra low noise, high headroom mic preamps, 8 subgroups, 6 Aux sends, 100mm logarithmic taper faders, extensive EQ includes true parametric Hi-Mid and Lo-Mid swept, 6 stereo assignable Aux returns, Mix B section, expandable, includes meterbridge, plus loads more features. \$8495.

PANASONIC RAMSA

Ramsaudio +61 2 94777377

WR-DA7 38 Channels- 16mic/16line/ 6aux, 100mm Motorised faders, 24bit-128 x oversampling, 32bit internal resolution, global and individual flip faders, midi remote. \$12,395.

SOUNDCRAFT

Jands Electronics (02) 9582 0909

Ghost LE 24/32 In-line format with up to 56 inputs at mixdown; 8 groups; 4 band split EQ with 2 fully parametric mids; 6 mono + 2 stereo auxes; optional meterbridge. Optional vca automation system available. \$14,995.00 (24ch).

SOUNDTRACS

Studio Connections Australia (03) 9874 7222

Soundtracs Topaz Project 8 complete with meterbridge, 24/8/2 - \$8000. 32/8/2 - \$10,000.

SPIRIT

Jands Electronics +61 2 9582 0909

Spirit Digital328 Digital In line recording console. 16 mic line inputs and 16 digital tape returns (or 32:8:2 with additional preamp inputs). E Strip encoders mean that the console is operated just like an analogue console, with the advantages of full digital recall. Full 24 bit A-D, D-A with internal 56 bit summing buss. Two Lexicon dual effects processors and two mono or stereo dynamics processors are included. Also comes complete with 2 Adat and 2 Tascam TDIF digital I/O, AES/EBU and SPDIF interfaces to allow integration of ancillary equipment in the digital domain.

Full machine control and synchronisation capabilities (9 pin, MMC, MTC, SMPTE, Wordclock). Snapshot and Dynamic Automation capable. Two consoles can be linked to provide up to 84 inputs at mixdown. \$13,995.

Digital 328 Optional I/O Three external interfaces are available for the Digital 328: 1. Microphone / Line I/O 8 channels of Spirit Ultramic Plus preamps and 8 analogue outputs. 2. Analogue Line I/O. 8 channels of unbalanced line level I/O. 3. AES/EBU I/O. 4 pairs in and out of AES/EBU. All three use the 328s Tascam TDIF digital I/O ports, but can also be used as external converters without the console. From \$1195.

Spirit 8 16/24/32/40 New 8 bus console for live and recording direct to multitrack applications, 40 UltraMic Plus Pre's 12 stereo inputs (40ch); 4 Mute Groups; 8 Audio Groups; 4 band British EQ with 2 sweeps; 6 auxes; Integral Meterbridge. From \$10,995.

TASCAM

TEAC +61 2 9644 2442

TM-D4000 32 mono + 2 stereo input, 8 buss Digital mixer with 6 Auxiliaries, 24-bit digital quality, motorised faders, dynamics and 4 band sweep EQ on each channel, inboard multi effects processors, + comprehensive machine control inc. 9-pin and a Jog/Shuttle control knob. \$9850.

YAMAHA

Yamaha Music Australia +61 3 9693 5185

O2R 40 channel/8 buss digital mixer capable of 24 bit recording featuring minimum 32 bit processing throughout. O2R channels comprise of: surround sound panning, 8 aux inc. 2 FX processors, 4 band parametric EQ, input delay and comp/lim./expander/gate, 96 scene memories with full dynamic automation and 100mm motorised faders, backlit LCD. Digital I/O option w/4 slots capable of ADAT, TDIF, AES/EBU, Y2 and analog formats. XLR & TRS inputs/outputs, Timecode & wordclock inputs, MIDI control & external device profile to run Protools etc. \$14,995.

OVER \$15,000

ALLEN & HEATH

Technical Audio Group +61 2 9810 5300

GS3000/32 32 channel, 8 group, in-line twin fader console, 2 patchable

valves, 4 band EQ with parametric mids, 6 aux, mute automation with 4 mute groups/127 mute scenes, Midi machine control, 100mm Alps faders. \$16,995.

AUDIO DEVELOPMENTS

John Barry +61 2 9439 6955

AD146 Popular for film and TV production, battery or mains powered, four outputs. 6 Channel \$16,357, 8 Channel \$19,917.

AD147 Follows on from the success of the AD146, battery or mains powered, two outputs. 6 channel \$13,279, 8 channel \$16,185.

COOPER SOUND

John Barry (02) 94396955

CS208 An updated version of the CS106/108 line includes comprehensive communications with four main and two auxiliary outputs. Battery or mains powered. 6 Channel \$26,230, 8 Channel \$30,296.

MACKIE DESIGNS

Australian Audio Supplies +61 2 4388 4666

Mackie Designs D8-B 48 input, 8 bus digital console, full meterbridge, 100mm motorised faders, full automation of all parameters, 4 band parametric EQ, compression and gating on all 48 channels, 2 on-board global effects expandable to 8 stereo effects, 24-bit main outputs, both 5.1 and 7.1 surround sound capabilities, on board upgradable computer, SVGA output, Apogee UV22 Super Encoding software, Apogee digital interface cards, totally upgradable architecture. \$25,995.

OTARI

Amber Technology +61 2 9975 1211

Advanta advanced, fully digital large-format console for all music, film and video-post applications. Completely configurable architecture with simultaneous control of up to 128 (16x8) signal paths, 24-bit/96kHz compatible, both Mapped and Dedicated control surfaces available. From \$250,000.

Concept Elite large-format, digitally controlled analogue console. Up to 48 x dual-path channels with 2 x 4-band parametric EQ, dynamics, EAGLE VCA automation w/- optional moving faders, 10 aux busses, Hires metering etc. Dedicated film versions available. From \$150,000.

Status digitally controlled analogue recording/production console featuring digital switching/routing, console Recall and EAGLE VCA automation. 24-48 x dual-path channels, 8 aux

busses, metal patchbay. Options include moving faders, dynamics and film monitoring/panning. From \$55,000.

SOUNDCRAFT

Jands Electronics +61 2 9582 0909

Ghost 24/32 Unique in its class, it has transport controls for MIDI machine control; track arming, locate and cycle keys; timecode reader and generator; 128 on-board mute scenes. Inline format 72 inputs at mixdown; 8 groups; 4 band split EQ with 2 fully parametric mid bands; 6 mono + 2 stereo auxes; optional meterbridge. Optional vca automation system available. \$16,995.

DC2020 (24/32/40) Moving fader automated inline console with touchscreen driven onboard computer that controls console automation; machine control for all popular digital and analogue recorders/sequencers, and project management. Optional patchbay. \$P.O.A.

DC2020 Surround (24/32/40) As above, but with Magtrax Surround monitoring options. \$P.O.A.

SOUNDTRACS

Studio Connections Australia +61 3 9874 7222

Soundtracs Solitaire in-line console with dynamics in every channel and moving fader automation. From \$40,000.

Soundtracs Jade equipped with highly developed dual inputs on every module with fader and mute automation, EQ and dynamics processing. From \$77,000.

Soundtracs Virtua Digital Audio Console. From \$45,000.

Soundtracs DPC11 Digital Production Console. \$POA.

TASCAM

TEAC +61 3 9644 2442

TM-D8000 40 mono + 12 stereo 8 buss DIGITAL console with 4-band parametric EQ, inboard Dynamics, versatile machine control including 24 track "arming" function on meter bridge (supplied as standard), 6 Aux sends, 4 Cut-groups with dedicated cut masters, comprehensive 12 pot multi-function pod (for EQ control, Aux, Dynamics etc.). \$17,999.

next month::

MICROPHONES

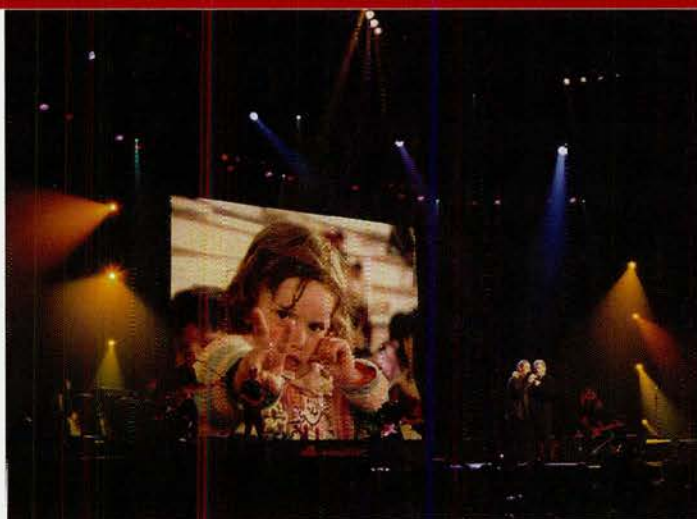
email:
catriona@conpub.com.au

Special

LIVE

PRODUCTION REPORT

50 Candles and 195,000 Pixels Johnny turns 50

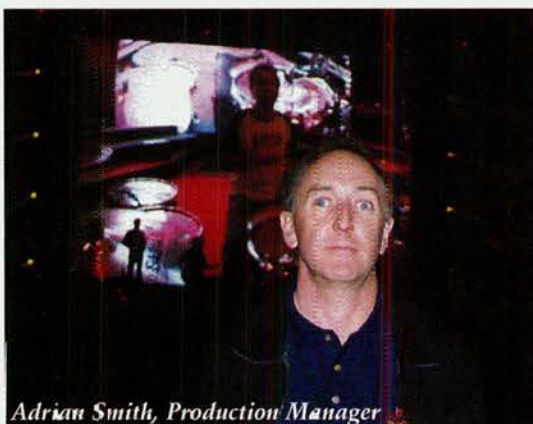


Photos: Madeleine Murray

Apart from Joan Farnham, the other star of the *I Can't Believe He's 50 Tour* was the huge LED screen behind him. The 10.24x7.58m screen came on between numbers in the first half, and during songs in the second half. Farnham's '50th birthday tour' gave the concert a family album type feel, with an opening show of old clips and pics. In video intro pieces on the big screen, each of the six guest acts talked about their work with Farnham.

I arrived three hours before the show, and saw the screen on at half light, and it was still incredibly bright. I thought that it might dominate the stage, and take away from the drama of darkness, but it worked well with the lighting.

The show started out as a small, ten-day tour, but as Adrian Smith, production manager, said "Nothing Farnham does happens by halves, so it ended up being a 31-day national tour with six semis, and 62 people on the road."



Adrian Smith, Production Manager

The screen

Cam Johnson from Clipsal Vision was at the Sydney Entertainment Centre before the show. According to him, this screen is the largest ever erected in the country. The 78 square metre full colour replay screen weighs almost seven tonnes. The problem was obviously going to be how to transport the screen around the country, and how to get it up and down in each venue.

Clipsal had an 800kg two-part fly bar engineered which was built in two 5 metre sections. They rigged the bar with five 2-tonne motors, and load cells, so they could tell exactly what weight was on each motor. The screen is mainly made for outdoor use, and it was set on the lowest possible brightness setting for these indoor shows.

The screen is made of 64 panels, in modules of eight by eight. Each panel is 1.28m x 960mm, and weighs 90kg. Two panels fit into each of the 42 roadcases, which fill a semi-trailer. The screen is put together on site by rows of eight. The process takes three hours to put up and two hours to take down.

Adelaide was the first city where the screen, awesomely big, was flown. "Clipsal have done a great job, it's worked really well, and we haven't had any problems with it," said Adrian Smith, the production manager.

The screen is made by a joint venture of companies—the Adelaide-based Clipsal, and Lighthouse, a company owned by Clipsal in Hong Kong.

Each pixel is made up of five light emitting diodes in the three primary light colours—two red, two green, and one blue. These diodes can be lit in varying combinations and intensities to make 64.5 million colours.

"It's a better resolution than CRT technology," said Johnson. The screen can get as big as possible without distortion. *continued over*





"So you were too late to get the Stadium contract for the big screens?" I asked.

"No, we weren't too late," he replied, "It was a matter of whether we wanted to get paid for it. Some people are doing it for sponsors rights."

Johnson took me back behind the stage and showed me the mass of data cables behind and under the screen which take the video feed from the racks set up in an area below the stage.

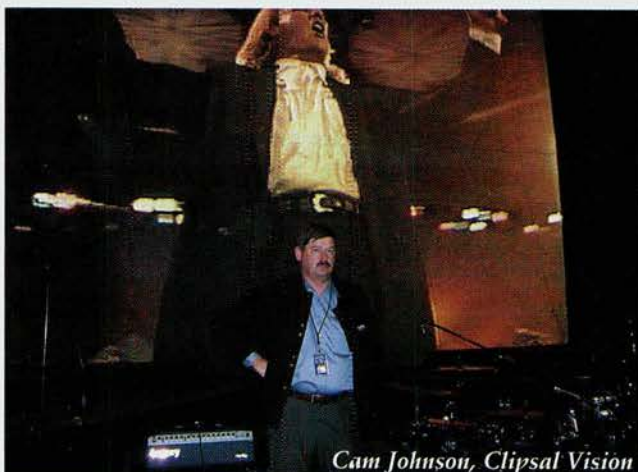
The Farnham stage is very wide, and clear at the edges. The monitor and the video sections are tucked into areas below the stage.

Video feeds

All the video material going to the screen was being generated and mixed by Big Picture, down below the side of stage. Dennis Murphy, half owner of Big Picture (BP) was sitting down in front of his mixer. Murphy trained as a vision mixer in the ABC for five years. Farnham seems to like his team, and most of the crew had worked with him before. BP toured with him in '94, in *The Talk of the Town* tour, then didn't do anything with him for a few years, because his shows were in the round.

This February, 3F was approached, and briefed on this show, which was to be video intensive. BP was providing the playback as well as live camera coverage of the show. There were three operated Sony DCR digital cameras, two just below the front edge of the stage, and one FOH. There were also two miniature fixed cameras, one on keyboards and one on drums. These live camera mixes were on five screens around the venue. Three screens were 12x9', and two were 20x15', all with Barco projection on them.

The brief from John Philip's, tour manager, was to put Farnham in the audience's face. "The audience love it, because it seems to be value-added, which it is," said Murphy.



Cam Johnson, Clipsal Vision

Murphy as director was calling the cameras, and integrating the tape playbacks on some of the other screens. The big screen only takes playback material, except for two cues where it takes a live camera feed. "The two cues are done as a highlight. A big screen like that can detract from the performer, so less is more," said Murphy.

"There is a good level of trust between BP, and John's people. Ross Fraser, his producer basically prepared the tapes, and gave us his indicated cues. We have a good working relationship."

The producers originally wanted a 108 square metre screen, but that wasn't viable. "We consulted on the screen in the early stages. We have to be very careful because we work with three or four different screen companies. We tend to play it neutral, and not align ourselves with any particular company. On this show, we just identified all the suppliers to the production, and indicated what their systems were like. Clipsal ended up with the contract.

"It's a bit of a baptism by fire for them, because the screen is so big, and it's touring. It's the first time they've really been on the road before, because they traditionally do sporting events. They are trying to crack a new market, and they've done really well."

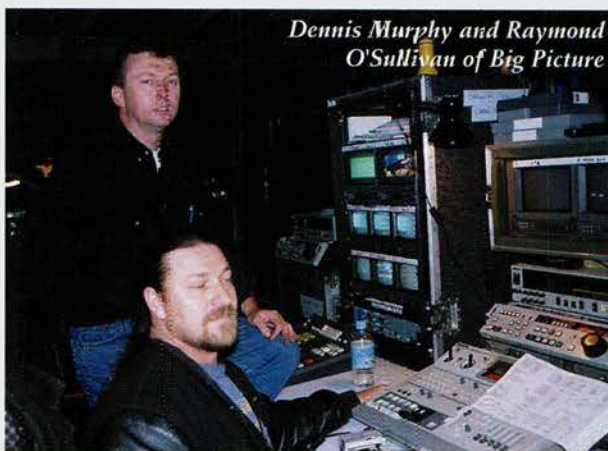
Five years ago, there were three LED screen manufacturers, and now there are 72, according to Murphy. "The process is now so refined, the cost has come down, there are a whole lot more players in the market."

BP has toured with Janet Jackson, David Copperfield, and are currently talking to Jerry Lewis.

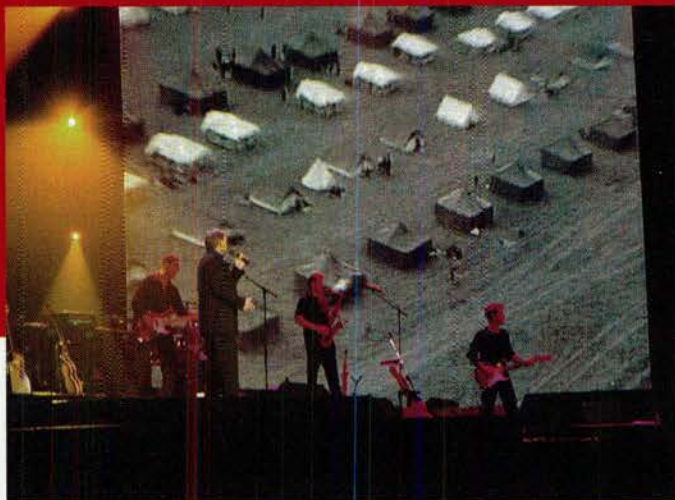
Murphy pointed out that his operation was "quite cost effective, because the guys perform a dual role. On the load-in, they rig and install all the projectors and during the show, they do camera work or CCU."

Lighting

Up in the auditorium was Chris Newman, LD and operator, who has been designing the lights and stage for Farnham's shows for 12 years, since the *Whispering Jack* tour. "John's pretty easy," said Newman. "He basically hands it over to the production, and lets us do our thing. This show is based around the LED screen. The main aim of the staging was to get as big an area for the screen as possible.



Dennis Murphy and Raymond O'Sullivan of Big Picture



"I wanted to design a stage with a clear view through to the screen, without too much riser or band gear in front of it. We've always liked to hide side stage areas, where monitors, guitar techs and dimmers usually are. We like it as neat as possible. Everything is hidden away from view. That also gives John more stage area, and gets him 12' closer to the punters, which he always loves to do."

Each of the six different guest artists had their own style and mood, which Newman enhanced with his lighting. The heavy duty Nana-Zhami got a barrage of strong lighting, while Kate Ceberano was bathed in a white glow.

Newman used 36 VL2s Vari*lite profile lights, some of which he had arranged to form verticals. "The screen is so bright and the trim is so high above the screen, that all the lamps tend to be a bit topsey, and they lose intensity. So I put the verticals in to actually have some punch from the same direction as the screen. Otherwise it just washes everything out, and you don't see anything in front of it."

