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Entertainment Technology Trade Monthly



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Some quick end-of-year words:

First, we truly hope you have a sensational holiday break - if at all possible due to your work commitments!

Second, note we ALWAYS run corrections, clarifications and fix errors. Along the way this policy generates some kidding, with the magazine title sometimes lampooned as 'Corrections'.

Well guess what - the policy remains. We would prefer some light hearted banter as people comment about whatever may have occurred in these pages. In actual fact, we condense more news and information into these monthly pages than most other trade magazines worldwide. So mistakes DO happen, no matter how careful we are. And we prefer to fix them.

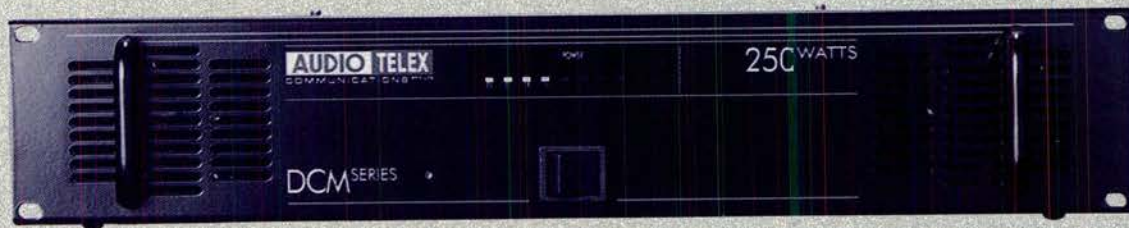
Third, have we **ignored you** recently? The volume of articles and news releases sent to us for consideration is now huge - a stack that fills two trays as I write. Please don't be offended, give the editor a call anytime you wonder about your material.

•Remember we do not publish a January issue, see you February!

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Connections

DECEMBER 1996 - JANUARY 1997. Number 39

GEAR IN THE HOUSE

Spending Spree Follows Drought at Intercity

Intercity Gearhouse are breaking out in every direction with fresh capital buying tonnes of new equipment. It's an exciting time for the staff, who banged heads with a reluctant and corporately constrained previous owner when Intercity was part of the AAV group. As any successful hire and production business owner well knows, New Equipment Means Everything.

Intercity are now part of Gearhouse Group PLC, a carnivorous UK headquartered operation who quite simply seek world domination or something close. Intercity Gearhouse is now part of a global Presentation Company. Gearhouse bought Intercity for a bargain price, believed to be \$1.8 million. AAV sought a friendly sale because AAV remain in the busi-

ness as Corporate Theatre Producers and they still need the services Intercity Gearhouse offer. AAV had chosen to sell, and were talking to a local group who were keen to buy Intercity - and pay more than Gearhouse.

Another lesson any business operator knows well, or should, is that equipment doesn't make a company. People do, and AAV felt Gearhouse would make a better operator of Intercity for the future, by empowering the staff. And they have, with the firm now run by state managers and Russell Bennett - together making decisions referred back to the UK.

Cashed up and re-equipped, Intercity Gearhouse can now push inventory as a means of winning new business.

(continued on page 30)



Intercity Gearhouse marketing manager **Russell Bennett** with NSW state manager **Sonja van Vliet**



Australian made MFX-3 plus stars at AES in LA

FAIRLIGHT'S DVD MOVE

Fairlight ESP Pty Ltd are Australia's greatest recording equipment success story. The firm has been around 22 years in one form or another - and has just announced that their staple product the MFX-3, will be 24 bit DVD compatible from next year.

Fairlight is a major exporter. The firm has offices in North America, Europe and Japan, and dealers in 27 countries plus Australia and the USA.

What fuels Fairlight's success in a world where there are more than 150 digital audio workstations? It's the unique abil-

ity to record 24 tracks simultaneously to one hard disk drive. This is due to a proprietary platform, which means Fairlight make their own processing unit. Not bogged down to a PC, Windows or the Mac O/S means a Fairlight MFX can do what its maker intended - record and edit audio.

Fairlight now boast turnover of A\$18 million, with 64 employees - 9 in the USA alone.

The new release for Fairlight is the MFX 3 plus (above), which can expand from a base 8 track system through to 24 tracks. MFX can both expand and be updated.

Yothu Yindi Reveal Crew Apartheid

South African Black Tech Crews Denied Basic Training, Australians Propose 'Achievable Action' Plan For All Tours.

• See page 6

LA AES *We find the new gear & trends for you!*
LDI ORLANDOinside

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INDUSTRY NEWS

Yothu Yindi Uncover Crew Apartheid

*South African Black Tech Crews Denied Basic Training –
Australians Propose 'Achievable Action' Plan For All Tours*

When Yothu Yindi crew chiefs Henry Schipper and Michael Lippold arrived at the Kyalami Complex near Johannesburg for a large outdoor concert, they were surprised at the organisation of the crew. Wearing South African Roadies Association (SARA) T-Shirts were many blacks - but they were relegated to basic tasks. None were allowed on the stage itself.

More disturbingly outside a recent performance by Manhattan at the Standard Bank Arena, 25 members of SARA toyi-toyed outside because promoters had refused to give them a chance to learn from the groups technical crew. Show personnel were unsympathetic as the small group sang and danced outside the gates. Finally a black A&R person negotiated for two of them to come in.

Freddie Nyathela, head of the SARA confirmed a sad situation - that his crews had virtually no training opportunities. Trained technical crews in SA are generally all white, a situation stemming from apartheid and the longish time frame that true technical skills take to amass.

Remarkable as it seems, but the Australians found many keen aspirants in the ranks of loaders and gofers who were just hankering for the chance to learn by watching and doing more involved tasks. They really want and need to learn.

"With the embargos lifted the global music industry is in there touring, the business is cleaning up. But there is no training for these guys and no opportunity" Michael Lippold told Connections.

Freddie Nyathela puts it into plain words. "For the past five years we have simply asked that members of SARA be given opportunities to learn from, and exchange experiences with, technical crews that visit this country. This has proved to be an uphill struggle, because the white controlled music industry is content to let us lift equipment and pay us meagre wages".

The standard rate for white crew in SA is 25 rand per hour, whereas SARA members are lucky to get 80 rand for a long day. More concerning is that a cultural imbalance has always existed in South Africa whereby the black population have been traditionally denied knowledge - the illiteracy rate in Johannesburg is 72%, while black youth unemployment runs at 75%.

Michael Lippold and Henry Schipper, along with Yothu Yindi members were taken aback by what they saw during their brief tour. A country with a commercial touring market but with technical skills not available to the most willing is an unusual thing.

ACTION PLAN

Several things can be done about this. Michael Lippold points out that international acts entering South Africa can simply request on their rider that a SARA member be allowed to shadow each white technician at each show.

A request to this effect is being emailed to artist managers worldwide. Knowledge of the problem amongst Australian crew who may visit South Africa is important too, so that if a bunch of keen looking trainees wearing SARA T-Shirts turn up at a show they are given encouragement, not treated as potential bandits.

Meanwhile, Connections has sent SARA a donation of a large collection of our technical books and videos, valued at over \$800. We will also send copies of this magazine each month to SARA. Readers who feel that this is a good cause can send us a few dollars or some high denomination postage stamps to help towards airmail costs, which are A\$8 per mag.

We will ship as many back issues as we can, the more postage assistance we get, the more we can send to SARA by airmail.

Send your stamps or money to:
**Connections, SARA Appeal, PO
Box 439, Epping NSW 2121.**

IMPORTERS, MANUFACTURERS ADVISORY

NEW REGULATIONS ON ALL EQUIPMENT SALES

From **January** no new equipment may be introduced onto the Australian market unless it complies with strict new EMC (Electro Magnetic Compatibility) regulations.

Importers and manufacturers of anything electrical must abide or face heavy penalty. New products must be labelled with the 'C-Tick' mark. The final stage then requires that all products sold from January 1999 must comply.

It applies equally to guitar amplifiers, lights and samplers. Anything electrical is affected, be warned.

Details: online from Spectrum Management Agency (SMA): www.sma.gov.au, call +61 (0) 6 256-5334, or fax 253-2424.

CREST AMP WAR

CREST power amplifiers may win market leadership from QSC in Australia during the next year, following an unusual distribution decision which has created two high profile distributors.

The Crest decision re-authorises previous distributor Production Audio Services- alongside incumbent distributor Jands Electronics.

Jands won Crest amplifier distribution rights in 1995.

Then in November came a bombshell for Jands from Crest - news that Australia would have two distributors for at least the next year. Jands are apparently unimpressed. Managing Director Paul Mulholland offered a terse 'no comment', then ventured that "it is an interesting decision" before ringing off.

Production Audio Services are upbeat, having maintained distribution of Crest mixing consoles throughout. PAS are now full line Crest distributors, whereas Jands will concentrate on amp sales alone.

Jands will continue to distribute Crest amplifiers alongside Production Audio Services - the outcome is truly great for customers who can be expected to benefit while the distributors square up for market share. Look out QSC!

BIRTHS

○ **Michael Nutt**, Company Manager at **Video Replay Systems** and his wife Helena have announced the birth of their daughter Jessica Elaine on Sunday November 10. Mother and daughter doing fine.

○ Belated news from the Sydney Opera House Lighting Department. Baby, **Ari Norris-Ross** was born at The Royal Womens' Hospital and weighed 4kg and was 44.5 cms long. Mother and baby doing well.

MOVES AND CHANGES

○ **System Sound** have completed their long awaited move to their new headquarters, just down the road from their previous location. Their new address is: 10-13 Porter Street, Prahran VIC 3181, T 03 9529 2633, F 03 9529 4897

○ **Blacksheep Productions** have announced the return of **Kirsty McCarthy** from her European holiday and she has assumed her previous position as Operations Manager for the Staging Department.

○ **Phil Clark** and **Ves Campion** are now with **Intercity Gearhouse** as Account Service Managers. Phil Clark was previously with Intercity and has returned after a stint at Polygram whilst Ves Campion was at Grafton's Lighting (Belated News).

○ **AVLA** welcome the newest member of their team, receptionist **Natalie Sertorio**.

○ **Spy Matthews**, Chairman of **Delicate Productions** announced that he will be relocating to his home city of Melbourne in late December. He left Australia for Los Angeles in 1976 as Production Manager for **Supertramp** and a few years later in 1980 he founded Delicate Productions with current business partners and former Supertramp technician Smoother Smyth, Steve Dabbs and Gus Thomson. Spy will remain as a shareholder of Delicate Productions and its subsidiary, Delicate Electronics Sales Inc., and act as consultant

to both companies. Spy can be contacted through Delicate Productions at 805 3881800 fax 805 3881037 or e-mail spy@delicate.com.

○ **Oracle Laser Productions** is proud to announce a new staff member — **Andrew Brajbisz**, previously with Total Concept Productions in their production department. Andrew will work in the Sales and Production areas of Oracle. Contact: 02 9938 4466.

DISTRIBUTION

○ **Beyer Microphones** will now be distributed in Australia and New Zealand by **Syncrotech Systems Design Pty Ltd**. Phone Australia (02) 9417-5088, New Zealand (09) 300-3038

○ **Jo-Anna Kamorin-Lloyd** has started her own company **JKL Productions P/L**. In addition to distributing Tomcat trussing, Columbus McKinnon theatrical chain hoists, Skjonberg controllers and Suntrak drapery and accessories, JKL will handle Motion Development Industries' line of product. Contact: T/F 03 9572 2303

○ **Technical Workshops** of Melbourne have been recently appointed as the Australian distributors of Fostex professional headphones and microphones. Contact: T 03 9866 6655 F 03 94866 6991

○ Adelaide company **Hi-Z Sound & Production** are still agents for Black Express lasers and now handle DJ mixers, CD players, effect lighting including brands such as Nu-Light Lasers, NJD, Ryger. Call Sue and Steve Williams on: T/F 08 265 4746

○ **Wild Gravity** of Townsville are now Australian distributors for **Total Fabrications**. The firm is famous for its outdoor roof systems in addition to trussing. Check their work at www.totalfabs.com, or call Wild Gravity on 077 213-540.

EMPLOYMENT

○ **Blacksheep Productions** are still looking for a Video Production person after advertis-

ing on the net. The main criteria for the position is experience with the Media 100 system and the use of Photoshop, Director etc. If interested contact Sue Payne on 02 9212 7222 or e-mail: blksheep@mpx.com.au

WEB SITES

○ **ARX** have a new website: <http://www.arx.com.au>

○ Queensland audio visual supplier and installer **Richardson & Devine** has a web site with some good links to a number of industry contacts and manufacturers: <http://www.ozemail.com.au/~richdev/>

○ The **International Association of Assembly Managers (IAAM)** website has information on the World Council for Venue Management; facility trends and developments: <http://iaam.org>.

See also **EventSource** which lists venues, products and services and a calendar of more than 10,000 trade shows. US based: <http://eventsource.com> And, the World Council for Venue Management (WCVM) can be found at: <http://venue.org>.

○ **Opcode** have upgraded their web site and is apparently easier to navigate offering eight areas for exploration: <http://www.opcode.com>

* All web-sites listed in *Connections* can also be accessed through our links page (go to: www.conpub.com.au) It's updated monthly.

CONFERENCE

○ **Australian Cable & Satellite Television Conference**, Sydney February 4 – 6: AIC Conferences: 02 9210 5777

HELP!

"I met the Four Kinsmen last summer when they performed in Las Vegas but can find no news about them on the net. Can you help?" says an e-mail from DeNeice Kenehan from Las Vegas, USA. This is a cry for help: fax (702) 361-8718; 11870 Parvin St., Las Vegas, Nevada 89123 US.

AWARD

○ **Laservision's** Managing Director **Paul McCloskey** has won the inaugural **Telstra NSW Small Business Entrepreneur Award** recently announced in Sydney.

Laservision have been finalists three times in the NSW Business Awards and this year Laservision were among the top five in the category "Companies With Under 50 Employees", "This award is a significant across-the-board endorsement of our team's high performance." said Laservision's Managing Director Paul McCloskey. Laservision recently secured major export contracts worth \$7.2m for *Everland*, a large theme park in South Korea. Mr McCloskey continues, "We have also signed a major contract for Laservision operations in India and offices are being established in Bangalore with a division in Bombay." Contact: 02 9658 1000

OBITUARY

○ **Robert Racic** has died at the age of 32. He was well known in the professional audio and music industry and his career spanned music production, engineering, and DJing as one of the high profile DJs in Australia. As a mixer and mastering engineer he worked with acts such as *Rockmelons*, *Severed Heads* and *New Order* among others and established dB Mastering with sound engineer Kathy Naunton. He died on October 25 as the result of an illness caused by a brain virus.

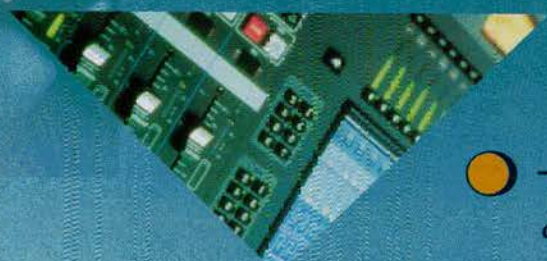
MISPLACED AND STOLEN

○ **AR Audio Engineering** have lost the following items whilst they were in transit. 1 x Martin MX5 Speaker Controller (SN#96001). The only one in the country; 1 x QSC Powerlight 1.8 Amplifier (SN#089502—); 1 x QSC Powerlight 4.0 Amplifier (SN#129504748); Contact Julie King at AR Audio Engineering on 02 9810 5300.

○ **Graham Harrison** from **Horwood Australia** reports the disappearance of a

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EnTech



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● TRADE SHOW & CONFERENCE

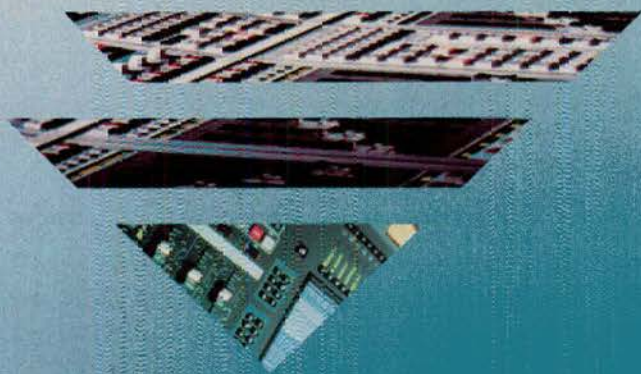
● < ENDS ON ANZAC DAY >

Melbourne Exhibition Centre April 23, 24, 25 (Conference starts April 22nd)

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Keynote speaker: Bill Forster (editor, One to One mag, UK)

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> CONFERENCE

Where do tomorrow's technicians come from?

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■ April 23rd, first day of Exhibits

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Technology

WHAT'S NEW, HAPPENING & IMPORTANT FOR THIS MONTH

Connections sent **Howard Jones** to cover the AES show in L.A. This is where you find the next trends in pro audio. It's a happening show....

AES: IT'S PRO AUDIO HEAVEN (with TUBES!)

The 101st convention of the Audio Engineering Society, held last month in Los Angeles, was a very vibrant affair. The exhibition stands filled a giant hall at the L.A. Convention Centre and attendees from all over North and South America thronged the workshops, seminars and demo activities in the surrounding rooms.

When the show opened, the pointy heads went for the various technical sessions whilst the gadget heads made a beeline for the exhibition hall. The latter had plenty to feast on. Besides some exciting new product releases, the show offered an opportunity to catch up on product enhancements both current and planned. Dividing my time between the exhibition floor and the seminars, some dominant trends soon became apparent.

BIG TREND

The biggest story of this show was undoubtedly that **DVD** has already arrived in a big way. The Hollywood studios have moved to embrace DVD-Video, taking some of the audio post houses with them. Players are available now, with at least two different brands being demoed at the show. Unfortunately, the DVD-Audio specification is still being argued out, but DVD discs carrying video, surround sound and graphics are likely to become available early in 1997. Mastering software and hardware for both audio and video is also ready to go. See our exclusive coverage of DVD and its ramifications in the special DVD feature in this issue.

One of the unresolved issues with DVD is labelling. Since it is a double-sided format, there is only room for a very small label. An extension of the CD spec may show the way forward. Apparently, Red Book has always allowed for the inclusion of text information to be included with the audio data. Philips have now instituted Text Creation and Formatting and demonstrated it at the show, using a new model Sony 200 CD changer. When a disc is

selected, the changer reads the Table of Contents which includes text information giving details of the recording, artist etc. This information is scrolled across the LCD display on the changer.

PRODUCTS THAT STOOD OUT:

Studio Audio Video have been working with Philips on CD Text Creation, incorporating it into their SADIe digital editor. Presumably there is a separate text editor and the text information, once assembled, can be downloaded to CD-R along with the audio data, flags etc.

The growth in digital audio editing platforms showed no sign of slowing, with existing manufacturers of fully integrated systems being joined by newcomers offering a variety of plug-in PC cards and editing software.

Digital Audio Labs showed their new V8 multitrack platform, **Digital Studio Processing** continued to promote their post-production workstation, **Sonic Foundry** showed their Sound Forge Windows software, **Micro Technology Unlimited** debuted the MicroSound Krystal workstation and **Soundscape** unveiled 4 new products which increase the power of their existing system.

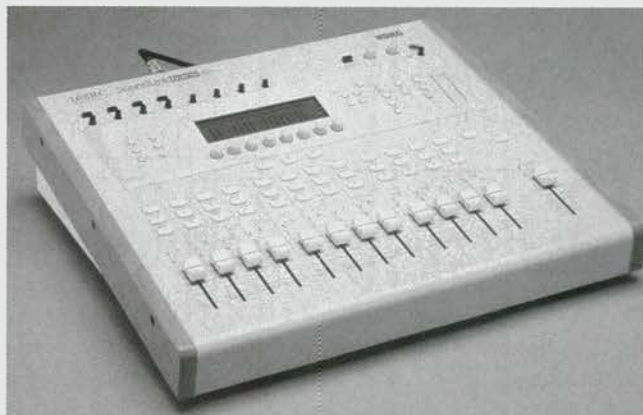
The Pyramix virtual studio, introduced by **Merging Technologies**, is a workstation for Win95 or Windows NT. Offering direct connection to digital 8 track, CD and DAT, their network-based audio editor is claimed to be the only workstation designed specifically as a distributed network.

What was apparent, however, is that **Pro Tools** is pulling away from the



Mackie move into studio monitors

field. At the show they announced the imminent release of Version 4.0 software and their stand was shared with, seemingly, a dozen or more third party suppliers who had developed options and TDM plug-ins for Pro Tools. These include the DC66 dynamics processor from **dbx**, declick software from **Cedar**, dynamics processing from **Drawmer**, 3D sound processing from **Spatialiser**, surround tools from **Dolby**, PurePitch from **Wave Mechanics**,

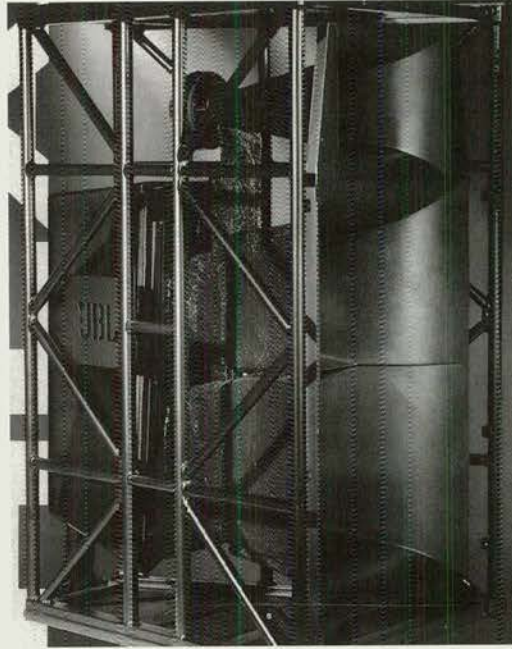


Korg Soundlink with ADAT optical interfaces

JBL DEBUTS NEW HLA TOURING SOUND PA

JBL used AES to debut their new HLA series large touring sound speakers. Using newly developed drivers in a so-called SpaceFrame, JBL claim that the HLA (Horn Loaded Array) speakers are radically different to any other professional sound reinforcement system currently in use.

The initial components in the HLA series are the 4895 three-way and the 4897 sub-woofer. The 4895 is characterised for frequencies from 100Hz to 20kHz with the sub-woofer doing the job from 100Hz down. At the heart of this series is JBL's new Dual Coil Drive transducer technology. The DCD driver assembly features Neodymium magnet construction, dual voice coil assemblies, improved heatsinking and airflow and Optimized Aperture Waveguide. Utilising two magnetic gaps and, therefore, 2 voice coils allows a doubling of power handling capacity according to JBL. However, the significant weight reduction achieved in the construction of DCD assemblies may ultimately prove even more impor-



tant for touring sound companies. At the preview, a new 10" DCD driver was passed around - it weighed about 7lbs in the old money, down

from around 22lbs for a traditional driver of this size.

In research for the HLA series, JBL developed a new 3 way Multiband Waveguide. Powered by 2 DCD drivers in a composite magazine together with a large format compression driver, this gives 40 degrees coverage horizontally and 30 degrees vertically. The idea of the composite magazine is to give the transducers powering the waveguide sufficient rear compression load to balance the acoustic resistance provided by the waveguide itself.

Viewed from the front, the HLA 4895s look like traditional enclosures. As the accompanying picture shows, however, the front is simply a protective grille with the speakers contained in a light but strong metal frame. The upper driver is encased in a moulding and the lower two in the composite magazine, with a coupling joining the two elements. In both cases, the heatsinks on the drivers are left exposed to the air. This has several advantages. Firstly, together with a preferential air flow system for the heatsinks, this should offer a significant reduction in operating temperature (continued over)



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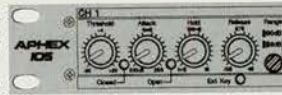
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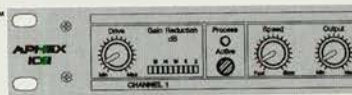
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Write in Reader Service Number: 134

From Crane Song: the HEDD (top) is a digital signal processor - a Harmonically Enhanced Digital Device. The STC-8 (bottom) is a stereo compressor/peak limiter.



cusheets for Pro Tools files from **WildSync** and several others besides. Meanwhile, Version 4.0 will offer major new editing and mixing features including send and mute automation and dynamic automation of virtually all TDM plug-in parameters. Pro Tools 4.0 mixing features are to include touch, write and latch automation modes and a new Narrow Mix view which will increase the number of accessible mixer tracks on screen. Version 4.0 will also work with **Mackie's** HUI.

The retro trend continues unabated. In fact, there was so much valve gear at the show that I've prepared a separate report on all the mics, mic pres, EQs, limiters, desks and even recorders which now feature valve technology. That report also details the news from **Groove Tubes** about a valve manufacturing facility

you 02R owners - a special kit allows you to cascade an 03D with your machine.

Another digital console taking a bow at the show was the **Korg Soundlink DRS 168RC**. The 168RC is a 24 input, 18 bit, 8 bus mixer offering 16 digital inputs via 2 ADAT optical interfaces and 8 analogue mic/line inputs. It has 2 internal 50-preset effects processors and full automation.

Another brand new product came from **JBL**, celebrating their 50th year producing loudspeakers. They demoed their new HLA series touring sound system, featuring the all new Dual Coil Transducers. The 4893 3 way and 4897 sub-woofer are easy to aim, rig and fly. The DCD speakers use ultra-light neo-dymium magnet assemblies and are mounted in a special SpaceFrame enclosure. See our special



which they are to open.

The most obvious "look-at-me" new product at the show was the 03D from **Yamaha**, the third in their line of digital consoles. A scaled-down, more affordable version of the 02R, this new console nonetheless incorporates a high degree of functionality. The 03D (*pic, p.19*) comes with 26 inputs, 16 direct outs, 6 aux sends, 4 sub groups and a stereo bus. Input features include a 4 band parametric EQ and limiter/compressor/gate on every channel. There are also 2 internal effects processors which include several new effects. The 03D can digitally interface with modular digital multitracks using the same option cards as in the 02R. A built-in computer handles console automation when interfaced with an outside timecode source. And for all

report on the HLA series in this issue. **QSC** also moved forward with several new additions to the Powerlite range of amplifiers, incorporating some very innovative new circuit ideas. We'll be running a feature story on the new Powerlites in our next issue.

Over on the **Lexicon** stand, the MPX-1 multi-processor effects box was making its debut. It contains 2 independent microprocessors, using one for reverb and the other for DSP effects. This means that up to 5 stereo effects can be used simultaneously, including reverb, pitch, chorus, EQ, delay and modulation. The MPX-1 uses a new interactive front panel dis-

JBL HLA

perature within the driver assembly. Secondly, the drivers can be aimed as they are rigged, without having to tilt the whole enclosure. This is done in the horizontal plane by creating a circular array and in the vertical plane by pointing the Waveguide up, down or straight ahead.

The HLA4897 sub-woofer enclosure is constructed of a non-wood composite material. An outside layer of carbon fibre is bonded to a honeycomb and foam core which has an inner skin of fibreglass. All of that is then bonded to a composite carbon fibre/aluminium baffle. The entire enclosure is fastened to a metal SpaceFrame as used in the 4895s. This enclosure houses two 18" drivers separated by a curved, three-dimensional vent designed to reduce the level of vent compression. As a result, JBL are claiming 3dB more output than any other double 18" box on the market.

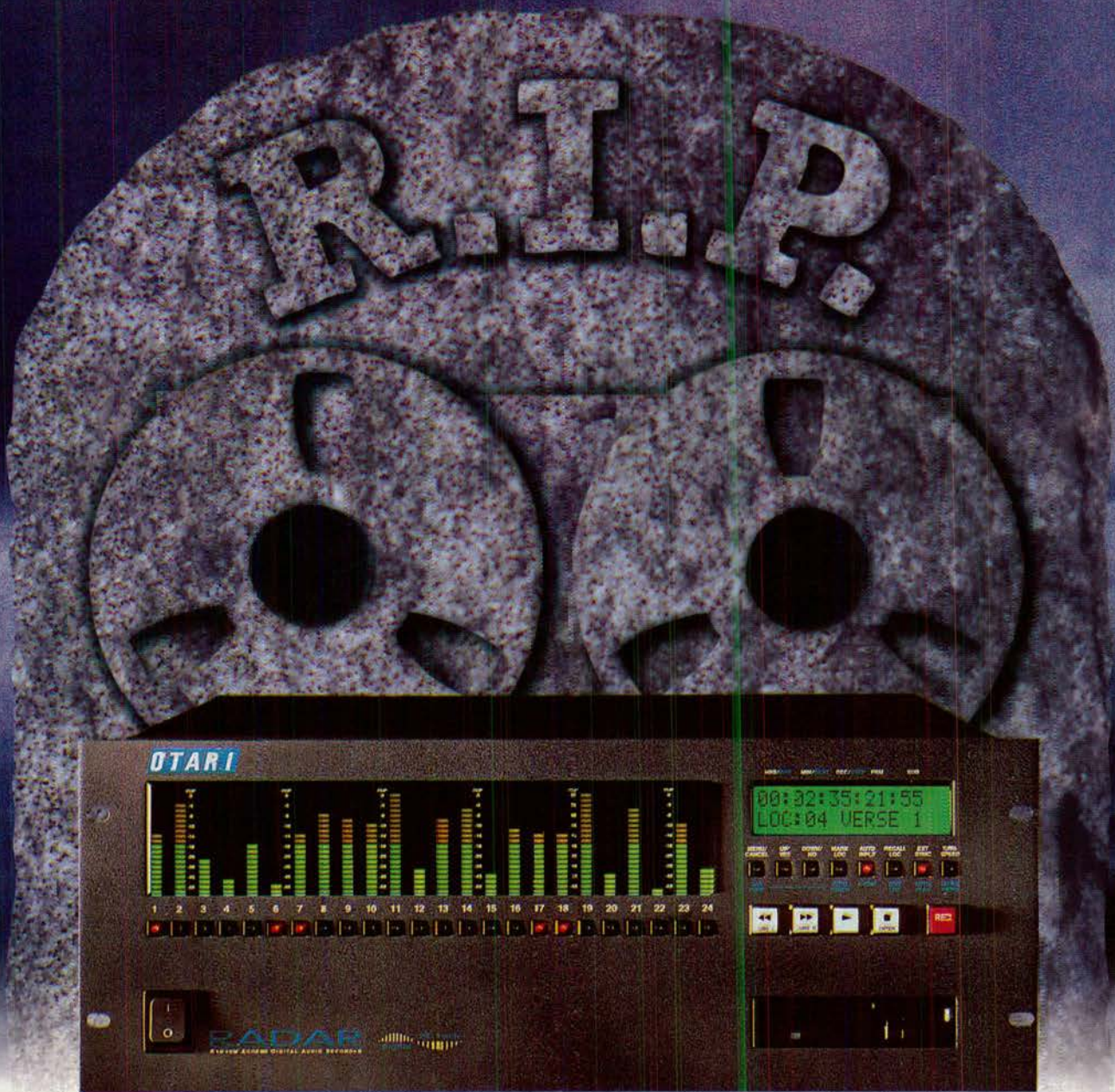
On the night, the demo system consisted of 6 x 4895s and 3 x 4897s per side. JBL used both live and recorded music to show off the new system and easily filled the theatre with loud, clear sound. Since the theatre was far from full, the acoustics didn't represent what happens when you add all those bodies but it was still obvious that an array of HLAs would have no trouble coupling to almost any size auditorium or arena. The sound was well articulated, pretty well balanced tonally and *loud!* Moving around the body of the theatre and commuting between the balcony and the stalls also showed that the HLAs achieve an excellent dispersion pattern with ease.

play. Lexicon also introduced a new dual reverb card for the PCM-90 and a harmony effects card for the PCM-80. These are the first in a planned series of expansion cards for these units. Surprisingly, for this writer at least, Lexicon also weighed in with a couple of amplifiers - the world sure needs more amplifier brands.

Over on the **Mackie** stand, the irrepressible Mackie team debuted several new products. First off were the SR40-8 and the SR56-8, new additions to the live sound line-up. The SR40-8 has been released, with its very *long* teammate to follow in a few weeks. Similarly the

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When Audio Media Magazine reviewed the Otari Radar, they summed up "Without doubt, RADAR is the most exciting recording product that I have seen in the last 10 years".

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new Mackie monitor, designated HR824 will be officially released soon. The HR824 is an active 2 way design, using wave guides, a servo loop on the woofer and an active crossover driving separate bass and treble amps. Still in the monitoring chain, Mackie have expanded their amplifier range. The FR series now includes the M1200, M1400 and the M2400. All three use a very large toroidal transformer, complementary bipolar output stage and are slanted towards sound reinforcement usage.

And last, but not least, from Mackie comes the so-called HUI - Human User Interface. Designed as a front end controller for Pro Tools, they say that it'll eventually work with MOTU, Opcode, Steinberg etc. HUI looks a lot like a mixer, which is not surprising since it is a virtual control surface for the mix panel within Pro Tools. Using 8 motorised faders, a shuttle wheel, numeric keypad and lots of switches, HUI allows for hardware control of the software parameters appearing on the Pro Tools screen - this gets the user away from much tedious mousing.

The manufacturers from the big end of town weren't being left behind either. **Sony** were demonstrating their Oxford 24 bit digital console, together with the new 24 bit extended DASH recorder, the PCM-3348HR. The very cool thing about the 3348HR is that it's recordings are compatible with non HR recordings and vice versa. **Studer**, the other manufacturer supporting the DASH format, rolled out the Mark II model of their digital multitrack. Sony also displayed their new high end DAT recorder, the PCM-7040. Replacing both the 7030 and the 7050, the new model basically includes all the functions of those models at an improved price. In addition, the 7040 is the first DAT to carry Sony's Interactive Status Reporting function which allows the user to upload and examine most machine parameters.

Still on DATs, **Fostex** announced the D-15. This new model has full time code functionality and offers optional chase-lock capability. Another option card gives 9 pin interfacing. The timecode option also allows for syncing to black burst or colour bars.

AZDEN announced their hot 31XT plug in wireless transmitter now has balanced receiver outputs.

Meanwhile, **SSL** were showing the G+ "Special Edition" recording console and the new Aysis digital broadcast console. They also announced hardware and software enhancements for the SL9000J. On the **Otari** stand was a new 24 bus, digitally controlled analogue console, the Elite. Otari also also now offers Version 1.4 software for the RADAR, giving new features such as the ability to lock 2 RADARs together with sample accuracy, machine control, Midi Timecode and DSP jog.

The veteran diehard analogue company **API** came out with a new version of the Legacy console, as well as some new rack mount processors using their tried and true analogue module concept. **Fairlight** came to town with the MFX-3 plus, an extension of their existing DAW featuring an upgraded CPU, PCI bus support and an enhanced controller. Fairlight say they have seen the light on the hill and it is 24 bit, promising to make this new MFX 24 bit-capable by the end of 1997. They are also reporting great success with the FAME (Fairlight Audio Mixer Editor) which is kind of like an MFX hiding in an Amek console. FAMES have now been installed in L.A., Tokyo, Switzerland, Sweden and Australia.

The HDCD format seems to be quietly gaining acceptance. Originator **Pacific Microsonics** was demonstrating their Model One HDCD mastering processor and **Manly** have incorporated a decoder into their high end D-A converter.

There was also great interest to be had from some of the workshops and technical sessions where industry movers and shakers defined where we're going with issues such as DVD. One particular workshop was comprised of people mainly from L.A.'s film community who have already been involved in preparing audio for release on DVD.

The workshops I sat in on were well attended and although L.A. might have more pro recording studios per square metre than anywhere else on earth, when it came time for Q&A, the people in the hall were asking just the same questions and wondering just the same things as we all do. As ever, the secret is: there is no secret. Get in and learn your trade, work at it as hard as you can and you'll get where you're going.



Old is new again

Howard Jones ponders the Tube - fad or non-fiction? The hypemasters blast off in L.A.

The retro trend in terms of both looks and technology shows no signs of abating, judging by this year's AES show. Manufacturers already committed to valve designs were joined by an ever growing number of others keen to emulate their success. Mind you, the taste for yesterlooks doesn't always mean that there's a valve inside the box. Your Connections columnist was arrested by several striking looking front panels that were futuristic in a retro kind of way which for some reason or other made me wonder if they weren't from the set of the Thunderbirds. Engaging the makers of these devices in conversation often revealed a disdain for valve circuits as being noisy and not true-fi!

Tube Tech, as committed to valve design as the name would imply, were exhibiting their full range of valve mic-pres, EQs and compressors. They had the lid off their PA240A power amp showing some very large 'Golden Dragon' KT90 tubes. The chassis also had 2 very large fans in the rear panel. Meanwhile, **Summit** were debuting a combination mic-pre/compressor-limiter. Designated the MPC-100A, the new addition keeps the preamp and compressor stages independent, each using its own valve circuit. Accepting mic, line & instrument level inputs, the signal is passed through the valve preamp stage before driving a new comp/limiter section. A master gain control means that overdrive sounds can be set up without disturbing the level between the preamp and compressor stages.

Manly Laboratories were giving a power display of their commitment to exotic valve gear. As well as their traditional range of die-for mic pres, mixers, enhanced

Pultec EQ and tube DI, the stand also featured some mono-bloc amplifiers. The biggest of these seemed to be about 12RU high, with a polished brass front panel dominated by a very retro look VU in the middle and vented to show the complement of gleaming tubes within. The back panel was similarly vented, showing even more valves. And boy, is this guy strict: the back panel contains only the power inlet, 1 RCA socket, 2 fuse holders and 2 speaker terminals. Lo-fi audio wusses need not apply. I didn't have the heart to ask the price!

Interestingly, **Manly** have committed to the HDCD process, incorporating it in a new model 20 bit D-A converter. This box - upgradeable to 24 bit operation - has 4 selectable digital inputs and uses a fully differential valve output stage with output transformer. The circuit board tracks are plated with 24 carat gold.

Round the corner on the **Dunmore Vintage** stand I found the DR707 valve microphone. They had it set up alongside a Neumann with which they were inviting comparisons. The Dunmore seemed to offer extended bottom end and was overall a little punchier. Dunmore were also displaying the DR2AS stereo compressor and the DR2MP mic pre, both featuring a veritable fleet of valves. Both devices were graced with polished bronze front panels - polished metal has clearly become the masonic handshake of the yestercrowd.

Elsewhere in the exhibition hall I found the **D.W. Fearn** VT-1 valve mic preamp. This unit, expensive but favourably reviewed in the overseas press, has now been joined by the VT-2 dual channel unit and the VT-1/F tube DI. All three units are finished in a gor-



Soundelux flying the tube mic flag with their U95

geous glowing red which would distinguish any studio which could afford them. Like the VT-1, the dual channel box uses old-fashioned looking VUs and large, plain knobs. Unlike some, Doug Fearn is not simply some valve crank. His units are (mostly) thoughtfully designed and claim very impressive specs: how about -3dB at half a Hertz? And Doug is on the internet- visit him at www.dwfearn.com.

Traditional valve-heads **Groove Tubes** were showing their full line of tube mics and outboard processors. My eye was caught, however, by the Dual 75SL power amp. This very sexy item ranges the valves along the top of a polished chrome and brass chassis. Even the covers of the output & power transformers had polished brass covers. I don't know if it sounds any good - you'd buy it on looks alone. Harley riders could *relate* to this product, man.

