

AV: TOYOTA & THE 23 HELICOPTERS

# Connections

AUSTRALIA'S Entertainment & Technology MONTHLY

AUSTRALIA \$4.50

#35

AUGUST 1996

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## THE ORB

The Club Guts: lights, sound, laser

## NEW SECTION: ON TOUR

Audio, Video and Lighting info

k.d.lang

Hoodoo Gurus

Smashing Pumpkins

## AUDIO

AES PREVIEW: exhibition details

## BUYERS GUIDES

Studio Mixing Consoles

Lighting Consoles and Dimmers

## STUDIO

Post production for The Army

## THEATRES

Brian Thomson

## LIGHTING

Sing Sing

Don Giovanni

Barratt Scholarship Update

ISSN 1320-5595



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Write in Reader Service Number: 118

ALWAYS full of NEWS

Rather than an incomprehensible list of stuff, we thought this months index **might** work better if we list the major stories / features which do NOT fall inside an obvious SECTION. Let's see how this works for you!

<b>AES Preview</b>	starts page 9
<b>Letters, abuse, complaints and more ...</b>	page 22
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<b>Duncan Fry (humour attempts)</b>	page 46
<b>Brian Thomson: theatre designer</b>	page 88
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**NEW SECTION!**  
**ON TOUR**

Makeover time, Connections now has those great On Tour stories all together just BEFORE the Lighting Section.

**\*Go to page 58.**

**Subscribers note:**  
Change in sequence .... last month we published a JULY issue for the first time, it did NOT carry an issue number. June was number 34, July had no number, and this August issue is numbered 35. This is to ensure continuity in our subscription system. Subscribers got the JULY issue last month at no additional cost. The JULY issue replaced our Connections Contacts Yearbook experience which was published in July 1995.

**Back up to speed:**  
We are full strength again after various Connections people debunked to various places in the name of recreation. Thanks for not minding the Club section and the AV section not appearing last month. We make up for it this month!

**GO to the sections!**

This magazine is full of news.... and **now better organised too** (we hope)

- **New products**, P15 • **Audio Visual**, P24 • **Theatre, Cinema News**, P36
- **Studios & Post**, P48 • **Classifieds** now in the middle • **On Tour**, P58
- **LIGHTING**, our largest section..... P63 • **Club & DJ News**, P84.

*4th Proud Year of Independent Publication*



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Write in Reader Service Number: 200

# Connections

AUGUST 1996. Number 35

## Cinema shake-up

Greater Union moves to get rid of projectionists; says Union

By Madeleine Murray

Greater Union are proposing that projectionists be replaced with cheaper cinema workers, such as canteen bar and FOH staff, according to their union.

"Members are outraged," said Eric Thomson, Media Entertainment & Arts Alliance Assistant Federal Secretary. "How can Greater Union justify sacking long-standing, skilled and experienced employees and replace them with new inexperienced staff...? Our members are angry that the proposed changes will mean poorer presentation of film for the public and film makers."

At presstime cinema employees were to attend general meetings to consider action.

John Wilson, chief projectionist at the Hayden Orpheum said projectionists were essential. "The film won't focus itself. When something breaks, there will be no help. Unskilled workers can't fix a broken machine. You'll need a second print, not for if, but when it's scratched."



NEW SECTION!

ON TOUR

Makeover time, Connections now has those great On Tour stories all together just BEFORE the Lighting Section.

\*Go to page 58.

## CONSOLES HEAD HIT PARADE AT ROD'S PARTY

Mixing Consoles are being unloaded from jets as the 6th AES Convention readies for September 10th, despite floorspace sales downturn

By Julius Grafton

**A**udio elite or mainstream? The forthcoming 6th AES Regional Convention has been stridently promoted as "Australia's only specialist audio exhibition", "the only 100% professional audio event of the year", "Number one for audio professionals", and "The best networking opportunity until 1998".

Around 1000 visitors are expected at the World Congress Centre, where proceedings will be as diverse as a 'MIDI basic' workshop through to a paper called "TDFD-based Measurement of A-D Converter Non-linearity".

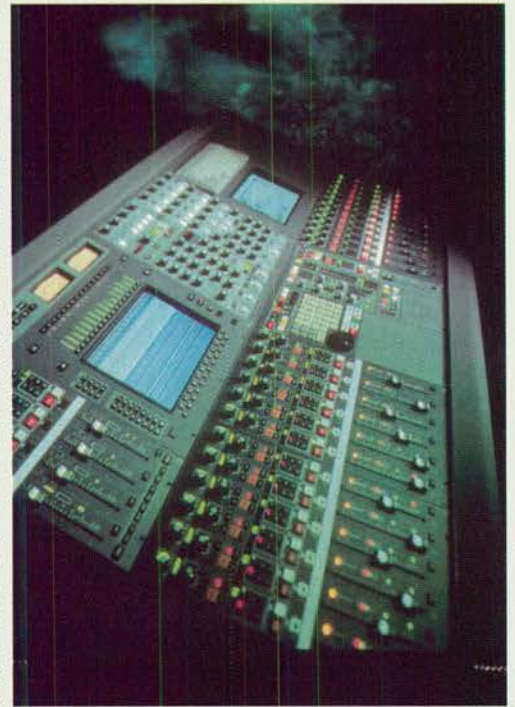
With honorary and voluntary work amounting to perhaps thousands of hours, the Audio Engineering Society Melbourne Chapter run this regional gathering each second year or so. On the floor the committee, headed by Rod Brown, wear blue AES blazers, and work to achieve the stated aims - and to raise some serious money from exhibitors.

AES is profitable, and given the 41 exhibitors signed up at

presstime, popular with the audio suppliers too, for it gives them the chance to showcase products before the 1000 or so audio professionals, amateurs, enthusiasts, and students who attend.

Exhibition space sales for this year's event are down compared to the two previous conventions however, necessitating a floor plan redraw at presstime. In addition, marketing for this year's event has been cut back, with the convention program still not yet complete at presstime.

But with product premiers like the AMS NEVE LIBRA (pictured),



the exhibits do represent good value for visitors, who are charged \$10 to attend. • Our AES preview starts on Page 9.



## DMD Projection Arrives

By Steve Whittle\*

**A**t last year's INFOCOMM in Dallas, nView Corporation displayed a prototype video/data projector using TI's single chip DLP projection sub-system. That demo marked a significant step forward in the most promising video/data projector

technology to come along in years. Annoying pixelization, which still plagued LCD-based systems, was virtually invisible with this new machine - and colour accuracy and contrast ratio were very good. Over the last year TI has been nursing its infant

technology closer to production reality. Finally, just two months ago, nView began shipping the world's first DLP projector using TI's single chip digital micromirror device sub-system.

(Continued in our AV Section, starting on Page 24)

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## Hairy Phone?



*During a recent trip to Shanghai, the TJA Communications crew decided to visit the old Friendship Stcre. Sure enough, on Najing Road they discovered this sign!*

## Distribution Changes

• **TACTILE TECHNOLOGY** make the M4000 digital mixer, a product we've given a good run in these pages in bygone months. Now it is to be distributed by JMC - Audio Visual Design, in Sydney. Call them on (02) 9281-2444.

• **KINETIC SYSTEMS** have appointed Grevillea Distribution as their Australian distributor. Based in Brisbane, Grevillea has been actively involved in the pro audio industry for the past ten years, with a current turnover of \$1.5m. According to Bruce Jacobson at Grevillea, the Digital Genius range of converters is an ideal addition to their range of products. Grevillea report strong interest from Mastering engineers, DAW operators, and DA 88 owners. Call Grevillea on (07) 3262-8655.

## SAE turns 20:

Tom Misner (right) has reason to smile, with his SAE Technology Colleges now a 20 year old chain. The 22 schools have their roots in Sydney, where Tom started the thing, these days it's a monster! Congrats to Tom and the team.



## ARX award Ross

ARX System Perth based WA rep, **Ian Ross**, recently got the gong as ARX worldwide sales person of the year. Pictured at left getting the award from Colin Park, Ross is tenacious and uses marketing very well. He is well regarded for his role in promoting the industry in WA.

## BIRTHS

Congratulations to all the following on their recent family additions.

• **Roger Cameron** of Pollard Productions and his partner **Robyn Forsythe** - a baby boy, Tully John Forsythe Cameron, on May 13th, 1996 weighing 3395 gms. Roger says having Tully was the best thing he ever did and for Robyn, the hardest.

• **Serge Rancev** of Audio Oz and **Katie** - their second child, a baby girl, Emily, 9.5lb on June 25th at the Monash Medical Centre, Melbourne.

• **David Timmins** of Jands, and **Susan**, had a 3.4kg baby boy, Alex David, born 2/5/96 at 8.22am in the RHW (Paddington Womens). Labour was 3.5 hours - a bit rushed

Elaine's babywatch: call (02) 9876-3530 or fax (02) 9876-5715. It's free!

but it didn't happen in a taxi or anything like that. All are doing well.

• **Josh Luo** of Jands and wife **Jean** recently had their second baby girl, Eileen, 3.5kg, born 4/5/96 at 4.45pm in the King George V Hospital at Camperdown. Everyone is well.

• **Mitch Carmody** (previously of Jands and now of Convoy International) and wife **Jenny** had their first child Dane Fletcher, 3.4kg, born 30/4/96 at 10.20pm in the St. George Hospital, Kogarah.

• **Lloyd English** of Mighty Music Darwin and partner **Julia** are now the proud parents of a baby daughter, Katisha Louise born 8/7/96, 7lb 10oz at the Royal Darwin Hospital.

## GO to the sections!

This magazine is full of news.... and now better organised too (we hope)

- New products, P15
- Audio Visual, P24
- Theatre News, P36
- Studios, P48
- Classifieds now in the middle
- On Tour, P58
- LIGHTING, P63
- Club & DJ News, P84.

## Moves and Changes

- After 8 years at Graftons Sound, Jeff Stewart has relocated to **Anything Audio** in Gladesville to help with their increasing workload. (02) 9879 64788

- Advertising events people **Bates & Partners** have expanded into the Special Events and Production Management areas. Two events practitioners join the team: Ronalto Fabbro brings several years in banqueting and function organisation; Sue Hemmings has 5 years experience in venue and event management. (02) 9957 6500

- At **Australian Monitor** David Hay has resigned as general manager.

- Audio Vision company **Network Nomis** has changed their name, to **Integrated Vision**, to reflect the areas of involvement in the audio visual and video conferencing industries. The name unites its three departments; Video Conferencing, Rental & Staging and Audio Visual Sales. They are active in 3 locations: Sydney (02) 9929-5499, Brisbane (07) 3871-1344, and Adelaide (08) 272 1222.

- **Audio Sound Centre** has appointed **Steve Murphy** (pictured)



as their new Sales Manager. Murphy arrives at Audio Sound Centre following a year of free-

lance audio mixing and consulting, having left his position as head of Sound at the Australian Film Television and Radio School. Steve Murphy is well known among location and studio operators and retains his post as Australian sound consultant for Dolby laboratories. Call to congratulate him on (02) 9901 4455.

- **AAV Business Communications** has announced the expansion of the company's recently established Sydney operation with the relocation of Melbourne based AAV BC General Manager, **Tim McMahon** and the appointment of an additional three senior producers.

According to McMahon, who relocates to Sydney in the next few weeks to oversee the Australian operation, the AAV BC Sydney office now boasts collective experience in the conceptualisation, development and production of a range of integrated communications solutions.

The new appointments to AAV Business Communications Sydney include Manager of Production, **Jan Newland** who has experience in corporate videos, film, television series, commercials, staging and special event management involving slide, videotape and multimedia presentations.

**Gary Hunter, Producer/Designer** has extensive experience in designing exhibitions, sets for trade shows, launches and events, graphic design and animation.

**Video Producer, Lee Gidaro** most recently worked in an atmosphere which demanded speed and efficiency in order to produce two weekly programs for CBA-TV, the Commonwealth Bank's TV production unit.

**Graeme Westwood**, who was instrumental in establishing the AAV BC Sydney office in 1995 continues in his role of Executive Producer.

## Warner's Bugs Charlie the tech

Warner Bros Movie World in Queensland recently awarded 'employee of the year' to AV technician, Charlie Castles.

Charlie was part of the team who assembled the Riddler's Lair set, part of the studio tour. He cabled and assembled 15 Intellabeams and 50 fixed lights. He worked on the Maverick Grand illusion show, with flames, tricks and 126 triggers for audio, lighting and SFX cues. He has a 40 channel audio desk and two lx desks.

1,300 Movie World staff competed for the prize: congratulations Charlie, a true entech industry multitasker!



*Charlie Castles gets the Gold Bugs, with John Menzies (CEO, on left), and GM Mark Germyn (right). Charlie got a grand and a trip to the USA as well!*

### Correction

**Electrical Safety story, p 83, July** We managed to transpose a line in this story by Bruce Liebau last month. It was in the 5th paragraph on page 83, and should have said: "The brown (active) wires from each of the three incoming power cords were connected to one of the three numbered terminals, all the three blue (neutral) wires were twisted together and connected to the terminal 'n'".

Fortunately, the diagrams showed the correct scenario!

Connections thanks the several readers who called about this. -Ed

### Martin's MAC 1200 page 82 June

Okay so it wasn't a photo of the Martin MAC 1200. Nobody from Connections went to Rimini this year due to Entech being too close, so we didn't know what it looked like. I asked Light & Sound International magazine if we could reprint their photo - to which they replied yes. Turned out they had the wrong photo. -Cat Forcer.

### Correction: re R.J. Reynolds show and Dreamscapes

I was canoeing down the Zambesi River, past pods of huge, scary hippos, when Dee Cameron's letter was published in the July issue of Connections. Now that I'm back, in one piece I would like to clear up a few things.

I was basically writing a piece about the design and the lighting of the R.J. Reynolds shows in Asia. The subjects told me several times that the production was a joint effort between Dreamscapes and the Dee Cameron company. They stressed what a great team effort it was, and asked me to mention the producer, the technical director, and others. I decided not to mention them when I wrote the article, as it was about the design and lighting.

Dee Cameron's suggestions that Dreamscape deliberately omitted her are incorrect. In fact, the opposite is true

-Madeleine Murray

## netSite

Connections offers you our net address: log on for free, and use us to hot link to other useful sites world wide. We have a growing archive, and lots of ENTECH info online, including The Entech Tapes. Come visit us at: [www.conpub.com.au](http://www.conpub.com.au)

Our web master is Greg Weaver. Telephone him on (018) 414-960.

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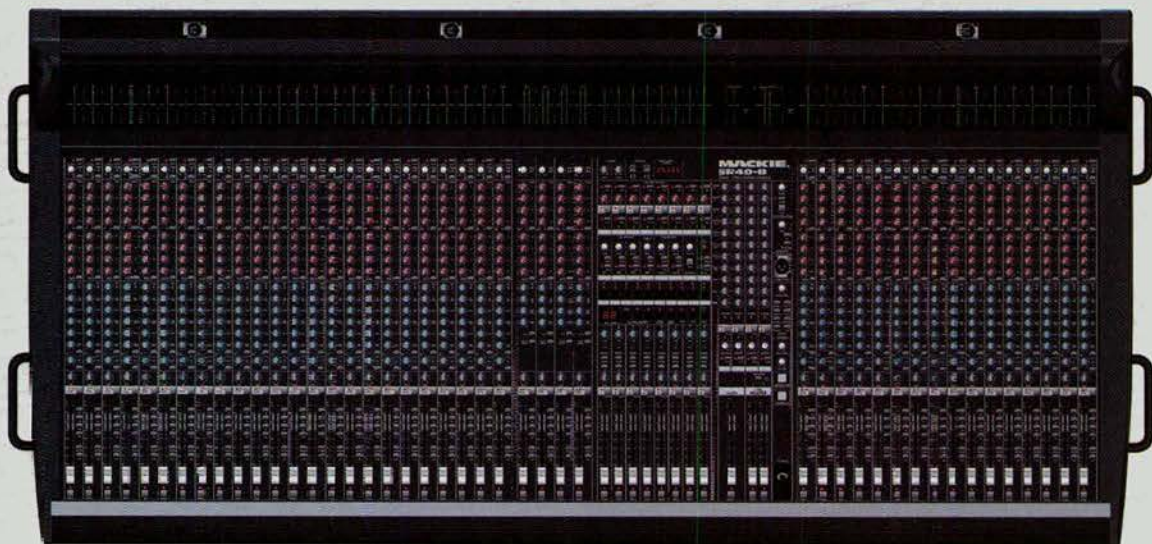
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With features like built-in digital muting automation, Left/Right/Center outputs, 12x4 matrix, 4-band EQ with swept Hi & Lo Mids and built-in meter bridge.



- **Center-mounted Master section** with 4 full-length "aux strips" including 4-band EQ, pan & trim controls
- **Independent L/R/center bus assignment**
- **On-board snapshot group muting** with external computer control capabilities
- **12x4 matrix** w/center L & R input controls, matrix mute button + LED, matrix master level control, and matrix solo - LED
- **All inputs & outputs fully balanced** (except RCA tape inputs & outputs)
- **Master section** includes fader link L/R switch, center master fader, center solo + LED, L&R/L-R master level faders, L&R solo switches + LED indicators
- **8 Submix section bus strips** each feature 100mm log-taper faders, "Air" EQ controls, center & L-R assign switches, pan controls, mute & solo switches with LEDs

- **Stereo Aux./Tape Return section** includes level control, mute switch, solo switch + LED, monitor line out level control, monitor mute switch, global PFL/AFL solo switch & Mackie's famous Rude Solo Light LED
- **40\* mono channel strips** with Mackie's renowned high-headroom/low noise discrete mic preamps, polarity switches & sweepable 30-800Hz Low Cut (high pass) filters at 12dB/octave
- **Mono channel strips include:** 60 dB range gain trim, individual phantom power switch and status LED, 8 individual aux sends, Aux 1-4 & 5-8 pre/post switches, 4-band equalization with 12kHz Hi shelving EQ, sweepable (500Hz-15kHz) Hi Mid EQ, sweepable (45Hz-3kHz) Lo Mid EQ, 80Hz shelving EQ, EQ In switch, 30-800Hz sweepable Low Cut (high pass) filter at 12 dB/octave and In/Out switch, constant

power pan control, mute switch + LED, Submix 1-8 assign switches, L/R/center assign switches, 100mm log-taper fader, solo switch + LED indicators

- **4 extra stereo line channel strips** for aux returns, which include: 4-band equalization with 12kHz Hi shelving EQ, 3.5kHz Hi Mid EQ, 300-z Lo Mid EQ and 80Hz shelving EQ, plus 150Hz fixed Low Cut (high pass) filter at 18dB/octave Low Cut In/Out switch, other features same as mono channels

- **Flip switch** for stage monitor applications: Exchanges the master control of any selected aux send with the corresponding subgroup fader routing the aux send to the sub insert jacks, slide master fader, air EQ, and balanced output connectors

- **UltraMute section** has 99 mute groups and 99 snapshot capability, mute select switch + LED indicators, Store/Preview/Snapshot/Clear/Enable switches + LEDs, 10-unit snapshot indicator, group indicator, Mute/Up/Down switches

- **Talkback section** includes talkback mic input (phantom powered), assign switches for Matrices A-B-C-D/Aux: 1-4/Aux 5-8/Ext./L-R, talkback level control, solo level control, program level control, talk button, recessed phones jack (there's one on the rear panel too), 400 Hz/pink noise source with separate level control (uses talkback routing switches)

- **The non-optional Meter bridge** includes individual 12 segment bargraph displays for each channel, dual bargraphs for the stereo channels, eight additional bargraphs for the subgroups, and three more for Left/Right/Center outputs. The input meters may be globally switched to read pre-fader or post-fader, and so may the output meters. The meters are dimmable

- **Rear panel** includes RS232 data port & MIDI In and Out jacks, L&R outputs, L&R monitor outputs (engineer's wedge), L/R/center XLR outputs, talkback output, XLR Matrix A-B-C-D & sub outputs, Aux Return B inputs (4 stereo pairs), Tape A & B inputs & outputs, main L & R inserts, Center insert, subgroup inserts, Clear-Com input, & main power supply input

- **Each channel** has rear panel XLR mic & TRS line in jacks, insert with separate send & return (balanced), & direct out

- **Built-in Clear-Com™ interface:** ties the SR40-8 into any Clear-Com party-line intercom system, with ground isolation, ignore switch, call button + LED, and a trick or two that even Clear-Com doesn't have

- **External 400-watt power supply** with redundant power capability

- **4-pin XLR lamp sockets and dimmer**

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\*What's this I hear about a 56 channel SR56-8?  
Is this true?

Write in Reader Service Number: 131

# Technology

WHAT'S NEW, HAPPENING & IMPORTANT FOR THIS MONTH

## AES PREVIEW

Every 2nd year the Audio Engineering Society's Melbourne Chapter hold a Convention and Trade Show. This year it will be held at the World Congress Centre, between **September 10** and **September 12th**. Exhibitors\* will show their wares, this is what you can see there.....



TV-950 console

**ACOUSTISEARCH** are ACOUSTIC AND ELECTRO-ACOUSTIC CONSULTANTS, and manufacturers of high quality audio equipment, including ACOUSTIC MODULES, SPECIAL PURPOSE MICROPHONES, AND DIGITAL PROCESSING equipment. Distributors for:

- HARRISON audio mixing consoles; HARRISON produces the most advanced automated audio console which is the first choice of Soundfirm Melbourne and ABC-TV Melbourne for their post production needs. New Level in price performance TV-950 console now available. (pictured above).

- JENSEN TRANSFORMERS: world leaders in high performance transformers.

- BAG END - leader in patented sub bass systems and time aligned monitoring; also a range of product covering the full spectrum of the audio industry.

**AMBER TECHNOLOGY** will feature the new Beyer U600 frequency afire UHF wireless system; the Neumann W149 tube condenser mic system; the TC M2000 'Wizard' digital effects processor; DK Audio MSD100 low cost audio

meters; and the Otari UFC-24 Universal digital audio format converter. Other brands represented are: Electrohone projection systems, Weircliffe tape degaussers, EVS audio/video network delays, RTI tape cleaners and evaluators, Beyerdynamic microphones, Canare cables, Drawmer signal processors, Digigram PC based redord

and edit systems, Neutrik connectors and test gear, Neumann mics, Otari recorders, ProBel broadcast automation., and TC Electronic processors.

**Neumann M 149 tube mic**



### AMPS UNLIMITED

Amps Unlimited is a Melbourne based manufacturer and distributor of professional and hi-fi amplification.

Range emphasis is on installation products including 100 volt line amplifiers, mixer amplifiers, PA and auditorium speakers plus audio/video switchers, all under the

AMPOWER brand name.

Since its introduction in 1992 AMPOWER Professional Audio has achieved a very high profile in quality installations and is recognised for its performance and reliability in the field. As a result AMPOWER products are specified by many leading consultants in Australia.

In addition AMPOWER is now distributed to 7 countries in the Asian region with further market expansion planned for the near future.

**ARX** manufacture a complete range of ARX Signal Processing equipment, amplifiers and speaker systems. Special feature products include the AFW-1 Auto Feedback Workstation - "if it's got a microphone and a speaker, it needs an AFW-1". Also featured is the ULTM-8, 8 channel comp/limiter.

**ATT AUDIO CONTROLS** was established in early 1985 to represent the interests initially of two British companies, namely Turbosound and Amek Systems and Controls. Several additions have since been made, but the company is selective in the products it represents, preferring strong support for a few as against token representation for many. PRODUCTS: Mixing consoles - Amek Systems and Controls, Langley, Total Audio Concepts (TAC); Signal processing - BSS Audio; Speaker Systems - At AES



AMPOWER CV8-4 Audio/Video Matrix Switcher

## WHAT IS AES?

The **Audio Engineering Society** is an international body headquartered in New York. The Melbourne Chapter runs this regional gathering which features around 40 exhibitors. In addition there are 21 workshops, technical papers sessions, and technical tours. A short list of the workshops is on page 14.

- Call the organisers on (03) 9682-0244 for more.

## WHERE & WHEN?

September 10, 11, 12.  
World Congress Centre,  
Melbourne.  
Hours 10 - 6 Tues,  
10 - 8 Wednesday  
10 - 4 Thursday.

## COSTS:

Full program, early bird booking price (before September 2nd) is \$175.

Workshops, Technical Tours: \$10 each.

Entry to trade show: \$15 at the door, or \$10 in advance. \$5 for students.

- Call (03) 9682-0244.

*\*This is all the information supplied by the organisers and by exhibitors as at July 18th 1996. The LATE LIST of every exhibitor is on page 14.*

# AES PREVIEW

Turbosound, Impact (by Turbosound); Studio Monitors - Quested Monitoring Systems; Microphones - Byetone II, Neva-ton, Oktava; Amplifiers - Chevin Research

**AUDIO SOUND CENTRE (ASC)** is a one top shop for all your audio needs. We carry a great variety of stock and have an excellent Rental & Service team. Some of the products on display will be:

HNB DAT Recorders & Recording Media  
Sanken, Coles & Tram Microphones  
PSC Products, Denecke Timecode Products, Lectrosonics & Audio Ltd Wireless Systems, Comtek Communications systems, Cooper Sound Mixers, Panamic Boompoles & Brainstorm Timecode Products.

**AUDIO TELEX** will feature the Peavey Media Matrix Miniframe, with version 2.0 software. The MediaMatrix is a very innovative audio computer product, and new Peavey MediaMatrix controllable amplifiers will be on display. New DCM power amps and the TX8200 1RU stereo mixer head up Audio Telex's locally manufactured range; and new Sabine and Symetrix products will be on display too. Other brands represented by Audio Telex: Telex, Oxmoor, Soundsphere, Chiayo, Misco, Switchcraft, Auditel, Goldline and San Ming. Finally, pick up a copy of their new 56 page catalogue at AES.

**AUSTRALIAN AUDIO SUPPLIES** was established in 1987 and is a distributor of Professional Audio Equipment. The company continues its expansion into the Australian audio industry by offering quick and personal service, and being "in the face" of the buyer with

as much product information as required. Distributing only the most innovative pro-audio products, Australian Audio Supplies' lines include MACKIE DESIGN mixing consoles, SPECTRAL digital audio, CAD microphones, HAFLE power amplifiers, ADL tube products, PRESONUS dynamics processors, and HAYES studio monitors.

**AUSTRALIAN TEL-TEC** is the leading supplier of pre-wired audio jackfield assemblies to the broadcast, studio and television industries. Both analogue and digital audio assemblies are available along with a wide range of accessories for bantam and long frame sizes. Australian Tel-Tec carries professional audio and video products which include jackfields, IDC panels, component patching, fibre optics, cable management systems and an extensive variety of connectors.

A special customised pre-wired assembly service is offered to meet the individual requirements of engineers with specific and varied applications. Insulation displacement terminations can be supplied to slash time and cost overheads during installation.

**THE CHAPPLE GROUP** commenced manufacturing quality audio cassettes in 1975 and grew from a Company, catering mainly for the domestic market into a national group. The progression into audio cassette duplication and CD replication saw further expansion and the creation of CD Laboratories Pty Ltd which provides an array of quality products and

services encompassing audio-visual and computer technologies. Their client base includes Government Departments and instrumentalities, Educational Institutions and users within the music, recording, media and computer industries.

The Group is committed to the continuing supply of quality products and services.

**DIGITAL SOUND SYSTEMS (AUST)** will feature the new Penny & Giles PP10 multiprocessor. This offers one-stop digital processing. Soundscape offer new hardware including an accelerator card. Klein + Hummel 2 way active mastering monitors suit CD mastering and post production. In addition, DIGITAL SOUND SYSTEMS represent SPL, SEA, MBQuart, Reference, Unicase, MBHO and Adtec products.

**DIGITAL STUDIO PROCESSING PTY LTD (DSP)** is an Australian designer and manufacturer of digital audio editing equipment. All of our systems emphasise intuitive ease-of-use and ergonomic design. The systems are modular, can be purchased in many different combinations to suit particular applications, are easy to upgrade, and range from 8-channel editors to the fully integrated Poststation with Non-Linear Video (NLV) and Virtual Control Surface (VCS) for the Yamaha 02R digital mixer.

Penny & Giles PP10 audio multiprocessor



**Music Centre**

# TURRAMURRA

**Pro Audio Division**

NOW YOU CAN HAVE IT ALL

ALL AT THE ONE STORE WITH THE

LARGEST RANGE OF DIGITAL HARD

DISK RECORDERS, MIXING CONSOLES,

COMPUTER SOFTWARE,

KEYBOARDS, MICROPHONES.

GIVE US A CALL FOR ALL YOUR STUDIO REQUIREMENTS

TURRAMURRA MUSIC CENTRE 1267 PACIFIC HWY. TURRAMURRA Ph.449 8487 Fax.449 3293

# AES PREVIEW

we will exhibit our top-of-the-range Postation, showing for the first time in Australia our new VCS2 with touch sensitive faders, and also a desktop editing system.

**DW PRODUCTIONS** - a Sydney based company specialising in compact disc technology and associated digital entertainment products. This area of communications technology used to be exclusively the domain of mass manufacturing, but in the five years since DW Productions first demonstrated real time studio CD recording and real time "Cedar" audio restoration, small scale in-house compact disc production for audio, data and video has grown to be recognised as an integral part of the entertainment and information industry. DW Productions digital demonstration studios in Neutral Bay boast products from Audio Design, Apex, Cedar Audio, Denon, Kodak, Marantz, Maxell, Nimbus, Optivision, Panasonic, Pro Disc, Spondor, Stage Tech and Z-Systems. At AES Melbourne 1996 DW Productions will launch the amazing "Cedar for Windows" Digital Restoration System, offering sixteen channels of simultaneous, multi-function audio restoration.

**EAST COAST AUDIO** represent Aphex, with the new dual channel Easyrider Model 108 and the Tubessence range featured this year at AES. The full range of audio signal processors for studio, broadcast and sound reinforcement will be on hand. Tube-TEC valve compressors and equalisers also featured. Visit their netsite: [www.eastcoastsw.com.au](http://www.eastcoastsw.com.au)

**EAV TECHNOLOGY** represent Musicam USA, who make ISDN

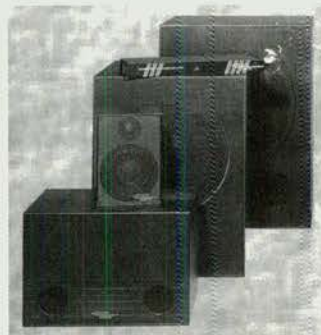


Short Cut Audio Editor, from 360 Systems

audio codecs. David Lin from Musicam USA will be on hand. Other products: 360 Systems, who make the Instant Replay device and the new Short Cut digital editor. ESE make time code products, Alcorn McBride do hard disk video and audio, McCubbin Electronics make telephone hybrid systems and mixers. Henry Engineering, Bay City Broadcast and Tascam are also represented. David Geoghegan from Alcorn McBride USA and Rod McCubbin from McCubbin Electronics will be on hand.

**ELECTRIC FACTORY** are the importers of music instruments and pro audio products. On display will be the Alesis ADAT-XT Digital Multitrack System, Effects processors, Monitors and Amps. Emagic professional integrated Hard-Disk recording and sequencing packages. Ensoniq studio Effects processors and professional keyboards. T.L. Audio state-of-the-art valve processors. J.L. Cooper controllers, interfaces and automation devices for computer based Audiovisual workstations. Aside from static displays of the above listed products, the Electric Factory stand will feature product demonstrations and workshops. Our team of product support staff will be on hand to answer any questions relating to all Electric Factory products.

**ESA AUDIO** provides specialist engineered audio solutions. It's product range is heavily supported by unique design and sales tools. To assist delegates to fully understand the utility of their product ranges, ESA Audio will be running 30 minute seminars on their stand (No 21). These will include presentations on the EASE acoustic sound field and EARS auralisation modelling programs by its inventor Dr. Ahnert, Digital amplifier and loudspeaker control and monitoring by Apogee Sound, Distributed audio by Sound Advance Systems, Acoustic correction



Apogee Contractor Series

by Sigtech, How to Fly safely by ATM Fly-ware, Automatic microphone and level controls by IRP Professional Sound Products, Portable sound systems by Anchor Audio and weatherproof loudspeakers by NEAR and Technomad. All designed to offer excellence in Audio Engineering.

**HORWOOD AUSTRALIA** was established to service the areas of Contracting and Professional Audio and offers a comprehensive range of audio products for professional and distributed audio applications.

Manufacturers represented by

## KLIPSH pro loudspeakers



Horwood Australia include Astatic Microphones, Atlas/Soundolier Communications Products, Alcatel Connectors, Canon Loudspeakers, Euromodule racks, Furman Electronics, KDM Loudspeakers, Klipsch Professional Loudspeakers, Omnimount brackets, Pro-co Audio Interface Products & Multicores, rockustics Loudspeakers, Rolls Corp. Electronics, White Instruments Graphic Equalisers, Kinetic Mixers & Amps, and Miles TriSonic Imagers, Mixers & Amps. Along with the Australian Industry, Horwood Australia also represents several U.S. manufacturers in Asia and the Pacific Rim.

**IRT ELECTRONICS** will show

the Audio Precision System Two Audio Analyser, which provides DSP Capabilities, AES/EBU digital audio signal analysis, combinations of digital and analogue audio domains. It uses APWIN software to provide the ultimate user interface.

## PRODUCTION AUDIO SERVICES

was established by Colin Stevenson in 1982 to service the broadcast wireless microphone market. Today the company covers many different markets including broadcast, industrial, corporate, PA, communications and music markets supplying high quality audio and communication products, 11 product lines are represented including AB amps and Eqs, Ashly amps, mixers and EQ's, Audix microphones and monitors, Biamp mixers and peripherals, Countryman miniature microphones, EAW loudspeakers and amps, Crest Consoles, Gentner teleconferencing units, Nady wireless microphones, Quam Nichols ceiling speakers and RDL "Stick-On" Audio tools.

**QUANTEGY** is the new name for AMPEX, makers of classic tapes and new ones too. Featuring the new 4mm DDS and 8mm DD8 data cartridges including the DDS2 120 meter cart. Also new: the DA8 8mm DTRS format tape. DAT tapes, Hi-8, ADAT, DDS (Certified



data storage, CDR, cassettes, and Grandmaster tapes all on hand. Fred Layn from head office is in town for AES.

**THE RESOURCE CORPORATION** will exhibit Konig & Meyer microphone, speaker and lighting stands; and equipment racks and trolleys. eurocable cables, Link multipin connectors, PESA crossover systems, MSB modular stage box systems, and

# AES PREVIEW



O m n i M o u n t mounting solutions complete the range.

**Eurocable  
LK CRO 1**

## **ROLAND CORPORATION AUSTRALIA.**

Roland Corporation began operations in Japan in 1972. It's original focus was on the design and manufacture of musical products for the professional or serious musician. It's longer term vision however, it to give a wide range of people access to the means of making and enjoying their own music and related creative arts through the application of the latest technology.

Roland Corporation Australia Pty Ltd commenced in 1976.

Roland's strength is in the market for Musical Instruments, however

the changing Audio market presented opportunities to provide quality digital audio products for professional studio, broadcast and home recording user areas.

### **SONY AUSTRALIA**

Suppliers of a complete range of professional and broadcast audio and video products suitable for production and transmission applications. Broadcast and Professional audio products include DAT Recorders, Minidisc Recorders, CD Players, Analog and Digital Mixing Consoles and Microphones.

Company Executives: Howard Shephard - General Manager and Director B&P Division, Charles Montesin - Broadcast Marketing Manager and Ian Lowe - Professional Marketing Manager

### **STUDIO CONNECTIONS AUSTRALIA**

Product List - Equipment exclusively distributed by Studio Connections Australia-wide:

AUDIOARTS (USA) - professional broadcast consoles; AUDIOLAB ELEC. (USA) - full range of tape erasers; C.M.C.I. (USA) - in ear monitoring systems; DORROUGH ELEC. (USA) - vu, ppm & aes-ebu metering systems; EUPHONIX (USA) - digitally controlled mixing consoles; GENELEC (FINLAND) - active studio monitoring systems; KLOTZ & CO. (GERMANY) - complete range of cables and multicore systems; LEXICON INC. (USA) - digital audio processors; POPLESSS (USA) - microphone voice screens; SIGNEX PRO PRODUCTS (UK) - patch bays/xlr, bantam, midi etc.; STEDMAN (USA) - dynamic studio microphones; SADIE (UK) - multitrack digital production & editing systems; STUDIO TECHNIQUES (USA) - remote controlled microphone placement system; WHEATSTONE CORP (USA) - production TV & broadcast on-air consoles; XTA ELECTRONICS (UK) - real time spectrum analysis

ers & equalisers; Z SYSTEMS (USA) - A-D converters, digital routers & digital parametric equalisers.



### **SYNCROTECH SYSTEMS DESIGN**

distribute AMS/NEVE Libra Digital consoles, The LIBRA will be on hand. **DRM Labs V1** video disk recorder will also make its debut. An AES exclusive: the new **Soundtracs VIRTUA DIGITAL** mixing console: \$39,995 with 64 inputs, a FULLY DIGITAL console. New Audio Station dig-

## Imagine what would happen if the audience understood your lyrics.

## (You'd have to stop inviting Mum to your shows.)



There are two excellent reasons that Mother will hate LA325 Performance Audio loudspeakers:

**1)** With 600 Watts AES power handling and 131 dB SPL peak output, they're the loudest thing she's heard in her life.

**2)** Since LA325s are full range, three-way systems with dual 6.5-in midrange cone drivers mounted in a sealed subenclosure, vocal articulation is maximized. Which means that Mum - and everybody else in the audience - will hear every word. Even the naughty ones.

But we didn't make LA325s for your dear old mother. We made them for you and your bandmates. Audiences will love them for the same reasons Mum hates them.



The same engineering that made EAW loudspeakers the world standard for touring musicians makes LA Performance Audio systems the new benchmark for band PA. The engineering process that created them was so comprehensive, even the ergonomics of a load-in figured in the design.

There's so much to tell you about LA that it could fill a brochure. In fact, it does fill a brochure. Call EAW at **(03) 9415 1585** to receive your copy of the LA Technology Story: From The Concert Stage to The Next Stage.

And when you get your LA325s, do yourself a favor and watch your language.

**LA: Technology that's redefining what PA means**

One Main Street, Whitinsville, MA 01588 tel..508 234 6158..1 800 992 5013 fax..508 234 8251 web..http://www.eaw.com  
EAW International, Ltd. tel..+44 1223 41 6660 fax..+44 1223 41 5918 International Sales Asia tel..619 224 9429 fax..619 224 9439  
Write in Reader Service Number: 121 Production Audio Services tel..011 61 39 415 1585 fax..011 61 39 415 1595



# AES PREVIEW

ital controller. Version 5.1 Sonic Solutions. Latest workstations from Digital Audio Research. Garwood in ear monitors. Also on hand, the latest from Audio Kinetics, Calrec, KRK monitors, Soundfield Mic's and the latest live console from Soundtracs. Guests include **Hugh Gwyllim** (Neve), **Alan Campbell** (DAR), **David Gibbons** (Soundtracs) and **Terence Marshall** (Sonic Solutions).

**SYNTEC INTERNATIONAL** distribute many leading brands. Feature products from Tannoy, Orban, Soundcraft Broadcast, Studer and Sennheiser. Other products: SSL, Ampex tape, Boomshadow booms, Dolby digital broadcast products, Eventide, Fostex, Garner, Rycote, Sedco.

**SYSTEM SALES** provides the finest audio equipment to engineers and organisations working in broadcast, recording and live sound. To support clients, a staff



of accomplished sound engineers can offer service and recommendations based on first hand experience and access to a large range

of leading name products. At the 1996 AES, System Sales will be exhibiting Cadac, CyberLogic, Meyer Sound Laboratories and LCS level control systems as well as introducing new product from each manufacturer.

**TASCAM TEAC AUSTRALIA** will feature Tascam production products, mini disk recorders, mixers, digital multitrack recorders, CD players, DAT recorders, cassette decks etc. Feature products include the new DA 38 (budget DA88), 564 4 track minidisk recorder, M2600 MKII recording consoles, M1600 record-



ing consoles and the M08 mixer complete the new product array. Travers Falkiner will man the stand.

**YAMAHA MUSIC AUSTRALIA** is Australia's largest musical instrument distributor with its core business being "the pursuit of sound". In recent years this has developed from its traditional musical products to include



leading edge digital audio and computer industry products. At this year's AES Convention Yamaha Music Australia will show its award winning 02R Digital Re-

# interM

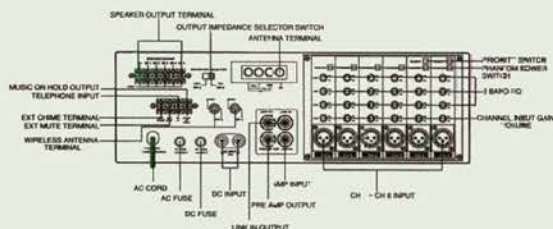
BY INKEL

... COMMERCIAL SOUND PRODUCTS FOR THE 21ST CENTURY

## INTRODUCING... THE PAM-60/120 AMPLIFIER

A new concept in module amplifiers, the PAM series is designed for that application requiring the highest in reliability and audio excellence, this module system will allow any of the following configurations:

- Amp+Tuner
- Amp + CD, (or deck)
- Amp + Tuner + CD (or deck)



**Features Include:**

- 6 balanced input with trim, 3 band graphic, phantom power
- Priority switch on channel 1,2
- 5 speaker zones • 4 tone chime • 24 volt
- Remote chime & mute control
- Telephone input & music on hold
- Module options tuner, compact disc, cassette deck

For more information on the INKEL range of products, contact your nearest INKEL dealer or phone:

**MAGNA**  
SYSTEMS AND  
ENGINEERING

**Australia:**  
Magna Systems & Engineering  
A trading division of Inklore P/L. ACN 034 03-397.  
7 Gibbes Street, Chatswood NSW 2067.  
Phone: (02) 417 1111 Fax: (02) 417 2394

**New Zealand:**  
Magna Techtronics (NZ) Ltd.  
Level 4, 210 Khyber Pass,  
Newmarket, Auckland.  
Phone: (09) 307 3901 Fax: (09) 307 3832

Write in Reader Service Number: 143

# The Trap With One Free Oops!

The all new KP-3002-C could be just the ticket, especially if you're looking for a high output PA box that's expandable and won't break your pocket-book or your back.