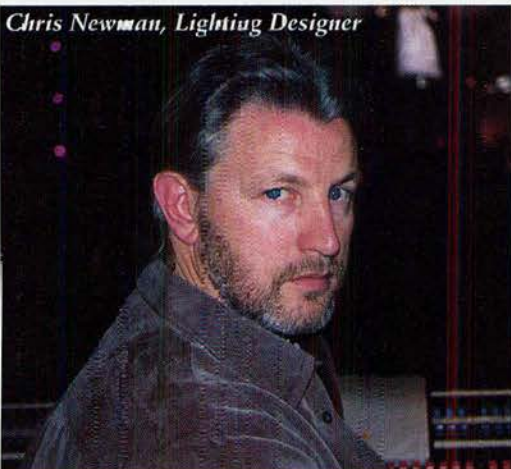
He also had V-ARC5s, another moving yoke wash lamp for the TV show in Melbourne. "We've added them here to see how they will work, so that when we get into the Regent theatre, it won't be such a drama," he said.

There were 200 PARs, and eight-light DWE Molefay units on the front truss. This lights the audience, because Farnham likes to see them at certain parts of the show. Newman uses the same sort of unit on stage, with colour scrollers, for a stage wash. There are also 36 colour scrollers on PARs.

Newman had no moving truss elements, because he couldn't get in the way of the screen.

Peter Lothian programmed all the moving lights, and operated them during the tour as he has done for previous Farnham tours.

Chris Newman, Lighting Designer



The Audio - Monitors

A particularly soft-spoken pleasant man from Rocky Cape on the north-west coast of Tasmania, John 'Fendo' Henderson was trying to eat his desert when I dragged him back to his monitor den under the stage to explain his gear to me. Henderson has worked for Farnham and Glenn Wheatley for about eighteen years.

"We've always been at the high tech end of town," Henderson said. "John likes technology, and has had good sponsors who want to show him new stuff, so we've always been leaders in the high tech gadgetry."

Henderson runs organic monitors, or normal monitors for wedges, with in-ear monitors as well. Farnham started with ears, but has now dropped them, because they interfere with his rapport with the audience, and the devices don't look good on TV. Merrill Bainbridge and Human Nature all use ears. With so many guests, Henderson was pretty busy. The problem with ears, is that you don't know if there is a problem. And an unhappy performer must be very unhappy after a number where they couldn't hear.

Yes, Henderson agreed. He himself had been in the doghouse because Bainbridge's ears weren't on for a song.

"In-ear monitoring is very insular, and it isolates you. You can't hear anything but what is in the mix. If you haven't got the mix right, it's pretty devastating. It's hair-raising to go out there and face the crowds when you can't hear a thing. I got the dunce's jacket for that one," he grinned.

"Each set of ears requires such a critical mix level. They have to have their own reverb, their own EQ. Because there is such a big cast, all of the cues are set in MIDI, and all the mixes are MIDI-controlled."

Henderson was running 14 radio hand held mics. "It gets quite a handful when you're mixing that many mics open at once. It took me a few shows to get it together, to really settle the whole thing down."

He was using three Yamaha O1V mixing consoles and a Soundcraft Series Five monitor console. "The O1V's are absolutely flexible, they have onboard compression and onboard reverb. You're not carrying racks of equipment around with you, and they are very simple and fast to use. The problem with digital desks in a live

continued over

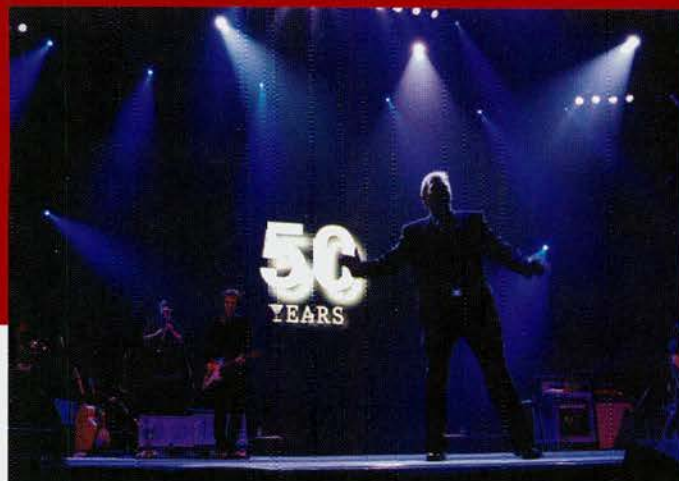
*Peter Lothian, Vari*lite Operator*



Grant 'Tosh' Walsh, FOH Audio



John 'Hendo' Henderson, Monitor Engineer



situation is that they were very slow to use."

The Audio - FOH

The audio operator, Grant 'Tosh' Walsh, was using two Midas XL4 consoles. "They certainly make life easier. I think they're great. I use all the automation on it, the flying faders, all the remote grouping, remote VCA control, and mute sends.

"It's essential on a show like this with so many guest artists, and you can jump from scene to scene. The moving faders help you to focus on what's happening next, as opposed to trying to pick out which channel is active. So you can turn something off, or fade out and then see which channel is active for the next act.

"They are a far superior console to most, but like all automation things, the software probably needs further development.

"We've got them linked via MIDI to bring up a different scene

for every song in the set, as well as everything else that goes on."

He also had a couple of "new" DBX 556 compressors that seem to be working well."

●Madeleine Murray

Guest performers Ross Wilson, Merrill Bainbridge, Nana-Zhami, Human Nature, James Reyne, Kate Cerebrano

Production Manager Adrian Smith **Tour Manager** John Phillips
Video Director Dennis Murphy **Projectionist and replay to big screen** Ray O'Sullivan **Projectionist and CCU operation** Dan Keating **Projectionist and camera operator** Dave Hendy **Senior camera operator** Paul Woofe **Lighting Designer** Chris Newman
Vari*lite operator Peter Lothian **Audio FOH** Grant 'Tosh' Walsh
Monitors John 'Hendo' Henderson **Clipsal Vision** Cam Johnson, Danny Garae, Nathan van de Van.

The Sound - concerns raised

As happens, readers call the Connections office after attending a show, to talk about the production. A consistent opinion was expressed, along the lines of the following letter received, that to some people, the sound on the recent Farnham tour wasn't at a standard our readers would expect. Because of this, it is opportune to print the letter we have received from Mark Williams.

The writer has worked as a live sound engineer for 15 years, and has been the main engineer at Exodus Recording in Mildura (now Red Earth Studios) for 4 years.

We forwarded the letter to John Farnham's production manager Adrian Smith, hoping to get a response before presstime. Adrian advised he was unable to arrange it within the deadline timeframe, but would try to do so for the next issue. The letter reads:

• On July 8, with 3 friends, I paid \$70 and drove 550kms (1100km round trip) to see John Farnham's last concert of the current tour at Melbourne Park.

Performances from all artists were enjoyable but the quality of sound was disappointing to say the least. The problem was frequency balance - eg: peaks around 2K and nothing around 400 to 800hz. This amounted to a cutting tone most noticeable with solo vocals and lead guitar which was painful to the ears on occasion, mainly when the dynamics were peaking out.

Jack Jones normally gutsy sounding guitar solos sounded like they were coming from a single horn, not a guitar cab.

The same problem was particularly evident with all vocalists although less so with Human Nature and Meryl Bainbridge, probably due to smooth voice character and low dynamics and John Farnham's voice suffered less than the remaining artists. James Reyne's voice was particularly piercing.

Nana Zarnie's guitar sound suffered the same thin gutless tone and Angus Burchard's toms couldn't be heard all night apart from a little floor tom. The bass guitar and kick drum also lacked clarity.

I was sitting (most of the time, in Upper section Row EE seat 286. I went for a walk to determine whether the problem was local and I would estimate that at least one third of the audience were hearing the same as we were. I sat just behind the mixing desk for several songs until interval and it was a great deal better. I stated the problem to FOH engineer Grant Walsh and he said he'd get someone to check it out.

I have questions from a group of 4 audio literate rational human beings - all are musicians and/or vocalists, 3 have audio engineering experience, one is a doctor and I myself have worked as a studio and live engineer for many years.

We expected reasonable quality sound - as you do from a professional show. We also believe that if you don't put pen to paper in this sort of situation it is somewhat irresponsible.

John Farnham stated during the show that the people concerned with all aspects of the show were the best, I myself have respect for these same people and do not wish to doubt it but I said to myself he needs to sit where I am and then seek some answers from those involved.

Could the appropriate people please answer these questions:

Q1. Who was responsible for sound at setup and showtime in areas other than the FOH position? And do they have any knowledge of, or reason for, the problem?

Q2. What are the criteria used to determine speaker positioning and therefore audience coverage?

Q3. What is the maximum distance that the speakers in question are capable of delivering a balanced frequency range?

Q4. If throw or reflections are the problem, Why weren't delay stacks used?

- MARK WILLIAMS



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LIVE

PRODUCTION REPORTS



The Offspring

Having evolved from a punk band into more of a rock band, The Offspring received rave reviews for their recent sell-out tour of Australia and New Zealand. They are a good live band giving a show which is fast, furious and very entertaining. Various tour members took their turn on stage and by the time they got to *Why Don't You Get A Job!* there were eight people on stage plus a bubble machine. The bubble machine had made its debut earlier in the show when there was an 'intermission' complete with a near naked fat man, bikini clad g.r.l and 'elevator' music.

Another comical highlight was when effigies of The Backstreet Boys appeared on stage and the lead-singer Dexter beat them down with a baseball bat. Naturally this caused one of the loudest roars of the evening.

Lighting designer Phil Ealy (last seen here with Guns & Roses when they played Eastern Creek) hooked up with The Offspring about four years ago.

"Four years later, the shows are larger with much more technology," said Phil. "This tour started in January with a month in Europe and a couple in the States. After Australia and New Zealand we do the States (outdoor gigs) and Europe again, Japan, and finally South America."

The Australian shows are an exact reproduction of the earlier dates with most of the gear hired locally from Janes. Phil carries his own Avolites Pearl console everywhere and also shipped over were the Wybron colour changers, custom gobos and Diversitronic DMX3000 strobes.

"It's a little hard to reproduce things like gel strings and as for the Pearl, I'm just really comfortable with my own," he said. "It's so small, I can carry it any-

where. I have always been an Avolites user with the QM, my all-time favourite. What I like most about the Pearl is its size which enables me to bring it into my hotel room for editing. I did that a lot at the beginning of the tour. I like the way it's set-up, it was a natural progression to use it.

"The rig itself is relatively small, the whole concept is that less is more. Every year we're getting larger, as far as technology goes, but the band are not interested in major, big shows. They still want to concentrate on the music and that's how I approach the design. I light the moods and tempos rather than try to over-light the band. Some of the looks that come out of the show are spectacular in themselves, just from the way I programme I guess.

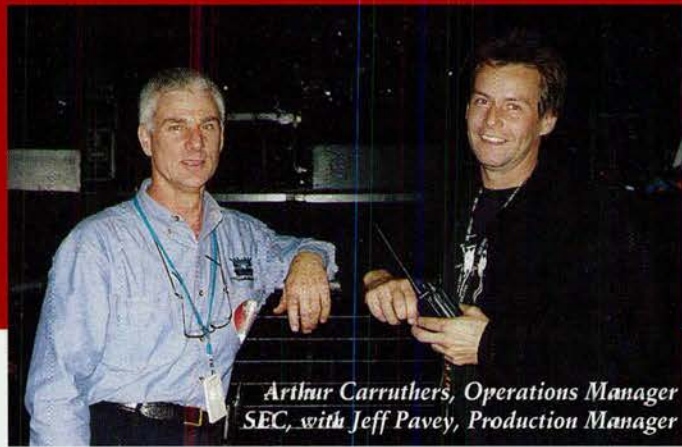
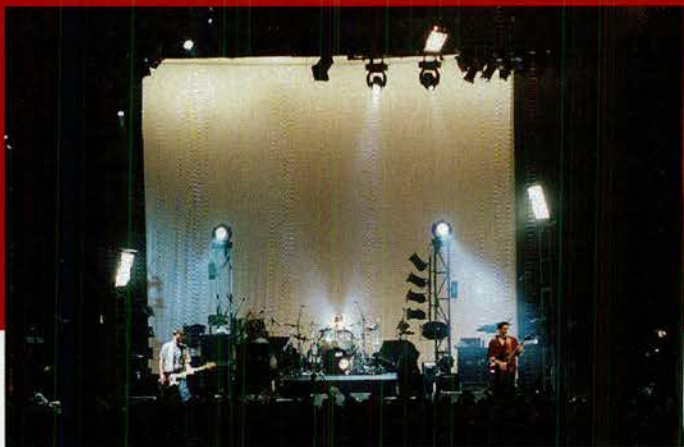
"I try accent what's going on on-stage rather than delivering flash and bang all the time. I've never done that. The band rely on my expertise from day one. When they first started using production, I got the job from recommendation - it's good position to be in. Lighting is so important, especially for a band like this who have crossed-over from punk and anti-lights to a pop band. Their audiences expect more, kids are much more educated in technology and expect good visual shows"

Phil Ealy, Lighting Designer



The rig used 10 Martin MAC600's, and 9 MAC500's, a new departure for Phil who usually opts for Vari*lite's.

"I have a good relationship with Bandit Lites and they were recommending them," explained Phil. "Then I met the Martin guys in Florida and we hit it off really well. We were one of the groups they didn't offer any special deals with, it was a case of trying the lights to see if we like them. I've been really happy with them. The reliability of the MAC's is great, we had none go down in Europe or



Arthur Carruthers, Operations Manager SEC, with Jeff Pavey, Production Manager

the US and none in Australia so far. Everyone has a moving light now and the market is pretty saturated with technology. These are good, dependable lights which give me the what I need as a designer. The Cyberlight has the intensity and the colour mixing which is great, but for the size and cost of that versus the MAC500, the difference compensates for the lack of colour mixing."

A lot of the current album artwork is reproduced in gobo form for the MAC500's. Rather than use the standard MAC500 gobos, Phil preferred to use the standard gobos from the Martin Pro918.

"The dichroic blue/green breakup is one of the best gobos," he said. "We use an ultra-violet backdrop depicting the album cover main artwork. At the beginning of the show I light it just with the Martins as a conventional cyc and at the end of the show we hit it with UV so the kid turns into a skeleton. We also use a white cyc for colour treatment and we also project some of the artwork on it."

"The Martins gave us the opportunity to do projections on a budget. We looked at projectors because I was concerned that the gobos in the Martins were too small and the clarity would be affected but it worked out okay."

DF50 smoke machines are normally used but at Sydney Entertainment Centre a couple of F100's were added as the air conditioning is so effective. No followspots are used, a result of their punk days when they were against the whole rock-thing.

"I've worked that into the design to make sure they are in," Phil commented. "Again, that's been one of the challenges because of the minimum amount of lights we are using. The band move around a lot and I have to be on top of that. I've had discussions with the band about using followspots and I suspect that the next design will include them but it won't be a traditional FOH look."

The nick-name for FOH engineer Grant Bass on this tour was Mini-me, refer to photo. Grant is in his twenty-second year of the audio business having worked with symphonies through to heavy-metal.

"You shouldn't be pigeon-holed into certain types of music," he said. "I've bought over some of my own racks. It's just easier especially if you have some weird pieces that generally aren't in stock with a most hire companies. Inserts are mainly BSS, vocals are all run through ATI Pro 6's and there are a couple of older pieces such as the Aphex Studio Exciter and Passion on the vocal subs. Left and right is processed through a Dolby Spectral Processor which is a recording piece. Outboard effects are TC Electronics and the rest is pretty straight forward."

"The most interesting piece of equipment we have is the BSS Soundweb which is a DSP-based processor which you can configure any way you want - eight in, eight out. It's a software based device where you can pick and pull anything done, you can configure it as a crossover (which Grant was doing on this tour), or you can use it as an insert device. It's very flexible and although it's a Windows programmed unit, it's still very effective."

Grant Bass, FOH Engineer



The rig was a Jands Turbosound although Grant confessed to being a VDoc-guy which is unavailable in Australia at the moment.

"Jands have been good and have given us basically what we asked for," said Grant. "There are 64 TMS3 boxes in total with 24 subs - there is a total of 88 cabinets. Jands got us some Clair P4's as infills and there are Jands amps on the main rig with Crests on the subs."

continued over

FULL HOUSE::THEATRE NEWS

● The **Lyric Theatre** at Sydney's Star City Casino will no longer be managed by the Really Useful Company - the Australian Subsidiary of Andrew Lloyd-Webber's Really Useful Group. Ending the 8 year lease after just 18 months, the decision to hand control over to the casino management was made in the interests of both parties. According to General Manager of the Lyric Theatre, Jill Keyte, staff will be offered contracts by Star City. Star City are confident of the Lyric's continued success with a string of musicals lined up over the next couple of years.

● The NSW arts ministry is being lobbied by two small theatre companies to transform the old **Wilson Street Theatre** in Federn into a 300 seat independent theatre venue. An estimated \$2 million would be needed to set up the alternative style venue in order to give independent theatre producers the opportunity to create cutting-edge theatre performances.

● Metro Edgley Pty Ltd are the successful bidders on a project to transform Sydney's **Luna Park** into a \$65 million harbourside funpark. The site will be converted into a lavish enter-

tainment complex featuring a 2000 seat multi-purpose circus arena, a 600 seat theatre, as well as restaurants, retail and accommodation. The park's landmark smiling face and Coney Island amusement park attractions will also be upgraded as part of the project. The park will play host to a range of non-animal circuses including Circus Oz and Circus Du Soleil. Metro Edgley Pty Ltd have been given a 40 year lease to the site which is due to open in 2001.

● Congratulations to the whole company from **The Boy From Oz**. The

show was recently named Production of the Year at the annual MO Awards, and the show's star Todd McKenney was given the award for Male Performer of the Year. Despite a troubled start to the Melbourne season, ticket sales have gone through the roof smashing a box office record of more than 11,500 tickets on a single day.

● **David Copperfield** has announced an Australian Tour in September. Performances are scheduled for the Sydney and Perth Entertainment Centres and the Regent Theatre in Melbourne.

Beatels at the Festival Hall

It was 35 years ago today...



35 years ago, the Beatles performed at Festival Hall in Melbourne as part of their whirlwind tour of Australia. They were lit by followspots, and their music was amplified by what would now be classified as a crappy PA, not that you would have been able to hear the songs above the hysterical screaming of the crowds. 35 years to the day (and the hour), the world's premiere Beatles coverband The Beatels recreated the scene at Festival Hall in front of a smaller, less hysterical audience.

The idea of the 35 years celebration show came from the band members themselves. Formerly The Beatnix, Beatels members Bruce Coble (John Lennon) Steven Shipley (Paul McCartney) David Wood (George Harrison) and Simon Merlo (Ringo Starr) put the multi-media show together with a little help from their friends Potato, Felix and Aldo.

Potato (full name Mr Potato Head) designed the staging and lighting for the tour. He explained that the band and crew were conscious that as good as 'authenticity' is, at the end of the day the shows had to be a nineties performance. Video and projection were incorporated into the shows to add extra dimension, and three large screens enclosing the

back of the stage provided the perfect backdrop.