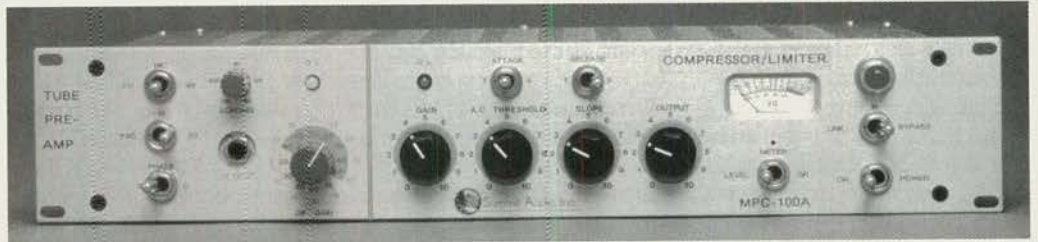
Groove Tubes also had a very interesting press release stating that

vacuum tube manufacture is about to re-commence in the United States. A joint venture between GT

and a company called Fritzztronics (I kid you not), production will take place in a Massachusetts

building previously used for valve manufacturing. First cab off the rank is a copy of RCA's original

Summit MPC-100A mic preamp and limiter. One box, with tubes...



Soundtracs intro 4 more

New **Topaz 4** consoles showed at AES. topaz 12-4 will rack mount, the Topaz 14-4 has 10 phantom power channels with 2 stereo channels. Topaz 24-4 has 4 main mix buses with 28 inputs total. Topaz Maxi-8 is the live sound 'sister' mixer to the Project 8 recording model. It can be split to monitors or used as a matrix mixer. Coming soon.



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Old is New Again....

6L6GC beam pentode and is designated GT-6L6FZ. I quote: "The GT-6L6FZ's materials and specifications will be as the original RCA, including carbonized Grade A nickel plates, pure tungsten grids, premium A-31 Cathaloy cathodes etc.." I wonder if Groove Tubes will make these new valves available to competitors?

Back on the tradeshow floor, **Soundelux** was also flying the tube mic flag with their U95. Despite the Neumann nomenclature, this mic has a look and a spec all of its own. And the specs are very good indeed: 3 main polar patterns with 6 other intermediate steps, frequency range given as 20-20kHz (referenced to nothing, so a pretty useless figure in itself) and a max. SPL of 135dB (@ 0.5% THD).

Demeter was another committed valve products company with a broadening range on offer. They were showing their new H series goodies which are all 1RU rack mount devices priced at a level designed to attract the project studio owner. The H series use a circuit topology based on a front end tube stage performing the amplification functions with a solid state output driver stage. There are 3 units in the series. The HM-1 is a 2 channel mic pre, utilising Jensen transformer input coupling and a gain stage based on the 12AX7A. The front panel has high

impedance inputs on jack sockets, with the rear panel XLRs accepting low impedance ins. Each channel has variable gain, low cut, phase reverse, phantom on/off, overload indicator, volume control and a 10 section LED ladder. The EQ-1 is a 2 channel, 3 band parametric equaliser.

The HC-1 is a mono tube compressor which uses a photocell as the variable gain element. The unit has variable attack, release, compression level and output gain. There are switches for input sensitivity and low frequency sensitivity with dual 10 segment LED ladders. As well as showing the already established VTMP-2B and VTCL-2A, Demeter were using the show to introduce the VTHF-300 monobloc power amplifier. This 4RU box uses 8 x 6550 C output valves and has separate front panel controls for individually biasing each valve. Like the Tube Tech power amp, this one also uses a cooling fan. Demeter claim tetrode or pentode operation for this amp - I didn't notice this until later and so neglected to pin them down on what this means.

Demeter also make a range of MI type products and had slipped one on to the stand at AES - the so-called Tremulator, the sound of which Ry Cooder has had a hand in shaping. Unfortunately, it was a static display only.

A new company swelling the ranks

of the true tube believers was **Retrospec**, showing an electro-optical tube compressor/limiter and a tube DI. The Squeeze Box has an EQ section which can be switched out separate to the compressor circuit which has threshold and gain reduction controls. This unit was set up as an active display with a signal source - presumably a CD - running through it. I tried it. For my money it sounded terrible. If you turned the compressor threshold up high, then it wasn't really doing anything very much. If you adjusted it so that the music peaks occasionally went over the threshold, then it would produce this horrible, distorty noise. Their DI - the Juice Box - was a static display, but claiming very good specs related to the use of all Class A circuitry and no audio transformer. Housed in a very long thin enclosure, the Juice Box is a very awkward looking device. Duncan Fry wandered by and made some cutting remark about did I see that 6' long DI box?

However, I'll let Retrospec have the last word: "Aren't we all still looking for a couple of Pultec EQs that won't drain the account dry? The Teletronix LA-2A? The Fairchild 670?....That was when our performance expectations were a whole lot more modest. If the signal chain could get down to around 40 Hertz and up to 16k and manage to keep

the distortion to somewhere under 1% we thought we'd died and gone to Heaven..."

And lastly, it's not to be thought that all the action was confined to mics, preamps and processors. Over on the **TL Audio** stand resided the Valve Technology Console in all its glory. This beast of fable and myth is real enough; a fully modular in-line desk available in configurations from 16 to 56 channels. Buy a 56 channel version and you won't need a heater for your studio! No, no, just kidding. Options include patchbay, automation and meter bridge, so you could certainly consider it seriously if you're looking for the sonic difference offered by valves. From what I've seen of other TLA products, they offer a sensible mix of tube and solid-state technology, using each where it is best suited. I've not noticed any undue problems with valve longevity either in their outboard gear.

With all these retro goodies now available, I look forward to the day when some enterprising type sets up an all-valve studio. After all, I even came across the **ATR Service Company** offering a valve repro amp card retrofit for old Ampex ATR-102 recorders. And guess what? The guy on the stand was an Aussie!

Sure, sure.



*See also: Tubes: **Watch Out For The Token Valve**. Story: Page 44.

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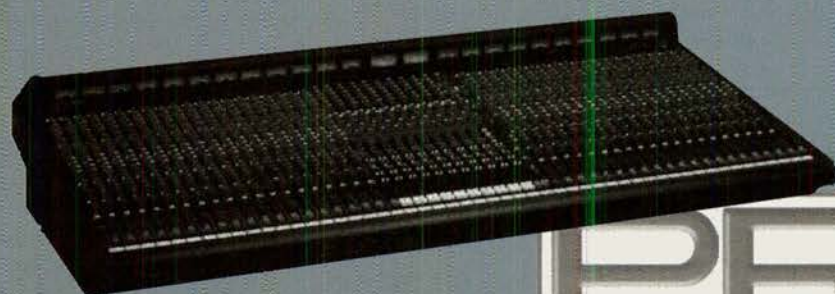
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Write in Reader Service Number: 122

Small {Audio} Gems from the AES in Los Angeles

By HOWARD JONES

Sometimes at tradeshows the big name product releases can overshadow other items which, nevertheless, are real winners. Here's a selection of those products which tickled Connections fancy for one reason or another.

On the **Roland** stand we saw the VT-1. Described as a voice transformer, this really nifty gadget could also be used on guitar and keys. The guy demonstrating it was turning his voice into Darth Vader or Madonna in real time with the flick of a fader. This thing has independent pitch and formant controls and includes a stereo digital reverb. It's great.

Brilliant idea for the toolkit is the **Goldline** Gold Lite/1K tone generator. Contained completely within the backshell of a Neutrik XLR, the generator starts up when phantom power is applied. At the end of the backshell is a LED to show when phantom power is present. Nifty.

NTI have added to their range. This rare but fabulous brand is one of audio's better kept secrets. The EQ3-D is a new 1RU version of the original EQ3 and is available in the trad NTI blue or all black. The air control has been modified: it is now sweepable from 2.5kHz to 40kHz, where the original was fixed at 10kHz. Frequency response is claimed to be +/- 0.5dB from 10Hz to 125kHz. That's not a misprint. Rupert Neve would be proud of these guys. The PREQ3 was released last year, a 1RU 4 channel mic/line preamp with the same vari/air circuit function as already described. It also has phase reverse & phantom power switching on each channel.

Grace Design is a small company with a strong belief in its solid state design approach. They have 2 products out, both mic preamps. I didn't get to hear them, but the lids were off and I couldn't help but notice the oh-so-rare attention to circuit topology and assembly detail. Here's

another product giving usable frequency response out to 300kHz. Funnily enough, it looks a little Neveish on the inside: 24 position gold contact rotary gain switch formed by hand wiring precision resistors to each contact. Watch this company.

Crane Song are another small company with a couple of excellent products in their portfolio. The HEDD is a digital signal processor - a Harmonically Enhanced Digital Device. With applications for CD mastering, the HEDD can operate as an effects device or as separate A/D and D-A converters with the sound treatment applied to either converter. The STC-8 is a stereo compressor/peak limiter utilising discrete Class A circuitry. This box also has an enhancement function. There are no VCA or optical gain control elements in the signal path.

Press-It is a CD labelling kit from **Rocky Mountain Traders**. Suitable for labelling small CD runs, it's quick and easy. You print onto blank

labels using the supplied software. Design templates are also provided for printing from Coreldraw, Word etc etc. The labels are supplied in solid colours and clear plastic and can be fed into either a laser or inkjet printer. Once printed, you use the Pressit Label Applicator which places the label dead amidships. We've seen it. It works.

A quirky company with a quirky name, **Aardvark** make an eclectic group of products. They all fill a purpose, though. The Aardscape is an analogue tape saturation processor. It has controls for input level, warmth and drive with switch selectable brilliance and saturation. In the digital domain, they offer 3 products: a master sync generator, a 1 x 6 AES/EBU distribution box and an A/D, D/A converter. Due for release in early 97 is the 12 channel ADAT audio card. This PC plug-in gives 12 channels of simultaneous record and playback with your editing software of choice. Optical connectors allow for I/O to ADAT and



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Write in Reader Service Number: 166

DAT, with other connectors for S/PDIF, AES/EBU and analogue. Say hello to Aardvark at www.aardvark-pro.com.

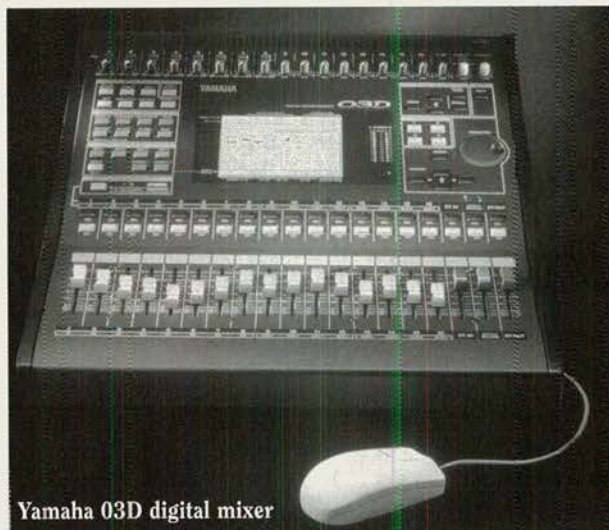
Liquid Audio makes a suite of audio software products which enable you to master, publish and download your music to/from the internet. We don't know if it's bullet-proof but they're out there making it happen. Their product also interfaces directly to Pro Tools Version 4.0. Check them out yourselves at www.liquidaudio.com and see what you think.

Beyer have put out a digital microphone. The MCD-100 is a condenser with a 22 bit ADC hooked to an AES output. Using Digital Phantom Powering, this mic offers exceptional S/N ratio and an SPL rating of 150dB.

Signal Transport makes the Project Patch group of products. One of their cool patchbays is a synth patch panel which takes an unbalanced 1/4" input, boosts it and sends it out an Elco connector as a bal-

anced signal. Another good product is the Swing Rack which squishes a 12, 15 or 45 RU rack into a very small space by having a cunning hinged arrangement. This allows the whole rack to swing out in very little more floor space than is taken up by the front of the rack itself.

Mediaform make CD copiers. The CD-4400 comes in a case like a PC tower and contains 4 quad speed CD-R drives. The data to be copied - it can be audio, ROM, whatever - is transferred onto the internal hard drive. You can then burn 4 blanks at once. Alternatively, make 3 copies whilst the data is being read in from the master. This thing is smart. You



Yamaha 03D digital mixer

can convert multi-session discs to single session and copy track-at-once to disc-at-once. Add the optional DAT interface and you can burn CDs direct from DAT. The CD-4400 can be connected to a PC or workstation as the CD-R in residence and multiple CD-4400s can be chained together to make up to 40 simultaneous copies.

They make another model - the CD-2510 - which autoloads up to 25 blanks and burns them one at a time. You stack the blanks in the input hopper and walk away. If any blanks fail to copy correctly, the machine identifies them and separates them from the successfully recorded discs. Clever, no?

And, finally, a guernsey to **Speck Electronics**. We're sure we remember Speck as being a maker of decidedly low-rent product, but maybe we're wrong. In any case, the Xtramix/cx compact line mixer is an elegant, attractive device. Not just a rack-mount keyboard mixer, the Xtramix includes internal talkback mic, mix insert points, balanced mix outputs and a total of 76 inputs. Not bad when you consider that it all fits into just 4 units of rack space.



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MAR2	230	150		\$995.00
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Write in Reader Service Number: 149

LA show Gossip

- **Philips** have officially announced the death of DCC as a consumer format. They apparently still have hopes for it in the pro world...

- The sale of **BASF's** tape division to a Turkish company has been aborted. A new letter of intent has been signed with a Korean chemical company...

- Both **Matsushita** and **Toshiba** released DVD players on November 1...Sonic Solutions actually had both **Pioneer & Panasonic** DVD players on their stand with real DVD discs in them...

- **Neotek**, manufacturer of large recording consoles, has been through a period of great difficulty. New owner is **MartinSound** of California (developer of the Flying Faders system).

- **Fostex** is trying to make their products talk to everyone else's. They have already signed an agreement with Mark of the Unicorn which will see MOTU's popular sequencing package incorporate machine control & file interchange for Fostex's DMT-80 and D-80. Further agreements with Opcode and E-Magic are in the pipeline.

- **Groove Tubes**, together with a company called **Fritzronics** are due to begin valve manufacture in the US. First product will be a 6L6GC copy, due mid-97.

-Howard Jones, at AES in LA.

DVD: it's here, it's now, it's unavoidable

Digital Versatile Disk is a reality. Howard Jones reports from the Los Angeles AES that mass migration is underway. Will DVD-Video take off before DVD-ROM? What is happening with DVD-Audio and DVD-RAM?

This year's AES show made one thing abundantly clear: DVD has already arrived as a significant format. Both in the exhibition hall and at the workshops, DVD was not only discussed in detail, several stands were running active demonstrations of DVD technology.

Although everyone agrees that it is DVD-ROM which will become the predominant version of the new format, currently it is DVD-Video which is making all the running. In Hollywood there appears to be no major player who has not committed to the format and all studios are now, or have already, geared up for the post-production "authoring" tools required to prepare DVD master tapes.

Let's take a look then at what DVD is all about. The DVD disc itself is the same diameter as a compact disc and DVD players use laser technology similar to CD players to read the discs. Supposedly, DVDs will consist of 2 platters, each half the thickness of a CD, glued together so that the disc will have to be turned over to ac-

cess each side and indeed the makers of CD replication technology have begun to modify their lines to allow production of DVDs in just such a fashion.

In practice, there seemed to be some at the show who felt that the original Sony idea of the 2 sides each facing the same way might still eventuate. Such a disc requires a player where the laser can adjust to 2 different focal lengths and thus retrieve all data without having to flip the disc. It also allows for a label to completely cover the non-data side, as per CD, which is not the case for the DVD as currently specified. No-one, in fact, has yet said how an individual DVD is to be identified since there is only room for a very small label. Philips may have solved the problem with their CD Text Editor/Formatter development which is taken up elsewhere in this issue.

The specifications for the data which will be carried on DVD have been grouped by application. Thus we have DVD-Audio, DVD-Video, DVD-ROM and so on. This is nec-

essary because, although all DVDs can be thought of as giant data storage devices, your DVD player needs to know whether to interpret the data as PC files, stereo audio, surround audio, video etc. However, that ability of the DVD to carry huge quantities of information also means that the specifications for one variant of the format can spill over into another. The way DVD-Video is developing, it will not only carry video pictures, but surround sound, multi-lingual audio etc. Similarly, expect to see DVD-Audio discs carrying video stills of the recording artists together with files carrying their biographies, personal profiles etc.

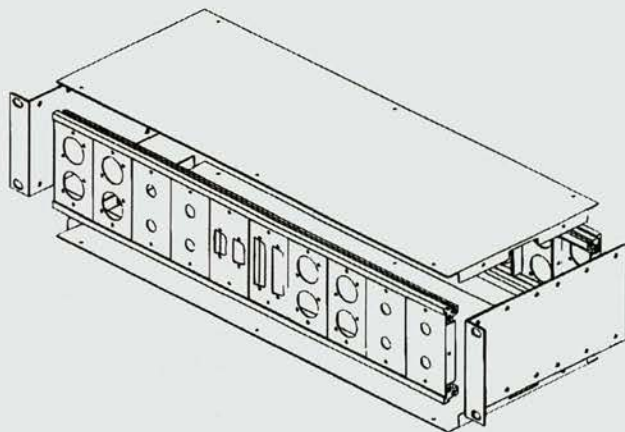
One of the DVD workshops I attended made plain that DVD-Video is a settled issue as far as Hollywood is concerned. DVD is to use the Copy Generation Management System, or CGMS, to prevent unauthorised duplication of DVD based material. This will function like SCMS does with DAT recordings, with some apparent refinements such as the ability to limit

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EASY SOLUTIONS

Why Bose?

Bose® Australia have a tradition of difficult and different field trialing for their products. One of these test bed scenarios is the annual Australia stage of the World Rally Championship. Rally Australia was held in September across the southern corner of West Australia. As usual it was a precision event, culminating in a monster concert in Perth.

Bose West Australia representative Peter James explains why Bose are involved with Rally Australia. "It gives us the chance to try different products in different situations. Last year we used a point source system comprised of long throw Panarays for the first time. This year we used a distributed system based on the trusty Bose 402. The reason we do the Rally is to give our dealers the chance to get their hands on the product, to see the many different ways Bose products can be used, and for us at Bose to keep our hands in".



Results?

Well, Tommy Makinen in a Mitsubishi Rally Art won, of course! All the Bose 402s have gone on to less arduous work around Perth. And Eventscorp are very pleased. John Bradbury said Bose help out every year, and it just gets better. And the Rally sells out too - with next year's event scheduled ever bigger, dirtier, and meaner!



The Rally As An Event

As just one stage of a global car rally, the Australian section covers just four hard days and nights. Eventscorp package the rally and stage the concert, held in Langley Park (Perth). It comprises a display rally section where truckloads of gravel are brought in to make jumps and tracks for the cars.

Dancers, fireworks and music make the event an event. 30,000 people converge. Cars crackle and blat around. The weather in September lends itself to people enjoying an outdoor event.

Bose On The Job

The Bose 402 is a multipurpose column speaker which can go anywhere. At Langley Park 32 of them were used in a distributed system, with one Crown® CT1600 amplifier feeding each four. It was a simple but effective system which more than delivered.

Equally exciting was the four day rally itself - where Bose supplied little sound systems for each of the 30 stages around the state. Across a 2,000 kilometre course. Peter James explains: "We had four teams, each basically in a car. They had a little generator, a small mixer, an amp and four Bose 402 speakers. We literally hung them from trees with coathangers! The teams had to leapfrog and schedule carefully to keep ahead of the rally itself - no mean feat given the speed of the whole thing!"

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DVD playback on a region-by-region basis. Thus, a studio might decide that the latest movie from big Arnie is cleared for release on DVD in America, but not in Canada. The American release DVD will be imprinted with a code which the Canadian player will respond to by refusing to play the disc.

Unfortunately, the specifications for DVD-Audio are still being thrashed out. The main reason for this is to do with the compression algorithms which are used to encode DVD data. Bit-rate reduction techniques are used to compress both the video and audio information on a DVD-Video disc. This is necessary for video, of course, in order to make sure that the average length movie will fit on a single disc. These same compression techniques can also be applied to DVD-Audio to allow several possible outcomes: many hours of audio on one disc, or many channels of surround sound with less recording time per disc, or some cross between these two. In any

case, any of these possibilities would compromise the optimal outcome of ensuring that the final carrier of the audio information be as linear and as perfect as possible. In the latter case, the proponents for the high-end, linear argument have been holding out for a DVD-Audio spec that sees the data being encoded as 24 bit words at sampling rates of up to 96kHz. Because of the huge data rates such encoding would generate, the possibilities for multi-channel sound would be greatly reduced. This option is therefore being resisted by those who see surround sound as being the most important aspect of DVD. At the moment we effectively have two warring camps pitted against each other over what the DVD-Audio spec should be, with the result that the specification cannot yet be completed.

The party most vigorously arguing for high bit-rate, linear encoding, known as the Acoustic Renaissance for Audio, have professed themselves pretty happy

with version 1.0 of the DVD spec, which was announced in September. This version at least allows for studio-quality linear PCM audio as an option, whereas Version 0.9 contemplated the use of compressed audio only.

In considering the arguments on either side of this discussion, I should declare my own biases. I attended a very interesting demonstration of surround sound hosted by Philips, who were at AES in some force. It turns out that they are apparently avoiding DVD player manufacture at this stage in favour of producing boards for use in OEM players made by other manufacturers. At the show, they were promoting their MPEG-2 codecs and had set up a demonstration of an MPEG-2 encoded DVD disc recorded by Decca in July with the choir of the Kings College Chapel, Cambridge. The recording was made as a discrete 5 channel recording from a 14 mic array into a Yamaha O2-R and was nothing short of stunning. The main 4 mic array was set up be-

tween the organ loft and the choir, with another 5 mics around the choir, 1 mic beside the organ and 4 behind the organ. The source recording was 20 bit and is a stunning demonstration of the power of surround sound - the sensation of being present in the chapel was very strong. The direct and reverberant sounds could clearly be located in a 3 dimensional sound field and the front/rear balance of voices and organ was heart-stopping.

However, when an A/B comparison was carried out between a non-compressed studio-quality stereo source and the same source put through an encode/decode cycle, the difference to me was apparent: the compression algorithms robbed the music a little of its air and imaging. Not much, mind you, but definitely enough to annoy someone looking for the highest possible method of reproduction. And more than enough to annoy the hell out of an artist who has sweated beaucoup hours in the studio to preserve every nuance of

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(Continued from page 7)

his or her music. There turns out to be a reason for this. The compression which is applied in the MPEG-2 codec bears more than a passing resemblance to the PASC psycho-acoustic algorithm which Philips developed for DCC, and I didn't think much of the sound of DCC.

The power of the surround sound demonstration couldn't be denied, though, so I find that I have modified my position. I think it may come down to the individual musicians and producer on any given record (can I still call it that?) to decide for themselves whether to release their DVD in compressed or uncompressed format. I can certainly see an argument that a small loss in imaging might be more than compensated for by the sensation of being completely immersed in the sound field - at least on certain kinds of music. The other factor which may influence this decision in the early years of DVD relates to how many music purchasers are likely to have 5 channel surround sound systems. The Philips demo was run on a 5 way (plus sub-woofer) Meridian audiophile type set-up which no doubt costs a bomb. If, as a listener, you are losing definition in the stereo mode without the compensating advantage of gaining surround sound (because you can't afford it), you may be less inclined to support compressed DVD releases.

Any further delay in working up the DVD-Audio spec, however, might mean that a *de facto* decision on these questions is made by dint of commercial forces. With the advent of DVD-Video, Hollywood has had to install processing for the audio files required on the video releases. It has become apparent that it would be entirely possible to release a DVD-Video disc which contained, in fact, no video. All the data space would be given over to audio information and your player would reproduce this just as happily as if it were an audio DVD. The audio on such a disc would necessarily be compressed, as all video DVDs will carry (compressed) surround sound data. I don't suppose that movie studios will worry themselves producing music albums for record labels, but post-production houses with spare audio-processing time on their hands just

might. In such a case, the whole compressed/uncompressed argument will get lost in the rush to get product to market.

Clearly, DVD is going to have a major impact on the push towards surround sound in the home. With the advent of widely available, well-recorded (we hope) material utilising surround sound, consumers able to afford the extra equipment will want to take advantage of one of the main benefits which DVD can offer. Manufacturers will also be encouraged to develop affordable home theatre systems. It would be logical to expect retailers to offer surround sound system add-ons bundled with DVD players. Interestingly, DVD will also have a major consequence in one other area which I hadn't previously considered - that of the modular digital multitrack. With studios wanting to record discrete 5.1 or 7.1 soundtracks, the Tascam DA-88/Sony PCM-800 recorder will be assured of an extended product lifespan. This particular format has already been widely adopted in the film and video worlds. Post houses know the product, like it and seem enthusiastic to keep on using it as their surround sound recorder of choice.

DVD players are starting to enter the market now, with pre-recorded software likely to be very close behind. The format itself has been distinguished by its universal acceptance and the relative speed with which it has been taken up. Unlike other recent new formats which have stalled in the marketplace or failed to win over the record labels and film producers, DVD is already marked as a success and is clearly the most significant development in audio replication since the CD. The ramifications of DVD will be immense for both audio and video. We'll be following developments in this area closely, so keep reading these pages over the coming months as we bring you regular updates and all the latest information on DVD.

DVD - The Conference - will be held on Tuesday April 22nd at the Melbourne Exhibition Centre as part of ENTECH 1997. Bill Foster, editor of One to One magazine London is keynote speaker. More details call 1-800-635-514 or go to: www.conpub.com.au

Miles MTI-3 Tri-Sonic Imager from the Jands rig at the recent ARIA awards. This is a unique piece of equipment and is one of only six in the country. If the stolen unit is returned to Graham Harrison at Horwood no questions will be asked. Contact: 02 9585 1011.

○ **Eric Brown** from the Canberra Theatre has asked for help in tracking a stolen PA system. The complete PA system plus some lighting gear was hired from the Sound Workshop in Canberra and was installed at the Two Dog Nightclub, an occasional venue for the recent National Festival of Australian Theatre. Eric reports that a lot of sound equipment has been stolen in the Canberra region over the years and the area is a definite target market. Please refer to the "stolen" section in the Classified Adverts of this magazine.

TRAINING

○ The **Federation of Communicators Users and Suppliers (FOCUS)** and **INFOCOMM International** and **INFOCOMM Asia (ICIA)** have announced the launch of the **ICIA Institute in Australia**. According to FOCUS, the ICIA Institute offers high level training and professional enhancement programs for managers, employees and users of presentation and entertainment technologies. The first Institute will be conducted in Australia from January 20-24, 1997 in Sydney. Three, five day courses are being offered:

• **Perfect Image: Video & Computer Interfacing for Large Screen Display** - Gary Kaye and Luke Rawls. This will range from LCD, CRT to light valve and the use of computer and video images and new presentation media.

• **How to Sell New Technology** - Bill Sharer. New techniques for prospects in technology retailing, service provision with hands-on workshops.

• **Fundamentals of Hire Operations** - Joel Rollins. A five day curriculum including; principles of video, audio waves,

acoustics, lamps. Discussion of the hire process and specific techniques from order to set-up. For beginners or intermediate.

Costs: \$1250 per seminar (less \$250 if a member of FOCUS/ICIA). Contact for more information: FOCUS P.O. Box 447, Cremorne Junction, NSW 2090 or T 02 9953 6768 F 9818 2658 ICIA netsite: <http://usa.net/icia>

○ The **NIDA Summer Program** will be running again in January 1997 from the 6th to the 31st of January with short courses in all aspects of theatre training including production and technical skills. Contact: NIDA Open Program on 02 9697 7626 or fax 02 9313 6590.

○ According to a new group called the **The Presentation Group** events' presenters are often confronted with complex audio-vision-information technology yet using this technology effectively and confidently is another matter. To improve this situation The Presentation Group aim to offer up-to-date knowledge and skills for presenters through ongoing seminars. The group comprises Neil Langford from Space Age Communication, Graham Lahman from Australian Business Theatre, Bruce Robertson from Intercity Gearhouse, Chris Joiner from Corporate Images and Brian Hinton from Kodak Australia. The Presentation Group held its first series of public programs at The University of Melbourne in November and more are planned for 1997. For information about the group contact Tanya Slaughter, 03 9853 7882.

News Compiled by Dan Cole

LATE BREAKING NEWS

○ The **Australian Music Association** has decided not to implement the Music Industry Development and Investment fund. The plan was for importers to pay a percentage of sales, the fund would go towards further education aimed at improving the take-up rate of musical instruments amongst the young. The fund was to be the AMA's major initiative for this year.

BUYERS GUIDES

Each month we list available representative equipment from all distributors. **Distributors: to get listed CALL ELAINE on (02) 876-3530.**

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June Live Mixing Consoles. *Profile, PC Spots*

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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!

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DOLLAR HISTORY

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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
NOW*	0.81	91	0.47	1.23	1.13

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 ▲

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MAJOR TRADE SHOWS

- **NAMM 1997:** January 16-19, Anaheim LA. Call + (619) 438-8001
**** note wrong dates shown previously, not Jan 17-20. Sorry.
- **MusikMesse Frankfurt:** Feb 26 - March 2nd. Call +49 69 7575-6662
- **REPLItech Europe:** March 13-15. Spain. Fax +1 914 328-2020
- **NAB '97:** April 7 - 10, Las Vegas. Call +1 202-775-4988.
- **NSCA 1997:** April 16 - 20. New Charlotte Conv. Centre, USA.
- **ENTECH '97:** Melbourne Exhibition Centre, April 23 - 25, 1997.
The entertainment technology trade show and convention-
ENTECH Conference: DVD and Pro Audio - April 22nd.
ENTECH Conference: Industry Technical Training- April 22nd
ENTECH Conference: Hi-Tech Retail & Issues - April 23rd.
THE ENTECH AWARDS: Plaza Ballroom, April 24th.
ENTECH is held annually, appearing in Sydney in 1998. Promoted by Connections Magazine, call +61 (0) 2 9876-3530.
- **Venue Management Association Conference.** Melbourne Exhibition Centre, April 23 - 25, 1997. Call (02) 876-3530 for details.
- **SHOWLIGHT '97,** Ghent, April 28 - 30. Call PLASA, +44 1 323 642-639.
- **PALM CHINA '96,** 25 - 28 May, Beijing. Call +65 227-0688.
- **REPLItech International,** 3-5 June, San Jose, USA. Fax +1 914-328-2020
- **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.
- **PALA '97.** July 14-16, Singapore World Trade Centre. +65 227-0688
- **PLASA 1997.** Sept 7-10th, Earls Court, London.
Call +44 323 410-335. Worlds fastest growing ent-technology show.
- **AES 103rd.** Sept 26-29, New York. Fax +1 212 682-0477.
- **AIMS '97.** The Australian International Music Show. Early October.
- **REPLItech Asia,** Oct 14-16, Singapore. Fax +1 914-328-2020
- **Vision & Audio '97,** Nov. 4-6, Earls Court, London.

Cultural Festivals: Australia:

Melbourne 17 Oct - 2 November. Sydney 8-26 January. Sydney Gay and Lesbian Mardi Gras 1 Feb-1 Mar. Perth 14 Feb-9 March. Adelaide 27 Feb-15 March. WOMAD 27 Feb- 2 March. Canberra 8-17 March. Australian Festival for Young People 21 Mar-6 Apr. Darwin 15-31 Aug. Brisbane September 1997.



World Weather trend, DECEMBER

*NOT a forecast!

Where?	Temp °C	Rain mm		
Auckland	21/14	79	Manila	30/21 68
Bangkok	31/20	7	New York	6/-1 84
Beijing	3/-7	3	Paris	7/2 50
Chicago	2/-5	48	Perth	27/16 15
Dubai	26/14	36	Rome	13/6 93
Frankfurt	4/0	54	San Francisco	14/6 104
HoChiMinhCity	31/22	56	Seoul	3/-7 32
Hong Kong	21/15	25	Shanghai	12/2 38
Jakarta	29/23	203	Singapore	30/23 266
Kuala Lumpur	32/22	230	Sydney	25/17 74
London	7/4	48	Taipei	21/14 77
Los Angeles	19/9	61	Tokyo	11/1 61
			Toronto	1/-4 61

CASH!

PAYMENT PITFALLS
By Julius Grafton

The sale is made because a dealer orders the gear. Or the customer orders the gear. Or you are contracted to do the job Everyone breathes easier and goes about putting the equipment together. The bigger the sale, the bigger the relief, right?

Wrong, chances are your problems are just starting, because you have yet to be PAID.

My very first installation was a theatre restaurant where some serious theatre names were involved. Of course the owner was a lawyer, and the sale was hard won. I put the gear in because the lease company gave me a 'letter of comfort', which in effect stated the lawyer had the deal made.

Of course opening night came and went without the leasing firm paying me, because of 'security' issues. But it was all OK they insisted.

The letter of comfort had so many escape clauses it wasn't in any way enforceable. Taking the equipment out in a lightening raid forced the issue, the lawyer took me to his bank where the manager cashed a \$30,000 cheque from the lawyer's trust account. Unreal.

From the Publishing (Too) Hot Chair, I hear stories about people STILL getting caught with financed installations.

Insist on a 20% deposit before you start. A finance company will NOT complete a deal until they have their security.



GOING to:

NAMM 1997, L.A., January 16-19

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LETTERS

*#//@%XX-?!

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TANDBERG IS ACTUALLY NUMBER ONE

Further to James Waldren's questioning Tandberg's claim to being the European market leader, (*Letters November*) Tandberg have backed it with actual numbers.

The Tandberg Vision is the world's top-selling single videoconference product. It commands more than 40% of the world marketshare in the desktop category and more than 10% of the low bitrate market (56-384Kbps). To end of 1995, approximately 10,000 units have been sold worldwide both under the Tandberg name and those of oem partners such as BT. The majority of these sales have occurred throughout Europe, establishing Tandberg as desktop video conferencing market leader in that territory.

Admittedly, a broadbrush statement of 'market leader' begs ques-

tions such as which market?...which product?...and what percentage? There you have it.

• **Mike Dodds, AV Technology, Teleconferencing Sales - Sydney.**

GLEN H. IS NOT MISSING

I didn't realise I was missing. I know I should have told someone before taking my extended leave from the industry. I innocently decided that after 13 years I needed a change of pace for a while, so returned to University full time to complete some studies that I had been previously doing in pieces for some time.

I do appreciate the compliments and thoughts expressed by Michael Roberts (August letters) and Paul Arnald (November letters). A lot of people put their heart and soul into our music industry, which I'm sure most of the time is the only

thing that keeps it going, so it is always uplifting to get recognition for that contribution.

The approach I have taken in my work has seen me come unstuck on occasions but I have always believed in experimenting and pushing the boundaries a bit, both as a means of personal learning, and to try and create an audio experience that exceeds expectations.

I am now working with the audio visual team at Staging Connections in Melbourne.

Paul Arnald has solved the mystery of the disappearing rigging (see his November letter) that has plagued me for a decade, and I will be down to collect my slab from Michael Roberts (see August letter) on my next surfing trip, however I have doubts that it still exists, knowing Phillip Island crew. Many thanks again.

• **Glen Helmet, Blackburn, Vic.**

UNFAIR DISMISSALS

I have been following your recent brush with the unfair dismissal laws (*"Suing the boss"; October*). No one denies that there must be protection from genuine unfair dismissal, but it is time we saw the current system for what it is.

We would like nothing better than to expand our business and take on additional employees but we don't have the recourse necessary to fund a protracted court battle if we happen to need to dismiss them. Let's face it. When was the last time you heard somebody say "I was fired, but I deserved it."

Some people think that this may not be appropriate subject matter for a magazine such as yours but with high levels of unemployment in the production industry I believe constructive debate can help.

• **Mark Gibson, Mk1 Productions, Camden NSW.**

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SIMON LEADLEY ON "HOME STUDIOS VS. PRO STUDIOS" DEBATE

I am a co-owner of a professional studio and I have been one for well over 15 years. I have lived through the heydays of large studio budgets and large studios in this country, and today we are facing a unique situation in the history of recording. Or are we?

Anyone can go to their local music store and buy a 24 track digital machine(s) and a desk to suit, speakers, amps, mics etc., with change from \$50,000, set it up in a garage or a bedroom and record an album. Am I worried thus far? Not really.

OK, so on the strength of some demos recorded on this equipment, that band gets a record deal, the record company gives them a \$50,000 advance and the band set about making a record. Can it be done? Sure. Will it sound great? Probably not.

Anyone can walk into a camera store; buy a very sexy SLR camera and set up shop at home to take photographs. Will all the magazines people who use professional photographers beat a path to your door because you are \$150.00 per hour cheaper than Lord Litchfield.

The reason I thought up the camera scenario is because the parallels are so convincing.

The Pro-photographer has a studio (like Audio), they do demos (proof shots), they have support staff, and they charge more than the budget studio that I invented.

Why then haven't budget photographers works graced the pages of Vogue or Black & White etc?

Quality and Professionalism and the human experience factors are the reasons I would suggest. A certain minimum requirement in technical and artistic values.

This is where the photography and Project/Home studio scenario splits. There doesn't seem to be the editorial objectivity in both the artistic and technical sides of making records. In a larger studio complex producers and artists discuss the musical merit of various arrangements. Sound proofed rooms; expensive air conditioning; fax machines; staff for all kinds of purposes keep it all humming along so that the musicians and producers can concentrate on the task of making a good album. Most people think that large studios cost a lot of money (and I don't call

\$100.00 per hour a lot of money) because they are greedy. If I was in this purely for the money I would be a computer consultant (they get from \$70.00 - \$150.00/hr with little or no overhead) but I don't do that because I enjoy my job and through the years have met and worked with many fine and talented musicians and producers. But today it has become silly, an us and them battle, counter-productive and destructive.

The consequences have been low prices (good for musicians) but bad, with no maintenance, cheap gear and poor staff as the result. We are continually fielding calls from home studios who need 'advice', which I will not give for free, whenever they encounter a problem. I understand that home or Project studios are here to stay and that fostering co-operation and discussion is a more positive way ahead, but I also want to introduce some balanced discussion to the debate. We work hand in hand with many Project studios offering advice at the early stages of production (to head off problems) so that when it comes time to do our part of the work, things go smoothly and predictably.

Looking into my crystal ball, I see a place for both Project and Large studios, perhaps more of one than of the other, but issues that need to be addressed are:

- The legal issues of small business operation (insurance, accounting expenses, liability insurances, staff payment issues, local council operation licenses etc. and these are usually not accounted for by Project studios, one reason why the prices are low)

- Minimum standards of acceptable quality, both technical and written work (tracksheets logs etc),

- Minimum standards of pay. Quotes like "the big studios are going to have to eat shit....." (*not in this magazine - Ed.*) are offensive un-intelligent and counter-productive to the debate.

The Australian Music industry is in a huge stage of flux and I, for one, would like to see it emerge stronger and more cohesive, doing what it does best, creating great music.

• Simon Leadley, Technical Director, Trackdown Digital, Sydney.