The enclosure's trapezoidal design allows it to be used individually or in multiple system arrays without fear of phase cancellation. The pro components include a die-cast 15" aluminum frame woofer for gutsy lows and a two-inch titanium voice coil driver for sizzling highs, coupled to a 60°x40° Tractrix Wave™ horn for smooth and even coverage.



And, if that ain't enough, in the unlikely event that you fry the speaker, even if it's your fault, we will replace it with a one time "free oops!" with no questions asked. As with all Klipsch Professional systems, the KP-3002-C carries a limited 5 year warranty that is fully transferable.

Now with all that said, don't you think you owe it to yourself to check out the KP-3002-C and hear what you've been missing? Check out your local Klipsch Professional dealer and experience the legendary Klipsch Pro sound.

- High efficiency (102 dB 1 W/1 m)
- 500 watt power handling (2,000 watt peaks)
- 60 Hz (38 Hz @ -10 dB) - 17.5 kHz
- Bi-ampable
- Rugged Klipsch Pro construction
- Heavy-duty carpet covering
- Ergonomically placed recessed handles
- KLP™ protection circuitry
- Locking 1/4" Neutrik™ connectors

## klipsch

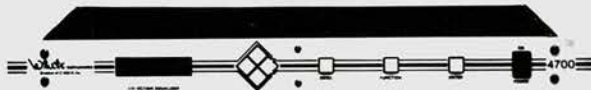
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WITH WHITE INSTRUMENTS PERFORMANCE

### 1/3 OCTAVE EQUALIZER



### White Instruments Model 4700/4700-2 One or Two Channels in One Rack Space

- 28 One-Third Octave Filters, 10dB Boost or Cut, 0.5 dB resolution
- Adjustable High and Low Pass Filters
- Adjustable Gain in 0.5 dB steps
- All Functions Digitally Controlled
- Ten Non-Volatile, User Programmable Memories, No Battery backup
- Ten User Programmable Presets
- with Optional Remote Control
- Intuitive Real-Time Controls
- Tamper-Proof with Password Security
- Servo-Balanced, Differential, I/O
- Output Muting during Power up/down
- Hard-Wired By Pass Switch
- Optional RS232 and PA-422 interfaces
- Affordable Price

For information please contact,

**Horwood Australia Pty Ltd**  
P.O. Box 218, Hurstville, NSW 2220  
Phone: (02) 585 1011 • Fax (02) 585 1317



# AES PREVIEW

Recording Console interfaced to a digital multitrack recorder, the new MD4 minidisk 4 track recorder, the Pro R3 professional digital reverb, multimedia products and the first quad speed Compact Disc recordable unit on the market. There will be displayed a range of products to meet the audio needs of project studios, broadcast and installation applications.

**ZONAL** Manufacturers a complete range of audio recording media for the broadcast, studio and duplicating industries. Included in the range are all professional formats, including 1/4", 1/2", 1" and 2" audio tapes for all applications. R-DAT, ADAT and hi-8 cassettes, magnetic sound recording film, audio cassette pancakes, leaders and spacer tapes and films, CD cases and trays.



## Exhibitor List (FULL)

As at July 18th.

Acoustisearch / Thirkell Holdings  
Amber Technology Pty Ltd  
Amps Unlimited  
ARX Systems  
ATT Audio Controls  
Audio devices  
Audio Sound Centre  
Audio Telex Communications  
Australian Audio Supplies  
Australian Monitor  
Australian Tel-Tec  
AWA Distribution  
BASF  
Broadcast Engineering News Mag  
Digital Sound Systems Australia  
Digital Studio Processing  
DW Productions  
EAV Technology  
Electric Factory  
Entertainment Services of Australia  
Fairlight ESP  
Horwood Australia  
Jands Electronics  
Lake DSP  
Meyer Sound Labs  
Musiclab  
Production Audio Services  
Qasar Comm's / Videx Systems  
Quantegy International  
Roland Corporation  
Sony Australia  
Studio Connections  
Synrotech Systems Design  
Syntec International  
System Sales  
Tascam  
Technical Workshops  
Techtel  
Yamaha Music Australia  
Zonal Limited  
•The Organisers gave us information about most - but not all - exhibitors.

## Workshops

W-1 LIFE, THE STUDIO AND MIDI - BASIC. Presenter: Chris Steller.

W-3 THE INVISIBLE OPERATOR - UNASSISTED SOUND SYSTEMS. Presenter: Peter Blackmore.

W-4 LIFE THE STUDIO AND MIDI - ADVANCED. Presenter: Chris Steller.

W-5 MULTI-TRACKING WITH MINI-DISC. Presenter: Travers Falkner, Tascam.

W-6 AUDIO POST PRODUCTION. Presenter: Michael Slater.

W-7. DIGITAL AVOID TECHNIQUES. Presenter: David Sloss.

W-8 MICROPHONES - SELECTION AND APPLICATION. Presenter: Ron Streicher, USA.

W-9 AUDIO TRANSFER OVER ISDN. Presenter: David Lin.

W-10. AUDIO PRODUCTION DESIGN. Presenters: Rod McCubbin, McCubbin Electronics and David Geoghegan, Alcorn McBride.

W-11 MICROPHONES - SELECTION AND APPLICATION. Presenter: Ron Streicher.

W-14 LOCATION SOUND RECORDING. Presenters: Geoff White, Lloyd Carrick.

W-15 SYSTEM DESIGN BY COMPUTER - THE MEDIA MATRIX. Presenter: Peter Holland

W-16 LIFE, THE STUDIO AND MIDI - BASIC (REPEATED). Presenter: Chris Steller.

W-17 RADIO MICROPHONES - PRACTICAL APPLICATIONS. Presenter: Peter Holland, Audio Telex

W-18 LECTURE THEATRE AUDIO DESIGN. Presenter: Steven Bolton, Electrosonic Systems.

W-19 LIFE, THE STUDIO AND MIDI - ADVANCED (REPEATED). Presenter: Chris Steller

W-20 IN EAR AUDIO MONITORING - PRACTICAL APPLICATIONS AND DEMONSTRATIONS. Presenter: Murray Tregonning

W-21 THEATRE SOUND. Presenter: John Scandrett.

*At press time a schedule was not yet available detailing when each of these would run, or on which days.*

• Call the organisers on (03) 9682-0244 for info.

# NEW PRODUCTS

## VEGA joins low-cost UHF club

Vega has addressed some of the problems of wireless audio technology with the development of the new U2020 UHF wireless system. Familiar wireless concerns such as; crowded frequency bands, limits on the number of frequencies, squelch breaks (that cause bursts of noise at unpredictable times), and dropouts have been tacked head-on. As a result, the U2020 offers audio performance said to be comparable to the quality of wired microphones.

Vega started shipping its first products in 1960 and were involved in the first wireless systems on the market.

The U2020 offers that almost compulsory new thing we all like to see: frequency agility. It offers one hundred frequencies over a 20 MHz window - so the systems

can be used anywhere. Two receiver splits are available for a total of almost 200 unique frequencies.

Frequencies on both the transmitters and the receiver can be changed via accessible rotary controls, and matching channel numbers is simply done. Frequencies are centred in the uncluttered UHF band, meaning that the U2020 can be added to existing VHF systems without risk. The creation of a multi-unit installation (with up to 20-plus U2020 systems) is possible with interference in the UHF band greatly reduced.

Dual-mode squelch circuitry provides receiver-based prevention of interference "hits" from digital signal processors and other digital sources. So, when the trans-

mitter is turned off, accidentally or otherwise, the receiver will remain muted.

DX20 audio processing, a new version of Vega's Dynex companding circuitry, provides wide dynamic range and high-quality frequency response.

Vega say with the U2020, a 100 frequency UHF wireless system is available for little more than the cost of a VHF system. Times have changed!

PRICES: U2020 BPM (body pack with mic): \$2295.00

U2020 BPI (with instrument cable): \$2195.00



U2020 BPH (with headset mic): \$2350.00

U2020 557 (with 557 insert): \$2350.00

U2020 757 (with 757 insert): \$2495.00

MC2020 multicoupler for receivers: \$195.00

• Mark IV Audio (Australia)  
call: 02 9648 3455.



# APHEX

**Aphex Price Deals at these stockists:**

**Victoria**  
Warehouse Sound 03 9417 4866. Caldwells 03 9429 8122.  
Allans 03 9654 8444. Manny's Music 03 9416 1564.

**New South Wales**  
Turrumurra Music 02 449 8487. Sound Devices 02 283 2077.  
Brashes 02 261 2555. The PA People 02 642 5344.

**South Australia**  
Future Music 08 373 0644. Adelaide Rock 08 212 7933.

**Queensland**  
Australian Academy of Music 07 3831 0283.  
Palings 07 3229 2155. MIDILink 07 3368 3366.

**Model 104**  
**Big Bottom™**  **\$475**

**Model 105**  
**Logic-Assisted**  
**Four Channel Gate**  **\$723**

**Model 106 Easyrider™**  
**Four-Channel**  
**Compressor**  **\$723**

**Model 107**  
**Dual-Channel Thermionic**  
**Microphone Preamplifier**  **\$833**

**Model 108 Easy Rider™**  
**Two-Channel**  
**Automatic Compressor**  **\$436**

**Model 109**  
**Parametric Equaliser**  
**with Tubessence®**  **\$792**

For further information look at our website at:  
<http://www.eastcoastsw.com.au>

or Email us at:  
infotec@eastcoastsw.com.au

or talk to us on:  
phone 03 9428 9797 or 0418 381 481

or fax 03 9427 9898

Broadcast Technology Pty Ltd  
ACN 005 689 752

Write in Reader Service Number: 134

## CREST LMX MONITOR CONSOLE

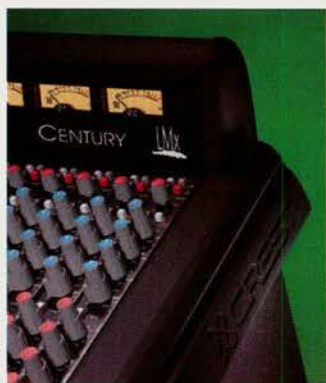
Crest Consoles introduce their contender in the concert stage monitor (foldback) mixer market, the Lmx. It has 22 mix outputs or 'sends', which can be configured as stereo and/or mono as required.

LMx has VU metres for all outputs and stereo bus set, a 3 band sweepable stereo EQ on outputs 1 - 20, switchable output points on all outputs, eight mute groups, alternate monitor output for a second monitor system, built in mic splitter with ground lift switches, and a "room ambience" input section. This is for in ear monitoring where microphones are placed to collect audience noise. This is a dedicated input section to avoid tying up input channels.

Global mono or stereo configuration for each bus is achievable

with the press of a button.

Each input has 4 band sweepable EQ and a 5 segment LED display. Low noise and distortion are promised too! Price range is \$80 - \$99k, 40 or 52 inputs. • Details: **Production Ausio Services, (03) 9415-1585.**



## HBB DATape

HBB **Purple** DAT tape has been updated by having extra length added. (*Me too? -ed*) Up to an extra 5 minutes is added at the same cost, says Audio Sound Centre. In addition, they say the DAT 125 is now the longest 13 micron professional DAT tape on the market. The range comprises: DAT 15, 35, 50, 65, 95 and 125. Audio Sound Centre seek discerning distributors in all states for these and other HBB media products.

**...& HBB MO Disks added**  
HBB have also introduced 5.25" re-writable Magneto Optical disks, the HBB MO1.3GB and MP 2.6GB are the models. The 5.25" MO format is possibly the most rugged re-writable data storage solution, we at Connections can attest to this!

• Call ASC (02) 9901-4455.

## Digital Audio Monitor

The new Eyeheight AM-100 Digital Audio Monitor will identify and monitor audio signals. It will accept AES/EBU, IEC958, S/P DIF and EIAJ CD-340 formats. The front panel tells you status, format, sampling frequency and error conditions. It'll also act as a portable D/A converter. • **Amber Broadcast (02) 9975-1211.**



# Q-MIX HM-6 HEADPHONE MATRIX AMP

- 6 independent, musician-controlled headphone mixes at once
- For studio & live applications
- Main L/R input plus 4 mono channels
- Effects loop with 6 individual stereo returns
- Robust (160mW) output drives any headphones to high SPL's
- Built-in power supply
- Long-life sealed controls
- Made in the USA

### More productivity on both sides of the glass

A great headphone mix goes a long way towards keeping studio performers happy and creative. Trouble is, every musician has their

own idea of what a "great headphone mix" sounds like.

You're in the control room to pay attention to stuff that's getting recorded, not to nurse six headphone mixes. Enter the Q-Mix HM-6 headphone matrix amp.

It lets six musicians create their own individual mixes from up to five sources plus effects.

First the conventional part: Plug the main stereo mix into Q-Mix and



drive six beefy, high-output headphone amps.

Now the Q-Mix difference: You can route four MORE mono inputs into Q-Mix. But it gets even better. There's also a separate 5-channel

mixer inside the Q-Mix HM-6. Connect its mono output to an effect and return the signal to Q-Mix's stereo return. All performers can have as much or as little effects as they want.

### No cheese in Q-Mix

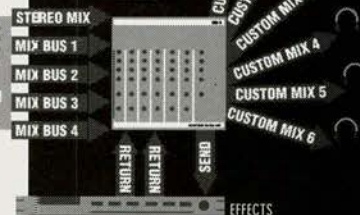
All inputs are balanced so there's no hum and noise. Each headphone amp puts out 160 milliwatts into a 60-ohm load...enough to completely toast your ears with any set of cans you can plug into it.

Get a Q-Mix HM-6 now. For the price of 3 sets quality headphones, you can have something that optimises the value of the headphones you already own.



Below: A typical hook-up: An overall stereo mix, 4 submixes from the console. An effects processor. And six musicians.

The all-new Q-Mix HM-6  
**\$695**  
rec. retail price



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# VIRTUA

— DIGITAL CONSOLE —

# FROM Soundtracs

**ALL FOR UNDER**  
**\$40,000** EX TAX



The Virtua is a 64-input digital mixing console. 32 are analogue mic/line inputs and 16 are digital. Each input has 4-band fully parametric EQ. A compressor and a gate, 8 auxiliary sends and 24 tape outputs. A further 16 inputs are configured as 8 stereo returns with level, mute and balance control only. A total of 64 inputs to mix. The console utilises a highly intuitive touch-sensitive motorised-fader control surface combined with high resolution VDU and LCD display to make the system flexible, fast and very easy to use. It provides full dynamic automation and snapshot recall/reset of all functions. LCRS panning for multi-format production and extensive user-reconfigurability. A latest generation 32-bit floating-point DSP, and 20-bit output converters are used to ensure the highest audio quality with an output dynamic range in excess of 105dBu. Ideal for music mixing, 24-way multi tracking, post-production, surround sound dubbing and theatre sound design. The Virtua has a full complement of professional features including S/PDIF and AES/EBU for mastering, MIDI and 9-pin machine control, MTC/SMPT-E synchronisation as standard, 15 digital input/outputs in ADAT (Fostex/Alesis) format with optional T-DIF (Sony/Tascam) or AES/EBU (most HD systems) formats. The Virtua can be expanded from 9-32 faders. Truly professional digital multitrack mixing for under \$40,000 ex tax.

Distributed in Australia & New Zealand by: Syncrotech Systems Design Pty Ltd  
Unit C, 9 Gibbes St. Chatswood NSW 2067 Tel: (02) 9417 5088 Fax: (02) 9417 8360

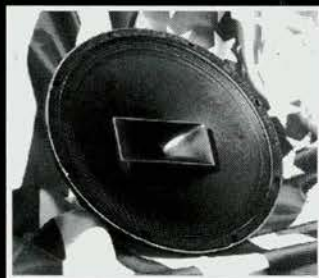
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Sensitivity 1w@1m:99.2db  
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Includes High  
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Optimised for sound reinforcement applications.



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Voice Coil Diameter 3",76.2mm

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### MP12-300

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## Technology

# FOCUSRITE GREEN



Focusrite produce professional high quality audio processors for people who are not colour impaired. Or shy. The RED and the BLUE ranges now have a companion, enter the GREEN series, pictured above in glorious monotone.

The Green 1 Dual mic preamp sells for \$2,450 and looks funky.

Green 2 has a Focusrite EQ along with multiple inputs for mic, guitar or direct recording. \$2,750.

Green 3 is known as the voicebox, it's a microphone signal path to any recording medium. Cost \$2,950.

• Details from AR Audio Engineering, (02) 9810-5300.

## MACKIE EXPAND, DRAW FIRE

**SEATTLE (Wa):** Mackie Designs and Digidesigns have announced an agreement on a low cost product to act as a hardware interface for Pro Tools - as well as other DAE (Digital Audio Engine) based products.

Scheduled for release later in the year the new product will feature touch sensitive moving fader technology, transport controls and basic editing functionality.

Greg Mackie contends that mixers are an important part of the interface between professionals and their products. "We create hardware control surfaces that make it easy to translate ideas into effective results".

Mackie have established several new engineering groups to address current and forthcoming directions.

One of these is the Analog Team, headed by amplifier guru Cal Perkins. Naturally this means the

rumour at presstime is that Mackie are about to release a large audio power amplifier.

The 'Acoustic Group' are sequestered at present, and their role is to make things with no faders.

Mackie claim they have expanded research and development expenditure by 400%.

Mackie attract rumours like few other firms, and have an advanced grasp on marketing as more than just an advertising tool. They are one of the best marketers around.

• **Meanwhile, Soundcraft** have fired a salvo at Mackie via the latest advertising for Folio SX.

The ad says: "Its sad that some mixer manufacturers resort to hype and long, technical sounding names to describe features that every self respecting company has used for ages but doesn't shout about. This junk food mentality only makes it harder for you to decide what's good and what isn't".

# broadcast media info bits

## things which don't fit elsewhere

By Dan Cole

Some interesting figures from the **Australian Bureau for Statistics (ABS)** regarding Film & Video Production and Distribution in Australia. From 1993-1994:

~1,179 businesses in the industry employing 5,998 people, generated \$467.7m from sales of goods and services; and a further \$121.2m in rights and services.

~ total income \$607.7m with expenditure of \$705.8m, so an operating loss of \$98.1m. Seven of the largest companies (100 or more employees) recorded operating profits of \$1.4m.

~total of 4420 productions, the majority, 3,733 related to corporate/marketing/training videos; 29 feature films.

~NSW accounted for 58% and Vic. 28% of product.

And Facilities:

~Sound Post Production houses: 62, Value: \$6.3m, contribution: 1%

~Dubbing/duplication: 187, Value: \$22.9m, Contribution: 3.8%

~Editing: 187, Value: \$51.4m, contribution: 8.5%

~Special FX: 38, Value \$7.9m, contribution 1%

• The Formula One Grand Prix has their own **technical group** called the Formula One Constructors' Association who specify electronics and equipment for each event. In Melbourne, the FOCA's electronic equipment occupied four custom containers; they required over 300 radio frequencies between 70MHz and 30GHz so the National Transmission Agency was called in. They co-ordinated with the Defence Dept for the use of some of their spectrum.

• New contracts have been let by the NTA for a total of \$4.3m to complete **Triple J's regional expansion**. 44 extensions will make Triple J available to 80% of Australians (or 14.5m). Cost of extensions: \$12m

— Broadcast Communications awarded \$2.07m contract to install Triple J at 5 sites; Mt Binger (Griffith); Mt Dundas (Hamilton); Mt Ulandra (Wagga); Williams Hill; Tower Hill.

— Kilpatrick Green awarded second contract \$2.2m to install Triple J at three sites; Mt Lennard (WA); Loxton (SA); The Bluff (Spencer Gulf)  
All required to be in place by November 30 1996.

• Greater Union and China Construction Holdings **joined forces** to 'examine commercial projects' in Beijing and other sites in China. The development again marks the lack of opportunities for US business with China preferring to go elsewhere.

• *Art of the Possible* is the theme of **Cinessentia 1996**, a low budget film festival and forum on in September. Entries and details: (T) (049) 216 382, whilst in Melbourne, the **Experimenta multimedia exhibition Robotica** runs in conjunction with the Melbourne International Film Festival; 25-10 August.

Five **cinema multiplexes in Indonesia** belonging to 21 groups have introduced computerised ticketing facilities.

• The importance of technology in education and display will be explored in the **trade exhibition EDUCTECH 96**. Adelaide Convention Centre, 6-8 August; Sydney Convention Centre, 25-27 August. (T) 03 9819 0211.

• Early cinema is the theme of *The Dawn of Cinema conference at the Museum of Sydney*. It will feature lectures, panels and special screenings with Australian film history mixed in. 15-18 August. (T) 02 251 5988

• **RMIT short Audio Visual Courses** cover areas such as Introduction to Audio Production; Producing Your Own Audio Demo Tape; Single Camera Video Production; Technology for Video Production. (T) 03 9660 4100

• Amateur video artists are **invited to submit** a dance party video clip for the 1997 Big Day Out's *Boiler Room*. Equipment and prize money for the top three and passes to the event for the next 30. Entries between 4-6 minutes on VHS, SVHS or Beta, and optional soundtrack between 110-140bpm. Entries from Waterfront Records by the 1st November.

• New developments in special effects and graphics will be the subject of the **forum FilmTech 96, When Inspiration Strikes**. Sponsored and convened by Avid Technology featuring overseas and local professionals. 24 August. (T) 9937 1800

• The Australia Council has announced two **new art and technology residencies** for 1997. Financial assistance up to \$35,000 per annum will be made for artists 'attached' to host organisations; Firmware and the CSIRO Division of Information Technology. Deadline: November 15, (T) 02 9950 9000

• The **ATOM International Multimedia Awards** will be held in Melbourne in October, but entries are due soon. The awards are open to all who have developed or participated in the development of digital interactive multimedia products or services. Entry forms and details, contact: ATOM awards PO Box 222, Carlton South, Melbourne, 3053.

• Technology giant **Matsushita owns** 1/4 of DVD patents — 820 plus 5,200 pending. Next most likely to reap DVD rewards are Sony and Pioneer each with 20% of patents.

• The Arts Law Centre (NSW) has published a series of handy **arts-entertainment contracts** for general use. They cost around \$15 each.

Email Dan Cole c/o: mail@conpub.com.au

Sound Information  
from  
**YAMAHA**

by Chris Steller

## DON'T PIGEONHOLE YOUR MICROPHONES

With the recent flying visit of microphone 'guru' Joel Singer, I had an opportunity to listen to his experiences working with the 'big name' live bands in the U.S. During his talk he revealed a multitude of techniques and tips he had used to solve some tricky problems encountered along the way. While he was explaining his use of different microphones, one thing stayed in my mind - how a manufacturer recommends a product to be used, and how that then becomes 'gospel'. We rarely, if ever, go beyond that recommendation.

An example of this was my perception of the Audio Technica 4050 microphone - a great studio vocal microphone. Joel explained how Queensryche were not happy with the sound they were getting miking a Marshall stack with the traditional microphone methods, so Joel recommended a 4050 because it could handle the high SPLs and it had a better frequency response than most other 'live' microphones. They were so impressed with the results that the word spread, and many other touring 'heavies' like Metallica are now using 4050s.

The same situation occurred with overheads for drums - the traditional recommended cymbal mikes were very middy, so Joel used a pair of 4050s for overheads. The overheads now play a more important part in the overall sound of the kit. He has even used the 4050 for miking a kick drum. So, it's a fairly expensive way to get a good guitar or drum sound, but think about how important your sound is. And say hello to the Audio Technica 4050 all-rounder microphone.

If you require further  
information call Yamaha  
on 1 800 805 413

## BUYERS GUIDES

Each month we list available representative equipment from all distributors. **Distributors: to get listed CALL ELAINE on (02) 876-3530.**  
New deadline: 1st of the month prior.

**Feb** Studio Monitors. Truss, Flying systems, rigging

**March** Wireless Microphones, Video Projectors, Moving Lights

**April** EQ's, Crossovers, Limiters, Signal Processors, Film & TV Studio lighting

**May** Effectors, Reverbs, delays. Effects Lighting

**June** Live Mixing Consoles. Profile, PC Spots

**July** Lighting control, **NEW:** Video splitters, interfaces & 'black boxes':

**August** Studio Mixing Consoles. Dimmers

**September** Microphones. Fresnel spots, Floodlights

**October** Amplifiers, Samplers. Followspots

**November** Loudspeaker systems. Fog Machines

**Dec/Jan** Recorders & Recording software, DAWs. The MONSTER recording buyers guide! Scrollers, colour changers.

**\* TO GET A BACK COPY OF ANY ONE CATEGORY:** Check our Internet site first, ([www.conpub.com.au](http://www.conpub.com.au)) and if not there or if you are not online, send \$5 plus a stamped self addressed envelope to BG, PO Box 439, Epping NSW 2121.



## MAJOR TRADE SHOWS

- **PLASA** London Sept 8-11 1996 and includes British Music Fair. A world-great tradeshow! Call +44-1323-642-639
- **AES Melbourne:** September 10-12, World Congress Centre.
- **Photokina,** Cologne Germany, Sept 18-23. +49-221-8210
- **AES 101st.** Los Angeles Convention Centre, Nov. 8-11, 1996. (New dates!) Call +1-415-558-0391.
- **41st IES Convention,** Perth November 18-21. Fax (09) 322-1734.
- **LDI 1996,** Orlando, 21 - 24 Nov. Call +1-212-229-2965
- **NAMM 1997:** January 17 - 20, Anaheim LA. Call + (619) 438-8001
- **NSCA 1997:** April 16 - 20. New Charlotte Conv. Centre, USA.
- **ENTECH '97:** Melbourne Exhibition Centre, April 23 - 25, 1997. Annual show, at Sydney Exhibition Centre on even years.
- **SHOWLIGHT '97,** Flemish Opera House, Ghent, April 28 - 30. Details from PLASA, +44 1 323 642-639.
- **Venue Management Association Conference.** Melbourne Exhibition Centre, April 23 - 25, 1997. Held in association with ENTECH. Call (02) 876-3530 for details.
- **INFOCOMM,** June 5 - 7, LA Convention Centre. +1 703 273-7200
- **NIGHTWAVE '97.** June 7 - 10, Rimini, Italy. +39 541 711-249.
- **SMPTE,** Sydney Exhibition Centre. *Dates changed,* now July 1 - 4. Biannual TV/Film equipment trade show and convention.
- **Vision & Audio 97,** Nov. 4-6, Earls Court, London.

Shows we will cover soon ...

- **PLASA.** London in September is quite nice. This is a big show, and has a lot of attraction. Sadly run at the same time as our local AES. Caroline Grafton will cover this show.
- **AES 101st** in L.A. - a great chance to see Pro Audio at work, and much easier to attend than when it is held in New York. November. Howard Jones will cover this show for Connections.
- **LDI** in Orlando, November. Caroline Grafton will cover this show.

### DOLLAR HISTORY

HOW the A\$ has fared over time.

One Australian dollar would/will buy:

	\$US	Yen	£	DM	\$\$in
1965	1.14	403	0.39	4.46	3.25
1970	1.12	400	0.46	4.05	3.22
1975	1.33	392	0.59	3.11	3.15
1980	1.16	251	0.49	2.03	2.52
1985	0.66	165	0.51	2.02	2.10
1990	0.77	98	0.39	1.18	1.45
<b>NOW*</b>	<b>0.78</b>	<b>85</b>	<b>0.50</b>	<b>1.17</b>	<b>1.12</b>

30 day trend ● ● ▼ ▼ ▲  
Trendline: fall means A\$ weakens, imports cost MORE, while exports earn less. And vice-versa. It takes TIME to take effect.

**NZ\$ at publication: \$1.13 ▼**

\*At 19/7/96. All rates indicative only. Check with your bank.



### World Weather trend, AUGUST

\*NOT a forecast!

Where?	Temp °C	Rain mm			
Auckland	14/8	117	Manila	31/24	437
Bangkok	32/24	191	New York	27/19	119
Beijing	31/21	141	Paris	24/14	64
Chicago	29/19	80	Perth	18/9	135
Dubai	39/28	0	Rome	30/19	21
Frankfurt	24/14	76	San Francisco	22/12	1
HoChiMinhCity	31/24	269	Seoul	31/22	221
Hong Kong	31/26	413	Shanghai	32/23	139
Jakarta	31/23	43	Singapore	31/24	191
Kuala Lumpur	32/23	157	Sydney	17/9	76
London	21/13	59	Taipei	33/24	266
Los Angeles	24/17	1	Tokyo	30/22	147
			Toronto	26/16	61

## CASH!

Business Column

By Julius Grafton

**H**as anyone noticed how the catering on domestic airlines has gone downhill in recent times? You get a cookie on your Qantas flight to / from Melbourne / Sydney outside meal times. And when it is meal times, no grog to be seen! Seemed like yesterday the domestics were trying to outpoint each other with service in the air.

### FLYER WAR:

• On the other hand, the Frequent Flyer war is interesting. Because Ansett don't fly many overseas routes, you can earn and redeem points on many great and useful airlines. But these myriad airlines don't recognise you in any way when you use them. So if you are a mega Ansett user flying on **United Airlines**, (for example) they'll just treat you like anyone else. Which is OK, but the difference can be seen if you are a mega Qantas flyer who turns up on a QF flight. They KNOW their good customers.

You get the bottle of champagne, and if you have a really solid number of points in your frequent flyer account, the pilot will get the bursar to bring you his card.

This means you can come and sit in the cockpit for a landing. And this is something worth doing! So, if you want to earn points on airlines which usually cost less than Qantas, join the Ansett plan. But don't expect any special treatment.



## GOING to PLASA in London?

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What makes PowerLight amps work so well?

Refined "stepped linear" output circuits for optimum efficiency. PowerWave™ Switching Technology for tighter, fuller sound. Remarkable 2ohm load performance with unsurpassed thermal capacity. Extensive, proven protection circuitry, providing continuous fail-safe operation. Full compliance with worldwide safety and EMC requirements assures trouble free system integration.

And PowerLights are extremely *light*. At a fraction of normal weight, the road crew will have the last word of praise.

So, when touring sound companies like Sound Image and Jason Sound stake their reputation on a power amplifier, it *really* makes a statement.

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“the PowerLight Series will be my choice for a long, long time...”

**Jeff Lilly**  
 President, Jason Sound  
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A.R. Audio Engineering Pty Ltd

558 Darling Street BALMAIN NSW 2041

Telephone: (02) 9810 5300

Facsimile: (02) 9810 5355

Write in Reader Service Number: 129

## HOW DO I GET IN?

My question is how do I get a job in the sound or lighting industry? I am in year 12 and fully expect to get a good TER. What should I do now? I have worked on school plays and have a PC and hard disk recording system at home with my keyboard. I know the recording industry is slow, but I don't care. I want to be an entertainment technician. **-Karen Bourke. (email)**

*\* Because I don't know where you live I can't be too specific. Generally you've got options like further education - and we have a Course Guide coming up in the October issue. Otherwise network yourself like crazy, read the next letter, and apply for traineeships. Jands Production Services have taken 8 - 12 trainees a year in previous years, they run newspaper adverts around the end of the year. Keep your eyes open. -Ed*

## I GOT IN!

I wrote to your magazine about 12 months ago urging more businesses to give up and coming Audio Enthusiasts a go. Well here I am now, that year later, writing to thank the one guy that gave me a chance and to tell anyone who is thinking about being an engineer that if you want it bad enough keep going, talk to people, make contacts - most importantly don't let anyone tell you that you can't do it and don't let anyone stop you.

I spent about four months working for nothing, learning everything I could, reading books, going to gigs. I did a couple of courses but nothing prepared me for my first job - alone, just me and the lighting guy. Thankfully things have got better since that night and I am now proud to stand up and call myself an engineer. I

still work for the same guy running an install at the local pub a couple of nights a week and am still learning and will be for a very long time. I had an excellent teacher with an awful lot of patience and I guess that's what got me through the times when I never thought I'd ever be able to do it - my source of inspiration. Now I have a passion for sound and live music that I probably bore my friends with but I love it.

I had my first gig the other night when I had the punters coming and telling me that I do great sound as well as the band being happy. Hearing that makes all the headaches to get there, worth it.

So what's the moral of the story you ask?

All of us who are starting out share the passion and ideas that all you long time engineers had when you started out.

Someone gave me the chance -

and one day maybe I can give that same chance to someone else but, in the meantime there's lots of people out there who love sound.

Let's start producing some more top engineers and bring the quality back into live sound no matter how big the show. It's not only your ears that get tired.....

**• J. Wood. Southport, QLD.**

*\* I see a lot of people working full time as technicians who are committed to helping others get a start. Most, in fact. So, aspiring young technicians, build your networks and ask others (politely) if they can give you a little time to answer your questions. If they say no, remember they are either really busy or just part of that selfish minority who feel threatened by others. -Ed.*

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**25<sup>th</sup>**  
ANNIVERSARY

Write in Reader Service Number: 115

## I REJECT LUDITES!

I'm amazed at the suggestion, repeated recently in your pages, that some people in the industry do not see how we technicians multitask.

I work in the AV dept of a major Melbourne hotel, where in any one day I may setup, operate and pulldown any of the following equipment: stage lighting, PA, softgoods, wireless mics, video graphics projector, slide projector, screens, effects lighting, cassette and DAT recorder/s, - and I also prepare customer visuals on Macromedia Director on the PC. I record using Sound Forge. Then I interface all this to the customer's laptop!

Connections: thank you for giving me a realistic industry magazine!

-Carl Bond, Richmond, VIC.

## EQUIPMENT HASSLES

I've recently purchased gear for my home studio. To choose I spoke to friends, visited shops, and read magazines like Electronic Musician and Connections.

One I had my list together it added up to around \$26,000.

I visited six retail outlets in Sydney, and took the best price to each shop to get the best deals.

Once I had everything on my list I set it all up, installed the software, and had problems with Windows '95 and my video display. Then I had problems with the hard disk recording package.

I had countless hours on the phone to resolve these and other problems. One shop told me to call the manufacturer in the USA!

-Vic Nguyen, Cronulla NSW.

• *Moral: Pay a bit more and have one vendor give you support. -Ed.*

## MISSING ENGINEER

Inspired by the recent ENTECH awards, a group of musician friends and I decided to nominate worthy industry personnel for our own prestigious awards. However, the best live sound engineer award could not be presented due to our inability to locate the recipient. We are therefore pleading to Connections or it's readers to help us.

The recipient, known only to us as Glenn (a short guy who used to set his mixer up on a drum riser), last seen working with acts such as Real Life, John Farnham, Daryl Braithwaite and the Chantoozies before disappearing into the corporate event scene. The award was given following an after show incident recounted by one of the voting panel at a John Farnham show at Geelong Performing Arts Centre in 1988. When talking to Glenn at the mixing desk a group of an-

gry punters interrupted accusing Glenn and the band of cheating, threatened violence and wanted their money refunded because they refused to believe that the show was not mimed as it 'sounded too perfect'. They felt their accusations were justified when they spotted a cassette deck in the FX rack and stormed off to inform the venue management of their discovery. Sitting in the audience that night was like listening to a CD, such was the spatial dynamics, balance and separation.

So for doing a 'too' good a job, and having been witness to his sensitive and innovative work on many other occasions, Glenn gets the nod. Any imput on his whereabouts would be greatly appreciated as the awarded slab is diminishing weekly. We also have a project that needs his touch.

• Michael Roberts, Phillip Island, VICTORIA.

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Write in Reader Service Number: 149

# Audio Visual

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## URBAN ASSAULT AV show includes 23 helicopters!



### Toyota Launch their new Prado in Spectacular Style

By Cat Forcer

One of the most elaborate corporate events of the year was the Toyota launch of their new 4WD car, the Prado, to 600 dealers assembled in Sydney. Their use of helicopters was the talk of the

town and a major media event. The tranquil grounds of St. Ignatius College, nestled by the water, made an ideal location.

"The college was picked because the helicopters have to fly in over

the water," said Meri Took, Production Director. "Although they have an auditorium here, we soon realised it wasn't practical. We wanted to produce corporate theatre not a gang show! We decided that the gymnasium, as a shell, would work fine. We wanted a raked audience that could look down on the set."

There was a five day bump in and four day rehearsal period, all for a one hour show.

The idea of the set, designed by Eamon D'Arcy, is a backyard of the type of family who would buy a Prado - upper middleclass, North Shore types who want a 4WD as an urban vehicle. The story, performed in a theatrical style, revolves around a wife pestering her husband for a new car and he surprises her with one for her birthday. Personally, I found the idea irritating. Do women really have to plead and cajole their husbands when they want something? Yuk.

In between the story line, various Toyota executives took the

(continued over)

(continued over)

## The New Deal

Optus Local Call Launch

By Madeleine Murray

It was an emotional moment for anyone who has ever been peeved by Telecom/Telstra service, or their telephone bill. Who hasn't felt apoplectic with anger while listening to half an hour of ads, interspersed with "Your call is important to us...", only to be told to call another number when they finally get through? Who hasn't wondered how they managed to make over \$350 of nebulous "metered calls" in three months?

Corporate Theatre

Now, at long last, some revenge, some solace, a new deal! Geoffrey Cousins announced at the very high profile launch, "As from today, the price of the local phone call in the Optus local network will be 20 cents, 20 cents!" Applause.

I cried.

There is no better way to get to an Aussie's heart than to give them a 20 cent phone call. But it got even better. 15 cents on holidays, "when people like to call their friends and relatives," Cousins said.

It was an important moment. The Prime Minister was there, talking about the Aussie family, Aussie values, and the Aussie pioneering spirit. The average Australian was up on the giant screen, making the first 20 cent phone call, carried live from Lindfield.

The whole launch was transmitted live to the Optus staff at venues in Chatswood, Parramatta, and Melbourne, and carried on their inhouse cable service, and Optus Vision Cable Network. 500 media, customers, telecommunications brass, and political clout were there. The New Deal launch was on all the national TV news that

## DMD Projection Arrives

By Steve Whittle\*

(continued from page 5)

Having seen the prototype projector at last year's INFOCOMM, we had been eagerly awaiting the availability announcement from nView. Recently, we were fortunate to receive some of the first units shipped. We can now report that the D400 (data only) and D405 data/video projectors are compact and lightweight, making them ideal for the business projector market.

The projectors display all video and data sources at 640 x 480 resolution and the video compatible units have both NTSC and S video inputs. Both models project at a respectable 250 ANSI lumens.

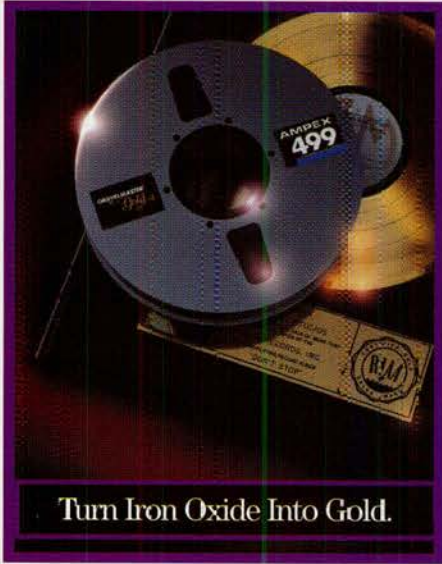
Notwithstanding some minor problems with the metal halide lamps and a sluggish remote (both of which have been resolved), the projectors perform very well. Pixelization is nearly invisible thanks to the reflective technology and digital processing which in effect acts as built-in line multiplying. Contrast is also very good, although very bright images such as sunsets, bright skies or a windows backgrounds with lots of white have a shiny appearance. Colour accuracy is good, although in white raster tests the D405 has a slightly cool colour temperature.

(continued over)

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## VIDEO PROJECTOR (cont)

This showed up more using the video inputs than the data inputs, leading me to believe it could be attributed to bad NTSC decoding. Because most people are used to seeing over-saturated colour, they perceive the DMD's colour saturation to be slightly soft. It is actually very accurate. For permanent installations nView's projector needs a few changes made to allow better integration into a room. The only control option nView allows is IR control, although most installers favour S control or RS 232/422. Another is the blue screen. We have not been able to disable the blue screen, and the projector displays it between inputs changes and when no input is present. Last, there are no RGBS inputs.

Recently I had an opportunity to visit Texas Instruments' new Digital Light Processing Marketing Centre. David Leonnig from the Media Relations Dept. walked me through the facility to show what it was all about and to give me a chance to see some of the prototype engines.

It was here that I had a chance to see a prototype of the three chip engine that Electrohome will be using in its recently-released Vista pro projector. At 1000 ANSI lumens and 800 x 600 pixel resolution the image quality was impressive. Colour temperature and saturation were excellent. Also much reduced was the shininess of high contrast images. The image does not have the quality of a high-end CRT graphics projector (sorry TI), due to the images' flatness.

When I see a betacam recording from a one-inch three-tube studio camera played back through a Faroudja line

quadrupler and projected with a Barco 1209, Electrohome 9500 or Hughes ILA projector the image has a depth of field approaching that of film. The DLP has excellent colour, contrast, definition and brightness; however the image lacks depth of field. The other major factor is, of course, resolution limitations. For the DLP projectors to really have a place in the installation market the professional projectors will need at least 1024 x 768 compatibility, and be easy to control from a remote system such as Crestron and AMX.