Broken into three different sets, the first bracket of songs was an exact re-creation of the songs performed at the Hall 35 years earlier. Dressed in replica suits and playing authentic Beatle instruments, the band faithfully reproduced the show from 35 years earlier.

To highlight the transition in the style of Beatles music, Potato used different lighting instruments and effects.

"The first part and is very sixties. We try to keep away from all the modern looks and we just keep it as it was. It's like watching a movie when they switch it to black and white to show you what it was like back then. Then we click back into colour for the second set which covers the psychedelic period."

"Most of the first set is just five 1.2k Selecon Zoomspots, with the 1k cyc flood 'bricks' on the ground to get the Cavern look. I've looked at the video of the Cavern Club and there were only a few groundlights and the low ceiling was well lit, so I've tried to recreate that for a few songs."

"I use chocolate (Lee 156) in the first set which is one of my favourite looks. Chocolate is a gel that doesn't go with anything but it gives

Felix (with his moving Ray Can controller circa 1960's), Aldo and Potato



FULL HOUSE::THEATRE NEWS

● The **Tivoli Theatre** in Queensland's Fortitude Valley has been given \$500,000 towards renovations on the Victorian style theatre. The theatre's lease was recently taken over by West End Theatre Management who are currently involved in the construction of a Las Vegas style showroom at Riverside Drive West End. The money will be spent on upgrading the Tivoli's lighting and stage facilities, as well as renovations to the kitchen and the seating to transform it into a Theatre Banquet venue.

● **Company B Belvoir** has

launched a new program called B Sharp to be housed at the 80 seat Downstairs Theatre at the company's Surry Hills complex. The program will be trialled for six months and will feature six acts who will be given administrative, financial and artistic support from Company B. The \$100,000 project is aimed at nurturing young talent and is headed up by Director Lynette Wallis, with Geoffrey Rush in the all important role of Patron.

● The theatre adaptation of Tim Winton's best selling book **Cloudstreet** is enjoying incredible success at the box office. The Com-

pany B and Black Swan production brought to Melbourne in a co-venture by the Victorian Art Centre, Playbox and MTC is expected to sell out its entire season. And with all budget commitments met halfway through the season, each of the partners will make money on the deal. Similar success is anticipated when the production moves to Adelaide before heading off overseas to appear in a number of festivals.

● A new web site has been launched aimed specifically at Australian theatre goers. **Ozdiary** is a user-friendly internet diary of what's on in the per-

forming arts around the country. The site is updated weekly and contains freelistings of shows and auditions as well as links to performing arts web sites. Check it out at www.ozdiary.org

● As you probably know, the mention of the word **Macbeth** is supposed to bring on bad luck in the theatre world. It's always referred to as "the Scott's play". The New Theatre has a problem with its production of *A Midsummer Night's Dream* in Sydney. The sound designer has the accused name Macbeth Clark. Call him Clark e?



that great sepia effect. I use it sometimes with a deep blue in the background which is our way of doing black and white."

Purists would probably scoff at the use of intelligent fixtures in a re-creation, but as Potato explained they were aiming for sixties 'looks' and if that meant utilising current technology, then so be it.

"Besides, if the Beatles were around today they would be using the most hi-tech equipment they could get their hands on - look at Paul McCartney's last concert."

To supplement the largely Ray-can rig in creating sixties looks, Potato used Opikinetix Solar 250s and a Solar 575 followspot each with rotating oil cassettes, and nine Martin 518s. The Martins were used for colour washes on the screens during the early sets, and then used for gobco effects during the psychedelic songs.

"They're moving lights used in an unusual way. They don't flash around too much, they're basically just on the screens. We don't like to do a look twice in the show and since there are 40 songs they're great for giving different looks. It means we've got the moving lights, the regular static lights, the Solars with oil wheels plus Felix's whiz-bang moving Rays."

The moving Rays with their massive Moto-Light controller are Felix's pride and joy, as he explained: "You'll love them - they're straight from the 70s so they're almost authentic. They were the forerunner of the moving light. I've resurrected them from the grave especially for these shows."

The Martin 518s were run off a Martin Case Controller by owner/operator Alco Fabrizio, while Potato ran everything else off a Tands ESP. Potato also operated the Epson 3700 projector used for animated footage of the Beatles taken from the original cartoons as well as clips from the Yellow Submarine cartoon.

"We avoided using film footage of the Beatles because we wanted to avoid that whole side-by-side comparison of how much they really look like them. The cartoons are great because they're caricatures, plus they're brighter and more fun as a backdrop."

Additional projectors were used as 'specials' throughout the show to project text messages on cue. In *Drive My Car*, the words 'Beep Beep, Beep Beep, Yeah!' were flashed onto the rear screen adding a nice multi-media touch to the song.

Felix (of *Connections* Road Warrior fame) looked after audio for the shows.

"We've got a Meyer speaker system here. It's loud, and it's clear. I've been using Meyer speakers on and off over the years and I'm perfectly happy with them."

I've been enjoying this tour and I'd like to think I know virtually every Beatles song from beginning to end and what it should sound like. And sure they had crappy sound systems back then, but you need a pristine, clear, not necessarily loud, quality stereo PA to get that sound because everyone knows what it *should* sound like. And if it's just a little bit wrong, you can see everyone turning around and looking at the mixer.

"And because everyone's used to album quality and they know how each Beatles song should sound, there's a bit of pressure there. You know you've got to make it sound bang-on. It's not hard to do but it takes a bit of work, particularly to get some of those true sixties effects like on *I am the Walrus*. You just need a good clean PA that faithfully reproduces all those little effects."

"You don't need much sub for this band, there's a bass undertone but it's just there. From *Paperback Writer* onwards we cranked up the bass. Sometimes I play with a few hard stereo effects - I do what they did in the sixties and put all the instruments in the right channel and all the vocals in the left channel and see if anyone notices."

continued over

The Offspring *continued from previous page*

Grant was using a Midas XL4 mixing desk which he described as 'the best sounding thing out there'. Monitor desk was a Midas XL3 with a mixture of 12ams and DLP double 15 2" wedge. Claire R4's were used for side fills with JBL subs.

With microphones the main vocal was a Sony RF with an Audix OM7 capsule on it. SM98's were on the toms and percussion with a SM91 in the kick. For guitars there were two channels of Whirlwind mic eliminators as a direct,

on one side there was a TLM193 and on the other an AKG C5600 as well as a couple of 57's. Bass was all direct and the rest of the vocals were Audix OM7's.

"They're a good band to mix for, not terribly loud on stage but by no means quiet!" said Grant.

"It's not an overwhelmingly difficult job to get a balance but it is a guitar-based band and the biggest challenge is to get a balance between the guitars and at the same time, keep the vocals up there. Over the years they've added percussion and samples, and we're now up to 56 channels for a four and a half piece punk band. There's stuff going on all the time, you can't sit back and let it go."

BSS Soundweb DSP-based Processor



Grant's effects rack



● Cat Forcer

Beatels at the Festival Hall continued from previous page

Felix used a Soundcraft 800B mixer. He would have liked to have had more channels for effects sends so he could really specialise on some of the songs, but had to cut it down to three. He explained most of the work went into the treatment of the John Lennon vocals.

"All the songs from 1966 onwards it's mostly all treatment on the John Lennon vocals because John hated the sound of his voice and he would do anything to make it sound different. At one point they came up with the idea of putting his voice through a Leslie organ and he loved the sound of it. So he came up with the idea of being suspended by his ankles above a microphone and someone swinging him around to get that Leslie cabinet effect. He was deadly serious but they wouldn't do it. He was always trying anything to get his voice sounding different. So John's voice was always quite treated, whereas Paul

just wanted to sound like Paul."

Felix used a range of microphone to best capture the vocal characteristics of the band members and to make them sound more like the original Beatles.

"I use a Beyer TG180 on Paul. It's a beautiful big fat sounding mic. I use a CAD 95 condenser on George because he tends to sing so soft, a Shure Beta 58 on John's vocal, and Ringo gets whatever's leftover because he only sings on two songs."

As did the Beatles, the Beatels used a backing tape for orchestral accompaniments run off a complicated CD system. Felix explained the system is currently in mono however plans to move up to stereo will greatly simplify the system.

Felix was using an SPX30 for effects but as he explained there is no effects processor on the market that produces genuine sounding sixties effects.

"Unfortunately all these SPX's and so on, the phasers and flanges are really weak. So I had the idea that if someone sat down and came up with a device, perhaps it could be called the SPX69 where you just sample all the great phasers and flanges and plates from *Abbey Road* and you make it nothing but classic effects. Even put a valve in it, like a valve distortion or even just a nice valve compressor, and with big knobs on it, no cursors, and nothing but '69 classic, beautiful sounds, because it's hard to get big fat warm flanges out of SPXs or Lexicons. They're just not convincing. I think there's a real market for it. A big two-rack unit with big fat knobs and delay feedback knobs so you can control the feedback. Someone should make it."

● Mandy Jones

SHOWS WE'VE SEEN LATELY

A Punter's Perspective

CIRCUS OZ



As a first timer at **Circus Oz** I have to admit I was a tad scared. Maybe I'd been lulled into a false sense of security after seeing nice n' safe *Cirque Du Soleil*. That security was quickly shattered by the time I'd climbed the rickety bleachers to my bench-seating while avoiding eye contact with the performers 'working' the audience.

It's only natural to draw comparisons between *Circus Oz* and *Cirque Du Soleil* following the French-Canadian circus's high profile clean-sweep of Australia's capital cities. While both circuses are similar in terms of acrobatic styles and ethos, the packaging is totally different. Where *Cirque Du Soleil* is slick and clean, *Circus Oz* is grungy and feral. Oz's performers are fallible and you cheer them for it.

Performing in the Melbourne Town Hall as part of their 21st Birthday, the current *Circus Oz* show had a bit of everything. Making the most of the Hall's elaborate pipe organ, the grand drapes parted to reveal one of the musicians playing Happy Birthday in a scene strangely reminiscent of a Peter Sellers film.

Incorporating just about every style of circus trick from juggling to tumbling to trapeze, the performers of varying ages are very skilled and totally fearless about what they do. Standout acts in this show included a 20 foot swan dive by a gold-microphone holding crooner who wouldn't be out of place in *The Boy From Oz*, and the backwards 100 metres sprint performed upside down at the top of the Town Hall ceiling.

And even though most of the acts seemed to be slightly risqué, the kids in the audience didn't seem to register anything out of the ordinary. Even a goth-punk slightly S&M tightrope act involving lots of leather and whips didn't seem to worry anyone.

In contrast to the loud, brash style of most of the acts, was an ongoing mime act performed by a single member of the troupe, working with props and sound effects to create the illusion of a range of circus animals. And even though at times all he was doing was pulling on the end of a long length of chain while a roaring lion sound effect came through FOH, every child in the room (and I'm guessing some of the adults) totally believed there was a lion at the other end of that chain. The live band got in on the trickery as well - the most compelling example being the double bass player who was slowly raised on a harness as he played, as was the double bass, until both of them were being spun around at high speed from the top of the grid.

Production wise, the lighting was innovative in its use of projection washes to give highlights to formation acrobatic scenes. And audio wasn't bad given the nature of the room and the challenges of amplifying so many different sources.

Even though I was out of my comfort zone for most of the show, *Circus Oz* has that rare charm of being able to win the audience. Admittedly I didn't stamp my feet and clap in time to the music like the couple next to me, but I certainly enjoyed the show.

● Mandy Jones



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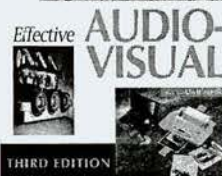
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The corporate logo projector is here

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Logo projection is one of the fastest growing sectors in lighting. It is becoming a necessity in the corporate world and retailers are also catching on to this kind of promotion. Take a surface, horizontal, vertical or a mix of both, and light it up with a sales message, logo or design. And change it as the customer mix requires.

Connections Market Survey examines Promotion Projectors this month. We've tried to limit the product to gobo/slide projectors for the corporate or retail market although we are aware that many larger moving lights, such as the MAC's, NAT TM's and Cyberlights, are capable of projecting gobo logos.

Corporate logos projected onto every table in ballrooms is a new trend we are seeing more and more of. Next month Sydney's biggest hotel ballroom opens in the five-star Westin Sydney Hotel seating around 1000 guests in full banquet mode and corporate logos projected onto every table by intelligent lighting is planned.

Sydney's deluxe hotel ballroom market is poised for a shake-up. The 600-seat ballroom at The Regent hotel, undergoing a multi-million-dollar refurbishment along with the entire hotel, is fighting back by also installing logo projectors.

It is predicted that the advent of the Westin Sydney's new ballroom is likely to provide increased competition for events at the nation's biggest hotel ballroom at Melbourne's Crown Casino which seat 1800 in banquet mode.

The Convention Centre at Darling Harbour seats 1800 in banquet mode. In October it will open a new 1000 seat facility. The sum total of banquet tables around the region, plus retail establishments and commercial public spaces augers well for the Promotion Projector. • **Turn to page 92.**

PACIFIC TIDALWAVE HITS RUSSIA



Mariinsky State Opera & Ballet House

Selecon is delighted to announce that Lumeko is now their exclusive distributor in Russia and it is a collaboration that is producing results - the first major sale of Pacifics to the Academie Pushkin in St Petersburg. The 90 PACs along with Arena FCs and Aurora Cyc lights are part of a major refit to this cultural icon.

Selecon luminaires have also been installed in

Maliy Drama Theatre, the Academic Comedy Theatre and the Mariinsky Academic Opera and Ballet Theatre with other major theatres showing a huge interest in the Pacific.

Lumeko is headed by Vladimir Lukasevich who has been the resident lighting designer of St Petersburg's Mariinsky Theatre, home of

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INSIDE LIGHTING



GAME SHOW LIGHTING

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HANSEL & GRETEL

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MARKET OVERVIEW:
LOGO PROJECTORS

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BERLIN REPORT
JOHN RAYMENT WRITES
EXCLUSIVELY

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PLUS: TECH TALK, &
NEW GEAR AT SMPTE

BUYERS GUIDE:
DIMMERS

Who want's to be a Millionaire? Well, there was no shortage of volunteers for that one. Just as dating shows were all the rage in the mid eighties, Million dollar shows are the current favourite. Channel Nine's version ended up winning the race over Channel Seven's.

Who want's to be a Millionaire initially went to air in the UK. The Nine Network bought the rights from the BBC to air the program for a certain amount of weeks each year. Although we had to stay pretty close to the BBC model, there certainly was a lot of room for improvement as well as adding our own little touches. Grundy's were enlisted to produce the show for Channel 9.



punctuated by progressively more dramatic sound and lighting effects.

Lighting was fairly easy. There aren't many positions to contend with. The positions were quite critical though, as it is a very confined area. There was really only one position some light could go so some unorthodox rigging solutions had to be invented. The main light used was Source 4 Profiles. The automated lighting component consisted of our Coemar 10 x CF1200

Who Wants to be a Millionaire? *lighting a game show in a confined space*

Pre-production for the show started early in 1999. The actual go ahead for the program was given four weeks before the first rehearsal day. It was bit of a rush to get it together in time. There were many technical issues to be resolved particularly in regards to the game software, it's graphic interface and the audience participation hardware. For those that chose not to watch it, in short it involved a series of questions that given all answers were correct, you would win one million dollars. To be a contestant, one would call a 1 900 number, register and be fifty cents poorer per call.

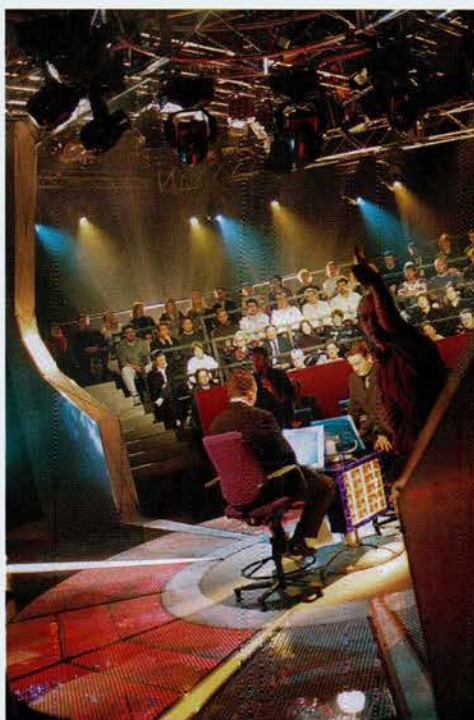
Out of the hundreds and thousands of people that registered, one hundred were randomly selected, called and asked some general knowledge questions. The best ten out of that got the chance to play. (I hope I got that right). Once you were in the "Hot Seat" and did not know the answer to a question, you had three "lifelines". Phone a Friend, 50/50 and ask the Audience were the options available.

Now at this point most people are saying, "who cares, get on with the article". Unfortunately, I had to explain this so the rest of the article would make sense. The lighting and the sound were crucial in creating the moods and drama of the program. As each crucial stage of the game was reached, it was

HE and 16 x CF500 AL moving yokes. Add in a few conventional 2KW fresnels and that was about it. We added a 48 way touring rack to assist with the floor circuits (74 in fact). Unfortunately in the rush to build the set, there was not a lot of time for consultation. This meant that we ended up with 2,3,4,5 6 and 9 channel chases. Control for both the analogue and automated was via a Compulite Sabre. Generally we would have split the automated lights from the conventionals but given the integration between the two, it was really out of the question. The Sabre is one of the few consoles around that does the two very well. The difficult part came when we had to interface the operation with the sound effects and the vision elements.

The search for a circular box truss took us to the very helpful and tolerant people of Clifton Productions. This truss was integral to the look and worked beautifully.

The show is entirely driven by the response of the contestants. Each response creates a sequence of different events. We have to be able to initiate these events with a few seconds notice. For example, if a contestant decides to bail with only thirty two thousand dollars, depending on where we are in the segment, we instantly have to go





into the contestant selection process again. On top of that we had to interface with audio. The logical solution was to trigger the lighting cues via SMPTE or MIDI. That would have made too much sense so we opted towards the old fashion method of operator timing. Not wishing to cast any disperson on my brethren of the sound department, but that was a nightmare as no two operators had an even remotely similar sense of timing. To finally complicate matters, we had to follow the camera cuts, which again varied with each show.

While on the subject of source, the audience PA (supplied by McLean Audio) had to be intimate but loud. There were subs placed under the audience which as the music had heavy bottom end really helped keep the joint rocking. The sound effects were generated via Midi off a Digicart.

Rehearse, we most certainly did. In the weeks before the show went to air, I think the crew knew the script better than the host did. It got to the point when one of the crew asked another crewmember a question. When she didn't know the answer, she asked if she could phone a friend or ask the audience. The show is recorded pretty much as "live". As the music runs throughout, editing is very difficult. The only post production that takes place is a little tightening for time.