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One Ball- 6 Months To Plan

*Staging Dimensions stage the Galactic Ball in Brisbane-
showing that Queensland CAN handle (very) major events!*

By Cat Forcer

The Financial Planners Association Conference and Gala Ball was recently held at the Brisbane Convention Centre. The event was produced by Staging Dimensions who renamed it "The Galactic Ball" and consequently carried the space theme through the events.

Planning for the event took six months with the clients requiring a function with a futuristic theme for 3000, a number that diminished to 2350.

"In theming, futuristic is very hard," said Mark Keegan of Staging Dimensions. "We wanted to find some large icons to use and so we imported some large weather balloons from America. They blow up to 16ft in diameter and you can project light images onto them to create the look of planets. In the end we only used three because they turned out to be very unstable objects. In fact one of them burst half way through the evening and landed in one of the guest's dinner! But that was the only accident we had during the whole event."

From a local inflatable hire company, a 48ft Challenger rocketship which acted as a centrepiece suspended from the ceiling.

The room had two stages running simultaneous entertainment from the moment the guests entered the room until they left. The night began with twelve street performers dressed as aliens wandering the place, entertaining as moving lights swept the room.

Each of the 235 tables were pin-spotted to highlight the table centre pieces designed and created by Staging Dimensions.

"We're a total event management company from the point of view we can either do the stage or we can do the whole event," explained Mark. "So the tables were dressed in silver and blue lame, alternate overlay, and all the centre pieces were planet and ship shapes rotating in the middle of the table."

Being a Queensland company, Staging Dimensions always try to utilise other Queensland companies. As Mark was a former director of East Coast Lighting, he often turns to them for lighting.

"I made the decision that the job was too big for one lighting company so I asked Phil Stafford from Entertainment Lighting to do all the room lighting for me - lots of movement, colour and projected images - and then I asked East Coast Lighting to light both the stages," said Mark.

On the feature stage Geoffrey

Rose and Tracey Burke from Laser Special Events performed their mirror dance with the lasers as an opening spectacular. Deni Hines also performed on that stage as did an aboriginal acapella group from Brisbane called Aim For More. On the other stage was a 20 piece big band called Alan Brown Big Band who played during dinner. After dinner was the party with Deni Hines, Geoffrey and Tracey's fabric dance and the Greg Doolar Band. In all the event ran from 7pm until 1am.

Burping in began on the previous Tuesday with the final number of flying points being 95.

"The important thing about this event is that it's totally Queensland produced," said Mark. "We want to say that Queensland can actually do this now. You don't have to truck huge amounts of gear up here, there are companies who can pull it together and make it work for big events."

Lighting supplied by ELS:

8 x Studio Color; 8 x Cyberlight; 16 x Intellabeam; 8 x Golden Scan III; 4 x Golden Scan HPE; 1 x Status Cue; 48 PAR 64 Stubbies Wide Beam; 120 Pin Spots (PAR 36); 6 x 1.2kW Fresnels; 24 x 1kW Prolite Zoomspot; 1 x Avolite Rolacue 30/60; 1 x Jands Instinct 60 way; 1 x Jands Event 60/120 console; 3 x

DF50; 2 x F-100; 2 x Astroraggi; 2 x Hypermoon; 6 x Twister 3; 4 x Scatter; 1 x Jackstar; 1 x G300 Haze Machine; 9 Mirrorballs, etc.

Lighting supplied by East Coast Lighting:

4 x Colourset Scrollers; 30 x 500w Selecon Minifresnels/barn doors; 10 x 1.2kW Selecon Zoomspots; 16 x 650w Selecon mini P/C; 20 x Selecor 500w Single Cyc/Flood; 12 x 650w Selecon Zoomspots; 4 x MSR 1200 Performer Followspots; 16 x Trackspots; 1 x Hog 600; 24 Data Flash Units; 12 PAR 56 (narrow beam); 12 PAR 56 (medium beam); 136 PAR64 (medium beam); 52 PAR 64 (narrow beam); 12 PAR 64 (very narrow beam); 16 PAR 64 (ACL); 4 x 500w QI Floods; 1 Axiom 24/48 and more.

Sound supplied by Brisbane Concert Sound:

Stage 1 - 8 x Turbosound Floodlight Mid High; 8 x Turbosound 21" Low; 20 x Ramsa WS-A200E Speaker; 6 x Australian Monitor F300 Wedges; 2 x QSC MX3000A; 5 x QSC Powerlight 1.8; 6 x Australian Monitor AM 1600; 3 x Australian Monitor 1K2; 1 x 40ch Langley 501 console; 2 x Turbosound 600 4 way Processor; 2 x Yamaha 1027 EQ; 1 x Yamaha YDG2030 EQ; 2 x Yamaha 2031
(continued over)



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The new ADF-Workstations — The ADF-2402 is the ultimate feedback controller and digital parametric filter set. Control all aspects of the FBX algorithm, and program each of the 12 filters per channel as parametric or adaptive FBX filters. New features include graphic filter editing and Windows™ Remote Control Software. The ADF-1201 is the single channel version.

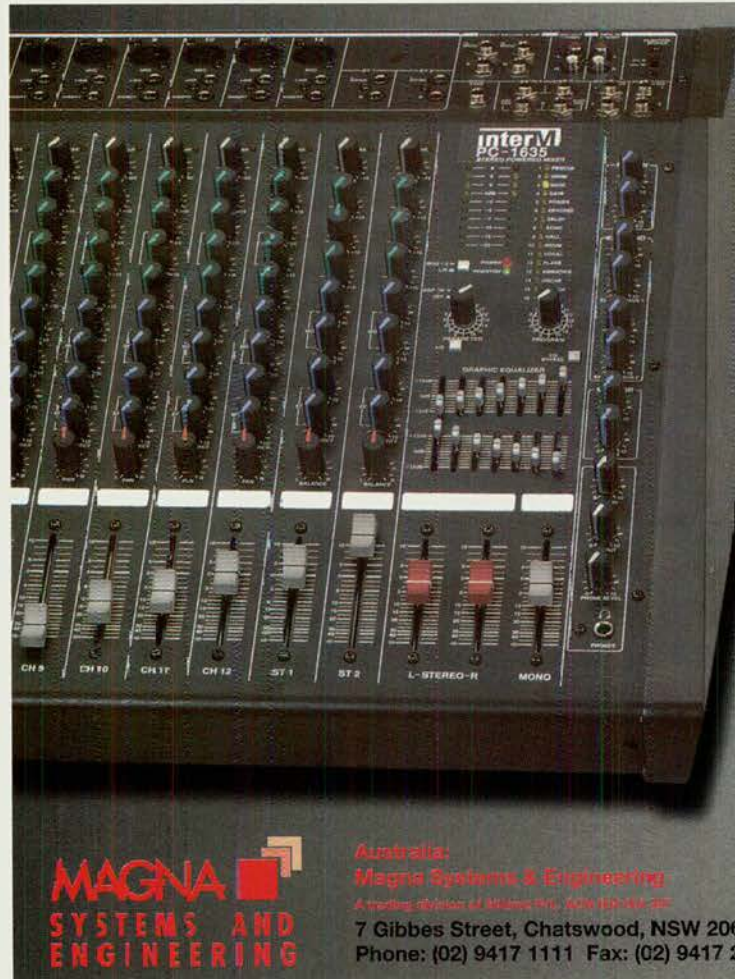
FBX and FBX Feedback Exterminator are registered trademarks of Sabine, Inc., and are the brand names of its line of automatic feedback controllers. Covered by U.S. Patent No. 5,245,665; Australian Patent No. 653,736, and Canadian Patent No. 2,066,624-2. Other patents pending.

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Brisbane Ball (continued)

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8 x Turbosound TMW 212 Wedges;
1 x Australian Monitor MiniQMX
2 x 12"; 20 x Ramsa WS-A200E; 2
x QSC MX3000A; 1 x QSC
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Monitor 1200 Quad; 8 x Austral-
ian Monitor 1K2; 2 x Australian
Monitor AM1600; 1 x Yamaha
3204II; 1 x Yamaha 2408; 2 x
Yamaha 1027 EQ; 3 x Yamaha
2031 EQ; 1 x Yamaha YDG2030
EQ; 2 x Yamaha C20 Controller; 1
x Turbosound LMS700; 2 x BSS
402 2 ch Comp/Limiter; 2 x DBX
160XT; 2 x Yamaha SPX 900; 1 x
Yamaha 550 CD Player; 1 x
Yamaha 262 Cassette Player.

CREW PERSONNEL

Staging Dimensions
Production: Mark Keegan;
Michael Oberg
Table Centres:
Gavin MacDonnel
Design/Art:
Leo Herrygers
Stage Management
Tony Noble
Pete Stevens
Jim Davies
Scott Mercer
Chris McGuffin
Anthony Chalmers
Tony Guilk
Stefan Klucis
Brett Voss
Barry Lindsay
Sean Kylie
Tim Maslen
Derek Weith

East Coast Lighting
J.P. McHugh
James Kenny

Entertainment Lighting & Sound
Phil Stafford
Nick Elvin

Brisbane Concert Sound
Ian Taylor
Alf Velm
Andy Burgess
Brian Savage
Kieran Waters

INTERCITY GEARHOUSE RE-EQUIP

(continued from page 5)

Take the Barco 8100 light cannon
video projector. Before, Intercity
had two and were pushing hard to
get two more. Now they have 14
and the utilisation is high.

NEW GEAR

100 Video Wall units are now in
stock, 40 of them flight cased, the
rest on dollies with covers. They
are Toshiba P4130VE units, a 41"
multi-sync rear projection cube
with the thinnest of thin mullions
(screen border) - just 1.75mm. So
when you stack them the screens
all sit almost together.

Gearhouse choose these because
they say they are not as deep as a
Pioneer cube, and the internal pro-
jection and electronics unit can
be quickly interchanged if some-
thing goes woozy.

Like other video walls, hirers
choose 4 x 4 or whatever combi-
nation - I saw a 3 x 9 wall work
nicely. Electrosonic software
which runs through a card on a
PC gives you options for split
screen or different programs.

It's probably the brightest way
to get a moving image across, cer-
tainly brighter than a video pro-
jector, and possibly most (old fash-
ioned, analogue but still unreal)
movie projectors.

The old way to do a video wall is
still used commonly too, that's the
traditional video monitor stacked
up. Intercity Gearhouse now have
200 of these, each a 28" Hantarex
unit.

Audio has been revamped too,
and Apogee Sound Inc make the
speaker system of choice. The AE-
5 is a compact loudspeaker used
with the AE-12 subwoofer. They
were chosen for the 'theatre'
sound desired, and are controlled
with a proprietary Apogee proces-
sor, amplified by Apogee DA-800
amplifiers.

Sony retro units (upright rear
project units) are new, the 60"
monitor and 40" models are in
stock. The 60" unit breaks down
into three roadcases, one for the
screen alone. As a stand-alone
visual point they are brilliant for
moving video or graphics.

The list goes on, extra EV SX200
speakers - surely the AV workhorse
of the '90's, low end video projec-

A/V - Productions - Events

tors, slide, overhead and whiteboard products. Also the aforementioned fleet of Barco projectors are supplemented with a bunch of different lenses, from .9 to 7:1.

EXPANSION PLANS

With over 100 people working, the Australian operation looks like expanding further. A Townsville office was added recently, joining all major capitals except Darwin.

Set and theming services are likely to be added because Professional Conference Organisers (PCO's) like to one-stop shop requirements. Corporate Meeting Planners feel exactly the same way too, and as the main competition for Intercity Gearhouse already

build sets, watch this space. In fact the competition is Staging Connections, who presumably are not taking the Gearhouse onslaught lightly.

Gearhouse themselves are a likeable gorilla, with the CEO in the UK -one Steve Laken- boasting some strong global links. Gearhouse have just purchased a group of companies in South Africa called The Lighting Group. This is made up of Lighting Unlimited, Stage Design, Woza Power, PA Sound and PSL South Africa.

When the Australian takeover was announced, Gearhouse stated that this was their first step into the Asian region. It will doubtless not be the last.

A Video Wall Primer

Designing an application where you may use a video wall needs a little preplanning, most of all for size and weight. A wall is not light. The big advantage over a video projector is no projection distance is needed.

As a guide a 3 x 3 cube wall (that's 9 cubes together, natch) once on a plinth with control and odds and sods will return little change from one tonne in weight. It'll take about 3 hours to build and align.

Your video signal is fed into a PC which has Electrosonic Pic software and a control card onboard. This splits the input source signal to one large image or an image of mixed magnifications and sources. Pic will accept

up to four source inputs, and do multiple image display complete with freeze, wipe, colour wash and magnifications.

The system can also control up to 12 source machines that are either RS232 or 422 compatible. The control PC will control up to 36 cubes.

Using traditional 'monitor' cubes (Intercity Gearhouse offer Hantarex 28" monitors) is less costly, but the downside is the look of the units - they have a thicker screen surround. Video Cubes (Toshiba 4130ve from Intercity Gearhouse) look almost seamless because they use a rear project engine onto a screen, so the surround (called the Mullion) is just 1.75mm.

Hire & Production News

• Mark Gibson reports on some of **Mk1's** recent production work which included supply of audio, lighting and staging systems for: the *Women's Day* Melbourne Cup Function at Randwick Racecourse; Natwest Markets Annual Dinner; the opening of Obar in Surry Hills.

Production crew were also supplied to Total Concept Productions for the IMAX Theatre opening; the launch of Water Week at Centennial Park; the Hermes Show Jumping event at Moore Park and Hot Ice Productions for *The King in Concert* tour and the Rebel's An-

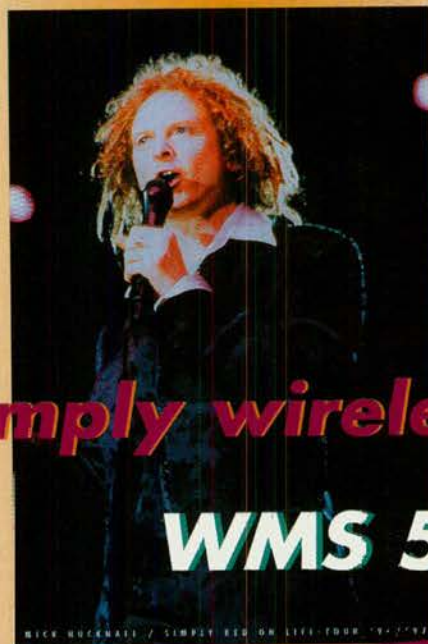
nual Bike Show. Contact: (046) 55 6647

• **Staging Rentals** most recent production/hire work includes; the Lexus Launch at Port Stevens; the Jaguar XK8 Launch; Victor Chang Memorial Dinner; Coca Cola's annual general meeting on the Gold Coast; Staging for *Pantera, Tracy Chapman, The Corrs, Clannad*; The ARIAS; Youthquake; APRA Music Awards. Coming up; President Clinton, staging and drapes, Schools Spectacular. Contact: 02 9519 6300.

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Hire & Production News

• **Production Dungeon** informed us that they have added a Drawmer DS201 & DI241 to their hire/production inventory. Contact: 0419 650 041

• Within two months, audio visual production company **Blacksheep Productions** have provided event management, A/V staging and video production services to a number of clients with locations ranging from Queensland, Adelaide, Bangkok, Bali, Manila, Jakarta and Singapore. Welcome home! Contact: 02 9212 7222

• From Point Clair in NSW, Neale Mace of **Entertainment Installations** reports purchasing a range of new equipment for their hire department including; 3 x ARX SX1500 amplifiers, Audio Telex TX4000 mixers, Klipsch Speakers, CAD microphones, Proel Mic Stands, Martin Robocolour Pro400s, Phonic EQs. Some recent production work included; a P.A. hire for a new church group and a XXX rated strip show on the same day; a full Martin intelligent lighting production for a local high school including Roboscan 518s, 812s and Robocolour Pro400s. Recent sales: The ABC OB dept. purchased a bunch of Littlelites; Empire Bay Public School bought 30+ raylights, a Dynalite dimmer and Jands stage 12 lighting desk; AV equipment sales included Electronic White Boards, AV trolleys, OHP units for the new Mingara Club. Contact: 043 243873

• **Audio Visual Lighting Australia (AVLA)** have won the contract for the refurbished Timezone in Fremantle supplying and installing sound, visual projection and lighting equipment throughout the complex. The Melbourne Cup also kept Avla busy, hiring audio and visual gear to a number of venues throughout the Perth metro area including Mandurah, "It was satisfying to set up over 51 TVs, screens and projectors knowing that everyone one had a great day out." says Avla Visual Manager Jeff Georgiou. Contact : 09 227 1399

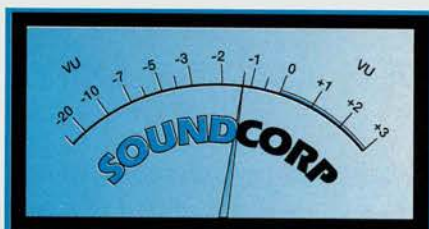
• Townsville's **Wild Gravity** has taken delivery

of ten 10' sections of Total Fabrications Heavy Duty, Double Hung Pre-Truss, possibly the first in Queensland. The company has also acquired the Australian distributorship for the LA & K based company after a visit to LA in August. Total Fabrications also have a web site at: www.totalfabs.com or T 077 213540

• Some recent **GUVT** news includes: their Theatrical Lighting Division supplied low voltage lighting for Aristocrat at the Gaming Show at Darling Harbour; a digital dimming system for Sunset Boulevard; their Special Effects Lighting Division helped supply large orders for the Melbourne Casino through distributors including 60 Cyberlights and 139 Strobelights through Bytecraft, and 20 Wild-fire 250w luminaires through Clearlight Shows. GUVT technical staff were also involved with the installation of a 12-plex at Liverpool in N.S.W., a 6-plex at Marina Bay in Singapore, and a 6-plex at Suva in Fiji, as well as a number of single screen auditoriums. Contact: 02 9550 5488

• **Rosssound Hire** recently provided the sound coverage for the Alcoa Fairbridge International Horse Trials at Pinjarra. The sound system(s) covered five main areas of operation including two showjumping arenas, one entertainment area and a cross country course covering several kilometres. *Rosssound's* Studio Caravan and two Sports Observation Caravans were used as main commentary points with the sound system(s) matrixed so that premier events could be included in the total broadcast. Equipment used included several Electro-Voice 2500 series radio microphones, Mackie MS-1202-VLZ and MS-1402-VLZ mixers, ARX SX800C contractor series power amplifiers and over fifty TOA TH50 speaker horns. Contact: 09 457 4044

• **DMC lighting & Sound** have announced the arrival of the Aquarius 3D full colour Laser, apparently the only one of its kind in Australia. Hire enquires should be directed



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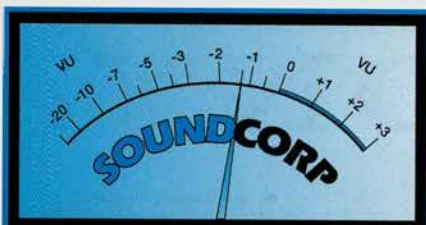
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Hire & Production News

towards Drew Muirhead or Myles Duggan. Contact: 02 9319 7177

• An addition to our *Meatloaf* story of last month - **Show Technology Australia** have informed us of some personnel and companies involved in the production:

- Brian Anslow, Lighting Workshop (Perth) - 20 x Clay Paky Goldenscan HPEs;
- Ben Phillips, Ben FX (Adelaide) - 4 x Clay Paky Goldenscan HPEs;
- Scott McCreadie, Eclipse Lighting (Hobart) - 2 clay Paky Goldenscans HPEs.
Contact: Show Technology, 02 9898 1111

• The band **White Man Can't Reggae** recently demonstrated a lighting rig that runs without a lighting operator, using MIDI. The rig included 24 (trackspot) moving lights, megastrosbes, PC1000 frontwashes. Contact them and see how it all works or read about it on their web page:

<http://www.ausiemusic.com.au/whiteman> or phone Stephen Pohan on 03 9899 4499

• **Grafton Lighting** (no relation to the editor, who still sometimes gets mail for them!) supplied lighting equipment for a production of *Musica Viva* at the Opera House and also had two hours notice to light Sydney's Centre Point Tower, red white and blue for Bill and Hilary Clinton's recent visit. Contact; 02 698 7777

• Hire news from **Concert Lighting Systems Australia (CLS)** includes lighting and rigging services for the Melbourne Festival events at Melbourne Town Hall, The Great Hall and Southbank; equipment supplied to: Youth Alive, Tattersals, Ajax Fasteners, a Ballarat production of *Jesus Christ Super Star*; Kellow Fawcner; John Farnham's TV Special and Myer's Christmas Windows. The latter using an Obsession 600 to run the lights and cue the automation.

• **System Sound** have been busy with the design and engineering of the Victorian State Opera's production of *West Side Story* which will be doing seasons in Melbourne, Sydney and Auckland. System Sound's current work list include *Sunset Boulevard* at the Regent Theatre in Melbourne and *Phantom of the Opera* at the Lyric Theatre in Brisbane. Contact: T 03 9529 2633 F 039529 4897

• A recent production at Darling Harbour certainly kept **AM Staging** occupied. The client was Sun Microsystems whose Sunrise '97 Week included a specially written musical Adventure in Aus. The event was staged in Australia for Sun's 2,900 sales employees from around the world. The production included 12 Sun executives on stage, 20 professional performers and a crew of 72.

"The audio system was complex," says AM Staging's Technical Director Mike Emerson, "As well as a paging system to the dressing rooms and green room we radio mic'ed 18 people on stage, running the sound through a Midas XL200 console. The plot also required complex sound effects which we provided from a Digicart" he said.

The AM Staging team of Mike, Dean Stevenson (audio operator), David Marshall (video projectionist) and Adam Baldoni (staging technician) had four weeks lead time for the production and worked closely with San Fransico based production firm Jack Morton Company as well as Chameleon Lighting, set designers Inspiration Design and costume and prop providers Hard Love. Contact: 02 9332 2400.

NEWS compiled by Dan Cole.

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Crazy For You

Theatre Royal, Sydney

The crew of *Crazy for You* have had an intense week. So intense that my visit to a tech run has been postponed twice.

The problem has been fitting a huge show, into a medium theatre, in a short time.

I arrived half an hour before rehearsal, prepared to be discreet and inconspicuous. After 20 minutes of sitting in one place, I spotted someone eating Vitari, and looking relaxed. I went over, and introduced myself. He had never heard of Connections. I told him how great it was. I imagined he was some assistant cable type guy. "So who are you, and what's your role?" I asked, imperiously.

"I'm Nigel, the director."

After I stopped banging my head on the velvet seat in front of me, I asked West, who is from England, about Australian theatre. He enjoys working here, and finds that the standard of techs and actors keeps improving. (Mike Ockrent is the original director.)

The crew have performed minor miracles with the show. The stage of the Theatre Royal is 11.5x16.9m. At various times during the play, the stage contains two functional cars, a hay wagon, two theatre marquees, a saloon interior and exterior, gas station, spiral staircase, and an elaborate theatre interior complete with chandelier, and 32 gold chairs. The ending is a deco vignette of arches, billowing clouds, and feathered chorus girls, on a Busby Berkeley scale.

The costumes

The wing space is quite small, particularly on the OP side. There are 380 costumes, some elaborate creations of tulle, feathers, and wire frame. These have to be in dressing rooms, and in quick change areas. When a costume is used, it must be returned, the next lot set, and the ones that need maintenance culled out. The wardrobe people have to make sure it all gets back to the right place, and check against plots which have to be written down, and maintained. Some of the girls change constantly, up to 15 times during the show.

"It's not really been possible to have a quick change area set up on stage, because there's scenery moving all the time," Ken Wilby, the production manager says. "So they are all temporary. Ground cloths are laid down, the dressers set it up, do the change, then clear as quickly as possible, usually at the time that a scene change is happening. It's a logistic nightmare. What stage management have succeeded in creating on stage, is a credit to them in their ability to organise and maintain the discipline. It's really quite remarkable. The per-

formance backstage is as big as the one onstage."

Lights and electrics

The number of lights is staggering. The lighting design is locked in, to replicate the original American version. So the entire front of the balcony, above, and below is covered with lights. Every available surface and bar has lights on it.

Stephen O'Keeffe, head electrician, worked for three weeks, with ten guys to rig the show. "The lighting situation was huge! It's a totally over the top Broadway rig, that only just fitted inside the Theatre Royal. We have about 1500 lamps on 600 dimmers. It's mainly Lekos with Source 4s driving all of the Wybron scrollers. Lighting everything in Profiles seems a very Broadway tradition.

"We have fifteen electrics bars on stage, eight ladders, three of those are automated so they have to fly in and out to clear scenery. And we have a lot of ground row and cyc light. We started the electrics fit out on October 11, but because the bump in was underestimated, it became a bunfight. We had a couple of days to pre rig, which was mainly the stuff on the stage. We then had to keep coming back to the stage as scenic elements were completed, and set electrics were needed on them. The bottom of some scenery is used as an electrics bar, because the space in the grid is chock a block.

"The FOH was the easiest bit, though a few things have been a bit irking. When Cameron Macintosh redid the theatre for *Phantom*, they took away a couple of really useful lighting positions. So there have been a number of things that we've been cursing *The Phantom* for, because some of the really good elements of the FOH theatre have just vanished."

When O'Keeffe took on the show, he had no idea it was going to be so big. "I kept asking for designs, then I got a contract, then I started work, and I was still asking for schedules and designs. So it was a bit of a shock to discover exactly how big it was, but life's like that.

"Even though there's extensive paperwork, it's been very difficult trying to reproduce a design from paperwork, especially one of this scale. When you light a show mainly in Profiles, each scene is going to be quite specific. So in order to focus a scene, we've had to get all the flymen, and automation in to set the scene up, so we could focus it. Then pull it down, and set the next one up so we could focus that. It was a very drawn out process.

"We still have lots to do. Like the star cur-

By Madeleine Murray

tain, which is little grain of wheat light globes on figure eight. WE've managed to get two thirds of that combed out, but the OP side is still in a tangle, because stage time's been at a premium. Getting someone on top of a Cougar to straighten out the budlight is a major event."

Kevin Blythe was working in the electrics crew for the bump in, and has come back today. "It's been huge. Everything's really tight. Lights are just so close to each other, you can't move. It's pretty full on. I've never seen so much stuff." Blythe has been rigging the lights, fault finding, fixing things up, running and rewiring the Wielands, which had two different wirings."So that was a bit of a nightmare, which we discovered late one night, and had to shut everything down while we went through them."

His mate, Stewart Brown, was dazzled too. "I think this is the biggest rig I've ever seen. It's been a bit of a challenge to work on something like this, in limited space, and in limited time. We're a bit tired, but we can see that it's coming together, and looking great."

Staging

Bruce Bolton, deputy stage manager said, "Basically I'm trying to get my head around exactly what's moving all the time, so I'm not calling anything that's liable to kill someone. And of course to keep in the back of my mind what the stage manager's saying at the same time, because she's running the floor." There are more than 50 auto cues, and 37 fly cues, and over 200 electric cues.

The biggest problem in this run was that they hadn't really had a chance to find out the best quick change positions for wardrobe to pre set in the very top of the show. "Our sequencing went out when we found out that they weren't in the best positions. That's a natural thing that happens when you do your first run. We got through it all, and we were in the right sequence eventually for the scene. And we didn't stop, so that's good."

Technical director

I caught the extremely Scottish TD, David Filshie, in a quiet moment between rehearsals. He had the very important job of attaching fish net over the orchestra pit, so the musicians wouldn't be injured if anything fell off the stage. "The challenges have been the timing, and the scheduling. We had an extremely tight schedule to work to. It's also a very very tight show, technically. Literally the turns levels are 1/4". It's an American set, so we've been

working in inches. There's 1/4" between all the trucks, and masking, and everything else. Fitting it into the space has been really tight."

The set came from America, from Broadway, and went to Adelaide to be rebuilt. But there were still lots of adjustments to make when it reached Sydney. Every single line in the theatre is taken up. There are six fly men, and 67 fly lines in the show. "Between them, there's absolutely no space, so they're having to do a lot of brailing. That's four on the fly floor, and two the other side to do running brails. That could potentially be a problem, because if the running brails aren't in place, if there's any mishap, then it'll foul on the rest of the set. So it's fraught with those things."

Production Manager

Ken Wilby's job is to have the overview. to help solve problems from dog clips to budget blow outs. He has to be able to adapt to changes in his original schedule, and to constantly reassess priorities as the rehearsal begin.

"The biggest problem in this production has been the extent of the lighting rig, and how enormous it was. There's been a few problem with tweaking the set here and there. But this rig is enormous, not just by Sydney standards, but any standards."

I kept pressing in vain for anecdotes about huge crises or dramas. Wilby denies there have been any major ones, but says that, "I think everytime someone comes to you with a problem, it's like 'this is the end, the show can't go on.' People do have a tendency to overdramatise, or just to dramatise their situation, to make a point, or get priority. The department have been exemplary in the way they've cooperated with one another under some times of extreme duress, and great frustration. When you think about the number of people traipsing around that stage, up to 100, it's amazing."

There have been a few innovations on this show. The floor surface is bakelite, which means it stays glossy, and enhances the sound of tap dancing. The fog effects are done with nitrogen, and leave the floor dry. *Crazy for You* have been developing a fog system for the Theatre Royal, using machinery designed in the US. "It's been a very quick learning curve for us to try and get that effect you saw at the end, which is lush in the extreme, and quite overpowering in its beauty," Wilby says. "It's quite a surprise to see that much fog coming up, and hanging around on stage, with that sort of density. That was really exciting for us, when that worked, and worked so well."

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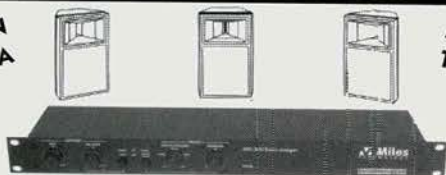
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○ **Stuart McDonald-Woods**, Technical Manager of **The Queens Park Theatre, Geraldton (WA)** reports that to complement their P.A. system purchase of last year (Mackie 24/8/2, Amcron 1200 & 2400 amps and EV Deltamax speakers and controllers) they have just taken delivery of 21 Selecon 1.2Kw Medium Zoom Profiles. This brings their FOH rig up to 33 Selecon 1.2 Zooms. The equipment was supplied by **Stagecraft** in Perth. Mr McDonald-Woods said, "It was great to retire the Strand T84s" and added that they are also in the process of replacing their "ring-main" talkback system with a new Jands 4-channel system, supplied by **Midwest Music** in Geraldton.

• **Queens Park Theatre** also have a new Manager. **John Reiter** started in November and is from **Spare Parts Theatre** in Perth. Technician **Keve Moore** has left for a tour Europe and **Shane Nanup** is the new theatre trainee. Contact: 099 215 866

○ In November a fire went through and destroyed the building housing the theatrical supplier **Stepping Out** located in Newtown, Sydney. It is estimated that 5000 costumes worth up to \$450,000 were destroyed. They were part of a 10 year collection of **Stepping Out's** owner **James Worner**. In a recent interview in *The Glebe* Mr Worner said he couldn't get insurance due to the insurer's 'over commitment' to the area (they also weren't happy about the building). **Stepping Out** have supplied costumes to some large productions including *42nd Street*, *Jesus Christ Superstar* and *Guys and Dolls* and also catered for smaller theatre groups and, as a result of the fire, up to 12 community theatres are now left without important costumes for their 1997 seasons. It is unlikely that Mr Worner will continue the operation and the remainder of his stock will be sold soon. A benefit was held for **James Worner** at **St George Leagues Club** in November to ease

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○ The next general meeting of **Bathurst Council** should determine whether plans for a dedicated theatre space for the town will proceed. The Theatre Committee has proposed a 650 seat, two-tiered design for the existing City Hall with provision for 1200 seats on the auditorium floor. The proposal was prepared by JBR Architects and the development is estimated to cost around \$6m.

○ The **Redcliff Entertainment Centre** is now under the management of R.A.N.S of Melbourne and the new Technical Manager is **Jeff Street**. Contact: 07 3889 5388

○ The **Australia Council's** newly established Dance and Theatre Fund has recently allocated \$7m for new projects including:

- A Theatre Fund Fellowship (worth \$80,000 over two years)

given to theatre designer **Mary Moore** (SA);

- A Partnership Grant between Macquarie University and NSW based **Theatre of Image** of \$79,578. The grant will contribute to artist fees over a twelve month period while the University will contribute staff and technical resources;

- **Outback Theatre** were allocated \$26,500 to assist in their productions and organisation. Outback Theatre is a mobile community theatre/resource based in Hay and offer a range of workshops and performances to isolated regions of Western NSW.

The Australia Council's Chair of the Theatre Fund, **Geoff Street** said, "The Theatre Fund has supported projects which exhibit creative energy and commitment to innovation." Details 02 9950 9059

○ Staff of **The Theatre Royal** in Hobart have marked the theatre's 160 years of performing arts and entertainment with the launch of

a special season in early-December. Season brochures and details will be available soon and they also have an internet address: <http://www.tased.edu.au/tasonline/theroyal> or T 03 6233 2026

○ The **Geelong Performing Arts Centre** has reported a record season from their last financial year with ticket sales exceeding \$500,000. Apparently attendance numbers for both the Education Program (27,402 compared to 25,958) and Subscriber numbers (1,237 from 941) have risen also.

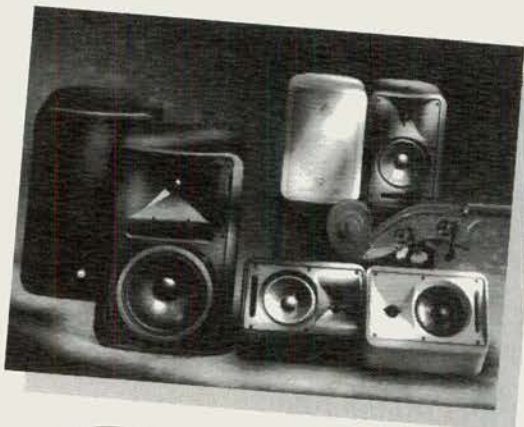
○ In Indooroopilly (QLD) the **St Peter's Lutheran College** have plans for an \$8.5m performing arts complex with seating for 1100. Brisbane architectural firm Phillips Smith Conwell have won the design for the three levelled complex which will be located south of the School Chapel and will feature rehearsal facilities, fly tower and open air amphitheatre.

○ New York theatre director **Terrell Robinson** is at the moment directing second year actors at **The Centre for Performing Arts** (Adelaide) in a production of *Little Black Sambo* at the Price Theatre. He has worked at Lincoln Centre's Theatre Directors' Lab and La Mama. Contact: 08 8231 5416

○ **The State Opera of South Australia** have announced a surplus of \$308,000 for their financial year ending in June 1996 according to the Chair of the State Opera, Mr Timothy O'Loughlin. This is due in part to a joint venture with all of Australia opera companies and also due to efficient performance against its original budget. The remaining surplus coming from Federal Government assistance. See season details at their internet address: <http://www.stateart.com.au/saopera>

Compiled by Dan Cole

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Write in Reader Service Number: 171

No Expense Spared

- a look at the scenery and automation of *Sunset Boulevard*

By Mandy Jones

Mik Auckland, Production Manager of the Melbourne season describes *Sunset Boulevard* as a "busy show". The first twenty minutes of the show are non-stop and backstage activities are hectic as sets are trucked, flown and packed away. Auckland explains that the biggest hurdle to overcome with the Melbourne show was the size of The Regent. While the auditorium and foyers are spacious, backstage facilities have been far from ideal for a show of this size.

Limited room in the wings has meant that props and scenery are stored double stacked in the space above the wings and in the fly tower, masked by the proscenium border. To enable this, 45 one tonne chain motors were purchased and installed so that scenery can be lowered, moved on to stage, removed once it is no longer required and then returned to storage in the air, all during the show. The fifty pieces of scenery stored in the roof weigh between 60 and 80 tonne, including a full size fibreglass replica of a classic car of the era, an Isotta-Franschini.

NEW DECK: The company installed their own stage deck which sits ten inches above the existing Regent stage. This deck supports the 100 or so tonne of sets, as well as housing the stage motors, winches and traps required for the show, without having to cut into the newly laid Regent stage deck installed during the refurbishments.

A team of 62 people make up the technical crew, from backstage crew, to followspot, au-

dio and lighting operators, to stage management. Auckland says that *Sunset Boulevard* is a very technically demanding show for the crew considering the complex automation and 15 set changes, as well as the lowering and storing of scenery on chain motors. Pre-show checks start at five o'clock pm for an eight o'clock pm performance. 36 automation axes must be checked and tested as well as sound checks, conventional lighting and Vari*Lite checks.

30 SEMI'S: It took 30 semi-trailers to bring the set to Melbourne from where it was built at the Adelaide Festival Centre workshops over six months. Without a doubt the *piece de resistance* of the set is the mansion of Norma Desmond, an incredible gothic setting on hydraulic scissor lifts and trucks so that it can be rolled up and down stage, and then raised to reveal another scene underneath it. Weighing in at around 40 tonne, the mansion features a sweeping staircase and is intricately decorated, complete with its own ornamental lighting.

The mansion and all scenic pieces were built and painted in Australia, however, some of the mansion dressings had to be imported from the set shops from the last two USA productions, simply because it was easier and cheaper.

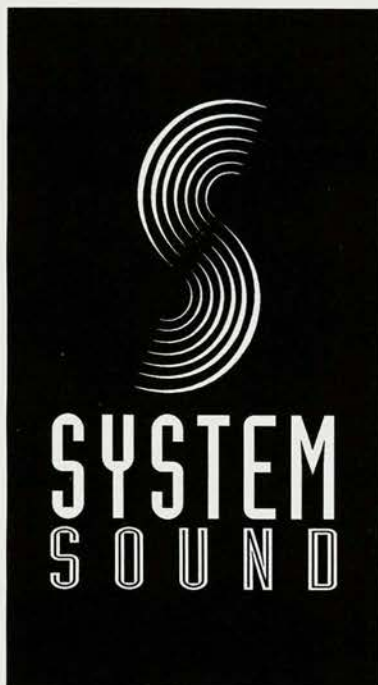
"It's very much a local production," says Auckland. "With just a little bit of help now and then from overseas."

The plans for the Australian version of *Sunset Boulevard* were designed with numerous venues in Australia and Asia in mind. Every major venue in Australia has been calculated

into the 'footprint' of this show so it has been designed to fit into the smallest venue the creative team have in mind, as well as the largest. At present, The Regent is the smallest venue allowed for in the designs, and Auckland comments that backstage is too small for it to be the ideal first venue for the production in Australia. While the front of house aspects of the theatre are perfect for a production of this nature right down to the decor design, lack of work spaces and appropriate loading docks have meant additional difficulties in the early stages of 'fit up'.

On stage the problem is a little more serious. Auckland explains that when the mansion scenery is in its upstage position, it literally stops 45 millimetres from the back wall. For safety reasons, emergency stop brakes have been installed on the back of the mansion set in the event a cast or crew member becomes trapped behind the moving set. At times in the performance there is as little as one foot of space in the wings for cast members to enter through between the sets and the fly-rail.