So now TI is currently developing, and as of late May has available for shipping, three different versions of its light processor: a single chip, two chip and three chip. The basic projection system works like this: A light source is reflected off of the DMD and into a lens, which makes a gray scale image. To have a colour image the light source must be broken down into its red, green and blue components via prism or dichroic filter wheel, then reflected off of the DMD(s). The single chip version uses a single light source through a dichroic filter wheel and processes all three colours sequentially on the same DMD chip. This makes for a simple, convergence free, cost-efficient colour projection system. The two and three chip versions use a prism to split and filter the appropriate colours onto separate chips and then recombine the colours into one projection lens.

Future versions could easily be manufactured with multiple chips and multiple light sources to get increased light output. TI also says that there is no practical limit to the resolution capabilities of the system. They expect to be ship-

ping DLP engines capable of 1280 x 1024 resolution by year's end

Currently nView is the only company shipping DLP projectors to dealers; however, Proxima and ASK will soon be taking shipment of single chip engines. Electrohome has started taking shipment of the first three chip projection engines and has introduced its Vista pro DLP projector at INFOCOMM 96.

Where does this leave DLP? There will always be the reference analog systems for those who can afford them. (Many TV studios still use tube cameras). As systems integrators we must look at the overall advantage of switching to DLP projection systems. The subsystem that TI manufactures receives a digital input. Projector manufacturers must convert incoming signals to digital before they may be input into the sub-system for projection. Satellites, laser disks, computers, beta machines, editing systems and many other sources are available with digital output formats. The technology and equipment for broadcasting, switching, storing and distributing digital signals exists and is in use today as computer networks and digital telephone switches. Cost effectiveness is where the DLP imaging systems will definitely excel.

*\* Steve Whittle is an electrical engineer by training, and is the principal systems engineer at Bauer Audio Visual of Dallas, a systems integration company and supplier of A-V installation services to major hotels, national Associations, and international corporations.*

• nView distributed by: Advanced Visuals, call (02) 9817-5455.

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## OPTUS

night, the Midday Show, the 7:30 Report, and the front page of the papers. (continued over)

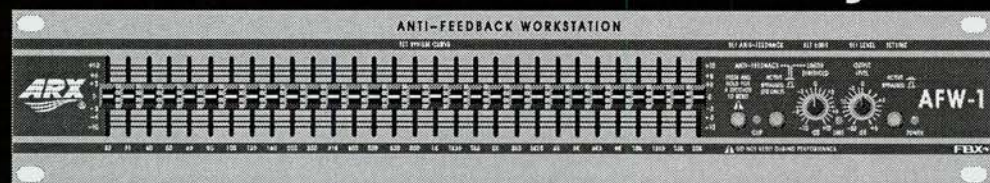
It had the tone of a historical event, and Wavelength, the company who orchestrated the set, podium, sound, lighting, communications, music, promo video, graphics, and live links pulled it off perfectly.

### Wavelength

The launch was essentially a very sleek press conference. It was held in an exhibition hall at Darling Harbour, Sydney. Wavelength designed the set based on the new logo, The New Deal. "It was all very secretive," said Merryn Hughes, the Executive Producer. "We didn't know a lot of the information until fairly close to the actual event. We were doing quite a lot of guesswork with the advertising agency. Because of the situation with Telstra, they didn't want to release information or let any leaks out to the press until they had the big press launch. In terms of design and things, we were sort of running blind. But we came up with a set design that matched the corporate feel of the company, Optus Vision, and Optus Communications. We matched it to the logo design the advertising agency had developed for The New Deal, which was a circle. We hooked onto the circle idea, because it was a little bit different."

Wavelength built the room inside the hall, dressed it in drapes, suspended big circular canvases with projections, and built three circular stages for the front. One stage had the podium, where the speeches were made by Cousins,

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and the Prime Minister. A 4x4 bank of monitors on the central stage showed graphics, videos about Optus, and the live cross.

After an opening video, an emotive performance by Cousins, and John Howard's speech, a phone rang loudly. The third stage revolved to reveal a lounge room, with Cousins taking a call for the Prime Minister. It was the first 20 cent local call, made by Mr. and Mrs. Cocks, of Lindfield. The Prime Minister crossed the stages, and spoke on the phone to the couple.

The whole conversation, not memorable for its content, was shown live on the central screens. Then there was another video, food in the foyer, and an exhibition where people could test the new handsets.

A very impressive feat. And one that required a big team. Four pages worth of credits, including over a dozen OB staff, and five link technicians in each receiving venue.

Like any launch, it had to be good, and foolproof. But particularly good, and foolproof. Because if a national launch of a telecommunications giant has a telecommunications glitch in it, that would be a disaster. So there were backups for the backups. Every step had three different contingency components. If the phone line dropped out, there were four backup lines. And audio links so that the conversation could still be heard. There were three levels of hardware at each step, so everything had the same degree of integrity as a permanent installa-

tion.

The whole event was stage managed to give it a landmark, historical feel, and I was a sucker for it. But there were a few catches which came out in subsequent interviews. The 20 cent call will only be available where there are Optus cables, and they are not too popular in many suburbs. The 'rollout' is taking a long time, is barely in some cities, and will never be in the country. You have to change your phone number.

Meanwhile Telstra replied by saying they wouldn't lower their local call price, but rely on "customer loyalty." How quaint.

### The links

The most complex side of the show were the links. Gonzalo Gover, *(continued over)*

## TOYOTA

*(continued)*

stage to deliver their spiel. The highlight of the set was surely the acrobatic display by the Flying Fruit Fly Circus who had been masquerading as the couple's children and friends. Two garden gnomes attempted to inject humour into the set with a running commentary. The set ends with the husband leading his wife outside of the gym to where her 'surprise' present will be. The audience dutifully follow them out onto the cricket pitch where a large Toyota sign is painted across the grass.

The whole story was developed to introduce the helicopter stunt. Sound effects follow the audience up to a viewing area over the cricket pitch. Sky Channel installed an O/B link system, with a commentator and video crew in one of the helicopters, to beam pictures and audio back to college. The audio is fed through an outside PA system, with a second commentator on the oval with a headset also able to speak through the system. The video link is relayed through several monitors in the viewing area. Several choppers were actually filming and so images could be changed about.

The audience see the formation of helicopters coming down the harbour and hear the conversation between the chopper crew and the guy on the oval. The 23 helicopters were supposedly the largest formation ever to fly into a capital city outside of wartime.

*(continued over)*

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## Toyota

Added to them were the media helicopters making quite a spectacle. Part of the flight path over Sydney was closed down for the period making timing crucial. Suspended from the lead helicopter is a 5000<sup>2</sup>ft Toyota flag whilst another helicopter has the actual Prado car dangling beneath it. Once the helicopters arrive at St. Ignatius, the car is carefully lowered onto the oval and a skydiver, trailing a 10,000<sup>2</sup>ft Australian flag descends onto it's roof.

The dealers then go to lunch whilst Meri and his team are busy changing the set over by removing the greenery and throwing a black cloth over the stage. A large fluorescent map of Australia, designed as a table, is set out and when the dealers return they are given the strategy on how to sell the car. The gym then resembles a war room set up enforcing the Urban Assault theme.

The gym had consisted of two basketball courts divided by a sports net which had to be removed. The windows were all covered with black plastic and the walls were draped in black curtain. The next day the rigging was done under the supervision of Simon Ambrose with the trussing and rigging supplied by Jands. A ceiling cloth was then added by Staging Rentals, one

### Tony Moffat



of the major suppliers on the job, to give a black canopy.

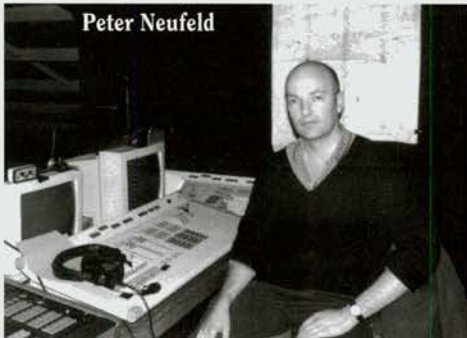
Lighting and audio were then installed before the grandstand was built by Butlers and the set constructed by Eagle Beech. The following day the set was dressed by Greg Thomas of The Greens Department with real grass and real pavers. Parts of the set had been specifically designed for the Flying Fruit Fly's performance with the back wall doubling as a performing area and a trampoline



Meri Took

disguised as a pond. A sundial doubled as a lectern.

The projection screen behind the set was 8m x 4.5m in size. Two projectors were ran, a Barco 5100 for a wide image and for the



Peter Neufeld

smaller image, supplying a 'picture within the picture', a Barco 1292 was used. All of the A/V equipment was supplied by Technical Direction and was designed by Michael Hassett.

"We run everything off Beta machines and we run through MX50 units," said Meri Took.

Lighting designer was Peter Neufeld whose background started in theatre but now he enjoys a reputation of being able to diversify his talent to other areas. Lighting was supplied by Chameleon, a company Peter believes supports designers far more than other large rental firms.

"When you're doing one-off shows you really do need that sup-

(continued over)

## Optus

and Janette Ferrier from Excess Energy were the technical director and production manager of the OB side of things. They hired everything available at Channel 9, and more. They had sixteen link dishes up, four TV receiver dishes in Sydney, and two in Melbourne, all backed up 100 per cent. Optus supplied a transportable earth station at Darling Harbour.

"There were only four cameras on at the shoot, but the communications were fairly complicated between the various sites, and the link systems," Ferrier said. "We, Excess Energy, have the only double redundant broadcast quality fly away outside broadcast unit in Australia, which is why Wave-length used us for this. This had to go to air, the media took a split from our OB."


### A very big scaffold

At the core site of Lindfield, there was an ENG (electronic news gathering) crew who all had a minimum of ten years experience. Two microwave link transmitters and two microwave link receivers were at Lindfield, outside on a customer-erected scaffold that was 15m high, with a 7x2m top.

The signal went from Lindfield, to the pinnacle of Centrepoint, to Darling Harbour. "Centrepoint alone is a pain in the neck to rig," Gover said. "You only have access to bring hardware up while they're not bringing customers up to the restaurant. So you have to be in the building, and upstairs by 9am. And we had seven lift loads of hardware. That just took forever to get it in the lift, upstairs, then transfer it to the smaller lifts, which took half as much gear."

The brief was that it had to be live, but it had to have the feel of a normal telephone conversation. "You had people who weren't trained on one end of the line," Gover said. "So you couldn't rely on them to cover any shortcuts in costs or technology."

"The flyaway OB kit was down at Darling Harbour, and four Hitachi cameras. Howard could see Mrs Cox, and she could see Howard, which is not usually done, because it's extremely expensive to get vision both ways. The brief from Paul Kenny was that we must make Mrs Cox, in

particular, feel as calm and as comfortable as humanly possible. Anything that would make her feel at ease had to be pursued with 'the utmost passion.' He has quite a way with words, the little wombat. But he's dead right." 

### Some of the crew:

#### Executive Producers:

Paul Kenny/ Merryn Hughes.

TD: Steve Brlekovic.

#### Audio/Communications:

Leon Minervini

LD: Chris Murphy.

#### Video/Graphics Producer:

Belinda Lightfoot.

#### Some OB crew

Technical Producer: Gonzo Gover

Production Manager:

Janette Ferrier.

## Optus Equipment List

### Audio

DDA Q2 48 channel FOH console  
Sabine ADF 2400 Workstation  
12 Meyer UPA-1c speakers  
4 Meyer USW-1 Subwoofers  
2x Meyer M1a processors  
1x Meyer B2EX subprocessor  
3 Crown MA1200 Power amplifiers  
Sound Control Technologies AVT24  
Teleconference Interface (supplied by Sound Control Australia)

### Comms

Clearcom 4 Channel System in venue connected via telephone interfaces (Clearcom AC10H) to venues at Parramatta, Chatswood, and Preston (Vic). Telex Radiocom wireless Comms system.

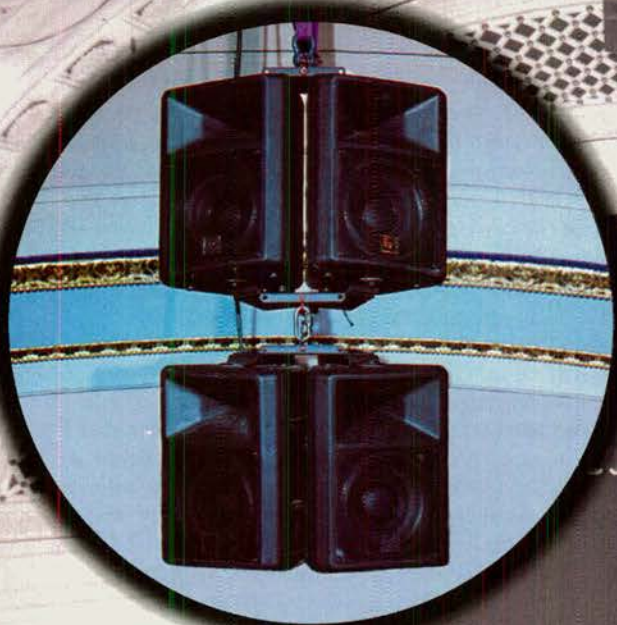
### Video

All microwave links equipment supplied by Channel 9's OB department  
4x4 Pioneer rear projection Videowall using an Imtech Ultra Videowall controller  
2x UVW 1800 SP Betacam record/playback machine  
1x PVW 2800 SP Betacam record/playback machine  
1x BVW 75 SP Betacam record/playback machine

### Staging

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## Toyota

port to make sure you get the right equipment," said Peter. "Chameleon will also invest. For this job I needed some very powerful UV's which can dim and be controlled in terms of barn-dooring and stuff, and Chameleon purchased the units for this job without hesitation. You continue doing business with companies that support you like that."

Meri Took pointed out that although both Jands and Chameleon could have under-quoted each other, they came to a mutual agreement to make the show work with Jands doing the rigging and audio whilst Chameleon supplied the lighting.

"This is a theatrical piece within a corporate setting. It's great to work with a proper designer and director as well as an experienced technical team. My main consideration was the front projection screen receiving ambient light spill so there are no par cans in the rig. Everything is profiled or barndoored to have that control and flexibility without competing with the screen. The only exception is for the Flying Fruit Fly's when everything is basically full up as they are swinging from the ceiling and truss."

Because the rig had a ceiling cloth on and it was about 8m high up, some of it was fairly hard to get to. Apparently the crew were seen swinging in their harnesses about in precarious positions to reach lamps.

"The actual rig went together incredibly well and no lamps had to be moved," said Peter. "All the time has been taken up by plot-

ting. We're using an Expression 2X and Geoff Kelly has done a great job operating it. Rachael Belbin also did a great job programming the six Super Scans on the Scancommander. I'd also like to mention Damien Oxley as having put the system together so well.

Careful consideration had to be given to the lighting when the Flying Fruit Fly's performed so as not to dazzle them and working it out was quite a major task.

### Sound Hurdles

Marrying theatre with business presentation caused sound designer Tony Moffat some hurdles not normally encountered in corporate work.

"You don't usually have a dozen radio mics at a Toyota Convention, for instance," he said. "From an audio point of view the main problem was that the time scale was extremely short, less than two weeks to get it all happening. The radio mics are the Shure L Series with Sanken capsules which are great. I had originally wanted a Sennheiser radio mic system but the budget didn't allow for it. We've had to cut a few things out, primarily because there hasn't been time to put the stuff together and do what we really want to do."

The sound system came from Jands and Tony was contracted to do the show by the production company Show & Tell. The main speakers were JBL Array 4892's which Tony believes are among the best in the small, compact loudspeaker range.

"The main thing is that you have the ability to control the dispersion pattern," said Tony. "They're a bit like profile spot in that once

you move out of the pattern of the box, you're out of the pattern of the box. In situations where the acoustics are a problem, you can point the PA to exactly where you want it to go.

"We configured the system with a main left and right cluster, a cluster of two boxes each, and a centre cluster which primarily carries lectern and vocals. We then have two clusters aside which are delays and basically reinforce the radio mics and the lectern. The sound imaging is much higher than I would like, normally there would be lower speakers to pull the sound image down but the set didn't allow that."

The main mixing console was a Midas XL3 which Tony admits was slightly overkill for the job but he likes the quality.

"Channel EQ and just control of the system in a show like this is important," he said. "Ideally I wanted to use the XL4 (but it's out with k.d.lang) so I could program each scene in and step through it. It could have triggered the sound effects too. The sound effects are played back through a Denon Minidisc loaned to me by AWA, it's the latest model with 'hot keys' which allow me to load 10 sounds into keys which are re-played instantaneously. Other stuff is played back off an Akai DR4 which I also use for editing."

The outside viewing area had a JBL Sound Power system although Tony's original concept was to use six DS4's to absolutely blast everyone. When the helicopters arrive, the *Ride of The Valkyries* is played. The speakers along the driveway from the gym to the viewing area are Martin EM15's owned by Tony.

### Urban Assault: credits list:

#### Executive Producers

Robert G. Miller, Jim Kostopoulos

#### Producers

Gay Black, Shane McLachlan, Peter Rix

#### Director Mike Mullins

Production Director Meri Took

#### Production Manager

Adrienne Driscoll

#### Designer Eamon D'Arcy

Technical Director Peter Savage

#### Sound Design & Operator

Tony Moffat

#### Lighting Design Peter Neufeld

Lighting Operator Geoff Kelly

#### AV Design Michael Hasset

AV Operator Matt Rouse

#### Aerial Display Fred Merrett

#### Staging Co-ordination

Dave Comer, James Moran

#### Assistant to Director

Alana Thompson

#### Stage Manager Annette Alderson

Assistant Stage Managers Adam

Lowe, Alex Slee

#### Lighting Crew Damien Oxley,

Rachael Belbin

#### AV Crew Phil Surtees

Sound Crew David Quinn, Matt

Debien, James Pavey

#### Head Rigger Simon Ambrose

Jands Production Manager

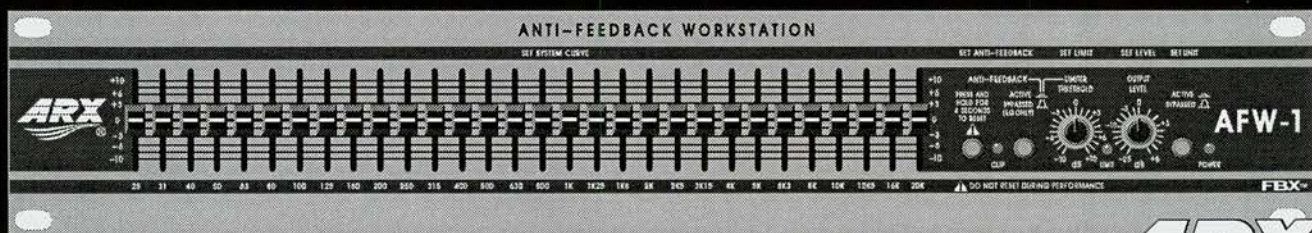
Brian O'Conner

### 23 Helo's in formation...

After the Army Blackhawk tragedy, no-one wanted any hint of a problem with this show. Thus a very extensive brief called 'Safety is THE issue' was prepared, and all helo's flew 3 rotor diameters apart in loose formation. All manner of approvals were sought and obtained before the day. Chris Townsend was the formation coordinator.



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**Homogenous Track Potentiometers** permit undeviating rotational incrementation.

**Micro-Monoceque Construction** enables super-abundant component insertion. Geometric ergonomics facilitate a minimal rackmount footprint.

**EM50081-1-1992 Emissions and EN50082-1-1992 Immunity** Naturally, SX comfortably surpasses these standards.

\* Including all inserts, direct outs, groups, mono bus and anything else we could think of.



## WE SAY...

SX is a powerful, multipurpose mixer with DAT quality sound, housed in a freestanding frame with carry handle. It has 20 inputs (including 4 stereo channels), as standard – enough for most live and recording situations.

**FACT:** SX's 12 mono inputs have UltraMic™ preamps. 60dB of gain range and +22dB of headroom, allows any mic or line device to be plugged in.

**FACT:** SX is a 4-bus mixer. In addition to the mix cuts, two sub-buses allow you to record groups of instruments to multitrack send them to additional speakers, or sub-group to mix. SX also has a dedicated Mono Out.

**FACT:** SX's 8 Direct Outs are swichable pre/post fader so they are equally useful when recording in the studio or at a gig.

**FACT:** 100mm faders throughout give you more resolution and finer control over your mix than the 60mm faders found on many more expensive mixers.

**FACT:** SX's 3-band EQ with swept mid is a real "British EQ". Custom-designed controls at carefully chosen frequencies produce a warm, natural sound. A steep 18dB/Octave High Pass Filter effectively reduces low end muddiness.

**FACT:** Of the 3 Auxiliary Sends, 2 can be pre- or post-fader. This makes SX equally suited to "monitor heavy" live performances or "effects heavy" mixes.

**FACT:** Unlike many small-mixer rotary controls, SX's have been custom-designed to give an even spread and consistent control around their sweeps.

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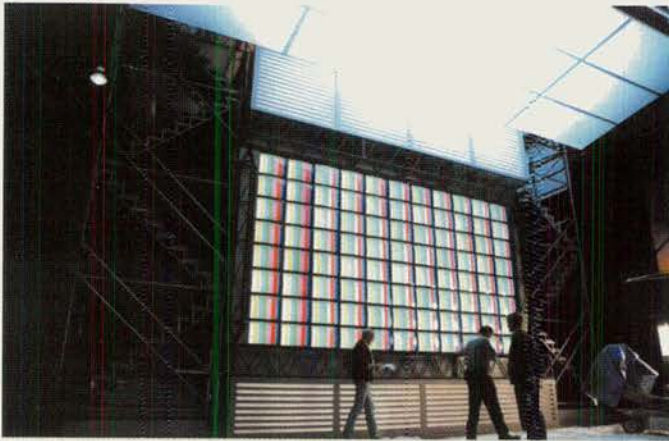
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## Seeing More Than Double

Nearly 90 video monitors were stacked up as a giant video wall for the Commonwealth Bank's latest TV commercial.

The ad, in which 88 talking heads provide the backdrop to live action, was produced by Ibbetson Films for the CBA's advertising agency, Ammirati Puris Lintas, at Mentmore Studios in Sydney.

Ibbetson gave staging company AM Staging only a week or so in which to source and set up 60 monitors and 35 U-matic players. Then the client increased the number of monitors to over 80!

The ad's creative concept relies on the monitors starting and shutting down at exactly the same time. With no time in which to program a computer to do the job, AM Staging's Adam Milwright and Deal Stevenson organised large-scale manual synchronisation. With each player fed by four cables, the sheer volume of cable was astounding.

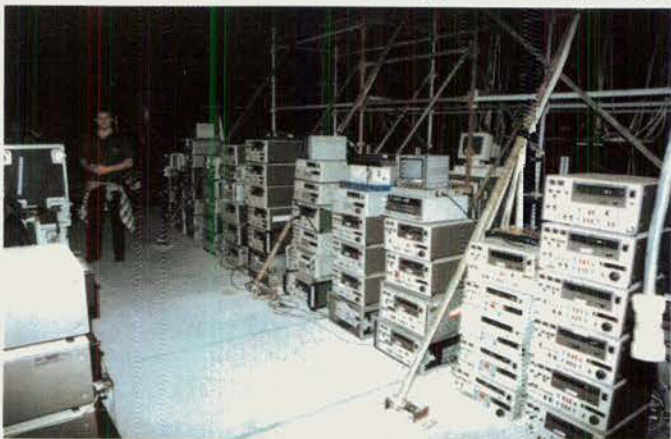
"Every time action stopped, we had to re-cue every machine; with a big production like this, we didn't want to waste our client's

time and money by keeping the crew waiting for hours while we re-set 65 players," said Tim Olah, AM Staging's Manager. "In the end, our re-cuing time for the whole rig was only five minutes and, from 55 takes, we missed the cue just twice."

Final touches to the commercial, including the monitors' display of a large percentage sign, were added during post production at Videolab.

The four day shoot tied up every U-matic player in Sydney. With such a large rigging, crew safety issues were as important as speed. Concerns that the bottom monitors of the eight-monitor high wall might implode owing to the weight were addressed by secure rigging and ensuring that the floor was flat and sturdy enough.

Ibbetson Films' Rob Spencer commented, "I have never seen a bigger video wall in Australia; to be able to feed, re-cue and generate images on so many monitors with such a short lead time was a huge challenge for the crew- we are very pleased with the results."



## Making the MOst at MO

Think Mo Awards and it's not immediately obvious they are run as a charity fundraiser. This year's event was held at the Sydney Entertainment Centre, where production firms Norwest Productions and Showcorp Production Services headed up a long list of volunteers.

With a charity event one immediately thinks of an austere and compromisingly cheap presentation ~ Mo this year surprised with a very effective themed concept from Showcorp's Colin Baldwin, who was the event technical director. This simply entailed 120m of white chiffon cut into 8m lengths and gaff taped to a truss.

As our picture shows, these vertical drops were very effective, and they were used as a set piece too, with the truss and drops raised above the stage during the opening number.

The Mo's are actually a regis-

tered charity which draws most income from the awards, and provides financial assistance to people in the entertainment industry in times of need. Executive director Ken Laing is the main mover and shaker.

The audio came from Norwest Production, with boss Chris  
*(Continued over)*

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**\*Go to page 58.**

Kennedy credited by Laing as 'the most generous person in the Entertainment Production Industry'.

Lighting apparatus was supplied by Showcorp (who also did the staging), Graftons, Daylight International, the Sydney Entertainment Centre, and Premier Lighting.

Other credits go to Cathy Lee for technical direction, Dave McNeil for lighting, Lorin Chapman (Moving Lights operator), and Steve Law for audio design.

### DENNIS BRAHAM AWARD

Significant to the production industry was the inclusion of an award in the memory of Dennis Braham. Dennis passed away in June last year, and was well known and regarded in his role as Capitol Theatre manager, and before that heading up Arena Technical Services. The award was the Dennis Braham Outstanding Contribution to Musical Theatre award, and it was won by Dein Perry.

Adelaide Audio Service's foldback rig has been working hard: some artists' demanding to hear them-



The PA People have further upgraded rental inventory with the addition of a new Soundcraft SM12 monitor console - it provides 12 foldback mixes, and has 48 inputs.

selves include; Badloves, Julie Anthony, Def FX. The core of the system is Martin wedges, SCV graphics and QSC amplification. (08) 362 2322

Audio Solutions in Canberra have added to their inventory with the recent acquisition of two Tascam DA-88 recorders for live applications. The DAs join a Sony SVO-9620 SVHS player/recorder and two NEC XM29 23" data monitors. The recent purchases help fill their recently expanded premises in sunny Fyshwick. (06) 280 6331

Pinknoize Audio have begun production of the Panzer 3 Sound System, it consists of a two box system made up of the PHM top box with 1x 15" in its own reflex enclosure and a 1.75" horn; and the PLM low box with 1 x 18". The package is run through a system controller (passive) but has no crossovers. The PHM runs from 40Hz to 20K, the PLM from 32Hz to 120Hz. Both boxes are the same size and are 'arrayable'. The PHM made its debut on the 1995 Gina Jefferys QLD Theatre Tour and the front bar at the Workers' Club at Tamworth's Country Music festival. Two PHM boxes per side were used, powered by a Jands 920. (067) 322 927

Avcom Staging in Brisbane has recently purchased the new Sony 1292QM Supergraphics projector, one of two available now for hire in Queensland. This completes an already extensive range of video display equipment including Videowall and cube technology, vision mixers and high-end video playback machines. (07) 38461736

R & K Lighting (Melb) have been busy with production of The Mask pantomime at the Forrest Hills Shopping Centre and H.B. Bear (yes, him...) at the Dancenong Plaza; also the Jag Fashion Parade. They have recently sold 12 LSC Multi-Splits to contractors' heaven, Crown Casino. Call R & K on (03) 97207689

Staging Rentals have had a busy month last including; coordinating staging and production for Toyota's Prado launch for Show & Tell Special Events; staging and dressing for the launch of

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Foxtel's music channel "Red"; staging for Optus' music channel launch "Arc Music"; staging for k.d. Lang tour; design and staging for the A.P.A. Book Awards; Media launch for Beauty and the Beast stage show; exhibition and display for Northern Territory Tourist Commission. (02) 519 6300

**Sound Unlimited Productions** (Leichhardt) recent activities; for Halo Promotions at the Metro Theatre including Itchy and Scratchy and Retro; lighting for the Auto Salon Motor Show at the Sydney Showground; Installations

at the new Chatswood Mandarin Shopping centre. Equipment purchases include; 4 x Martin Roboscan PRO1220s, the Martin 3032 PC based controller. They have also built a web page: <http://ourworld.compuserve.com/homepages/venuetech> or (02) 564 2277

**Enterlite** have recently manufactured and sold a 40' x 30' Star Cloth and supplied over 14 kilometres of fibre optics in an foyer installation at the Festival Theatre, also, a new Enterlite curtain was used in a benefit show at the Hilton International. 0418 830393

turing will also supply Alloy Tri-Truss, Alloy Box Truss, Chain Hoists and controls for Phantom of the Opera. Work is also underway to manufacture 200 and 1200 Amp per leg power distribution boards for the Phantom touring rig. (03) 9646-8555.



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**The P.A. People's Rental Division** has expanded its audio and communications inventory, introducing a range of small music system components. The audio hire stock now includes: Soundcraft Folio and Spirit live 3 mixing consoles; Yamaha MX200 mixers and REV 100 effects units; Bose 502A and 502B loudspeakers; EV SX100/200 speaker systems; Peavey XR600E powered mixers, DPC700 amplifiers and paging horns; Shure LX radio mic systems, (capable of up to 13 simultaneous channels); ALE 4-metre and 6-metre winch-ups. They have also added ConcertCom belt packs; single, dual and four channel master stations; squawk boxes; 2-4 wire adaptors; and Beyer DT108/109 and Gamma headsets. Coming are Sawtron 2-way radios, with Beyer headsets and talkback interfaces. (02) 746 2400

CLS has been awarded contracts to supply Sunset Boulevard with; Steel Mono Truss, Alloy Tri-Truss, Steel Box Truss and Custom Alloy 'H' - Truss for transporting Varilites pre-rigged. CLS is also manufacturing custom hoist controls for set storage on Sunset. CLS manufac-



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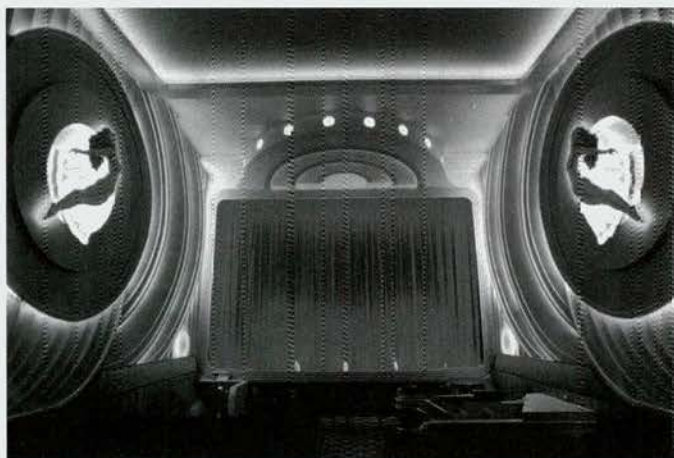
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# THEATRE



Pic: John Therie

## The Grandeur of a Era: *The Hayden Orpheum*

By Madeleine Murray

The restoration of the Hayden Orpheum is perfect. The textures, colours, fittings, and detail are lavish. The place oozes elegance, and obsession with the 30s, an era of speakeasys, jazz, and film noir.

The rose foyer has a curving patterned terrazzo floor, and art deco light fittings. Palm-like columns, and a shiny black counter give lustre to the bar. In the main cinema, intricately patterned recessed ceilings, huge suspended deco lights, a rising Wurlitzer, statues holding lights in niches, and a lush ruched red velvet curtain create a stunning effect.

There are four cinemas. One

original cinema has been restored, and another smaller one is a converted ballroom. Two cinemas have been built from scratch, and look utterly 30s.

In late '86, a DA was lodged to tear it down, and build townhouses. A National Trust listing was put on it. Mike Walsh bought it and spent a year restoring it, with John Love. \$2.5m was spent on the restoration of the main Orpheum cinema alone.

**John Wilson, chief projectionist**

John Wilson has been at the Orpheum since the beginning in '87. He has a storybook background for his job. "My father was a projectionist in Mackay, Queensland, at the

Grove drive-in," Wilson said. "One night, when I was nine, he was walking out the door as usual, and he turned around and said, 'Do you want to come too?' That's how it started. I showed my first show on my own when I was eleven. A la Cinema Paradiso, I used to stand on the film trunks to see out the port, because I couldn't see. I advanced from four spool trunks to three. Then I just kicked them out of the way all together.

"In those days, the film came in 2000', 20 minute sections, and they would join them to make an hour. I couldn't lift those because they were too heavy. When I was doing a shift, they left them in the 20 minutes sections so I could actually lift them onto the projectors."

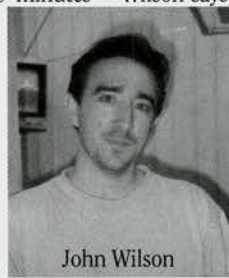
**A dazzling experience**

The star cinema is the main Orpheum. The huge oval room in three tiers seats 750. The seats are on a curved arc, with lots of space between

rows, and big aisles. The Wurlitzer comes out of the floor. The building was always built to have an organ in it, but never did until Walsh took over. There are two curtains, the ruched red velvet one that goes up by seven separate motors, and silver curtains that open outwards.

In the projection room there is a Precept 36 lighting board to dim the different lights around the room, in the ceiling and the niches, and spot on the curtain, before the film begins. An elaborate series of lighting cues and curtain rises precedes the film, so people really know they're at the cinema. "The actual curtains close again after the slides,"

Wilson says. "We show the curtain off again for about two minutes, and we play an overture just like the old days. The lighting changes again as the overture ends." The lights in the room change from daylight to dusk to evening to black.



John Wilson

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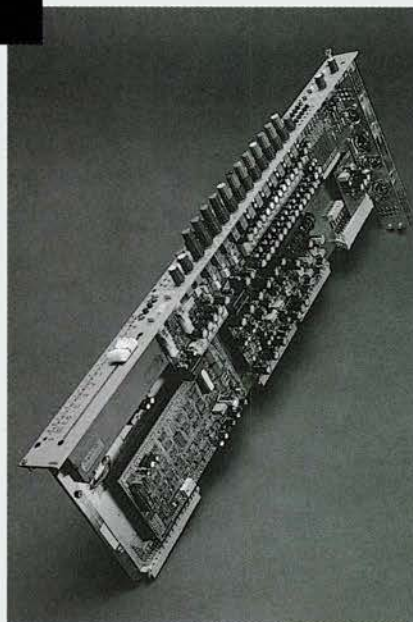
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The ceiling recesses are lit with neon.

The speakers are JBL, the amps are made by Associated Sound in Newcastle. They use the platter system, which holds four hours of film. It never needs rewinding because the film comes from the centre of the reel. The projectors are all Century, modified by Associated Sound. They have an automatic lens turret, which can switch between wide screen and cinemascope. The projectors in the main cinema are 35/70mm. *Baraka* and *Lawrence of Arabia* have been running in 70mm versions here. The projectors can also run silent films at silent speed, which is 18 frames per second.

"The projectors actually have a bit of a history," Wilson says. "They came out of a Darwin drive-in, which closed. Mike wants Century machines in all his theatres, and that's what he has. So when we found out that he wanted 70mm in here, the chase was on to try to find a Century 70mm, which no one thought existed in Australia. Then Associated Sound came across these in Darwin. When we bought them, Associated Sound had replaced everything, replaced all the gears, painted them. They looked brand new."

The projectors were renovated by Associated Sound who do all the Hayden installations. The main cinema has DTS (Digital Theatre System) digital sound, which is basically a CD-Rom time coded to the film. DTS is a co-production between Spielberg and Universal, first used on *Jurassic Park*. Four channels are mounted behind the screen, and stereo speakers along each wall. And a Dolby CP65 provides both Dolby A, and SR sound.

Three out of four screens have an automated system, called Ezymation, made by David Bolton of Penny-Wise, Melbourne. Bolton designed and built these systems, which program curtain movements, over 10 lighting channels, sound, and film. It has three automatic programs. One is to show slides, one to start the program, and one to shut it down. But in between all that, there can be anything up to eighteen steps. Each ad, trailer, and the feature film has its own cue, and its own volume control. "We run it like this, rather than doing like a multiplex, and just running the whole program on one volume," Wilson explains. "You start at a lower level, and it slowly builds up, so that you're ears aren't bleeding by the time the feature starts. We're very conscious of that."

## Short Acts

### THEATRE & CINEMA BITS

From Madeleine Murray

**David Marriner** certainly stays in the news. Marriner had a hectic beginning to the month of July. He gave a press conference with Victorian Premier Jeff Kennett, to announce that *Showboat*, directed by Hal Prince would move into the Regent Theatre in 1998. The \$10m musical will have the biggest cast ever for an Australian show, 90 singers and musicians.

Meanwhile, back in **Marriner's Staged Developments** office, the company secretary was arrested for allegedly setting fire to the premises. About \$500,000 worth of damage was done. "It was a frustrating week," according to **Rob Robertson, General Manager of the Princess Theatre Group**. "We lost a lot, including many papers, and building plans."

**Marriner's Forum theatre** opened in Melbourne, after months of renovations.

Win some, lose some. While Melbourne gets more theatres, **Liverpool** has just lost its only one, at least for a year. A **250 seat theatre** was being built at the Casula Powerhouse, but work has been stopped. The council budget is short \$4.6m, so the theatre project has been called off until next year. This saves the council \$300,000.

Manilla is a tiny town north of Tamworth, on the way to another small town, Baraba. This area has suffered greatly from the long drought. In an unrelated incident, the grand, **80 year old Palais theatre in Manilla** is to be demolished. The Council has tried to hire Army bomb experts for the job, but nothing has happened yet. According to the Northern Daily Leader, the theatre cannot be restored owing to "the state of the building and its design."

1999 is a long way off, but the plans for the **Walsh Bay, Sydney** area, are getting clearer. A 1000 seat theatre will be purpose built. The Sydney Theatre Company is negotiating to manage the theatre, but it would be used by other companies. Two balcony areas as well as stalls will give it an intimate atmosphere.

(continued over)

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## SHORT ACTS (continued)

The brouhaha over the **Bathurst Theatre** versus a revamped City Hall continues. Peter Freestone writes in the *Western Advocate* that Bathurst needs a "comfortable, tiered seating, multi-purpose theatre. The flat floor of the Bathurst City Hall works well for balls, but for theatrical performances or music presentations, it's hopeless. Audience concentration is stretched to the limit as people dodge from one side to the other in an attempt to see what's happening on stage....Revamping the inadequate City Hall is a bandaid solution. If Bathurst City Council has swags of money as claimed recently, investment in a properly appointed appointed theatre should be given urgent consideration."

**Sportspace** is a pleasant guided tour through the Sydney Cricket Ground, and Football Stadium. A slide/sound show conjures up the locker room atmosphere minutes before the game, an actor strolls through five different sets interacting with lifesize figures

and talking about sports history, and sports memorabilia is well displayed in a round room. Spectra vision creates a small figure that moves in a glass box of cricket artifacts, and there is some clever projection of talking heads onto 3D heads. Also a few reenactment type actors pretending to be an Irish barmaid, or a footy fanatic.

It's a nice enough show, three years old, and pretty pricey at \$18. The person that wrote the promotional flier must have seen a different show than I did. "Sportspace is a spectacular combination of interactive entertainment, live actors in character, the magic of technology like multi-screen spectra vision and a wealth of historic memorabilia and information...Sportspace is a major international tourism achievement-Lords and Wembley have nothing like it. Inspired by the hi-tech thrills of US movie studio tours and theme parks, the Sportspace dream cost a staggering \$1.2 million to realise." What?

The **Independent Theatre at North Sydney**, built on the site of an old

tram shed, is supposed to re-open in September. It was used as a small arms factory in WWI. The theatre still needs to raise \$450,000 to finish the work.

Weird problems. The temperature in containers shipping a laminex-covered set from Sydney to a **Singapore trade show** reached over 70 degrees Celsius. The guys spent days ironing back on the laminex, which had all bubbled in the heat.

A few years ago, the **Theatre Royal in Hobart** didn't even have computers. Now they have it all, including an email address:

throyalhob@peg.pegasus.oz.au And a web site: <http://www.tased.edu.au/tasonline/theroyal>

And they have just sold their first tickets over the Net, to someone in England.

**Alex Cruikshank, Technical Director of the Moncrieff Theatre, Bundaberg** retired on Sunday, June 30, after 51 years in the business. Steven Dawson will be the new TD.