The questions were totally random with three degrees of difficulty that varied with the amount of money that was on offer. The security was extremely tight. So tight in fact that on one occasion, a technician went into the control room to fix a minor monitor problem (one of the production assistants accidentally kicked the plug out of the wall).

And was locked up in the room for the next forty minutes.

The show was quite infectious and quite challenging to do. You certainly had to be on your toes and listen to what was going on. If nothing else, I now know who wrote Seven Little Australians. I didn't win the million dollars though.

MY FAVOURITE GEL COLOUR

DAVID TIDY

Lighting Director Channel 7 Melbourne



"It depends on what I'm doing but I have a few favourites like Lee 179 Chrome Orange as a good amber, Lee 141 Bright Blue, Lee 139 Primary Green, and Lee 162 Flame Red. And you can't go past Rosco 344 Follies Pink. But there's so many great colours - that's where you get spoilt with moving lights because you can just dial up any colour you want!"

NEWS

JANDS ECHELON DEBUTS IN WA

Jands' Echelon desk had its recent debut at the annual Leeuw Estate concert in Western Australia.

"It was smooth, fast and the menu function took a lot of pain out of programming," Concert & Corporate Productions Tim Bradsmith enthused. "Jands have really hit the nail on the head with this desk."

Tim had chased a demo of the Echelon for the gig but only succeeded two days before set-up. "With most of our crew up to date with the Hog 250/600 the set up was very smooth," Tim said. "The design set up is great, very much like the Wholehog 11 but without that silly touch screen and much simpler to program."

The Echelon was set up to run 12 Mac 500's, 14 Mac 600's, six 5K Colour Set scrollers, 172 2.5K dimmers and a Jands HP6. The show featured an international cast of singers and was broadcast live via satellite on the ABC and sold to Eurovision in the US.

MORE SEARCH LIGHTS

The Great Outdoor Lighting Company have taken delivery of their second shipment of search lights. 7k Xenon Space Cannons with full colour mixing, 16 bit resolution, pan and tilt dimmer and black out function. These new fixtures compliment the existing wide range of special effects and architectural lighting - for further information call +61 2 9966 9111.

GRIVEN KOLORADO

Schuster's Concert Lighting, Queensland have taken delivery of twelve Kolorado outdoor CMY colour changers from, featuring Griven's patented planar optic system. Griven is distributed in Australia by Universal Lighting & Audio +61 7 5532 9922.

GOBOS ON LINE

The Gobo Factory have launched their latest their new website - www.gobo.com.au. Now, if you can't find a catalogue, need gobos in a hurry, want to create a different special effect or theme, then their easy to remember website address makes

life a little bit simpler.

If you've had problems finding catalogue images to suit your requirements then check out how their theme set service works. If its simple text that you want projected then a messages set may be the answer. Unique to The Gobo Factory, these services can often mean creative and more affordable lighting solutions for your production or event.

The website also provides an overview of the various types of gobos available and their individual merits as well as sizing and fixture information. For those requiring a fully customised service there is further guidance regarding artwork formats and options, along fully detailed prices.

For further information please contact either Mark Blackwood or Jenni Wight +61 3 5439 3770.

SYDNEY CHARITY GIG CREDITS

A gig called "Battle of the Bands" which was aimed at raising funds for various charities including the New Children's Hospital and research into breast cancer, called on production firms to donate gear for the night.

Lighting designer Alex Mair was given no money whatsoever to light this event, and consequently stretched his friendships within the industry. There are three companies that helped out this year, as well as the gentlemen within those companies who were kind enough to pull some strings: **Chameleon Touring Systems** - Tony Davies: Supplied a bunch of conventional gear. **Show Technology** - Emmanuel Ziino: Supplied 10 Clay Paky and Martin automated luminaires. **Danger Sound Production Hire** - John "Felix" Kulak: Supplied dimmers and control, plus some more conventional gear.

All up, the show used about 48 Parcans (Rays + 64's), 4 Molefay duets, 6 strobes, pinspots and some other generic stuff, with 48 ch. dimming (24 of which is in-house). Control was an ESPIII 60ch and a new Martin Lightjockey for the 10 moving lights (8 Martin Pro 812's and 2 CP Stagescans).

PACIFIC TIDALWAVE HITS RUSSIA

continued from previous page

the Kirov Ballet and the Opera companies for the past thirteen years. He taught at the Theatrical Institute for 12 years, lecturing before he had even finished studying and has toured extensively, working on stages throughout the world.

With the Selecon name having been firmly established in St Petersburg, Vladimir Lukasevich now has his eyes firmly on the rest of Russia.



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Earth Leakage Protection

You may meet them as RCDs (Residual Current Devices), ELCBs (Earth Leakage Circuit-Breakers), CBRs (Core Balance Relays) or GFIs (Ground Fault Interrupts) - but whatever your background and whichever TLA⁽¹⁾ (Three Letter Abbreviation) you use, earth leakage devices are not only a crucial component in your electrical safety scheme, they are frequently also required by regulation. Let's look at what they do, how they do it and how we can use them to improve safety without causing too many unnecessary disruptions to what we do.

Whilst overload circuit breakers are designed to protect the power distribution system, earth leakage devices are only useful for protecting people from electrocution. An overload circuit breaker is designed to interrupt a circuit when the current exceeds a preset limit. In a thermal type breaker, a small over-current (due to overloading) can be tolerated for a prolonged

period before tripping, although a large over-current (due to a short circuit) will trip fairly quickly. A magnetic type breaker will trip very quickly once its threshold current has been reached. As the current necessary for fatal electrocution is less than a couple of Amps for a duration of less than a couple of seconds, an overload breaker offers virtually no protection from electrocution. Earth leakage protection devices are designed to trip for fault currents between 10 and 100 mA and for interrupt times between 40 and 100 milliseconds after a fault current is sensed.

Earth leakage devices are based on the principle that the amount of current entering a device should be exactly the same as the amount of current leaving the device and that any discrepancy is due to current flowing somewhere that it shouldn't, which is a bad thing. If an electrical appliance such as a luminaire is working properly all electrons entering the luminaire will flow in down the active wire, around through the filament of the lamp and out again down the neutral wire⁽²⁾. If there is a fault in the wiring which somehow allows the body of the appliance to become connected to the active line, then when someone touches the appliance they provide a path to earth for the current which is not via the neutral; this is the situation for which an earth leakage protection device is employed. An overload circuit breaker will not care that a small, albeit fatal, additional current is now flowing.

An earth leakage current is sensed by comparing the active and neutral currents flowing through a circuit, usually by the simple means of measuring the current induced in a coil through which both of the wires have been passed. Under normal conditions, as there are identical currents in both wires and the currents will be flowing in opposite directions, there will be no current induced in the coil. The current induced in the coil by a fault condition can be used to trigger an interruption to the circuit.

In the best of all possible worlds every electrical circuit would be protected by an earth leakage device, but of course there is a down side to their use: firstly they're not cheap, but then again safety rarely is; more importantly they're subject to nuisance tripping. It seems that there are a number of circumstances when there may be an imbalance between the active and neutral

currents without any safety implications. Some inductors, particularly the ballasts of discharge lamps and the chokes on phase-control dimmers (the ones in all of your dimmer racks), quite commonly have a small and often variable amount of earth leakage; put several of them on the same circuit, protected by the same earth leakage device, and you have an unscheduled blackout just waiting for the most inconvenient moment⁽³⁾.

The ideal way to avoid a major production catastrophe is to place each device in your electrical system on its own rather costly earth leakage protected circuit ensuring that only the faulty device will be disconnected. A more cost-effective alternative may be to place devices with known leakage on a circuit with an earth leakage protection device with higher activation threshold or one designed specifically to work with the ballasts of discharge light sources. Some devices may actually be so reduced in operational effectiveness that they are better installed on circuits not fitted with an earth leakage device. These variations are often only possible in fixed installations and must always be done in consultation with an electrician or electrical engineer who is fully cognisant with the safety and operational requirements of the situation.

Earth leakage protection is an important part of the electrical safety scheme for any system, although it may present some implementation difficulties where there are conflicts between the safety ideal and the operational reality. It is vital for us to make certain that the system that we are using is configured to meet the best possible balance of needs.

1 Ok, so one of the list is a four letter abbreviation. The correct term for these is ETLA (Extended TLA).

2 Or the reverse of this, depending on which half-cycle of the mains we are examining

3 The memory of losing all lighting on a live outside broadcast due the leakage in the ballast of a discharge followspot is still crystal clear decades later.



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Write in Reader Service Number: 164

Damien Cooper only graduated from NIDA's Technical Production Course in 1996 but since then he has lit some very prominent shows including *Frank the Sinatra Story in Song* with Tom Burlinson and Theatre of Image's production *Exotic Pleasures*.

Damien is resident lighting designer for Synergy Percussion and One Extra Company. Later this year he will light *Plastic Space* for Thwack dance company as well as a dance piece for Chunky Moves. This involves a fluoro wall made up of 45 fluoro's stacked behind each other as well as 12m of fish tanks.



HANSEL & GRETEL

Damien Cooper lights Kim Carpenter's magical production

"I thought that coming out of NIDA I'd have to start at the bottom and work my way up but I've found a niche where there was a gap and filled it!" said Damien. "The biggest secondment I had at NIDA was for the Adelaide Festival where I worked with Geoff Cobham the Production Manager. I also worked with John Rayment on *Free Radicles* and with Jamie Lewis at Melbourne Theatre Company."

It was Geoff Cobham who recommended Damien to work with Kim Carpenter's Theatre of Image. The magical production of *Hansel & Gretel* proved an enormous hit with families over the school break with most performances sold out.

"We only has three weeks to rehearse but fortunately it was in the theatre, Wharf 2 at the Sydney Theatre Company" said Damien. "With the huge amount of props used, it was very useful and made it easier to light. There are lots of scene changes with the maximum scene being only two minutes long so there were a lot of lighting changes too trying to depict the space and the atmosphere. We had lots of props like city skylines with lots of flashing lights on them. We also had a daytime/night time concept running through the whole thing so we had lunar balls and sun balls with 24v projector lamps inside of them. Pin spot fans came down from them and we also used a lot of colour."

"There were a lot of puppets in the show with operators hidden behind them so we had to do a lot of hidden corridors of light so you didn't light the puppeteers. In Wharf 2, which is not a traditional



proscenium arch stage, it was difficult.

"The witches oven was hard to light. We had a lot of lights inside it trying to get heat onto the performers. Unfortunately the angles are all from behind so you can't get a lot of the facial expressions of the performer. There's also a complete lack of positions for footlights to get a shot into the face."

"The way Kim directed and designed the show was to take things into a miniature perspective so there are little houses 500mm wide and the focus will drop down to those houses while the cast runs on stage and freezes in a tableau of that little house creating the household environment. With the lighting we'd build out from that. There were about 100 cues in an hour long show."

Damien was using STC's ETC Express which he described as 'very nice'. He hired in a bit of gear from Chameleon especially profiles as the Wharf doesn't have many - mainly Pattern 23 profiles, 650W snub-nosed lamps. He also got some lekos from Chameleon on a 'very generous hire'.

"There's also a night time scene similar to Kings Cross which I got some Par36 scanners for," said Damien. "I also hired a hazer which ran constantly through the stage. Cobos are sparkles leaf breakups, basically just for texture."

During one of the previews Kindergarten kids were put in the front row and apparently as soon as the witch appeared, most of them ran out.

Damien is currently busy working for Fox Studios Australia who will open their Backlot Attraction this November.

"Nigel Levings is the lighting designer and I'm his associate," said Damien. "We're the architectural lighting designers for the whole theme park and we're also lighting the high-turnaround show which will be in the 1200-seat theatre being built there."



MY FAVOURITE GEL COLOUR

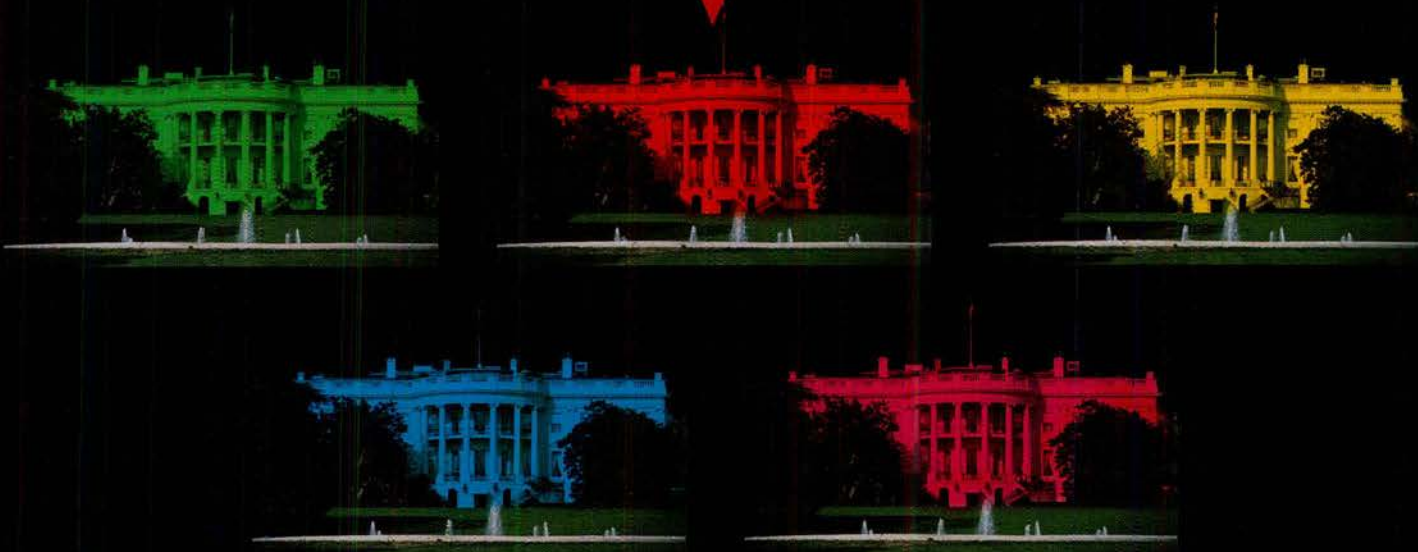
IAIN REED

Director 32 Hundred Lighting, Sydney

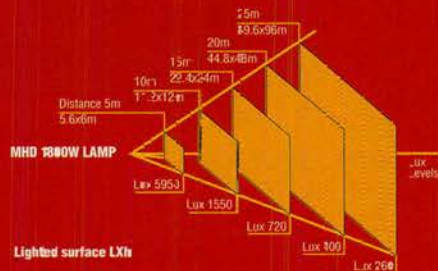


"My absolute favourite is Lee 179, it's a gorgeous colour - a chrome orange which looks really nice on TV. I also favour Lee 141 which is a beautiful cyc colour. I love Lee 164 red and 109 salmon."

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ADJ

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The ADJ Robogobo takes a metal gobos which cost \$140 to make with a 3 day turnaround. Metal gobos last a lifetime. The lamp used is a 12 Volt 100 Watt Osram lamp lasting 1,500 hours. There is no remote control but the Rotogobo has a four way prism to give a unique effect. The unit is fan cooled and cased in a black powder coat finish. Weighing only 1.9kg and measuring 303mm in length and 150mm in height this unit is small but effective. The unit is yolk mountable and uses its own power supply.

Price: \$163.12.

AMERICAN DJ

American DJ Supply Australia Pty Ltd. 1800 643 111

The American DJ **Roto Gobo** is a cheap and effective means of projecting a rotating image. It uses one 25.4mm (1 inch) stainless steel gobo which can be fitted and changed with ease. The image is fully focusable. Gobos can be custom manufactured from \$100,



depending on the format of the artwork presented. The image will last while ever the unit is turned on. The Roto Gobo uses an FCR lamp, 12v, 100w and due to highly efficient optics the output is very bright for a 100w lamp. Its size is 15 x 12 x 22cm and comes in black extruded aluminium finish. Accessories available for the Roto Gobo include a four way prism which splits the image into four, dichroic coloured filters and a four col-

our dichroic filter. The unit simply plugs straight into any standard Australian power point, is fully stand alone and comes with a hanging bracket to mount the product. The Roto Gobo is also available as a version that accepts two gobos allowing a mixed overlaying effect to be achieved.

Price: standard Roto Gobo \$199 (inc tax), overlaying version \$219 (inc tax).

Website: www.americandj.com.

CLAY PAKY

Show Technology +61 2 9898 1111

Clay Paky have a range of compact projectors. The **VIP (Versatile Image Projector) 300** is a gobo projector used for static projection as well as moving images and it uses gobos. To make a gobo it can take up to three days but, if urgent can be done in two days. They can cost from \$140 to \$1 000 in full colour and will last a lifetime. The lamp life of a VIP 300 is 3,000 hours using an Osram 300 watt lamp. A range of accessories and effects are available allowing for different types of static effects and motorised effects, mounting and

projection accessories make the VIP very versatile. The two charged rods power the accessories. The VIP is cased in a die-cast, aluminium black or silver powder coat casing and weighs 8kg, its length is 482mm and is 275mm high. This fan cooled unit has a bracket for mounting.

The **VIP 300 DIA** is identical to the VIP 300 except that it is specifically designed for projection slides. The cost of making a slide starts at \$12.00 and also takes 3 days to make, and the image will last up to two weeks. The DIA has special optional accessories including timed slide changer, rotating slide and continuously rotating fluid effect. The DIA uses an efficient forced-ventilation cooling system. The cooling system and the special metal protection for slides, which are supplied as standard, protect the delicate film and frame from the heat of the lamp.

When use of a normal lamp is required for reasons of operating economy, the choice is the **VIP 250 ALO**, which features the same performance and operation as the VIP 300 - the difference is in the low voltage 24 V, 250 Watt lamp.

An option for a small budget is the **Display Line SIP 300**. Using Gobos and having a lamp life of 3,000 hours, the SIP also has accessories available including a beam shaper, colour filters and manual mirror. The control panel, like all Display line units is on the actual unit, the SIP only weighs 3kg and it's length is 359 mm and the height is 275mm. The unit can be mounted on a three position mounting bracket with a 25mm pitch.

Price: VIP 300 \$1,409.85 inc tax; VIP 300 DIA \$1,635.25; VIP 250 ALO \$1,187.70; and Display Line SIP 300 \$1,015.50.

Website: www.claypaky.it

COEMAR

Coemar De Sisti +61 3 9467 8666

Coemar produce a range of medium profile spot fixtures fitted with long life lamps (6,000 - 10,000 hour) designed specifically for gobo projection. This is supplemented by a range of very high power discharge profiles with wide angle zoom optics for those occasions where high ambient light levels exist. All of these units can accept either full colour glass or standard metal gobos.

The Coemar **Zenith Mastercolour** utilises the modern and stylish housing of the standard Zenith fixture, combined with an external ballast (electronic or magnetic options) and long life CMD lamps from Philips. Manual zoom gives 15 to 41 degree beam angles, making the fixture ideal for short throw applications.