Lack of space has led to ingenuity in the *Sunset Boulevard* camp. All automation control equipment and audio equipment such as amps and racks have been placed on custom built barges which are suspended above the stage in the wings. The barges are winched up on chain and dead hung 18 feet above the stage for the season. At the end of the season, the barges are easily lowered to stage level where they are broken into two parts and wheeled straight into a semi-trailer. None of the equipment has to be removed, it is simply



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a matter of unplugging it and away it goes.

Like the barges, much of the show has been designed with touring in mind. Other than the control equipment which can be packed up quickly and loaded into a truck, even the lighting equipment has been considered in terms of touring. Custom designed and built trusses have been made for the Vari*Lites used in *Sunset Boulevard*. Auckland explains that Vari*Lite Australia had input into the design of these trusses and the results have been so successful that the lites are better off touring in the trusses than their roadcases.

And when it comes to Vari*Lites, *Sunset Boulevard* has its fair share. The rig includes 64 Vari*Lites - 23 x 2C's, 23 x 4's and 18 x 5's. The man behind the console behind the Vari*Lites is Richard Knight, Associate Vari*Lite Designer. Together with Associate Lighting Designer, Vivien Leone, these two travel from one *Sunset Boulevard* production to the next, setting up the lighting rig according to Andrew Bridge's original design.

Having kick started six other productions, Knight and Leone say that they have just about ironed out all the problems in their department, however preparing for a production outside the USA or Europe poses certain challenges. With all the lighting equipment brought in from overseas, integration of different lamp types and power requirements can be time consuming. Leone adds that the biggest challenge has been maintaining close inventories of all equipment as any replacement stock has to be sent from overseas.

Leone is in charge of the 350 focussing units in the lighting rig, as well as the 50 or so additional units on board the mansion set.



She adds that she always envies Knight and his Vari*Lites during fit-up.

"He can just stick the disk in and they all kind of know pretty much where they're supposed to go. But with conventional lights, you have to arm wrestle each light into place."

While Vari*Lites make up a significant proportion of the lighting rig, Knight explains that their use in the lighting design is distinctly different to the way most productions use them. They were chosen simply for practical reasons so that when a major piece of set is moved the lighting can follow its movement without drawing it to the audience's attention.

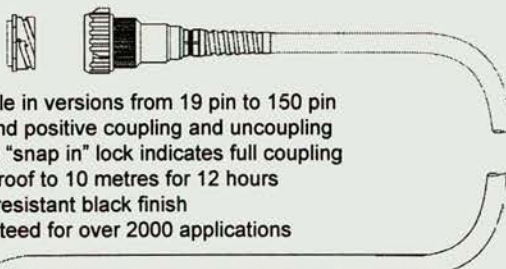
"The idea is to fix it so that you can't see the seams or the joins. It's completely the reverse

of rock 'n roll, there's no flash whatsoever. There are only about five cues where you're actually supposed to see the moving lights move - the rest, you're not supposed to see."

Controlling all the lighting equipment is a production in itself. With Vari*Lites, moving light curtains, and then 400 conventional lights, Leone describes it as "computers running computers, running computers".


The conventional lights are run off a Strand Light Palette 90, the light curtains off a David Hersey console, and the Vari*Lites by a Mini-Artisan 2 which is run off a Mac. All three systems are co-ordinated through a show control program known as Bleasdale - when one person hits go, three consoles work in sync.

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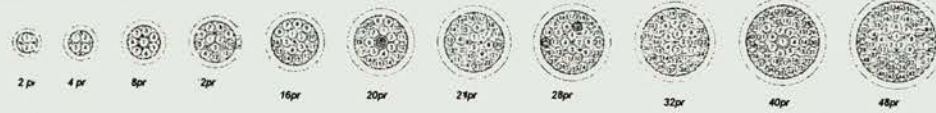


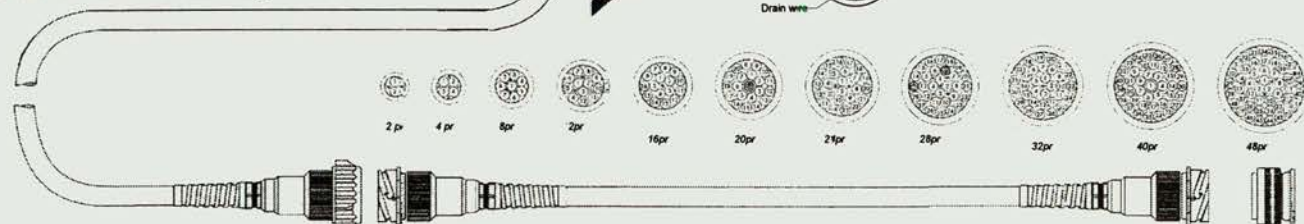
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Write in Reader Service Number: 170

FUNKY TIME *Won't you take me to ... dah de dah ... funky town?*

When I was just starting out in the industry, Colin and I worked with a Jazz Funk band for a while. Unfortunately for them, it was at the height of the extended mix disco compilation craze, and despite the band's undoubted talent, audiences responded to them by sitting down and drinking when they played, and getting up to dance when they stopped. (About the best thing you could say about the "Hooked On..." crap by Jive Bunny etc etc was that it taught a whole generation of Australians to clap **off** the beat!)

Still, luckily for the band (and us) their management had a lot of clout, so there were always 2 or 3 gigs a week.

The bass player either had enormous faith in the two of us, or a misplaced faith in divine intervention, because he didn't have a road case or any kind of cover for his speaker box. And although we took the best care of it that we could, one day the inevitable happened - it fell over in the truck and something sharp ripped through the grille cloth. Incredibly the speaker wasn't damaged, but there was a nasty hole in the cloth; and although he was philosophical about it, you could tell he wasn't pleased. We put a cross of gaffer tape over the hole to stop it spreading.

Musicians definitely have no sense of humour when it comes to themselves or their equipment. The next

gig, just for a bit of fun, we put great huge crosses of black gaffer all over the front of his bass bin. He rolled up to the gig, stepped on stage, took a horrified look at the gaffer tape, rushed over to the box, and peeled up the tape to have a look at what he anticipated would be enormous holes! Of course, there weren't any, and he stood on stage fuming as Col and I rolled around laughing our heads off.

From then onwards he carried all his gear himself in his own car!

Not all the times were funny, though. One night we had a gig at Billboard, a subterranean club in the city, situated in the bowels of a multi storey car park. The band were headlining, and there was quite a long break between the support band finishing and our guys coming on.

Since we were all hungry, I volunteered to go around the corner to McDonalds to get us all something to eat. Coming back across the street with my arms full of burger, an aggressive drunk careered into me on the crossing. Next thing I knew, he had run up behind me and given me a king hit to the side of my head that would have dropped an elephant, sending me crashing head first into Michael's Corner Store.

I went out like a light, and woke up to see the guy being held by a plain clothes cop. He helped me to

my feet and took us down to the Police Station, where he said they would be charging the guy with assault.

However, when we got down to the Police Station, despite my cut face, loose teeth and smashed glasses, the officer on duty declined to press charges since he couldn't be sure that I hadn't provoked him. He did give me the drunk's name and address, though, in case I wanted to sue him privately myself. No way, I thought, but the next day I rang up some of my ex-Vietnam chums, told them the story and gave them his address. They rang me back a week or so later to say he had been taught to be more careful in the future. I didn't ask for any details. As the Italians say, revenge is a dish best eaten cold.

And talking of cold, I got back to Billboard a bit late, still clutching my bags of burgers, and handed them around to a chorus of "Shit, mine's cold" "What about my fries?" "I said no pickle on mine"

What an ungrateful bunch. There's just no pleasing some people!

The band had got itself a gig at a large all-night party down the coast. From the crew's point of view, the highlight of the night was a topless dancing competition, with all the girls dancing on tables for the grand prize of a bag of Bob Hope! I've got to admit that it was certainly more

exciting than watching the band.

During one of the breaks the guitarist latched on to a stunningly good looking girl, blessed with a chest that would have been a definite dead heat in a Zeppelin race! They disappeared into his car for a spot of 'hide the sausage,' emerging half an hour later so that he could get back on stage to play.

In the next break he wandered over to the mixing desk, and said to us "Wow, what a hot chick (*Did people really talk like this, Dunk? Ed*). Unbelievable. And you know what? You'll never guess where she works, never in a million years."

We agreed we'd never guess, so he told us.

"The Salvation Army! Can you believe it - the Salvation Army!" and he wandered off to find somebody else to astound with his news.

However, the sting was in the tail, so to speak. About two weeks later at a gig, he wandered over to talk to us again.

"Hey, remember that girl from the Salvation Army I picked up at that party? You know what - she gave me a dose of the clap! What a slut, eh?"

We agreed, nodding solemnly and trying to keep a straight face, while the words 'Serves you right' drifted through our minds.

"Shit," he said, "I tell you what. That's the last time I buy the f---ing War Cry!"



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Write in Reader Service Number: 91

All about TUBES

A WARM INNER GLOW

Adelaide's Ross Giles specialises in the manufacture, re-building and maintenance of tube equipment - he took time out to discuss with Dan Cole the application of valve technology in professional audio.

"Many companies are building equipment with what I call the 'token valve'. This is where you have mediocre sounding electronics with a valve added in an attempt to warm it up." says Ross Giles, discussing the spate of tube based devices. "This is not limited to lower priced equipment either, often high quality solid-state gear such as Summit also pop in a valve."

"The 'token valve' tends to change the harmonic structure but will not necessarily make it warmer. It will make a different type of harshness — it all depends on the circuitry around it and how they have designed it. Generally, the input balancing will be ICs [Integrated Circuits]; side-chain controls will be solid state then the signal passes through the valve stage."

Surprisingly, the demand for tube or valve technology now exceeds the mid sixties and although there are a plethora of valves in audio gear according to Mr Giles 'many people haven't had experience with properly maintained vintage gear', which sound very different to the discerning ear.

"When you listen to new tube based equipment you are more than likely listening to a common tube called the 12AX7. The 12AX7 triode is a valve made by various manufacturers, each sounding different. The Chinese 12AX7 has a 'toppy' sound which is bright, very different to the Russian type made by Sovtek which has an even, richer sound."

"If you buy an Alesis or whatever they probably contain a Chinese 12AX7. You can take this out if you want and put in a better quality or different type 12AX7 and this will



change the sound. Be very careful doing this; don't bend the valve pins and remove the valve with a gentle rocking movement. In my opinion the best sounding AX7s ever made were by Mullard and they stopped making them in the '70s and are now highly sought after. The prices for these are going up every day.

"The new genre of equipment that uses all valves looks retro but when you listen to it, it may sound hard. I'm thinking of the ADL. In the one I tested, I found that there was a lot of ringing in the transformers which produces a smeared, upper-mid sound.

Re-issue style valve microphones also should be listened to closely as Mr Giles explains,

"For instance The RODE mic. in cardioid pattern has upper-mid harshness compared to a [Neuman] U67 but this goes away when in an omni or figure 8 pattern. Generally a valve mic. has an open sound revealing a lot more inner detail compared to a transistor based mic which tends to be 'closed' sounding.

According to Ross Giles the valve has a bright future and it is only the

specialised vintage valves which are rare. Common valves such as the 12AX7 will always be made, yet watch out for the label as this is often misleading as Ross Giles explains,

"Large companies buy in large quantities of tubes from the manufacturer, then re-label them with their logo, such as Mesa Boogie, Ruby etc. In actual fact there are currently only three large audio valve makers in the world: China, Czech Republic and Russia, with a few specialist manufacturers in the West*. There is talk that an old [valve] factory in the former Yugoslavia will be working again. There is also a small company in Italy, Viac Valves, that now make a very high quality triode audio power valve that retails in the USA for around US\$400 each!"

"Communist countries never stopped making valves and the Chinese bought the old valve technology initially for transmitting purposes about 30 years ago and then began making the 12AX7 and other audio valves. One Russian company is called Svetlana (meaning 'light')

(continued over)

PRO TALK

VALVES (TUBES)!

Q Recording Studios (NSW)The Demeter Tube Direct D.I. adds great warmth to bass guitar. It sometimes oscillates a high frequency but we can deal with this. We use a Pultec for kick, snare, guitar, vocals; the Drawmer is great across the mix, on guitars vocals, anything really. The Rode - a beauty, and the AKG C12 & C24 are classics, nuff said." **James Edwards** from **Tropo Sound** in Broome says a new addition to our studio is the Rode Classic mic. Valve gear: we love it."

M. Cullen from **Festival Records Mastering (NSW)**- Tubes sound great for anything distorted as they only recreate 2nd order harmonics unlike transistors/chips. Our Drawmer 1960 has worn out the pots before any tube problems and transformers are more of a problem in Pultecs than the tubes.

Greg Dixon from **Eastwood (NSW)** says that running a 1" analogue multitrack he doesn't find tubes add to the sound as much as he's heard them do in all-digital set-ups. Comment from a few singers: they don't feel a valve mic. sounds much different in the mix (both times a U647 compared to a U87), but that they sing better with that sound through the cans!

Barry Clissold of **Wombat Rd. Studio (VIC)** : Tube devices impart a warm tonal feel, handy on harsh sounding instruments and voices.

Finally **Norman McCourt** of **C'est Ca Audio Services (VIC)**: No two pieces of valve gear sound the same. We have one valve limiter which is excellent for kick drum but after 10-12 hours of constant 'four on the floor' pounding it starts to distort, so we go around the back and push all the valves back in (this upsets the engineers who don't know)! For vocals I have used a valve chain, i.e. mic (Neuman U67) to pre-amp (Aphex) to limiter (AWA) to Pultec EQ and then to tape. Sometimes this sounds wonderful but sometimes it doesn't happen!



Atomic Media: Audio & Vision via the Internet

By Jim Sarantinos

You won't find any bleary-eyed musicians, microphone stands, drum booths or cigarette butts in this faculty, only dedicated programmers propelling the audio-visual technology revolution into the next century.

Welcome to the age of multimedia where 2" tape reels and mixing consoles are meaningless to the staff here. If you mention quad-speed CD-ROM burners, digital editing software, and the internet to them then you're speaking their language.

Atomic Media is a small company which specialises in the production of 3-D animations, the design of web pages on the internet, interactive kiosks, CD-ROMs and audio-visual corporate presentations. Expansion plans are currently being implemented as the company is ready to open new studios around the globe, particularly to penetrate the North American and the lucrative South-East Asian markets.

The source for the production of multimedia at Atomic Media is firstly digitised from externally shot footage (usually on Betacam SP videocassette supplied by clients) and edited on AVID non-linear video editing system. The images are then modified using software such as Adobe After Effects and Metatools Final Effects to add digitally produced special effects to them such

as motion tracking, blurring, colour correction/balancing and solarising.

Multimedia is subsequently created from the resultant vision on both IBM (PC) and Macintosh platforms. The PC computer contains a Pentium 90 MHz processor, has 32 Mb RAM, a 4 Mb video card which includes acceleration, a Soundblaster soundcard (16-bit) and

a Wave Blaster add-on for sound playback. However, audio recording, editing and mixing is the exclusive domain of Macintosh software.

Most audio is produced in house using an assortment of Kuwai, Sequential Circuits and Roland keyboards. Voiceovers and additional music are produced off site and easily imported into the appropriate software via external drive. The Macintosh computer contains a 150 MHz 604 processor, a whopping 80 Mb RAM and an equally impressive 5 Gb hard drive. The audio recording software installed is Macromedia's Deck II version 2.5 and Soundedit 16 version 2.0 which Taki Konstan (a director of Atomic Media) considers to be the best digital audio workstations currently available on the market for multimedia applications. Deck II features up to 32 track simultaneous playback and can record up to 999 tracks at 16-bit resolution, 48 kHz sam-

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HHB PortaDAT - Sanken CSS-5 stereo shotgun. Mono compatible with switchable 3 and 5 position capsules for normal and extra wide stereo. Small and lightweight designed to fit standard Rycote location windscreens and used both for interview and atmos recordings. Plugs and powers straight into the PortaDAT. \$3,645.00.

Studio recordings - Pearl MS-2 and MS-8. The output signals S (side) and M (mid) are mixed in the microphone to produce normal left and right channels without the need for a mixer. Available as type K with omnidirectional M channel and Type C with a cardioid M channel. 5 pin XLR output. Unique internal lights, yes lights. \$3,381.00.

There are many more fine stereo mics to choose from plus lots of two mic combinations that make sense as well. Our advice is to read all the brochures you can on stereo mics and see what will suit your needs best, then try them out!

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AUDIO SOUND CENTRE

Atomic (continued)

pling rate for CD-quality sound. Length of recording time is only limited by the memory available on the hard drive or external drives (CD or Syquest). The software can also 24 bit mixdown automation (chorus, delay, equalisation, fader, movements, gain, normalisation, pitch changes, reverberation, time compression/expansion) via optional plug-ins and can synchronise to video via SMPTE (including 29.97 fps drop-frame) and MIDI timecode.

Similarly Soundedit 16 boasts an equally impressive array of features including visual representations of audio programmes such as Fourier analysis and scrolling wave forms, and can save them in any of fourteen file formats including WAV, DIFF, AIFF, MIDI allowing for compatibility with a variety of other Mac based audio workstations such as Sound Designer and Session 12. SoundEdit also has a ShockWave (version 1) plug-in installed which can compress audio by ratios as high as 176:1 making it ideal for transmitting audio via the internet. The Netscape version (for the internet) of the software is yet to be released, but once it is, it will mean faster and direct download times via the internet since no other software will need to be pre-loaded into your PC.

The potential of transmitting CD-quality through a telephone line boggles the mind. The ISDN (Integrated Serial Digital Network) technology which uses ordinary telephone lines is already operational in some studios particularly for recording voice overs from remote areas. The rate of data transmission directly affects sound quality and is limited by the bandwidths of the telephone lines. Bottlenecks not only occur as data travels from your PC to a backbone, but also in the return links back to your PC. Bandwidths currently range from 64 to 512 kilobits per second. A bandwidth of 64 kilobits per second is considered to be the minimum required for the transmission of CD-quality sound. While connections such as frame relays, T1 and multiple T1 lines can boost the bandwidths of the return links, crackles and dropouts are still a problem with audio files transmitted in this way.

Once the fibre optic cable roll out is completed in Australia, gradually replacing coaxial cable, bandwidths will improve dramatically and CD-quality sound will be able to be transmitted via ISDN networks at phenomenal speeds.

Taki is particularly keen to pursue the development of spatial audio enhancement which allows the manipulation of sound through space in terms of localisation especially in the creation of complex action adventure games and virtual reality. Another exciting project which Taki is currently developing is enhanced music CD-ROMs. When these dual purpose CD-ROMs are inserted into a domestic CD player they playback normal audio. Moreover, when they are inserted into a PC they double up as interactive CD-ROMs; i.e. images and additional sound can be played back. Imagine the possible applications of these 'super' CD's!

•Taki Konstan, ATOMIC MEDIA, 2 Bay St
Port Melbourne VIC 3207. T 03 9646 0644.



Warm Inner Glow (continued)

who make a great sounding EL34 power valve. The firm Tesla in the Czech Republic has restarted with U.S. money and they are developing a completely different type of 12AX7."

Mr Giles suggests that a signal triode can last many years and are fairly stable saying, 'output valves in amplifiers will wear out quicker'. But identifying a decaying device and how long should valves last, are important questions.

"When valves decay they become soft and dull in their sound and lose the dynamics in the top-end. It's a slow process and you may only notice it when you put in a new one. I'd say you have at least a year, maybe two, but this depends on how often it is switched on or if it's got a stand-by switch. The standard 12AX7 should last 1000s of hours use.

"In a valve or tube a filament gets hot and heats a thing called a cathode. The electrons start 'boiling' and 'bubbling' so you get a space charge of electrons around the cathode. An anode has a high positive voltage on it that draws the stream of electrons from the cathode to the anode so that the current flows through it.

"A grid of wire is placed between the cathode and anode and by putting a small voltage charge on the grid the electron flow between the cathode and anode is changed. That's why the English call it the valve — it's like turning a tap on. This is a Thermionic Valve. The Americans call it an Electron Tube."

Lately the Giles name is appearing in more studios. He makes custom orders and at the moment he produces a valve mic. pre amp, compressor, D.I. and an equaliser.

"The e.q. is a four-channel, three-band e.q.; the 3-bands, bass, mid and treble are very broad. It isn't a case of cut or boost, but more or less. It allows you to manipulate tonalities of sound, or wider bandwidths. Because of its low phase shift distortion, when you turn the treble up you get an 'opening of air' rather than phase distortion.

"I make a tube D.I. which has a line level output so you don't have to go into a solid state mic pre-amp but instead go direct into your multitrack or hard disk recorder. With my pentode mic. pre-amp input amplifier I wanted to capture the sound of English recordings of the late '50s to early '60s.

"Because the equipment I make is all valve there is minimal circuitry. Modern gear uses a number of ICs; each contain hundreds of transistors and the signal has to go through so much stuff that no wonder it's worn out. Everytime it goes through, a layer of detail is taken off the sound."

A criticism with the current state of audio technology is that everything is 'off the shelf', that new products sound the same. Exploring the possible sound of valve technology is one alternative and there is now a range of such technologies offering a wide pallet of sounds.

Ross Giles lives and works in Adelaide and can be contacted on (08) 381 1722

Metropolis' Migratory Mobile

By Dan Cole

Metropolis Audio own one of largest mobile recording studios in Victoria and have been in the Outside Broadcast game for around 25 years, which equates to a lot mobile experience. Their current truck (the third) has been refurbished and re-designed and is vision/audio capable for required specifications of high-end television and international recording.

According to owner Ern Rose, the mobile is flexible and has "evolved as needs have changed. In the old days one 16-track tape recorder was a luxury, now we can accommodate two- 48 track machines. As well, the facility can do either digital or analogue — with analogue that's four machines and with digital we normally go for the Sony 48 track format. We can also do noise reduction across all tracks."

According to Mr Rose what makes an OB truck great is the stuff that isn't glamorous or flashy but what is hidden from view. He continues,

"It's all the things you don't see; the draws full of adaptors and fittings, balancing transforming that only come out when they are required — if you don't have them you will get into trouble. It's also such things as the switching that enables us to run different machine configurations and monitor them, to be able to select noise reduction on any machine — that's quite sophisticated and you don't see it. [The client is] presented with a 'yes we can do it' and that's the end of it".

"Because the mobile is run in conjunction with the studio we can put in multiple DAT machines, DA-88s, 1/4" machines or whatever is required. Every job is quite different, especially in the television world; one live TV show might have four DAT replays, another could be all live

bands. We have had the 48 channel PM4000 and two 40-channel PM3000s running at once in some instances."

The facility has two sound-proofed rooms with a dividing door which can be taken out for larger projects so the booth-area can be used for voice-over or as downstream mix.

"Sometimes it's just a machine room. For instance we are doing the live TV broadcast of John Farnham at the Tennis Centre (for Channel 7) and the second room will be used as a downstream television mix area.

"We have done more TV this year such as *The Midday Show* (from a factory opposite Ch9 studios); *John Farnham* at the Tennis Centre and *The Football Show*, also out of the Tennis Centre. Previously we had a run of major bands doing broadcasts into the U.S., which was popular for a few years. Acts such as *Madonna*, *U2*, *Bon Jovi*, *Neil Diamond* — those sorts of acts ask for a dual 48 track for HBO live television into cable or television. These jobs are great to do because there's the budget to do them properly".

As with any project, planning is crucial, yet with O/B recording this becomes even more important as there is an enormous amount of responsibility and liaison involved.

"The planning of the installation is the first thing; we would talk about it a few weeks, sometimes months ahead (for TV). In some cases we design the cabling for the whole O/B site. The implementation of planning is the next phase so we have clean power.

"The artist entrusts their performance to you. It is more exciting [than studio-based work] and we often do live to air or a concert to multitrack. In most cases two staff is the minimum with up

to four on a rig and de-rig day."

Dealing with a production's crew is an important part of doing an O/B project. "We're pretty careful about what we ask of, as it's easy to become the enemy if you start making demands. Crews have their routine and system and they don't want that interrupted, nor do we want to interrupt it. The show will run at it's maximum if we are invisible and don't give them anything unusual to consider. We tend not to make requests to change microphones but if we see a way to make improvements, and everyone is keen, we will do it, otherwise we will fit in.

"In most cases large touring organisations are very well organised and have a hierarchy that you dare not cut across. They have strict guidelines because they don't want to f— up and we understand that and try to be sensitive to it — ie: some crews don't want people in their meal room so you have to be careful not to intrude."

Metropolis Audio operate their mobile in the same market as the ABC who also have a number of mobile studios around the country, and this can be a concern as Mr Rose elaborates,

"I doubt if the ABC O/B truck(s) are run commercially. They may bring in revenue for the bottom-line for the ABC and that might look good to them but if you cost them on the basis as we do, I don't think they could afford to do it competitively. It's a dangerous area that is arriving. Their vans are fine and JJJ have done a lot of good stuff however the ABC might record three hundred bands a year or something and that's three hundred bands that don't need to record commercially.

• Metropolis Audio, 180 bank St., South Melbourne, VIC 3205 T 03 9696 2111.

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Write in Reader Service Number: 168

On The Set, at Oscar & Lucinda

By Madeleine Murray

Oscar and Lucinda, directed by Gillian Armstrong, has been shooting in Australia, for the past three months. Ralph Fiennes, who stole the show as the hyper-sadistic Nazi Commander in *Schindler's List*, stars as Oscar. *Oscar and Lucinda* is the improbable love story of two gamblers drawn together by fate, in nineteenth century Australia.

On the day I visited, the film crew were in The Rocks, in a small street of old woolstores. The first scene was in an office, built inside the wool store. Oscar is going up north, to build a glass church. He is saying goodbye to Lucinda, and kissing her for the first time. Jeffris, an officer, comes into the room. Through the windows of the office, we see people from her glass factory working.

Preparing for a scene

I asked the sound recordist, Ben Osmo, how he prepared for this scene. After reading the script, and the production schedule, Osmo figures out what will be needed on each location. "This particular room is meant to be adjacent to her glassworks, so there's always going to be activity outside the windows," Osmo said. "We're shooting in The Rocks, so I've had to request traffic control outside. That means that people who are authorised, and have police permission can hold traffic while we're shooting. That's organised during pre production."

Osmo also liaises with the wardrobe department, because natural fibres make less rustle for radio mics, placed on actors. "I can get a jump start by talking to the designer and requesting that certain materials be favoured, such as cotton. When they can, they help me."

For the scene today, Osmo knows that Oscar, Lucinda, and Jeffris are in the office, and are going to have dialogue. Osmo watches a rehearsal, or block through of the scene, to see how where the actors will be moving. One whole wall is glass, so reflections are a problem. This means that the boom swinger has a

very limited scope for moving, or his boom will be reflected in the shot. So Osmo decides to put radio mics on all the cast.

After Oscar, Lucinda, and Jeffris are in costume, the radio mics are put on. Nucifora, the boom swinger goes to Cate Blanchett's caravan, and puts the mic on. It's placed inside the clothing, near the solar plexus. Ideally there is some air around it. The pack, in a pouch on a belt, is also hidden by the costume.



Gillian Armstrong directs

Fiennes' wardrobe is problematic, because he is often wearing a clerical type of top, with a high collar. Jeffris is wearing a tight military jacket. "We had to devise a couple of ways of putting those in," Osmo said. "It's a fiddly thing to do, but once we get it done, we set the levels on the transmitters. They come on set half an hour later, with the mics unplugged. We plug them back in, and have a listen."

The other problem that Osmo prepared for was Jeffris' entrance, while the other actors are speaking.

Recordist (& Entech Award Winner) Ben Osmo



The entire floor is wood. When recording dialogue, Osmo tries to eliminate as many background sounds as possible. Footsteps would have been unnaturally loud over their very quiet dialogue. So Osmo precut some foam rubber, and put it under Jeffris' shoes.

The extras working away in the background had to look busy, but not make too much noise. The glass window provided a certain barrier, so that only the loudest noises,

although it is still slightly audible. "But I know, with the techniques we have in post production, that it's better to leave it that way and mix the scene as well as I can. The software and outboard equipment can easily eliminate that frequency without affecting the dialogue. If I filter too much, then it would affect it."

Osmo uses the boom mic for fill, and spill. "In this scene, I'm crossfading between three radio mics. The boom picks up the ambience. I've found through experience that radio mics alone have a different sound than a radio mic with a little bit of the boom. Usually in a really wide shot, where I can't get the boom in, I'll put radio mics and have the boom up as well. When we go into close up, I'll just use the boom. The combination of those, works to match from one shot to another. It's kind of an unorthodox way of doing it. The die hards tell you to do it one way or another. In this case, because the dialogue was so quiet, I elected to stay with the radio mics, and maintain the spill factor with the boom mic."

During shooting, Osmo sits at his trolley listening and mixing. He is using a Sony DAT, and a Nagra for analogue back up. On his desk is a remote switch to run both machines. Before a take, he puts them on pause. When the first assistant says, "Turn over," he turns both machines on, and calls out "Speed" on the intercom to Nucifora, who relays the message on the set. This is less disruptive for actors, than someone shouting 'Speed!' from 50m away.

The script page for this scene is clipped onto Osmo's trolley, beside his head. The dialogue is marked in different colours for each character, which correspond to the colour of their radio mics. Lucinda is red, Oscar blue, and Jeffris on green.

From then on, it's cross fading. Osmo can't have four mics open all the time, because it'll bring the background levels up too high. So he follows the script, interpreting the timing of the actors. A monitor of the shot helps him to be see who

which were footsteps, penetrated. So, Osmo put foam rubber under some of their shoes. He had to do this, because the floor was in shot. Otherwise, he would have put carpet down.

Recording the scene

The two main characters are split off to one channel, and Jeffris, who comes in and out of the room, is split off to another channel. This allows the editor and mixer in post production to control and balance the dialogue from both sides of the room independently.

Osmo also had to be aware of dialogue overlapping, which makes it impossible for editing. This happened once this morning, and they did another take. Years of experience help Osmo to know what problems are critical enough to ask for another take, and what problems can be fixed in post production. On one take, a rogue vehicle goes past outside, but it is acceptable, because it is between two lines of dialogue.

A basic general rumble in the room is fixed by a high pass filter,

is about to speak, or ad lib. He fades every actor as they speak, and leaves the boom mic open to disguise the cross fades.

"I don't want Jeffris mic open, because we see him way in the background, walking up. The sound editor gets my mix, which is my choice of what mic, who to favour, and perspective."

During this shot, Nicole Lazaroff, the second boom operator and sound assistant, has been outside the set where the workers are. So when the dialogue has finished, and Lucinda is standing by the window, Osmo slightly opens up that mic. "Also Jeffris called out to Oscar, way in the background. I just did a little mix, simulating how naturally you would hear it through a window. It was mixed up with other effects, and that was just an added bonus, because normally you wouldn't hear it anyway."

Usually Osmo mixes a scene down to two tracks. If there were another camera, he would use another DAT machine.

This morning, a close up follows

the wider shot. "If it's a normal dialogue, on the close ups, we just use the boom. The boom usually sounds better. It sounds cleaner, more natural. It has the timbre and resonance of the actors' voices. Radio mics are always a compromise, no matter what anyone says. They're a good compromise, because otherwise we couldn't get half the material we get, in modern film making."

But in this case, the dialogue is particularly soft. Osmo asks Nucifora, by intercom, if he can boom the shot. Nucifora says, "I can get there, but I don't think you'll like it." After working together for ten years, Nucifora knows what Osmo wants. So they decide to go with radio mics. "Even though it's a slight compromise, at least we could get more signal to noise from the voice, rather than bring the ambience up too high."

Nucifora explains the problems for him, in this scene. "It's very difficult, because the whole back wall is glass, so we're dealing with lots of reflections. I can't put the mic exactly where I want. I have to check

meticulously with the cameraman, because only he can tell if my reflection is in the shot. I have to wear black. Sometimes I can stay still, and they can't see me, but as soon as I move they see me. That's the main hurdle, then there's always shadows, of the boom. And with anamorphic, you see the whole room, it's massive. But we've got it, we've got it covered."

After a take

After the director calls 'Cut,' Osmo puts a tone on the tape, and switches off both machines. He then tells the first assistant director, by intercom, if there was clothes rustle, if an actor scudded muffled, an extra was too noisy, or the timing of the dialogue didn't work.

Osmo talks to Nucifora, and suggests ways to improve the boom movement. They make little adjustments to the radio mics, in case it has been moved, or clothing has folded over it.

Next scene

This afternoon, Oscar is leaving

in a lavish departure scene. Two or three cameras will be shooting horses and carts, and a procession of riders moving off. The street will be blocked off, and covered with pine bark and sawdust.

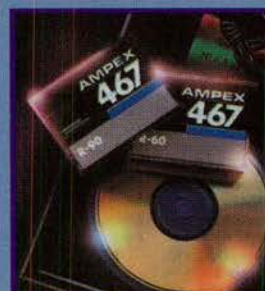
Inside, Osmo has used Neumann KMR81, for the boom mic. Outside, he is planning to use Sennheiser 416, with external blimps and wind socks. "I usually use those, and Sennheiser 816 on exteriors. They're much better for wind interference, and getting rid of background noise you don't want."

Depending on how the scene is blocked, Osmo will probably put a radio mic on Jeffris, because he's the leader, and he may ad lib. Oscar may react to some of the crowd saying goodbye, so that's another radio mic. There'll be two 416s on boom poles, about 10' apart. The aim is to get a wide stereo split, a two track split of the procession going off. "I may split off the radio mics onto a separate DAT machine, and have just the sound effects on another DAT. The editor will get both DATs and mix then together."



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○ Introduction

This year the distinction between hard disk recorders and digital audio workstations (DAW) is becoming harder to figure. Also the newest trend in smaller 'firmware' is the Mini Disk recorder, for 4 tracks on a cheap MD. In 8 track-ers, ADAT, Tascam and Sony battle it out with newcomers galore. Hardware, software, cards in your PC - or good old magnetic tape. Be confused, and aware that many, or most, products here are proprietary, stand alone units which do not talk to other brands. Check your supplier, get local user references, and see where the nearest service/support centre is located. Good hunting!

There are SIX categories in this years Guide:

- Software and Hard Disk Recorders; • Mini Disk Recorders; • Digital Audio Workstations; • DAT; • Recorders- stand alone multitrack; and CD Recorders. Remember that products will overlap between sections, so keep an open mind.

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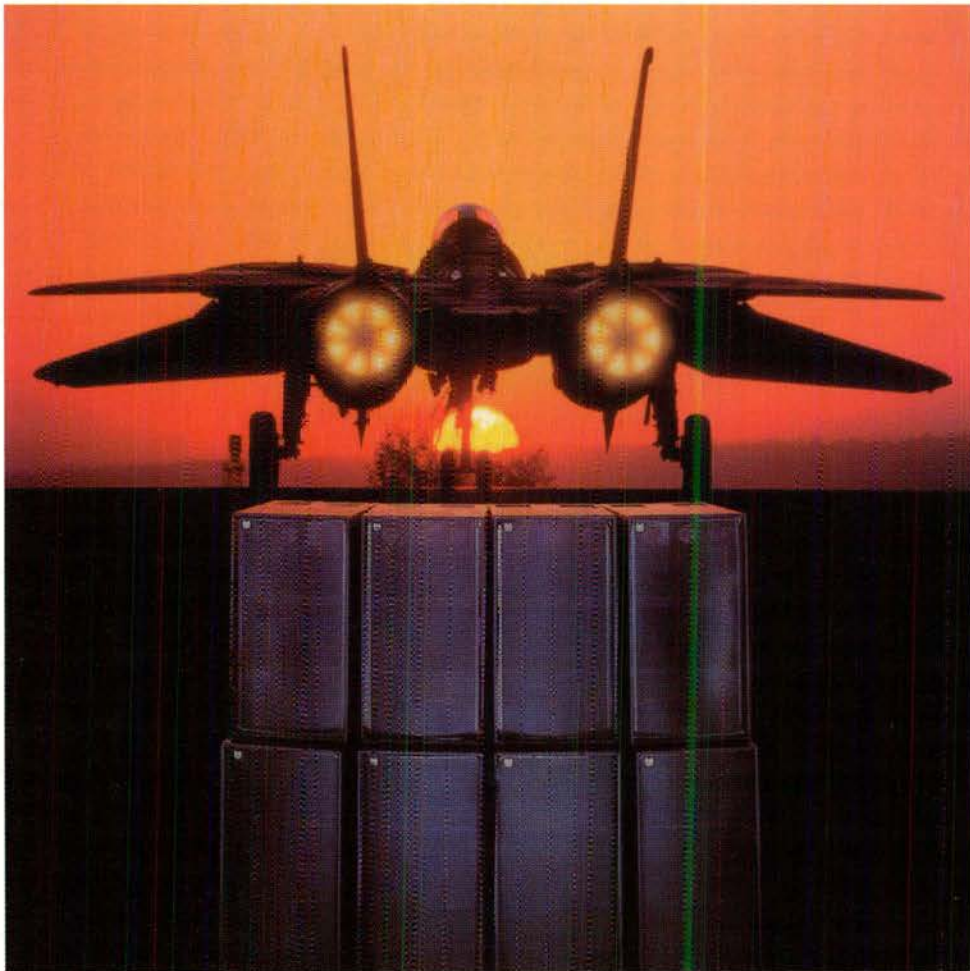
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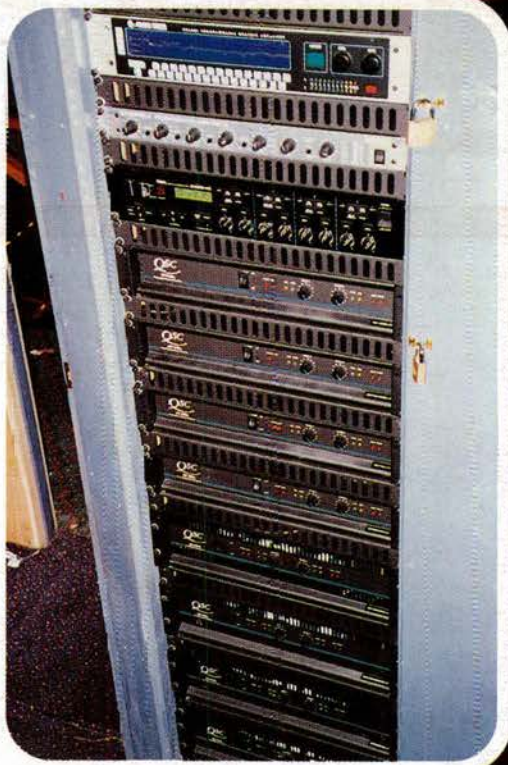
Our objective was to make Heaven comparable to the best Nightclubs in New York, Rome or London – maybe better," said club Boss John Pike. "We had already won

'Best Entertainment Venue in South Australia' for the last three years. This leap forward in audio and visual technology has us mixing it with the best in the world. Certainly on the audio side, as far as I am aware, no other club in the world has a dedicated concert system like Martin F2 – it makes a very big difference, everyone who's heard it knows that."

Already the most popular venue in town, the 2,000 capacity Heaven Nightclub in the Newmarket Hotel, Adelaide has set a new queue record and has a paint mark on the footpath 260 meters from the entrance to prove it! The refit has been featured in *Connections* and *World Disco Review* magazines and the club now accommodates international live acts three nights of the week and various types of dance music the remainder of the week.