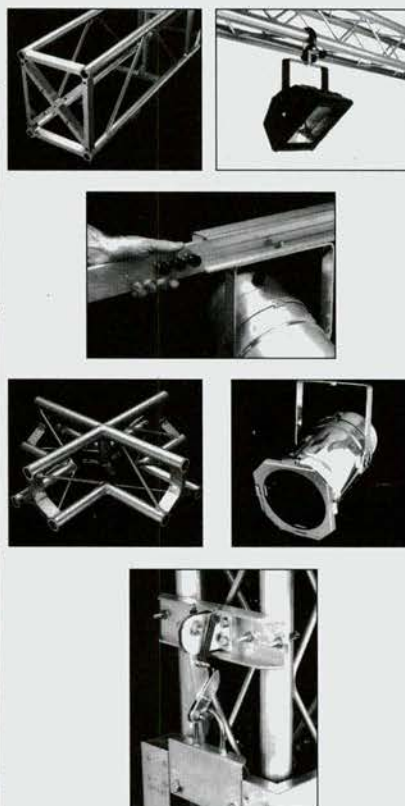
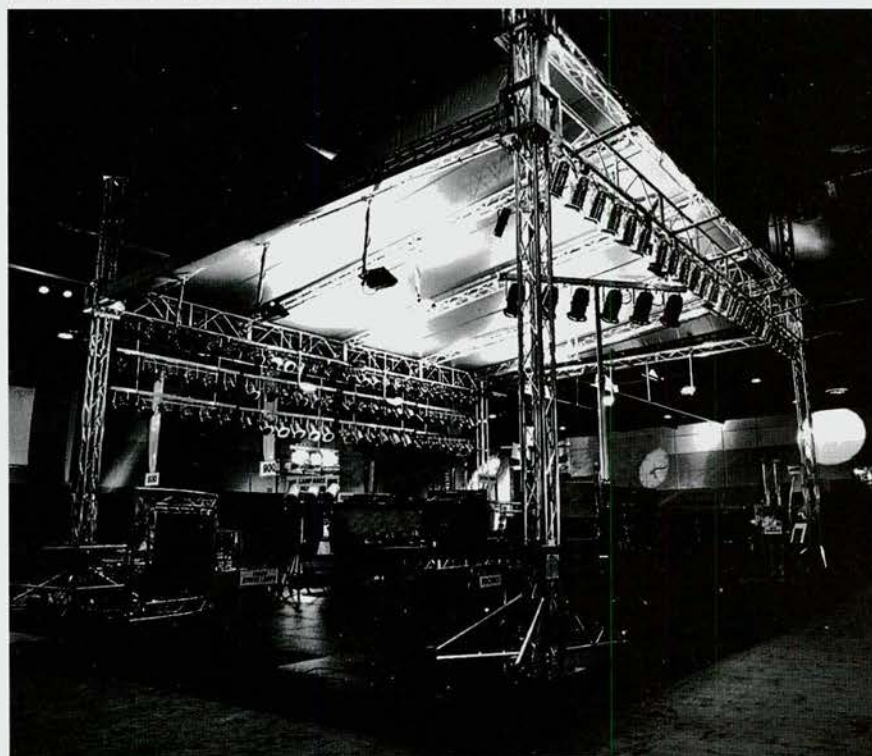
**Lionel Todd** was one of the three architects who finished off the interior of the Sydney Opera House, a job that left everyone disgruntled. The theatres in the Opera House are known to have some basic problems, such as inadequate wing space in the opera hall. Now Todd, 66, has come up with a proposal to build a proper opera theatre at Circular Quay. Sorry, that's all I know at the moment.

The **1000 seat lyric theatre planned for the Crown Casino** has won State government approval, although the design is not finished, and the location has not been finalised.

More casino rumblings. The Comedy Festival director, Susan Provan, and probably a few other people, are worried that the **plethora of theatres in Melbourne** will be a problem. The Casino, which is on the Southbank, will have a \$100m, 1800 seat lyric theatre, and a 1000 seat showroom. Such competition on the southbank could draw people away from the downtown centre, and its various colourful theatres.



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John Ridge in The Malthouse foyer

## ***The Malthouse Theatre in Melbourne***

By Madeleine Murray

**Y**ellow, ochre, and russet autumn leaves lie along the side path of the old three storey brick building. Arts students, actors, and other Melbourne types are eating lunch and reading at tables in the passageway. The front of the building is covered in scaffold, because the two original towers are now being restored.

Inside, the foyer is also a casual restaurant and bar, my sort of foyer. Grey cast iron columns 8m high form a line down the centre of the room, and the walls are beautiful golden aged wood. Above, in a ceiling alcove's some of the old brewery equipment, a big wooden funnel, RSJs, and trolleys moved by cogs and leather gear belts.

The Malthouse is one of those success stories, a big industrial space converted intelligently into two theatres. Built in 1892 as a

brewery and malting works for Castlemaine Breweries, it was later bought by Carlton and United, who donated it to the Playbox. In 1990, the Malthouse opened with two theatres, designed by John Beckett.

Beckett was an English lighting designer and technical director who had been with the Playbox when their theatre burnt down in '84. "It was an unbelievable scene," Beckett said. "The building literally melted." Beckett and the Playbox did a feasibility study of about 20 places without any luck. One day, Beckett had a puncture in the industrial southern Melbourne area. While he was waiting for his car, he noticed the brewery, and a couple of removal vans outside. He started poking around inside, and found it was the last work day. An old man who had worked there for forty years

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## Malthouse

showed him around. Beckett fell in love with the place, threw himself into the project, and eventually the building was donated to Playbox.

### The Merlyn Theatre

The Merlyn was originally the car parking space of the brewery, so it was built from scratch. One intriguing problem with the space is that it's not on foundations. A water table lies underneath, and it was impossible to dig beyond it. So when trucks pass on the busy road outside, the whole grid shakes. The theatre can work in the round, end stage, traverse, or with cabaret seating. Staging area is 16m wide x 12m deep, with the pit open. It seat between 350-500, depending how it is used. All the seating is fully movable, moved by compressed air. The grid height is 9m, and the bars within the grid travel up and downstage. They can be moved into any position within the grid pattern.

The production manager,

Michele Preshaw, showed me around. Preshaw had been venue technician of the Malthouse for two years, and had only been PM for four months. She was enthusiastic, well informed and reads *Connections*. "A big movable gantry called Hilary travels up and downstage in an east west direction, and that's what we use to get to all the lighting positions," Preshaw said. "It's fantastic. You can have three people up there, plus all the equipment you need, hang the lights on the bars. We run looms out to all the lights, patch them on the top level straight off from where we work up there, then it's all soft patched at the lighting desk."

The lights are all Selecon stock, ranging from 650w profiles, up to 2K. The lighting desk is an AVAB 202XP. "The great thing is, we can put lights anywhere, which is just the best," Preshaw says. Bars form the front railings right around the balcony level on all three sides. "It means you can hang a light or a speaker absolutely anywhere,

which is terrific. That's all designed by Beckett." Beckett even designed the little clips that hold the handrails to the edges.

Control position can be placed anywhere in the room. The gantry poses a bit of a problem sometimes, because there is nowhere to store it.

### The Beckett


This beautiful room with hand-made-brick walls, arched windows, and wooden columns is also a versatile theatre. It works as end-stage, shallow, and round, seating about 190. Stage area is 8.5m wide x 11m deep. Grid height is 4.8. All the lighting bars are controlled by an air winch. The only problem is you can't fly a bar during a show because of the noise. All focusing



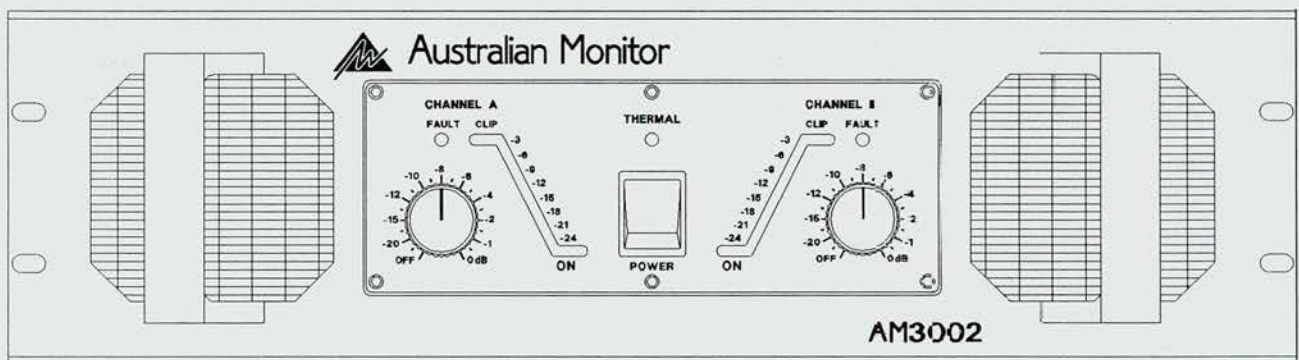
Production manager, Michele Preshaw

is done from a ladder, and there is a ladder rail to hook onto.

All the lighting stock is CCT minuet, upgraded from 500w to 650w. The Playbox Company has some old stock they use. All the dimmers are Bytecraft. The control desk is also an AVAB. The stage manager operates both lights and sound.

The Beckett is part of the original brewery. Beckett incorporated the room's features into his design. All the sides on the side of stage are movable. 

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# Frequency compatibility in WIRELESS MICROPHONES

By: Russell E. Williams

Some time ago, I suggested a method of choosing intermodulation-free radio microphone channels. Here I propose to expand on the radio theory as it applies to the audio entertainment industry will offer some practical approaches to reduce the possibility of interference ...

**Preamble**

Wireless microphones and "in-ear" monitors are subject to the laws of radio frequency (RF) physics and employs frequency modulation which is substantially impervious to noise.

Two station	3rd order	2A - B = ?
	5th order	3A - 2B = ?
	7th order	4A - 3B = ?
Three station	3rd order	A + B - C = ?
	5th order	2A + B - 2C = ?
	7th order	3A + B - 3C = ?

If A, B, and C, are equally spaced, some of these intermods fall on the same frequency more than once. [See: Figure 3 on next page]

A six channel system produces

**Bands available**

The frequency bands available are summarized here:

Band	Emission	Power *	Notes
297 MHz	41 MHz 180 kHz	100 mW	Limited sub-bands
88 MHz	108 MHz 180 kHz	10 W	FM broadcast band
174 MHz	204 MHz 330 kHz	3 mW	TV bands,
208 MHz	222 MHz 330 kHz	3 mW	and
520 MHz	820 MHz 330 kHz	3 mW	conditions apply

\* Maximum power shown is Effective Isotropic Radiated Power (EIRP).

**Some causes**

Text books on radio frequency interference suggest that it may be intermittent because not all of the transmitters or receivers are on all the time. In the entertainment industry, the reverse is true most are on most of the time.

30 combinations of the [2A - B] variety and 60 combinations of the [A + B - C] variety alone!

(continued on next page)

**Intermodulation**

There are two basic forms of intermodulation interference (or "intermod"). It is a process where two or more radio signals are mixed in a non-linear device which produce additional signals.

The first is transmitter intermods. [See: Figure 1]

Even though the conversion losses are typically 10-30 dB down, the resultant intermods may be strong enough to cause a problem to the victim receiver.

To get 60 dB isolation between the transmitter aeriels, the distance between them would be approximately 250 metres at 174 MHz or 45 metres at 820 MHz.

The second form of intermod is in a receiver, when subject to, strong, off-channel signals. [See: Figure 2]

Conversion losses are almost non-existent in the receiver, as it is being confused by the multiple input signals.

Intermodulation products can be analysed mathematically. A small sample is:

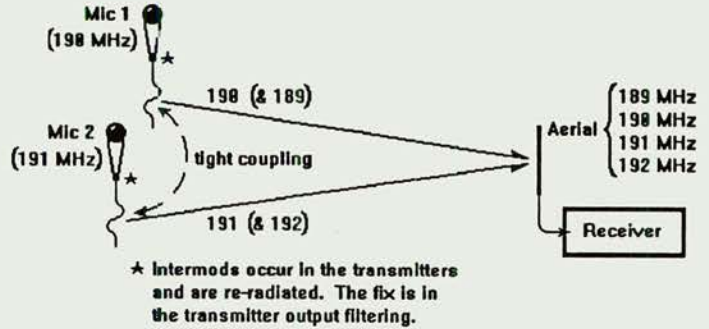


Figure 1: transmitter intermods

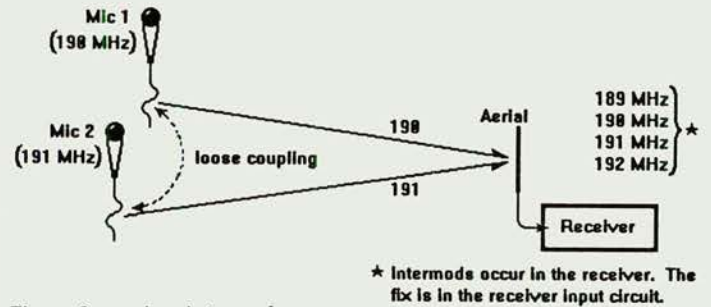


Figure 2: receiver intermods

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So, a simple guide might be: do not use frequencies with identical steps between them as shown by the letter "S".

**Harmonics**

A harmonic is an exact multiple of a lower frequency. Looking at some typical wireless mic frequencies we get:

- Third 3A = ? 3 x 175 MHz = 525 MHz
- Fourth 4A = ? 4 x 20375 MHz = 815 MHz
- Fifth 5A = ? 5 x 4068 MHz = 2034 MHz

Clearly, the third and fourth harmonics of VHF transmitters may fall on UHF receivers.

**Receiver images**

The front-end of a receiver has a mixer which is fed with the wanted radio signal (the RF) and a local oscillator. The mixer output is the inputs, the sum, and difference frequencies. [See: Figure 4] The difference frequency is used for the intermediate frequency (the IF). Let's say you are using 2023 MHz.

Can you use a second microphone on 1809 MHz? No. The mixer in the first receiver sees this as another RF signal and produces; the RF (1809 MHz), the oscillator

(1916 MHz), the sum (3725 MHz), and the difference (107 MHz). That's the IF, again. Thus, 1809 MHz is the "image frequency" in this case.

Some manufacturers use a 214 MHz IF. Now, if the wanted signal was still 2023 MHz and the IF was 214, the image frequency would be 1595 MHz.

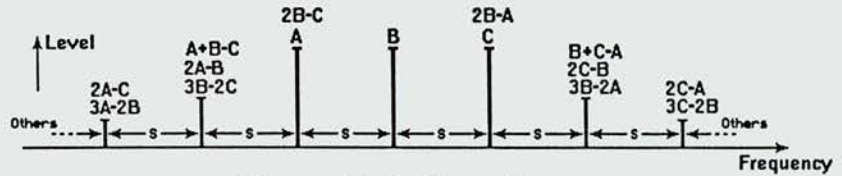
**Frequency separation**

The regulating bodies have allowed 64 MHz per TV channel. Necessary bandwidth given by twice the maximum modulating frequency, plus, twice the maximum deviation. Typical figures would be:

- $(2 \times 15) + (2 \times 75) = 180$  kHz  
250 kHz raster  
25 chan's available in 64 MHz
- $(2 \times 15) + (2 \times 150) = 330$  kHz  
400 kHz raster  
16 chan's available in 64 MHz.

To see if you have sufficient fre-

Figure 3: 3 station intermods



quency separation turn all the receivers on and turn all the transmitters off; then turn on only one transmitter at time. If any receiver, other than the companion receiver, un-mutes, then the operating frequencies may be too close.

**External factors**

Earlier we considered receiver images, and 1595 MHz. That frequency is allocated to 25 Watt vehicular mobile services around Australia. Therefore, interference will be strong, but intermittent. FM broadcast and VHF TV stations may have an effective radiated power of up to 100 kW, while UHF TV stations may have up to 1 MW.

All spurious radiation must be reduced to less than 50 W at the transmitter. Add the path attenuation (FM transmitter to wireless microphone receiver about 95 dB at 10 km for 100 MHz) and the interference potential is very small. Harmonics may still be a source of problems, though; e.g.:

- 2A = ? 2 x 1019 MHz = 2038 MHz  
(FM stereo radio) ("old" freq)
- 3A = ? 3 x 6425 MHz = 19275 MHz  
(TV Ch-2 vision) (in TV Ch-8)

The fourth or fifth harmonic of 4068 MHz, or 4075 MHz, "in-house" pagers, at (nominally) 35 Watts may cause

real headaches if you are using units in the ranges 162 MHz 163 MHz or 203 MHz 204 MHz.

Transmitters close to a receiver can desensitize the receiver. The effect is that the receiver appears partially deaf to the desired signal.

**Transmitters**

Traditionally, transmitters used a crystal which operated at a much lower frequency than the final frequency and was multiplied up. It might start with a 15 MHz crystal, followed by a doubler, a second doubler, and a tripler (giving a factor of 12) to arrive at 180 MHz. Many harmonics may be generated in the multipliers and only the desired one is tuned to.

**Phase-locked loops**

Most transmitters today use a phase-locked loop (PLL) as the reference radio frequency source. [See: Figure 5]

If the inputs to the phase detector are identical, then it is in lock and there is a steady output from it, so the voltage controlled oscillator remains stable. If the output varies, a correcting voltage is applied to the VCO to force to change frequency until the two inputs are identical again.

In a transmitter, varying a voltage into the VCO an audio rate causes the output to be frequency modulated.

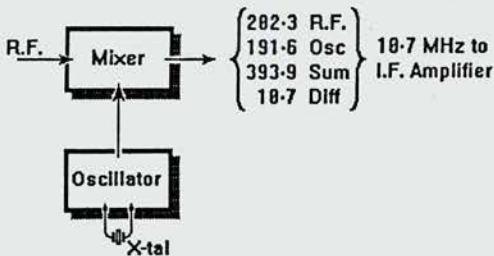


Figure 4 Receiver "front-end"

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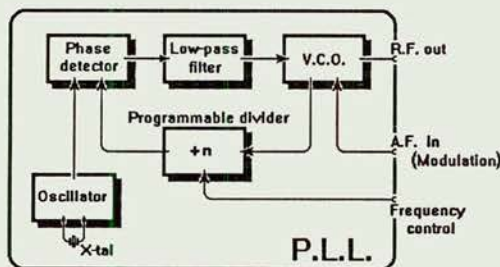


Figure 5 Phase Locked Loop, simplified block diagram

**Receivers**

The primary features of a receiver's ability to perform are designed to consider at least the following parameters:

- The **SENSITIVITY** of a receiver is expressed in terms of the signal at the aerial and is around  $1/100,000$  of a Volt;
- The **SELECTIVITY** of a receiver is its ability to distinguish the "on-channel" from the "off-channel" signals;
- If two transmitters are on the same frequency, the receiver doesn't know which is the wanted signal. It locks on to the stronger. This is known as the **CAPTURE EFFECT** and is why you don't use a hand-held mic and a lavallier mic on the same frequency simultaneously; and
- **DESENSITIZATION** is the reduction in receiver sensitivity caused by strong, near-by, off-channel signals.

Signals from the transmitter can be reflected by nearby objects on the stage or in the building, or people. [See: Figure 6]

Each of the reflected signals arrive at the receiver with a different phase and amplitude compared with the direct signal. The audible effect varies from a slight "phasing" of the sound to a cancellation (or, "drop-out").

**Diversity reception**

Frequency diversity is inefficient use of the radio spectrum and won't be considered.

Space diversity takes advantage of the multi-path reflections and requires two aerials spaced somewhere between three and ten wave-lengths of the frequency of operation (say, six). For VHF service place the aerials approximately 10 metres apart; and, for UHF services, 2 metres apart.

Look at the block diagram [Fig-

ure 7] and compare the typical signal levels [Figure 8].

The signal at 'A' is different from that at 'B' because of the location of the performer relative to the receive aerials with respect to time. The combined output (c) clearly shows that there is no drop-outs due to multi-path reflections because of the receiver system which switches between the signals.

So, by plugging the telescopic aerials into the back of the receiver (about 30 cm apart) there will be little difference between the received

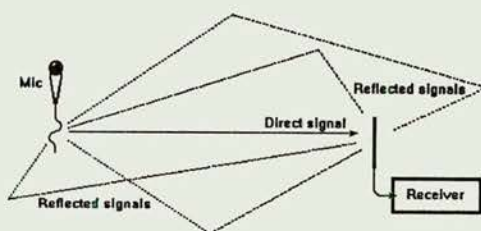


Figure 6 Multi-path signals

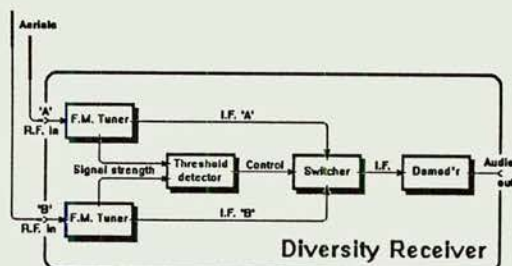


Figure 7 Diversity receiver block diagram

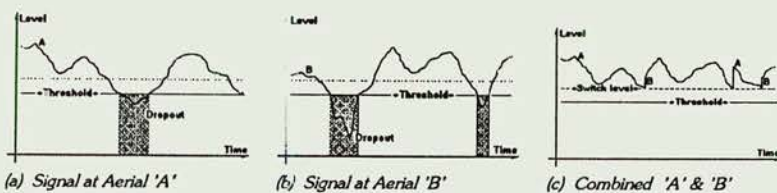



Figure 8 Diversity receiver output

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signals.

#### FREQUENCY SELECTION

##### A theoretical approach ...

We have already looked at some of the maths associated with intermods. A few publications dealing with radio engineering include a look-up table for third-order intermod-free operation. It assumes all channels are available

at a particular location and that the spacing between channels is the same.

If fifth-orders are taken into account, then the number of channels required sky-rockets. All the un-listed channels cannot be used without there being problems.

A suggested set of intermodulation free channels in any one television band can be cal-

Channels needed	Channels required	Operating channels having no third-order intermodulation interference
3	4	1, 2, 4
4	7	1, 2, 5, 7
5	12	1, 2, 5, 10, 12
6	18	1, 2, 5, 11, 13, 18
7	26	1, 2, 5, 11, 19, 24, 26
8	35	1, 2, 5, 10, 16, 26, 33, 35
9	46	1, 2, 5, 14, 25, 31, 39, 41, 46
10	62	1, 2, 8, 12, 27, 40, 48, 57, 60, 62
Fifth-order intermod-free channels		
8	137	1, 2, 8, 12, 27, 50, 78, 137

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culated by the formula:]

where :

$$f_{Ch} = f_{lo} + o + (n \times 04) \text{ MHz}$$

$f_{Ch}$  = the carrier frequency of the radio microphone channel;  
 $f_{lo}$  = the lower limit of the TV channel;  
 $o$  = any value for an off-set between 02 and 14; and  
 $n$  = a number taken from the table above.

If all transmitters had a necessary bandwidth of 180 kHz, then there would be 25 channels in 64 MHz which gives a pick-list of:

- 1, 5, 11, 13, 18;
- or, 16 channels with a necessary bandwidth of 330 kHz and a pick-list of:
- 1, 5, 10, & 12

for  $n$ . You could use channel 2 if really pressed for channels.

**A practical approach ...**

There will be no problems with two transmitters, especially if they are far apart in frequency separation. When a three, or more, transmitters are needed, the "rule

of thumb" solution is: choose a frequency which is  $\frac{2}{3}$  to  $\frac{3}{4}$  the spacing of the widest gap available, but not equalling, or an exact multiple of, the spacing of any two adjacent transmitters; and, definitely work no closer to another transmitter than 15 times the

widest transmitter emission bandwidth.

There may still be a bit of fine tuning, but it puts the new frequency in a working ball park.

**Conclusion**

When you have found a suite of frequencies that work, note them down for future use!

Be sure to inform your supplier what you have when you go to hire/buy additional radio equipment. They should then be able to take your existing frequencies into account.



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She was only the blacksmith's daughter, but she knew my nuts had a left hand thread

Here's a question for all you road warriors out there. When was the first time that you learned that wheels on the left hand side of the truck are held on with wheel nuts that have a left hand thread on them? Well, if you're at all like me it would have been the time when you had to change your first flat tyre.

I had borrowed Colin and David Park's old Bedford J1 truck to do a gig in Mount Gambier with Sweet Pain, and they were supplying someone to help - Gordon, the world's laziest roadie. I'd worked with him before - not a bad guy, but very hard to track down when load out time came around. I couldn't use my own truck because the trusty engine in it had shit itself the night before, grinding and shuddering to a halt in the wilds of Cranbourne, on the outskirts of Melbourne.

The old Bedford was not the sort of truck that you'd normally choose for a long haul like to the Mount and back, but it did have two major points in its favour; one, it was available; and two, it had just had an engine rebuild so there was every chance of it keeping going for 800 kilometres.

Apart from that, though, it was a thought provoking vehicle to

drive. To those unfamiliar with the model, if I just mention the name '1960's Myers Van (Grace Bros in NSW) that should easily bring it to mind. Rounded fibreglass body, single rear wheels, and the most flexible chassis that anyone ever put on four wheels, (and I'm including early Mustang convertibles in that). Turning any kind of corner required a great deal of planning, as indeed did just keeping it going in a straight line. Turn the wheel one way and the front end would twitch slightly and start to veer in the opposite direction. Then just when you thought it was about time to start moving back to the left hand side of the road, it would suddenly move back over there by itself and head for the gutter, whereupon the whole process would start again. At least it kept you awake.

Parking it required the arm muscles of a team of sumo wrestlers, and with a full load of PA, lights and stage gear on board was well nigh impossible. You had to aim it towards the load-in door, stop as close as you could, and then start unloading from wherever you were. Only when it was empty was there any chance of steering it to a parking space.

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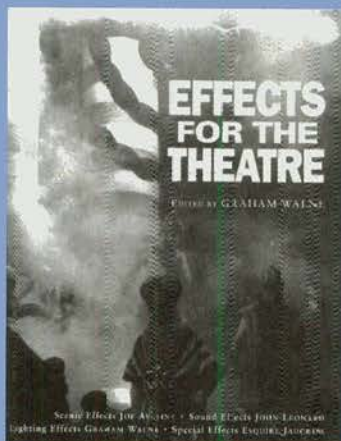
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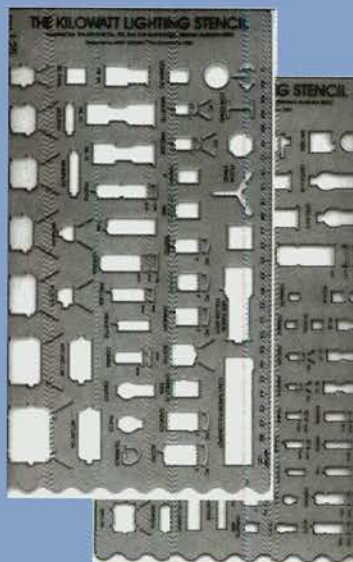
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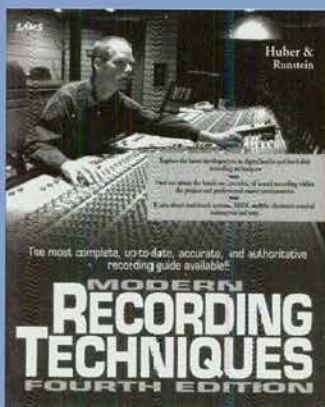
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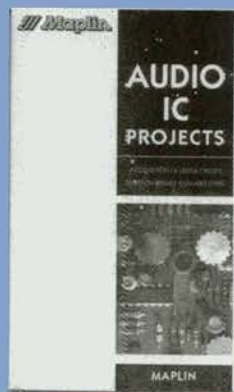
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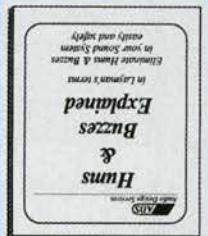
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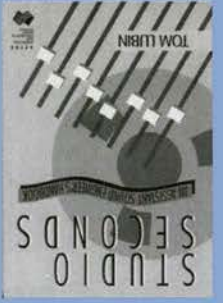


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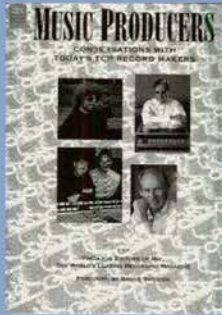
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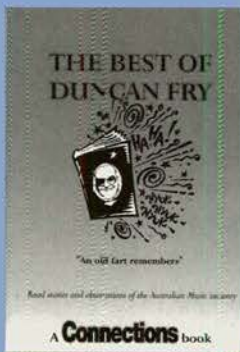
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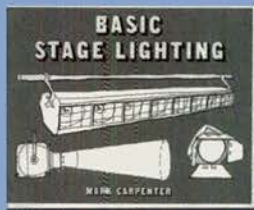


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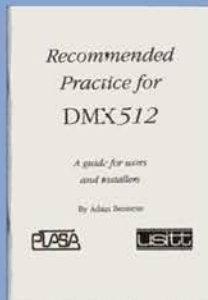


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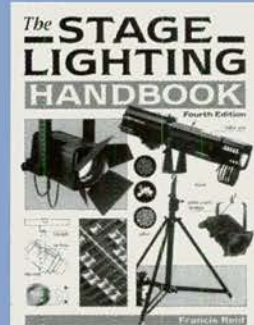
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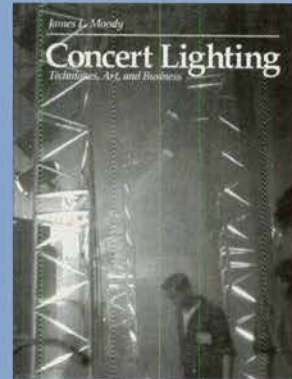
Walk into most large shows today and you see computers at work. All too often systems for lighting, sound, staging and machinery are not connected. This book discusses how different systems can be integrated, and details most different protocols in use today. Invaluable, says Connections editor. 292 pages, illustrated. By John Huntington.



## Stage Lighting Handbook \$39

Fourth Edition, by Francis Reid. The Standard guide to stage lighting. The book appeals to beginner and pro alike, and in this fourth edition incorporates recent advances in technology. The material on the process of designing and implementing the lighting for a production has been completely revised. In 1974, Connections editor Julius Grafton read the first version of this book and went out to light a professional stage play. It's true, it can be done, and this book will help you do it! 208 pages. Plenty of helpful drawings.

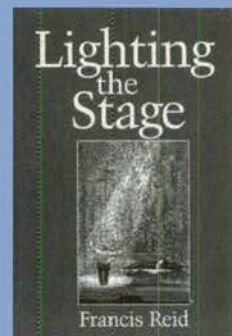
## Concert Lighting Techniques, Art & Business. \$94



This hard back, large format book is a quality item, the first book we have seen to deal solely with large scale concert lighting. Author James Moody is the ideal person to write this, he goes beyond the tour and discusses applications of concert

lighting equipment, techniques to other fields including film, theatre broadcast TV and corporate theatre. Some quotes: "down to earth, honest, easy to understand, information not found in today's books on lighting. This man KNOWS concert lighting". This book has colour pic, sections on overseas touring, pre production, business, stage design, dealing with problems and much more. 'Highly recommended by Connections'. 190 pages, large format, quality reproduction throughout!

## Lighting The Stage \$36



Previous books on stage lighting have tended to concentrate on the factual aspects of design and technology. But for young lighting designers and all those concerned with lighting - directors, choreographers, set designers, costume designers, stage managers and specialist technicians - the equipment and the design processes are only the start. It approaches stage lighting from the human angle. 114 pages, 1995. By Francis Reid.

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# Duncan Fry

think about them. Certainly the designers hadn't!

Passengers originally travelled in the lap of luxury on an upside down milk crate, sumptuously padded in leftover gaffer tape. But one night, as if by magic, a pub chair found its way into the cab. Four sawn off legs later, and truly this was now travelling in the grand manner! You just had to make sure you were holding onto the dash when starting off, otherwise you'd tip over backwards and end up sprawled up against the back doors!

It had one other little quirk that endeared itself to you. You had to unload it to fill it with petrol! Laugh if you must, but it's true. For some unknown reason the body builders had placed the fuel cap under a little trapdoor in the middle of the rear floor area! Honestly, you couldn't think of a worse place for it to be if you sat down and thought about it for a week.

There was a doorway between the cab and the back, and if you set up a couple of 4560's and a horn in this doorway, it was a relatively simple job to run a lead to them from the cassette player!

Even just 20 watts from the old Pioneer modular system was enough to pin the ears back. So on a steady diet of Monty Python, ZZ Top and Pink Floyd, Gordon and I wended our merry way to the Mount.

The trip over there went fine, but coming back it seemed to me that the truck was wallowing somewhat more than usual, and becoming even more reluctant to return to an even keel after a turn. So, I stopped and got out to have a look at things. Sure enough, the passenger side rear tyre was flat.

So, out with the spare, which luckily was full of air. I laid it down in front of the flat tyre, and slowly drove the truck up on to it. This was an old rally driver's trick - it lets you get the jack underneath much easier, and you don't have to pump it as much to get it to the right height.

Then we got the wheel brace out and tried to loosen the nuts. They wouldn't budge. No matter how we pulled on it, the nuts were locked on tight. "It's no good, we need some more leverage," I said, so in desperation we took a lighting bar from the back of the truck,

slipped it over the wheel brace, and both swung on it. CLANG! The wheel nut didn't move, but the wheelbrace snapped in half. "Shit, what are we going to do now?" asked Gordon. I straightened my shoulders. It was time for some positive thinking. "F\*\*\*ed if I know", I replied. We sat down on the side of the road and contemplated our position.

After about 20 minutes, a farmer pulled up. "Havin' a bit of trouble, eh, lads?" he enquired. We explained our predicament to him, and showed him the two halves of the wheelbrace. "Ah, no problems, fellers. I'll just go and weld it for you!" OK, thanks, we chorused. After all, what choice did we have? And he picked up the pieces and drove off. In less than five minutes he was back.

"There you go lads. I've just done a quick job but it should do the trick." I looked at it. It had been cleaned, beautifully welded and ground smooth so well that it was impossible to see the weld line. "Jeez, thanks mate," I said, a little lost for words. (Can this be true, Dunk? Ed) "Here, I'll give you a hand, he said kneeling down in

the dirt. "Course, you know that left hand truck wheels have left hand threads, don't you." he continued as he slipped the wheelbrace over the first nut. With a single left hand twist it spun off. Ditto for the other four! We stood there open mouthed. Left hand threads! Who would have thought it? Only a Chrysler owner, that's for sure. If only I'd bought a Valiant sooner! In less than no time we had the spare wheel on, thanked our benefactor profusely, and were on our way back home. It's a lesson I never forgot.

Oh, the old Bedford had one other little foible. The back doors didn't always close properly. It must have had something to do with all the body flexing. Late one night Col and Dave were coming back from a gig, and somehow or other the doors worked their way open. I guess the twelve mic stands strewn behind them down the highway may have given some poor driver a bit of a surprise, but nowhere near as much as the runaway spare wheel barrelling down the road towards him would have done!



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**ADAM PINCH** has been working in the region for the past five and a half years. Prior to Synchrosound, Adam worked in Hong Kong as Head of Sound at STAR TV, then at JSP Post in Singapore.

**ANTHONY BOHUN** ("Ant" as he prefers to be called, pictured at right) joins Synchrosound after work-

ing as a freelance engineer in Australia, primarily working with AMS Neve Logic 3 at studios in both Melbourne and Sydney. Ant's credits are mostly in the field of television with an emphasis on documentaries and drama including the Australian series "Blue Heelers". Bohun headed up Synchrosound's first feature film soundtrack mixing session on the AMS Neve Logic 2.

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• Marcus Leadley accepts the Golden Reel award from Quantegy's David Williamson



Trackdown were awarded the prize for their work on the Angel's last album *Redback Fever*, engineered by James Cadsky, Terry Manning and produced by Steve James. Although recorded 2 years ago it has accumulated sales of 35,000 in Australia.

The Ampex Golden Reel Award is part of an International program that recognises excellence in audio production but the catch is, to qualify, a record must have been totally recorded and mastered on Ampex tape, in this case 467 and 499 types.



## State of the Art

By Dan Cole

**T**he Central Coast is fast becoming a popular locality to set up a recording facility, Garry Beers is close by, so too Cloud Studios. **JR's Recording Studio** is based at Mannering Park, Lake Macquarie, about half way between Sydney and Newcastle.

"Being located here has worked out well for us," says owner manager John Roy, "Rather than compete in the cut-throat Sydney post audio/recording market, the studio has attracted clients from the region."

Some projects include radio and television networks 2GO & Coast Rock FM, Channel 9 and artists as diverse as Rodney Rude, Steady Eddie to music artists Harry Young and Robbie Krupski.

"Jingles are good because they can be done in a day; I can write, produce and record them quickly, in fact there is a lot of talent in the area to draw upon; vocalists, guitarists."

This recording facility is part of the new breed: compact, very hi fi and viable. Some key technology components and astute work practices make it realistic primarily the efficient combination of a

Yamaha O2R mixer, DA-88, and CUBASE Midi System; "CUBASE is the hinge: it runs all the automation for the O2R and the hard disk recorders or the MIDI.

### Yamaha's O2R mixer

As with many new O2R owners, John Roy is enthusiastic and after describing his set up, I could see why. "With the O2R there are 40 channels running. The DA-88 gives me other tape based channels to bounce down to. I didn't have room for a large desk and being computer based, any console had to fit in. I've seen people put keypads on their desk—that's not for me because I spend too much time at the computer.

"With this set up, linked into the computers, I can easily go from one project to another, with all settings recalled; everything's automated. I had four different jobs on at the same time and its very easy and handy moving between them.

There has been a fair amount of press about this console yet I asked whether there was anything about the O2R that could be different. "I would like to see hard disk re-

coding built in. The O2R is already totally digital, it's all cards—AES/EBU for the CBX-5s; a DA-88 card to set your work-top up—so everything runs off desk. I know they [Yamaha] could build an interface to do it.

### Processing

Having the latest digital gear is fine but it is by no means the whole story, for the finely tuned and discerning ear something else needs to happen,

"I run every thing clinically clean. I run a dual TL Audio valve pre-amp for microphones. The Behringer Composer is a good machine (lots of studios use them). I also use a valve exciter and spectrum enhancer.

### Compression

"The O2R has a four band EQ and a compressor on each channel, I can dial up a different compressor for each signal — that's 40 compressors available. With CDs, today's sound has a very wide dynamic range and the trend is to squeeze in as much in regard to headroom as the CD can take, to make it as loud as you can. Classical music is the opposite.

"I run the compressor with everything I do, to get product into a tight level, mastering to the best my technology allows. If you have more dynamic range occurring there's a good chance it will sound quieter on the radio. If you have got it compressed already their equipment won't compress as much because the levels are right up there.

If you hadn't noticed, we have stumbled into the realm of the black arts: pre-recorded compression rates and their relation to broadcast systems. Each radio station has their own compression and processing 'formula' and are reluctant to talk about it, so for John Roy, the final audition test is in the car listening to the radio,

"I have found from doing jingles you don't know what your work is like until you hear it back on the radio, that's when you start formulating your ideas. A loud kick drum for instance will cause the [broadcaster's] compressor to lower the level as radio usually has a slow release rate—it won't return quickly.

"My latest material sounds good [on radio] as I've got the formula down; keep it warm but don't let

the bottom-end get away. I can control a lot through MIDI but overall, once you get the compression right you have more space.

"I have a lot of respect for English producers; they know how to get warmth and the bottom-end working, although many American productions are getting fuller in the bottom end without breaking up. There is a lot of technology now that will enable this".

### Structure

The space was originally a garage. In the ceiling John has used strammatt board, rock wall in the cavities, double lining for walls and doors, and even two tailgate-glass pieces from the HZ model panel van(!), used between booth and control room,

"I did all the work myself and if I had to pay someone else I wouldn't be able to afford the equipment."

John Roy works part-time at Turramurra Music and is enthusiastic about them, even before he started working there,

"I was buying from them, in fact I used to produce a product called MidiMelodies, MIDI file backing tracks which they used to sell."

### Rodney Rude

A recent project was a compilation video of Rodney Rude live shows, which took over a year to complete, "His permanent roadie has a DA 88 and he records every show; 2 vocals, guitar, audience mics, playback material. We downloaded material into the computer then locked up to Betacam. He likes to have the audience loud, so you hear everything and takes cuts from different nights which makes it difficult, but with automation you can pre-set precise level and use the EQs to match difference audience dynamics."

### Atmosphere

The facility has two neat spaces including a relaxation area, and John Roy has made an effort to make it comfortable, "I try to create a relaxed working atmosphere here; I work efficiently but not so to rush or put off the client. When you are a vocal artist you can't just do a take cold, you need to have a relaxing surroundings."

Rates start at \$45 per hour.

• *John Roy's Recording Studio*, Ph (043) 591418, Fax (043) 59282

## Studio Edit Points

**Trackdown Digital** (Camperdown) recently held an in-situ recording/social event, called 'In Studio'. The idea is to bring together recording artists, recording type-people and friends in a relaxed social atmosphere. Last months In Studio officially marked the completion of the refit of studios A and B and the appointment of Marcus Leadley as studio manager. Singer/songwriter Robyne Dunn was the featured artist.

Mick Wordley from **Mixmaster Productions** (Adelaide) has informed us that his new recording facility is up and running. The studio has been lovingly built from scratch from recycled timbers and features mud brick walls in the main recording room which have excellent acoustic reflective qualities, (Steve Albini agrees). He has moved all equipment from his city studio to the new facility in the hills. Mixmaster Production features a comprehensive selection

of analogue gear including a fully reconditioned AMEK M2000. The living quarters are particularly inviting. Ph (08) 278 8506

**Soul Studio** (Qld) are offering a recording package where 3 songs can be recorded, mixed and pressed for \$599, with full use of facilities and two engineers. The studio has also recently purchased two Drawmer DS201 noisegates and a Drawmer spectral compressor and have announced the option of providing low budget video clips, and the continuation of artists promotions. Soul Studio is a four roomed 24 track digital facility located in Surfers Paradise utilising Macintosh based hard disk recording/editing and sequencing. Contact Daniel Winter on (07) 55 922 222.

**Damien Gerards** are looking to put out a new compilation album, and are looking for bands to record. Contact: (02) 9660 8776.