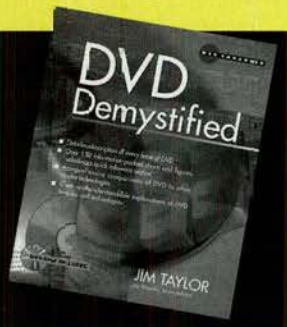


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CONNECTIONS SHOP

NEW BOOK: DVD DEMYSTIFIED \$80

Jim Taylor. Digital Video Disc is the all-in-one storage technology destined to alter the landscape of home entertainment and business computing. Now is the time to learn about DVD and how to use it to its best advantage. Jim Taylor, an industry insider, paints the full DVD picture in this friendly, not-too-big, not-too-technical introduction. DVD included with samples from Elite Entertainment, Short cinema journal, Dolby, THX, Pioneer, and more. 443pgs, 1998.



THE GAFFER'S HANDBOOK \$72

Harry C. Box. Edited by Brian Fitt. Hands-on manual covering the equipment and tricks of the trade essential to the motion picture gaffer including tungsten and discharge sources, fluorescent units, carbon arc lights, electronic dimmer systems, and many others. 432 Pgs, 1999.

CREATING SPECIAL EFFECTS FOR TV AND VIDEO: 3RD EDITION \$38

Bernard Wilkie. Concise and practical introduction to the world of special effects. Each special effect is detailed with full descriptions of equipment, procedure, and type of effect obtained, also covers aspects of safety and the correct procedure for dangerous sequences. 224 Pgs, 1995.

PROJECTION FOR THE PERFORMING ARTS \$80

By Graham Walne. Gives a brief historical overview of early projection attempts, then looks at equipment and the planning and design of every kind of indoor and outdoor live performance. 139 pgs, 1995.

CONCERT TOUR PRODUCTION MANAGEMENT \$39

By John Vasey. Provides basic information needed to manage the production of a touring concert from start to finish. Discusses different types of venues, who's who on the road, crew management, riders, contracts, and even electrical formulae! 165 pgs, 1998.

LIGHTING TECHNOLOGY \$83

Brian Fitt & Joe Thornley. A comprehensive guide to the basic theory and practice of lighting, collecting a wealth of technical detail and reference data for the lighting industry. Formerly "Lighting By Design", completely revised and updated. 420 Pgs, 1997.

MOBILE DJ HANDBOOK \$45

By Stacy Zemon. For both the newcomer and the experienced DJ, the book contains helpful tips, advice and ideas on how to develop and expand your business, covering marketing, bookings, buying equipment and music, and running parties and dances. 173 pgs, 1997.

STUDIO BASICS \$34

By Richard Mansfield. This book covers what happens on the studio side of the glass, from the artist's point of view. Subjects covered include logistics, preparation repertoire, instruments, and how to listen to tapes. 164 pgs, 1998.

A-Z OF LIGHTING TERMS \$35

Brian Fitt. Useful for anyone in the lighting industry, especially students, who have heard terms or expressions and wondered what they meant. Many terms are expanded using illustrations to clarify some of the more complicated principals, formulae and laws. 224 Pgs, 1999.

STAGES FOR TOMORROW \$38

Francis Reid. Gives a unique insight to some of the key developments of live performance technology this century and offers a view of where the future lies. The technology of staging styles is covered, with ongoing engineering solutions for scenery, light and sound. 120 Pgs.

SOUND ENGINEER'S POCKET BOOK \$50

Edited by Michael Talbot-Smith. Compact source of essential data for every sound technician. Covers noise measurement, acoustics, microphones, loudspeakers, mixing equipment, CDs, DAT and MIDI telephony, ISDN, digital interfacing, ultrasonics. 157 pgs, 1995.

OTHER BOOK TITLES:

AUDIO WORKSTATION HANDBOOK Francis Rumsey	\$75.00
BASICS OF VIDEO LIGHTING Des Lyver/Graham Swainson	\$35.00
BASIC STAGE LIGHTING Mark Carpenter	\$17.00
CONCERT SOUND Edited by David (Rudy) Trubitt	\$48.00
CONCERT LIGHTING James Mowry	\$70.00
CONTROL SYSTEMS FOR LIVE ENTERTAINMENT	
John Huntgron	\$86.00
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ELECTRONIC PROJECTS FOR MUSICIANS Craig Anderson	\$39.00
ESTA ETHERNET GUIDE	\$35.00
FUMES & BUZZES EXPLAINED Laurie Nethercote	\$9.00
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Edited by David (Rudy) Trubitt	\$39.00

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MIDI SYSTEMS & CONTROL Francis Rumsey	\$55.00
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MUSIC PRODUCERS Edited by MIX Magazine	\$39.00
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Yennie & Sylvia E. Carlson	\$105.00
RECOMMENDED PRACTICE FOR JMX 512 Adam Bennette	\$19.00
SEMI-LIGHTING TECHNICIAN'S HANDBOOK Harry C. Box	\$75.00
SOUL & MUSIC FOR THEATRE Kaye & LaBrecht	\$44.00
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STAGE MAKEUP Herman Buchman	\$34.00

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Lighting::MARKET OVERVIEW

BY::Cat Forcer

detailed:: PROMOTION PROJECTORS

Images can be on standard metal gobos (E size) or full colour glass. Gobos will last indefinitely. Two lamp options: CMDT-150/830 Rated Life 10,000 hours, Colour Temp 3,000K; CMDT-150/942 Rated Life 6,000 hours, Colour Temp 4,000K. Accessories: Electronic Ballast; Magnetic Ballast; Gobo rotator; Deflecting mirror adaptor. The unit is convection cooled. Size : 608 x 209 x 306 mm (excluding ballast). Weight : 5.3 kg. Mounting : Adjustable hanging bracket included. Unit can be horizontally or vertically mounted.

The EHP in the Coemar **Focus EHP** fixture stands for "Extra High Power" and that is exactly what these units are designed to do. They use a very large M size gobo to allow very detailed images to be created on full colour glass or metal gobos. These gobos are made by a number of local Australian companies and can be turned around in a matter of a few days. The 1800w CHD lamp gives excellent lamp life, which is combined with a full condenser optic system for the best possible gobo projection. The fixture features a wide angle optic system to suit the short throws usually required for gobo projection. By utilising an optional weatherproof housing the fixture can be located outdoors where it's very bright output is more than a match for most ambient light conditions. An external ballast is provided to allow remote mounting up to 25m from the fixture. Images can be on extra large standard metal gobos (M size) or full colour glass. Gobos will last indefinitely. Lamp is the CHD1800w. Lamp life is rated at 1500 hours. Accessories: DMX dimming shutter; Gobo rotator; Prism/Effect holder; Deflecting Mirror adaptor. The unit is convection cooled. Size: 710 x 460 x 260 mm (excluding ballast). Weight: 23.5 kg (excluding ballast). Mounting: Adjustable hanging bracket included. Unit can be horizontally or vertically mounted.

The 2500w HTI lamp in the **Focus EHP 2500** gives excellent lamp life, which is combined with a full condenser optic system for the best possible gobo projection. It provides almost 80% more light output than the 1800 version of the Coemar EHP1800. Manual zoom range is 30 - 47. By utilising an optional weatherproof housing the fixture can be located outdoors where it's very bright output is more than a match for most ambient light conditions. Lamp life is rated at 750 hours. Size: 801 x 460 x 260 mm (excluding ballast). Weight : 27.5 kg (excluding ballast).

Price: Zenith Mastercolour \$1,492 inc tax; Focus EHP \$8,156; Focus EHP 2500 \$10,128.

Website: www.cdaust.co.au

ENLITEN

Chameleon Lighting +61 2 9310 5222

The **Callisto Exterior Logo Projector** from Enliten is a totally weatherproof gobo/logo projector designed specifically for architectural and retail applications. It is IP65 rated and accepts standard stainless steel and glass gobos also mono and coloured dichroic images. A choice of beam angles from 100 - 550 are available. Lamp is a Philips 150W CDM-T metal halide with a lamp life of over 9000 hours and a stable colour temperature - 3000K or 4000K.

Remote control gear to suit the local supply is available. Mounting is universal and the unit is supplied in black although other colours are available to special order only. Weight: 7kg. Accessories include: gobo/pattern; coloured glass filter; line-up grid.



new products::

JB LIGHTING

JB Lighting (Germany), and Australasian distributors Universal Lighting & Audio announce the launch of the VaryScan6 575 and VaryColor6 575/250 moving yoke luminaires. The VaryScan6 features 24 colours, six rotating gobos, strobe, iris, dimming, prism, flood effect and special effect position. DMX control and other functions are set from the built in backlit LCD display. Operating modes include a stand-alone mode.

Call: ULA +61 7 5532 9922.

JANDS 4PAK11

Jands Electronics has revamped the Jands 4PAK four-channel lighting dimmer/controller, building on its reliability and ease of use with new styling and CE/C-Tick compliance.

Integrating a control desk, dimmers and cables into an economical and easy to use unit, the 4PAK11 is ideal for applications including stage lighting for schools, bands or theatre groups, effects switching in mobile applications and the control of shop or trade show displays.

Each of its four channels is rated to handle the full

2400 watt load and the model features long throw 70mm faders for precise level control, flash buttons, output LEDs per channel, an integral chaser equipped with speed control, an audio switch to create sound-to-light effects from the built-in microphone, a master level control fader and a power on/off switch with built-in indicator.

Call Jands Electronics + 61 2 9582 0909.



AVOLITES VISUALISER

The Avolites Stage Visualiser simulation program combines software and hardware, allowing lighting designers and programmers the opportunity to pre-program the lighting rig without having direct access to the instruments, the rig or the venue - in effect, a virtual production rehearsal.

The hardware comprises a 1,024 channel DMX reader card, and the software simulates and displays intelligent fixtures on your PC.

Visualiser offers all the benefits of remote programming such as time efficiency, space and cost reduction plus advance preparation for shows - particularly useful for shared console situations such as festivals, multi-purpose venues and concert halls.

Visualiser also includes full DMX monitor and testing facilities. The Avolites Visualiser realises its true potential as a training aid and also for demonstrating design concepts to clients with minimal time or financial outlay. A demonstration video is available from ULA.

Call: ULA +61 7 5532 9922

6-PACK STAND CASE FROM KATA

The sturdy, protective Hexabag, from the protective case designer, KATA, unfurls to reveal six deep cylindrical pockets for packing and organising lightstands, Lighting Gel Rolls, microphone stands or other long accessories.

Its innovative design makes it possible to retrieve items by simply opening the padded lid. Hexabag's handles have comfortable, extra-long handgrips that provide ideal balance for carrying loads of varying weight distribution. Or use the ergonomic shoulder strap to carry it golfbag-style. Hexabag is fabric-coated with polyurethane, structural protection is provided by polypropylene panels, polyurethane foam and fibreglass rod, while shoulder straps and handles are padded with polyethylene foam (EVA added). The hexabag is available in two sizes for short or long lighting stands.

Call Miller Professional +61 2 9439 6377.

HOGEDIT

Flying Pig Systems are proud to announce the release of the HogEdit Application. This free program may be used for editing or creating shows for the WholeHog II console using a win32 PC or laptop. This software allows the WholeHog II, Echelon, or Jandshog operator to program much of his/her show on a PC, then load it into the console later on. It can do a lot of what a Wholehog II can do, with the major exception being the output of DMX or MIDI (for obvious reasons). Please Read the Licence carefully before use. HogEdit can be downloaded from: <http://www.flyingpig.com/Hog2/H2tech.htm>

Lighting::MARKET OVERVIEW

BY::Cat Forcer

detailed:: PROMOTION PROJECTORS

Price: From \$2500.

Website: www.enlitea.co.uk

FAL

ELSTA (02) 9568 2100

New from FAL is the **Promo 3 Promotional Projector** featuring five positions for gobos and/or slides. The slides accepted are standard 50 x 50mm which can be obtained at any photographic outlet and created from computer files or photos. Gobos are a standard D size 53.3mm metal or dichroic glass. Costs of producing gobos vary depending upon ones requirements. Any of the five positions can be selected, each is rotatable and indexable. The Promo 3 uses an MSD-250 discharge lamp with a manufacturers rated lamp life of 2,000 hours. The unit is fan cooled. The FAL Promo 3 is DMX controllable (using

6 channels, plus 2 for programming mode) and can be used as stand alone. User presets can be installed using the on board dip switches allowing the unit to be run without the use of a controller.

Power is derived from a standard Australian power point and the power consumption is 600 watts. The unit comes with a hanging bracket, weighs 16.5 kg and dimensions are 640 x 390 x 235mm. The

Promo 3 is available in an extruded black aluminium finish or white for architectural installations.

Other features include strobing from 1 to 7 flashes per second, black out, uses 6 stepper motors, easy access to lamp and image wheel. Images can be rotated in both directions and are indexable to any position. Any of the five images can be selected at any time so a "show" of images can be created.

Still available is the **Promo 2** which is similar to the Promo 3 but only accepts one image instead of 5. The **Promo 1** projects a single rotating image from a standard D size 53.3mm steel gobo and uses an arcstream MBIT-150 lamp rated at 6,000 hours (GE's rating), is fan cooled and fully focusable. It is stand alone - simply plug it into any power point, hang it using its bracket and point the image to where you want it to go. The unit features easy lamp and gobo access and comes in an extruded black aluminium finish. It weighs 8 kg and size is 360 x 310 x 230mm. Also new from FAL is the **Promo 4** projector. This compact and attractive unit provides for projection of images and effects. Projection media can be standard 35mm photographic slides or effects wheels and cassettes available from a range of manufacturers. Two low voltage power outlets are compatible with standard Optikinetics wheel and cassette rotators, and twin runners in the gate will hold them in position correctly. Uses a MSD 250 lamp (2,000 hours Philips, or Osram HSD 200/250). The Promo 4 features extruded aluminium housing, is fan cooled, is stand alone, weighs 19.5 kg and its size is 440 x 280 x 150mm. It comes with a mounting bracket.

Price: Promo 3 \$4,999 inc tax; Promo 2 \$3,499; Promo 1 \$999; and Promo 4 \$2,499.

Website: www.fal.it

continued over



The Q Range from Mad Lighting offers the latest features demanded by the professional user looking for outstanding performance from a compact aesthetic unit. Separate shutter, digital DMX address and the latest in technology are all standard on the Q Range resulting in ease of operation and stunning effects. All effects are housed in the unique injection moulded case with 'quick release' lids and fast access for servicing and maintenance.

FEATURES

- Ultra quiet operation
- Digital Address System
- Pan & tilt invert select*
- Strong chassis mounted hanging bracket
- Separate shutter
- Standard or wide angle pan & tilt select*
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- MSD lamp option
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Lighting::MARKET OVERVIEW

BY::Cat Forcer

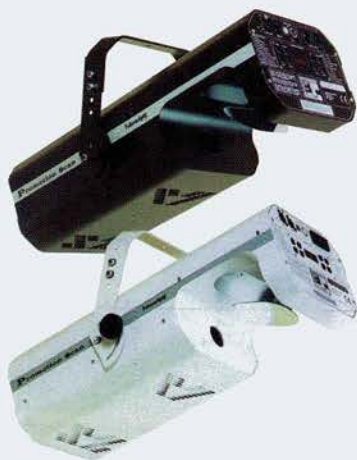
detailed:: PROMOTION PROJECTORS

FUTURELIGHT

Coemar De Sisti Australia +61 2 9467 8666

Futurelight were one of the first companies to utilise the technology of intelligent robotic lights with the ability to project 35mm colour slides. All Futurelight units are available in a variety of colours including Black, White, Red, Blue and all other RAL colours on demand (minimum quantities may apply for colours).

The **Promotion Scan** is the first Logo projector that can be used as a normal Intelligent Moving Light as well as a promotional tool. The internal controller can be programmed to run slides during the day and then at night a DMX controller is connected and the Promotion Scan becomes a moving light with 5 gobos, 8 colours, dimmer and strobe. This makes them ideal for clubs, pubs and gaming venues. Images can be on standard 35mm colour slides (glass mount slides are NOT required) OR on a D size gobo. Slides last from 3 – 6 months of continuous usage (24 hours per day), depending on colours and saturation.



All slides are rotatable and fully indexable and the unit takes 4 x 35mm slides or 4 x D size gobos. A 200w or 250w MSD/HSD lamp with a rated life of 2000 hours is used. Hand held remote control, which enables the user to simply plug in, then programme the internal controller from a range of up to 25m. Once programmed the remote control is unplugged and the fixture is left to run the new programmes. The unit is fan cooled and has a thermal cut off if the unit overheats. Overheating is indicated on the units LED display for easy diagnostics. Size: 550 x 210 x 180

mm. Weight: 22 kg. Mounting: Adjustable hanging bracket included. Unit can be horizontally or vertically mounted. Unit can also be stood on it's base.

The **AdScan** is a lower cost version of the Promotion Scan. It contains all of the programmability of the Promotion Scan in a smaller, lighter package. It has an internal controller with 10 programmes of up to 60 steps each and an internal real time clock with Day of the Week functionality. It takes 5 x 35mm slides or 5 x D size gobos and all slides are rotatable and fully indexable. The unit is fully self contained (no external power supply) and images can be on standard 35mm colour slides (glass mount slides are NOT required) or on a D size gobo. Slides last from 3 – 6 months of continuous usage (24 hours per day), depending on colours and saturation. Lamp is a 200w or 250w MSD/HSD with a rated life of 2000 hours. Remote, cooling and mounting as above. Size: 532 x 212 x 215 mm. Weight: 15 kg.

The **DV-250** is a compact slide rotator/projector. Optional accessories include number of rotating mirror and prism rotators. It has an internal controller with 5 programmes of up to 20 steps each and takes 5 x 35mm slides or 5 x D size gobos. All slides are rotatable and fully indexable. Images can be on standard 35mm colour slides (glass mount slides are NOT required) OR on a D size gobo. Slides last from 3 – 6 months of continuous usage (24 hours per day), depending on colours and saturation. Takes a 200w or 250w MSD/HSD lamp with a rated life of 2000 hours. Accessories: Rotating Mirror Adaptor and Rotating Prism Adaptor. Cooling and mounting as Promotional Scan. Size: 300 x 210 x 200 mm. Weight: 10.8 kg.

new products::

BOOM STAND GOES STRAIGHT IN SECONDS

The new Manfrotto Convertible Boom Stand 420 is a dual-purpose stand designed to convert quickly and easily from a simple, compact light stand to a fully functional lighting boom and stand. Simply loosen the wing handle on the stand's unique pivot collar, lift the top two riser sections, release the safety lock and tip the risers into horizontal boom position. Minimum stand height is 130cm, maximum stand height is 390cm, closed length is 113cm, and load capacity at full stand height is 9.1kg. Minimum boom extension is 19cm while maximum boom extension is 178cm. Manfrotto 420 models are available in either bright aluminium or black anodised finish, with optional sandbag counterweight for maximum boom stability and smoothness with heavier lampheads and lighting accessories. Call Miller Professional +61 2 9439 6377.