The visual refit features the best technology available, including eight Clay Paky Golden Scan 3s, eight Golden Scan 2s, a 7-watt Aquarius Laser, 32 Martin Roboscan Pro218s, 24 Robo Colours, 36 Jet Strobe Tubes, and six Mirror Balls.

The audio system is based around Martin Audio's F2 concert system with QSC MX Series



PA HEAVEN IN A

3 C CHECKS OUT ONE OF THE

amplifiers, Yamaha and Klark Teknik processing and a Soundcraft D-MIX 1000 Disco Mixer. Heaven wanted to change the focus of the nightclub from a distributed audio 'Disco/Dance-Floor' configuration to a 'Front-of-House' configuration. In other words, where the audio emanates from a single focal point of excitement, in Heaven's case the stage/DJ booth area. To achieve the 'FOH' impact, a flown array of horn-loaded, narrow dispersion speakers with very high SPL output was required.

The whole system includes eight Mid/High cabinets, four each side in two custom VST™ (Venue Sound Technology) flying frame arrays, with 6 double 15" Sub-Woofer. Three QSC MX3000a amplifiers, two MX2000a's and four MX1500a's drive the system with a Yamaha D2040 controlling cross-overs, time-alignment delays, etc., and a Klark Teknik DN3600 digital graphic EQ with preset EQ curves for different types of music format.

Glenn Leembruggen of audio consulting group, Elecoustics, who carried out final EQ and critical listening using MLSAA audio analysis software said, "this is the loudest, cleanest high level system I've heard – it's a pleasure to work with."

John Pike said after the re-fit was complete, "Heaven is a showcase of the best technology we could find anywhere in the world, it puts us way out in front of anything in Australia – entertainment in Adelaide is now genuinely world-class."



Martin's F2 System is more commonly seen handling stadium-sized venues for top international acts like Simple Minds, Take That, Deep Purple, Sade, Status Quo and Youssou N' Dour, but it was considered ideal for the job. Unlike other manufacturers who try to achieve minimum componentry by extending the frequency range of a driver (often beyond its optimum range), the F2 system maintains the luxury of configurations upto six-way active. The system in Heaven is configured four-way: a 'SuperTweeter' Array of Ring Radiators for the ultra highs, a 2" compression driver with Martin CD horns for the highs, the world's largest compression driver for mids, a 5.5" exit 3" voice-coil horn loaded device, and double 4" voice coil 15" drivers (also horn loaded) in the floor-standing F2B Sub-Woofer.



ADELAIDE

WORLD'S PREMIER NIGHTCLUBS

When Adelaide nightclub, Heaven, wanted to change their PA from a distributed audio 'Disco/Dance-Floor' configuration to a 'Front-of-House' configuration, they chose some of the world's best technology. 3C goes behind the scenes to see how they did it.

4000W

PROFESSIONAL AMPLIFIER

ON
OFF
 PROTECT
 STANDBY
 POWER

QSC

POWERLIGHT 4.0

Building a Lear Power Mac

Your mission: to build the best-sounding, greatest-performing professional power amp in the world. How do you do it?

SUPPLY MUSCLE

You might want to start with the power supply, because it's a major contributor to the dynamic characteristics of a power amp. Well-regulated supply rails are necessary to the survival of *Really Big Bottom End*, so you want supply voltages that are really stiff and won't sag under the load of big transients and heavy bass. You'll also want plenty of reserve capacity, so you can use it for subwoofers if you want, with kick drums and earthquakes and all that. And you'd want very minimal AC line ripple on the supply voltages, to prevent line-frequency intermodulation with the audio signal at clipping. And, of course, it's got to be rugged and reliable, because you have little time for failures.

A conventional power supply wouldn't cut it here; you'd definitely use a switching supply operating at high frequency, well above the audio spectrum so it won't cause any audible noise and definitely won't produce any hum. How does 115kHz sound? And instead of the big power reservoir being after the transformer, as in a conventional supply, you'd

want to make it a high-voltage reservoir (you can get by with small-value capacitors and store even more energy) before the step-down transformer. Speaking of the transformer, forge the heavy 'boat anchors'; use something small, light and fast.

And instead of having switching transistors making square waves, you would make a resonant circuit on the transformer primary to reduce EMI and RFI and to allow the transistors to switch, without losses, at the zero crossings of the sine waves that result. And while you're at it, you could make it a 'smart' supply that shuts itself off as part of the amplifier's protection scheme, and add a remote-controllable 'standby' feature that is free of inrush current at turn-on.

AUDIO EXCELLENCE

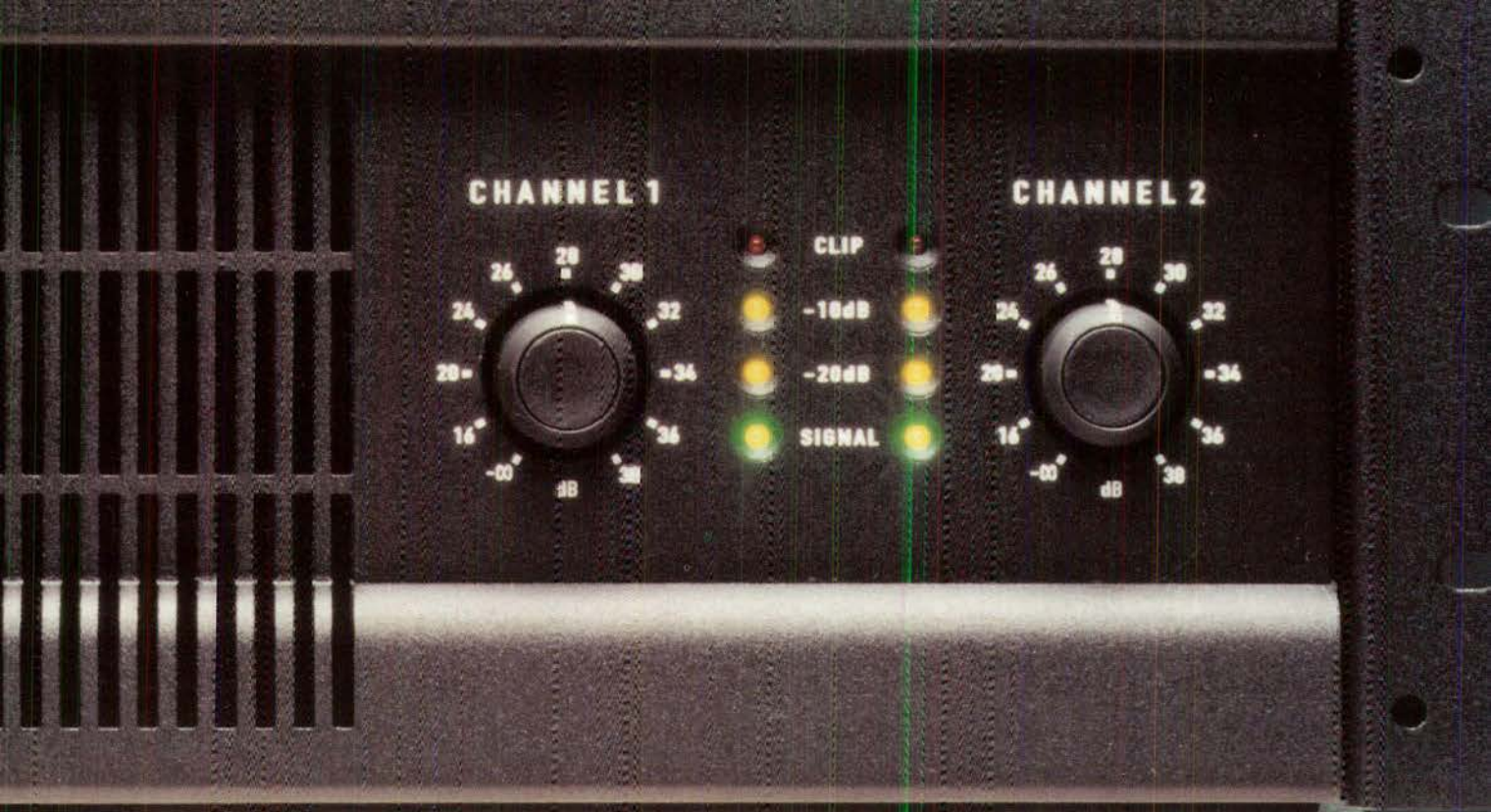
If you've already got a proven, high quality audio output section you can build on, so much the better. It would be a good idea to make it a grounded-collector configuration, so you can clamp the output devices directly to the heat

sink without any insulators in between for direct thermal transfer. And the 'smart' power supply would allow you to do away with output relays, so there you would pick up some increase in reliability and damping factor. You'll want actively balanced inputs, of course, designed so that the impedance doesn't change between balanced and unbalanced sources. Do you use XLR or 1/4 inch? Why not accommodate both in the same connector?

COOL AND LIGHT

For cooling, you'd want a quiet, continuously variable-speed fan blowing its air flow back-to-front through an extruded aluminium 'tunnel' heat sink. This setup mimics air flow turbulence that causes back pressure, and it helps prevent build-up in the amplifier rack. In fact, adding a well-designed Class H circuit to a high-power amp design will make it even more thermally efficient.

Oh, and be sure to make it's really lightweight, too. Like less than 8.2Kg for 1800 watts total power, or, under 14Kg for four kilowatts of total power.



Mean, Machine

The New PowerLight 4.0

Of course, an amp like this would have to be wrought of ideas from an assemblage of some of the finest engineering minds in the audio industry.

So what would you end up with when you're finished? If you did it right you'd have a QSC PowerLight amplifier.

POWER TO THE PEOPLE

And now there's one more reason to switch to PowerLight – introducing the brand new PowerLight 4.0. More than four thousand watts (2000 watts EIA, 1kHz @ 1% THD, per channel at 2 Ω) of clean, quiet and superb audio performance in three rack spaces and only 13.6Kg. It's the perfect amp for subwoofers, especially on tour where the light weight is an additional premium benefit.

Like its smaller, 2RU siblings, the PowerLight 1.0, 1.4 and 1.8, the PowerLight 4.0 utilises QSC's PowerWave™ switching power supply technology to achieve incredibly transparent dynamic performance and almost unbelievably light weight. Neutrik combo connectors on

the rear panel allow the use of either XLR or 1/4-inch TRS inputs. A mode switch on the rear panel easily sets up the amp for stereo, parallel, or bridged mono operation. Three rack spaces in height, with dual detented gain controls and LED signal level and clip indicators on the front, the 4.0 clearly lies in the megawatt class with FTC (20Hz-20kHz, <0.1% THD) ratings of 900 watts per channel into 8 Ω and 1400 watts a side at 4 Ω . Typical mid-band power output is 1000w at 8 Ω and 1550w at 4 Ω per channel. Imagine that – possibly the first mega-amp you can ship with postage stamps. And you're used to pushing around heavy racks full of conventional power amps, right? Wait till you've tried working racks full of PowerLight amps.

Also like the other PowerLight amps, the 4.0 features the remote 'standby' terminals on its rear panel that allow you to switch one or more PowerLight amps between standby and operate modes with a single pair of switch contacts. Using this feature, even whole racks of amplifiers can be switched on simultaneously, because there's no inrush

current to trip the circuit breakers in your power distro. And when it's running, the PowerLight 4.0 amplifier, assisted by its three-step class H output circuitry, is quite efficient electrically – this translates to less waste heat generated and less current demand on your AC power sources.

A nice by-product of the PowerWave switching technology is its immunity to noise on the AC line as well as its ability to run acceptably well on low and high line voltages.

Because you might be using your PowerLight amp with a speaker processor, we figured you might appreciate that the channel gain controls are calibrated with the actual voltage gain, in 2dB steps.

Three LED indicators next to the power switch register the current status of the amplifier: power (operate), standby, or protect. DC, subsonic, and thermal overload protection circuitry is linked with the 'smart' circuitry of the power supply, so the power rails are 'muted' when the protection circuit activates. This eliminates the need for output relays, enhances the output damping factor, boosts

INSIDE
THE
PL4.0

The Best Sounding Amp
Is Now The Most Powerful

4.0

PowerLight™

PowerWave™ Switching Technology allows for the high-speed transformer to be small and dramatically light weight.

The charged capacitor bank distributes current as needed before the transformer—delivering continuous, stiff supply voltage.

A temperature-controlled, continuously variable speed fan blows heated air rear to front, keeping the amp and the rack cool.

An aluminum heat-sink tunnel designed with the maximum possible surface area transfers and dissipates heat.

The new PowerLight 4.0 introduces massive power to a series of amplifiers that have already become a benchmark for excellent audio performance and reliability. **PowerWave™ Switching Technology** (patent pending), at the heart of the PowerLights, is **the power supply technology for the future**. The 4.0 clearly demonstrates why...

SUPERIOR AUDIO

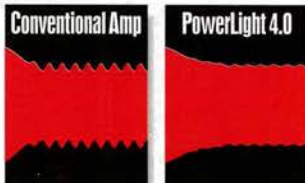
The 4.0 achieves remarkable audio quality because **voltage supply to the output section is powerful and stiff**. There are virtually no sags following transients or long peak power demands. You won't hear typical modulation from AC ripple or garbling during clipping. The bass is ultra-clean and fat. Highs are pure and unstressed.

MAXIMUM EFFICIENCY

A **PowerWave transformer "flies" at 115 kHz** (2000 times the frequency of a conventional transformer). Waste heat from resistance is almost nil. The supply is 90% efficient! And the 4.0 features **the latest three-step Class H linear output circuitry** for maximum audio quality and efficiency.

"NO-FAIL" PERFORMANCE

QSC's renowned protection circuitry is enhanced by the PL 4.0's "smart" supply which matches power delivery to changing musical demand. The 4.0's thermal management keeps the amp cool under extreme conditions (even 2 ohm loads). And with the 4.0, **EMI and RFI are absent**, making the amp safe for wireless mics.



Less power sag, less clipping intermodulation, more bass impact, cleaner transients...PowerLight.

INCOMPARABLE AMP

You won't see or hear another amp with the power and performance of the PowerLight 4.0. **Call your QSC Dealer or A.R. Audio (02) 810 5300** for complete details.

The front panel of the PL 4.0 features comprehensive LED status arrays, detented gain controls with soft touch knobs and 2dB steps for easy resetting.

Made in USA.

4 PowerLight Models

Output Power in Watts per Channel			
MODEL	8 Ω *	4 Ω *	2 Ω **
PowerLight 1.0	200 Watts	325 Watts	500 Watts
PowerLight 1.4	300 Watts	500 Watts	700 Watts
PowerLight 1.8	400 Watts	650 Watts	900 Watts
PowerLight 4.0	900 Watts	1400 Watts	2000 Watts

*20 Hz-20 kHz, 0.1% THD, ** 1 kHz, 1% THD

PowerLight 4.0 Key Features

- ▶ PowerWave™ Switching Technology
- ▶ Advanced Thermal Management System
- ▶ DC, Sub Audio and Thermal Overload Protection
- ▶ Data Port for Use With QSC MultiSignal Processors
- ▶ Neutrik Combo and "Tool-less" Binding Post Connectors
- ▶ Extreme Light Weight—30 lbs!
- ▶ 6 Year Warranty Available

Three-step, Class H linear output circuitry insures less waste heat, less current demand and excellent signal-to-noise ratio.

QSC™
AUDIO

HEAR THE POWER OF TECH NOLOGY™



A.R. Audio Engineering Pty. Limited ACN 051 557 9C5
558 Darling Street, Balmain, NSW, 2041, Australia.
Telephone +61 (02) 810 5300 Facsimile +61 (02) 810 5355

reliability, and is downright kinder to the audio power circuitry. The supply rails are suppressed briefly at turn-on and immediately at turn-off also, to prevent thumps in the loudspeakers. QSC's patented Output Averaging™ short circuit protection allows safe operation into virtually any load. The PowerLight 4.0 will also be the first QSC amplifier to feature a rear panel dataport connector for use with the new MSP MultiSignal Processors – more news on them soon...

The unweighted noise figure is better than 105dB below the rated operating power, and there's no line-frequency hum or buzz from a big power transformer's electromagnetic field. In fact, the self-noise from the amp is so nearly inaudible it's sometimes hard to believe the amp is turned on!

The ingenious power supply design produces inherently little EMI and RFI, and combined with the AC line input filtering, will put negligible noise or harmonics back onto the power grid; so if you have transformers in your power distribution system, they'll run cooler. PowerLight amplifiers also

comfortably meet all FCC and European requirements for RF interference, so they're completely safe to use with your wireless microphones.

With the high capacities of the PowerWave supplies bolstering the rail voltages, there's absolutely nothing lightweight about the sound of a PowerLight amplifier.

QSC's founder and Chief Technical Officer, Pat Quilter, says the PowerLight 'may be the best amplifier QSC has ever built.' (Well, he tends to be rather modest.)

Those in the know are already enjoying the dual benefits – excellent sonic quality and ultra lightness – of the new QSC PowerLight amplifiers.

Sound companies such as Sound Image and Jason Sound in the USA and ACP, Troy Balance, Norwest, AAA Productions, AVsound, Events and Austage in Australia are using PowerLight amplifiers with superb results.

If you're looking for big power with awesome sound, great reliability, and very manageable weight, give PowerLight a good listen.



USA SERIES: THE POWER-FOR-DOLLAR BENCHMARK

USA 400 2-Ch 200w/4Ω 3RU (XLR & Jack Ins, Limiter & HP Filter)
\$1,095.00

USA 900 2-Ch 450w/4Ω 3RU (XLR & Jack Ins, Limiter & HP Filter)
\$1,395.00

USA 1310 2-Ch 655w/4Ω 4RU (XLR & Jack Ins, Limiter & HP Filter)
\$2,095.00

POWERLIGHT: LIGHTWEIGHT PORTABLE/TOURING AMPS (INCL DATA PORT)

PL 1.0 2-Ch 400w/4Ω 500w/2Ω 2RU 8.2Kg! \$2,295.00

PL 1.4 2-Ch 550w/4Ω 700w/2Ω 2RU 8.2Kg! \$2,795.00

PL 1.8 2-Ch 700w/4Ω 900w/2Ω 2RU 8.2Kg! \$3,395.00

PL 2.0HV 2-Ch 1000w/4Ω 2RU 8.2Kg! \$3,995.00

PL 3.4 2-Ch 1200w/4Ω 1700w/2Ω 3RU 13.6Kg! \$4,995.00

PL 4.0 2-Ch 1400w/4Ω 2000w/2Ω 3RU 13.6Kg! \$5,995.00

MX SERIES: HEAVY DUTY PA/CONCERT/TOURING

MX 700 2-Ch 270w/4Ω 325w/2Ω 2RU \$1,295.00

MX 1000a 2-Ch 400w/4Ω 500w/2Ω 2RU \$1,995.00

MX 1500a 2-Ch 600w/4Ω 750w/2Ω 2RU \$2,295.00

MX 2000a 2-Ch 725w/4Ω 1000w/2Ω 3RU (Dual Monaural)

\$2,895.00

MX 3000a 2-Ch 1300w/4Ω 1600w/2Ω 3RU (Dual Monaural)

\$3,995.00

THE MANY FACES OF QSC

As one of the world's largest amplifier manufacturers (if not the largest), QSC manufacture a number of product ranges so there's probably one that suits your application.

NEW USA STACK

USA Series 'the biggest bang for buck' have the best watts per

dollar ratio in the industry and have just completed a redesign giving them more power (USA370 1E5w/ch replaced by USA400 200w/ch, USA850 425w/ch replaced by USA900 450w/ch, USA1300 650w/ch replaced by USA1310 655w/ch) more features (Neutrik Combo XLR & jack inputs, switchable limiter and High Pass Filter) and no increase in price! USA Series are used in

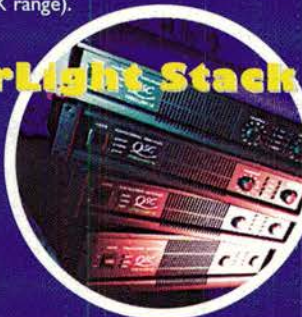
MI, PA and a million installations around the world including a very large proportion of cinemas and theme parks!

MX Series

MX and EX Series are heavy duty conventional heavy weight amps using the same chassis and circuitry. Used extensively in touring and fixed installations, these are the amps that built the QSC reputation for power, ruggedness and reliability. EX adds more input and output options, the ability to remote control and clip limiting as standard (standard only on MX3000 in MX range).

PowerLight Stack

PowerLight follows the reputation of MX/EX. With the addition of PL3.4 at 1200w/ch and the PL2.0HV at 1000w/ch PowerLight becomes QSC's most comprehensive product range with more options to follow....



Can a broad-based studio, broadcast and live console company reinvent itself as a specialist live console manufacturer and post

massive growth in the process? Allen & Heath thought they could and did! Right now they are probably the most focused mixing console manufacturer in the business and, from the look of the products on the drawing board, likely to remain so.

Rather than spread their R&D and manufacturing resources over an expansive product range with a different mixer for every mood of the day, Allen & Heath poured all their resources into a narrow focus of live consoles for touring and fixed installation. The result is a comprehensive set of products which set new levels for innovative, user friendly, feature-packed, road tough consoles which hit the market at attractively low prices.

With the addition of the newly released **GL4000** Allen & Heath have replaced their entire main console product line within the last 12 months! The new generation: **GL2000**, **GL3000** and **GL4000** are based on extensive market research into just what operators needed from their consoles, consequently they are packed with important live facilities like flexible dual function use, serious 4-band EQ, dual mono channels, 100mm ALPS faders, separate individual channel PCB's, whistle clean circuitry and rugged frames.

GL4000:

Launched in September 1996 at PLASA UK the GL4000 is essentially an organic development of the ground breaking GL-4, both dual function, 8 sub-group and 10 aux. The GL4000 adds recording and control capabilities, further monitoring and numerous must have luxuries designed specifically for the live engineer...

- **Dual functionality:** GL4000 can be configured as a powerful 8-group FOH desk, a comprehensive and intuitive 12-bus monitor board, or a desk that combines both jobs along with innovative live recording facilities all in one easy-to-use control surface.

- Engineer's 'wedge listen' facility plus talkback to all monitors.

- 4 stereo or dual mono mic channels with soundstage 'width control' (adjusts the signal from 'reverse stereo' through mono to 'normal stereo' and on to 'enhanced wide' and 'accentuated stereo' image).

- 4-band full sweep EQ with switchable 'Q' control.

- Instant 8-access Mute Groups plus 128 MIDI Mute patches with LED readout.

- 4 segment LEDs on inputs.
- 12 segment LEDs on outputs.
- Mono out.
- 4 Matrix outs.
- Direct outs with switchable level control on all channels.
- SYS-LINK expandability to other GL4000's or A&H mixers.

GL3000 Range:

Early in 1996 Allen & Heath launched the GL3000 an eight-group/eight aux console featuring dual function capabilities, expandability via SYS-LINK and a stack of professional features at a previously unheard of price point.

For **FOH applications** the GL3000 offers the engineer upto eight subgroups to LR; eight aux. sends all on individual controls; upto a maximum of eight outputs feeds on fader control, and one output feed on rotary pot (mono sum).

For **monitoring:** eight independent monitor mixes with full signal patch facilities; one independent stereo mix for on-stage side fills or in-ear monitors; two alternative mixes using the matrix outputs and channel routing balance and four further level outputs derived from similar mixes.

In **dual mode** the typical default format is: eight subgroups, four monitor mixes, four aux sends, Left, Right, Mono and Matrix outputs and, of course, numerous alternative formats.

GL2000 Range:

The GL2000 takes most of the facilities of the GL3000 to a smaller 4 sub-group, six aux format. One of the most significant features of the console is the two fully featured stereo input channels coupled with the two stereo FX returns. Together these four additional channels give another 8 inputs for the mix. Hence the GL2000's reputation as 'a 24 that thinks its a 32.'

Like the others, the GL2000 can be used in FOH, Monitor, or Dual Mode; is equipped with 4-band EQ with two mid sweeps, 100mm long-throw faders, input metering on each channel; and incorporates SYS-LINK console linking technology. It is targeted squarely at the quality orientated sector of the small console market, particularly, small PA companies, AV hire, live music venues, churches and theatre. In fact, any application where a heavy duty, intuitive, console is required with bags of flexibility and a long working life.

Alongside the rack mount **GL2** (4 sub group, 10 mono, 2 Stereo Channels), the **GL2-S** (6 mono, 6 stereo), the **1RU GR-1** (3 zone, 6 mic, 5 line with limiting and ducking), Allen & Heath's comprehensive live mixer product range is the best in the business.

GL-2: FOUR-GROUP MULTIFUNCTION CONSOLE

GL-2 10 Mono/2 Stereo Ins, 4 Group, 6 Auxiliary Rack Mount Mixer \$3,950.00

GL-2S 6 Mono/6 Stereo Ins, 4 Group, 6 Auxiliary Rack Mount Mixer \$3,950.00

GL-2000: FOUR-GROUP FOH/MONITOR/DUAL-USE CONSOLE

GL2000/12 12 Channel (20 Input) Mixing Console: 4 Group, 6 Aux, 10 Mono Ch (4 Band/2 Mic Sweeps EQ) & 2 Stereo Ch (4 Band EQ), 2 Stereo Returns \$3,995.00

GL2000/16 16 Ch (24 Input) Version: 14 Mono, 2 Stereo, 2 Stereo Returns \$4,955.00

GL2000/24 24 Ch (32 Input) Version: 22 Mono, 2 Stereo, 2 Stereo Returns \$6,595.00

GL-3000: EIGHT-GROUP FOH/MONITOR/DUAL-USE CONSOLE

GL3000/16 16 Mono Ch Version: 16 Mono Ch only \$7,450.00

GL3000/24S 24 Channel Mixing Console: 8 Group, 8 Aux, 10 x 2 Matrix, 28 Mic Inputs, 20 Mono Ch (4 Band/2 Mid Sweeps EQ), 4 Stereo Ch (4 Band EQ), 2 Stereo Returns \$9,950.00

GL3000/32S 32 Ch Version: 36 Mic Ins, 28 Mono Ch, 4 Stereo Ch \$12,450.00

GL3000/40S 40 Ch Version: 44 Mic Ins, 36 Mono Ch, 4 Stereo Ch \$14,950.00

GL3000/M24 Meter Bridge for GL3000/24 \$1,795.00

GL3000/M32 Meter Bridge for GL3000/32 \$1,950.00

GL3000/M40 Meter Bridge for GL3000/40 \$2,150.00

GL4000: EIGHT-GROUP FOH/MONITOR/DUAL-USE TOURING CONSOLE

GL4000-24 24 Ch Dual Function Console: 20 Mono/4 Stereo Channels, 8 Group, L-R-Mono Busses, 10 Aux, 4-Band Full Sweep EQ with 'Q' Control, 8 Mute Groups + 128 Midi Mute Patches, 8 Returns on Faders, 10x4 Matrix, Metering In & Out Direct Outs, Wedge Listen Facility \$16,950.00

GL4000-32 32 Ch Version: 36 Mic Ins, 28 Mono Ch, 4 Stereo Ch \$21,950.00

GL4000-40 40 Ch Version: 44 Mic Ins, 36 Mono Ch, 4 Stereo Ch \$25,950.00

GL4000-48 48 Ch Version: 52 Mic Ins, 44 Mono Ch, 4 Stereo Ch \$29,950.00

GL4000/M24 Meter Bridge for GL4000/24 \$1,795.00

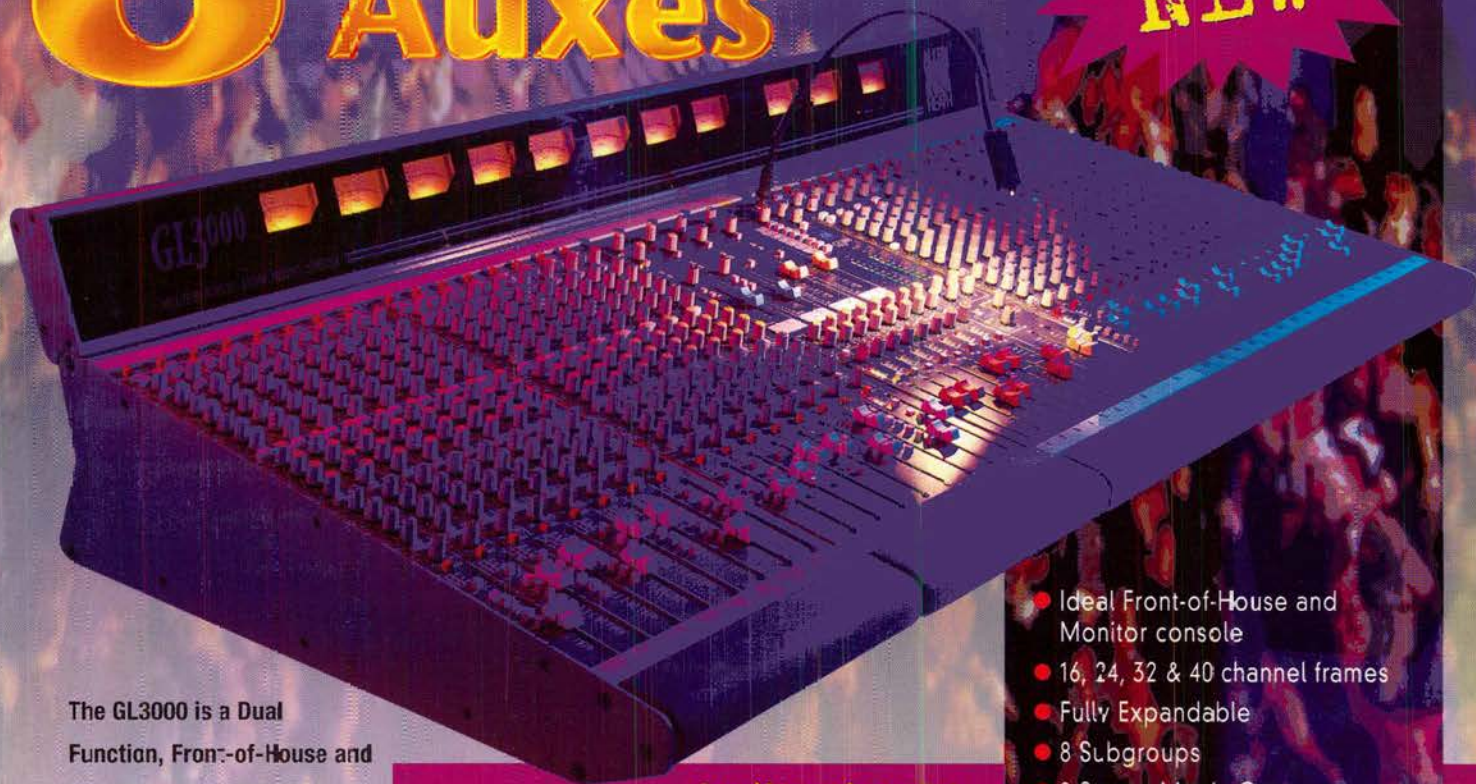
GL4000/M32 Meter Bridge for GL4000/32 \$1,950.00

GL4000/M40 Meter Bridge for GL4000/40 \$2,150.00

"The result is a comprehensive set of products which set new levels for innovative, user-friendly, feature-packed, road-tough consoles which hit the market at attractively low prices."

8 Groups Auxes

NEW



The GL3000 is a Dual Function, Front-of-House and Monitor mixer for Club PA, Band PA and Hire Companies alike. It boasts an exceptional feature set - typical of all Allen & Heath consoles.

Because the GL3000 has 8 Groups and 8 Aux busses; one night the console can be a stand alone 8-2 mix monitor board, another night a single engineer can mix any number of bands for a showcase performance. It is that easy with the GL3000 because everything you need is in front of you.

The flexibility goes even further. The console can be expanded in two ways;

...for the price of 4
without cutting our features in half!

either bolt on another micro or stereo expander module (installation takes minutes), or install the unique SYS-LINK™ buss interconnect system which links independent consoles together as if they were one.

Add this flexibility to the superb quality of the audio performance, the visual clarity of the control surface, the solid metal beam construction and you will know that only Allen & Heath could have achieved such versatility.

Looking at how engineers produce their shows requires an unusual understanding of the business. Everybody wants to work in a slightly different way.

Bringing together all the different dreams and wishes is now a hallmark of the Allen & Heath approach.

The GL3000 represents our commitment to finding cost effective solutions for your requirements.

- Ideal Front-of-House and Monitor console
- 16, 24, 32 & 40 channel frames
- Fully Expandable
- 8 Subgroups
- 2 Stereo Matrix Outputs
- 4 Stereo Dual Mic inputs*
- 4 band mid sweep EQ plus switchable lo-cut filter
- 8 ALX sends
- 2 Stereo Returns
- 2-track record and replay
- Extensive metering and monitoring capability
- Optional VU Meterbridge*

*Except on the 16 channel GL3000

GL3000

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&
HEATH

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1795



INVESTOR IN PEOPLE

HEAVY DUTY MEDIA MACHINES

MARANTZ PROFESSIONAL

World famous for their portable cassette recorders and CD Recorders Marantz Professional have released in Australia a rack mount range of CD's and cassettes. As you would expect from Marantz these are well designed units: tough enough for professional applications with excellent signal quality and a set of advanced flexible features.

Already seen in recording studios, live touring PA's, duplication facilities, broadcasting, installed audio systems of all description the complete Marantz Professional range now includes:

- ① **PMD502 Single Cassette Recorder:** rack mount, 2-head, auto-reverse, serial remote, variable output, 15% pitch control and Dolby B/C. Balancing option **XLR502. \$995.00**
- ② **PMD510 Double Cassette Recorder:** two completely independent decks with separate inputs and outputs, rack mount, 2-head, serial remote, variable output, 15% pitch control, Dolby B/C, serial or cascade recording capability and facility to link to other PMD510's for extended recording or playback. Balancing option **XLR510. \$1,895.00**
- ③ **PMD320 Single CD Player:** rack mount, 18-Bit D/A Converters, serial remote, fader start, 8% pitch control, program play and digital out. **\$795.00**
- ④ **PMD321 Balanced Single CD Player:** as PMD320 with the addition of balanced XLR outputs, auto cue and instant start. **\$995.00**
- ⑤ **CC45/PRO 5-Disc CD Changer:** rackmount, infra-red volume control, fade-in/fade-out, continuous random play back, 30 track programming, peak level, auto music search and serial remote. **\$795.00**

- ⑥ **CDR620 CD Recorder/RC620 Remote:** comprehensive input/output interfacing: AES/EBU, SPDIF, XLR Analogue in/out, sample rate converter, digital audio delay & auto indexing from CD, DAT, DCC, MD, SCSI-II interface for CD-ROM(XA), PHOTO-CD, CD-i, Video-CD & CD-DA and high speed copying.
- ⑦ **PMD101 Mono Portable Cassette Recorder:** 2-head, built in speaker and microphone, 6.5mm jack for external mic, normal or half speed recording/playback, +/-20% pitch control, Automatic Level Control (ALC), low battery indicator, 3 digit tape counter, RCA line input/output, tone control, headphone output and level control and cue and review facility. **\$645.00**
- ⑧ **PMD222 Mono Portable Cassette Recorder:** As PMD101 plus 3-head, XLR mic input, telephone jack input, external speaker output, VU meter, ambient noise control, peak indicator and memory rewind. **\$1,095.00**
- ⑨ **CP430 Stereo Portable Cassette Recorder:** As PMD222 plus two illuminated VU Meters, Dolby B and dbx noise reduction, MPX filter, and Bias fine adjustment. **\$1,595.00**
- ⑩ **PMD601 Stereo DCC Digital Portable Recorder:** All the rugged shock proof advantages of a cassette plus digital quality! Featuring 5-Pin XLR stereo mic input, direct telephone, coax digital, optical and line inputs, RCA line, optical TOSLINK and headphone outputs, Manual/Auto recording level adjustment, Dolby B NR and a leather carrying case. **\$2,495.00**



Portable Cassettes find application wherever sound is recorded; from journalists reporting to law courts, language laboratories and music training. PMD101 and 222 feature a half-speed facility which helps musicians learn new music by lowering recordings exactly one octave.

Martin Audio celebrate their 25th Anniversary this year with a number of important additions to a product range that already spans concert,

fixed installation and small portable general purpose speakers. Formed by Australian David Martin in 1970, Martin Audio grew up as concert sound reinforcement grew up. A Martin system powered Pink Floyd at Earls Court London in 1973, and over the years ABBA, Leonard Cohen, the Average White Band, Spandau Ballet, Thin Lizzy, The Clash, Status Quo, The Police, Black Sabbath, Barry Manilow, Madness, Motorhead and a thousand others have followed.

The current product line up is more extensive than ever, with F Series concert systems, LE foldback monitors, the new Wavefront live and touring systems, the EM Series installation range and ICT/ICS small portable PA units.

Wavefront 8

Martin Audio's latest release and is the latest in a history of ground breaking, earth shattering, ear busting speaker systems! It's a whole new generation concept, a flexible platform; medium throw, any music genre, stackable, arrayable, touring or fixed, the new Wavefront 8 system can do it all. As well as being

The mid-high **W8** utilises two horn-loaded 12's with phase plugs vertically above each other in a splayed formation which allows the cabinet to go down to 80Hz (sufficient as a full range box for some applications). The high-mid band between 850 and 3.5KHz is covered by a specially developed 6.5" cone driver loaded by a unique toroidal phase plug and horn which maintains constant 55° horizontal dispersion over the entire operating range of the driver. High frequencies are generated by a 1" exit compression driver on a constant Q HF horn which iderically matches the dispersion characteristics of the 6.5" driver.

The **W8C** and **WSX** have just been added to the Wavefront 8 range. **W8C** is identical to the **W8** but with the omission of one of the lower mid drivers making it ideal as an underslung cabinet in a flown **W8** array or as an inverted cabinet at the top of a **W8** array to increase HF throw in large venues. **WSX** is a massive 7ft folded horn sub-woofer specially developed to reproduce very deep bass frequencies in the most demanding touring situations where extreme level of bass are required. **WSX** is also ideally suited to contemporary dance music in dub environments where high levels of concentrated bass energy is required.

LE700 the standard by which all...

With over 5,000 **LE400** foldback monitors sold around the world, Martin Audio has become virtually an industry standard for concert monitoring and the most highly rider specified. The **LE700** is a development of the **LE400**, both are 15" 2-ways, but whereas the **LE400** is switchable active or passive, the **LE700** is active only — eight of these beasts were enough to establish Adelaide Audio Services as the hire company with the best on-stage monitoring in Australia!

The **LE700** uses an 4" voice coil 15" mid/bass driver and an 2" compression driver exiting to a 1.4" throat differential dispersion CD horn. Martin's differential dispersion horn design is a key feature as it enables the monitor to maintain the correct balance and sound dispersion as the musician moves away from, or closer to, the monitor. A dedicated Martin **MX5** system controller performs cross-over and protection duties.

A Martin system powered Pink Floyd at Earls Court London in 1973 and over the years, ABBA, Leonard Cohen, the Average White Band, Spandau Ballet, Thin Lizzy, The Clash, Status Quo have followed

extremely directional and efficient, **W8** is designed to be very clean and musical — its alot like a giant Hi-Fi system and it delivers truly enjoyable, listenable music — at traditional Martin Audio volumes!