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Write in Reader Service Number: 171

# Audio Visual In The Defence Department

They make Video's there, like the current number one: "How To Drive a Tank". Dan Cole enlists for a day to find out.

**A**s part of the Army's involved command structure, the Audio Visual Section produces a wide selection of material, managed in Sydney by Lieutenant Colonel Don Keyes. As head of the Section and Executive Producer he has a double responsibility of keeping the operation functioning efficiently and maintaining high production standards. So what do they do and why does the Army have an Audio Visual Department? Read On.

## National Military Training

"Training Command is one of the three major functional commands of the Australian Army." Lt. Col. Keyes explains, "Land Command has the field army; tank squadron,

such as parachute training and the Land Warfare Centre. We are pretty big and spread right across the country and we handle individual training for basic trades and career training advancement such

A/V unit in Canberra which was a mix of everything; a large graphics capacity, photographics, model making."

This A/V unit was recently reorganised in the interest of efficiency, cost reduction and relevance to training customers, with the administration based in Georges Heights Sydney,

"I have a Command Cell consisting of myself, two Majors and a Finance Manager. I reduced a lot of positions and converted what I had left to civilian and it was a conscious strategy, to utilise expertise available in the commercial world. We don't provide for the outside world but we do draw on it."

## Production Studios

There are two production facilities, one in Sydney and one in Northern Victoria in the Albury Wodonga region at Bonegilla,

"We also have a dubbing, distribution and archival centre in Canberra with two people. Canberra is not only an archive dubbing facility but also a conduit to and from the National Film Archive and the Australian War Memorial.

"The Sydney production facility consists of four people: a writer/director, two editors and a camera person. These are non-uniformed people drawn from the industry. Our writer/director Les McClaren is required as a docu-film maker to make training programs."

The main equipment in the Sydney suite includes: Betacam SP Suite based on Sony; BVE 910 Controller; Abekas A70P Character Generator; Sony DFS 500 Digital Effects System and a Media 100 non-linear system (Mac Based).

The unit at Bonegilla in Victoria has a similar structure with five people but has a strong graphics and audio capacity,

"Northern Victoria has a simi-

lar edit suite based on a 910 and a more user friendly character generator (Aston Motif, with upgraded software). Because of its distance from industry infrastructure Bonegilla has to be self contained.

"The new Silicon Graphics system gives us 3D and animation capability and the graphics operators are very good, they get posted around but they do the same work; it's actually a trade." Bonegilla Editor Kim Pohlner added, "Victoria is the graphic input whilst it is more non-linear in Sydney, otherwise, it is the same. We have an operational studio which is set up with a lighting grid for multiple camera use." says Mr Pohlner.

According to Lt. Col. Keyes audio has to be located at Bonegilla because it is isolated from any post production in Melbourne. It is now self contained.

"We [Georges Heights] took on digital non-linear editing and converted the sound position to an editor. In Sydney I might hire out Julian Ellingworth or Mark Winter or Mike Gissing; we don't have sound mixing capacity and I don't want it."

Some equipment used at Bonegilla includes: Sonic Solutions sound suite; timecode HBB DAT field recorder; Sanken Shotguns and Lavaliers; video graphics and animation centre/cell manned by two military graphics illustrators and a Silicon Graphics system.

Prior to the restructure all video production staff, with the exception of one, was military including director and cameraman,

"The retention of skill was a problem because of the high turnover of staff, going to other postings every two or three years."

## The Product

Primarily, the Audio Visual section provides training education and information programs for training commands,

"We do a lot of military history programs; the Heritage Series (part of the History Education Series) is an analysis of campaigns, some of which are of real significance — *Hamel-The Turning Point* was broadcast in Australia



Bonegilla editor Kim Pohlner at the Sony BVE910 edit suite



SPR Lisa Davidson and CPL Leigh Stevenson using the Sonic Solutions sound suite at Bonegilla.

regiments, brigades etc — ready to fight. Logistics Command does exactly what its title says and Training Command, where we are, is responsible for training individual soldiers.

"We have some fifty training establishments such as; school of infantry, armour, military engineering, military intelligence, army health, catering, defence helicopter school, army aviation school, transport school etc plus specialty training establishments

as officer education.

"There are over 1300 courses run per year mainly on the Brisbane-Melbourne-Sydney axis. Training Command has a thru-put of about 25,000 students per year. I'm responsible for film and video production support for all of it."

## Re-Structuring The Unit

"We're called audio visual but that's probably a misnomer because we now concentrate on film and video production. We had an

Head of section and executive producer Lieutenant colonel Don Keyes and editor Jorge Farre.



on the ABC and in Europe via the BBC.

"We have just finished a project called *Say A Prayer For Me* which is a unique look at the Vietnam war through the eyes of the chaplains who were there. We also have a two part series on the Australian Lighthorse.

"We make material for our own purposes but we do offer it outside broadcasters. The material produced by the unit can be publicly accessed through the library

system unless it has a barrier on it; such as *how to drive a tank*; more general things like *Dangerous Loads and Dangerous Goods* are accessible."

This production, in fact won an award at the Charleston Film Festival in the United States and the demand for the section's product is greater than its capacity,

"The more people see the product the more people want it," says Lt. Col. Keyes. "The section produces about 100 productions per

annum, of those, 45-50 are fully scripted productions across all facilities which amounts to about 2500-3000 minutes per year.

"We are uncompromising on standards because quality training reflects quality product."

#### Efficient Economic Practice

Since re-organising the section's structure Lt. Col. Keyes says that productivity has increased dramatically whilst operating costs have reduced,

"Now I have two Majors working as producers/project managers so instead of contracting out for a complete production (including their margins), we do it all our selves. Paying people directly trimmed down our expenditure. We've changed the way we do business."


All of the section's cash budget goes into production or production support and through re-organisation there has been a considerable flow-on effect into the commercial sector via post-pro-

duction and employment of freelancers, as Lt. Col. Keyes explains,

"The budget finishes up in the commercial world; I hire a lot of freelancers, writers, directors — even post production facilities — but I mix in my resources.

"Previously there might have been maybe only five jobs flowing into the market. What I'm doing is increasing production for the local industry. For instance in Darwin, a project, *Survival Training In The North*, is one of three which is fully sourced outside; all I'm providing is a line producer.

"I wouldn't like to give the impression that we are taking work away from the industry, quite the opposite in fact. We must have an in-house capability for the reasons of economics, workload and potential sensitivity of the material.

"Having re-structured and re-positioned, we now face the challenge of the application of multimedia, distributed training and interactive television in a reduced economic environment." 

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Write in Reader Service Number: 141

# HOWARD JONES WORKBENCH

## Why the Serial Copy Management System concept is stupid

In the last two columns, we've been examining issues relating to some of the various interface standards for the exchange of digital audio information. Last month's column looked at length at the way the channel status data in IEC958 is constructed. You'll recall that the so-called sub-codes which can be transmitted across a digital audio interface are contained within the channel status block and that I pointed out that these sub-codes can affect the way the receiving device behaves.

The story revolves around DAT - why, I hear you ask? It's because everybody has one, everybody is trying to either get data on or off one, and because sometimes you can't get your DAT to talk to something else to which it is connected.

DAT was devised as a consumer format, pure and simple. A group of Japanese companies dreamed it up as a replacement for analogue cassette and when they demonstrated working models everyone saw that it made (near) perfect recordings which could be digitally cloned onto the *n*th generation. The American record companies also saw it as a great threat to CD sales. The hypothetical situation was raised of only one copy of a given CD ever being sold, it being digitally copied to DAT by the purchaser and given to a mate, who made a DAT copy for his mate etc etc. This hypothetical held that a chain of perfect digital clones could find its way through the market and a great deal of pressure was brought to bear in an attempt to kill DAT as a format.

Given the investment which the Japanese had already made in bringing DAT to market, they naturally resisted this pressure, but could not afford to simply ignore the demands

of the record companies. Initially, the answer was to produce DAT recorders which only had a sample rate of 48 kHz and these machines are with us to this day. Eventually, the political tug-of-war over DAT saw the introduction of SCMS - the Serial Copy Management System. In a nutshell, SCMS allows the user to make one digital copy of a source recording. Any attempt to make a digital copy of that copy will not work. You could, however, make endless digital copies off the original source or analogue copies of the first digital copy (yes, I think it's incredibly stupid too. Show me the person who can pick when an extra D-A transition has been made - but that's an argument for another day).

So, you now had DAT recorders which could record at a sampling rate of 44.1 kHz, but which sometimes caused problems when you quite legitimately used them to make an extra copy of a tape. When SCMS is activated on a machine, you will see a front panel message such as 'Copy Prohibit'. SCMS remains with us to this day and still causes problems in digital audio interfacing. Incidentally, the question of copy management systems is very much alive. DVD is now being actively promoted as the all-purpose format of the future, particularly as a replacement for VHS. The Hollywood studios, however, are baulking at wholehearted support for DVD until a way is found to safeguard copyright by preventing unauthorised duplication. A new form of SCMS has been proposed!

Let's return now to the sub-codes buried within the channel status data on an interface like IEC958. The SCMS information is contained within those sub-codes and how a receiving device reacts to it will de-

pend to some extent on the age of the unit. A SCMS era machine receiving data on an S/PDIF port will definitely lock out if you are attempting to make a second generation copy. A pre-SCMS machine will probably lock out if you send it either SCMS stamped data, or data recorded at 44.1 kHz. To confuse the situation even further, the receiving device may behave differently depending on whether you connect to AES or S/PDIF input.

Example: the Sony PCM-2500 and DTC-1000 DAT recorders. Basically the same unit, the 2500 was earmarked as a pro unit and the 1000 as consumer. The DTC-1000 will lock out if you send it AES format data or data recorded at 44.1 kHz. The PCM-2500 will do likewise if you connect either 44.1 kHz or AES format data to the S/PDIF port. The 2500 will work, however, if you connect data of either format at either sample rate to the AES input.

The political to-and-froing over DAT as a format killed it in the consumer marketplace. As we know, however, DAT has survived and prospered in recording studios the world over. Generally, therefore, the DAT recorder is the most likely source of trouble in a chain of digital interconnects. Most of the latest digital consoles and workstations will have both AES and S/PDIF ports and will ignore SCMS commands. They certainly don't put SCMS on outgoing data. The main players in the DAT game these days are Sony, Tascam, Panasonic and Fostex. Sony units with SCMS cannot have the Copy Prohibit defeated. Some Tascams can and the others I'm not sure about. As far as I know, all portable DATs (except the very latest Sony DAT walkman) will only record at 48 kHz with SCMS. Brands other

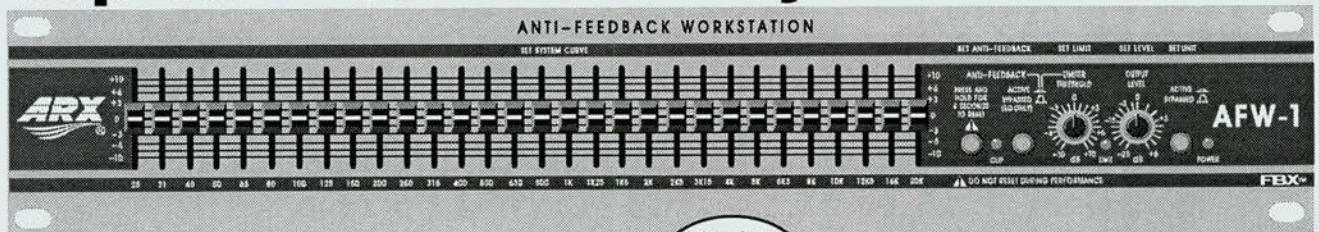
than the ones named above were virtually all modelled on consumer designs and suffer the same problem of only doing 48/SCMS. Some DATs don't mind seeing AES format data coming in on the S/PDIF port and vice versa - they will happily decode and record that data. Other devices may partly work but be prone to muting or drop-outs.

If you are setting up a digital studio for the first time, here are the golden rules to follow:-

- Connect only AES to AES and S/PDIF to S/PDIF.
- An RCA connector may carry AES format data and an XLR connector S/PDIF - read your manual.
- Use cables of the correct impedance running direct from output to input: 75Ω cable (not video cable!) for S/PDIF and 110Ω for AES.
- Where you are using a DAT to back-up data from a workstation, avoid running that data through the console - connect direct to the DAT.
- Ensure that all units are switched to digital input and that the same sample rate is selected on all units. If a switch is provided to select between AES and S/PDIF, make sure that it is in the correct position. Remember to check the clocking options in any software you run.
- Sophisticated systems will require a master video or word clock reference. Intermittent ticking in the audio indicates a clocking problem.
- If you seem to be having SCMS related problems, make a fresh recording on new tape and try using that. If problems persist, you may need specialist assistance.
- If all else fails, have a Bex and a good lie down - it's not easy being a pioneer.

\* Howard runs Studio Solutions, call (02) 9906-4363.

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ARTIST	PRODUCER	ENGINEER	PROJECT
<b>New South Wales</b>			
<b>A#Sharp</b> Jeff Cripps (02) 534 4440 24 Track 1*			
Jasper Stone	Jeff Cripps	Jeff Cripps	4 Trk CD
The Bellhops	Jeff Cripps	Jeff Cripps	CD
The Swing Team	Jeff Cripps	Jeff Cripps	CD
Jay Justin	Jeff Cripps	Jeff Cripps	Demo
<b>Airmotion</b> Guy Dickerson (02) 550 6576 24 Track Analogue			
D.J. Soup	Creative Vibes	Fraser Stuart	Album
Stephen Rae	Stephen	Greg White	Feature Film
Pandora's B ox	Phil Rigger	Phil Rigger	Album
<b>Albert Studios</b> Leesa (02) 9953 2544 48 Track Digital			
Daniel Amalm	John Springate	Samd Horsburgh	
Paula	John Springate	John Springate	New Single
John Paul Young	John Springate	Sam Horsburgh	Forthcoming Album
Wayne Jury	Barry Andrews	Barry Andrews	New Single
Dave Wilkins	Craig Portells	Craig Portells	Forthcoming Album
<b>Audioscapes</b> Jim Blackfoot (02) 564 0099 16 Trk. Dig./Post Prod.Film & TV			
Hansel & Gretel	Burbank Anim.	Jim Blackfoot	Post Sync FX
Hercules	Burbank Anim.	Jim Blackfoot	Promo
Dean Lotherington	Burbank Anim.	Jim Blackfoot	Demo Musical
Geraldine Turner	B.Castles/Onion	Jim Blackfoot	Album
Greg Bowman	Great Big Events	Jim Blackfoot	Sydney Swans 1/2 Time
Brent St. Kids	Jacqui Howard	Jim Blackfoot	National Anthem
<b>Bush Tracks</b> Ruth Miller (066) 891 290, 24Track Recording and Multimedia			
Spliffmasters	Tonkin/Major/Highet	Dave Highet	CD-Plus Album
Kym Pitman	Pitman/Highet	Dave Highet	Album
Llewellyn Rae	Vanya/Highet	Dave Highet	Album
<b>Charing Cross Studio</b> David Sykes (02)387 8362 - 24 Trk Neve 800 Series			
Mental As Anything	Martin White	P.Jones	Album Tracking
Ben Lee	Peter Jones	Peter Jones	Album Trk. & Mix
Smudge	Wayne Connelly	Peter Jones	EP
U am I	Wayne Connelly	Wayne Connelly	Mixing
Something for Kate	Dave Trump	Dave Trump	EP Track & Mix
<b>Crystal Clear Studios</b> Dave Tozer (02) 684 1152 24 Trk. Dig.			
Love & Rebellion	Dave/Band	Dave Tozer	Adats & BRC, 32 Ch. (66input) Console
Eternity	Dave/Don	Dave Tozer	Album Mixing
Cyanide For Xmas	Dave	Dave Tozer	Album
Terrestrial	Dave	Dave Tozer	EP
Myriad	Dave	Dave Tozer	Demo
Sweet Subtufuge	Dave	Dave Tozer	Demo
<b>Damien Gerard Studios</b> Contact Marshall (02) 660-8776 2 x 32/2' 24 Track			
Nancy Vandal	Band	Russ Pilling	Album
C Masuak/W.Gilbert	Band	Marshall Cullen	Comp. Track
J.Stevens/R.Hirst	Rob Hirst	Marshall Cullen	Single
Alabaster	Band	Russ Pilling	Album
Mosquito	Band	Russ Pilling	Demos
<b>Darling Harbour Studios</b> Ike Brunt (02) 211 1474, 24 Track A80 Studer, D88 Sony			
The Angels	Rick Brewster	Julian Slade	Demos
Afram	Band	Julian Slade	Demos
Hobo Posh	Gordon Hunt	Julian Slade	Demos
Relish	Band	Julian Slade	Demos
Empire	Band	Julian Slade	Demos
Lodestar	Band	Julian Slade	Demos
<b>Festival Studios</b> Catherine Knapman (02) 660 4022 2 x Analogue Multi-Tracks or Digital Multi-Track			
Silverchair	Nick Laynay	Nick Laynay	Album Tracks
Shield	Kyle Neven	Mark Thomas	Tape Transfers
*Peter Pan	Mike Harvey	Glen Phimister	Stage Prodn.
Silverchair	Nick Laynay	Nick Laynay	Album Record.
<b>Hullabaloo</b> Geoff (02) 9906 2933, 24 Track, 16 Trk. Protocols			
Disney Aust.	John Berrick	Glenn Heaton	2 x Live Shows
Come Alive Prod.	K. Meenahan	Glenn Heaton	Hanna Barbara Show
Heaton/McGarvey	Heaton/McGarvey	Glenn Heaton	ARC TV Themes
Big Byte	Heaton/McGarvey	Heaton/McGarvey	M & E for 26 Episodes
<b>Lucinda Street Reordings</b> Rick Mostyn (042) 291 169, Dig. Multitrack Computer Based Studio			
Mutton Chops	Rick Mostyn	Rick Mostyn	Live Set CD
Mrs. Peel	Rick Mostyn	Rick Mostyn	Live Set CD
The Voids	Rick Mostyn	Rick Mostyn	Live Set CD
Nabilone	Rick Mostyn	Rick Mostyn	Live Set CD
Tom Campbell	Rick Mostyn	Rick Mostyn	Irish Folk Music
Ross Smith	Rick Mostyn	Rick Mostyn	AC/DG Style Rock
<b>Megaphon Studios</b> Guy Dickerson (02) 550 6576 24 Track & 48 Trk Analog.			
Kingsley Looker	Michael Harvey	Guy Dickerson	Album
Chris Abrahams	Chris	Guy Dickerson	Film (Short)
Stealth	Jim Bonnefond	Jim Bonnefond	Tracking Album
Alan John	Alan John	Guy Dickerson	ABC TV
Bed Heads	Band	Guy Dickerson	EP
<b>Mirage</b> (Mixing) G. Nixon (02) 211 3915, Neve VR Studer 820 Dolby SR			
Bubacu	Jeremy Allum	Jeremy Allum	Album Mix
Lancaster Bombers	Allan Lancaster	Mike Stavrou	Single Mix
Kulture	Matt O'Connor	David Hemming	Single Mix
Sara Kennedy	Russell Dunlop	Gary King	Album - Start
Sidewinder	Jeremy Allum	Jeremy Allum	Single - Mix
Brilliant Creatures	Jeremy Allum	Jeremy Allum	Album Mix
<b>Nu-Town</b> Greg Hopping (02) 516 3306, 24 Track Analogue & 16 Trk Fac.			
Caleb Packham	Greg Hopping	Mark Worrall	Debut Single
Lonnie Gordon	Greg Hopping	Mark Worrall	2nd Aust.Single
The Vaughans	Greg Hopping	Mark Worrall	New Single
<b>Paradise Studio</b> Jason Lea (02) 357 1599, 24 Track Analogue			
David Reidy	David/P Wallis	Adrian Boland	Album Tracking
Purple	Sophie/Carlo	Glen Phimister	Qantas Ads

ARTIST	PRODUCER	ENGINEER	PROJECT
Tina Martyn	Larry Muhoberac	Michael Vidale	Single
Bob Bernard Band	Sue Hutchinson	Mark Roberts	MBF Child.Cass
Goodwin Prodn	Wayne Goodwin	Mark Roberts	L.J.Hooker Ad
Kate Swadling	Kate	Mark Roberts	Tracking
<b>Powerhouse Studios</b> Doug Henderson (02) 318 1220 32 Input Neve Console 24 Trk.Studer A800			
Munk	Powerplay Prod	Doug Henderson	CD Album
Psychrist	Band	John Darwish	CD Album
Dark Order	Band	Gavin Duffield	Album
Larry McGrath	John Hresc	John Hresc	EP
Sacred Hearts	Paul Field	John Darwish	EP
Sister Green	Band/J.Darwish	John Darwish	Single
<b>Q Recording</b> Gordon Sullivan (02) 212 4851, 24 Track, 02R, DA-88			
Tim Finn	Ricky Fatar	Lawrence Maddy	Overdubs
Clouds	Band/Whitton	Tim Whitton	Album Trkg.
Alloy Forces	Al Wright	Al Wright	Album
Red Rivers	David Price	David Price	Album
Strings Plus	Phil Hartl	David Hemming	Orchestral O/Dubs
Northern Line	R.M./Band	Richard Muecke	Album Tracking
<b>R. &amp; R. Recording</b> Robert Zimola (02) 672 4494 16 Track 1*			
C.J. Turner	Mike Kerin	Rob Zimola	Album - CJJM
Kerri McInerney	Mike Kerin	Rob Zimola	Album - CJJM
Australia Post	R. Zimola		In Store Message
Raine & Horne	R. Zimola		
<b>Rathouse Studios</b> Mark Macedone 018 270 731, 16 Track Analogue			
Knucklehead	Knucklehead	Mark/Sid Barone	2nd CD
<b>SAE Technology College</b> Michael Pollard (03) 9534 4403, 24 Trk. Analogue, Sony MXP 28 ch. Dig. Editing			
Multiple Insertions	Band/Bruce	Bruce McDonald	Anarchist Comp.
Bilious Scum	Band/Bruce	Bruce McDonald	Anarchist Comp
Gerald	Band/Bruce	Bruce McDonald	Anarchist Comp.
Poo Poo	Band/Bruce	Bruce McDonald	Anarchist Comp.
Crux of Love	Band/Bruce	Bruce McDonald	Anarchist Comp.
Totem	Band/Bruce	Bruce McDonald	Demo. Poss EP
<b>Sony Music Studios</b> Ross A'Hearne (02) 332 0320 24 Track/Pro-tools			
The Poor	Brent Eccles	Simon Tonx	Demo/PreProdn
Human Nature	Paul Begaud	Simon Tonx	CD Rec. & Mix
Bernie McGann	Lloyd Swanton	Ross A'Hern	Mix CD
Slava Grigoryan		Louise Taylor	Rec. & Mix
Carl Rafferty	Carl Rafferty	Simon Tonx	Rec. & Mix for CD
Doug Parkinson	Keith Walker	Keith Walker	Tracking for CD
<b>Sound Level</b> John, Steve, Randy. (02) 552 3200, 16 Trk. Dig. & 5 Rehearsal Studios			
Feline	Band/Randy	Randy Franz	Demo/EP
Valufka	Band/Kieren/Randy	Randy Franz	Demo & Remix
Five Guys Named Shmoo	Band/Randy	Randy Franz	Mixdown
Wetsuits	Band/Jordan	Jordan Brebach	EP Demp
Ferral Errol	Band/Dave	Dave Rusleigh	Demp/EP
Seven	Band/Jordan	Jordan Brebach	Demp/EP

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# 10th ARIAS: nominations

## PRODUCER OF THE YEAR (Continued)

Chris Dickie *Hallowed Ground/Homebaker* - 6 Mile High; *Restoration-Header*

Chris Dickie (With Baby Sugar Loud) *Nothing's New/Tumble Forward* - (Baby Sugar Loud)

Daniel Denholm *Scene Stealer* - The Earthmen; *Is It OK/Huntingground* - Max Sharam

Robert Dillion/Steve Boyd *Poor Poor Pollyanne* - Steve Boyd And The Preachers

Charlie Drayton *Hard On Me* - Divinyls

Charles Fisher *I Want You* - Savage Garden; *Big Deal/If Only* - Hoodoo Gurus

Ross Fraser *Have A Little Faith/A Simple Life/All Kinds of People/Don't Let It End* - John Farnham

PeeWee Ferris *I Feel It* - DJ Darren Briais VSDJ PeeWee Ferris

Paul Kosky *This Bliss/Peace of Mind* - Neil Murray

Andrew Kuppel (CO) *AK Soul Featuring Jocelyn Brown* - Show You Lcve

Steve Kilbey *Sometimes*-Stephen Cummings

Steve Kilbey/Kev Carmody Kev Carmody - *Some Strong Strange People/Young Dancer is Dead/Images of London/Blue You*

Nick Launay *What If...*-Automatic

Sean Lowmy/Robert Taylor *Psychoactive Summer/Spell On You/I'll be Your Majick*-Def FX

Lachlan Magoo/Kiley Gaffney *Punk Rok Chik*-Kiley Gaffney

Lachlan Magoo/Regurgitator *Kong Foo Sing/Track 1/Blubber Boy* - Regurgitator

Mark Moffatt *I Believe (Wheels Does Turn)* - Clint Beattie; *World Weary Heart/The Dreamer/The Swimming Song* - Mark O'Shea; *Fiddler Man*-Audio Murphy Featuring Slim Dusty

Neil Murray *Spirit/Tjapwurrung Country* - Neil Murray; *When I'm With You* - Fiona Kernaghan

Barney McAll *Luncheon With The President/Here's to the Miracles/Love Comes Back/A Tribute Two* - Vince Jones

Paul McKercher *Armchair Ride*-Tumbleweed

Daz Nuance *Nesson Dorma/Blue Romance/Six Million Pink Flying Saucers/Daz Goes Jaz*

Siew Ooi *Under The Water/Sleeping Dogs/Power of One* - Merril Bainbridge

Garth Porter *1959* - Lee Kernaghan; *A Bushman Can't Survive* - Lee & Tania Kernaghan; *Didn't We Shine* - Gina Jeffreys

Phil Punch *Fireman Joe* - Ed Kuepper

Barry Palmer *Going Down/She Loves She/Valentine's Day* - Dead Star

Mark Punch *Cypress Grove*-I'm Not Your TV; *When I'm With You* - Fiona Kernaghan

Pollyanna & Dave Trump *Keep Me Guessing/Lemon Suck*-Pollyanna

Renegade Funktrain *Joy/Renegade Funktrain* - Renegade Funktrain

Kevin Shirley *Drugs/Ken Carter/Suzi Q* - Ammonia

Louie Shelton *Run Like A River/Better Late Than Never* - Tracey Arbon.  
*Melrose & Vermont/Fly Like An Eagle* - Louie Shelton

Justin Stanley *Two Weeks* - Mother Hubbard; *Master Blaster*-Nikka Costa

Kalju Tonuma *Political Prisoners/Speculator* - Insurge; *Thunder*-The Mavis's

Andrew Thomas Wilson *Lady Marmalade*-Bob Downe

Victor Van Vugt *Soft 'N' Sexy* - Dave Graney And The Coral Snakes

Martin White-Mental As Anything *Nigel/Whole Wide World/Marianne* - Mental As Anything

Martin White *30 Feet Above Shitville Accidentally Kellet Str/Bellydance*

Greg Wales *Dogs Are The Best People*-The Fauves

Tim Whitten *Pick You Up*-Powderfinger

Kevin Bloody Wilson *My Way..Or No Way At All*-TJ Dennis

You Am I *Hourly Daily*-You Am I

ARTIST	PRODUCER	ENGINEER	PROJECT
<b>Soundwarp</b> Meredith Brocks (02) 9905 7144	Mastering		
Solomon Gates	Solomon	Meredith Brocks	Album
Q-36	Q-36	Meredith Brocks	Album
Ade Slade	Adrian Ayre	Meredith Brocks	EP
Unseen	Fraser	Meredith Brocks	Album
Bruce Cale	Bruce Cale	Meredith Brocks	Album
Richard Barakat	I. Moss/Richard	Meredith Brocks	Album
<b>Studio Arts Productions</b> (C42) 849128	Ed Lee. Independent	Recording Studio	
Fifth Sun	Band/Ed Lee	Ed Lee	CD
Dave Benuik	Dave	Ed	Cd
Movement	Band/Ed	Ed	CD
Dillon	Dillon	Ed	Drum Tracks
Altered States	Band/Ed	Ed	CD
Ed Lee	Ed	Ed	Wings Promo
<b>Tracking Station</b> Chris Brocks (02) 281 8899, 2' 24 Trk, Dolby SR, 3 Rooms			
Shiver	Shiver	Chris Brooks	Single
Shiver	Shiver/G.Fleming	Gary Fleming	EP
Anthony Field	Anthony Field	Chris Brooks	Album
Wiggles	Wiggles	Roy Mollace	Album
<b>Troy Horse</b> Michael Lewis (02) 319 1799	24 Track 2'		
Shouties	Hayes/McKersher	Paul McKersher	Album
Simpletons	Band/Trump	Dave Trump	Album
Run Silent	Band/Wright	Colin Wright	Album
Young Achievers Prog.	Ricky Eggleton	Bruce Waite	Comp.
Front End Loader	Bub Fiendish	Suzanne Ireland	Demos
Pennidredful	Band	Suzanne Ireland	Single
<b>Velvet Sound</b> Dave McCann 0414 227 325	24 Track/32 Ch/ 2' Valve Analog		
Skunkhour	Band	Tony Wall	Demos
Gashammer	Band	Tony Wall	Tracking
Kylie Burtland	Band	Tony Wall	Tracking
Cactus Child	Daniel Denholm	Daniel Denholm	Single
Solar	N. Mainsbridge	Nick Mainsbridge	
<b>Wirra Wirra Studio</b> Will Rcut (02) 605 1203, 24 Trk, 8 Trk, Dig. & Mast.			
MacDonald Health		Ian Cooper	Spoken Word Cass.
Video Williams	David Williams	Ian Cooper	Internet Video
Diane Milic	Diane	Ian Cooper	Album
Feb Man	Fab	Will Rout	Album
Suresh	Suresh	Ian Cooper	Jingle
Proboskis	The Band	Ian Cooper	CD Mastering
<b>Queensland</b>			
<b>Digital Paradise Studios</b> Ian Peters (07) 5527 0722, 32 Track Digital			
Rex Harris/Bob Pierce	Bob Pierce	Ian Peters	Gospel Alb.Trks
Marc Dunn	Mark/Ian	Ian Peters	Demo Trks
Lyn Bowell	Ian/D. Toombs	Ian Peters	2 Wk. Alb. Lockout
Thompson Bros	Lee Conway	Ian Peters	Album Trks.
Gold Coast City Ball.	Dawn Ramsley	Ian Peters	Music for Don Quixote
<b>OPM Studios</b> Daniel Seymour (07) 3374 1668, 8, 16 & 24 Trk. Digital			
Custard	Joe Malone	Joe	Demos
Purple Avengers	Daniel Seymour	Daniel	Album
More	Daniel Seymour	Daniel	EP
Feebles Junkie	Daniel Seymour	Daniel	Single
Cunningham	Rob Moore	Daniel Seymour	Demos
<b>School of Audio Engineering</b> Michael Quinn (07) 3367 0143, 36 Ch. Desk/Tascam, 8 Track Mackie			
Alchery	Craig Thompson	Craig Thompson	Album
<b>Seismic Disturbance Studio</b> Craig Thompson & Benjamin Turner (07) 3260 6732, Roland 24.			
Blurt	Benjamin/Craig	Benjamin/Craig	Album Tracks
<b>Soul Studio</b> Daniel Winter (07) 5592 2222	24 Trk. Dig. Tape, Mac Hard Disc Rec. Radio/TV Prod.		
Darryl Lovegrove	Darryl	M. Stills/D. Winter	Album
Scott Whatman	Daniel Winter	Mick Stills	Album
Jason Mackle	Mick Stills	Daniel Winter	Album
Resin	Band	Stills/Winter	EP
Sour Drop	Band	Stills/Winter	EP
John Strauss	Mick Stills	Mick Stills	EP
<b>Suite 16 Audio Productions</b> Murray Lyons (07) 3369 8733	24 Tk Analog/24 Tk. Dig.		
Mark Scholtes	G. Smith/P. Benson	David Champion	Album
Lemonjuice	D. Richards/Band	David Richards	Album
Kristie	Garry Smith	David Champion	Album
Kerfue	Band	David Champion	Demo Songs
Conrad/Jupiters		Julian Lynch	Commercial
Toyota Corolla		David Champion	Commercial
<b>Sunshine Studios</b> Leon Prescott (07) 844 6844	36 Channel Neve		
Crop Circles	Price Surplus	Price Surplus	EP
In Stereo	Price Surplus	Price Surplus	EP
Bliester	Magoo	Magoo	EP
FAT	Leon Prescott	Magoo	EP
Powder Finger	Mark McElligott	Mark McElligott	EP
<b>Vandersound Studios</b> Eric Vandersande (07) 5546 8100, 24 Trk. ADAT/XT, HDR, 02R, CD-R, Multimedia			
B105	Eric	Eric Vandersande	Remast. to CD-R
FB&G	Eric	Eric	Alb. Tracking
White Night	Eric	Eric	Demo CD-R
Anthony Sheridan	Eric	Anthony	Demo CD-R
Ben Burton	Eric	Ben	Demo CD-R
Lachlan Blundell	Eric	Eric	Album Tracking
<b>South Australia</b>			
<b>Disk Edits</b> N. Clark (08) 340 1377	Editing & Mastering		
Epiq	Bojang	N. Clark	CD Alb. Mast.
Leigh Newton	Leigh	N. Clark	Album Master
The Tell Tails	Band	N. Clark	Album Master
Al Perry	Big Star Records	N. Clark	Album Master
Dirty House Records	Dirty House Records	N. Clark	Album Master
Peter Sullivan	Peter	N. Clark	Album Master



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ARTIST	PRODUCER	ENGINEER	PROJECT
<b>Mixmaster Productions</b>	Mick Wordley (018) 822 986 24	Track 2'	
Shock Poets	Mick Wordley	Mick	Album
Jason Waldron	Jason	S.Fieldhouse	Album
Travis & The Heeler	Travis	Mick	Album
Robyn Habel	Robyn/Mick	Mick	Single
<b>Victoria</b>			
<b>Big Beat Studios</b> (03) 9898 5815	John 'Shadow' Toth 16 Trk.	Analog. 1', 32 Trk. Auto Session 8	Hard Disk
Amanda	Toth/Borgeest	Ben Williams	Demos
Incline	Toth/Borgeest	Dave Borgeest	CD EP
Grayce	Toth/Williams	Ben Williams	Demo
Taylor Made	John Toth/DJC	Ben Williams	Demo
Curse ov Dialect	Toth/C.O.D.	Ben Williams	CD
J.F.K.	Toth/JFK/DJC	Dave Borgeest	Demos
<b>C'est Ca Norman</b> (03) 9419 1506	Automated 24 Track		
Pat McKernan	Norman James	Belinda/Genevieve	Live Album
Margy Gibb	Margy	Genevieve	Demos
Meg Ryan	Norman James	Belinda/Genevieve	Live Album
Company of Women	Norman James	Belinda/Genevieve	Demos
<b>RB-X (Aust) P/L</b> Bevan Quelhurst (03) 9429 6199	24/48 Track	SSL Cons.	
Air Supply	Graham Russell	Matt Thomas	Demos
Steve Lowry	Steve Lowry	Ethan Cook	Album
Kage	Kage	Ethan Cook	Demos
Greg Champion	Adam Quaife	Adam Quaife	Album
PVDP	Ethan Cook	Ethan Cook	CD Single
BIB Productions	Doug Brady	Doug Brady	Jingles
<b>Seed</b> David Warner (03) 9682 8488,	24 Tk Analog/32 Ch.	Harrison Cons.	
Tex Perkins	Tony Cohen	Tony Cohen	Album Mix
Verona	McGoo	McGoo	Album Mix
Rail	Rail	Tim Johnston	B Sides
Barker	Barker	Tim Johnston	B Sides
Stephen Cummings	Stephen Cummings	Simon Polinski	B Sides
<b>Sing Sing</b> Kaj Dahlstrom (03) 9428 4622	SSL, Neve 24/48 Trk.	Dig. & An.	
Suiciety	Kalju	Kalju	EP
Head Like A Hole	Robby Rowlands	Robby Rowlands	Album
Rail	Don Fleming	Bill Emmons	Album
Tex Perkins	Tony Cohen	Tony Cohen	Album
Automatic	Nick Launay	Nick Launay	Album
Monique Brumby	David Brady	Simon Polinski	Album
<b>Sound Around</b> Trevor Cronin (03) 9531 3891	Mobile Sound Studio		
Fat Cat's Revenge	Band	Trevor Cronin	CD
Died Pretty	Trevor Cronin	Trevor Cronin	Live Tracks
Gavin Campbell	Winterdaze	Trevor Cronin	Live DJ Recording
<b>Studio 52</b> Paul Higgins (03) 9417 7707	Studio A - 32 Tk.	Studio B Adat 16 Tk	
Tunari	Band/Trevor	Trevor Carter	6th Album
Poesia Andina	Band/Trevor	Trevor Carter	Debut Album
Bad Boys Batacuda	Band/Trevor	Trevor Carter	Demos
Bonafied Rosy	Band/Trevor	Trevor Carter	Demos
Gecko Films	Elizabeth Drake	Trevor Carter	Film S/Track
Cash Backman	Cash	Rowan Jarl	Album Tracks
<b>True Form Music Services</b> Neil Gray (03) 9391 0907,	12 Trk. Analog, 8 Trk Dig.		
Stony Creek Backwash	Band	Neil Gray	Mix Album
Black Dog	Sam Bird	Neil Gray	Demo
Tuff Gang	Band	Neil Gray	Demo
Venison Chilli	Neil Gray/Band	Neil Gray	EP
Oozin Blues	Band	Neil Gray	EP
<b>Wombat Road Studio</b> (051) 454204	Barry Clissold 24 Trk.	Plus full Midi Facilities	
Kran	L. Mathews	Barrie Clissold	Demo Tracks
Project 4	A. Austria	Barrie Clissold	Demo Tracks
John Couzens	John	Barrie Clissold	Alb. Mix/Tracking
Brian Baker	Brian	Barrie Clissold	Album
Sale Opera Co.	J. Clancy	Barrie Clissold	Demo Tracks
Gidgee Rock	R. Stewart	Barrie Clissold	Demo Tracks
<b>Western Australia</b>			
<b>Planet Sound Studios</b> Denise Preston (09) 382 2211	48 & 32 Trk. Dig/24 Trk. Analog.		
Evergreen	John Villani	John Villani	Album
Jeff Brownrigg	Jeff/J.Villani	John Villani	Re-mix Single
Gary Edmonds	John/Nunzio Mondia	John Villani	EP
Oz Connection	John Villani/Band	John Villani	Album Trk.
Tim Minchin	Tim	John Villani	Doc. for Singapore Zoo
The Wily Infadels	Band/J.Villani	John Villani	Album
<b>Troppo Sound</b> Mick Connolly (091) 922 394	24 Track Dolby		
Jimmi Chi	Shane Howard	Kuckles	Corrugation Road
Wayne Barker	Wayne	Troppo	Sound Track
Pigram Bros	Band	Brett Lyons	Debut Album
Br. Kevin Ryan	James Edwards	James Edwards	Church Album
<b>Witzend Recording Studio</b> Alan Dawson (09) 3311818	16 Track		
Mardi Picasso	Band/Alan	Alan Dawson	Album
Taxi Cathedral	Band/Alan	Alan Dawson	Album
Valiant	Band/Alan	Alan Dawson	Album

### YOUR BASF TRADE SALES OUTLETS:

**NSW:** Audio Visual Designs (02)281-2444, Silver & Ballard (02)439-5355, Independent Tape Services (02)436-0666.

**VIC:** CATS (03)9529-3177, Chapple Tape (03)9580-6620, DEX Audio (03)9372-2266, MTA & Assoc. (03)9819-6455.

**SA:** Adelaide Tape Duplicators (08)212-7111, Pro Media (08)276-6793.

**WA:** Ausmag (09)314-1953, Pro Copy (09)375-3902.

**QLD:** Musiclab (07)862-1633, Tek (07)239-4000



# BASF

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# Buyers

## Studio Mixing Consoles Under \$7500

**FENDER** Fender Australia (02) 666 5077  
**MX5216** \$5,000 16 Channels, Four Sub-groups, Stereo Master x Mono Sum o/p, 6 Aux Sends and Returns, 3 Way EQ with mid sweep, Phantom power 100mm Faders, Fan-Cooled Power Supply  
**MX5224** \$6,500. As above but with 24 Channels.

**MACKIE DESIGNS** from Aust. Audio Supplies (043) 291 711

**MS1202 - VLZ** \$995 4 Mono Mic/Line Channels; 4 Stereo Line Channels; 3-Band EQ; 2 Aux Sends; 2 Stereo Aux Returns; PFL Solo; Mutes; XLR + 1/4" outputs; Control Room Monitoring.

**MS1402 - VLZ** \$1495 6 Mono Mic/Line Channels; 4 Stereo Line Channels; 3-Band EQ; 60mm Faders; PFL/AFL on every channel; Control Room/Phones Matrix; 2 Aux Sends; 2 Aux Returns.

**CR1604 - VLZ** \$2995 16 Mic/Line Channels; True 4 Bus Design; 7 Aux Sends; Mid Sweep EQ; AFL/PFL Solo; Control Room/Phones Section; Multi Way Physical Configuration.