AVOLITES AZURE2000 SHADOW + SAPPHIRE2000

Launched at PALA the Azure2000 Shadow, a touring orientated version of the popular Azure2000. The Shadow features all the function of the Azure2000, but with "shadow" positive keys, which will be familiar to the users of other Avolites products like the Pearl. Azure2000 Shadow will be available from Australasian distributor Universal Lighting & Audio in August.

The eagerly awaited Sapphire2000 was on show at PALA, receiving strong interest from touring and theatre users alike. The Sapphire2000 building on Avolites reputation as a leading moving light console manufacture, with the inclusion of extensive theatre style functionality. Contact Australasian distributors Universal Lighting & Audio for more information

Call: ULA +61 7 5532 9922



ADJ GT 351

The GT 351 is the baby brother to the GT 700, it's slightly smaller but has just as much power. The GT 351 has a new design pump system which keeps the fluid to the block constant and the machine is protected from overheating with two forms of protection. The first is the thermostat that disengages the heating element when the correct fog temperature is reached, and will cut off power in case of over heating. The second form of protection is a thermofuse device which is added on top of the heater block as a final means safe device.

The GT 351 fogger comes complete with an "Aussie" plug, using low voltage magnetic remote. As an added feature there is an internal tank which means you don't have to worry about the container going missing on hire.

All of these features are packaged in a eye-catching purple case.

The ADJ GT 351 Fogger will happily run on JEM fog juice.

Available at \$122.34 distributor and \$199.00RRP, the code is: ADJFOG015.

Call Show Technology +61 2 9898 1111.



MLD NEWS

The current Martin Lighting Director software version is 2.42, released the 14th of July. The updates bring the following changes compared to v2.4: Added an updated help file with in depth discussion of all the new MLD features (multiplex functionality, 2D tracking, sample rate boost, etc). The help file now also includes radio optimisation tips, more troubleshooting sections and some more examples; Fixed DMX output problem with older versions of the DMX CPU firmware; Improved 2D tracking functionality; Fixed a few minor bugs, a range-check error and a memory leak.

The software can be downloaded for free from the link below and it will work with all existing MLD hardware (if you do not have MLD hardware you may still run the software in any Win 95/98 PC). The download is well worth the bandwidth particularly because of the up-to-date documentation and bug fixes.

Get MLD 2.42 as a single download or as floppy segments at <http://www.martin.dk/service/Software/Logs/MLD-download.htm>

Lighting::MARKET OVERVIEW

BY::Cat Forcer

detailed:: PROMOTION PROJECTORS

The **DP-250** is also a compact slide rotator/projector. There are two adjustable speed controls for slide rotation and optional mirror/prism rotation. Takes a single 35mm slide or single D size gobo. Slide can be rotated or static. Optional accessories, image, lamp, cooling, mounting and size as above. Weight: 9.3 kg.

The **DPH-250** is a compact slide rotator/projector. Same as above but uses a low Cost M33 lamp (24v, 250w) with a rated life of 2000 hours. Weight: 9.2 kg.

Price: Promotion Scan \$4,999 inc tax; AdScan \$3,460; DV-250 \$1,934; DP-250 \$1,162; and DPH-250 \$968.

Website: www.cdaust.co.au

FX RANGE

Coemar De Sisti Australia +61 2 9467 8666

The FX Range is a low cost product range manufactured in South East Asia. All units are manufactured to CDA's exacting standards including 240v rated transformers, moulded 240v Australian plugs and full C-Tick certification.

The **TL-9805** is a static logo projector. It is designed to take a standard 35mm colour slide or a D size gobo in an optional holder. The unit features manual zoom and focus and has a power switch located on the rear panel. Slide changing is via clip in holder that requires no tools for changing. Images can be on standard 35mm colour slides (glass mount slides are NOT required) or on a D size gobo. Slides last from 3 - 4 months of retail usage (12 hours per day), depending on colours and saturation. A high output dichroic lamp (A1/271) with a rated life of 1500 hours is used. An optional gobo adaptor plate is available. The unit is fan cooled using a low speed DC fan. Size: 340 x 120 x 120 mm. Weight: 6.5 kg. Mounting: Adjustable hanging bracket included. Unit can be horizontally or vertically mounted.

Price: \$650.00 inc tax.

Website: www.cdaust.co.au

GRIVEN

Universal Lighting & Audio Pty Ltd 1800-648-111

Griven **Mover** is a new marketing tool in its target markets of promotion, marketing and display work. It has been designed to achieve product/company branding and actual sales of products and services, with many potential applications, notably shops, commercial centres, showrooms, exhibitions and display areas. Mover has the choice of using 35mm slides, metal or dichroic gobos, and can accept four of these, making it possible to project, scan and rotate any picture, image, company logo, brand name or message at a very low cost. The four projected images can change every twelve seconds, and 16 pre-programmed sequences of the mirror pan and tilt, giving the projected scanning movement, can chase through automatically. Image rotation is also possible, with four speed options, and there are also four speed options on the auto sequence chase. With the addition of DMX control, the mirror movements can be controlled and programmed to suit any special requirements and a strobing facility can also be controlled from DMX. The use of an easily changed but long life MSD 200 discharge lamp, which is supplied with the projector, in the Mover gives high light output and the high definition optics ensure a sharp image. The beam angle with standard lens is 22°, an optional 12° lens is available for longer distance projection. Mover has an inbuilt safety micro switch to turn off power if the lamp cover is opened, and is power factor corrected meaning that it only draws a current of 1.7 amps in use. A weekly timer, which can be programmed to give 20 different operations per day, is available as optional. Colours: black and white.

Price: \$3985 ex-tax.

Website: www.griven.com



continued over

SELECON

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A NEW WORLD OF PATTERN PROJECTION FROM THE COOLEST GATE!



The new **PACIFIC** has a gate so cool you can create your own designs using Photoshop® or similar programs, print them onto overhead transparency plastic and you have a very low cost colour pattern/slide ready for projection.

All possible thanks to the superior effectivity of flat mirror coating and Selecon's reflector design. Of course glass patterns, including the latest dichroic glass patterns, can be used safely.

The trick is to use the 600w GKV lamp, with the Pacific adjusted to a very flat field beam. More on the advantages of a full peak/flat field adjustment next month!

Contact details for David Ferguson, Selecon's Australian Market Manager, are below. Please contact David with any queries, technical questions and enquiries. We look forward to hearing from you.

CONTACT YOUR SELECON DEALER OR SELECON FOR FULL DETAILS

NSW — HERKES PRO LIGHTING, Ph 02-9319 3133, Fax 02-9319 0204
VIC — CLEARLIGHT SHOWS PTY, Ph 03-9553 1688, Fax 03-9553 4401
SA — OSMOND ELECTRONICS, Ph 08-8410 1111, Fax 08-8410 3322
QLD — HERKES PRO LIGHTING, Ph 07-3841 4288, Fax 07-3841 5448
ACT — SOUND ADVICE, Ph 02-6280 8777, Fax 02-6280 8177
WA — STAGE & STUDIO, Ph 08-9227 9932, Fax 08-9227 9347
TAS — K.W. McCULLOCK, Ph 03-6343 1043, Fax 03-6343 1847

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As reviewed by Dr. G in
Connections July 99 p36

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TAS-	Frontline	(03) 6331 4122
WA-	ProDesign Lighting	(08) 9409 8964
	www.pro-design.com.au/focus-pg.htm	

Write in Reader Service Number: 158

THE LARGEST BIRTHDAY CANDLE IN THE WORLD

Gaze across Auckland's skyline and you can't miss getting a glimpse of the Auckland Skytower, also known as the largest birthday candle in the world.

In celebration of its first birthday late last year the 328 meter high Skytower, the tallest structure in the southern hemisphere, was turned into a gigantic birthday candle complete with a flickering flame.

To create the flicker flame effect on top of the mast Kenderdine Electrical Ltd., installed 4 Martin Exterior 600s and programmed them to change from yellow to amber to red to simulate the color of a burning candle. The Exterior 600s were used to illuminate approximately 25 meters of the top 75 meters of the tower.

The bulk of the colored light on the tower was created by changing the MH lamps of the flood lighting to colored bulbs. Some lights are placed at the ends of the metal spokes of the Skytower's wheel requiring a technician to walk along the spokes to change them!

At the entrance gallery audio-visual images are displayed on a 40 meter-long screen. From there elevators take visitors through the shaft of the tower up to three different observation levels, an outdoor deck and a revolving restaurant.

The exterior display lighting was designed to avoid spill-lighting and reflection from the glass. Most of the lighting is from floodlights directed upwards, with some downward-directed floodlighting illuminating the ribs at the base of the shaft.

The upper third of the tower houses 10 floodlights. Lower down are two sets of four 70W lights with another eight placed around the outdoor observation deck. Lower still are four banks of 12 lights. Eight 150W metal halides fill the area between the ribs, and 16 150W lamps illuminate the legs at the base.



Lighting::MARKET OVERVIEW

BY::Cat Forcer

detailed:: PROMOTION PROJECTORS

MARTIN

Show Technology +61 2 9898 1111

The **Martin ImageScan** can use gobos or slides, a gobo can take 3 days to make and cost from \$140 to \$1000 for full colour but, lasts a life time. A slide can cost \$12.00 and also takes 3 days to make, with the life of the slide lasting 2 weeks. The machine also takes transparencies or laser printer images. The lamp used in an Imagescan is a 200 Watt MSD lamp that last for 2,000 hours. Control is via hand held remote control or DMX 512 controller. The unit is fan cooled and weighs 16kg, is 617mm in length and 425mm in height, all finished in a black powder coated



Lighting::MARKET OVERVIEW

BY::Cat Forcer

detailed:: PROMOTION PROJECTORS

casing. The Imagescar is yolk mounted and has its own power supply.

Price: Imagescan \$2,458.20

Website: www.martin.dk

OPTIKINETICS

Lightmoves Technologies +61 2 9560 0000

News from Optikinetics Ltd is that the Company re-branding under the [OPTI] banner has proved popular with their customers. Not only does it make their name easier to say but it brings their product ranges closer together. [OPTI] now brand all lighting product [OPTI] Kinetics and trussing product [OPTI] Trilite.

As well as this re-branding [OPTI] has also added two new gobo projectors to their established range this year.

The **GoBoShow** is based on the Osram HQI 150 lamp with an average life of 9000 hours, the basic F1 model GoBoShow takes either 50mm glass or metal gobos. 35mm slides can also be used for limited periods* with the F2 model which has an additional 3-speed cooling fan directed at the gate of the projector.

For applications where more power is required the slightly longer **GoBoPro** is available. This projector utilises the Osram HMD250 lamp with an average life of 2000 hours. Accessories for the GoBoShow and GoBoPro projectors include a wide range of slide/gobo holders, rotators and changers as well as mirrors, with a variety of motions, to suit most applications. Colour change, glass distortion and fader wheels can all be added to further animate basic gobos.

A real time mechanical analogue clock attachment is available with a choice of either modern or Roman numerals. Custom clock faces including logos and text can be added. Power and control for and between the attachments and projectors is carried through the rails onto which the attachments are mounted.

[OPTI] has been producing custom gobos and standard projector effects both for its' own projectors and other brands for close to 30 years now. A variety of processes are used including glass chrome etching which is highly durable and can hold really fine detail. [OPTI] has also recently taken a license to manufacture the Swedish Beacon high definition full colour glass gobos. (This process is available from Lighting By Design in Australia).

*35mm slide life is generally greater in [OPTI] projectors due to the effort that is put into the design of the cooling for the effects stage. However accurate figures are difficult to quote as this is dependent on the density of the specific image and the type of slide film used, as well as whether or not it is sandwiched between glass. Circa 150 hours is usually achieved on the GoBoShow F2 before colour degradation is noticeable. Only duplicate 35mm slides are recommended so that the original, which is actually the film from the camera and therefore often irreplaceable, is held as a master.

Both the GoBoShow and the GoBoPro are available in either black or white and weigh 7.7kg and 10.85kg respectively. Remote operation and programming via DMX is due to be launched for both models later this year. Both projectors have mounting yokes with adjustable point of balance and

can be mounted universally. Both also are self contained with in built power supplies.

Price: F1 model GoBoShow \$1,895. The F2 model GoBoShow \$1,995. GoBoPro is \$2,595 inc lamp and 85mm lens.

Website: www.optikinetics.com

MY FAVOURITE GEL COLOUR

PHIL EALY

Lighting Designer with The Offspring



"I use exclusively GAM with the exception of Lee 116 which no one has been able to come close to yet. My favourite colours would have to be the Lee 116, which I'm not using on this tour, the GAM blue double A10, GAM lavender double 960, and GAM red 270."



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SMPTE

SEEKING NEW LX AT THE BIG BROADCAST SHOW

Lighting is very much the poor cousin technology at the SMPTE show, held in Sydney late last month.

SMPTE is the peak TV/Broadcast engineering trade show in Australia, held each other year.

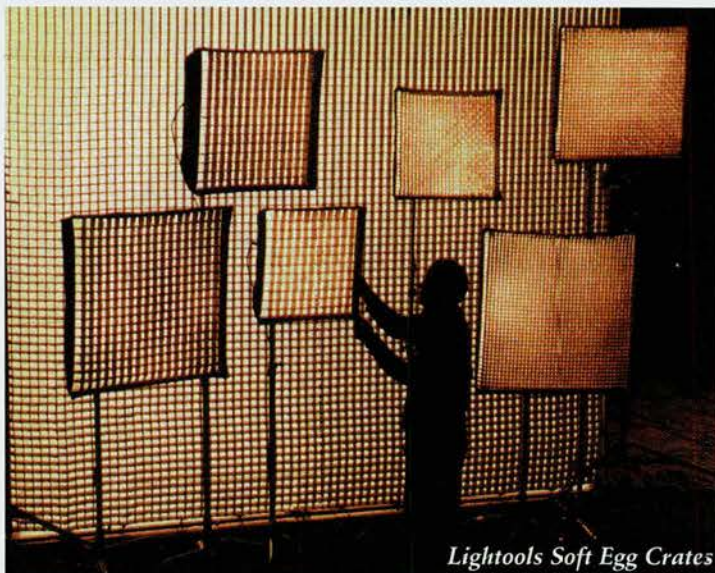
Most of the attendees were Engineers In Suits, although they're more usually seen around the studios in brown cardigans and shirts with pocket protectors full of pens and tweakers. The majority of members of The Society of Motion Picture and Television Engineers are engineers who want to look at television transmitters, camera and tripod bags, anything to do with High Definition Television, non-linear video and audio post production or camera jibs with very long arms.

The theme of the conference sessions was "Into the Total Digital Era" which dealt with the upcoming introduction of digital television broadcasting and high definition television and to a lesser extent with the digitalisation of the film and sound post-production processes. Needless to say these topics have very little direct impact on the world of lighting. The move to colour television in the seventies may have provided an opportunity for upgrading and refurbishing studio lighting systems, but making the picture wicer (16:9 aspect ratio instead of 4:3) and adding more lines to it (1080 x 1920 resolution) doesn't seem to have many lighting side-effects.

There was a fair amount of lighting on show, with the majority of new products being evolutionary developments of existing technologies. If there were any themes to what was on display they would probably be "even more fluorescent lighting" and "have we got a great new flight case for your redhead kit".

Australian Film Television and Radio School

The national film and television training institution was at SMPTE



Lighttools Soft Egg Crates

promoting their industry short-course program for the second half of 1999. Courses on offer in the area of cinematography include *Sex, Stunts and Dinner Parties*, *Digital Camera Techniques for Drama*, an introductory course in the skills of the *Camera Assistant* and most probably of most interest to *Connections* lighting readers: a *Lighting Masterclass for Cinematographers* scheduled for late November, which is to be run by an as yet unannounced high profile cinematographer. Check with AFTRS on (02) 9805 6444 for more details.

Balcar

Balcar are a French company specialising in fluorescent lighting for film and video who have been in the Austrian marketplace for some time. They were at SMPTE in force to find a new distributor for their products.

The Powerflux narrow-beam fluorescent luminaires were making their debut at SMPTE. These represent a new direction for fluorescent fixtures, which until recently have been wide-angle, short-throw fill lights rather than modelling sources. Both of the Powerflux luminaires are dimmable via a DMX.

Bytecraft

The Bytecraft transnational corporation (you have to wear an ID tag to visit their Melbourne head office now!) was showing the cut-away prototype of their PLASA-award winning sinewave dimmer which now bears the name "Bytesize VST" (Variable Sine Technology). The first production versions of the VST were installed in the Studio at the Sydney Opera House on the Monday after SMPTE. SMPTE saw the first public showing of the complete new range of 22 Quartzcolor fixtures for luminaires for studio and location work, a fairly radical change after producing the same luminaires for up to

Q: What has a 7k Xenon Lamp,
Can leap tall buildings in a single flash
Has full CMY colour mixing
Is as fast as the speed of light
Has 16 bit pan and tilt resolution
A mechanical dimmer to black-out

A: The Space Cannon 7k Ireos
The Space Cannon 7k Ireos is the most powerful, versatile multi-purpose all weather moving light available in Australasia. Space Cannon is imported by Coemar De Sisti Australia Pty Ltd.



Tel: (02) 9966 9111

www.greatoutdoorlighting.com.au

Lighting::Searching for new things

BY::Andy Ciddor

twenty-five years for some models.

The **Strand Lighting** 530i Control Console was on show with its latest software upgrade that supports a digitiser pad and a mouse via the PS/2 ports. The digitiser pad interface allows "buttons" to be created on the digitiser which can trigger any one of the console's 1,000 macros.

Cine

Cine Australasia (the local arm of Singapore based Cine Equipment Pte Ltd) now have offices in Melbourne and Sydney from which they distribute ARRI, Kino Flo, Chimera, Lowel, Manfrotto and Koto lighting products along with ARRI cameras, Tiffen filters, Angénieux Lenses and a heap of other camera and grip equipment.

New luminaires on display from **ARRI**

included the HMI X Lights range, designed for washing large flat areas such as buildings or scenic backings, along with the diminutive Minisun 21/50 watt HMI daylight and the Pocket Par 125watt HMI Par, both of which can be run from either mains or battery packs.