Essentially Wavefront 8 is a two box 5-way trapezoidal touring system using an 18, a 15, two 12's, a 6.5" cone, and a 1" compression driver. This allows each driver to 'specialise' in it's optimum frequency band rather than stretch across too many frequencies and perform inadequately at their range extremities.

Both the 18 and the 15 are in the **W8S** sub: the 18 is front facing and reflex loaded, as in a traditional sub and the 15 is loaded in a folded horn. By marrying the two together the **W8S** has the best of both worlds, the weight of an 18 and the attack and speed of a 15.

Sydney's 'Psychedelic' band Dr Stone (a reformation of the early 1980's cult band 'The Lipstick Killers') equipped themselves with by far the highest specification foldback system touring Sydney's pubs! Four

LE700s at front of stage (end to end at most gigs!) form the basis of the system with Martin **W3 15" 3-ways** on drum and side fill.

Band spokesman, Mark Taylor, says, "When Dr Stone performs now it's for fun, we did all the hard work gigs when we were 19. We like to play at ear busting levels, so on stage we needed a system which could cut through all the spill and give us very high definition particularly on the vocals and at extremely loud levels. That's why we've got the Martin System. Right now all

the quality sound is where we are, on stage, which suits us just great although we feel a bit guilty for the punters out front, last gig we used Martin Audio's new Wavefront 8 cabinets for FOH which evened up the score!"

All four foldback channels are routed via **SCV EQ2: ISPR 31-band** equalisers with on-board dynamics (compression, limiting, gating and filtering) to four channels of Sabine **ADF2400** Feedback exterminator. All the speakers are powered by **QSC MX Series** amplifiers. Moonlighter Tim Greig, who runs the FOH, said "This is how all acts would want to be, these guys are disgusted by mediocrity, if they don't have the best they don't bother. Did you notice the Lexicon 480L in the FOH rack!"



THE BIGGEST SINGLE ADVANCE IN SPEAKER TRANSDUCER TECHNOLOGY SINCE THE COMPRESSION DRIVER!

Martin Audio are incorporating their worldwide patented Inductively Coupled Transducer (ICT)

technology in a fast developing product range: EM15... CMS 6.5... ICT300...

It's a technology that packs a massive 2-way punch into what is essentially a single speaker driver. ICT was first seen in 1994 with the introduction of the 'dangerous' **EM15** – a double 5" sound reinforcement speaker capable of 115dB! As theatre rear and side fill, in clubs, bars, churches and retail stores infact wherever a big sound is required from an inconspicuous speaker the EM15 is it. And it has proved to be 'it' for a large number of professional applications including: the Australian Museum, Sydney Opera House, Macquarie University, Museum of Sydney, Sutherland Entertainment Centre, Olympic Aquatic Centre, Sydney Town Hall and The Comedy Store.

The theory behind the technology is this: the mechanical ability of a standard cone speaker dictates how far up the frequency band it can reproduce music signal – it's simply a matter of how fast the cone can move as it responds to ever higher frequencies. At a certain frequency, the cone can no longer respond and any signal above this natural cross-over point is lost. But, the high frequency signal still passes across the driver's voice coil, it just doesn't do anything...

The physics behind the technology is this: a



lightweight metal-skirted dome mounted inside the voice coil can be inductively driven by the HF frequencies as they pass across the voice coil. ICT just taps into the energy that is already there, the dome acts as a radiating surface and a phase plug completes the device allowing smooth dispersion and controlled coverage of the high

frequencies. So a single ICT driver is a conventional cone speaker, a

passive crossover, a concentric HF driver and a HF protection device all in one!

- No HF burn-out
- Higher Efficiency & Output, and
- Increased Reliability

Martin's ICT300 a double 10" very compact, full-range speaker with particularly wide even dispersion is the latest ICT based speaker. It's already busy in AV hire companies, with live acts, installed in churches, bars, convention centres, etc.

MARTIN AUDIO ICT/ICS 300 SYSTEM:

ICT300	Double 10" ICT Full Range Speaker (each)	\$1,550.00
M1	Dedicated ICT300 System Controller with Sub Output	\$495.00
ICS300	Double 10" Sub Bass Speaker for use with ICT300	\$1,750.00

EM SERIES HIGH POWER INSTALLATION SPEAKERS

EM15	Double 5" ICT Speaker (each)	\$397.50
EM150	Double 10" Passive EM15/25 Sub	\$1,750.00
EM26	Trapezoidal 8" 2-Way Passive Speaker (each)	\$995.00
EM76	Trapezoidal 12" 2-Way Passive Speaker (each)	\$2,395.00
EM251	2 x 15" Sub-Bass Enclosure	\$3,750.00
EMX1A	System Controller Stereo with Sub-Bass for EM25/75	\$1,295.00

WAVEFRONT SERIES

W0.5	Trapezoidal 8" 2-Way Speaker (each)	\$1,145.00
WM0.5	Miniature Stage Monitor 8" 2-Way (each)	\$1,145.00
W3	Trapezoidal 15" Active 3-Way System (each)	\$3,850.00
W3P	Trapezoidal 15" Passive 3-Way (each)	\$4,250.00
WX3	System Controller for Active Use	\$1,950.00
W8F	Wavefront 8 Trapezoidal Full Range Box	\$7,950.00
W8S	Wavefront 8 Trapezoidal Bass Box	\$6,950.00
W8C	Wavefront 8 Compact	\$6,950.00
WSX	7' Folded Horn Sub-Woofer	\$5,490.00
MX5	2 Way Stereo/4 Way Mono Controller	\$2,995.00

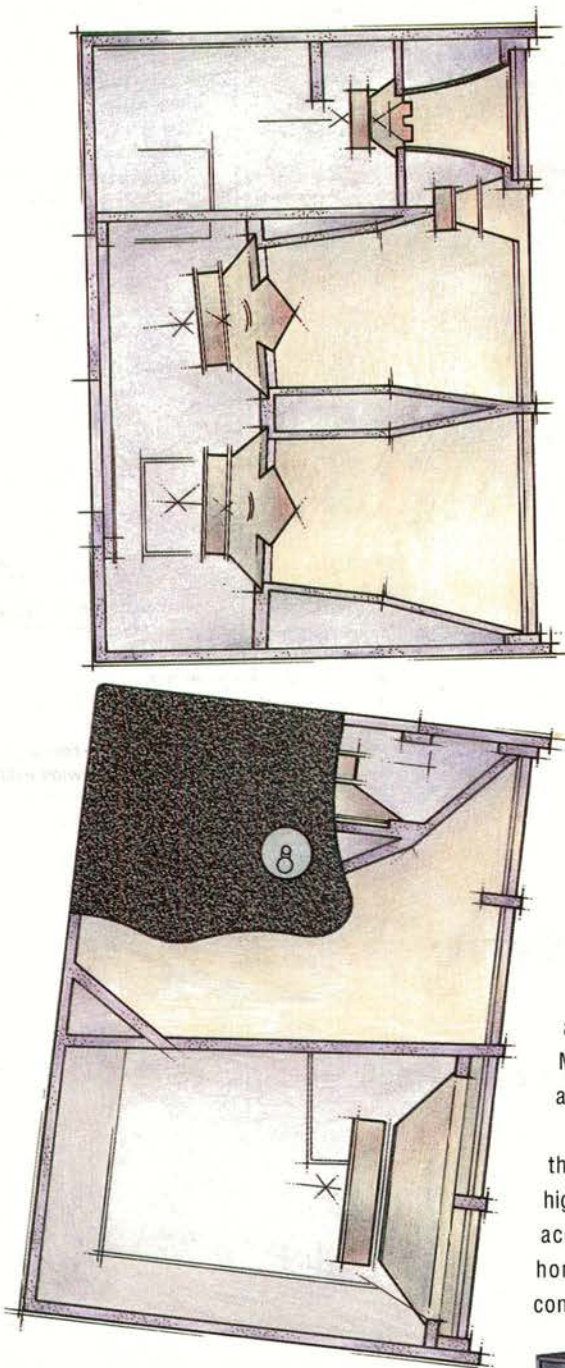
MONITOR SERIES

LE350	12" 2-Way Ultra Compact Floor Monitor	\$3,300.00
LE400	15" 2-Way (Passive or Active) Floor Monitor	\$3,750.00
LE700	15" 2-Way Active Floor Monitor	\$5,500.00



WAVEFRONT 8

a new approach



The new Wavefront 8/ Wavefront 8S is a uniquely flexible touring system which embodies the latest horn technology in an extremely versatile trapezoid one-plus-one box format. The Wavefront 8 can be used as a full-range stand alone



system for large scale theatre and concert touring applications while the separate Wavefront 8S hybrid sub-bass provides a user option when low frequency enhancement and additional headroom is required. The Wavefront 8 System offers various active and passive combinations giving the choice of running the system 2,3,4 or 5-way and both enclosures feature MAN quick-connect flying points as standard.

The Wavefront 8 features a three-way horn loaded design for high system efficiency, providing an accurate 55 degree constant horizontal dispersion pattern. The component complement of twin 12"

low-mid drivers plus a unique toroidal-technology 6.5" high-mid horn driver and a 1" exit high frequency compression driver ensure that the Wavefront 8 offers true full-range performance working smoothly and efficiently down to 80Hz.

High-mid vocal definition is assured by the use of an ultra low distortion cone driver covering the frequency bandwidth from 850 Hz to 3.5 kHz.

The Wavefront 8S features a unique horn/reflex design incorporating both 15" and 18" drivers for fast transient performance and extended sub-bass. Entirely separate 15" folded horn and 18" reflex sections can be driven in parallel or powered independently. This remarkable hybrid configuration results in a dynamic sub-bass with an efficiency of 104dB. Use of a low crossover point between the Wavefront 8 full-range enclosure and the Wavefront 8S sub-bass means that you can choose whether to ground stack or fly the Wavefront 8S to suit the needs of the venue whilst not compromising the acoustic performance.

Compromise is not a word recognised in Martin Audio system design.



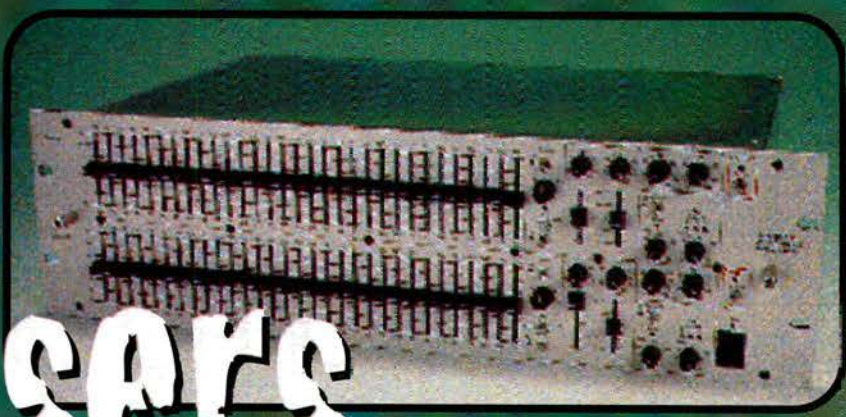
A HARD ACT TO FOLLOW.

TGI

A member of TGI plc Group of Companies



Some Equalisers



are more Equal than Others.

Are all equalisers equal? Certainly not! SCV's extensive equaliser range has earned a reputation in the top echelon world-wide - and as the most musical of the group. The range includes the flagship **EQ23 ISPR**, a complete dynamics package: stereo 31-band 3rd octave graphic equaliser, dual variable frequency shelving equaliser, variable low and high pass filters and compressor/limiter/gate with dbx 'soft-knee' chips. The **EQ23 I** is as the **EQ23 ISPR** but without the on-board dynamics. Both units utilise a unique hybrid combination of gyrators and real inductances in order to maximise dynamics and signal-to-noise ratio performance.

EQ23 IS was developed as a sister model to the **EQ23 I**. It has many of the same features but with shorter throw faders and at a more affordable price. In addition, it has the unique **AAC** (Adiabatic Absorption Control) which by moving a single fader compensates for the increasing humidity in a venue during a show by lifting the upper frequencies.

The EQ range also includes **EQ215** a Dual 15-band graphic, **MEQ5** a triple, 1 in 3 out, stereo program EQ, **PFL104** a stereo 5-band parametric EQ and **PFL52** a mono version. In addition to the EQ's SCV has a deceptively large product range of remarkably useful engineer-oriented equipment, from high quality microphone splitters and signal processing equipment to useful accessories such as cable testing and phase checking systems:

SCV TOOL BOX ACCESSORIES:

DI Box MkII	Active DI Box	\$255.00
MD8MkII	Multiple 8 Channel DI Box	\$1,550.00
DIP	Passive DI Box	\$295.00
PC80 MkII	Phase Checking System	\$795.00
TBOX	Cable Tester	\$175.00
DA82	Audio Distribution Amp. (1x3 or 2x4)	\$995.00
SCV DYNAMICS & EQUALISERS:		
BCL2	Stereo Compressor Limiter De-esser	\$1,995.00
EQ23 IS	Stereo 31-Band EQ with 'Venue Humidity' Control (2RU)	\$2,295.00
EQ23 I	Stereo 31-Band EQ with Long Throw Faders (3RU)	\$3,295.00
EQ23 ISPR	EQ23 I + Gate/Limiter/Filter/Phase Reversal	\$3,995.00
PFL52	5-Band Parametric with Var Q Filters	\$1,650.00

- 1 **PC-80**, the famous **Phase Checker** - checks phase accuracy throughout the audio system from microphones and loudspeakers to patch bay wiring.
- 2 **DI2 MkII Active D** - the cleanest DI in the industry. Features transformerless circuitry to achieve very low noise and distortion.
- 3 **MD8 8 channel of DI2 MkII** in a rack mount format with EDAC multipin.
- 4 **DIP MkII Passive DI**.
- 5 **T-Box Cable Tester**. Checks short circuits, open circuits and crossed wiring in cables with any combination of XLR, 1/4 jacks, and RCA connectors.
- 6 **DBT Dual Balancing Transformer Box** - balances unbalanced equipment with high quality 600/600Ω transformers.
- 7 **PHP Phantom Power Supply** - a four-channel mains powered unit.
- 8 The famous **UB Series Universal Buffer** - an ingenious card and frame system designed to solve problems like level matching, impedance converting, interfacing, balancing, amplifying, media splitting, distributing, remote volume controlling, etc. The system comprises a range of internally powered 2, 4 and 8 module cardcages.



“Best sounding, most reliable amp on the road ... hands down.”

Dave Shadoan
President, Sound Image

112 PowerLight 1.8's on tour with Jimmy Buffett and Melissa Etheridge



The PowerLight Series includes the 1.0, 1.4, 1.9 and the new PowerLight 4.0, rated at 2000 watts per channel into 2ohms weighing only 13.6 kg!

New High Power PL 4.0 Available Now!

When PowerLight™ Professional Amplifiers were introduced in late '94, we said they were the best sounding amps we had ever made.

Now that they've passed the ultimate road test, you can take somebody else's word for it. After more than a year on tour with some of the best sound engineers and hottest acts, PowerLight amplifiers have delivered on every kind of performance and musical demand—*unplugged* and *fully wired*—without missing a beat. In fact, PowerLight has emerged as the new standard in *sound quality* and *reliability* by which all other amps will be compared.

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.

QSC™
A U D I O

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QSC Audio Products, Inc. 1675 MacArthur Blvd., Costa Mesa, CA 92626-1468 (714) 754-6175 FAX (714) 754-6174
In Canada S.F. Jerketing (514) 856-1919 FAX (514) 856-1920

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

A.R. Audio Engineering Pty Ltd
558 Darling Street
BALMAIN NSW 2041
Telephone: (02) 9813 5300
Facsimile: (02) 9810 5355

Jeff Lilly
President, Jason Sound
100 PowerLight 1.8's on tour with Bryan Adams, Sarah McLachlan and Crash Test Dummies

FOCUSRITE

The name of Focusrite is a familiar one in top recording, mastering and post-production studios. It stands for audio processing tools that offer

uncompromising quality – the kind of precision, clarity and musicality that only comes at a price. But now the Focusrite sound that is a part of so many top recordings is available in a more affordable form – the Focusrite Green Series.

GREEN 1 DUAL MIC-PRE:

Whereas mixer designers must compromise to produce 16 or more mic amps at next to no cost, Green 1 is dedicated to providing two identical channels of superb, transparent mic pre-amplification. It makes for a significant upgrade compared with on-board console mic amps and an ideal tool for direct to 2-track recording with a minimalist signal path.

GREEN 2 FOCUS EQ:

Combining a 6-band equaliser with multi-source input section for mic, line or instrument the Focus EQ has a variety of applications, such as a high-quality front end for recording applications, or patched in via a send/return loop to upgrade a single channel of console EQ.

GREEN 3 VOICE BOX:

Provides a signal path of exceptional clarity and smoothness for mic recording, combining an ultra high-quality mic amp, an all-new Focusrite EQ section optimised for voice, and full Focusrite dynamics. The Voicebox can be used as a stand alone unit for direct-to-digital recording, or as an upgrade for the input section of a console. It is also particularly appropriate for post-production voice over and live vocal applications.

FOCUSRITE - GREEN RANGE

GREEN 1	Dual Mic Pre-Amp	\$2,450.00
GREEN 2	Focus EQ: Mono Direct Rec Mod/Guitar Pre: Mic-Pre & EQ	\$2,750.00
GREEN 3	Voicebox: Mono Direct Rec Mod: Mic-Pre, EQ & Dynamics	\$2,950.00

MORE INFO?

Contact us at

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Or, on the Internet:

QSC: www.qscaudio.com
Focusrite: www.focusrite.com/focusrite/
Allen & Heath: www.allen-heath.co.uk
Ivie: www.ivie.com

3C is an irregular dialogue from A.R. Audio Engineering Pty Ltd – it's an update on new products, information and applications from Allen & Heath, Martin Audio, QSC, Marantz Professional, Focusrite, SCV, ATC, Ivie and Crookwood.

A.R. Audio Engineering, 558 Darling St., BALMAIN NSW 2041. Ph (02) 9810 5300, Fax (02) 9810 5355.

BASF National Tracking Guide

ARTIST	PRODUCER	ENGINEER	PROJECT
New South Wales			
A#Sharp Jeff Cripps (02) 9534 4440 24 Track 1'			
Natalie Bartholomeusz	Jeff Cripps	Jeff Cripps	Christian CD
3rd Degree	Jeff Cripps	Jeff Cripps	CD
Sutherland Shire Band	Jeff Cripps	Jeff Cripps	18 Trk. CD
Aphek Studio Greg Dixon (02) 9876 8170. 16 Trk. 1" tape, mainly specialising in bands			
The Bright Side	Band	Greg Dixon	Album
Tam-a-lin	Band	Greg Dixon	Movie S/Trk
John Barrand	John	Greg Dixon	Demos
Kenton Webb	Kenton	Greg Dixon	Album
Sal Paradise	Sal/Greg Dixon	Greg Dixon	Single
John Connell	John	Greg Dixon	Demo/Album Pre Prod.
Audioscapes Jim Blackfoot (02) 9564 0039. 16 Trk. Digital Post Prod.			
Max Lambert	ABC Enterprises	J. Blackfoot	Playschool Album
Darren Yap	Max Lambert	J. Blackfoot	Demo
Brent St. Kids	Linda Nagle	J. Blackfoot	Xmas Special
Dynamite Dance	Jane Beckett	J. Blackfoot	Xmas Special
Optus Comm.	Mark Byrne	J. Blackfoot	CD Rom
NSW Migrant Serv.		J. Blackfoot	Educational Cass.
Charing Cross Studio David Sykes (02) 9387 8362 - 24 Trk Neve 8000 Series			
Bean	Martin White	Martin/P. Jones	EP Track/Mix
John Reed Club	Wayne Connelly	Wayne/P. Jones	
David Lane	Justin Stanley	Ben Moor	Album/Mixing
Kneivel	Wayne Connelly	Wayne/P. Jones	Album/Track Mix
Glare	Craig Beck	Craig Beck	EP Track/Mix
Hummer	Dave Trump	Dave Trump	EP Mixing
Crystal Clear Studios Dave Tozer (02) 9684 1152. 24 Trk. Dig. Adats & BRC. 32 Ch. (66input) Console			
Eternity	D.Tozer/Don	Dave Tozer	Album Mix
Cyanide for Xmas	Dave Tozer	Dave Tozer	EP
Corporate Horns	Dave Tozer	Dave Tozer	Demo
The New Persecutionists	Dave/Band	Dave	Demo
John Williamson	Steve Newton	Steve Newton	Live Mixes
Planet Fluro	Dave Tozer	Dave Tozer	Demo
Damien Gerard Studios Contact Marshall (02) 9660-8776 2" 24 Trk., 1/2" 32 Trk.			
Fendahlene	Band	Konrad	EP
Stumble	Andy	Jaimie/Russell	GYO II
Thami		Russell	Demo
Salmagundi	Russ	Russell	GYO II
Tin Gods	Marshall	Dave Rashleigh	GYO II
OUAT	Marshall	Marshall	USA Tracking
Darling Harbour Studio Ike Brunt (02) 9211 1474			
Hobo Posh	Gordon Hunt	Kilbey/Stavrou	Album
Panadolls	Band	Julian Stade	Demo
Festival Studios Catherine Knapman (02) 560 4022 2 x Analogue Multi-Tracks or Digital Multi-Track			
Paradise Road	Christo Curtis	Christo	Transfers
Ikea (TV Ads)	Wayne Goodwin	Matt Lovell	Demos
Violetines	Paul McKercher	Paul	Recording
Ikea (TV Ads)	Wayne Goodwin	John Bee	Recording
JMF Sound Studio Fran Esther (02) 9790 4097			
Hydromen	Band	Simon Meli	Demo
Nuclear Energy	Ralph Esther	Ralph Esther	Demo
Cactus Gravel	Band	Simon Meli	Demo
Lucinda Street Recording Rick Mostyn (042) 291 169			
Opera By The Sea	Rick Mostyn	Rick Mostyn	CD
Nu-Town Studio Greg Hopping (02) 9516 3306, 24 Track Analogue/Digital			
Insomnia	Greg Hopping	Mark Worrall	2nd Single
Boyz With Toyz	Alexander/Hopping	Greg Hopping	Single
Shield	Kyle Nevin/Greg	Mark Worrall	2nc Single
Vince Sorrenti	Hopping/Ciccone	Mark Worrall	Single
General Motors	M.Lawrence/Hopping	Greg Hopping	Single
Paradise Studios Jason Lea (02) 9357 1539. Custom Mixer, Studer A800, Valve Outboard			
Runaway Train	Band/Howard	Ted Howard	Album Trkg.
T.Baker/B. Barnard	D.Seidel/Band	Mark Roberts	Album Rec/Mix
Crystal Blade	Mark Opitz	Jason Lea	EP
Kate Swadling	Kate/Roberts	Mark Roberts	EP/Mixing
Troy Cassar-Daley	Colin Watson	Ted Howard	Single
Slim Dusty	Coe/Watson	Ted Howard	Album Tracking
Paul Bryant Mastering Paul Bryant (02) 9748 0222, Mastering Suite			
The Bridge	B. Israel	Paul Bryant	CD Comp.
Deliberate Strangers	Rob Specogna	Paul Bryant	CD Album
Sutherland Bands	Jeff Cripps	Paul Bryant	CD Album
Libby Beasley	Suresound	Paul Bryant	CD Comp.
Nat.Bartholomeusz	Jeff Cripps	Paul Bryant	CD Album
Powerhouse Studios Doug Henderson (02) 9318 1220 32 Input Neve Console 24 Trk. Studer A800			
Dark Order	Band	Gavin Duffield	Album CD
John Rowles	Berger/Henderson	D.Henderson	CD Album
Dry	Band	Nik Sanning	CD
Laika	Band/R.Pilling	R.Pilling	CD
Robert Keane	Robert	Russell Pilling	CD Album
Geronimo	The Band	Steve Jones/Russ	CD
Q Recording R.Muecke G. Sullivan (02) 9212 4851, 24 Track Recording + 02R Digital			
Red Neck Mothers	David Price	David Price	Album
Animal Boy	David Price	David Price	Album
Shimmer	D.Jones/P.Northcote	R.Muecke	EP
Planet Cake	Band/WB	Warwick Buzagott	Single
Sedwick Pie	David Price	David Price	EP
Balawan	Band/R.M.	Richard Muecke	Album

ARTIST	PRODUCER	ENGINEER	PROJECT
R & R Recording Robert Zimola (02) 9672 4494. 16 Track 1" Format			
Kerri McInerney	Mike Kerrin	Rob Zimola	CJMM Album
Raine & Horne			Corporate
Blacktown TAFE			Demos
Rockinghorse Studio Grant Hilton (066) 884 131, 48 Trk. Analogue, 24 Trk. Analogue			
Jimmy Willing	Jimmy Willing	Keith Williams	Album
Kids for Gigs	Bob & Kim	Keith Williams	EP
Marcus McBain	Greg Courtney	Greg	Single
Alchemist	John Risch	John Risch	Album
Fur	Rob Younger	Magoo	Album
The Courtneys	Greg C.	Marcus McBain	Demos
Sound Level John Soane (02) 9552 3200, 16 Track Digital/Live to DAT our specialty			
Will Belford	Randy Franz	Randy Franz	Live to DAT
Promenade	Craig Beck	Jordan Brebach	Live to DAT
Elizabeth Ehlmann	Jordan Brebach	Jordan Brebach	Live to DAT
Gillfish	Gillfish	Jordan Brebach	Live to DAT
Ockhams Razor	Dave Rashleigh	Dave Rashleigh	Live to DAT
Laverne	Laverne	Randy Franz	Live to DAT
Soundwarp Meredith Brooks (02) 9905 7144 Mastering			
Freelance	Freelance	Meredith Brooks	CD EP
Wayne Law	Keigh Lass	Meredith Brooks	CD Single
Rumblefish	Rumblefish	Meredith Brooks	CD Album
Casey Greene	Casey Greene	Meredith Brooks	CD Album
G-Force	G-Force	Meredith Brooks	CD Album
Kerry Leigh	Kerry Leigh	Meredith Brooks	CD EP
Studios 301 Fiona Simpson (02) 9211 7301, X880, Studer A800, SSL 64 Ch, G-Series			
Endorphin	Jeremy Allom	Jeremy Allom	Mix
Violette	Dave McKercher	Dave McKercher	Mix
Human Nature	Paul Begaud	Adrian Bolland	Record Trk.
Weddings, Parties, Anything	W.Connelly	P.McKercher	Mix
Regurgitator	Rob Taylor	Rob Taylor	Remix
Def FX	Rob Taylor	Rob Taylor	Remix
Studio Arts Productions Ed Lee (042) 849 128 Independent Studio			
Evole	Ed/Band	Ed Lee	Demo
Inscope	Ed/Band	Ed Lee	Album Track
Erikas Jive	Ed/Band	Ed Lee	Prod.Master CD
B.M.I.S. Course	Ed Lee (Tutor)		Studio Sound Unit
Various	Nan Tien Buddhist Temple		Comp/Edit Teachings & Music
Velvet Sound Rec. Studios Dave McCunn (02) 9264 3420, 32 Ch. 24 Trk. 2" Analogue			
Beastiality	Band	Adrian Grigorieff	Album
Paul Scott	Paul	Tony Wall	Album
Hashed Denim	Hashed Denim	Tony	Demos
Aspirin	Aspirin	Tony	Single
Supernatural	Supernatural	Tony	Album
Aural Fix	Aural Fix	Tony	Album
Wirra Willa Studios Will Rout, (02) 9605 1203, 24 Track Analogue @ 2 x 8 Track Digital			
Fab Manzini	Fab	Ian Cooper	Mastering Album
Loaves & Fishes Orchestra	Steve Gorringe	Ian Cooper	Mastering Album
Eddie Magar	Neville Leete	Will Rout/Ian Cooper	Sound FX for Toys
Naked	Peter Hogan	Ian Cooper	Mastering Mini Album
C.L.C. Liverpool	Matt Wakeling	Will Rout	S/Trks.(Puppet Theatre)
Glenwood Players	Thomas Goth	Ian Cooper	Mastering CD

Queensland

Digital Paradise Studios Ian Peters (07) 5527 0722. 32 Track Digital			
Josh Arnold	Ian Peters	Ian Peters	Album Tracks
Lee Conway	Lee Conway	Ian Peters	Commercials
Rex Harris/Bob Prince	Rex/Bob/Ian	Ian Peters	Album
Soul Studio Daniel Winter (07) 5592 2222 24 Trk. Dig. Tape, Mac Hard Disc Rec. Radio/TV Prod.			
Lyngren	Band	Daniel Winter	Demos
Generic	Band	Daniel Winter	Demos
John Lowry	Bob Moore	Daniel Winter	CD
Brad Horwood	Daniel Winter	Daniel Winter	Album
UFest	Bob Moore	Daniel Winter	Album
Purple Avengers	Daniel Winter	Daniel Winter	Album
Sunshine Studios Leon (07) 3844 6844, 36 Channel Neve			
China Rhino	Leon Prescott	Leon Prescott	EP
Cardigan	Mark McElligott	Mark McElligott	EP
Tim Finn	Robert Moore	Joe Malone	Demos
Eat to Menue	Tim Whitten	Tim Whitten	EP
Vandersound Studios Eric Vandersande (07) 5546 8100, 24 Trk. ADAT/XT, HDR, 02R, CD-R			
Bruised Fruit	Eric	Eric	Album Tracking
Steve Mills	Eric	Eric	Album Tracking
Lachlan Blundell	Eric	Eric	Album Tracking
Evonne & The Coolcats	Eric	Eric	Album Tracking
Ben Burton	Eric	Eric	Demo
Vivians Hamster	Eric	Eric	Mastering/CDR/Cover

South Australia

John Reynolds Recording Nick Love (08) 8410 3044. 16/24 Adat Digital, 16 Trk. Analogue 1"			
Adult Toys (Zep Boys)	R.Axisa/N.Love	Nick Love	CD Album
Get Back	N.Love/Band	Nick Love	CD Album



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ARTIST	PRODUCER	ENGINEER	PROJECT	ARTIST	PRODUCER	ENGINEER	PROJECT
The Streamliners	N.Love/Band	E.Sikorski/N.Love	CD Album	Melb.Girls College	Anne Corry	Trevor Carter	"Kool Skools" Proj. Album
G.T. Stringer	Band/N.Love	E.Sikorski/N.Love	CD Album	Supremacy	Trevor Carter	Trevor Carter	Album Tracking
The Tell Tails	Nick Love Prod.	Eddie Sikorski	CD Album	Creature Seed	Simon Segal	Simon Segal	Album Tracks
Spiral Dance	Band/N.Love Prod.			Ruby Fruit Jungle	Simon Segal	Adrian Riccotti	Demos (Ex Bad Girls)
Mixmaster Productions	Mick Wordley (08) 8278 8506, 24 Trk 2"			Ta Ta	Simon Segal	Peter Frawley	Mini Album
Miltons	Band/Mick	Mick	Tracking	True Form Music Services	Neil Gray 0500 509 509, 20 Tk. (12 Analogue, 8 Digital)		
Jeanette Wormald	Mick	Mick	Tracking	Dee Wild	Gary Sproule	Neil Gray	Demo
Kerryn Tolhurst	Kerryn	Mick	Mix	SCO	Band	Ross O'Driscoll	EP
Capital F.	Capital F.	S.Fieldhouse	Album Trkg.	No Grace	Band	Neil Gray	EP
Twang Villa	Band	Mick	Album	Ausmusic Hotel	Paul Backern	Neil Gray	Radio Show
Chris Finnen	Chris/Mick	Mick	Album Mix	Frantic	Ross/Band	Ross O'Driscoll	EP
Victoria				Wombat Road Studio (051) 454204 Barry Clissold 24 Trk. Plus full Midi Facilities			
Apollo Studios	Michael Lulic (03) 9354 9058 or 015 321 051			G & L Hammon	G & L Hammon	Barrie Clissold	Album
Question	Ernie/Michael	Ernie	Single CD	Wif Pedersen	Gary Bantock	Barrie Clissold	Album
Snub Rocket	Ernie/Gav	Ernie	EP	Tim Borella	T. Borella	Barrie Clissold	Tracking
Delerium	Ernie/Band	Ernie	EP	Big Head Little Body	B. Baker	Barrie Clissold	Demo Album
Jupiter	Ernie/Band	Ernie	Demos	Kurnai College	Ian Reithoff	Barrie Clissold	College CD
Fracture	Ernie/Band	Ernie	Demos	Maffra Sec. College	Phil Bartlett	Barrie Clissold	Live Recording
Rosecrucians	Ernie/Band	Ernie	EP Album	Western Australia			
Big Beat/Equinox Studios	John Toth (03) 9898 5815, 24 Trk. Analog/Dig. 32 Ch. Auto Allen & Heath			Bonsai	Tom Thorpe (09) 246 4408, 24 Track		
Abominator	J.Toth/Band	Borgeest/Williams	CD	Kay-Redman	Tom Thorpe	Tom Thorpe	Jingles
Amanda	John Toth	Dave Borgeest	CD	John Meyer	Tom Thorpe	Tom Thorpe	Jingles
Gary Smith	Gary	Dave Borgeest	CD	Geoff Brownrigg	Tom Thorpe	Tom Thorpe	Kangaroo Creek Gang Album
Eveashae	John Toth	Ben Williams	Demos	Studiotrax	Tom Thorpe	Tom Thorpe	Demos
C'est Ca	Norman James (03) 9419 1506 Automated 24 Track			PMFM Morn.Crew	Tom Thorpe	Tom Thorpe	Jingles
Tripod	Various	Genevieve	Comedy CD	Planet Sound Studios	Denise Preston (09) 382 2211, 48/32 Trk. Dig/24 Trk. Analogue		
Gillian	Tricky/Norman	Genevieve	Dance Tracks	Wily Infidels	John Villani	John Villani	Album Mix
Minoochie	Greg Lynch	Genevieve	UK Album	17th Doll	Band/J.Villani	John Villani	Album Trkg.
Cosmic Party	Norman James	Genn Coath	Dance Album	Jeff Brownrigg	Jeff/J.Villani	John Villani	Album Mix
Meg MacDonald	Tony Hargraves	Genn Coath	Album	Rema Live		Les Williams	TV Mix
Cloudburstz Studio	Bruce Jacques (03) 9416 1038, 24 Trk. Analogue/Pro-Tools			Rhema-Chris Falsom		Les Williams	
Caustic Soda	D.Warren/Band	Dale Warren	CD Album	Poons Head	Rob/Sam/Bush (09) 339 4791.		
SEK	D.Warren/Band	Dale/Myles Barlow	EP	Air Ensemble	Dart/McLaughlan/Band	Rob Grant	Live Album Mix
Interfred	Simon Kent	B.Jacques/M.Barlow	CD	Flashing Tablet	R.Grant/Band	Rob Grant	EP
Brightwater	Bruce Jacques	Bruce Jacques	CD	Spooky	R.Grant/Band	Rob Grant	Album
Piping Hot	Bruce Jacques	Bruce Jacques	Single	Annoying Beth	R.Grant/Band	Rob Grant	Album
Starheat	Gumpy	B.Jacques/M.Barlow	Demo	Parry Dowd	R.Grant/Band	Rob Grant	Album
Hot House Audio	Craig Hamath 0418 356 475			Love Bites	R.Grant/Band	Rob Grant	Album
Front Line Prodn.	Craig	Ross Cockle	Movie S/Track	Tropo Sound	Mick Connolly (091) 922 394 24 Track Dolby		
Martin Lubran	Martin	Craig	Film S/Trk.Love & Chaos	Pigram Bros	Band	Brett Lyons	Debut Album
Simon McCulloch	Simon	Craig	Film S/Track	P.Kelly/D./Marr	Chaz Bottfield	James Edwards	Raining on the Rock
Kiss Music Recording Studios	Paul Kosky (03) 9827 1500 SSL Console, 48 Trk. Digital			Mark Bin Bakar	Benny Raja	Mark/Ben	Jack Davis Project
Deni Hines	Mr. Horri (Japan)	Andy Baldwin	Single	Witzend Recording Studio	Alan Dawson (09) 3311618 16 Track		
Mirth	Cameron McKenzie	Kal Tonuma	EP	Clarion	Clarion/Alan	Alan Dawson	Album
David Bridie	David	Simon Polinski	Film Score	John Guttererson	John/Alan	Alan Dawson	Album
Brian Canham	Brian	Doug Brady	Telstra (Nat)	Greg Huntley	Greg/Alan	Alan Dawson	Album
Three	B.J.	Andy Baldwin	EP	Melissa Banes	Melissa/Alan	Alan Dawson	Album
The Truth	Craig Portells	Craig Portells	Album	Stephen Charles	Stephen/Alan	Alan Dawson	Single
Newmarket Studios	Ben Hurt/Paul Rigby (03) 9372 2256, 24 Trk. Otari MX80 - Harrison MR4			Southern Bush Band	Band	Alan Dawson	Album
Maladiction	Band	Chris Corr	Album	Carnival Esque	Band	Alan Dawson	Demo
Red Asphalt		Ben Hurt	Demos				
Free Boppers		Ben Hurt	Demos				
Ian Andrews		Ben Hurt	Demos				
James Neuman		Chris Corr	Album				
RB-X (Aust) P/L	Bevan Quellhurst (03) 9429 6199 24/48 Track SSL Cons.						
Various "Push"	Self	Craig Smith					
Battle of Bands Winners	Self	Ethan Cook	2-3 Trk.Demo				
Greg Champion	James Black	Adam Quaiiffe	Country Album				
Graham Ferdenzan		Adam Quaiiffe	Album				
Greg Miles	Greg Miles	Mark McDougall	Corp.S/Track				
Spotlight Stores	Mark McDougall	Mark McDougall	TV & Radio Ads.				
S.A.E. Technology College	Michael Pollard (03) 9534 4403, 24 Trk 2", 8 Trk. H.Disk, Dig. Rec. Mastering						
Vericious	B.McDonald/Band	Bruce McDonald	EP				
Sound Around Mobile Studio	Trevor Cronin (03) 9531 3891						
Automatic	Trevor Cronin	Trevor Cronin	Live Video Sound				
Smick	Trevor Cronin	Trevor Cronin	Live Demo				
Doin the block	Glen Millen	John Hall	Theatre Show S/Trk				
Studio 52	Paul Higgins (03) 9417 7707 Studio A - 32 Tk. Studio B Adat 16 Tk						
The Faith Factory	Darren Sutton	Trevor Carter	Album				

YOUR BASF TRADE SALES OUTLETS:

NSW: Audio Visual Designs (02) 9281-2444, Silver & Ballard (02) 9439-5355, Independent Tape Services (02) 9436-0666

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) 8212-7111, Pro Media (08) 8276-6793

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

QLD: Musiclab (07) 3862-1633, Tek (07) 3239-4000



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Mini Disk Recorder/Players

DAT

DENON PROFESSIONAL

AWA Distribution (02) 9898 7666
DN990R Recorder Player, Broadcast Model, Full Editing, Balanced I/O, AES/EBU Digital I/O, RS232 Serial Port, 25 Pin Parallel Port, Headphone O/P, Comprehensive Pre-set Menu, Single or Continuous Replay. \$4390.00
DN980F Player only version of DN990R, Balanced O/P, AES/EBU O/P, RS232 Serial control, Non linear access, 25 Pin parallel port, Single or Continuous play, Headphone O/P. \$3200.00
DN1100R Rack Mount 2RU Recorder Player, Ten Hot Keys for instant access to any 10 tracks programmed, Balance & Unbalanced I/O, Digital input, Single or Continuous play, Parallel 25 pin port. \$3120.00
DN80R Fully professional portable recorder, Balanced Mic/Line input, Digital I/O, Editing, 148 Minutes Recording in mono, 74 Min. Recording in stereo, RS232 Control, NP1 Battery, AC Pack, Speaker & Phones O/P. \$5299.00

OTARI Amber Technology (02) 9975 1211

MR-10 Broadcast Minidisc recorder/player, full remote control & track ID via Alpha/Numeric keypad, extensive editing facilities, Large 32-character LCD Display, Bal. XLR In/Out, SPDIF Digital Interface. \$3760.00

SONY Sony Australia (02) 9887 6666
MDMX4 4 Track Minidisc Multitrack, with 12 input mixer, MMC, MTC, Full Minidisc editing, track bouncing & moving. Also records compatible stereo minidiscs. \$2490.00
MDS-B3 Stereo Minidisc recorder. Balanced analogue I/O, SPDIF I/O, Serial and Parallel remotes. \$4819.00
MDS-B4P Same as MDS-B3 but player only. \$3355.00

TASCAM TEAC Australia P/L (03) 9644 2442

MD-801R 2-Track Broadcast + Rack mount Recorder Player, Fast Editing, Jog dial, fast access - 200ms for full disc search, Pitch cont. + or -9.9%, Programmable end of message function, IBM PS/2 Compatible, Opt. RAM. \$3780.00
MD-80P As for MD-801R but

Play only. \$3550.00

564 4-Track version w/- 12 input mixer, 4 x XLR type mic. ins. w/- sweepable mid 3-band EQ. Unique bounce forward & merge capability for hard disc type non-destructive editing, midi clock out, Jog/Shuttle wheel. \$2999.00

YAMAHA Yamaha Music Australia (03) 9699 2388

MD4 MD Data 4-track recorder; 37 minutes duration; 3-band channel EQ; 4 to 2 ping pong; fast accurate transport for punch in/out; MTC out. \$1895.00



Sony MDM-X4
Mini-Disk multitracker

FOSTEX Syntec International (02) 9417 4700

D-5 Digital Master Recorder The Fostex D-5 satisfies the demands of the consumer and semi professional market. The D5 includes optical input and output I'D Editing function, AES/EBU Digital Interface. The D-5 offers outstanding quality at a breakthrough price. \$1995.00

D-10 Digital Master Recorder The D-10 is a professional DAT recorder providing advanced features for precise tape control. Program location & audio production. Large RAM memory allows immediate start and high quality stereo scrubbing. \$4995.00

D-25 The Fostex D-25 digital master recorder features synchronization 16M Bit RAM RS422 and parallel interface. The D-25 has all necessary functions for any professional application. \$11,499.00

D-30 The Fostex D-30 with chase sync function to master timecode built in two RS422 ports, wideband timecode reader/generator. The D-30 offers a variety of functions and features as the best production tool. \$15,599.00
>continued over page

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Alcatel Components' primary focus is on connectors. The company is a leading specialist in the Australian optical fibre connector industry and is also a major designer and manufacturer of advanced connectors for audio applications. It is committed to providing innovative solutions to meet the changing requirements of both domestic and overseas markets.