**16.8** \$6995 16 Mic/Line Channels; 8 Sub Groups; In-Line Monitoring; 100mm Faders; True Parametric EQ; 6 Aux Returns; 6 Aux Sends; Mix-B Monitor Section.

**PEAVEY** from Australis Music Group (02) 9698 4444

**RSM 2462** \$4295 High performance 24-channel, rack-mount mixer with eight low-noise microphone preamps on the eight mono channels and sixteen stereo line inputs on the eight stereo channels, for up to 52 line inputs at mixdown.

**RAMSA** Ramsaudio Pty Ltd (02) 477 7377

**WR-54424** \$3880. 24 Channel, 4 Sub Groups + Master Left/Right outputs, 4 Aux. Stereo returns and 4 mono returns, 3 Band EQ Mid Sweepable, 27 Aux send + Group and Master, separator phantom power each channel.

**WR-54416** \$3880. As for WR-54424 but Sixteen channels.

**ROSS** from Central Musical Instruments (03) 9315 2244

**RCS-2842C** \$5499. 28 Channels. High and low shelving EQ plus two sweepable parametric EQ's. Eight stereo FX returns/sends with pre/post switching for sub groups.

**SPIRIT** from Jands Electronics Pty Ltd. (02) 9516 3622

**Folio Notepad** \$595 Smallest and most affordable mixer in the Spirit Folio range for Home Studios, Multimedia, Video Post, Location Mixing. DAT quality; im-

pressive EIN and high RF rejection. Four mic and two stereo inputs; Separate Mix and Monitor outputs.

**Folio SX** \$1995 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.

**Folio Racpac** \$2995 High quality rack mount console for home recording, studio sub-mixing and live applications. Ten mic and two stereo inputs; 4 FX returns; 6 aux sends; flexible bussing and group outs; low noise pre-amp.

**Folio Protracker** \$2695 Eight channel rack mount mixer designed to interface to digital 8 track recorders for live tracking. Expandable; 3-way EQ; Aux send; inbuilt limiters on each output; low noise pre-amps.

**TASCAM** from Teac Aus. P/L (03) 9644 2442

**M-08** \$699.00 4 Mono mic/line in's, 4 stereo line in's, 2 out TRS or -10 level RCA, 2 band EQ, 2 Aux sends, PFL + Mute on every input channel, 4 mono FX Ret, Phantom Power.

**M1616** \$3280 16 In - in- line design (32 inputs 8 Buss), 8 XLR Mic W/- Switchable Phantom, bal/un-bal tape returns, 3 band Assignable EQ, 1 Stereo + 4 Aux sends, in-place Solo, optional 16 + 2 Meter bridge.

**M1624** \$4600 24 Channel version of above.

**M-2600/16MKII** \$5665 16 Ch. Distributed in-line with 'flip' switch, 8 buss, 8 Aux sends, 4 band EQ, Splittable between Monitor and/or line paths, Channel Group & L/R buss inserts, Phantom, Optional full Meter unit.

**YAMAHA** from Yamaha Music Australia (03) 9699 2388

**RM800** \$3695-\$4995 16 or 24 Input channels; 8 Groups; 3-Band EQ; 6 Aux sends, 4 stereo returns; 8 Channel inserts; 16 tape returns.

**ProMix 01** \$3995.16 Mon/1Stereo inputs; SPDIF output; 2 effects processors; 3 dynamics processors; 3-band parametric channel EQ; 50 scene memories; on-board processor & EQ library.

Yamaha Pro Mix 01



# Guide

## STUDIO MIXING CONSOLES

Prices current at 1st July 1996. Prices INCLUDE Sales Tax.

### Under \$15,000

**ALESIS** Electric Factory (03) 9480 5988  
**XZ** \$14,000 24 Channel in line studio console. 8 Sub groups, 16 returns, 6 Aux sends.

**DDA** Mark IV Audio (02) 648 3455  
**CS 3** \$7795. Available in 16, 24, 32 and 40 channel frames. Four Subgroups, six auxiliaries, three band equaliser with full parametric mid range. Individual group assign. Left/Centre/Right assign, ideal for surround recording.

**Interface** from \$7995. Available in 8, 16, 24 and 32 channel frames. Four Subgroups, six auxiliaries, four band dual mid sweep EQ. Fully modular design with various module options including stereo digital input module.

**FENDER** Fender Australia (02) 666 5077  
**MX5232** \$8,500 32 Channels, Four Subgroups, Stereo Master & Mono sum o/p, 6 Aux Sends, 4 Returns, 3 Way EQ with mid sweep, Phantom Power, 100mm Faders, Fan Cooled Power Supply.

**MACKIE DESIGNS** from Aust. Audio Supplies (043) 291 711

**24-8** \$8895 24 Mic/Line Channels; 8 Sub Groups; In Line Monitoring; 100mm Faders; 6 Aux Sends; 6 Aux Returns; True Parametric EQ; Mix B Section.

**32-8** \$10,795 32 Mic/Line Channels; 8 Sub Groups; In Line Monitoring; 100mm Faders; 6 Aux Sends; True Parametric EQ; Mix B Section; Expandable.

**PEAVEY** from Australis Music Group (02) 9698 4444

**Production Series™ 2482.** \$11,995. Switchable 48V transistor power, pad and polarity reverse, equalization, high and low mid sweep section and fixed high and low shelving, Eight auxs, 60 mm fader and PFL. A cue section allows you to build an independent headphone

mix from the first four aux buses.

**SOUNDCRAFT** from Jands Electronics Pty Ltd (02) 9516 3622

**Ghost 24** \$13,995 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 with 56 inputs at mixdown; 8 groups; 4 band split EQ with 2 fully parametric mids; 6 mono + 2 stereo auxes; optional meterbridge.

**Ghost LE 24/32** \$11,995 (24ch) As Ghost except for the automation and machine control.

**SPIRIT** from Jands Electronics Pty Ltd (02) 9516 3622

**Spirit Studio 16/24/32** \$7995. (24ch) Professional multitrack recording console. Up to 72 inputs available at mixdown (32ch). Split, assignable 4 band EQ; 6 aux sends; 8 groups, direct outs; External Power Supply

**Spirit 8 16/24/32/40** \$11,995 (24ch) New 8 bus console for live and recording direct to multitrack applications, 40 Ultra Mic Plus Pre's 12 stereo inputs (40ch); 4 Mute Groups; 8 Audio Groups; 4 band British EQ with 2 sweeps; 6 auxes; Integral Meterbridge.

**TASCAM** from Teac Aus. P/L (03) 9644 2442

**M-2600/24 MKII** \$7295 24 Input version of 2600/16. Meter option \$1750.

**M-2600/32MKII** \$8695 32 Channel version of above. Meter option \$2050.

**YAMAHA** from Yamaha Music Australia (03) 9699 2388

**O2R** \$13,995. 40 Input/8 Buss fully automated mixing console; 4-Band parametric EQ & dynamics processor on each channel; 8 aux sends; 64 scene memories; 2 effects processors, MIDI.

### Over \$15,000

**DDA** from Mark IV Audio(02) 648 3455

**Forum** From \$19,274. Available in 16,24,32,40 and 45 channel frames. Eight groups, six auxiliaries. Four band EQ with dual mid sweep. Available with module options including mute mono, stereo inputs. Also available with Midi Mute option.

**DMR 12** From \$87 230. Split console with up to fifty-six inputs. Twelve groups, six auxiliaries, four band EQ with dual mid sweep. Available with VCA Automation, comes complete with stand.

**MACKIE DESIGNS** from Aust. Audio Supplies (043) 291 711

**SR40-8** \$17,995 4C Mic/Line Channels; 4 Stereo Line Inputs Centre Master Section; 8 Subs; 12 x 4 Matrix; 4 - Band EQ; 8 Aux Sends; Snap Shot Mutes.

**OTARI** from Amber Technology (02) 9975 1211

**Concept 1** From \$95,000 Digitally controlled analog console with computer controlled routing and switching. Full automation with optional dynamics. 32-48 Dual-path input channels, 10 Aux Busses, 4-Band parametric EQ, Hi-Res metering.

**Status** From \$55,000 Digitally controlled analog Console with computer controlled routing and switching, console recall, automation with optional moving faders and dynamics. 24-48 Channel, dual inputs, 8 Aux. Busses, 4-Band parametric EQ.

**SOUNDCRAFT** from Jands Electronics Pty Ltd (02) 9516 3622

**Ghost 32** \$16,495 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; 6 mono + 2 stereo auxes;

optional meterbridge.

**CD2020 24 (32/40)** \$56,900 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. **Sapphire 20/28/36/44/52** \$42,900 Inline console with superb audio quality; module options; Unequalled flexibility. 4 band splittable and switchable EQ; 6 aux sends; 60mm monitor fader; noise gate on every channel; optional patchbay.

**T<sup>2</sup>-TACTILE TECHNOLOGY** Audio Visual Design (02) 281 2444

**M4000 mkIIIC24** \$60,000 This virtual mixing system is the first truly affordable professional fully automated, digitally controlled analog mixer. 24 Channel, expandable to 120 channels. Virtual console is easy to use with 48 motorised faders onchannels and monitors, SMPTE/EBU controlled.

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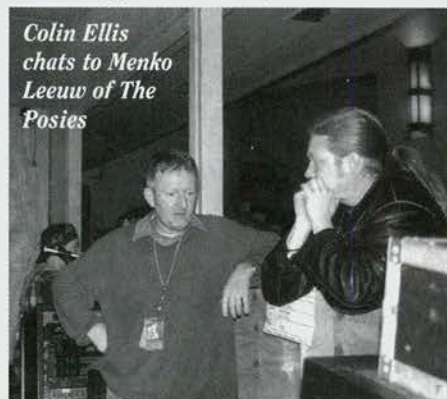
# HOODOO GURUS

## SOUND

The Hoodoo Gurus have been touring the country to promote their new album *In Blue Cave* and in Sydney they played the Enmore Theatre. Front of house was controlled by Colin Ellis, known for his work with *INXS*, *Midnight Oil* and *The Baby Animals*, who was lured from his retreat in Tasmania by Michael MacMartin, the bands manager.

As a warm up, a week of pub gigs preceded the tour visiting Jindabyne, Tathra, Mollymook, Camden, Bowral and Bathurst. Apparently it was freezing cold. A standard Revolver Martin pub tour sound system was used for these gigs.

"It's a great system, it's just a little bit 'lumpier' than these kind of PA's" said Colin. "It's more rock'n'roll, harder sounding and unbelievably loud. It's similar gear to what we're using here at the Enmore, the only difference really is the speaker system. He's got Martin stuff with folded horn, base bins and bi-radial horns as opposed to the Meyer boxes."



Colin Ellis chats to Menko Leeuw of The Posies

Colin was using a Yamaha PM3000 mixing desk which was chosen due to budget. It has forty channels but the Hoodoo Gurus only use twenty for their mic up, eight channels are used for effects units and effects returns leaving twelve channels for the opening act (the American band *The Posies*). Other gear included Klark-Tecnic graphics, DBX limiters and compressors, six Drawmer noise gates, six DBX160X compressors for inserts, a third octave analyser, CD/tape deck, two SPX990's, and one SPX900. Sound gear was supplied by Troy Balance.

For the smaller shows, six Meyer subs, 2x18" loudspeakers per box, were used as well as six MSL's per side. Another four MSL's were added for the theatre shows.

"I like the Enmore as I think theatres are great to play in," said Colin. "They change a bit on the vertical plane as opposed to the horizontal plane, you get more change as you walk down the steps as everything is sloping down to

the stage. It's a nice sounding room maybe a bit dry. If anything it soaks up the PA and you could maybe do with a little bit more power than we have in here.

"For the volume they play at, the Hoodoo Gurus are surprisingly easy to mix. I went into the rehearsal studio at Sound Level and it was so loud it was making my eyes water! I couldn't stay in there for more than a song and a half. They've got good strong vocals and they both use a two amp guitar amp set up whereby when they come to their solos they kick in the other amp. So they mix their own solos, really. They are one of the few bands I've worked with where you can sit back and take it easy, actually listen to it."

Monitor engineer Simon 'Davros' Blanch was using a Yamaha 32/10, what is known as the Lord Nelson monitor system - originally de-



Troggie

signed for the Little River Band about fifteen years ago.

"The wedges are a little bit like the old JBL concert wedge in that they have a timber horn flare," said Colin. "The timber makes it very sweet sounding and they're really nice."

Fairly standard microphones were being used - 57's on the snare drum and guitars, 451's on the high hats to give a crisp top end and a M88 on the base guitar with the DI. Each guitar amp has two

Beta 58's are used with standard 58's for the smaller shows.

"I find the Beta's pick up a little more spill," said Colin. "The standards give a slightly duller vocal sound but pick up less spill."

Whilst in Hobart Colin got to use the Midas XL200 through a company called Production Works and he was very impressed.

## Smashing Pumpkins

The Smashing Pumpkins returned to Sydney to perform three sell-out shows at the Hordern Pavilion, shows which were originally cancelled due to the death of the drummer's father. They took the opportunity to incorporate live video into the performance for the first time. With a full scale US tour under plan, with an elaborate set designed by the avant garde Mark Fisher, it was a good chance to trial ideas.

Video gear was supplied by PSL (Presentation Services Ltd) of the UK and Richard Shipman was the man in charge.

"We're running two of the new Barco 80 100 LCD projectors," said Richard. "They don't run on cathode ray tubes any more, they're all LCD with HMI lamps in them. The two projectors converge onto the one screen to produce one image with double the brightness. All the video material is running off CRV laser discs through a Composite vision mixer."

This means that Richard could generate all the effects himself during the show - the

standard video has the effects applied through the vision mixer.

"I have a bank of monitors, a load of CRV tape players and the vision mixer plus two pro-



jectors," he said. "PSL is the largest company in Europe for hiring video projection equipment and, at the moment, I'm working from their LA branch in Burbank. When we do the US leg, we'll obviously use the American kit but down here, we're using the European kit

Photo: Marty Williams



Photo: Cat Forcer

"It's a beautiful board," he enthused. "It's a cheaper Midas but it's very nice. They can compete with the Yamaha PM3000 level of board and so hopefully a few more companies will look at them. One thing I've noticed about the PM3000 is that as they are about fifteen years old, they're starting to get problems. They get channel problems and a lot of dry joints in them. We're forever pulling channels out and moving them around. Some Midas' would be nice for a change."

After playing Australia and New Zealand for about five weeks, the band and crew depart for a cushy four weeks in Brazil. The band have toured Brazil before as there is apparently a promoter there who is pretty keen on Austral-

ian bands. Other acts that have been there recently include *Spy V Spy*. Colin has worked in Brazil many times but mainly on large shows such as *Rock In Rio*, this tour will be the pub circuit.

"Michael MacMartin is trying to sell it to us as a holiday package!" said Colin.

## LIGHTING

Lighting designer David Platt, otherwise known as Troggie, has been with the Hoodoo Gurus for nearly four years.

"You can call me what you like, I answer to it all," he said.

Troggie has been working in the industry from 1978 and has done lights for numerous local acts as well as a few international names. For this tour he was using about 200 pars (mostly narrows), twelve Golden Scan 3's, seven DWE Duets, six lekos, thirty-six colour changers, two UV's and some groundrows. Quite a lot of equipment for the Enmore.

"The tour is called *Blue Cave* so we're just looking for that blue cave effect," said Troggie. "The original design had to be chopped back a bit due to lack of space. I've never wanted to be a big fan of moving lights. I thought if you couldn't do it with analogue, what's the point? But it's the age of it, isn't it?"

*continued page 62*

which has the same video system. It's pretty much my own gig and I'm given a free hand to move to the music which is quite nice."

Low headroom restricted the images a bit at the Hordern but the rig has been quite versatile. The US tour will play big arenas holding 25,000 and there will be a large 'monolith' centre stage which will restrict the show to only arena venues. There will be two screens either side of the monolith and then a similar screen to the 'letterbox' used at the Hordern.

A Seattle based company called Cutters created the video footage and computer effects to which Richard could create his weird effects. Apparently they were not given a tight brief and consequently a fair amount of the footage is not used. Most of the images are arty and hip but there is some NASA footage of a rocket launch used for *XYU*.

"The vision mixer allows us to run the images at different speeds, forwards or backwards," said Richard. "Even though some of the tracks are 2-3 minutes long, I can just re-loop the images all the time. I can effect the image by turning it into negative, paint it to give an oil effect, and mix with other images. It's similar to Photoshop without the high resolution. I have set pieces of video which I use for certain tracks so it's pretty much the same most nights, depending on how I do it!"

At the Hordern, Richard had to have his projectors hung on the downstage lighting truss making it more difficult to rig. Normally he would

have his own truss downstage about 3ft from the one used. They also hung down a bit low and were a bit obtrusive but that couldn't be helped. At very small gigs they have to be run from the back of the room. The video screen at the Hordern began from the floor whereas normally it would start at about 5ft.

"I get sick of going to rock shows and just seeing people on the screens," said Richard. "This is more like another lighting effect. Sometimes it's a bit of a play-off with the lighting designer when it comes to light levels! Andy Liddle, LD, has had to change systems so many times. Unfortunately, and he's certainly had



Photo: Cat Forcer

his work cut out. Billy doesn't like the light down on them or on their faces, so the plotting is quite a challenge sometimes."

Andy is an acquaintance from long back who I thought was a bit edgy about doing an interview. A couple of days later he phoned me to say that he had walked off the tour in New Zealand citing 'differences with the band'. Consequently there is no lighting interview. Andy had only just taken over the job as LD from Loz Upton who had been with the band a few years. He too had left the job for the same reasons.

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Write in Reader Service Number: 119

# k.d.lang

Jacqueline Molloy speaks to lighting designer Brent "Ski" Lipp

On a stormy winters night in Perth, k.d. lang performed a sultry set as part of her "All You can eat tour". While the Canadian crew members remained dressed in their shorts and T-shirts, the local crew piled on their winter woollies and grew a bit anxious as lightning got closer; hoping the storm wouldn't wreak havoc on electronic equipment.

k.d. lang's Canadian lighting designer and operator, Brent "Ski" Lipp, kept his cool as the storm hit. Two of the four follow spots went down, the emergency house lighting flickered on and off and several of the robotics literally lost the plot.

The Concert Hall wasn't the only venue to feel the impact. Up the road at His Majesty's theatre a lightning induced voltage spike cooked the keyboard on the Galaxy control desk. This prevented the crew from doing the softpatch during a focus session for STC's controversial production of David Williamson's play "Heretic".

Later that night I was to experience storm problems of my own. A lightning strike took out the monitor modem and mother board on our desk top computer at home.

Fortunately at the Concert Hall the squall passed quickly, and within fifteen minutes all equipment was back on line and the audience had barely noticed.

k.d. lang's remaining two Perth performances went off without any further disruptions from the elements. Though for a moment at the start of the second gig I thought I may have mistakenly wandered into a Tom Jones show, when a pair of red satin knickers were thrown at k.d. by an enthusiastic fan. Her stage crew took this with good humour, accustomed to the level of adoration that k.d. receives from her female fans.

The whole feel to the show was theatrical and stylish. Red legs and borders dominated the stage and were complemented by pale blue swathes of fabric hung on either side and above, billowing parachute fashion. A black backdrop completed the set with two red legs draped in front of it. Since the aim was to be able to turn any space into a theatre, all the legs and borders were hemmed with velcro to allow for easy length adjustment.

Ski gave a wicked chuckle at the suggestion that the



Photo: Mary Williams

stage looked like a boudoir aimed at seduction and he assured me that was exactly what k.d. wanted and the concept of a red set had originally been her idea.

Having a mainly red set made gel choices a little tricky for Ski. "The drapes are hard to change the colour of, so most things I do complement the red rather than change it". He used a lot of lavender to enhance the red, carrying the lavender theme into the main band wash with Lee 142 (Pale Violet). He also used Lee 181 (Congo Blue) to give a dramatic edge to the red. He created a vibrant contrast to the red by using deep blues and ambers on the pale blue drapes.

As if an almost entirely red set wasn't enough of a lighting challenge, Ski had to deal with

being the third LD hired for the tour; coming on board at the last minute. He was brought in just in time for the bump-in of the first gig in Vancouver. He had spent the night before, which happened to be New Year's Eve, operating the Vari\*lites for the band "Phish", in Madison Square Gardens, New York.

k.d. lang wasn't happy with the first LD hired for the tour and he only lasted a week. Graham Mickel was next to come on board and he stayed around for four weeks, leaving due to other commitments.

Mickel had already completed the design for the tour which Ski inherited and built on, adding his own touches. Ski naturally would have preferred to have come on board earlier rather than being handed a *fait accompli*. Fortunately he liked what Mickel had done.

"The feel to the show only changed a little between Graham and myself. After I joined, k.d. added some new songs so I got to light those from scratch, which was great for me artistically."

For this tour the key word to Ski's approach to the lighting was "restraint", allowing k.d. to be the main visual attraction. His use of robotics was unobtrusive, "Graham had designed it so that the robotic moves should be mainly unseen and I ex-

*continued page 62*



Brent "Ski" Lipp

**HOODOO GURUS** *continued from page 59*

The moving lights were controlled by a Scancommander whilst a Jands Instinct 60 way did the rest.

"I love the Instincts, they're my favourite desk," Troggie said. "I like the way they are set up and I've been using them since they first came out so I know them back to front. I'm a lazy person when it comes to learning something else but I get by. I've got Colourset colour changers as they're the best. You can drop kick them across the venue and they still work (*not recommended by Connections*). It's not a fast and furious show, I wouldn't even know what a button looked like."

The backdrop of an island with a smoking volcano was made by Hancock Events and was enhanced by the use of UV. Lighting equipment was supplied by Chameleon Touring Systems who Troggie couldn't praise enough. He was particularly impressed with Rachael Belbin, also mentioned in this month's Toyota story, who programmed the moving lights.

**Tour Personnel**

**Personal Manager** Michael MacMartin **Tour Manager** Mick Mazzone **Monitors** Simon 'Davros' Blanch **FOH** Colin Ellis **Stage Tech** Billy Hibben **Lighting Tech** David 'Troggie' Platt **Stage Tech/Production Manager** Clem Ryan **PA Rigger** Glen Browning **Lighting Rigger** Craig Martin. **Moving LX** Rachael Belbin.

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**k.d.lang** *continued from page 61*

panded on that concept which I think works well for the type of show k.d. does".

The robotics were used mainly to provide a choice of colours both on the set drapes and the main stage area. They were only used for gobo washes a couple of times during the show and that was towards the end. Since they hadn't been used much they had a big visual impact when they were. "k.d.'s not a big fan of gobos so she had a major say in when they got used and how they were used".

Ski toured a Jands rig picked up in Sydney, but brought the Strand Colourcall scrollers with him from Canada. "The Colourcalls run exactly to my cues in the Artisan without having to do any replotting. This way I also get to have the exact colours that I want. Every country will offer you something slightly different in terms of gels and I was very specific with what I wanted".

"Since I pick up the same rig in every country, I just have to tour with a disc and the scrollers, which makes life that bit easier." The show tours with a Canadian crew of 12, picking up 2 extra lighting techs and 2 audio techs in each country.

It is a relatively small rig consisting of 48 dimmers, 32 Par Cans, (17 with colour changers), 12 VL5's, 12 VL6's, 4 VLM's, 10 lekos and 2x3 way cyc units. Ski also used 2 truss spots and 2 FOH spots which remained on KD most of the time. The entire rig was controlled by the Artisan desk operated by Ski.

A back-up Artisan desk remained backstage fully programmed and up dated daily. Fortunately there was no need to use it, making it available for the crew to play *Doom* on its Mac computer. At last count lighting were slowly catching up to audio's kill rate!

Ski has worked with k.d. lang on and off for a number of years, having previously lit her "Ingenué" tour. He met k.d. quite by chance when they were both starting out in the business. He happened to be dropping off some equipment for a gig k.d. was doing when she discovered that he had one of his motorbikes in the back of the truck.

They spent the next hour crammed in the truck revelling in their mutual love of bikes.

"I'm not sure if k.d. remembers that meeting, I must ask her sometime. It was a long time ago for both of us" he laughs.

Ski was born in



Photo: Marty Williams

a small farming town in central Saskatchewan, Canada. He started out lighting club acts and gradually shifted into the rock scene. He moved briefly to Alberta and then to Vancouver where he now lives.

He spends a good part of the year working in the US, due to the limited job opportunities in Canada. "You'll generally find that most Canadian techs spend part of the year working in the US, assuming of course that you can get a Visa." Ski is able to have a Visa through the US lighting company he works for. He says that is a common way for a lot of Canadian techs to obtain Visas.

By now the "All you can eat" tour will have resumed in the US and be spending the European summer doing the "Sheds": outdoor stadiums that seat around 8 to 10 thousand. At the conclusion of the tour Ski will probably head back to his regular gig as LD of the band, "The Bare Naked Ladies". I didn't ask!!!!



Photo: Jacqueline Molloy



# LIGHTING

## MONTHLY

August 1996

Edited by Catriona Forcer

## BARRATT LIGHTING SCHOLARSHIP UNDERWAY

It starts this month, when Jason Waide (*right*) departs his home town of Lismore to a virtual training program with some leading Lighting Designers here and in London.

Launched at ENTECH, the Barratt Scholarship will train a young lighting designer via paid employment secondment. Jason was chosen from a strong field of applicants, and starts his program late August in Sydney.

He will work on productions alongside LDs, starting with the AO's *Tales of Hoffman* - along-

side Heather Carson.

He will also work with Chameleon Touring Systems, assisting on the transfer of *Phantom* to Brisbane.

A varied program is essential, to expose Jason to as many disciplines and as many LDs as possible. The whole program runs until November 4, when Jason goes to London for three weeks work there. His Scholarship concludes when he returns to Australia in December.

The Scholarship pays Jason a wage and expenses, and courtesy of Stage & Screen Travel, provides a Qantas return ticket to London.

### HELP NEEDED:

Funds are required! Donations to: **The Roger Barratt Lighting Scholarship, c/o Connections, PO Box 439, EPPING, NSW 2121.**



Jason Waide

### DONATIONS RECEIVED TO DATE:

**ALTMAN STAGE LIGHTING CO.** (Robert Kliegl \$100)

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**HERKES ELECTRICAL** (Tim Kennard \$100)

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**HIGH END SYSTEMS SINGAPORE P/L** (John Adams \$100)

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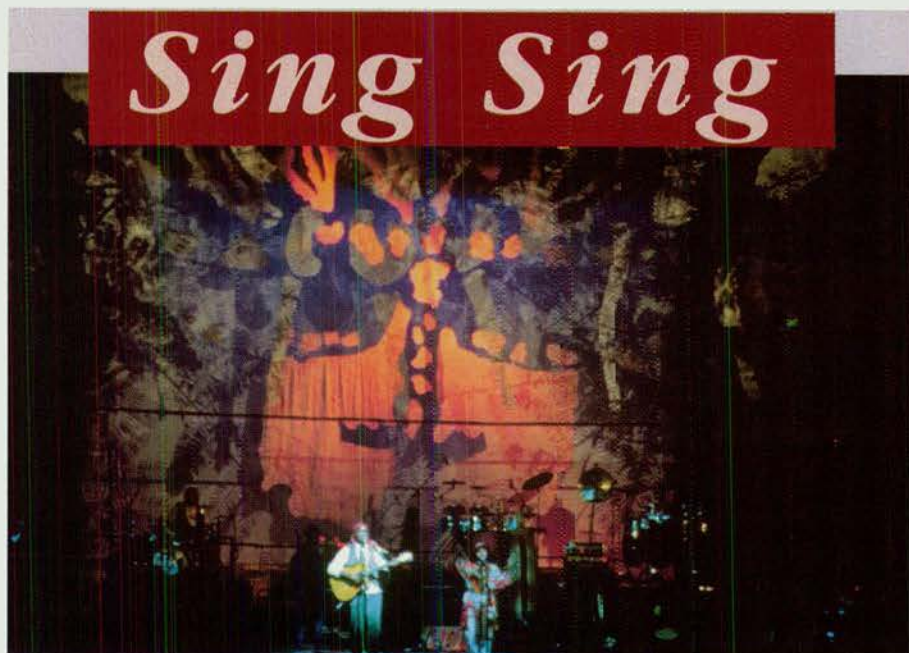
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*New donations (and pledges received) will be printed monthly in Connections.*



## Sing Sing

### A Celebration of the Traditional and the Contemporary

The concert *Sing Sing* was presented by the Victorian Arts Centre in association with Next Wave Festival and featured young, emerging and culturally diverse artists. Papua New Guinea, Torres Strait Islands and Aboriginal music and dance culture were brought together to perform with a reformed Not Drowning, Waving.

One concert was performed at the State Theatre, Sydney, and three were at the Concert Hall, Melbourne, two of which were public concerts and one was a daytime schools concert. Two Concerts were also played at Port Moresby, Papua New Guinea.

Lighting designer for the concerts was

*continued on page 65*

# the professional choice



## Futurescan III CE/CED: Specifications

Lamp type:	(CED) GE 150W 4000K Arc Discharge (CE) 250W 24v A1-223/M33
AC Voltage:	(CE) EEC 230/240/250v 50/60Hz US 120/130v 50Hz (CED) EEC 230/240/250v 50/60Hz US 120/130v 50Hz
Power Consumption:	180 VA 0.8 amp 230v
Motorised Colours:	White + 11 Dichroic Filters
Motorised Gobos:	Open + 11 Gobo Patterns
Remote:	CE: Lamp On/Off CED: Shuttered
Controlled:	Via DMX 512 or Internal Programmes
Cooling:	High Flow 12v DC Fan
Input:	3 pin XLR (In/Through)
Casing:	Aluminium/Moulded End Caps
Mounting:	3mm bar with locking adjuster
Dimensions:	(LxWxH) 480 x 260 x 195
Weight:	10 Kilo
Shipping Dimensions:	(LxWxH) 540 x 410 x 300
Packed Weight:	12 Kilo

	open		open white
	laser		red
	star		blue
	slice		green
	tunnel		yellow
	heart		cyan
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	slash		UV purple
	bubbles		magenta
	segment		aqua

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Designed with professional users and installation applications in mind, Pro Futurescan III has been developed using two of the finest lamps available. The CE uses the M33 250W long life Halogen lamp, while the CED opts for the 150W 4000K Arc Discharge lamp producing a stunning 6000 hours of lamp life.

Combine this with a colour palette of some 12 shades, projected through

precise, high quality optics, shaped by a further 12 separate gobo patterns, and it is clear that the Futurescan III has the power and abilities to impress the most discerning audience.

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# Sing Sing

continued from page 63



Chris Paterson whilst his company Picture This! Productions were in charge of producing a video documentary.

"It was a little bit different from your standard concert," said Chris. "It was a combination of some very traditional indigenous music plus traditional dance from the three regions. Plus there was some more contemporary dance choreographed by Albert David and some more contemporary music based on the work of *Not Crowning, Waving*."

"In terms of lighting we had three or four different formats to cover rather than just having a concert rig or a dance rig. We needed a concert rig which could provide fairly straight washes for the traditional stuff as well as flashy, chasing lights for the more up tempo bits. The same was needed from a dance rig which could provide rotating gobos and lots of projection."

Ian De Gruchy did a projection concept for the show with the lighting and projection created a multi-textured, layered look to the show. Two gauzes were used, one upstage and one centre stage with a cyc behind it giving several surfaces to be utilised by the lights and projection work.

Equipment was pretty much the same in Melbourne and Sydney although the stage set up had to be 'compacted' for the State Theatre. Lighting was duplicated as much as possible with gear coming from Chameleon in Sydney and Active Light in Melbourne. The rig incorporated fairly standard

concert washes and back light with heavy colour washes as well as side light for the dance numbers. Nine Golden Scans were used (GS2's in Melbourne and GS3's in Sydney) to provide for the up tempo number.

"We also used them a lot in the dance numbers," said Chris. "Not as moving lights themselves during the numbers. A lot of people use wiggly lights just for the sake of having them move and there is a time and a place for that. There's also a time to use them as specials, for gobo projections and washes where they are pre-positioned and you don't see them move. I try to get away from every number having moving lights just because they are there and costing a lot of money."

Port Moresby was a completely different story with the venue changing frequently. Originally the show was to be in a soccer stadium, part of a large music festival, then it changed as the show had to go there a week earlier. It was then scheduled to be produced in the grounds of the university, a venue used before for shows. Two weeks before the show



it was discovered that the venue was double booked. Eventually the show had to be produced at a local school's basketball stadium which had a roof over it but open sides.

"It was quite bizarre," understated Chris. "There was very little power. We had three phase but only 30 amps per phase. We had been planning to have about 100 par cans, thirty 1K profiles and a dozen fresnels which had to be severely cut down to 48 par cans run by a 24 channel manual board. We didn't have any effects or projections. It was interesting. We did discover that they had some Roboscans but when we looked at the venue, we didn't think they would work."

"The vibe working in Port Moresby was fairly volatile. The security for the concert was unbelievable, the guards wore full riot gear and had Alsatian dogs. Initially it was a complete freak out. The concerts there went really well although there had been a lot of concern about the security at the night time show"

At this stage it looks like the video will be aired by either SBS or the ABC. Triple J also did a digital multi track recording which hopefully will be put together with the concert footage.

### TOUR PERSONNEL

**Musical Director** David **Bridie Lighting Designer** Chris Paterson **Visual/Slide Design** Ian De Gruchy **Set Design** Wendy Black **Sound Design** Stuart McPhee **Stage Manager** Margaret Lloyd **Production & Tour Manager** John O'Donnell **Staging** Peter Clarke, Ben Shapiro.

## IES Annual Convention

The Illuminating Engineering Society of Australia and New Zealand is calling for papers for its 41st Annual Convention to be held November 18-21, 1996 at the Burswood Resort in Perth, Western Australia. The convention is entitled 'Living With Light: The Human Element' and it will focus on the impact that lighting and associated technologies have on people and their environment.

Keynote speakers will include Janet Moyer (renowned American landscape designer), David Loe (Professor responsible for the establishment of the Bartlett School, University College London) and Jacob Liberman (optometrist specialising in the effect of colour and light on mental well being).

For further information contact IESANZ Convention Secretariat, c/o Congress West, PO Box 1248, West Perth, WA 6872 (09) 322 6906 or fax (09) 322 1734.



# Don Giovanni

Opera Queensland's production opens the new Conservatorium Theatre

Opera Queensland's new production of Mozart's *Don Giovanni* was the premiere production in the brand new Conservatorium Theatre at Brisbane's South Bank.

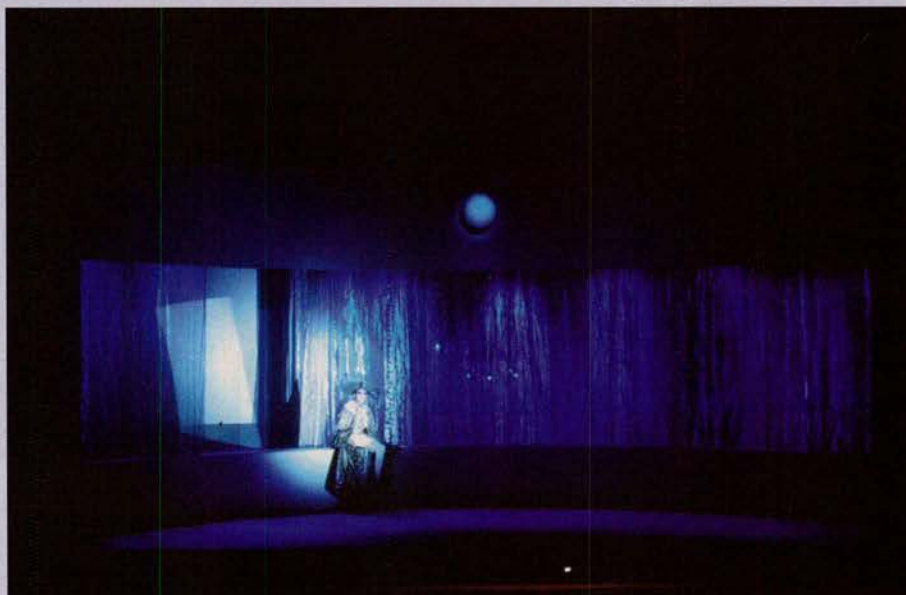
After its Brisbane season, *Don Giovanni* toured throughout July to the Gold Coast, Bundaberg, Gladstone, Rockhampton, Mackay, Cairns and Townsville as the first regional Queensland tour of a professional opera since the company's 1992 production of *The Barber of Seville*.

Director for *Don Giovanni* was David Bell, designer was Bill Haycock and the lighting design was by David Walters. David has been in the lighting business for close to twenty years having worked in the UK and Iceland for eight years. On his return to Australia, David took up the position of resident lighting designer with the Queensland Theatre Company, resigning in 1990. Since then he has worked freelance, based in Brisbane. He has just returned from a further twelve months spent designing lights in Iceland.

"I knew I was doing *Don Giovanni* before I left for Iceland," said David. "When I left Australia the Conservatorium Theatre hadn't been built and I did as much as I could from Iceland although it proved to be more difficult than I expected. I came back only a couple of weeks before the bump-in so it was very tight. David Bell had a run ready the day I got back and from there we started making final decisions.

"They kept a bit of a secret from me - the theatre was nowhere near ready! It was frighteningly unready. It was an interesting bump-in particularly on the first night I went to focus. Every time I took the house lights down, I could hear a lot of swearing. It turned out that the workmen were still trying to estapol the parquet floors in the auditorium. Temporary work lights had to be bought in and there were all sorts of major conflicts. During the plotting I got a message over the headsets that there was a threatened walk-off the site as people thought it was too dangerous to work in the dark! You had to laugh, there were subcontractors coming out of your ears."

The Conservatorium Theatre will house both the Conservatorium of Music, which comes under the auspices of Griffiths University,



and Opera Queensland. There is office space, music rooms, teaching rooms, couple of rehearsal rooms as well as the stage area. Apparently they spent quite a lot of money on the acoustics and, according to David, it certainly paid off as the acoustics are superb. The conductor, Roland Peelman, told David that he thought it was the best in Australia.

Some new lighting equipment was bought for the theatre including Selecon condenser profiles for FOH but a lot came from their old home the Basil Jones Theatre.

"Unfortunately it's fairly old fashioned stuff designed for a smaller theatre," David told me. "I believe the stage has the highest fly tower in Australia - 32m from the floor to the grid. The proscenium arch is 15m high so it's a massive

stage area. So you're trying to light that with 650w profiles and fresnels which is a bit of a joke. We hired some stuff in and QPAC lent us some equipment."

As the show was going on tour, David tried to incorporate many of the lights within the set making it easier to tour and to reproduce the look. For example, the curved header of the set is held up by a large truss holding a lot of lighting.

"There's a lot of shadow work created by MR16's" said David. "We use quite a few of them from floor positions. I use, as much as I could, lights on stancs so we weren't depending on rigging positions. Although I often work with visible rig, with this production I wanted to conceal light sources which we did quite successfully.

"Look wise, it's not your usual treatment of *Don Giovanni*. We had a white set representing the emotional vacuum that Don Giovanni lives in looking for ways to colour his life with women. A white set is always difficult to work with but it gives you things too. If it hadn't been a touring show I would have treated it a whole lot different. We pushed the whiteness of the make-up as far as we could so they read well against the set. We weren't frightened of colour. In the second act David





# New from De Sisti

wanted to increase the wildness so we used things like fluorescent light and sodium light. There are some very unconventional light sources."

The Conservatorium have an ancient Aladdin control desk so David hired in an ETC board. The programming of the show, as well as the running, was done by David's head electrician Dean Russo. Chris Dickie also did electric's and the surtitles.

"On the opening night the paint was still wet!" laughed David. "There was still a lot of stuff to be done. I wanted to use an oil cracker in this production but the air conditioning, above the stage area, sucked it all away. I tried to get control of the air conditioning but it was computer controlled which wasn't ready for another month. It was a miracle the show got on the way it did. I've seldom been less prepared for a show. However, it got good reviews."

The touring of the production also had trials.

"Some of the NARPACA venues are very good and some are not which makes it quite hard," explained David. "The set has to be concertina-like. I had 140 dimmers (LSC) at the Conservatorium which I had to pull back to 96 for the tour. A couple of venues only have 72 dimmers so you have to pull it back even further. There wasn't a huge amount of money spent on the dimmers at the Conservatorium but it's done quite simply and economically. They use a hard patching system which is quite unusual, it's not dimmer per circuit. There's a dimmer room with circuits going back to it and you can slide the racks back and forth."

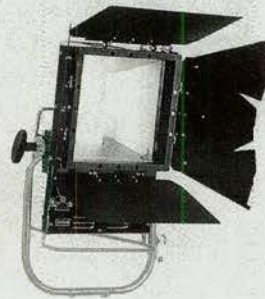
David is currently working on the lighting for *Over The Top With Jim* which is being done by QPAC as part of the new Brisbane Festival and it will also go into the Conservatorium Theatre and tour Queensland.

• Cat Forcer

New from De Sisti Lighting (Italy) is the De Lux Fluorescent Video Lighting range of fixtures. Available in two, four and six lamp 36w units, or in a six lamp 55w unit, the fixtures feature an interchangeable asymmetric/symmetric reflector system which does not require the removal of the lamps to achieve replacement. Thus the same fixtures may be used for both base and fill lighting, or for wash and background lighting via a simple reflector change, allowing for savings to be made from initial purchase by reducing the number of fixtures required.

Also new are the Goya Broadlights which made their Australian debut at Entech and they are available in both tungsten (2K and 5K) and discharge (1200 and 2500/4000 HMI) versions.