DB Audio Visual

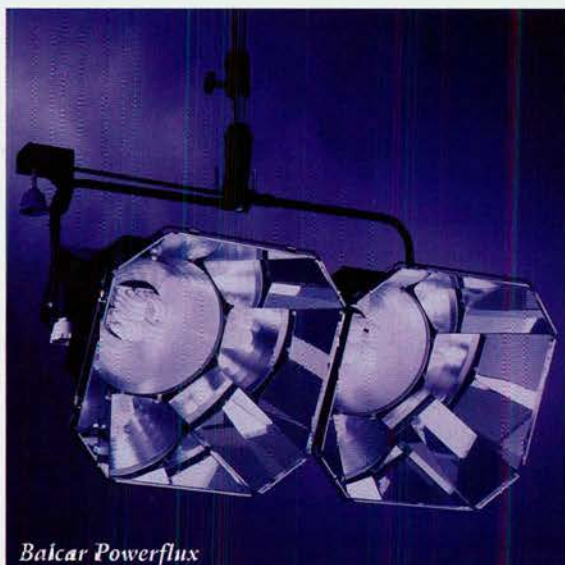
The German camera head manufacturer **Sachtler** also produces a full range of very well engineered, but not very widely known studio and location luminaires. On display at SMPTE was their latest release: the 21watt HMI MicroSun designed for camera mounting and able to be run off battery packs ranging from 9 to 36 volts.

Jands

The Jands presence at SMPTE was focussed on their audio products although they were showing some new models of the **ETC** Uniscan architectural dimmers.

John Barry

John Barry were always into every thing for production from charcoal eye-cup covers for camera viewfinders to those hideous furry windsocks for shotgun microphones that appeared to be made from someone's unlucky pet, and while they do distribute quite a range of lighting gear, it was the Australian made **Rocket Film Equipment** pouches and bags which are probably of most interest. There is a huge range of tool, meter, walkie-talkie and equipment pouches designed by a working gaffer and used by many local crews. As they're locally made you can probably order yours in standard production-black if the range of colours are too bright.



Balcar Powerflux

Mediavision

New products on Mediavision stand included the new **Colortran** Innovator control desk which will be reviewed in detail in the next issue of Connections, the Gulliver range of camera-mounted / hand held luminaires and the miniature Aliddo 12v Spot from **Ianiro Lighting Equipment**, and **The Effects Company** range of smoke, haze and fog machines. There was of course the latest **Lee Filters** gel book with the inevitable new colours selected by renowned lighting designers and for the die-hards: the news that dear old Cinemoid 17 steel has been resurrected as 725 Cold Steel Blue.

One of the more radical pieces of lighting equipment on show at SMPTE was the **LightTools** Soft Egg Crate: an extension of the old egg crate / spill-rings

concept, which finally allows the TV/film DOP to control the spill from large softlights, softboxes and overhead frames up to 20ft x 20ft in size. The notion of a 20ft square softlight with a beam angle of 40 degrees and no additional flags or cutters is one that may take some time accept. (Note: columnist Andy Ciddor has a commercial arrangement with the LightTools company).

Miller

Brightline studio fluorescent luminaires were to be seen on virtually every stand where cameras were in use, a smart move on the part of Miller to introduce this range of equipment to the industry. The new compact stacking lighting stands from **Avenger** were also on display along with the Convertible Boom Stand from **Manfrotto** and the Joker-Bug 300watt HMI Par and SoftTube diffuser from **K5600 Inc.**

Show Technology Australia

On their rather compact stand Show Technology were displaying the new **Martin** Mac250+ with indexing gobos, replaceable dichroic colour filters and a higher resolution achromatic lens, Martin's new remarkably easy to use LightJockey controller software and the new Fern Techno-Haze and Stage-Haze hazers.

The complete absence of flight cases from this brief overview of the SMPTE show is deliberate, as we have decided that in view of their major impact on film and video production, next month's Connections lighting section will be entirely devoted to a Redhead Flight Case Special.

BROWN'S

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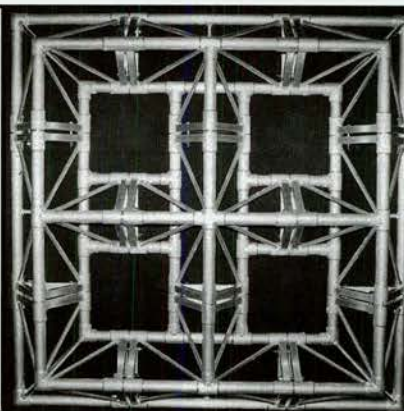
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ShowTech BERLIN

John Rayment, Lighting Designer for the Olympic Opening and Closing Ceremonies, writes exclusively for Connections



Why is it that some of us are blessed with the uncanny ability to be able to pick a randomly selected hotel that, alone out of the fifty possible, has extensive and intrusive renovations going on and to arrange a meeting with total strangers at stand X at 1230 on the day you fly in from another country?

ShowTech – DEM30 per day to get in – and isn't it hot inside?

Walk in, turn right into Hall 20 – the Strand truck. What a 40' thing of beauty. Given the number of places in Europe they must have to display their wares and the hundreds of thousands of pounds involved over any one year to do it, it makes sense to me.

Drive it in, drop the sides, connect the power, arrange floor in ascending order and have a coffee, you're done. Watch all the other stands spend days theming, organising, having fraught discussions with local personnel as to the absolute priority of their stand and feel smug, yet again, about The Truck.

The Martin stand – a vision in white – no trussing in sight. All of it wrapped in very clean stretch cloth, right down to creating a ceiling and cutting holes for the hook clamps for the fixtures.

Very nice water sculpture for proving that outdoor instruments can get wet. Terrific people – you actually get the impression that they believe in their gear and want to demonstrate it for you.

There was an interesting prototype demo set up to use robotics as follow spots – not using a performer with a device attached but rather an operator with an aiming device (in this case a video camera on a stand) which in turn controls a number of selected fixtures. You follow them in the traditional way and the technology allows you to command any number of instruments in the rig.

Watch their space. (*Sounds like the Martin Trackpod which we previewed at LDI'98 and is due to have its official release at PLASA – Cat*).

Various haze-generating stands – often being asked by the adjacent stands to stop generating. Humidifiers getting a great deal of interest – some a crossover from industry (food, etc.) and quite huge. Some haze (MDG, in particular) originates in defence aerodynamics – providing for training and flight simulators.

Is our industry just another form of business with technological needs? Probably. Certainly there is much evidence of that line of thinking here.

The laser display hall took the form of a live performance incorporating water screens, lasers effects, projections, animations, dancers, smoke, etc., etc. Lots and lots of people standing and watching in a dark space. Very little ventilation – did I mention it was hot?

The display/performance itself involved a big set-up involving a number of companies (presumably competitors) – ultimately underwhelming – even though there was an attempt to give it all a context and, almost, a story.

It was pretty dreer, really.

Technology and money cannot replace human creativity AND technology alone is inherently boring.

One thing you were able to do at ShowTech was get a beer (well, it was hot). At almost any stand. Indeed, a vast number of stands were bars, really. And no prizes for guessing which stands had the most visitors. You could buy a beer at a number of outlets but why bother when they're giving it away all over the place?

Had a beer or two with Jeremy Collins (which his distributor kept getting from a neighboring stand – very accommodating folk everywhere) while we reflected on the irony of seeming unable to catch up in Australia or New Zealand. He extolled the virtues of the Selecon Pacific, again, and the "sideways version" – the 90-degree fixture!

It must be said that there are Selecon instruments all over the place – I noted it particularly in my diary ("pacifics everywhere!").

There were the few stands with young ladies dressed in something a little odd but at least they were not attempting to speak knowledgeably about the product – they were only there to bring beer. Or dreadful coffee. Truly dreadful coffee.

It was quiet, though.

This was not a big audio show at all. Apparently there is a separate and dedicated audio gathering. ShowTech was made up of – Stage Technology, Trussing and Motors; Lighting (fixtures, projectors, effects, lasers, controls, dimming, accessories, installs); Special Events, conventions and conference equipment; Décor and effects, costumes, etc.; Safety; Services and service providers (including trade show contractors!); Sound and P.A; Miscellaneous (including amusement park equipment).

So many of the stands were the work of the actual manufacturers – not local representatives – and there are competitors in every imaginable field. They all know their competitors' strengths – the spirit and frequency of referral to other stands was just great.

The facility to chat with folk who were seriously well informed in their field of business was a great thing – and they seemed not to feel the need to slag the other products on offer elsewhere. Refreshing.

Then there was the Procon hall – a modest lighting and staging rental house. Virtually an entire hall used as a display room – there seemed to be at least one of just about everything (including the behemoth – the Lycian 1294 4Kw followspot) – and a full set of temporary meeting rooms for discussing your forthcoming needs.

And a bistro.

And a 195 page catalogue, complete with table of costs and multipliers for every item, so that you can work out your costs up to 1080 days.

Rumour has it they ordered 3000 (three thousand) MAC 500s during the show. Small company.

I confess I wasn't expecting to be impressed at all, let alone very impressed by ShowTech. Berlin – the scale of construction going on everywhere is crazy. Indeed the scale of the place is what is most remembered – right down to being trapped, in a roundabout, in a taxi, on the way to dinner with the Martin folk, by over 10,000 roller-bladers making their point about something important.

LIGHTING DIMMERS

THEATRE/TOURING

ANYTRONICS

GUET 1800 773 187

Series 192 range of 6 channel dimmers and 12 channel switching racks in fan cooled 2RU rackmount format with automatic plus or minus input signal detection. Single and 3 phase models. Dimming of 12-240VAC, 5 and 10 amp per channel output capacity, low voltage DC output, analogue input 0 to +/- 25 volt, DMX optional whilst still remaining analogue input. From \$890.

Series 193 range of rackmount dimmers in 3, 6 and 12 channel format accepting both analogue and DMX512 inputs and with circuit breaker protection on all outputs. Output capacity of up to 40 amp per channel (D310) 3 phase input, monitor LED's, on board rotary output controls and low voltage DC output. From \$2252.

DS410DMX Universal 4 channel @ 10 amp per channel dimmer, single phase, analogue and DMX input, circuit breaker protection, rack, wall or truss mounting. \$1045.

AVOLITES

Universal Lighting & Audio 1800-648-111

Avolites ART2000 24+24 channel dimmer system. Avolites introduce a new range of dimmer systems based and following on from their success with the Art series Digital dimmer, comes the ART2000 dimming system. 2 bays of 16amp dimming channels fitted, 2 bays of 16 amps switching mains channels fitted. Camloc or Powerloc mains loop output, Camloc or Powerloc mains input, Ammeter and Selection switch, RCB fitted for each 12 channel dimmer bay, patch bay with flexible amp, choice of utility outlets, choice of Wieland, Harting or Socapex outputs. All flightcased on castors. Configurations for 36+12 &

48+16 available also. \$33978.

Avolites ART2000 24+24 channel dimmer system. Avolites built their reputation on the FD series of dimmers which became the international touring industry standard. Now Avolites present the Art Digital dimmer, a three phase, 100% duty cycle dimmer that will control 12 channels of up to 4,000 Watts each. The design incorporates full monitoring and status feedback via the backlit display. Channel levels can be set quickly and easily from the front panel via the 12 rotary faders - ideal for a static state environment. Each module can store 12 memories which can be replayed via the front panel controls. Channels can also be programmed to respond to any one of 16 dimming curves. 72, 60 and 48 channel systems available 12 channels at 16 amps per module. A range of options and configurations are available. (ART dimmers in touring rack). \$37968.

Avolites TV 24 channel dimmer system

The Avolites TV DMX series of dimmers are fully digital, high density systems designed and built to the highest specifications. The modularly designed units are available in 25 and 50 amp versions and can be configured as a rack mounted main frame system or single modules for distributed dimming systems. All modules are three phase, offer high suppression levels, rapid response, 100% duty cycle, auto-voltage input selection and automatic frequency tracking. Each module is separately addressable and offers a highly stable output allowing smooth dim-

ming if inductive loads. All circuits are protected by MCB's and control circuitry is cross phase protected. Switchable RCB protection is also fitted as standard. The system is rugged and designed for use in demanding situations. (tv dimmers in touring rack). \$34000.

BYTECRAFT I.D.S.

Bytecraft Pty Ltd (03) 9587 2555, (02) 9550 3955

Bytesize TRV Budget priced dimmer. 12 x 10A channels; DMX 512 or AVAB in-

puts per dimmer and guard rail. Features as for Bytesize 483/TR. Also available in 6 x 5kW channel model. From \$4230.

Bytesize 483 Broadcast quality dimmer designed for professional use, with iron core filtering and SCR's. 12 x 2.4kW channels. Features as for Bytesize 483/TR. Also available in 6 x 5kW channel model. From \$4200.

CE.CO

Electrosonic Systems (02) 9714 0400

Fusion Touring 19" rack mountable touring dimmer, 12ch unit. DMX controllable as well as 0-10v control. Test button for easy testing, dims neon, fluoro, incandescent, low voltage and tungsten. Also switchable for non-dimmed loads. \$2207.

Fusion Wallmount wall mountable version of Fusion Touring Rack. Specifications as above. \$4815.

DYNALITE

Dynalite (02) 9319 5055

PERFORMER DIM1210 12 x 10A. Circuit breaker protection, DMX and analogue control, DyNet control port, extensive front panel control, optional load indication, user definable dimming curves, rack mount. \$3,575.

PROPAC DIM700 12 x 10A. Fuse protection, DMX and analogue control, lightweight, rack/shelf mount, some front panel testing facilities. \$2,500.

ETC

Jands (02) 9582 0909

Sensor ETC Sensor dimming system is available in a variety of different configurations including 48 x dual 5kVA modules or dual 2.4kVA modules. Sensor provides many sophisticated features including dimmer status read back. S.P.O.A.

continued over



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buyers guide:: LIGHTING DIMMERS

GENI

Show Technology Australia (02) 9898 1111

Light Modulator is a four channel dimmer/chaser. Accurate bass, mid, high, anti bass separation in sound to light mode. It has four individual faders, master faders, background fader, sound chase, speed chase; 0-10 volts DC output for further slaving of packs flash buttons, 19" inch rack mount and RCA audio output. Perfect for clubs or mobile DJ's. \$572.95.

JANDS

Jands (02) 9582 0909

HP Series High quality range of rack mounting (3RU) 12 x 2.5kVA (6 x 6kVA for HP6c) dimmer racks, extensive range of features including circuit breakers, high rise time (280 (s HP12TR/500 (s HP12SC) chokes, test facilities, scrolling alphanumeric display, keypad, selectable output voltage. Option of hard fired SCR output devices for excellent control of complex loads and speed controlled fans for low noise. Wide range of output connector options available including Socapex/Wieland and GPOs. From \$3,684.

GP12c-A Cost effective rack mounting (3RU) 12 x 2.4kVA dimmer rack with fuses and basic control facilities. The GP12c is ideal for entry level applications requiring a simple to use DMX 512 controlled dimmer rack. \$2,455.

FP12-A Cost effective rack mounting (3RU) 12 channel x 2.4kVA dimmer rack with circuit breakers and basic control facilities. The FP12 is ideal for entry level applications requiring a simple to use DMX 512 controlled dimmer rack. \$2,455.

4PAK II The Fourpak is a four channel control desk and dimmers in one simple easy to use economical unit. Suitable for a variety of applications including stage lighting and schools. The 4PAK II is rated for a total of 2400W. \$898.

LSC LIGHTING SYSTEMS

Various

ePAK 12 Channel x 10 Amp Digital Rackmount Dimmer, MCB's, 100% Duty cycle, push button riggers control with scene memory facilities, choice of output connectors, 3" tail and plug included. \$2370.

TS Series 12 Channel x 10 Amp or 6 channel x 20 Amp Digital Rackmount Dimmer, MCB's, 100% Duty cycle, professional spec'd dimmer with local controls including inbuilt chase programs and optional scene memory. Choice of output connectors. \$3300.

WALLPAK 12 Channel x 10 Amp or 6 channel x 20m Amp Digital Wallmount Dimmer, MCB's, professional spec'd dimmer with local controls including inbuilt chase programs and optional scene memory. \$2900.

ARCHITECTURAL

ANYTRONICS

GUET 1800 773 187

Black Box Series range of wall mounted dimming and switching packs. In 4, 6 and 8 channel configurations with 5 to 10 amp per channel capacity. Triac control 12-240VAC, opto isolated inputs, DIN and screw terminal inputs, channel mimic LED's, remote enable/disable facility and individually fused outputs. DMX optional on most models. From \$335.

PRO-DIM 2.5 architectural single channel dimmer of 10 amp capacity suitable for switching all types of loads. Master

and slave versions available. Heavy duty choke, remote input facility, internal pre-heat and max level controls, circuit breaker protection. 60mm fader and blackout switch (on master). Surface or flush mounting enclosures. \$370.

BYTECRAFT

Bytecraft Pty Ltd (03) 9587 2555, (02) 9550 3955

Solution5 Compact, robust, wall mounted 20amp dimmer pack can control variety of loads incl. incandescent, fluorescent, ELV, metal halide and cold cathode. Analogue or digital control. Master/slave operations as well as multiple Solution5 configurations are supported. Stand alone internal sequencing, with presets including fade up and down time, multiple local and remote modes. From \$1200.

Solution28 Your specific dimming requirements (10, 20 and/or 40 Amp) can be incorporated into each Solution28 cabinet making it an economical approach to modern dimming specifications. Stand alone internal sequencing with 100 presets each including fade times,

Helvar product range encompasses single channel to multi-channel multi-scene dimming systems suitable for any architectural dimming application. Systems range from the single channel MIMO system, with preset level control, constant light source dimming, infra-red remote control and LON control system interfacing; to the AMBIENCE systems, available in 4 or 24 channel configurations with 4, 8, or 16 preset scene Master Panels. The SOLO system is a single channel dimming system, while the IMAGINE system is available with up to 1000 channels. Dimming racks are available for 0-10v controllable loads, 240v dimming, incandescent, neon, tungsten halogen, and conventional/electronic transformers in single, dual, four and twelve channel configurations. Master and Slave Panels are European designed and finished in stylish Brass, Brushed Stainless Steel or white. Also available are AMX and DMX interface units. Various prices.

JANDS

Jands (02) 9582 0909



Bytecraft Solution Sine

GP12WM-A

Cost effective wall mounting 12 x 2.4kVA dimmer rack with circuit breakers. This GP12WM is ideal when the requirement is for a simple to operate wall mounted dimmer rack with basic control facilities. All WM series rack are particularly easy to install

with an optional integral 24 way patch panel being available for a space efficient dimmer/patch system. \$2,619.

HP12WMTR-A High quality wall mounting 12 x 2.5kVA dimmer rack with extensive range of features including circuit breakers, high rise time (240mcs) chokes, test facilities, scrolling alphanumeric display, keypad, selectable output voltage. Wide range of output connector options available. All WM series rack are particularly easy to install with an optional integral 24 way patch panel being available for a space efficient dimmer/patch system. \$3,767.

HP12WMSC-A High quality wall mounting 12 x 2.5kVA dimmer rack identical in all respects to the HP12WMTR except with higher high rise time (500mcs) chokes, hard fired SCR output devices for excellent control of complex loads and speed controlled fans for low noise. \$5,242.

HP6WMC-A High quality wall mounting 6 x 6kVA dimmer rack identical in all respects to the HP12WMTR except with a higher output power capability. \$3,602.