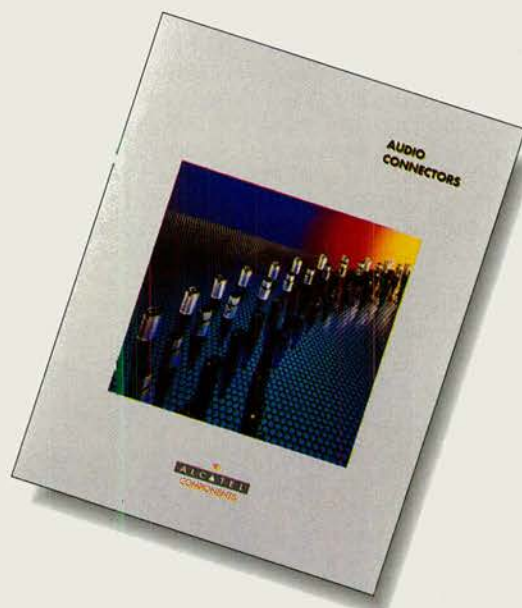
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Write in Reader Service Number: 195

RECORDING EQUIPMENT. THE BUYERS GUIDE



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DAT

DAW (Digital Audio Workstations)

GALLERY Sound Devices
(02) 9283 2077

DATStudio A unique 4mm DDS-DA SCSI DAT drive, combined with the DATStudio software, allows you to read/write standard Audio DATS with time code. \$4995.00

HBB Audio Sound Centre
(02) 9901 4455

PDR-1000 Portable, 4-head recorder, 44.1, 48 and 32 kHz sampling, phantom mic power, built-in limiter, hp filter, mic pad, digital input/output, illuminated display. \$9225.00

PDR-1000TG All features of PDR-1000, plus facility to record, generate and synchronise all standards of time code. Converts absolute time to timecode, jam syncs, records user bits. \$13,185.00

HM1000 Option for PDR-1000/1000TC, providing headphone monitoring for stereo, mono left, mono right, mono sum and MS stereo via a rotary selector switch. \$650.00

MS1000 Option for PDR-1000/1000TC, gives ultimate timecode accuracy of less than 1 frame drift over 10 hours. Temperature compensation, pull-up/pull-down sampling and Aaton compatibility. \$1050.

MARANTZ PROFESSIONAL A.R.
Audio Engineering (02) 9810 5300

PMD601 Portable DCC Digital Field Recorder, XLR Stereo balanced mic, RCA line, coax digital, optical inputs, optical Toslink, RCA line outs, auto or manual recording level, headphone out. \$2,495.00

OTARI Amber Technology
(02) 9975 1211

DTR-8 Cost-effective system for professional applications. Superb audio quality, rugged construction, AES/EBU/SPDIF Interfaces, 300x High-speed search, selectable sample rates, Bal XLR In/Out, IR Remote. \$2595.00

DTR-90T Top-range DAT recorder with independent Ch1 & 2 Record, Timecode Rec/Play, Removable Front Panel/Remote, Jog/Shuttle wheel, AES/EBU/SPDIF Interfaces, 5 x Selectable sample rates, Bal. XLR in/out. \$19,700.00

PANASONIC

Studio Supplies (02) 9957 5389

SV3800 2 Head rack mount, Balanced, AES/SPDIF - Optical, Error rate indication, Shuttle wheel, Remote control, Single programme play. \$3395.00

SV3900 2 Head rack mount, Full serial control designed specifically for remote applications. \$4699.00

SV4100 2 Head rack mount, balanced, AES-SPDHF - Optical, Error rate indication, Shuttle wheel, Re-

mute control single programme play, plus quick start via RAM with trim & Rehearse via cue wheel, locate points, External signal sync. \$4999.00

SONY Sony Australia Limited
(02) 9887 6666

PCM7040 New model - Broadcast and Professional time code DAT Recorder. Comprehensive timecode, functionality memory start, chase sync, Serial 9 pin and GPI Remote interfaces, balanced analogue and AES I/O. \$10,736.00

PCM2800 4 Heads, Super bit mapping, balanced I/O with trims, AES/EBU I/O, parallel and I.R. remote 4 direct drive motors, rolling tape guides headphone socket. \$5411.00

PCM2600 2 Heads, Super bit mapping, balanced I/O with trims AES/EBU I/O, parallel & I.R. remote, 4 direct drive motors, rolling tape guides headphone socket. \$3815.00

DTCA8 It's A Sony! 2 Heads, super bit mapping, 4 direct drive motors, rolling tape guides, unbalanced I/O, SPDIF I/O headphone socket. \$2695.00

TASCAM TEAC Australia P/L
(03) 9644 2442

DA-20 Rack Mount, Studio DAT with Digital out (5-Dif 2), unbalanced analogue correction, 'SCMS' by-pass switch, infra red remote standard, TOC function, high speed search and long play mode. \$1950.00

DA-30 MkII Rack Mount, Shuttle dial, AES/EBU & S/PDIF Digital i/o's, Balanced XLR type & unbalanced RCA analogue connectors, 48/44.1 & 32kHz sampling, SCMS free, parallel interface, selectable Auto ID detect. \$2890.00

DA-P1 Portable unit, XLR mic ins w/in-built limiter, 48v Phantom Power, Auto locate feature, 1 bit ADC/DAC, S/PDIF digital i/o, SCMS free, Hold switch for control lock-up, Head phone out w/- vol. control. \$3000.00

DA-60 MkII 4 Head, 4 Motor Transport, onboard chase synchronizer, RS-422 Serial Port, 64 times o/sampling 1 bit A/D conversion, off tape monitoring, instant start up, seamless punch-in/out, sub code editing, AES/EBU.

<<See also Software & Hard Disk Recorders. Great overlap exists here!

AKAI Australis Music Group (02) 9698 4444

DD1500 Superfast operation, sync to just about any source. All standard. Modular system using hard drive, MO's, SCSI DAT or DAT backup (Also Exabyte). Real time screen interface EDL Autoconform. DSPfunction, Pitch shift, Timestretch, EQ and much, much more!!! From \$17,200.00

ANTEX Electronics Mainly Multitrac (03) 9558 1517

Studiocard
A n t e x

Studiocard offers 4 balanced inputs and outputs, AES/EBU and S/PDIF Digital Interfaces, a SMPTE reader/generator, and an MPU-401 MIDI Interface. It is a 32-bit PCI card designed for use with Windows NT and 95. \$2795.00

FAIRLIGHT ESP (02) 9975-1230. NZ: 09 410-1079.

MF3 system - stand alone, proprietary editing system capable of simultaneous recording of up to 24 tracks at one time. Modular, expandable. FAME mixing interface allows fully integrated all digital production - recording, editing and mixing. From \$30,000.

KURZWEIL Music Technology Pty Ltd
02 369 4990

K2500 Series Retail Price (inc. tax) Prices start from \$7495

Digital Workstation/ VAST Synthesiser/ Controller, sequencer-automated mixdown, 48-note polyphony, Sample processing ^ pitch shifting, re-sampling, time compression/expansion, reads different sample libraries, samples-while-playing. Import/Export of AIFF and WAV sam-

ples, 8 analog outputs, Optional extras- DMTi Digital Multi-Track interface provides 8 channels of AES/EBU digital outs, 2 channels of AES/EBU digital ins, and a direct digital interface to the popular ADAT and DA88 digital multi-tracks and lots more....

METALITHIC SYSTEMS Mainly



Akai DD1500 work station

Multitrac (03) 9558 1517

Digital Wings for Audio Digital Wings for Audio is a 128 track digital recording and editing work station, complete with an extensive list of digital effects, SMPTE/MIDI sync, and an optional Break Out Box (BOB) offering Multiple inputs and outputs, along with Digital interfacing etc. \$2995.00

POWER TECHNOLOGY Mainly Multitrac (03) 9558 1517

DSP FX DSP FX is a 32-bit floating point DSP add-in card offering real-time digital effects that are completely software upgradeable. Currently available effects include, Multi-Tap Delay, Multi-Element Chorus, Analog Tape Flanger, Full Stereo Pitch Shifter and Reverb. \$1595.00

SPECTRAL Australian Audio Supplies
(043) 291 711

Express Simple, 2-panel interface with all the tools you need on-screen instead of hidden in a mass of annoying pulldown menus. Perfect for Broadcast, Commercial Production, Multimedia & Home Studios. PC-Based. 8 Tracks. \$6295.00

Producer Radically different PC-based DAW with direct access to familiar audio & mixdown tools. No drop down menus! Features: Automated mixer, 99 virtual tracks each with 4 layers, on-board sync, rich DSP features. \$6995.00

Studio Tracks XP Spectrals advanced cross platform solution for film & video editing and other edit intensive applications. Includes 12-track interface, ability to PQ code master CDs straight from the screen, backup to ADAT, DA-88, plus lots more!! \$7995.00



Sony PCM 7040 DAT

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Stand Alone Recorders- Multitrack

AKAI Australis Music Group (02) 9698 4444

DR4VR 4 Track hard disk recorder. No data compression. Virtual tracks with stereo mixdown

(02) 9417 4700

XR5 Multitracker The Fostex XR-5 has numerous features such as 4 input including 2 mic and 2 band graphic equaliser on each chan-

MARANTZ PROFESSIONAL A.R. Audio Engineering (02) 9810 5300

PMD502 Stereo Cassette Recorder, rack mount, 2-head, auto reverse, serial remote, variable output, 15% pitch control, Dolby B/C and balanced input/output option. \$995.00

SONY Sony Australia Limited (02) 9887 6666

PCM800 16 Bit, 8 channel digital recorder, AES Digital I/O, timecode chase and video sync, balanced analog audio I/O, up to 16 recorder multi operation. \$10,980.00

TASCAM TEAC Aust. Pty Ltd. (03) 9644 2442

DA-88 Hi-8 Video tape based digital 8 track recorder, 4 head drum, Seamless Punch-in/out, balanced and un-balanced Connection, Digital I/O, sophisticated Multi Machine synchronization W/- Opt. Sync. Cond. \$9500.00

DA-38 Digital 8 track as W/- DA88, internal electronic patch bay, Digital direct track copying, can accept up to 24 bit digital audio via TDIF-1, 18 bit x 64 oversampling, 20 bit x 8 on D to A, Shuttle wheel. \$7150.00



ADAT XT: First of the Modular Digital Multitrack (MDM) machines.

(250 tracks) locate points, DAT back-up. \$2795.00

DR8 8 Track Hard disk recording 16 channel digital mixer. (Automatable) Optional EQ. recording, easy editing. Take optional VGA interface. \$4995.00

DR16 Same as DR8 but 16 track recording and vice versa. Balanced mic. Inputs (RTS) Digital patch bay in front end. Digital bouncing within unit copy, copy insert, nudge, slip, delete, erase and much more. \$6995.00

ALESIS The Electric Factory (03)9480 5988

Alesis Adat XT Alesis say: "This stand alone recorder has become the industry standard digital 8-track in terms of its sonic quality, performance, reliability, price and all round studio computability. Over 100,000 units sold worldwide, more than all the other systems combined!" \$5900.00

EMU Music Technology Pty Ltd (02) 369 4990

EMU/Darwin Retail Price (inc. tax) \$5995
Details Powerful 8-track Digital Audio H/Disk Recorder. (Sync up to 16 units for 128 tracks) Combines the best qualities of computer-based and tape based recording systems into a compact, affordable, random access recording/editing system. Optional Extras- ADAT compatible cards, additional 4 analog input expansion card.

FOSTEX Syntec International

nel and dolby 'B' N/R making it a diverse and high quality four track recorder. \$799.00 (Baby XR-3 available at \$599)

XR7 Multitracker The Fostex XR7 multitracker is ground breaking in both price and performance, having 6 inputs including 2 mic, two speed variation & two band graphic equalizers per channel. The XR7 has essential functions with ease of use. \$999.00

DMT-8VL The newly designed DMT-8VL allows simple hard disk recording at an affordable price. Built in 12.5 min h/d (expandable) 2 mic in, 2 Aux sends + returns and more. \$2399.00 (DMT-8 features a more advanced mixer and recorder section at \$2995.00)

D-80 Replace your 8 track reel to reel with a Fostex D-80, 8 track simultaneous recording non de-

pendent cassette decks each with its own (optionally balanced) stereo inputs and outputs, serial or cascade recording with other PMD510's, serial remote, variable output, 15% pitch control, Dolby B/C. \$1895.00

PMD101 Portable Mono Cassette Recorder with built-in speaker, 2-head, internal microphone and 6.5mm Jack input, normal or half speed recording/playback, +/-20% pitch control, Automatic Level Control (ALC), low battery indicator, 3 digit tape counter, RCA line input/output, tone control, headphone out, cue and review facility. \$695.00

CP430 Portable Stereo Cassette Recorder with built-in speaker, 3-head, internal microphone and two 6.5mm Jack input, two illuminated VU meters, +/-20% pitch control, Dolby B and dbx noise reduction, MPX filter etc. etc. \$1595.00

OTARI Amber Technology (02) 9975 1211

Radar 24 24-Track random access disk recorder Compact 4-U R/M case with "Plug & Play" set up (operates same as multi-track tape machine), extensive editing, 8 & 16 track versions also available. \$42,900.00

ROLAND Roland Corporation Australia (02) 9982 8266

VS-880 The complete solution to release quality digital multitrack recording. 14 Channel mixer, 64 virtual tracks for recording, comprehensive audio editing and optional effects processor for true digital excellence. \$3995.00



Genex: this 8 track MDM does it with an M/O disk

structive and expandable hard drive (up to 60 mins.) \$3599.00

GENEX Syncrotech Systems Design (09) 9417-5088.

GENEX GX8000 (\$11,000 plus tax) Designed as a cost effective replacement for tape based digital multitracks the GX8000 is an 8 track random access M/O disk recorder, 8 to 24 bits resolution, AES I/O's, SMPTE reader/generator, PS232 / RS 422 interfaces, Bi-phase input, reverse play mode, optional A-D and D-A converters.

CD Recorders

MARANTZ PROFESSIONAL A.R. Audio Engineering (02) 9810 5300

CDR/RC 620 New Generation CD Recorder featuring comprehensive input/output interfacing: AES/EBU, SPDIF, XLR Analogue In/Out, Sample Rate Converter, Digital Audio Delay & Auto Indexing from CD/DAT, DCC, MD, SCSI-II Interface for CD-ROM(XA), PHOTO-CD, CD-i, Video-CD & CD-DA and high speed copying. \$10,800.00

OK, we KNOW there are products not listed. Howeverm it's up to the distributors to send us the information.

FEBRUARY:

Studio Monitors.

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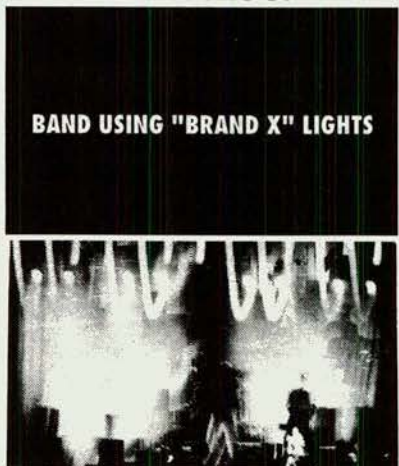
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The guitars fill the arena before the PA starts to work. Stage level hits the mixing position, 33m in front of the stage, at around 111dB (unweighted). That's already damn loud.

Where do you start? Like his predecessors sound engineer, Pablo learned early about the taboo subjects. Previous engineer Robbie McGraph came from Simply Red, and was slightly bemused that he had been chosen to mix rock's greatest live show. He found a taboo in production rehearsals when he suggested using a sampler for the kick drum. Pablo found his taboo when he suggested the band turn down. Perish the thought!

"It's very traditionalistic" he told me. "I re-

ceive it, I channel it. This is very straight audio law - input is output. When they rock, it rocks!" And wow, did it rock. In your face, in your chest, and damn your hearing. This is an event.

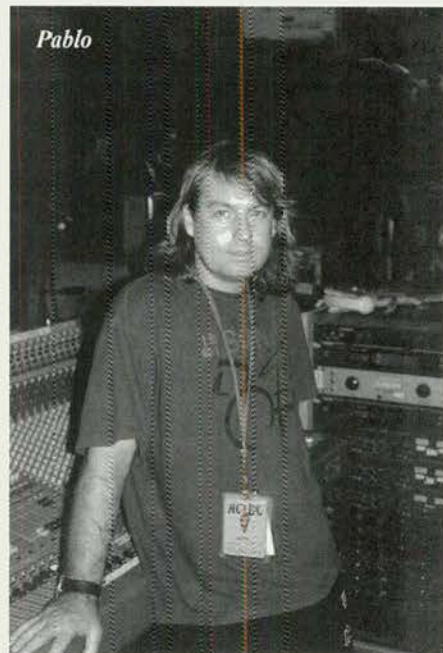
With the band specifying an EV manifold PA system because they used it last time and were very happy, Pablo was pleased to go along. His previous systems were Showco's Prism (with McCartney) and the Turbo Flashlight PA (with Dire Straights, for whom he system engineered). The EV Manifold system came from DB Sound in Chicago, and basically is a horn loaded 2 box system - high boxes are the MTH-4, loaded with 4 x 10' speakers (horn loaded) and six 2" compression drivers for a two way mid/high configuration. The low boxes (MTL-4) are loaded with 4 x 18" woofers. They are the same shape and size as MTH-4's.

Manifold has a respectable beach-head in Australia, with AAA Productions in Perth, LAVA in Melbourne, and Osmond Electronics in Perth all using MTH/L-4 and MTH/L 2 (half size) variants. Manifolds main attraction is the output to size ratio (OTSR) - which on our slide rule is unsurpassed.

Pablo likes bass flown in the main PA array. A word on contemporary PA design here. Many

systems are designed to fly the high/mid components and sit the sub bass on the deck. Pablo says this is bunk because the high/mid program hits your head a few milliseconds before the bass bit, which is still rolling up off the venue floor.

The EV Manifold system allows you to be abstract in system design, and the DB crew (headed by big and genial South American Jimi Hurrieta) fit the rig to the room. Because your sub and your top box are exactly the same dimension, you just mix and match. In Australia it comprised 24 high boxes and 20 low boxes per side, plus 8 MTL 2 (high and mid only, a half box)



which catered to front fill and sat atop some floor mounted MTL-4 subs).

The Australian system variation was a band of subs wrapped under the top row of MTH-4 boxes. Other times they had rigged the subs as a column in the flown array. Differently to standard D3 Sound spec, Pablo had the flown subs rolled off at 63Hz, while the floor subs went all the way down. This required a fourth 'way' or bandpass on the system crossovers, which were BSS OmiDrive units. Pablo has a theory about losing punch and information delivery if all the bass is on the floor.

When it comes to mixing the show, Pablo also has a twist, which some engineers swear by. It's doubling the main vocal channel. What you do is take a line out from the mixer, post fade, post EQ, and insert (plug) it back into an adjacent channel. The idea is that you can get more gain working the mixer electronics less hard. Less input gain, less line gain. Because the 2nd channel is post it is following the first. The first channel is off on the VCA masters, so the actual control is at desk centre on the Midas XL-4.

The vocalist sings through a new Beyer 7000 UHF system, chosen for a number of reasons. It feels 'right' in the hand, it sounds 'right' in the mix, it is in use. It has a dynamic mic element rather than a condenser, which is also available.

The other big job in the mix is getting the background vocals out there. This is done simply by muting- switching the background vocals on and off, virtually to the beat. These



AMPS FOR THE RIG

DB Sound use Crest amps, model 8001. They have a six pack on each side of stage which is actually 12 amps racked in one lump. Power distribution goes in one side, and the speaker loom travels on top. It weighs a trifling 2 tonnes or so. But it's FAST, because that's what DB are known for. Fast in, fast out. Because there were not enough six packs available, three racks of four 8001's make up the equivalent on each stage side.

So the whole PA could be driven by 4 HUGE amp racks. Except it isn't - it is driven by 2 huge things and six smaller ones. Then there are a couple of smaller racks for MTL-2's.

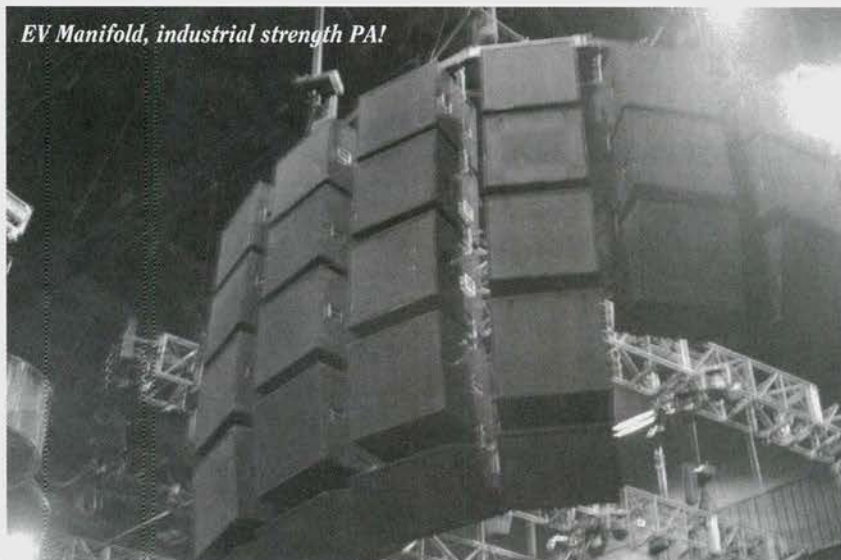
The DB guys say they have replaced only two Crest amps from 56 total on the road since January. An outstanding reliability reference.

mikes are routed through a mute group, the mute button is well worn. Pablo's right finger sits on it all night! On and off, to the beat.....

This is because with the worlds loudest band hammering away, every single microphone which is open to the mix will add to your woes. For this reason, some other live sound twists are employed. Overhead mikes for the drum kit number seven, because each cymbal is miked, some from beneath, with Shure SM 98's. The guitar amps have a single Audio Technica 4050 condenser mic on one 12" speaker in one of the army of quads. Under the stage are some Iso Boxes, which are a sealed box with a speaker and another Audio Technica 4050 mic inside.

The Iso Boxes are used because this way Pablo can get a guitar channel which is relatively clean, untarnished by stage noise. So he can add bass or EQ without clutter. The Iso channel is mixed with the quad channel. Each guitar and the bass have an Iso Box. The bass

EV Manifold, industrial strength PA!



amp (an SVT with Ampeg boxes) and Iso Box uses a Shure Beta 57 and a DI.

Down at the drums a Beyer M88 and a Shure SM91 (the square boundary mic) compete for Pablo's affections. Snare has an SM 57 on top and on bottom. The toms all have the new Sennhieser small drum mike on them, but we do not know what number they are.

Pablo is clear on what his job is. "I get the vocal clear across a wall of sound." Meanwhile he has enormously enjoyed this year with AC/

DC, and thinks he probably couldn't work with another hard rock or metal band. "I'll smile about this tour for years to come - if my ears stop ringing!"

IN EAR MONITORS!

The monitor engineer is known as Grubby. Anyway, Pablo informs me he was chosen because AC/DC have started to use one in-ear monitor. Yes, ONE. The singer has one to help with pitching.

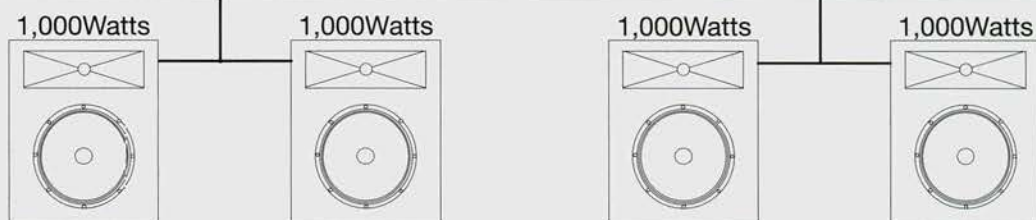
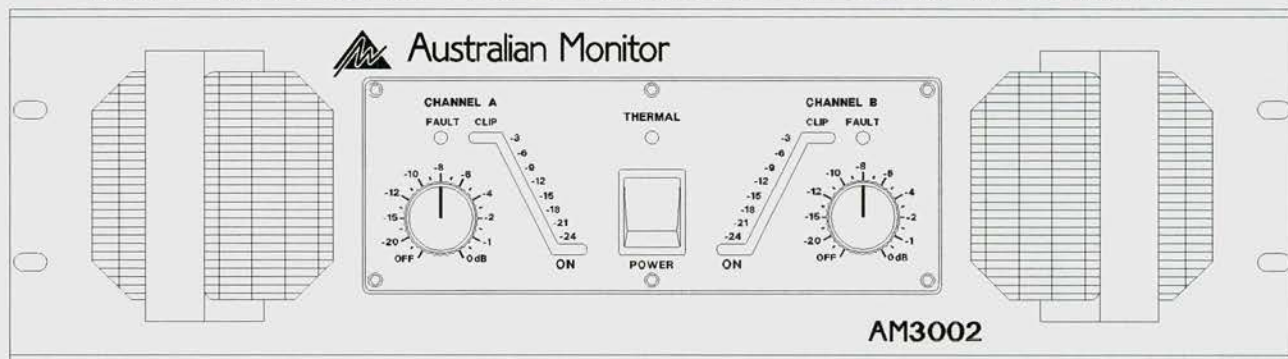
Pablo said some very wise things about in-ear monitors- for he himself also mixes monitors for other acts sometimes. It seems artists enjoy getting stereo in-ear monitor mixes, so much they get 'artistic' and start singing off the mic. Because the monitor engineer can keep the signal coming without feedback, the artist thinks it's OK to move the mic away from the mouth!

Of course the poor FOH engineer is trying to make gain before feedback while this is happening. A trap, yeah?

•Julius Grafton

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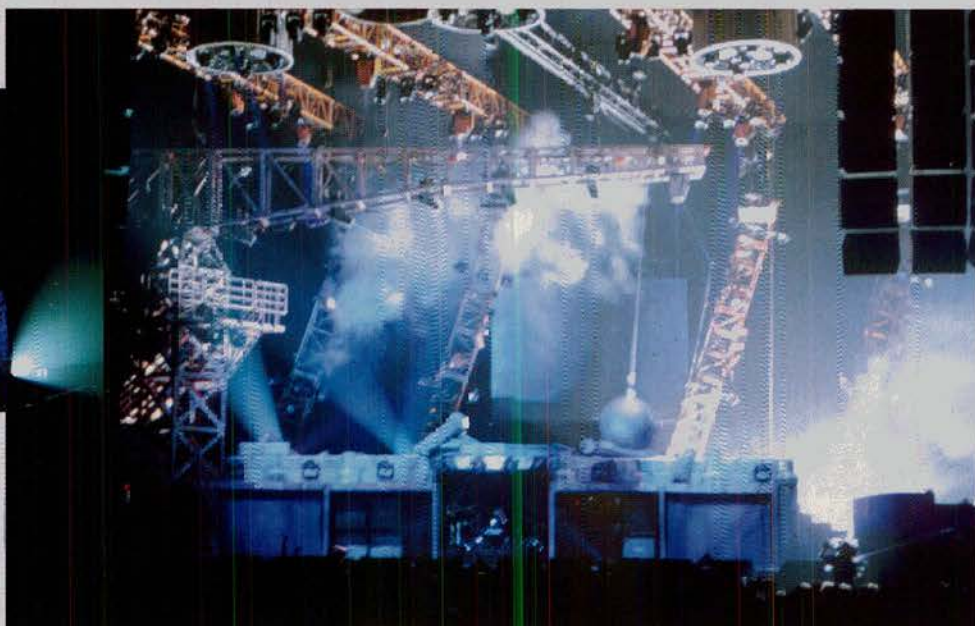
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AC/DC

The Tour From Hell

In a testosterone charged atmosphere, AC/DC unleashed their power amid a set resembling a large construction site. Taken from the cover of their latest album, *Ballbreaker*, the set was designed by Mark Fisher with the lighting by Patrick Wocdroffe and Charlie 'Cosmo' Wilson.

On previous AC/DC tours the wrecking ball scenario tended to be at the end of the show but on the *Tour From Hell* it provided a spectacular opening. It starts with an eerily lit stage with a fairly high 'stone' wall across it. A cantilever crane swings a large demolition ball several times towards the wall finally crashing into it amongst a flash of pyros. The wall tumbles down to reveal the band in a flood of white light and boy, are they rearing to go.

Starting the show with the biggest effect of all can be a bit risky but for the next two hours the band keep the momentum going. The band play amongst the rubble with other effects smattered throughout the performance. There's the huge inflatable doll, complete with suspenders and stockings, which springs to life during '*Wheels On the Bus*' and the gigantic bell which swings from the front truss during '*Hells Bells*' as Brian Johnson has a free ride. And of course the set finishes with a blazing six-cannon salute into the audience. Subtlety is an unknown identity on this tour. A scissor lift by the riser is used to lift Angus Young high above the workers and chick-

babes assembled there.

For a band like AC/DC the lighting rig is quite modest. Gone are the banks and banks of par cans, replaced by 28 Icons, 30 VL6's and 80 VL5's. Most of these are hung from the three orange trusses which are angled across the back of the stage which link to fingers of truss extruding out over the band. Wocdroffe and Cosmo had considered using Coemar NAT moving lights but as the Vari*Lite's were already specified, they decided that the Icons were a better choice. Cosmo had used the Icons on the previous Rod Stewart tour and had been very impressed by them. A Wholehog II was also considered but Cosmo had not been keen on the original Wholehog and decided to train on the Icon console instead.

The Icons had come from LSD in the UK with most of the rest of the gear from LSD in the USA. The conventionals and trussing came from Jands. Cosmo said it took quite a bit of convincing to persuade Jands to paint their trussing the required orange!

Although Cosmo could have run the entire show through the LSD Icon console, he chose to retain his long time buddy Guy





Forrester to run the Vari*lites from the Artisan.

"I like having a human input," explained Cosmo. "Also if my desk crashes, he's still got his lights and vice versa."

On the downstage extremities of the overhead trusses are eight Mole*ay blinders which are used to 'bleed' the colour from the stage over into the first few rows of the audience. AC/DC are a band who like to be able to see their fans.

Cosmo initially had doubts about using a mainly moving light rig as he believed they

just could not give the 'punch' required by a band like AC/DC.

"This band are known for their punch so I like to throw the lights into the audience," said Cosmo. "I like the lights moving a lot although some people might say they move too much. No matter how many moving lights you have they still don't give that punch. To compensate I've put 48 ACLs on the back wall and it definitely makes a big difference."

In the truss were four ic*lcwspots and there were also six FOH followspots. Suspended from the truss are circular pods of lights, mainly

VL6's, which vary in height during the show.

Dominating the back of the stage was the 17'x14', nine-module Jumbotron screen which hangs a little left of centre stage. As the Jumbotron has 1-16 intensity controls, video director Dave Davidian suggested using it as a lighting instrument. This is most noticeable in the first number *Thunderstruck* where the Jumbotron is a harsh blaze of white.

• **Cat Forcer**

Tour Personnel

Lighting Director *Charlie Wilson* **Sound Engineer** *Paul Boothroyd* **Monitor Engineer** *John Callis* **Tech** *Erik Cartwright* **Master Tech** *Will Roberts* **Head Rigger** *Norman Gomes* **Rigger** *Joey Favor* **Carpenters** *Chris Deters, Kurt Wagner, Tina Skjerseth, Steve Chamebers, Todd Carter* **Lighting Crew Chief** *Ian Tucker* **Lighting** *Jake Murray, Phil Hamer, Tim Gallup* **Vari*lite Operator** *Guy Forrester* **Vari*lite Tech** *Chris Dunford* **Sound Crew Chief** *Jim Iturrieta* **Sound** *Guy Novak, Mike Piper, Martin Hutt* **Video Director** *Dave Davidian* **Video** *Jim Malone, Bruce Green, Dave Anderson* **Pyro** *Mick Mcguire, Mike Kinard*

Jands Crew

Lights *Sean "Motley" Hackett, Wayne Lauder* **Vari*lites** *Zois Margaris*

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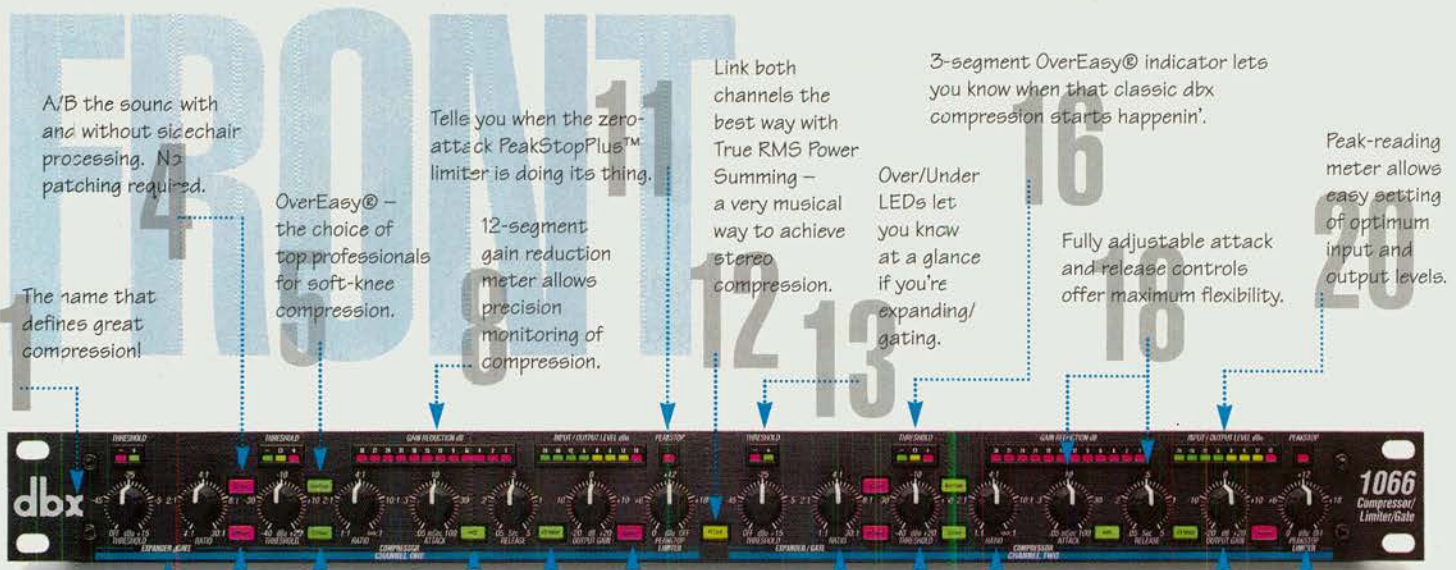
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ROUGH RIDERS

Welcome to Rough Riders where we take a light-hearted look at Artist's Riders: information sent out to promoters and venues detailing an act's requirements in terms of catering, technical needs etc..

Riders are filled with endless requests aimed at keeping the artiste and crew content and the show happening smoothly. I caught sight of a Rider request recently that stirred my imagination:

- Please provide an oxygen tank with mask and regulator for the artiste to do with what they will in the privacy of their 22 x 18 metre dressing room - no further than 10 metres from the stage with at least 2 electrical outlets, showers with hot and cold running water that have been personally tested by management; a lounge suite upholstered in natural fibre, private lavatory (preferably one that's not been previously used) and four recycling bins labelled plastic, paper, glass and organic. We would like the dressing room to have the ambience of an "intimate living room".

I don't know about you but a whopping great bin filled with dubious organic matter doesn't exactly strike me as your average living room fixture. It worried me even further when an attached note on this particular Rider stated that "management are attempting to create a home away from home for the artiste."