Coemar De Sisti Australia, their Australian distributor, claim that they are able to light the tightest areas straight on with 130° of f.a.t,



even light and that they are suitable for use as skypanns, cyclights, shadowlights, or as a broadlight for fill. The use of the optional 'black' reflectors allow for further flexibility producing sharply defined shadows for further effect. The tungsten

versions have ben used overseas in applications as varied as fill lighting, audience lighting, catwalks (replacing banks of pars/spots) and backdrop lighting.

For further information call: Coemar De Sisti Australia (03) 9467 8666.

## Bits

Entertainment Installations (043 243673):

- Supplied 4 Martin Roboscan Pro 812's, 1 Roboscan 518, a 2308 controller, 1 Martin Wheeler and a couple of ex-hire smoke machines to a local mobile disco.

- Supplied a bunch of ADJ and Geni effects to a local memorial club.

Coemar De Sisti (03 9467 8666) report:

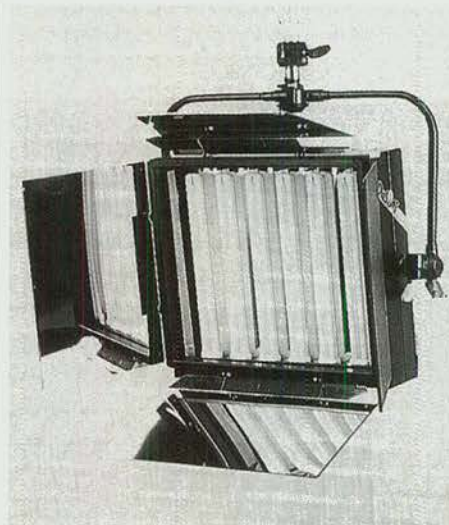
- DF-50 sales to LAVA, TCP NSW and Korea

- The Effects Company smoke machines sales to Image EF and Creative Lighting.

Selecon (64 9360 1718) report:

- Wayne Kellett of Herkes has sold NIDA some of the new Rainbow Pro 33 - 33 colour 8 inch scrollers along with Selecons custom 7" PC's.

- Plane: Hollywood has 200 Selecon Accent spots as well as Acclaim and ZS1200 zoomspots.




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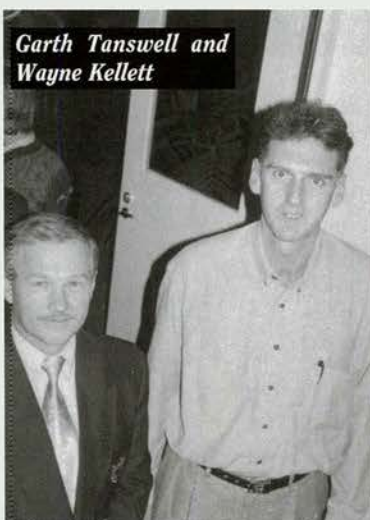


# HERKES EXPAND

Herkes Electrical has been around since before the war - the first war, that is. Old Mr. Herkes used to enter sales into his accounts ledger with a quill dipped in ink. I bought my T1 lamps there in 1975 for \$5.09 each. Nothing much ever changed.

When Mr. Herkes moved on to the big warehouse in the sky a young customer bought the sleepy firm. Garth Tanswell was an electrical contractor who got sick of jerking cables. He turned to wholesale instead. Soon he had more customers, and moved out of the old place which happened to be in a back lane in the Sydney CBD. He got very lucky and sold the building for a motzer.

One day in 1986 he got an offer from a hyped up entrepreneur who owned a stage lighting business and he bought that too. It fitted with Herkes, because Herkes had always sold theatre lamps alongside Clipsal plugs and



Garth Tanswell and Wayne Kellett

Olex cable. Now Herkes sold Selecon Luminaires and LSC dimming equipment too.

Soon it became apparent Garth's intuition worked, because his electrical wholesale customers started to buy lights, while his new lighting customers used a lot of cable and connectors.

In recent years Herkes operated from a modern warehouse in Bourke street Waterloo, which sometimes was overrun with contractors grabbing widgets while lighting trogs ransacked the Rosco gel rack. Pallets loaded with Selecon Zoomspots got stacked under slabs of three phase cable. It all worked well, to a fashion, but lacked decent presentation. You couldn't really browse for contemporary lighting there.

Last month Herkes took the logical next step and established a Pro Lighting division right next door, in a very impressive new cor-

ner location which is extremely prominent as you drive to Sydney airport. Garth purchased the building.

Now pro lighting and architectural lighting has a proper environment at Herkes, with a decent showroom and dedicated specialist staff - who to be fair were already on hand at Herkes before the expansion. Headed by Wayne Kellett, the new outlet is staffed by Alf DeAbreu and Georgie Petridis.

A door between the old Herkes and the new was about to be bashed through the wall when I visited, and the firm is still one entity with every item of electrical and lighting equipment on the same computer. So customer service is enhanced.

Garth says the architectural lighting market is enjoying a growth spurt, and it is a chance for Herkes to move into a top end market while retaining its core business.

Herkes also has recently opened a branch in Queensland, mostly to service wholesale electrical clients. The firm turned over \$8 million last year, with growth running at 16 - 18%.

•Visit Herkes Pro Lighting: 888 Bourke Street Waterloo (NSW). Call (02) 319-3133.

•Julius Grafton

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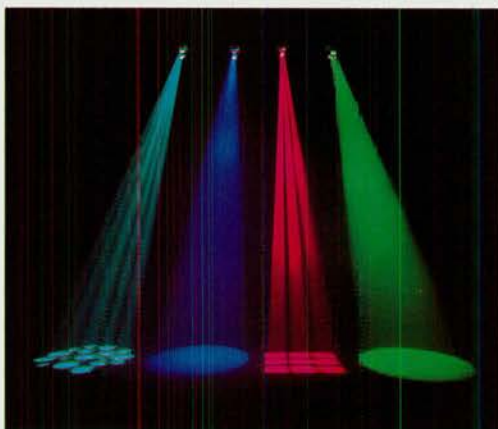
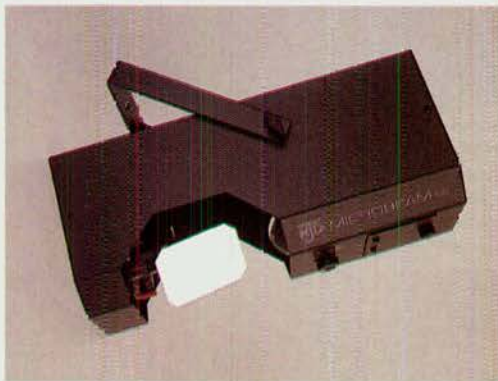


## MICROBEAM 100

Now available from NJD Electronics is the new Microbeam 100 Intelligent Scanner. NJD claim that the Microbeam 100 is the smallest, most portable scanner available on the world market today - as far as they know. It's dimensions are 370mm x 140mm x 165mm (excluding handle) and it weighs 5.4Kg.

Ideal for installations with limited space, hire companies and mobile use, the Microbeam 100 has the following features:

- DMX512 control
  - 0-10 volt control
  - stand alone operation with internal microphone
  - stepper motors
  - dichroic colours including white
  - 5 gobos (fixed to colours)
  - 1000w Halogen lamp
  - blackout facility and strobe effect
- Price is \$999.00 including tax and lamp.  
For further information call: Black Express Light & Sound (02) 559 4363.



## Photon Update

Originally a 144 control channel console, with the ability for riggers, printer and keyboard inputs, this now is the base platform for the Photon desk, known as the Photon Standard, from Compulite.

New software designs allow for a variety of other functions to be added to the desk in the way of options (MIDI, DMX in, SMPTE, Macro Wing Bus), producing the Photon LX.

Additional to the range is the Photon Expansion Option which allows the compact console to be upgraded and reconfigured to 512 control channels.

The Photon can further be used in Back-Up mode to allow it to run shows programmed on the Ovation and Applause consoles.

Prices start from \$9995.

Coemar De Sisti Australia report that the Photons debut at Entech was successful with an order taken on day 2 for the Australian Film & Television School. Two 240 channel Photon consoles, running in an on-one patch, complete with wired riggers control are being installed in the School. Free Offline Editing (OLE) software was included in the Compulite package allowing the students to learn the system at home on any PC as well as to program their shows without having to sit in front of the console.

For further information call: Coemar De Sisti Australia (03) 9467 8666.

## SHOWLIGHT '97

Showlight'97 will mark the fifth international colloquium aimed at lighting for the performing arts, covering television, film, theatre and concert lighting. Exhibitors from all over the world will attend Showlight which features a full conference with invited speakers presenting papers covering a wide range of topics, together with a trade show where a range of lighting equipment and information will be available throughout the conference.

A call for papers has been issued inviting lighting designers and associated professionals working within the entertainment field to submit papers as part of the forum for discussion and exchange of ideas that has become the hallmark of previous conferences. Recent advances in technology have created a myriad of new opportunities for lighting professionals, without eclipsing the value of more traditional skills. As a result, it is anticipated that the papers programme will offer a broad sweep of the industry.

Showlight'97 will take place in the heart of Europe at the beautiful Flemish Opera House in Ghent, Belgium from April 28-30, 1997. A programme of social events and visits to venues of interest is currently being planned to complement the conference.

For further information call: Showlight'97 +44 1323 642539.



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# projection perfection

We've been finding out a lot more about Condensor profiles. Check out this photo. With fewer limitations than ellipsoidals, Selecon Condensor Profiles offer:

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- precise beam shaping with hard or soft edge.
- projected images in focus across the stage and scenery (great depth of field).
- fine tune the image focus (soft centre, hard edge etc) to suit your requirements.
- extended pattern and filter life thanks to the lower gate temperature and even light distribution.

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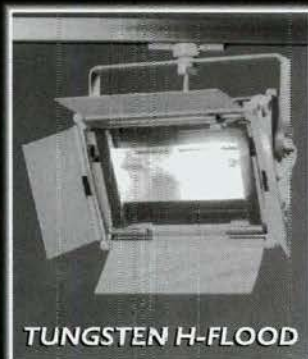


For further information and sample units to test, contact your distributor  
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## Stage Technologies secure contract after Entech



Following their successful visit to Entech, Stage Technologies of the UK have been awarded the contract to supply a winch/truss system for Cameron Mackintosh's international tour of 'Les Miserables'. The show, which will move from Hong Kong to Korea in June for a sixteen week run before transferring to South Africa, requires a small power flying system which can easily be moved from venue to venue.

The special requirements of this production necessitate touring a portable system which allows set pieces to fly at speeds of up to two metres per second in every venue. The specially designed Stage Technologies system incorporates the Big TOW variable speed winch built into a custom designed portable truss

system. The control for each winch will be from a hand pendant which allow for multiple dead positions and variable speed control. The complete truss and winch system has been designed to be flown from the theatre's own bars which can then remain static leaving the Big TOW winches to lift the set pieces in and out independently.

John Hastie at Stage Technologies explained: "This particular production of Les Miserables is touring in a jumbo jet! We have therefore had to design a system which is strong and light enough to satisfy the requirements of the show itself but also can be quickly packed up into suitable pieces for transportation by air." For further info call: Stage Technologies +44 171 354 8800.

## New Rosco Catalogues

Rosco have released their new Gobo illustrated Catalogue detailing all gobo patterns manufactured by them. Patterns include Trees and Foliage, Clouds, Windows, Elements, Breakups, Graphics, Abstracts and lists sizes of gobos and holders. Only available from Rosco dealers throughout Australia.

The Rosco 1996 52 page full colour catalogue listing all Rosco products for the entertainment arts is also available from you Rosco dealer. New for this year includes Colouriser patterns to compliment the range of Rosco gobos, computer software, IPS dimmers, Hazemaker, scenery glues, paints and hardware.

For further info call: Rosco Australia (02) 9906 6262.

## Bits

### Chameleon Touring Systems (02 310 5222):

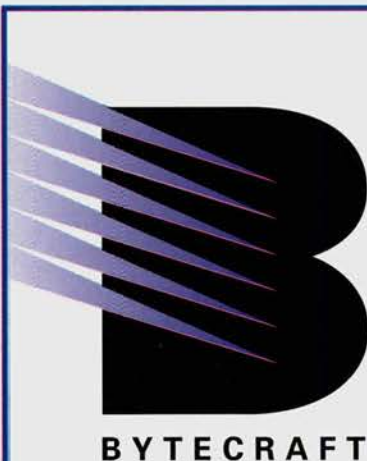
- Sydney Opera House have purchased over 80 Altman Shakespeare Ellipsoidal Spotlights for use in the Opera Theatre.

- ALE Trussing have been contracted to manufacture trussing and supply rigging accessories for the forthcoming feature film 'Dark City'.

### Universal Lighting & Audio (07 5532 9922):

- The Edge Nightclub Broadbeach Gold Coast purchased 4 x JB Varyscan 3 Special Plus and controller plus a Le Maitre G300 from Mick James Electronics.

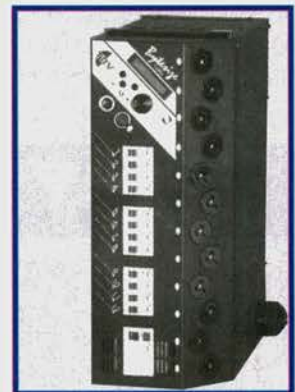
- Hot House productions installed Abstract Futurescan 3 CED's and a Le Maitre G300 into FJ's Nightclub in Port Douglas.



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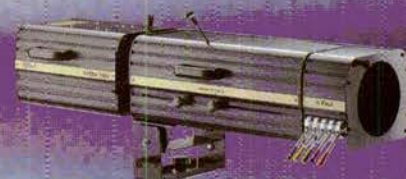
**Vestax**

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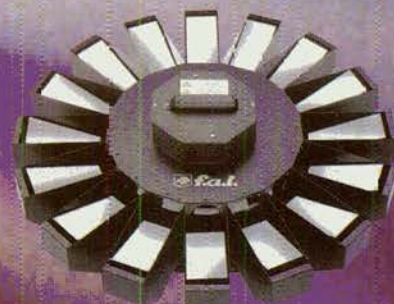
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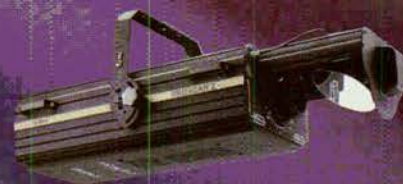
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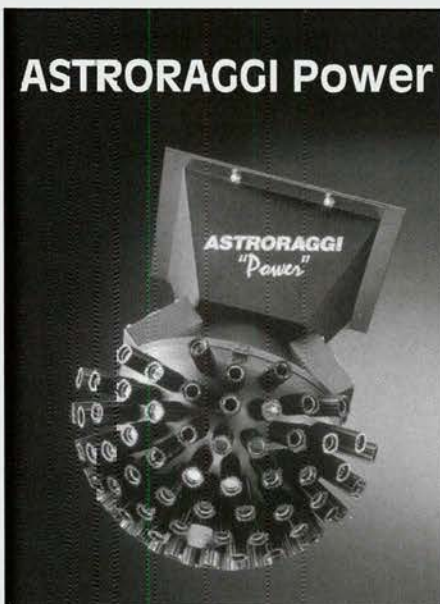
## new MICROMEGA available from Quantum Eflex

Quantum Eflex have announced the latest addition to the Omega series of moving lights by Genius Sri - the new MicrOmega which retails for \$1950 and has the following features:

- 8 dichroic colours plus white
  - rainbow effect: adjustable speed and bi-coloured effect.
  - strobe/blackout
  - pan and tilt 300° in 2.5 seconds
  - standard DMX512 USITT on 3 pin XLR
  - GE150w, G12 lamp base, 6000hrs av. life
  - power supply: 220-240v, 50 Hz @ 2 amps
- For further info call: Quantum Eflex (08) 351 9085.*



## ASTRORAGGI Power



From Clay Paky comes the Astroraggi Power, a new centre piece effect light which represents a totally new technological design of the classic product invented by Clay Paky. Based on a 400w HSR lamp, Astroraggi Power creates an intelligent multi-beam effect, with full control of rotation and gradual exclusion of individual beams. The product, aimed at the discotheque market, is in line with the recent revival trend that has emerged and is gaining ground in the entertainment world. *For further info call: Show Lighting Australia Ltd (02) 898 1666.*

## Selecon Arena range now Pole Operated

Selecon's award winning Arena range is now available with Pole Operated controls.

Designed for studio work and those hard to get at locations, the Selecon Pole Op system yoke fits all Arena 2000/2500w luminaires. Offering pan and tilt on the profiles and pan, tilt and focus when fitted to the fresnel and PC luminaires, this option is available ex factory or as a retro fit.

The 2500w 10 inch unit pictures offers a smooth, even, high output beam with a choice of 2/2.5kw lamps meeting the requirements for area illumination and key lighting in small to medium sized studios.

*For further information contact your Selecon dealer.*



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## Vari-lite join the Web

Each month we're going to look at a different lighting web site starting with Vari-Lite Inc who have recently joined the bandwagon at <http://www.vari-lite.com>.

Beautifully laid out, the pages supply complete product information, specifications, news releases and current listings of Vari\*lite Series 300TM dealers as well as Vari-lite locations across the globe. Also included is a look at their training centre and facilities along with educational information for anyone interested in automated lighting.

The Vari-Lite web site will be continually growing and expanding as new information and product developments are made available.

"In the coming weeks," said Special Projects Coordinator Steve Ricks. "We will be adding such things as VL List Serve, a discussion group covering the use of Vari\*lite equipment, and VL Search which allows you to search our entire site for specific information. Future additions will also include monthly features covering a wide range of topics including 'Using DMX to Control Automated Fixtures' and 'Choosing When to Use Movement'. We at Vari-Lite are dedicated to the education of automated lighting users and VL Online is the newest information from the company that started it all."

## JANDS TO REPRESENT WHOLEHOG

Jands Electronics has been appointed the exclusive Australian distributor for the Wholehog consoles by worldwide distributor AC Lighting.

"Jands was the natural choice," said Glyn Donoghue of AC Lighting. "Not only because of the close working relationship we have developed while distributing their products over the years but also because the Wholehog 11 complements the Jands range of lighting consoles. Now Jands will be able to offer the most comprehensive range of moving light equipment available.

"Another important factor that make Jands the ideal choice is their excellent service and back-up capabilities. In addition to back-up consoles, Jands has a full service electronic workshop with qualified engineers and a dedicated technical support engineer who knows the console inside-out."

The Wholehog 11 is made by Flying Pigs Systems and features the same easy to use syntax as the Jands Hog but offers some additional advanced features and configurable touch screens to make operation more intuitive.



The console is primarily designed for large shows featuring moving lights and has been used most recently on tours by Sting, Neil Diamond, Gloria Estefan and Cirque du Soleil. They are also becoming more commonplace in the US with one being used on the current production of *Big-The Musical*.

For further information call: Jands Electronics (02) 563622.

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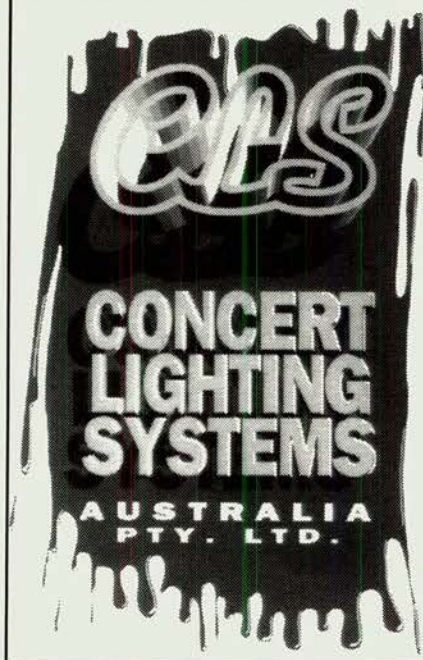
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## JB Varyscan 4 Compact Plus 575 HMI

The JB Varyscan 4 Compact Plus 575 HMI is the newest product to be released from JB Lighting. Utilising the standard slide in modules, it projects gobos through a multitude of colour based on dichroic filters through 2 conversion filters. Weighing only 17 kilograms, the unit can be delivered with an optional wide angle lens, inserted simply by opening the front of the unit, increasing the image projection by 30%.

The JB Varyscan 4 Compact Plus 575 HMI is controlled via DMX512 and can be run by any standard DMX512 controller. To compliment the unit is the new JB Scan Control 1612 controller which controls up to 16 scanners with 12 channels each and the



addition of 24 Par channels. All of which can be stored onto a Ram Card.

The JB Varyscan 4 Compact Plus 575 HMI retails for \$5600.00 ex lamp, including tax; the JB Scan Control retails for \$4332.00 including tax.

For further info call: Universal Lighting & Audio (07) 5532 9922.



# Ryger Products

DM Marketing is now the distributor for Ryger products.

Based in the UK, Ryger manufactures intelligent lighting effects, effect controllers, stage controllers, low voltage controllers, dimmer and switch packs, and powered controllers which include 12 way programmable touch panels and auto chasers. A complete catalogue is now available.

For further info call: Archie Kamakaris, Disco World (03) 9735 0588.

### CORRECTION 1

#### Electrical Safety story, page 83. July Issue

We managed to transpose a line in this story by Bruce Liebau last month. Sadly it happened to the critical line. It was in the 5th paragraph on page 83, and should have said: "The brown (active) wires from each of the three incoming power cords were connected to one of the three numbered terminals, all the three blue (neutral) wires were twisted together and connected to the terminal "n".

Fortunately, the diagrams show the correct scenario!

Connections apologises for the item being fubar'ed, and thanks the several readers who called to point this out.

### CORRECTION 2

#### Martin's MAC 1200 page 82 June issue

Okay so it wasn't a photo of the Martin MAC 1200. Nobody from Connections went to Rimini this year due to Entech being too close, so we didn't know what it looked like. I asked Light & Sound International magazine if we could reprint their photo to which they replied yes. Turned out they had the wrong photo. The strange thing is that they must have known that they had the wrong photo when they gave us permission to use it.....

## NJD Sword

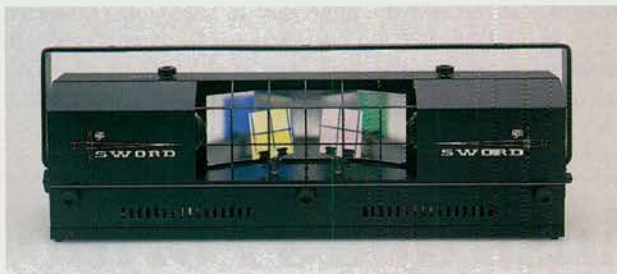
NJD Electronics have released the Sword lighting effect which has more features than its predecessor as well as being more compact and focusable.

Most importantly the Sword is four times brighter than its predecessor with randomly produced dichroic colours.

It has two independently motorised dichroic mirrors which, depending on their position, can produce up to six random coloured beams of pure dichroic colour. These mirrors can be adjusted to allow the beams to sweep in parallel or diagonally and the whole Sword can be mounted either vertically or horizontally to provide the user with a choice of effects presentations.

The light source is provided by two 100w 12v dichroic lamps, each individually fan cooled and focusable.

Sound activation is totally automatic and requires no connection to a sound system. Connect the Sword to the power and its internal electronics will sense the sound level and activate the mirrors in time with the bass beat of any music. Price is \$1399.00 inc tax and lamp. For further info call: Black Express Light & Sound (02) 559 4363.



## 2 new versions of Microlux

LuxArt Conception have released two new versions of the Microlux 1000 CAD software package.

Microlux 500 provides an entry level version of the CAD software whilst the Microlux 2000 extends the abilities of the 1000 package to include cue programming and screen visualisation of scenes. The program not only provides detailed drawings and full reports, but also the ability to program cues and view output in all dimensions, plan and elevation.

LuxArt have also released Microlux Vision DMX which allows users to connect the out-

put of any standard DMX512 lighting console to view their computer to view their lights on-screen. In conjunction with any of the Microlux design packages, by preparing the lighting plot and assigning channels to the luminaires in the plot, the DMX output is then 'read' by Vision and will provide a visual output on-screen in real-time. The potential for savings in pre-production programming and set-up times should be enormous, according to their Australian distributor Coemar De Sisti Australia.

For further information call: Coemar De Sisti Australia (03) 9467 8666.

Check out the new

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**Photon** Full feature compact console of 144/240/512 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. Price from \$9,995 ex-tax.

**CRESKIT SOFTWARE***Coemar De Sisti Australia Pty. Ltd. (03) 9467 8666*

**SoftPlay DMX** PC-based (Windows) lighting/motor controller. 96 control channels and 12 moving lights (8 parameter) plus 4 motor controllers. Infinite scene creation, softpatch, joystick control, offsite editing, programmable effects macros, timed crossfades. Suits smaller theatres, schools, etc. \$949.

**SoftPlay MIDI** PC-based (Windows) lighting/motor controller. 48 control channels plus 4 motors. Infinite scene creation, softpatch, offsite editing, programmable effects macros, timed crossfades, MIDI output - trigger scenes via MIDI. Suits smaller theatres, schools, etc, ideal for musicians & bands. \$450.

**AXON DIGITAL DESIGN***Coemar De Sisti Australia Pty. Ltd. (03) 9467 8666*

**ShowCAD** PC-based lighting control software and propriety DMX card for 1024 control channels. Fixture specific templates for moving lights, autogenerate scene and patch creation, offsite editing, comprehensive softpatching, SMPTE, MIDI, DMX in/out, Analogue, & audio input. Fully featured controller suitable for all applications in particular multimedia & theme park attractions. \$5,995.

**CCT***Rosco Australia (02) 9906 6262*

**CCT Regal II** compact 205mm x 145mm, 6 channel with master fade DMX control board. \$350.

**JANDS***Jands Electronics Pty Ltd (02) 9516 3622*

**Stage 12 (24)** 2 preset 12 (24) channel console or 24 (48) channels in wide mode; channel Flash buttons; 2 independent Grab masters. Chase controls inc Go/Cue, Speed, Direction and Level. \$815.

**ESP 11 24 (48 60)** Up to 498 memories; Live or Blind editing; 3 proportional soft patches to 512 dimmers; timed dipless crossfades; console linking for console expansion. \$3274.

**Event 24 (36 48)** Manual fader or timed Go/Cue timed crossfades operation; 3 proportional patches to 512 dimmers; over 500 memories; console linking; optional floppy disk drive. \$5733.

**Event Plus 48** 50 pages of memories, chases or crossfade stacks; Cue linking; multiple playback facilities; console linking; 3 proportional soft patches to 512 dimmers; password protection. \$9830.

**LSC ELECTRONICS***LSC Electronics and Agents (03) 9561 5255*

**LSC Axiom** available in 12, 24, 36, 48 and 60 channel format. All offer single preset operation which doubles number of control channels, true moving light control, inbuilt fixture library and 4 softpatches. Options 3.5" disk drive, desk light (these plus video and submasters are standard on 48 and 60), analogue outputs, console covers and road cases. Axiom 12 \$1950/Axiom 24 \$3450/Axiom 36 \$4850/Axiom 48 \$8500.

**LSC Atom** designed as an entry level console which offers enough features to suit the more demanding installations. 9 pages of scenes or chases (108 or 216), full edit facilities and in/out time fades which can be manual or programmed. Option as per Axiom plus VGA video. Atom 12/24 \$1350/Atom 24/48 \$2200.

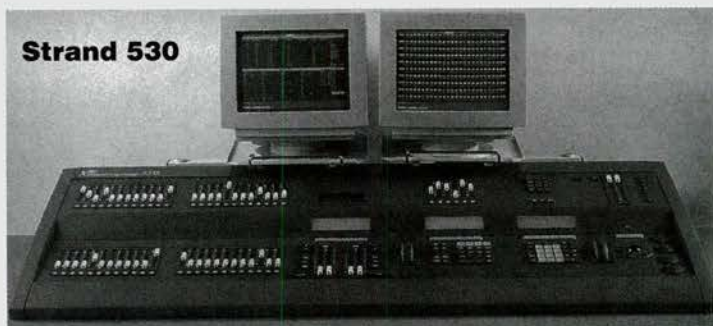
**LITE PUTER***ELSTA (02) 568 2100*

**C401** 4 channel dimming desk, low voltage, use with P404 dimming pack, master dimmer control, flash buttons, 0-10v DC output. \$245.

**C801** dimming desk with 8 channels, master control, programmable chasing with sound to light, flash buttons, 0-10v DC output, use with 2 P404 dimming pack. \$573.

**C1202** dimming console with 12 channels, master dimmer, chasing speed control, sound to light, 0-10v DC output, flash buttons, LED indicators, use with 3 x P404 or one 12 channel dimmer power pack. \$655.

**C2401** dimming console with 24 channels, 2 scenes, 10 groups of memory preset, 10 fader memory, cross fader control, adjustable fade time, 0-10v DC output, flash buttons, master controls, built in chasers. \$1145.

**Strand 530****METEOR***ELSTA (02) 568 2100*

**Omni Controls** all DMX lights and fixtures, 256 channels, 64 fully addressable objects, 32 groups, 240 scenes, 48 chases of 60 steps, 20 shows - recorded or 'live', MIDI compatible, RS232 port. \$2000.

**LIGHTOMATION/LIGHTPROCESSOR***Universal Lighting & Audio (07) 5532 9922*

**Q12** full DMX512, 12 channels, 2 preset desk, blackout button, 120 scene memory, analogue and DMX, speed control, desk top or 19" rack mount. \$1506.

**Q24** 24 channels, 2 preset desk, 240 scene memory, analogue and DMX, 24 chase memories, crossfade speed control, flash master fader. \$2710.

**Memory 12** 12 channels, 2 preset desk, preset master, grand master, dipless crossfade, 12 scene memory, 12 chase memories, internal mic, 0-10v, desk top or 19" rack mountable. \$1376.

**JB LIGHTING***Universal Lighting & Audio (07) 5532 9922*

**Scan Control 1612** full DMX512, 576 scene memory by controlling 16 scanner 24 par channels, joystick, master dimmer, 24 different shutter sequences, LED display, RAM card storage, speed control fader, loop-function. \$3551.

**JB Lighting DMX Controller** full DMX512, 880 scene memory by controlling 6 scanners, joystick, scene fade time, copy function, auto run or manual control or auto music control, X/Y pans. \$1912.

**SLS (HELLAS)***Quantum Efex (08) 351 9085*

**16+16** controls 16 fixtures via SLS MX only. Panscan Juniors, 3's, 4's, 5's. Blackout, master dimmer, gobo, colour, prism override. 1-16 fixture followspot. 792 scenes. Analogue joystick. \$3172.

**SLSCON 16ch** controls 16 fixtures via SLS MX only. Panscan Juniors and Panscan 3's. Blackout, 495 scenes, microswitch joystick. \$2487.

**GREAT AMERICAN MARKET***Showcraft Australia (02) 9698 3009*

**Gam Command** hand held DMX riggers control. Operates dimmers, colour changers, moving lights. Ideal for remote focus and pre-testing equipment. Provides back up for console failure. \$381.

**Gam Opto-Iso** compact optical isolator and line splitter

for DMX. Provides distribution and safety for DMX driven systems in adverse power situations. Battery operated for easy use. \$209.

**Gam Switch DMX** compact priority switcher. Provides automatic switching between Gam Command and Light Console. Transfers control between two lighting consoles automatically when one is turned off. \$241.

**STRAND LIGHTING***Bytecraft Pty Ltd (03) 9587 2555*

**LX24 2** preset 24 way manual analogue desk with flash buttons, dipless manual or timed crossfade between presets, blackout switch. Basic control for small venues and schools. Also available as 12 and 36 channel models. \$1456.

**MX48 2** preset 48 way manual DMX desk, total 192 memories. Flash buttons, timed split crossfades; LCD display; programmable effects; printer and monitor compatible. Also available in 12 and 24 channel modes. \$4809.

**GSX** powerful memory desk. Application software packages allow channel and feature upgrades. Integral 3.5" disk drive; 2 independent playbacks, wheel; LCD display and 24 submasters; controls up to 512 DMX dimmers. From \$3000 to \$10,000.

**LBX** memory + manual lighting console. As for GSX plus 96 faders custom configurable as single or two preset desks, with or without submasters. De-

signed for concerts and multi purpose venues. From \$6000 to \$15,000.

**THEATRELIGHT***Lightmoves Technologies NSW (02) 560 0000; Lightmoves P.E.S. (03) 9813 2955; Ashton Admor (09) 478 3800.*

**Cuemaster 48** 120 channel also available (\$6850), with optional DMX link panel (Cuemaster Plus), offering one fade per channel, 24 scenemasters, colour display and comprehensive show editing and playback. \$4650.

**Scenemaster 3F 24/48** 12/24 channel also available (\$2225), comprehensive show, scene and chase facilities, with recordable up/down fade times. Optional colour display. \$2725.

**DMX-Link** has sophisticated DMX mixing, back up recording and soft patch facilities. Featuring 240 channel input with patching to 512 dimmers, 100 back up scenes, and colour display. \$4450.

**S.G.M.***Ashton Admor Pty Ltd (09) 478 3800*

**Regia 256/36** 240 channels, 2 x 36 presets, 24 pages of 16 memory registers, 2 permanent 1 work file, 32 records, MIDI/RS232 input, DMX/RS232 output, intelligent lighting programming section, keypad display, floppy disk saving and more. \$5056.

**Regia 512S/36** 512 channel desk for controlling intelligent lighting and effects lighting. 36 programs, 1256 scenes, 36 fixtures, up to 20 channels per fixture, direct pan and tilt offset, MIDIRS232 input joystick. \$5229.

**Regia 24** 24 channels, 2 x 24 presets, 24 pages of 24 memory registers, flash buttons, 24 x 100 step chases, 576 scenes, RS232/MIDI input, DMX output, built-in microphone, data retention battery. \$2069.

**Regia 12** 12 channels, 2 x 12 presets, 12 pages of 12 memory registers, flash buttons, 12 x 100 step chases, 144 scenes, RS232/MIDI input, DMX output, built-in microphone, data retention battery. \$1477.

**R.V.E..***Ashton Admor Pty Ltd (09) 478 3800*

**LT 24 Channel** 24 faders, 99 pages of 12 submasters, 400 cues, patch up to 512, DMX controlled channels, 50 unlimited chases (3 directions), flash buttons, memory card, large menu and data display. \$5071.

**LT 49 Channel** As for above with added channel control and video monitor option. Both LT memory lighting consoles can be made for analogue output. \$6428.

**LT 96 Channel** 48 faders, 99 pages of 36 submasters,

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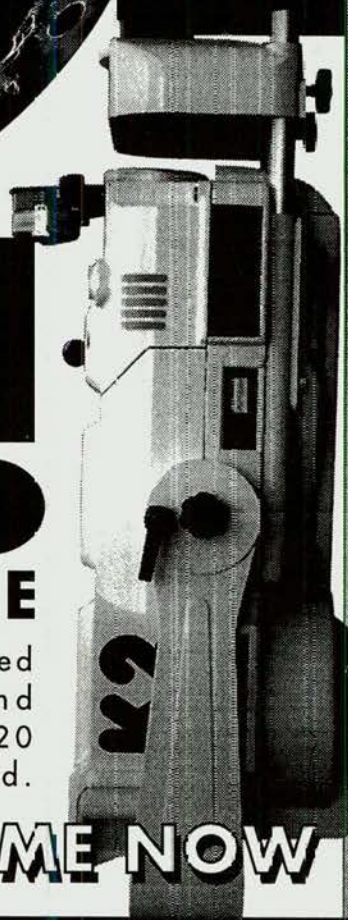


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# BUYERS GUIDE LIGHTING CONTROL & DIMMERS

400 cues, patch up to 512, DMX controlled channels, 50 unlimited chases (3 directions), flash buttons, memory card, large menu and data display, video option. \$9401.

## CELCO

*Electrosonic Systems (02) 870 7155*

**Pathfinder** 60 channels, 512 dimmers, up to 480 memories and 120 sequences. Optional DMX transmitter receiver. \$5000.

**Navigator V3** 240 channels, 512 dimmers, up to 480 memories and 60 sequences. Optional Personality Cards including M9 Videowall control. \$5200.

**Navigator EPX** 240 channels, 512 dimmers, up to 480 memories, 72 preset focuses and 60 sequences. SVGA output port, mini keyboard, trackball, theatre style monitor display and MIDI show control. \$7500.

## M.A. LIGHTING

*Show Technology (02) 9898 1111*

**Scancommander Extension** expansion unit expands Scancommander by another 16 intelligent fixtures and can also be utilised as a 'play back controller'. Has memory card slot for back up. \$5327.88.

## MARTIN

*Show Technology 1800 646 666*

**3032 PC Package** has intuitive 'icon' based control in full colour. Up to 96 Roboscan channels (fixtures); can be triggered via analogue or DMX; software up gradable; run up to 10 cues at once. \$2458.20.

**2308 Controller** runs any Martin product using Martin's own protocol - up to 8 Roboscans or 32 Robocolours; stores up to 10 shows of up to 255 sequences (96 diff.), 99 scenes, 611 secude capacity. \$1392.60.

**2501 Controller** entry level budget control, controls up to 32 units, in-built programs, sound to light, 9 easy to use microswitch keys, 19" rack mount. \$1064.75.

## GROUP ONE - ELEKTRALITE

*Show Technology (02) 9898 1111*

**CP10 Controller** 19" rack mount controller with 200 scene memory, 50 chase memories, sound to light, MIDI in/out, 64 DMX channel capacity, fixture library. \$2048.36.

**CP100** universal lighting controller capable of controlling both intelligent lights and dimmer channels. Features an extensive fixture library, 1024 DMX channels, 500 cues, 100 chases and floppy disk back up. \$9999.00.

## GENI

*Show Technology (02) 9898 1111*

**Light Modulator** dimmer/chaser, 4 channel capacity with all features needed. Four individual faders, master fader, background fader, sound chase, speed chase, flash buttons, audio input, 19" rack mount. \$597.50.

**Chaser 4CH MK2** 4 channel chaser with external mains fuse and fuse protection on each channel. Capacity 5A per channel, zero crossed with built in audio activation. \$266.40.

## PULSAR

*Show Technology (02) 9898 1111*

**Masterpiece 108** can control any lighting equipment that will accept 0-10V, DMX512 or RS232 (DMX). Features

108ch, 216 scenes, 54 scene chases and 48 environments. \$5320. Also available Masterpiece 48 \$4426.

**Replay Unit** designed for preprogrammed applications with unit only being 1 rack unit. Has all features of the Masterpiece 108, ideal for installation projects. \$2450.

**Touch Panel II** 12ch programmable touch panel - 4 fully programmable chases will run strobes as well, speed control, audio input, battery back up and programming 'lock out'. \$818.85.

**Zero 4001** 4ch chaser/dimmer with comprehensive presets, chase audio and dimming functions. Has optional foot controller, suitable for bands, duo's etc. \$900.

## NEBULA DIGITAL CONTROL

*Nebula Technology (08) 240 1165*

**Atkitex** wall plate with DMX input and output - stores up to 16 scenes with cross fades. \$495.

**Atkitex Professional** wall plate with DMX input and output - stores up to 256 scenes across the full 512 DMX channels. 24 hour 10 year programmable clock with cross fade times for scene playback. \$995.

**MIDI to DMX512 Converter** converts the MIDI protocol to DMX512. Utilises Note On/Off, Paf, Caf, control and programme change. Converts any equipment that outputs MIDI data into a powerful DMX controller. \$495.

**DMX Merge Box** merges 2 DMX in to 1 DMX Out. Settings for highest/lowest channel. Input A or B, or Last input used as priority. \$320.

## LIGHTWAVE RESEARCH

*GUVT (07) 3358 5022*

**Cyberlight System** LCD lighting controller up to 8 Cyberlights. 9 memories, 891 scenes, 1024 programmable presets, selectable proportional or remote level submaster modes, fixture parameter viewing, PCMCIA memory card and more. \$4,817.10.

**Universal Lighting Controller** for Trackspots, Intellabeams and Emulators. 16 addresses of any fixture combination, 500 scenes, 64 presets, 32 position memories, 32 character LCD, and more. \$2,322.85.

**Dataflash AF1000 Mini Controller** controls up to 12 AF1000 fixtures via standard USITT DMX512 lighting control protocol with provision of audio input for synchronisation to program material when required. Has standby, flash, up/down, program, rate, intensity and audio keys. \$963.43.

## LIGHTING TECHNOLOGIES

*GUVT (07) 3358 5022*

**DLS4000 Digital Lighting Sequencer** four channel audio activated; 20 selectable and rate variable sequence patterns; maximum total load 240V @ 10 amps, 800VA inductive per channel; output is via 4 x 3 pin GPO's; 8 channel (2 x 4 ch) mimic display. \$400.66.

## ANYTRONICS

*GUVT (07) 3358 5022*

**Aurora 12** 12 channel 2 preset manual lighting desk; flash level slider; slaving facilities; optional gooseneck light; connection to dimming packs via 8 pin locking DIN connectors; output 0-10v; requires +18 to +25V supply. \$576.71.

**Aurora 6** 6 channel 2 preset desk with two sets of seven sliders, 6 channel and 1 master, mounted side by side in a rackmount 3RU configuration; selectable automatic or manual fade, flash buttons, display

mode facility. \$376.81.

**Mini Desk 6** 6 channel manual fader panel with flash buttons, master level control and blackout switch measuring just 133mm x 212mm. 0-10V output; connection to dimmers via 8 pin locking DIN connector, requires +18 to +25V @ 20ma. \$186.11.

**Mini Desk 12** 12 channel version of above in 3RU



## Meteor Omni

rackmount format. Same features except requires +18 to +25V @ 40ma. \$321.67.