LITE PUTER

ELSTA (02) 9568 2100

D-120 1 channel dimmer, 2kW inductive loading maximum, high speed circuit breakers, plug-in modular type, emergency function, size 44 x 132 x 120 mm, use stand alone or with CP-2. \$409.02.
CP-2 4 pre-set scenes, controls up to 27 channels, 3 wire sync. remote control, fade time 0-60 seconds, emergency function, key lock function, use as system with

D-120, size 70 x 120 x 40. \$286.07.

CP-3A 100 scene programmable dimming controller and dimmer, up to 512 channel, built-in computer controlled, timer control, fade time 0-30 minutes, password protection, size 70 x 120 x 50 mm. \$572.95.

DP-6 DMX Interface, 8 group control points, DMX-512 512 channel outputs, 100 scene memory, timer function, fade time 1sec - 30min, use with CP-3A for complete system, size 482 x 88 x 96. \$1064.75.

DMX & NETWORK PRODUCTS

ALCORN McBRIDE

EAV Technology (03) 9417 1835

Lightcue is a real time DMX recorder which records output of any lighting board onto flash RAM or PCMCIA drive. \$6584.
DMX Machine offers 'scripted' control of dimmers (512 DMX channels) or as a RS-232 to DMX translator. \$1747.

AMX

A.V.Technology (07) 5531 3103

AXB-DMX512 can transmit and receive 512 DMX channels for DMX applications. Onboard memory stores channel groups, faders, patches and 72 presets. Used with AMX Control Systems. \$1300.

ANYTRONICS

GUET 1800 773 187

Anytest One hand held DMX tester, simultaneous control of 4 channels, large LCD, slider control of output. \$465.

AVOLITES

Universal Lighting & Audio 1800-648-111

DMX Splitter available in two versions - Rack or Truss mounting. Avolites DMX splitters will buffer, multiply, isolate and protect console DMX outputs. The device operates from any AC mains voltage (85 to 265v) with a robust 2 amp internal power supply. Standard units have DMX in, DMX loop out, Terminate On switch and LED, plus additional Power and Data LED's. (from) \$2425.50.

EUROCABLE

The Resource Corporation (03) 9877 8233

DMX1 110ohm control pair plus 3x1.5sqmm power conductors. Ideal for supplying signal and power in a single-cable package. Also available as DMX2, featuring 2 control pairs and power. \$8.61/m.
DMX S Single pair 110 ohm control cable 5.5mm OD to fit 5 pin XLR. \$2.42/m.
DMX D Double pair 110 ohm control cable 7.2mm OD to fit 5 pin XLR. \$3.39/m.
DMX CC Specially designed for colour changers, etc. Consists of single pair 110 ohm control cable plus 2x2sqmm power conductors. \$4.84/m.

GENI

Show Technology Australia (02) 9898 1111

DMX 4 Channel Controller DMX 4 Channel controller multi-function DMX 512 controller. It has 3 selectable models- 4 channel DMX dimmer desk, 16 channel microcolour controller and a 2 channel DMX dynamo strobe controller. It has 4 sliders for individual channel control and master slide for master dimming and function control. All products are 240V 50Hz.

Single Channel DMX Switch PCB Single Channel DMX Switch PCB unit is able to convert any device to switch via DMX

BUYERS GUIDE

Compulite are alive and well in the region despite being omitted (our error) from last month's Buyers Guide! Update:

COMPULITE

Coemar De Sisti Australia
+61 3 9467 8666

Photon Full feature compact console of 360 control channels, 48 scrollers, 512 DMX channels, 20 multi-purpose controllers, instant memory/channel/group/snaps/macro/chaser access, Rigger's remotes, SMPTE, MIDI, DMX in/out. Professional console suitable for smaller Studio, Theatre, Concert, Schools, etc. Also available in back-up model with full playback facility, tracking backup, and basic editor functions. Off-line editor included with all consoles. \$11,641.94.

Micron 4D M/E Ideal moving light console for production companies and freelance operators. Up to 2048 DMX channels, 1536

Dimming Channels (plus Scrollers), or 250 Moving Lights. Effects Engine with ability to create effects on the console. Interactive Touch Screen provides access to Groups, Effects, Colours, Gobos, Positions, etc all using plain English names. Internal hard disc and ethernet connection. Trackball, dedicated vertical dimmer wheel, plus FOUR parameter wheels for moving light control. VGA Monitor Output, Off-Line Editor, MIDI in/out/thru., SMPTE input Accessories include CompuCAD, CompuLINK, VideoLINK, E-Mix Ethernet Node, 2nd Monitor, Wire/less Remote Control with/without Moving Light Control, Macro Extension Keyboard, Submaster Wing. \$24,907.28.

Australia. \$270.

DMX-Analogue Converter Model DA12 compact 12 channel card provides up to plus 10V DC output from a DMX input. Can be set to start on any channel from 1-512. Supplied as a PCB card only with terminal block connections, this card converts a single analogue dimmer rack to digital. Also used for relay drivers to trigger effects or to drive any analogue item. \$295.

Sacre Moving Light Consoles

Control up to 192 moving lights and 1024 channels. File saving on hard and floppy disk. Total integrated control and direct instant access to all functions. Trackball & Multiple Wheel control, macros, in-built chasers, snap, disk storage, DMX in/out, MIDI, SMPTE, multiple protocol (Coemar/High End/PMX/Data, etc) Multiple effects package for



instant programming. Ethernet communication. Optional Touchscreen. Acknowledged worldwide as the professional's moving light console. \$53,147.54.

Spark Control 24 moving lights (22 parameter), 48 scrollers, and 240 control channels 512 DMX outputs, 600 cues, soft keys, 3 wheels, trackball, integrated control and direct access to all functions, MIDI, SMPTE, DMX in/out, remote devices (c/w trackball) & native protocols. Available in 1U rack-mount version with programming and playback functionality. Superb compact moving light/conventional controller suitable for all applications. From \$14,461.69.

512. It has a 16A rating at 240V AC, and it is small enough to retrofit on almost anything. The unit is supplied as a small PCB with wiring diagram. \$106.55.

JANDS

Jands (02) 9582 0909

DD8 provides 8 opto-isolated outputs from a single DMX 512 input. Full protection is provided up to mains level faults. \$979.

DDX60c converts a DMX512 input into 60 analogue level outputs. This device is used to connect a modern lighting control desk, featuring a DMX 512 output, with older analogue input dimmer racks. \$1,307.

LIGHTPROCESSOR

GUET 1800 773 187

QDMux decodes 24 channels of DMX to analog, has both 3 and 5 pin XLR DMX in/out's, start address alpha numeric LED, DMX line failure detection with blackout, last scene or stored scene recall programmability. \$13C7.

QBuffer DMX isolated distributor/splitter/buffer. 8 outputs, 1Kv isolation between input and output, has both 3 pin and 5 pin XLR outputs. \$1540.

QStore 256 channel DMX control and backup system, can store 64 presets of all 512 channels, can replace desk and run show-operated manually or triggered by binary trigger, pre-stored scenes can be recalled in any order and switched or faded in, has PCMCIA memory card slot. \$1635.

LSC LIGHTING SYSTEMS

Various

DMXSPILT 4 way Data Splitter providing full optical isolation between input and outputs. Available with 3 pin or 5 pin AXR connectors. Bracket included for truss mounting. \$600.

MULTISPLIT 19" Rackmount Splitters available in 5, 10, 15 and 20 way configurations. Full optical isolation between inputs and all outputs. Inputs and outputs can be front or rear mounted. \$1350.

ISOPORTS Range of wall mounted isolated DMX512 outlets, available in single, 2 way and 3 way variants able to control up to 1536 channels. Come complete with own sturdy housing and connection loom. \$220 - \$390.

ISONODES Intelligent wall mounted isolated DMX512 inlet complete with own sturdy housing and connection loom. Able to detect other DMX activity and isolate to avoid data corruption. \$250.

LITE PUTER

ELSTA (02) 9568 2100

CX-1 DMX Tester, DMX in and DMX Out

signals, auto fade, chasing output, intelligent lighting equipment testing, 10 memories, measures in percentage or hexadecimal, runs on 4 rechargeable batteries, size 95 x 128 x 50mm. \$409.02.

ISO-1 DMX Isolator - Safety device to be used between DMX consoles and DMX lights, can be used as DMX terminator, has error indication, protects DMX equipment from surges or stray voltages., size 130 x 66 x 45mm. \$327.05.

DP-3 DMX- Analogue converter, 72 channels, converts from DMX 512 to 0-10v DC, uses 3 25 pin D-type sockets for analogue signals, size: 482 x 88 x 50mm. \$1145.72.

DX-1220 12 channel DMX and analogue dimming pack, 20A per channel, 3 phase power input, 12 sockets on rear, 12 individual plug in packs, size: 482 x 176 x 260mm. \$2868.03.

MARIS

Electrosonic Systems (02) 9714 0400

Pico very small riggers remote. Identifies DMX problems, receives and transmits DMX, built-in flicker finder for mirrors and scrollers, 2 line 16ch LCD display. Only 250 grams. \$951.

DMXTRA combines 2 DMX channels, removes DMX jitters, DMX patch, backs up and replays shows from memory, DMX to RS232 converter and back to DMX. \$POA.

Twin Relay Converter 2 change over relays, controlled via DMX, selectable DMX address, DMX input + through - rated at 8A 240v. \$923.

SHOWCRAFT

Showcraft (02) 9698 3009

DMX Isolator Model 204 professional isolator with four outputs, two DMX line inputs and a riggers control input. Isolator features an automatically switched input which provides for a riggers control input or production desk input. Can be user configured as 1 in 4 out or 2 in 2 out on individual lines. Made in Australia. \$1400.

DMX Isolator Model 104 professional isolator with four outputs, one DMX line input and a riggers control input. Isolator features an automatically switched riggers input to enable quick and easy access for dimmer testing or riggers control input. Made in Australia. \$1300.

DMX Isolated Wall Socket a fully DMX compliant isolated line outlet with a five pin XLR connector. Designed to provide an easy solution for the provision of one or many outlets throughout a venue. Boxes can be fitted with single or dual outlets and provided with custom labelling for specific applications. Made in

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KEEPING UP APPEARANCES (Pt. 2)

O.K., so you've got a P.A. That don't impress me much. So you've got the touch, but have you got the look?

I have quite a few plastic boxes in both hire and sales stock. EV SX200s, JBL Eons, and Bose 802s. Each a joy for someone like myself to carry, but that doesn't stop the muscos who hire them from groaning and asking if there's anything lighter. What a pack of wimps. Often the cabinets are returned with scratches and scuff marks from being dragged and slid along. Armor All, a product mostly sold for tarding up old dashboards, helps rejuvenate them a little. But once they have so many scratches and gouges that it's starting to depress you, you might like to try the following treatment as suggested by Chris Clough of Sydney's "Small Systems".

Purchase a sample applicator roller brush from any decent hardware store. Acquire an offcut of hard high density foam, the type used in many modern, commercially built flightcases. Cut a rectangular block about 2"x1"x1". Drill a hole through the foam block and "turn" it against a sharp blade till you have a perfect cylinder. Use this cylinder to replace the roller on the applicator, making it just porous enough for the job. Use your customised roller to coat the cabinet with a thin layer of textured paint. These are paints that have a gooey, almost tar-like consistency. Rockhard and Emerclad are two examples. The paint fills all gouges and cracks, and if applied skillfully enough, leaves a very impressive finish.

Timber sidecheeks on consoles are easily scratched with case lids are put on clumsily. A matching stain applied with a cotton bud can practically make these scratches invisible. Wait a minute, wipe off, and finish with a furniture polish. If using a spray type, such as Mr Sheen, always spray onto a dry cloth before rubbing the timber/veneer area. Do not spray directly onto the console.

As mentioned in a previous article, the best product I have found for removing chinagraph, texta marks, etc, from consoles, effect units, etc is "Zoff", available from chemists. Although principally sold for the painless removal of bandages, it also removes stubborn traces of old masking tape and gaffer gum, with minimal damage to paintwork.

Rust marks on speaker grills are easy enough to deal with. A scrub with a wire brush and a spray with a well shaken can of enamel gloss paint. But when the lids of effects units, or even DI cases, start showing signs of rust, there is an additional treatment. Once you've sprayed them, (always a couple of light coats rather than one heavy coat: drips look terrible) then you can bake them. About an hour or so in a medium heat oven, preheated for about 10 minutes and fan forced if available. Remove with tongs and douse with cold water, being careful to avoid steam scalding, then wipe down. Baked enamel finishes are tougher, look better, and leave the metalwork ready for

reassembling without waiting. Being turps based, the fumes from baking enamel can be pretty rugged. If you've got any lemon peel lying around, place it on a baking tray in the oven afterwards, while it is still hot, with the door slightly open. The missus/girlfriend will come home and say how nice the place smells rather than throw things at you.

Roadcases looking old and daggy? Maybe they can use a bit of a makeover as well. Laminate surfaces can be cleaned with whatever you'd use on your kitchen benchtops; cream cleansers, whatever. Corners, clamps and catches that looked so pretty when new starting to tarnish? Or just plain rusty? Rust converters are available from auto accessory shops. Scrape off any loose flakes of rust before applying but don't sand back to bare metal. The tarnish/surface rust is the part that actually converts and bonds to the metal to create the new finish.

ABS plastic surfaces on flightcases are pretty tough and resist scratching better than laminates. But they do have an annoying way of separating from wooden panels, expanding, bucking and cracking up when exposed to direct sunlight. I've done plenty of outdoor gigs where I've been sporadically forced to stop and move cases around during the day to prevent them being damaged as the sun alters position. If you build your own cases, and you're thinking of bonding ABS to ply, make sure you first scrape/roughen the smooth ABS surface before applying the glue. This achieves a superior bond and helps to resist the impact of direct sunlight.

If the damage is already done, you may be better off removing the ABS and painting the underlying ply surface. Use a sharp Stanley type utility knife to cut the plastic where it is overlapped by the surrounding aluminium edging. Peel the plastic away. Don't bother sanding or scraping away traces of the adhesive remnants. Just slop on a few globs of your textured paint, even it out with a paint brush and then go over it with a short (about 6") coarse textured roller. Be warned, although these acrylic water based paints can appear touch dry within a few hours, when they are applied with this degree of thickness, they can take at least a couple of weeks to fully cure. Use the cases before the finish is cured and you risk large sections of paint being sheered away.

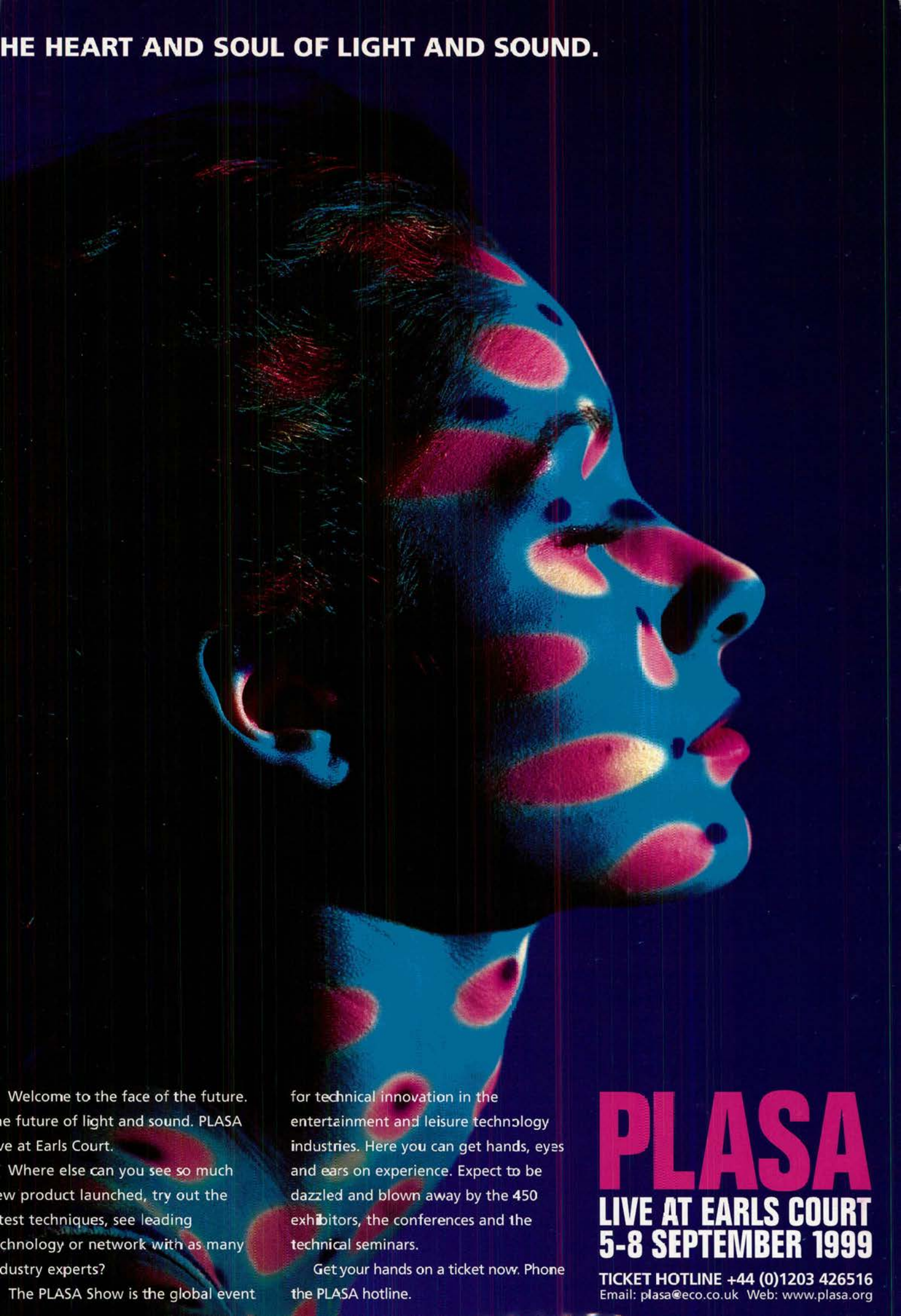
Here's an interesting tip. For a neat result when doing the above sort of work, try using a roll of the masking tape you normally use for marking up consoles to actually "mask" off the aluminium edging of the case before painting. Peel away while the paint is still wet for a nice pro finish. Hmm.

Wonder if anyone else has ever thought of using masking tape for this application?

(Please don't write or call about the last paragraph. Yes, it was supposed to be a joke)

Michael Orland still runs TPAC which is still doing what it has done for the past 18 or so years. Call him on +61 2 9799-7219

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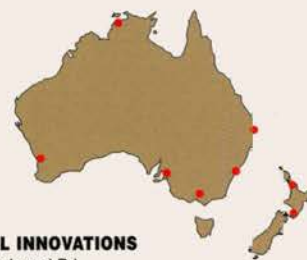
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