## CONTROL DESKS OVER \$10,000

### AVOLITES

*LSC Electronics (03) 9561 5255*

**Rolacue Pearl and Sapphire** 512 channel consoles designed to handle moving lights as easily as conventional lighting. Both consoles feature a large LCD which provides extensive information about the console and fixtures. The 4D Track system is available consisting of a graphic tablet as the user interface allowing the operator to position and programme intelligent fixtures quickly. Pearl (60 faders) \$20,430/Sapphire (120 faders) \$37,600.

**Diamond II** 1024 channels expandable to 6000, 180 channel faders, 30 sub masters, console supplied with graphics tablet, desk lights, console cover and road case. \$81,200.

### COMPUTITE

*Coemar De Sisti Australia Pty. Ltd. (03) 9467 8666*

**Ovation** (Mini 3B) Fully featured memory lighting console with integrated options & peripheral moving light adaptor (MLA). 1500 control channels, 20/40 controllers, system customizable, riggers radio & infrared remotes, MIDI, SMPTE, DMX in, Backup unit, internal hard-disk storage & floppy backup, networkable, off-line editor. Price from \$19,000.

**Animator Moving Light Consoles** Control 24/48/72/96 moving lights (22 parameters) and 512 DMX control channels in all configurations. 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. Price from \$19,600.

**Spark** Control 24 moving lights (22 parameter), 48 scrollers, and 144 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). Superb compact moving light/conventional controller suitable for all applications. Price from \$12,580.

**Applause (Micron 3B)** memory lighting console with integrated options, 600 control channels, 20 controllers, system customizable, riggers radio and infrared remotes, MIDI, SMPTE, DMX in, backup unit, floppy back up, networkable, off-line editor. From \$18,000.

### JANDS

*Jands Electronics Pty Ltd (02) 9516 3622*

**Event Plus 60** 120 channel wide mode - desk linking to 252 channels; user definable file storage; Cue linking; MIDI input; multiple playback facilities; console linking; 3 proportional soft patches to 512 dimmers; password protection. \$12,290.

**Jands Hog 250** Moving or conventional light controller; 3.5" DOS disk storage; Multiple fixture simultaneous operation; Command line syntax; Split fade times; auto menu; separate pallets for Group, Position, Colour and Beam. \$13,100.

**Jands Hog 600** As per Jands Hog 250 except control of 600 channels and additional pallets for Macro and Page. \$17,200.





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# ALTMAN



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# BUYERS GUIDE LIGHTING CONTROL & DIMMERS

## ETC

**Jands Electronics Pty Ltd (02) 9516 3622**  
**Express 125 (250)** 125 or 250 channel consoles; up to 1024 DMX512 dimmer outputs; 600 Cues; 24 sub masters and up to 2000 programmable macros; XY trackpad touch sensitive controller; 2 timed manual fader pairs. \$12,290.

## LIGHTWAVE RESEARCH

**GUVT (07) 3358 5022**  
**Status Cue** can simultaneously control Cyberlights, Intellabeams, Trackspots, Studio Color Automated Wash luminaires and general DMX devices. Console and Link Card operates in conjunction with a PC. 6000 scenes, 128 palettes, 32 instant presets plus 16 fader presets per song, unlimited number of songs. \$14,914.91.

## STRAND LIGHTING

**Bytecraft Pty Ltd (03) 9587 2555**  
**Strand 430** high capability memory lighting control hardware and disk-loadable operating and application software. Controls up to 600 channels, 400 scroller and moving light attributes into 1536 DMX outputs. Equipped with Intel Pentium 75 processor. From \$30,000 to \$90,000.  
**Strand 530** memory lighting hardware platform and disk-loadable operating and application software. Controls up to 1500 channels, 500 scroller and moving light attributes into 2000 DMX outputs. Equipped with Intel Pentium processor. From \$40,000 to \$100,000.  
**Strand 550** professional high capacity lighting control with 54 submasters. Controls up to 1500 channels, 500 scroller and moving light attributes into 2000 DMX outputs. Equipped with Intel Pentium processor. From \$40,000 to \$100,000.  
**Galaxy Nova** full specification, comprehensive memory lighting control with custom options, integrated automated lighting control and digital dimmer feedback for opera houses, large-scale theatres, concert halls and TV studios. \$100,000+.

## CELCO

**Electrosonic Systems (02) 870 7155**  
**Explorer EPX** 120 channels, 512 dimmers, 480 memories, 96 presets. 10 stacks with 99 entries. 30 sequences with 99 steps. Memory card storage. \$10,750.  
**Aviator T180** 180 channels, 1024 dimmers, 1000 cues, 25 lists, 100 x 99 step sequences. EPX has rate playback, submaster and master control modules. \$37,000.  
**Aviator T360** 360 channels, 1024 dimmers, 1000 cues, 25 lists, 100 x 99 step sequences. \$65,000.  
**Aviator T512 EPX** 512 channels, 1024 dimmers, 1000 cues, 25 lists. Moving lamp library. 100 x 99 step sequences. Rate playback, sub master and master control modules. \$40,000.

## M.A. LIGHTING

**Show Technology (02) 9898 1111**  
**Scancommander Tour Pack** has factory set 'personalities' and the tour pack includes roadcase, memory card, track ball and micro keyboard, drawer and desk lights. Call for complete spec. \$11,885.25.

## DIMMER RACKS

### ROSCO

**Rosco Australia (02) 9906 6262**  
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**Jands Electronics Pty Ltd (02) 9516 3622**  
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**HP12** high performance 12 x 2.4kW dimmer rack, on-board microprocessor control and fault detection, thermal magnetic circuit breaker protection, stand alone operational features. \$3275.  
**HP6** as per Jands HP12 except 6 x 6kW. \$3438.

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**LSC Electronics and Agents (03) 9561 5255**  
**Tour Series** 12 channel by 10 amp or 6 channel by 20 amp Rack mountable dimmer. Toroidal inductors offering greater than 300 microseconds rise time. Riggers controls are fitted on the front. \$2900.  
**Wallpak** 12 channel by 10 amp or 6 channel by 20 amp. Same specification as Tour Series but a redesigned package to allow for easy wall mounting. A catwalk hanging bracket is also available for distribution DMX installations. \$2900.

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**P210** 2 channel dimming pack, 10A per channel, 15A total load, 6 input patch switches, noise filter circuit, 9.5" mounting. \$245.  
**DX1220** 12 channel modular dimmer pack, DMX512 and 0-10v DC input, 20A per channel output (3 phase input), each channel is a module - easy to maintain, high speed circuit breakers. \$2450.  
**DP3** digital to analogue converter, 72 channels, converts DMX512 to 0-10v DC, start address can

be set, 1 RU rack mountable, D25 connector outputs for DC, 5 pin XLR for DMX. \$1225.

### LIGHTOMATION/LIGHTPROCESSOR

**Universal Lighting & Audio (07) 5532 9922**  
**Dimrack 12** designed for use with Memory 12 desk, 12 channel, 5 amps per channel, single or 2 phase, 0-10v, channel monitors. \$1335.

### BYTECRAFT

**Bytecraft Pty Ltd (03) 9587 2555**  
**Bytesize<sub>TRV</sub>** budget priced dimmer. 12 x 10A channels; DMX512 or AVAB input; MCB protected output; output patching and curve control; LCD display mounted control panel; internal back up. Also available as 6 x 20A channels. From \$3200.  
**Bytesize 483/TR** 12 x 2.4kW channel dimmer. Input DMX512, AVAB DMX, Felix, Command Link, Analogue +/- 10V. Fault reporting; internal preset programming; soft patch; curve control. Also available in 6 x 5kW channel model. From \$4200.  
**Bigtop** broadcast quality 12 x 2.4kW dimmer designed for touring includes 2 outlets per dimmer and guard rail. Features as for Bytesize 483/TR. Also available in 6 x 5kW channel model. From \$4200.  
**Bytesize 483** broadcast quality 12 x 2.4kW 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.

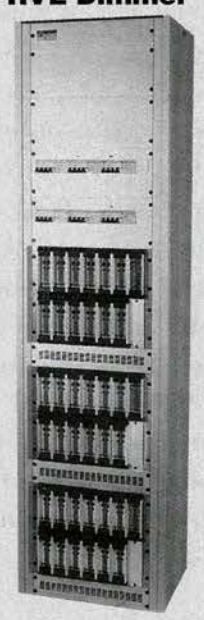
### THEATRELIGHT

**Lightmoves Technologies NSW (02) 560 0000; Lightmoves P.E.S. (03) 9813 2955; Ashton Admor (09) 478 3800.**  
**DMX Rack Pack** 12 x 10A dimmer rack; MCB protection; DMX input with selectable start address and analogue input. Also available with terminal connections (\$3250). \$3425.  
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PL2

# CLUBBLAND & DJ NEWS

Decor+ lasers+ lights+ sound = **The Orb**

Club Profile: by Madeleine Murray

**T**he Orb is set right on the edge of Kings Cross, at the craziest intersection in Sydney, where six different roads intersect. Where cars make way for people in the entire spectrum of social and psychic states on six pedestrian crossings. The huge wooden doors, and etched metal sign are the entrance to the two storey curved building. A flight of stairs takes you up past a glass brick wall, and into the club.

The decor, grey walls with bright splashes of colour, wall lights covered with metal bowls, wooden dance floor, didn't quite reek of the \$7m. figure. But it was day, the club was empty. At night, with a barrage of scans, raggis, lasers, and smoke machines, it probably looks very plush.

The two toilet rooms are snappy black and white tiles. There is an array of smaller rooms, some with sofas, one with a Technics turntable setup, and a room for Japanese. There Japanese visitors can sip sake, sitting on a wooden platform, under a photomural of birch trees. The owners want to attract a multinational crowd.

#### The fitout

Avsound, who have done many Sydney clubs, did the fitout at the Orb. The club opened on May 24, and all the glamour crowd came. (I was watching *Cracker* on TV that night.) Avsound did the job to a tight schedule, and in the chaotic conditions of many trades working on top of each other to a deadline.

Matthew Kline, who owns the audio and lighting company, said he chose the equipment for its re-

liability and durability. "The Clay Paky Mini Scans have customised patterns and their 300w lamps give ultra bright beams. Add programming via the CP10 control unit, and we achieve full control of all functions and execution of groups of sequences. I used Oracle Aurora 300 System laser, because it's air-cooled, and incorporates the 3D effect. It's brilliant, and made in Australia." Oracle is putting in a full colour laser system soon.

**Promoters:** Sky Entertainment, Jo Jo

**Lighting & Sound Design:** Avsound

**Lighting Operator:** Ming, Brad Wright

**DJs:** Stevie B, Grant Truslove, Merlin, Jo Jo, Johnathan Wall, and others

**Decor/Interior design:** Ian Hartley, Clive Jones

**Typical Door Charge:** \$15

**Entertainment:** Thurs. Illusionist, Dance. Fri. DJ, Dance. Sat. Podium dancers. Sun. Drag shows.

**Address:** 274 Victoria St., Darlinghurst, Sydney

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##### Lighting

6 Clay Paky MS300 Moving light, 1 Group One CP1 Elektralite mini scan controller, 24 Superstar Par



56 Light chrome, 12 Superstar 12" mirror balls, 2 TFI Star Raggi, 4 High End Data Flash high powered Strobes, 1 High End Strobe controller, 1 JEM Club 20 Smoke machine, 1 Zero 88 Mercury touch lighting controller, 1 Zero 88 Mode 12 switching unit, 1 Jands 4 ch chaser, 8 Superstar Shimmers, 2 Oracle Aurora 300 laser systems w/ 3D laser effect

##### Audio

10 Electro Voice SX200 speakers, 3 Australian Monitor AM1K2 amps, 2 Australian Monitor AM1600 amps, 2 Electro Voice DML2181BF 1000 watt flying sub bass speaker, 2 Electro Voice EQ231 Dual 31 Band EQ, 2 Technics SL1200 turntables, 1 Gemini PMX1000 disco mixer, 1 Electro Voice XP200 System controller, 1 Dennon DN2000F dual CD player, 1 JBL control 12 DJ monitor, 2 dbx 166A dual limiters.

## The Graveyard Shift Hip hop in Melbourne

by Madeleine Murray

**Ransom** is one of the top hip hop DJs in Melbourne. He has just finished building his own studio at home.

"I got very jack with going to recording studios, and being under pressure to perform," Ransom says. "I can't stand all that shit. That's not hip hop to me."

#### Work in the studio

In his studio, he uses everything from samplers to drum machines. Sometimes he records musicians and then samples them, or just lets them play and uses it on the tape. Ransom doesn't exclude any technology, but he tries to keep his machines as analogue as possible.

"There's digital in everything because I'm recording it on DAT, but for the most part, I try to keep the musical stuff grainy. I like to use real instruments, real electric pianos, real guitars and amps, good old Neumann mics. When you sample it, you lose something in the digital transfer, but what you've got is strong enough to hold. I try to keep my stuff really grainy, and really dirty. Not dirty where it's buried in the mix by a million unneeded frequencies, and all you hear is hiss and noise. But dirty, so the sounds are more grainy and fat."

"The initial idea comes out of nowhere, then within five minutes the track takes its own form. Then I think; what does this need, real drums, drum machine, samples, loops, things like that. The track more or less dictates. I build from

the starting point. 95% of the track is done in the first five minutes. I spend all the rest of the time refining that. You capture the vibe almost straight away."

#### Other happening things

Ransom is no slouch. He's working on five different projects at the moment. There's his own stuff, which is DJ tracks. "That's what I love the most, just real purist hip hop tracks with lots of scratching, and lots of beat."

He is working with a band called The Honeypot, where they make music music, that is words, songs, and lyrics. And with a rapper called Raph, from a band called the Debt Crew. "He's the only one I really give kudos to. I don't really work with any other rappers, cause I fully dig his stuff."

Ransom is also working with a group called Freshly Skeezed, a group of DJs. And he's doing music with a friend called called Voiteck. "We hope to release soon. Around this neighbourhood, we



have this group called Clicke. They are all ex-B boys, who have turned into electronic music junkies and I just hang out with them. I have a really broad spectrum of people that I hang out with. Basically I just want to be eclectic."

Ransom thinks that Melbourne has some great DJs, but wonders if the crowds appreciate them.

"Unfortunately the level of musical education is really low. Most people go out to be seen, and to see what other people are wearing. It's kind of disappointing, because in the last year, a lot of the DJs have gone overseas. But I think Melbourne DJs kick butt."

#### School of hard knocks

When asked about his background Ransom describes himself as a high school dropout, and an art school dropout. As a teenager, he painted.

"Music was a sideline. DJ Choice Cuts, who's an old school hip hop DJ around Melbourne, used to let me practise at his house on

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## DJ Ransom

Saturday afternoons. He let me use his gear, showed me things, and got me started. He explained that the only way to get good was to practise, it wasn't to stand there and watch and annoy people. I had to go off by myself, and really put a lot of time into learning the techniques. Like in old Kung Fu movies, they make them stir the soup for ten years. He was like that with me. He'd switch off the system, go watch a movie, and say 'You're no good. When this movie's over I want to see what you've learned.'"

When Ransom was 21, he got his first Technics turntables. Now he plays graveyard, that is 3:30 am till 7 at Saratoga's, and he does a night called Purveyors at The Lounge on Saturdays. "I think it's the most upfront night in Victoria, possibly in Australia. It's the newest, newest music."



# Panthers: a monster club grows

...with an innovative approach to club management

## By Madeleine Murray

The entrance sign, about the size of a two storey house, gives a hint of the scale of the place. Two huge panthers sit on two 7m high columns, with Panthers: A World of Entertainment red neon between them. Below is a 'No Vacancy' sign, and a list of the activities. Cables Fun Park, Water Slide, Swimming pool, Revhead Circuit, Cable Water Skiing.

Not to mention the nightclub, conference rooms, restaurants, and 800 poker machines.

Even though it is noon on Monday, the car park is full. Cars stretch in every direction as far as I can see. Beyond the cars, low large beige buildings sprawl out, obscuring the horizon. Inside poker machines also light up the vast floor expanse. And from the restaurant window, I see three lakes recede in the distance.

This is a big country.

## Sound and Vision

Cameron Hipwell and Jeff Tait have been at Panthers for five years, and they love it.

Hipwell is production coordinator for the venues at Panthers. He looks after the PAs all over the place. Bands fax him their light plot, and he has it set up for them. He keeps the roster of guys who have names like Potato, Alby, PJ Citizen, Mabo, Pudding, Noddy, and the Chief. The club is busy, with bootscooting on Mondays, Wednesday rave party, and Thursday disco. Friday is bands' nights with inhouse production, and Saturday is sellout main disco with about 1200 people. There is entertainment every night in the cocktail bar.

Hipwell used to tour with bands, doing sound, then lights. "The scope here is just incredible," he says.

Tait does the video and computers. He tapes each football game, and then cuts a tape of each player for him, using a computer program. And he looks after all the videos in the place. He has made a Website for Panthers, and is working on an interactive about the club. He didn't have any of these skills when he started.

"These are things I've learned here. I started off at Smithy's, the music shop. I came here, and I just took this on myself. I was always into computers at home, but I saw the opportunity since I got here. That's the good thing about the club. They let anyone develop. If you believe in something, and you want to do it, they let you go for it. I've got my own donut here. This is a section I started."

## Management

"The club has a certain culture, it's not a heirarchical thing," the guys tell me. Inside their ID card is the management philosophy. "Each of us takes responsibility for building a culture of participation and co-operation, and a working environment which encourages our personal growth and success. In particular, we strive:

1. To treat each other with respect that encourages our worth as individuals;

2. To encourage all suggestions, creativity, and initiative;
3. To communicate with openness and trust;
4. To dedicate our efforts to growth and development of Pnathers, ourselves and each other."

Cynical readers may think this is all a bunch of new age hogwash. But it seems genuine, and effective. Hipwell and Tait are remarkably happy and fulfilled in their jobs.

"Ross, the entertainment manager, believes in us, and trusts us, which is really good," Jeff says. "It's not often, in a club situation, that the manager puts so much trust and belief into the guys, and that's the main thing, that's why it really works. He's not on our backs. He knows that we know what we're doing, and lets us do it. He gives us guidance.

"There's a canteen that's set up, it's like a smorgasboard. You can eat anything you want, everything from health food to ice cream. You can eat three meals a day for free. You're allowed to come in half an hour before you start, and after work too. It's great, especially for all these roadie guys. They don't have to go out and eat takeaway."

## Looking after bands and crew

The Sound and Vision section have meetings every week to talk about what entertainment will be at the club. Part of the sound and vision team 'mission' is "to have the best artist hospitality reputation."

Hipwell and Tait have both been on the road, and they want to make Panthers pleasant for bands to come to. "We have the back room set up with couches, free drinks, pinball machine. If they want a light show, we ask them to fax the plot, and we'll do it for them. It's not like we're saying we won't do things, you just try to get on with everyone here. That's the whole idea."

At this point, the two men are getting really excited. The system works. "We're doing it obviously for the club," Hipwell says, "because we want people to come to the club. But we're also doing it

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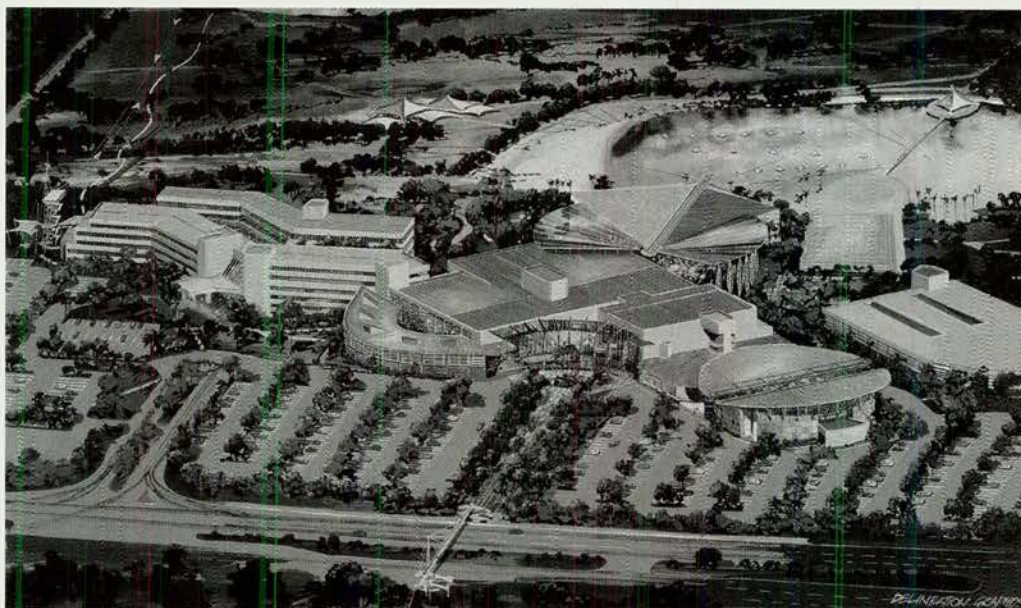
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# Connections



*Panthers eventual layout - new theatre, new rock venue, extra attractions. Artists impression.*

for the industry, because we know how hard it is."

"The main problem on the road is that you get to a gig, you're exhausted loading in, and you want a drink," adds Tait. "That's why we got the fridge, and we put cans of soft drink, bottles of mineral water, and orange juice. So they can get a selection. They don't have to worry about getting keys, or change. Tea and coffee, it's just all there."

"It's the sort of things that we wanted when we were on the road," Hipwell says. "It's not any big deal, it doesn't have to be a flash nice room, just comfortable. Lounge, pinball machine, and...a wooden toilet seat! A touch of class. We just want to break down the perception of us being a club, and we find that it works out really good, because then they respect us in return. Things like the load in are really important. Where there is a step, we'll make a ramp."

"If you load in at St George Leagues, it used to be up the marble stairs. There's all these people around watching you don't chip their marble stairs. That's what we'll be able to keep our eye on with these new rooms, that there will be a proper loading dock, and other things."

"We give them a carton of beer if they pull their PA down quick," Tait says. "Most venues, have really negative riders, 'don't, don't, don't.' We try to make ours positive. We give them a map, and anything else to be helpful."

The enthusiasm, commitment, and involvement of these two is

impressive. Who is this person at the top that has created this system which nurtures workers, gets total loyalty, and good work? He must be doing something right.

His name is Roger. Roger Cowan. He had a vision, 15 years ago, about building this place. He did it, and it worked. There is a rap video the club made for him, and a lot of testimonials. "Roger's the main man, and then the next line is a thousand people," Hipwell says. "It's not hierarchical. And Roger's a visionary, a genius. He bought all this property fifteen years ago, it was just a paddock..."

"And he just envisioned this could all happen out here," says Tait.

#### **Roger Cowan, the man himself**

"We try to encourage people to stretch a bit beyond where they would normally be, and reach out," Cowan told me. "If they have good ideas, we like to encourage them. They get that opportunity in their teams to do things under their own initiative. Both Jeff Tait and Cameron Hipwell have particularly done this. Jeff's gone out and developed stuff that we didn't even know he was capable of doing."

It all started about four years ago, when Cowan and others were working on new concepts for managing Panthers. They wanted more participation, and involvement from staff. "We looked at changing cultures, and flattening structures so that people got more opportunity, and became more empowered."

Back in '90, Cowan noticed that even though Panthers was breaking sales records, it wasn't too efficient. "I started to do a lot of reading about it, and research into world models. There's been a great change in managing companies in the last five or six years."

"I think it's working pretty well. The people you spoke to are a good example, where they do feel empowered to do things on their own initiative. It's also got some drawbacks, and at the moment we're making a few changes to fix the weaknesses in it."

"Instead of having middle management, we have Roger Cowan and the team leaders," John Bailey, spokesman for Panthers told me.

"We don't have assistant managers, and people in charge of large areas. Every bar or catering area has a team leader, each one is its

own business unit. They have to do a performance report each month. The problem has been, that with such a flattened structure, people couldn't really be checked on.

"We're about to start a new system called Jobfit. It'll go on computer, and we'll all have critical issues and outcomes that are in our own business unit, but also related to the ones of the company. They'll be tracked through the system, and the date they were supposed to be done by. We'll be responsible then, we'll have to report to something, even if it's a computer."

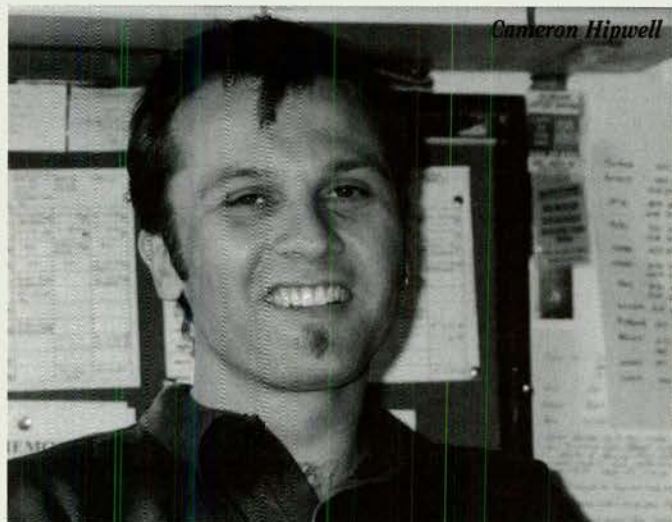
"That's the only danger in flattening a structure, that the onus is really on people to really get into it, and do the right thing. If you have the best systems, and people don't follow it, who then tells them they're naughty boys, or girls. That's been the only problem, but we've fixed it now. People are empowered to make decisions here, without having to ask anybody."

#### **New projects at Panthers**

Every entertainment room in the club will either be upgraded, or moved, in the next few years. An auditorium is being built. The consultants are Gazzard and Sheldon.

The Evan theatre will seat about 1000, with movable seating.

In between will be a Hard Rock cafe style place, with entertainment.



*Cameron Hipwell*



# The Tony and I

Brian Thomson, Set Designer

by Madeleine Murray

**I**magine the most prestigious, crucial Broadway award. Tony mania begins in early May, and ends in June, when the awards are announced. For two months The New York Times, The New York Post, and all the other papers and magazines carry big ads for the Broadway shows, with "Nominated for 5 Tonys! Best musical! Best Actress! Best Set Design!" The nominations alone carry enormous clout, and box office sales. The play that wins is virtually guaranteed a full house, the run extended by a year, and endless world touring possibilities.

A Tony is such a big deal, that this year Julie Andrews refused her nomination because she felt that the production itself, *Victor, Victoria* had been overlooked.

After all the stress, and suspense, an Australian production of *The King and I*, scoops four Tonys, including Best Set Design. Quite a coup for the designer, a banker's son, who grew up in Perth.

## *The King and I*

Brian Thomson has a good facade. His house,

in a quiet lane off the arthouse/cafe area of Sydney, is white, with red door, blue gas meter, yellow railings, and the word FIVE written in red letters on the wall. Inside, the colour red features strongly in banana chairs, a neon Y, a rocket, and a red jumper which intensifies Thomson's dark, piercing eyes.

Rodgers and Hammerstein's *The King and I* was put on at the Adelaide Festival, in 1991. The composer's daughter, Mary Rodgers, saw it, and wanted it for Broadway. Four years later, the sets were brought out of storage, and shipped to New York.

"It was sort of a bittersweet experience," Thomson says. "On the one hand, it was quite tough fitting the scenery into a theatre it was never meant to go into. It was freezing in New York, a seriously cold winter, which I didn't really mind. The scenery had sat around in containers for four and a half years, so it wasn't in very good condition when it came out. I had a constant battle to make sure that it looked up to my standard.

"The great part is that when it opened, we really amazed New York. *Big*, and *A Funny*

*Thing Happened on the Way to the Forum* were the ones that everyone thought would completely dominate the box office, win all the awards, get all the rave reviews. In came this *King and I*, and completely floored them.

"We got reviews that you could only dream about. Outside the theatre now, it says 'The most ravishing show you will ever see.' Truly remarkable reviews. One reviewer said it was better than anything you'd see in the Asian section of the Metropolitan Museum. I thought the rapture towards it was quite wonderful. Then we got Tonys, so that's pretty fantastic stuff." Thomson also won the American Outer Critic Circle Award for his work.

Thomson briefly thought about moving to New York. "I don't really want to. I enjoy the range of opportunities here. In New York, I'd be put in the 'exotic musicals' box. After I did *Superstar* in London, I got offered all the religious musicals. After *Rocky Horror Show*, I got offered all the transvestite musicals."

Thomson has seen the highs and lows of New York. When *Rocky Horror* played there 20 years ago, it was panned. "So I know what it's like to do a disaster, and I know what it's like to do a hit. And I think that was probably a very good grounding, to have done the flop."

## Lighting in *The King and I*

Nigel Levings was the LD, and was nominated for a Tony. "Given the fact we had enormous problems, such as no time, I thought he did an astonishing job," Thomson says. "It was wonderful to see the added dimension Nigel was able to bring to the show after four years. We used a lot of gauzes, and there's always a hint of what's beyond the gauze." Thomson used a series of five elephants as wings, and receding. "Nigel lit the elephants, going back so you feel that the set goes on forever. Very beautiful."

They also used a starcloth, a backdrop with fibre optic lights. "It would creep in during the musical numbers, you could just see it through the gauze. One reviewer said it was the best use of it he'd seen. Nigel is one of the best LDs in the world, and has to be seen as such.

"We didn't do the usual front cloth number, big set, out goes the cloth, etc. The whole thing did flow in a much more 3D way. The Americans were stunned by the fact that you could do an old show, in a new way."

## Lighting

Thomson mainly works with Nigel Levings, and Rory Dempster. "If I'm asked, I would always find it hard to choose between those two. With the *Doll*, I prefer Nigel's romantic lighting. And I feel that Rory is the best white lighter around. But I wouldn't want to categorise them anyway."

Lighting is a powerful element in Thomson's work. *Macbeth* was simply huge hanging shapes, lit to throw strong shadows on the stage. "I always get the lighting designer involved early. A lot of what I do relies on lighting, so I need to consult. In the *Doll*, I'm having light up dolls, and a light up floor, and

we need to work those ideas through. In *Aida*, we had light up pyramids. I always discuss and chat with them, then I make a rough model which I show the director."

Thomson admits that he doesn't keep up with all the technology. "We had more computers in *The King and I* than in Dick Smith's. The whole stalls were full of them. All that is fascinating, and I embrace it all, but I don't really know it." But he loves those lights with mirrors.

"Lighting is part of the actual design. I always try to think of ways to use it. I don't just design a set, and have it lit. *Macbeth*, lit by John Rayment, had a strong sculptural quality. You're really doing a sculpture. I'm the first of the 3D designers. Back in those days, when I did *Superstar*, for the first time ever things weren't flat. They were dimensioned, geometric."

#### Theatre today

Thomson is an uncompromising, daring designer, whose risks have paid off. He has been known for his strong palette, and use of steel and neon. He is quite outspoken on the subject of package tour theatre.

"*Beauty and the Beast* isn't going to change your life. Neither is *Phantom of the Opera*. Those things are beautifully done. The skill in them is superb, but it doesn't necessarily make it good, as far as I'm concerned. I'd much rather see all of that technology and wizardry applied to *Night on Bald Mountain*, or a wonderful piece of theatre.

"The reviewers noted that *King* had six wonderful songs. *Rent* has several great songs. Maybe the quality thing is going to happen. You don't just get "Memories" and two hours of sheer boredom. The first thing I did when the songs started in *Phantom of the Opera*, was to look for the exit. Stunning as it was as a piece of physical theatre, I could not stand any of the sentiments, and I hated the music. I just wanted to get out.



"I'd much rather use all that wonderful design, set, costumes, lighting, sound, for something a bit more substantial, with some guts to it. I think *King and I* is showing people that a hit show can have great songs, can take you on a fantastic journey, and tell a wonderful story that you care about. That's the thing about Rodgers and Hammerstein, as opposed to Andrew Lloyd Webber. Rodgers and Hammerstein music is staggering, the way that it tells the story, and sets the emotion."

This is a prescient sentiment, because it has just been announced that *Showboat* will be coming to Melbourne in '98.

#### The Rocky Horror Show

*Rocky Horror*, the film, was designed by Thomson, and shot over six weeks. Thomson performed miracles with little time or money. During one stressful day, the director, Jim Sharman, asked Thomson where the secret passage into the laboratory was. Thomson had forgotten, or never known, but there wasn't one.

"Well, how does Doctor Scott get in?" Sharman asked.

"I don't know, just push him through the wall," Thomson snapped back.

And that was the story behind one of the best moments in the amazing film, when Doctor Scott comes crashing through the wall.

#### The present

Thomson designs for opera, film, theatre, television, and dance. "That range keeps me focussed, and keeps me on my toes. There's always a challenge." He is currently working on *Aida*, and *Summer of the Seventeenth Doll* for the Victorian State Opera, and *Medea* for the Sydney Theatre Company. And he is currently probably not working on a Lloyd Webber show.



#### The King and I

Executive Producer: Dodger Productions. Director: Christopher Renshaw. Scenic Design: Brian Thomson. Lighting Design: Nigel Levings. Costume Design: Roger Kirk. Sound by: Tony Meola and Lewis Mead

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# THE PA PAGE

## Power to the people

*Part Two in a series, by Michael Orland.*

About fifteen years ago, I was hiring a lightshow comprising 16 par 58 cans and a switchboard which was powered via a three phase connector. After wiring up at one particular inner city gig, the lighting person flipped on each of the three masters. Six globes on one of the masters all blew at once. I panicked and rang a technician. "Ah-hal!" he says, "Floating neutral!" I alerted the club management who sent for the club's electrician. He spent 20 minutes re-wiring the outlet and re-attaching it to the wall (it had been hanging by its wiring). The manager later produced a letter from the electrician claiming no fault had existed, so the club was not liable for any damages incurred. I felt very cheated by the cover-up and stored the experience among my own personal X-files.

Now, I'm sorry if I've offended any audio purists by mentioning lighting on the P.A. page, but the point is there were two three phase outlets near the stage, and I could have just as easily used the faulty one for powering the audio. In such circumstances, most of the time you will simply blow mains fuses. Occasionally, the ghost of Murphy will be lurking in the wings and an amplifier will blow to protect the fuse. This is one good reason why you should always use the recommended size mains fuse. If an amplifier is supposed to have a 5 amp fuse, and it has been fitted with a 10 amp one instead, then there is often nothing to stop the supply rails swinging up and blowing everything in its path.

There was yet another story doing the rounds a while back about racks of Phase Linear amplifiers at the Sydney Entertainment Centre. As the FOH engineer brought up the volume, he noticed weird things happening, balance wise. As he pushed up the volume, racks of amplifiers had their input voltages raised, sending their internal voltages from 100 volts up to 180 volts turning literally hundreds of output devices DC, destroying all speakers in their path. The problem was traced to a combination of a floating neutral and poor fusing.

Which brings me back to the point I was making when I ran out of space last month. The compromise you should be aware of when using a three phase to 240 volt dis-

tribution board, usually the only practical means of adequately powering the modern truck sized sound system. The common neutral pin on the connectors, which are arguably the most important, are also the smallest and, in older connectors at least, the hardest to tighten. And if you ever lose the neutral connection, voltages across the three phases can rise or fall by as much as 50 volts, depending on how imbalanced the three loads are.

Even with a secure neutral connection, it is good practise to balance loads as much as practical across the three phases. When I first started powering audio systems off three phase I thought "Easy! Phase 1: FOH, phase 2: Monitors, phase 3: stagepower." I was soon shown how unbalanced such loading was. Even the most involved bands we worked with drew tiny amounts compared with our Front of House amp racks. Since then we generally allocate phase 1: FOH left, phase 2: FOH right, phase 3: monitors and stagepower. Sometimes even this needs a rethink. We have done private functions with large bands where we have used racks of amplifiers for monitor requirements and only a single composite cabinet per side for FOH. In such cases, to balance the phases we've had to run stagepower with FOH and split monitor power over the remaining two phases.

Running sound and lighting together off the one three phase outlet can be a pretty dodgy proposition. The dimmer racks in our A rig have large scale ammeters wired across each phase. I've often sat at the monitor desk, bored to bits, gazing across at these meters and watching them swing wildly as banks of Par 64s are thrown on and off. Whenever I've had to draw audio power off the three outlets on the dimmer rack, I've often thought this can't be good. And when our desk lamps start fading up and down inversely with the 64s I get very nervy indeed.

Wanna know (yet another) thing I really hate? Sound level meters wired up to trip audio power outlets! These things are usually installed after the venue has had its licence threatened by noise complaints. The management can then demonstrate to licensing police that

they have made a quick attempt to deal with the problem. And that's OK with me. The last thing I want is one less venue I can indirectly draw income from. What burns me is that so many venues can't be bothered following up with the more permanent solution, soundproofing. Our local pub is a good example of a little time and effort in this direction paying off big time.

When confronted with these meter/power switch deals, it's important to realise that most of them have been "weighted" to deal with grannie living down the road, complaining about the dull thump of the kick drum coming through her walls. I have heard support band mixes which didn't seem that loud interrupted by power outs, followed by main band mixes which seemed twice as loud which weren't interrupted. The difference wasn't in the metre/switch being adjusted, but in the average frequency response of the mix itself.

So many amplifier faults I've encountered seem to happen on switch-on. At Central railway station in Sydney there used to be racks and racks of Altec amplifiers which were up to 25 years old. People who worked there claimed that they'd never known one to fail, and that the main reason for their reliability was that in all that time, they'd never been turned off. One night at a venue with power being thrown on and off under load, and the system owner could wear massive repairs.

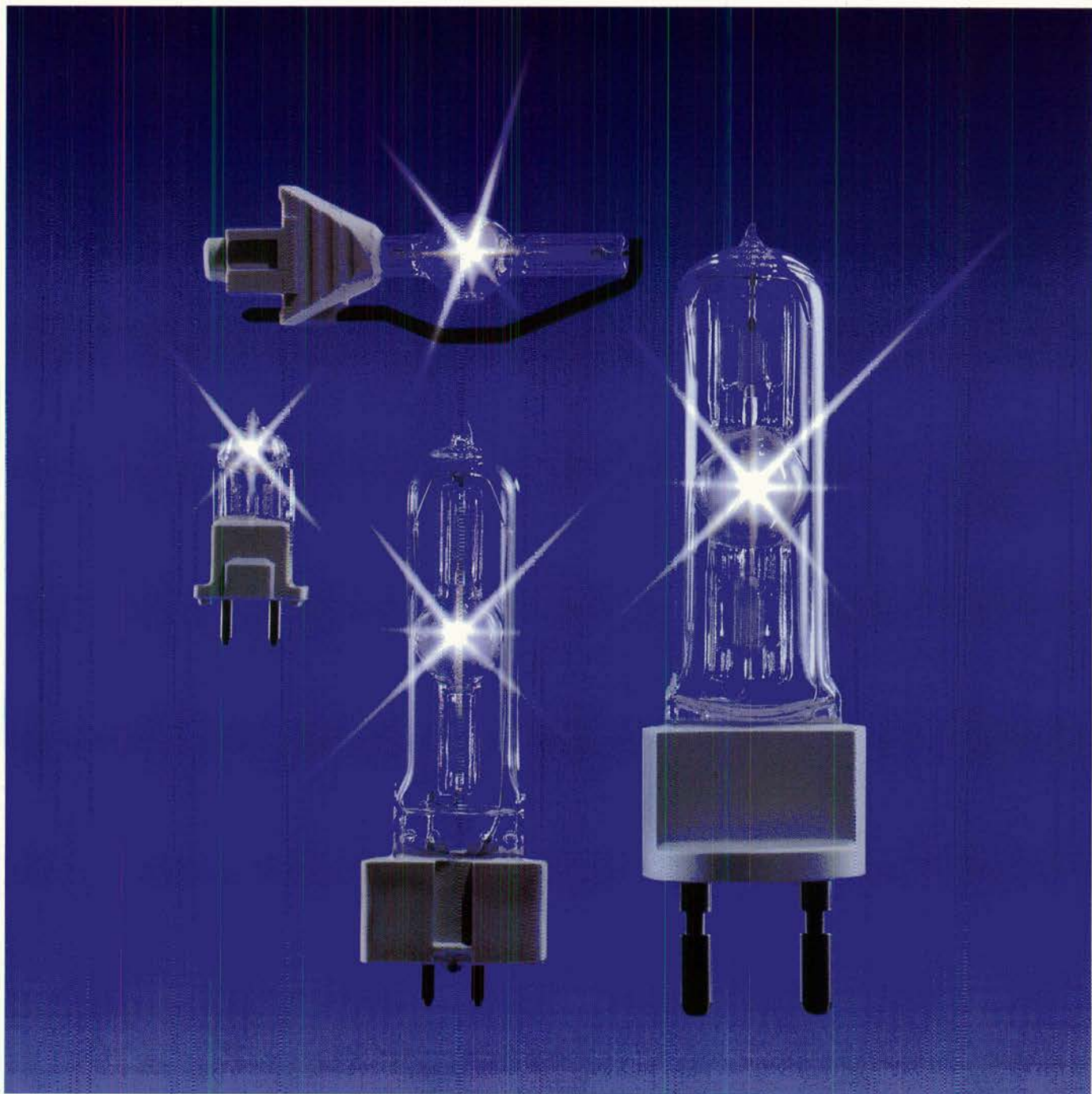
One of these level meter/power switches exists at a certain RSL club in Smithfield which I'll call "Venue X". In this case the meter that indicates the point at which power trips can't be seen by the engineer when mixing at floor level! Earlier this year I had power thrown on my system while mixing a Puccini aria! Yes, I guess I was pushing the organ bass at the time...

I have no helpful hints for overcoming the ravages of such devices when the system owner has no direct control of the mix. Apart from locating the microphone that controls the system and sticking a carefully cut piece of gaffer tape over the diaphragm. Perhaps if enough professionals objected strongly enough.....

*Michael runs The Public Address Co in Sydney, call (02) 799-7219.*

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