Really? The mind boggles. I have visions of hordes of plumbers turning up every day at artiste's "homely" 40 room mansion back home to replace all the loos that were so thoughtlessly used by artiste's 100 or so close friends who dropped round the night before to spend a quiet evening in front of the organic bin. Whatever happened to a cosy night in front of the telly?

Obviously we all have different ideas in mind when we imagine our comfortable lounge rooms, some of us see the dog lying asleep by the log fire or the giant sized telly flanked by the modular lounge suite, but an organic bin? I don't think so.

The thing about all this that really bothers me though is what organic matter is actually in this bin? If artiste is so determined to only use loos where no man has boldly gone before, then where are guests to the mansion directed too when nature calls? Organically speaking of course.

Rufus B.

If you have any wacky or funny requests from artists, please send them in.

Tizz and THUMP

Part 2 of a look at setting up sound and tuning

We've all done gigs where you have a room full of people, no sound check, a strange system and the band on in 10 minutes. Don't try tuning up with a tape. Again, grab a good mic and talk into the system. Try not to go "one two, one two", you'll just get the usual "three, four" reply from the punters. Quote Shakespeare (Robbie will do), sing a couple of lines from your favourite song, even "mic number one, mic number one, isn't this a lot of fun?". Anything but "one, two".

Listen for rings and hums again, getting it sounding as natural as possible. Find out where the system threshold is and you should be able to get a good idea on the gains of the rest of the channels by the level of your vocal mic.

If you're pretty sure all the channels are working, go up confidently and tell the band you're ready to go. Don't overdo it on the first song. Get the vocals to a good level without feedback and slowly bring up the level of the rest of the band til it's all sitting right.

Monitors are a different kettle of fish. Unless you've got super high-powered, bi-amped, three-way wedges, it's usually a battle between having them sounding as nice as possible and getting them as loud as possible before destruction.

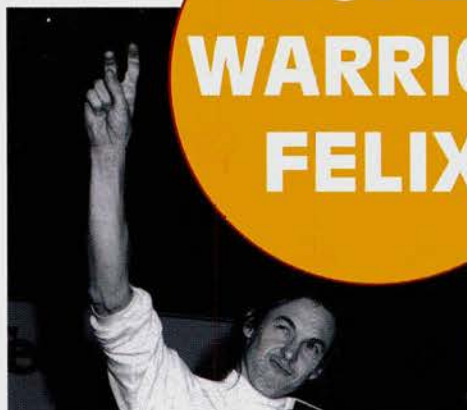
It definitely depends on the band you're doing. Consider the Chili Peppers' foldback specs - "monitors must be deafeningly loud". Ouch! I believe in tuning monitors similarly to FOH. Get them first sounding natural, then start bringing up the level, tuning out rings and hums. Again, it's no good having really loud monitors that are so coloured you can't hear properly.

If you've got the time, experiment with wedge placement. try to keep them up pretty high without spoiling stage sight lines.

With most female voices, tune with less top, and I find many like a lot of bottom end (hmmm?) so spend extra time on ringing out hums.

Remember, always look confident, be well

ROAD WARRIOR FELIX



prepared and don't be afraid to tell the band to turn down, up, or whatever. Be polite, but firm.

Concerning drum fills, if the drummer doesn't sing, just try to get the drum fill nice and loud. Pay particular attention to tuning the kick, with a mixture of mic placement, drum dampening and usually pretty radical cuts and boosts on the graphic. And watch your amps. A limiter on the drum fill is a very good idea.

If the drummer sings (oh Lord!) then tune the fill more to his voice than the drums. Better yet, give them a vocal-only wedge as well.

Don't let pop star antics and carry-ons throw you, remain calm and trust your ability. If something sounds weird, try to run out quickly to have a listen. Foldback is definitely hoping for the best, preparing for the worst.

Felix has his own company Danger Sound Production Hire, reach him on 015 497 761.



Our spy in the UK took this photo of Felix apparently having a quick snooze before a gig - the full UK tour story next month.



LIGHTING

MONTHLY

Dec '96/Jan '97

Edited by Catriona Forcer

LXbizzBITS

PRODUCTS

APOLLO RELEASES

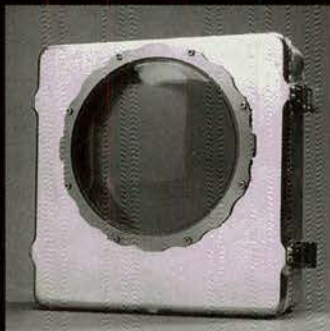
Apollo Spectrum have released a number of new products for the installation and production markets, including a new Chameleon Colour change unit featuring 200MSD lamp, static or rotating gobos, and dichroic colours. A new brochure is available detailing the entire range.

READER SERVICE NO 400

MERRIMAC

Motion Development Industries of the US have launched the MerriMac an all weather, fully submersible, scrolling colour changer designed to operate at a depth of 150ft. It has been designed for underwater applications as well as damp or corrosive environments and is constructed out of aluminium.

Designed for a 1K par style, the MerriMac has other adaptors available on request.



The elec-

tronics are hermetically sealed and the front cover with mechanicals and scroll removes by undoing the six clamps that hold the hatch closed. The MerriMac is powered by MDI's Shore Power which can power up to six units, one per port, and used MDI's custom Underwater Power and Data Cable.

READER SERVICE NO 401

FAL 2000

The FAL 2000 scanner has completed a six month test under Australian conditions with reliability, claim ELSTA. It has many features in particular two colour temperature correction filters and a unique three facet rotating prism. Retailing at \$2995, the FAL 2000 has an HSE 200 lamp, 9 dichroic colours plus white, 30 colour combinations, 30 dual colour combinations and four variable speed, bi-directional rotating gobos with four fixed gobos.

READER SERVICE NO 402



LDI



lights and showbags

It's a small world really. A guy wrote this industry is a global village, another said it equates to one-sixth of the world's potato crisp business. Walking about at LDI trade show I am busy refreshing relationships with Australians and others from the world at large. This is good.

LDI itself was held in Orlando, where the convention centre is isolated from reality, with hotels and support infrastructure within walking distance. No homeless people, no armed security guards at the hotel doors, no litter. A homogenised happy zone, with the world's greatest theme parks (try Epcot sometime) a short ride down the Bee Way.

This trade show is 8 years old and is straight unfettered lighting, theming and staging. Some audio firms hang off the periphery, catching enough custom to warrant making the investment. It attracts around 300 exhibitors they say, and about 8,000 people - maybe 10,000. It is ground central for lighting in the USA. Saying that, the number of working LDs and con-

sultants on the floor is disproportionate to dealers, retailers and wholesalers.

LDI's main overseas contingent is made up of something like 8% of visitors from South America - which is my guess. European visitors are not an option, because America (as great as it is) is a 110v territory. Funny that, half the voltage, double the amperage. The cable manufacturers and copper mines do rather well.

Otherwise it's full speed ahead USA, and plenty of innovations along the way. The things done best in the USA are:

- Theming - architectural lighting design;
- Touring - rock.

Without seeking to alienate our very good friends in the EEC, I say the above without reservation. A country with 250 million plus people, the leading world economy, equals a vibrant and exciting market. To which LDI caters - and caters well. This is a well designed, good looking and accessible trade show.

continued on page 83

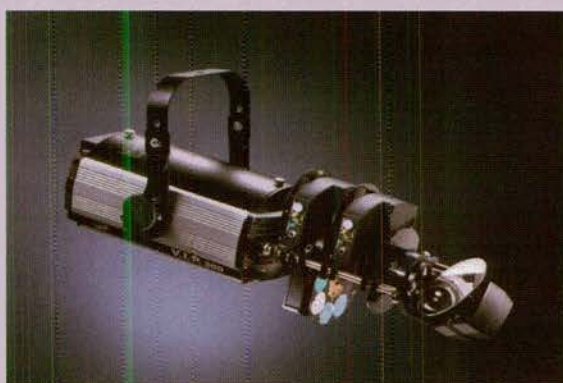


Product Dice Falls Well for Show Technology

Some years it's a mixed bag finding winners in the product lotto. This year Martin and Clay Paky won plaudits for their releases at LDI Orlando. Products and displays were excellent. Significantly both firms were located in the 'Quiet' part of the trade show - the 'Noisy' hall is a doomed creature, serving no purpose.

Martin had a huge open plan display where you could walk amongst product on plinths, and move freely. Several pleasant surprises awaited, the most striking of which is the speed with which this firm has developed the MAC moving head colour changer. Seen at PLASA, the MAC 1200 has found its way into use in Australia already - albeit at a similar price to the High End Systems Studio Color device.

Now a few months later at LDI is the MAC



The new Clay Paky VIP300

600, not just a scaled down MAC 1200, but a whole new unit with a 575 lamp. It's compact (480mm L x 350mm W x 640mm H), burns cool (I checked), quiet in operation (this was, after a quiet stand, one could not deter-

continued on page 83

Check out the new

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SHAPERS

of the lighting industry



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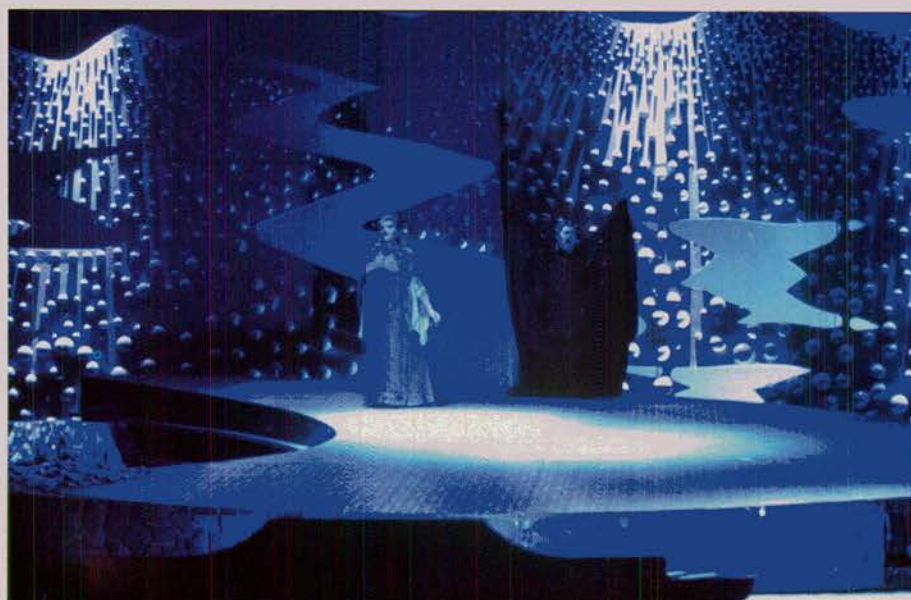
<http://www.highend.com>





Painting with Lights

Die Frau ohne Schatten



One of the most exciting inclusions in the 1996 Melbourne International Festival of the Arts program was the grand scale opera production *Die Frau ohne Schatten* (*The Woman Without a Shadow*). Previously performed at Covent Garden and in Los Angeles, the Melbourne production staged by the Victoria State Opera, in conjunction with the Melbourne Festival, was the Australian premiere of Richard Strauss' opera.

The entire staging of the production was visually based in intensities of colour. With internationally acclaimed artist and photographer David Hockney at the helm, the set for *Die Frau* was flooded with bold, intense colours.

Having designed ten other operas previously, Hockney approached the challenges of *Die Frau* by taking a more active role in the lighting design, so that coupled with his brazen backdrops, the stage would come to life in three dimensions of colour on colour.

The set for the fairytale opera featured a huge coloured swirl at its centre which was pivoted on a motorised revolving truck weighing over 1 tonne. Several crew members were required to stay inside the revolve for the duration of the show to assist in the pivot action. Hundreds of brightly coloured balls of varying sizes were arranged throughout the set creating a unique spacial effect, and a full-sized flowing fountain made from fibre-optics created the effect of a real fountain. The brightly painted cut cloth scenery was flown in and out, changing the setting from the fairytale world back to earth again, all with the simplicity of Hockney's saturation of colour. Seventeen canvas backdrops of 18 x 11 metres were

painted by Hockney for the opera.

Trevlyn Gilmour, Technical Director of the Victoria State Opera said *Die Frau* was a traditional opera in terms of staging. "It has the revolve and the flown scenery, very much a traditional concept. The only untraditional element is the use of colour and space by Hockney."

The real challenges of the production were in achieving the bold lighting design and in the balancing of the production's sound requirements.

Moving lights played an integral role in achieving David Hockney's colour vision for the set. Vari*Lites were incorporated into the original lighting design and had been used in the LA production, however due to a lapse in documentation, the Australian production team were not informed of the need for Vari*Lites until the end of July. When attempts to locate the number of Vari*Lites required in time for the production schedule failed, the lighting crew integrated Studio Colors into the design. Gilmour said that the Studio Colors were extremely successful and David Hockney was "very impressed" with them. The prismatic colours of the Studio Color lamps provided the intensity of colour needed to create the mythical staging for *Die Frau*. In one scene, Hockney used the moving lights to create a flowing golden river.

Gilmour said it was an incredible experience for the Victoria State Opera to work with David Hockney because he is such a visual artist rather than a "theatre person".

In a recent interview in the *Sydney Morning Herald*, Hockney said about his transition into scenic design, "It is the nearest I have got

LXbizzBITS

PRODUCTS

STARDRAW 2D V2

Stardraw 2D - version 2 of this program has been released with some additional features: full external database support (inc. MS Access, MS Excel, Fox Pro, etc.), enhanced reporting features, full Drag and Drop support, full OLE linking, and full support for externally located libraries.

READER SERVICE NO 403

STUDIO COLOUR UPDATE

Studio Color Automated Wash Luminaire Version 38 software from High End System has been released providing the Studio Color user with enhanced colour mix profiles and M speed colour functions together with other features including the ability to cross load software from fixture to fixture.

READER SERVICE NO 404

BOTEX FOR ELSTA

Elsta have added Botex products to their portfolio. Botex manufacture a large range of lasers, strobes, dimmers, power packs, pinspots, and lighting control equipment such as touch panels and strobe controllers.

The first product to be released from the 1997 Botex range is the Crab which will cost \$249 (special introductory price). The Crab's 4.9mW red diode laser produces nearly 100 patterns and the unit's three operational modes allow you "set and forget" convenience or creative control over your own laser lightshow. In the auto-mode, the 16 pre-set geometric shapes are projected one by one in order. In the music mode, the patterns are triggered by a built-in microphone. Speed is adjustable in any mode.

READER SERVICE NO 405

SELECONS' AURORA

Selecons new Aurora range consisting of 1000/1250w Cyc and Floods, has been designed to meet the rigours of the Australian touring and theatre market. Selecon boast extended filter life, a strong colourframe, multiple input options, easy access for service, and adaptability for top light or groundrow. The cyc range includes single, dual, quad, 4 cell linear with additional purpose built groundrow and flood units.

READER SERVICE NO 406





Painting With Lights continued from page 73



to sculpture, working in the theatre."

"You are working in three dimensions and you can create illusions of even bigger three dimensions. Cinema has great difficulty showing you grandeur because the lenses can't see enough. In the theatre you can create real illusions, spacial ones, because you are using real space as well. I like that."

Under the direction of acclaimed opera director John Cox, the \$1.4 million production was a massive logistical challenge. Importing a production of this magnitude meant months of preparation and organisation. Gilmour said preparations began in November last year - a long lead time considering the opera was only performed three times in the Melbourne Festival.

Using Hockney's original sets gave the production team another challenge - importing the backdrops and scenic art from overseas. The sets had been stored and transported over several months between seasons, and therefore had the expected wear and tear of toured sets when they arrived in Melbourne. Gilmour said the scenic artists at the VSO's scenic studios enjoyed touching-up Hockney's spectacular sets because they were so far removed from the normal opera sets with their bold primary colours and unconventional textures.

The original lighting design for *Die Frau* was created by the late Craig Miller. His design was re-created and enhanced for the Australian Premiere by Australian designer, Donn Byrns. Byrns' design was received so well by the producers that it was selected as the design for the Seattle Opera's season of the production to be staged in 1998. Hockney even commented that the Melbourne season of *Die Frau* was the best yet in terms of technical design.

The production shared its venue, Melbourne's State Theatre, with the Nederlands Dans Theater's split season of two ballets, which meant that a double lighting rig was required. Gilmour said the massive lighting rig for the two shows was simply an awesome sight.

The intricacies of the *Die Frau* lighting design meant that Deputy Stage Manager, Fiona Boundy called approximately 300 lighting cues each performance, as well as co-ordinating flies, traps, the children's chorus and supervision of backstage activities. Gilmour said that while *Die*

Frau was a grand scale production, its staging was very straightforward with mechanised lifts and revolve, and programmed flies.

With a crew of only 48 people, the Melbourne production was run on the least crew numbers out of the two earlier productions. Gilmour explained that crew numbers were cut down due to the facilities available at the State Theatre. The computerised flying system meant that only four flymen were required on the production, half as many as its international predecessors. While the crew were all locals, international experts such as Ted Pursey, Technical Director for the Covent Garden Season, and Hockney, were on hand to assist with the Melbourne season. Gilmour said "Their involvement has been invaluable".

● *Mandy Jones*

VARI-LITE GOBO CONTEST

Attention all students! Vari-Lite Inc is hosting a Gobo Contest open to all undergraduate and graduate students. Here is your chance to win valuable Vari-Lite training and/or cash. If you are artistically inclined and would like to see your gobos in lights, submit your artwork to Vari-Lite by January 31, 1997.

All winning gobos will be added to Vari-Lite's existing Vari*Image™ gobo catalogue, used by lighting designers all over the world for concert, theatre, and any event where Vari*Lite automated lighting is used. Winners will be announced no later than March 31, 1997 via press releases and the Vari-Lite home page at www.vari-lite.com. The Grand Prize winner will receive Vari-Lite technical and operator training plus Vari-Lite swag (or an alternative cash prize of US\$1000). Second and third place winners will receive US\$250 each, along with Vari-Lite swag. Winners will be credited for their entry in the Vari*Image™ section of the WWW for one year after final selection.

Official Guidelines for Artwork

- Images may be submitted on paper or electronically
- If submitted on paper or as "camera ready" art, the image should be no larger than 8-1/2" x 11". Original artwork must be submitted - no faxes will be accepted.
- Electronic artwork may be e-mailed to wmaster@vlint.com or submitted on these storage mediums: 3-1/2" diskettes, ZIP disk, Syquest cartridge, or CD ROM, and mailed to Vari-Lite Gobo Contest, 201 Regal Row, Dal-

las, TX 75247.

- Artwork should be submitted as black and white vector image or as a Greyscale or Bitmapped raster image. Black should be used to denote the actual image to be projected.
- The following formats are preferred:
 - Adobe Illustrator™
 - Freehand™
 - Adobe Photoshop™
 - Canvas™
- Other acceptable file formats:
 - .EPS
 - .DXF
 - .PICT
 - .PCX

Official Rules and Regulations

- Gobo Contest is restricted to undergraduate and graduate university and college students. Enrolment in trade schools does not qualify.
- All gobo entries become the exclusive property of Vari-Lite Inc. No artwork will be returned to contestants.
- No credit for winning gobo entries will be mentioned in printed material.
- The decision to accept or reject an entry is the sole discretion of Vari-Lite Inc. All winners to be decided by Vari-Lite Inc.
- Vari-Lite Inc does not discriminate on the basis of age, race or sex.
- Vari-Lite employees are not eligible to participate in this contest.
- All rules are subject to change.

For further information contact Vari-Lite Inc 0011 1 214 819 3261 during US office hours.



GETTING A BREAK

Barratt Lighting Scholarship Produces First Graduate

Getting a break as an aspiring Lighting Designer is harder than ever, even when you're 20 years old, keen as hell and placed in the ultimate networking opportunity. Jason Waide is the first Barratt Lighting Scholarship recipient, and he has just finished his four month period of secondments with a three week session in London.

"I just need one break - time and a budget. If people don't see your work then you don't get any work" he says. At presstime that break hasn't materialised, yet Jason has impressed many people and been to and worked on, a lot of shows.

Jason was a tech at Northern Rivers Performing Arts based in Lismore when he won the scholarship. It provided basic pay for three months work out of Sydney, and a return ticket to London - which was kindly provided by Stage & Screen Travel.

DONATIONS POURED IN

The Scholarship was announced at the ENTECH Awards, where an appeal was launched for funds.

The Entech industry chipped in and donated \$5,659.13, all of which went back to Jason as a stipend. It is a modest amount, somewhat short of the target sought. Complications with the estate of the late Roger Barratt precluded contribution as some beneficiaries had originally intended. However the lawyer handling the estate -Peter Haylen- was kind enough to donate \$100. Connections Publishing loaned the scholarship \$800 towards Jason's accommodation costs in London, and White Light also paid around \$500 towards accommodation.

Because the amount of money on hand wasn't really quite enough, several organisations and people donated accommodation, meals and money direct to Jason during the Scholarship.

During the Scholarship many people and organisations responded magnificently, giving Jason guided tours of shows, factories and a lot of time. In particular Tony Davies from Chameleon Touring needs extreme thanks for allowing Jason to base himself there while in Syd-

ney, and for helping to establish the program.

In London the industry association PLASA went out of their way to assist, to the extent that John Offord, the chief executive, drove to Heathrow to meet the QF1 at 6.30am - a trip of several hours duration in the cold and dark. John provided initial accommodation, and PLASA co-ordinated the London end of the scholarship.

JASONS STORY

I came down from Lismore and went straight to Chameleon. (LD) Gavin Swift had a room at his place in Marrickville for me to stay in.

The first thing I did was to help Chameleon prepare a corporate gig for Subaru at the Entertainment Centre. There were no real shocks for me in this, although I hadn't really expected a stage manager calling the show. I operated the Event console. The money that goes into corporate theatre is astronomic!

Chameleon were contracted by Wavelength, I watched them with interest. They had autocoques for the presenters and looked after the corporate people really well.

After that I did some factory stuff for a while, prepped a rig for an Aristocrat exhibit at the exhibition centre and learned about the hierarchy at Chameleon. Things are fast there - fast in, past out, the job happens and if a problem arises it goes up the hierarchy and gets fixed! It was really good at Chameleon, I got looked after well. They have a good rapport with the other companies, like Jands and Wavelength. There is a lot more sub contracting in the industry than I had thought.

I did some more corporate gigs, dinners, awards and exhibition rigs, at places like the State Theatre, Hordern Pavilion and even Rosehill Racecourse!

Cam Mac arranged for me to inspect the production of Miss Saigon, it was my first encounter with Vari*Lites. I got to see how they work and pull apart. I sat in on the automation for one show, the LX for another. It was



Jason awaiting his flight from Sydney

very instructional.

Then I went in to Little Shop of Horrors for a few days, watched it go up in stages, saw the focus day and looked at the rig. Sydney Theatre Company invited through, I checked out the workshops, stages and saw "Medea".

For some variety I spent a day at a film shoot for Dark City. The head gaff was just amazing - on top of it all through the day shift and he crossed over into the night shift too. He was calling the shots, electric's, and crew. I learned by watching him, it was very impressive. He didn't even know I was there.

Back at Chameleon we prepped the rig for Phantom in Brisbane, I did some work at Eelviore Street, and saw another STC show "Incorruptible" at the Drama Theatre. It's good to see the way a show is lit, and to figure out how you could have done it yourself.

I saw "Broken Glass" at the Seymour Centre, it was simple but it worked!

Then I prepped and lit Broadway in the Park, the Eugs Bunny orchestra show in Centennial Park. It was a Wavelength show, we pulled it all out in the rain. But it was dry for the performance.

I saw a tech run of Beauty and the Beast, and then went to Brisbane for the fitout for Phantom.

Cam Mac are so slick, so fast and I can't praise them enough. The crew all have good

continued page 77



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LXbizzBITS

GETTING A BREAK

continued from page 75

attitudes and the communication is very good. I did some rigging and stayed for the focus. The LD's associate flew in and was into it - calling numbers, plotting. I talked to her a fair bit.

While in Brisbane I went through QPAC and then sat in on the RAQ Fashion Awards, to see how a live TV show is lit. It was very instructional. The show came off OK, but they only had one console - a Hog - with everything on it. The time factor worked against them, I leaned a lot watching.

November 4th was coming up fast, I went back to Sydney on the 6.30 flight out of Lismore after spending a few days back home. I went to Chameleon and tidied up a few details, then Julius Grafton took me to the Airport. I got on the QF1 after converting the money Julius gave me into travellers cheques- it was my first overseas trip. 9 hours to Bangkok, then 12 hours to Heathrow through the longest night.

THE END OF THE ROAD

Jason flew to London and was looked after by PLASA. They handed him on to White Light, M&M and Theatre Projects, all London based firms.

After the formal 3 weeks in London ended Jason had some holiday time, with his return

scheduled as this issue has the ink applied. We'll update you with his London news next issue.

WHAT IT ALL MEANS

Jason sums up what he achieved: "I didn't learn new skills because I was already theatre oriented, and I didn't expect to anyway. I did learn more about attitudes, by watching people. It reinforces the fact that you must be nice to people unless you have reason not to be".

"I saw how you can work in a polished manner, I saw how efficiencies are achieved. I saw ways to handle situation that I hadn't seen previously. I also saw how technology is converging and overlapping".

• *Footnote: the Scholarship funds were collected by Connections Publishing Pty Ltd and deposited into a Barratt Scholarship Trust Account. Bank charges and credit card merchant fees were deducted where applicable. All proceeds were then paid out to Jason, no fees or other expenses were claimed by Connections or anyone else.*

• One contribution we failed to mention in previous listings was \$250 donated by Bryan Raven of White Light.

PRODUCTS

NEW NATS

NAT PC 2500 HTI - high powered colour mixing unit includes all the standard features of the PC range. Aimed at the top-end touring and installation market. **NAT MM Zoom 2500 HTI** - featuring a 2500W HTI discharge lamp. Featuring a 15-30 motorised zoom, colour mixing, 10 rotating gobos on 2 wheels, full mechanical d'ringing, iris, and all the other features of the NAT range. **NAT BBI's** - Coemar are now offering the full range of NAT projectors in a new "Ballast Built In" version. The range is now available in a choice of external ballasted or BBI units. All NAT TM's and MM's now feature fully removable touring heads, with the MM's offering full circle repositioning of the mirror head. **READER SERVICE NO 407**

ECODOME™

High End Systems have announced the imminent release of Ecodome™ for Studio Colors and Cyberlights. Ecodomes are weather resistant; modular indoor/outdoor housings manufactured from high impact, UV resistant clear polycarbonate with forced air ventilation and may be installed in almost any climatic condition. **READER SERVICE NO 408**

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LDI

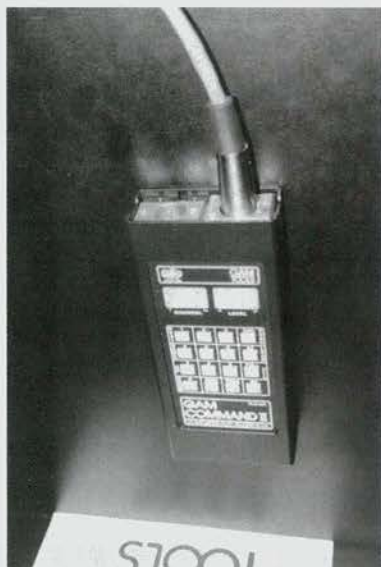
DMX TOOLS

GAM Command II is a handheld DMX controller, or 'riggers control' which can address your lighting system. It also can 'read' your DMX output, which is handy when under pressure you have 'lost' the assignment of a device. Or you think your device doesn't work but are unsure. Gam Command II tells you which channel is active from your 512 choices. It can tell you if more than one channel is active too. And it checks your DMX connection.

GAM have five handheld 'tools' now available, they are made in Sydney by Show Craft - Lee Conlon's company. Lee travels to major trade shows and sells these unique tools.

The original GAM COMMAND is available, the new one has an LCD readout for channel number and intensity. Select channel 240 at 59% - GO. Really, no DMX user should be without one.

Another great device is the SWITCH DMX. Simply, it gives you a DMX line which can run to an outlet on or side stage. When this



Gam Command II

outlet has a control device - a lighting desk, or a GAM COMMAND plugged in, it takes control. It switches from ordinary source (such as your bio box control desk) to the temporary outlet.

GAM TEST DMX, and OPTO-ISO are the other two boxes made by Show Craft and sold worldwide.

-Julius Grafton

Martin Attack Chinese Copycats

Several years ago Martin products were freely available at a tradeshow in Beijing. The cartons all said Martin, the lights looked like Martin, they were all counterfeit. The resellers were culturally conditioned to ignore protest. Copy is OK.

Today Martin say that copy products account for 80% of their potential sales in China, in other words it is a major problem. Martin are now a public company, and they are using some of their clout to try to reign in the theft of their designs and trademark.

A big first step which can be addressed immediately is a simple one. Connections calls upon the promoters of any trade show anywhere to ban exhibits featuring counterfeit products. A simple walk through during setup could allow a wronged manufacturer to identify fakes, swear out a statutory declaration, and then have the duplicated devices removed from the premises.

Trade show promoters ought to ensure they revise their contract conditions to reflect this.

It's time to send a clear message to anyone who steals. -JG

LXbizzBITS

PRODUCTS

COMPUTITE RELEASES

There has been a complete re-styling of the complete range, producing a more ergonomic layout with a hard-wearing finish.

Ovation 4D - available in two versions with either 20 or 40 controllers. Features include 1536 control channels, fully integrated on-board Moving light control or an optional MLA wing, full dimmer status, reporting, and error information, CompuLINK Ethernet connection, internal linking to CompuCAD. **Sabre** - the heir to the Animator range, offers control of up to 96 moving lights (22 parameter) or proportionally more where parameters are less. Option hard disk storage, 8 banked parameter wheels 50 context sensitive keys offering single press access to spots, parameters, groups, macros, snaps, leader assignments, and chaser assignments. 24 controllers accept memory, group, and chaser assignments. Full compatibility with WYSIWYG and Highlight CAD, as well as Ethernet communications support.

CompuLINK Ethernet Node - a remote VGA and DMX distribution node, it is fully supported by the Ovation 4D and Sabre consoles. Two models, Model 14 and Model 24 offer 2 or 6 output connectors respectively.

Remote Control Unit - offering full control over channels scrollers and macros, it can be used as a back up unit for the Ovation, Applause and Photon consoles, or as a standalone full featured console in a 1U high rack-mountable housing.

SP19 - Packaged in a 1U high rack-mount housing, the SP19 offers full tracking backup or standalone system for shows recorded on a Spark. A remote panel keyboard can be connected allowing full functionality.

READER SERVICE NO 409



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LDI - the hit picks

Naturally I missed something major. But what I did see was:

ROSCO GO DIMMER

A cunning PC based system is the Horizon, which has three parts. Take a modern PC or laptop running Windows. Into the printer port you plug a box which gives you a DMX output. The PC takes a CD with the software on board. Instant lighting control system.

Rosco say the software is free, it is also comprehensive - and somewhat ETC Expression like. Basically there are no limits. You can buy one or more DMX boxes which can cascade off your printer port.

"We're gonna redefine the console business" said Rosco ET president; Gordon W. Pearlman. "With Horizon we got no problem with CE compliance, codes, weight, voltages, whatever". He's right. Rosco sell you the DMX box for about 2.5 grand Australian. They give you the CD. When you want more than 512 channels, you get more boxes.

The system will ship midyear.

100,000 TONNES

The worlds biggest fun boat, the Carnival Destiny cruise ship sailed during LDI, with Glantre Engineering of the UK responsible for the Entertainment Technology fittout. One theatre onboard features a 4-deck flytower. Touch-screen control is used throughout.

HIGH END GO OUTDOORS

By far the busiest stand in terms of punters per square measurement was the High End Systems metropolis. Product refinements was the flavour with no huge releases. One good thing is the ECO DOME, which is a dalek-like plastic dome for outdoor use of Studio Colour or Cyberlight moving lights. The DOME is a UV resistant clear poly carbonate dome, the assembly has life support systems and is theft resistant.

BRIGHT MOON BALLOON

There is something clever about something simple. The illuminating balloon is helium filled, with a halogen light source. You tether it via the power cable. Use it anytime you need quick light, or as a venue effect. Two French firms offer all shapes and sizes up to enormous, they say 60kmh wind is OK too for some models. Contacts: Air Star - Lunar Productions (02) 9742-6274, or MTF Groupe Pretel (France)- fax +33 0 476 98 6044.

CHEAP FX FROM TEATRO

Smaller venues will like the Versa-Disc, which uses a stepper motor to drive a cardboard disk in front of a profile spot. Flame and fire

effects, colour masks and gobo's mixed together make do-it-yourself design easy. Comes standard with analogue control device, DMX optional.



Teatro Versa Disc

VIRTUAL LIGHTING LAB

Software which lets you choose how to light things. Select a sphere or figure on screen, put a cyc behind, then position different kinds of lights on the grid. Choose colours from Rosco or LEE, mix and match to 'see' a close approximation of how it will look. A handy tool, cheap-ish, and hopefully on sale at EN-TECH.

GELFILE

GAM color have software which gives you any colour under the sun. Find equivalents from different manufacturers, see the transmission loss, calculate intensity, mix your own colours. It's neat software, and again hopefully onsale at ENTECH.

•JG



LDI Aussies

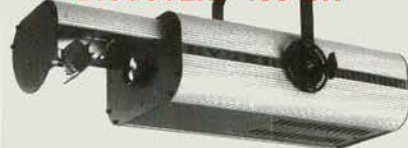
We lost count of the walkers and talkers on the floor, but Aussie's on display duty were quantifiable. Jands return each year, working from distributor AC Lighting's stand-Paul Mulholland and David Timmins were there. LSC likewise were represented on TMB's stand, with Dean McFadden making the long trip. Bytecraft were represented by AC Cooper, John Montgomery on hand. Show Craft make GAM branded products, Lee Conlon was on duty. PENN USA now has Mark and Lynn Dryden in control, moved up from Melbourne. I know there were others too, they will ring me and remind me.

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Lamp Wattage:	400	Strobe Effects:	Yes
Colours:	10	Fan Degrees:	180
Split Colours:	2	Tilt Degrees:	90
Gobos:	20	Stand Alone:	No
Gobo Colour Mixing:	Yes	DMX or MIDI:	Yes
Rotogobo:	Yes	Weight Kg Approx:	18
Rotocolour:	Yes		\$2699 inc. tax

DISCOVERY 250 ELC



Lamp Wattage:	250	Strobe Effects:	Yes
Colours:	10	Pan Degrees:	180
Split Colours:	2	Tilt Degrees:	90
Gobos:	20	Stand Alone:	No
Gobo Colour Mixing:	Yes	DMX or MIDI:	Yes
Rotogobo:	Yes	Weight Kg Approx:	10
Rotocolour:	Yes		\$1599 inc. tax

DEFENDER 250 ELC



Lamp Wattage:	250	Strobe Effects:	Yes
Colours:	10	Pan Degrees:	180
Split Colours:	2	Tilt Degrees:	90
Gobos:	10	Stand Alone:	Yes
Gobo Colour Mixing:	No	DMX or MIDI:	Yes
Rotogobo:	Yes	Weight Kg Approx:	8
Rotocolour:	Yes		\$1199 inc. tax

DEFENDER COLOUR



Lamp Wattage:	250	Strobe Effects:	Yes
Colours:	10	Stand Alone:	Yes
Split Colours:	2	DMX or MIDI:	Yes
Rotogobo:	Yes	Weight Kg Approx:	6
Rotocolour:	Yes		\$699 inc. tax

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TALES FROM CHINA

Horror stories from The Lighting Workshop

Since they purchased the entire contents of the Clay Paky stand at Entech 96, The Lighting Workshop in Perth have grown to be one of the biggest suppliers of intelligent lighting in Western Australia.

The Clay Paky fixtures, in particular the Golden Scan HPE's have found themselves on many diverse productions - silverchair, Andy Lau, Meatloaf, Sleaze Ball in Sydney, Telethon at TVW 7 Perth, Perth's own Mardi Gras "Pride". They have even travelled as far as the Christmas Islands. Later this month, a shipment of Clay Paky Miniscans will add to their stock as well as some Hot Technology smoke machines.

Also on the travelling front, several of The Lighting Workshop guys have been overseas working on various installations. As well as work in Dubai and Singapore, an installation team of three staff also recently went to work in China - Guy Smith, Andrew Chambers and Andrew Dorbert. Their mission was to install lighting gear into the Sun Island Resort hotel.

During the trip Andrew Dorbert fell sick and after spending 36 hours hiding under a blanket, he was admitted to hospital with appendicitis. After the operation he was surprised to find himself shaved from his neck to his toes! Not surprisingly Andrew has sworn never to return to China. He also has many tales of how things are done installation wise in China.

"You never see any safety gear on the roofs," he said. "The day before we got there, a tornado ripped through the place and lifted off



The Lighting Workshop Showroom

half the glass roof. Guys were up there standing on top of the broken glass pulling it off and one nearly came through. There was heaps of rickety bamboc scaffolding and we found ourselves 12m off the ground swaying in the breeze whilst trying to install lights, sound gear and two mult-media systems."

In the nightclub area, the guys found there was no truss supplied so they had to design it. They also had to unexpectedly design the control room in the ballroom as well as the DJ box.

"Where we were sleeping in a mock Tudor village the other end of the island, there were lots of man-holes," Andrew recalled. "One had the lid off and it was full of muddy water so we thought it was a storm water drain. A week later the water had cleared and you could see a 400 amp mains run down in there - all under water! The main distribution boards to each block of units had a 400 amp breaker line in with no cover or protection, it was hard wired

out in the open. Instead of breaking it up in parallel, they just ran one main feed into a circuit breaker and daisy-chained it out into every other one. Also, all the wire was the same colour so you didn't know which were active, neutral or whatever!

"Trying to get through to the locals was difficult. I designed a truss made out of 50mm steel pipe to suit a normal C-clamp but they built it out of 65mm swearing that there was no 50mm steel pipe available. Yet when we went in to set it up, the whole thing was sitting on 50mm steel pipe scaffolding! It was a bit of a worry."

The team had to stay at the resort for six weeks and Andrew Chambers drew the short straw to return and finish the work. Meanwhile, Brian Anslow wasn't exactly idling at the workshop he was out on the Meatloaf tour as Scan Tech - a satisfying but tiring experience he said.

-Cat Forcer

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"A good colourframe" A wide flat stainless steel colourframe, clamps the filter and is sized to provide an economic colour cut.

"Grunt" Our unique extruded reflector gives outstanding and consistent performance. Check out the chart.

"Connector Options" Cable tails or industry standard Wieland or Socapex.

"Rugged Construction" We know the rigours of touring around Australia!

"Adaptability for hire" The cyc units can be used as groundrow!

"Safety and Duty of Care" Unmatched electrical and mechanical protection. Access for relamping is achieved without having to remove the colour filter which on opening disconnects the mains supply. Safety glass protects against the dangers of exploding glass fragments as well as keeping curtains and scenery away from the lamp.

"The range" Includes, single, dual, quad, and 4 way linear cyc units along with single and 4 way groundrows. A flood unit and barndoor accessory completes the range.

Height	Lux@		Lux@		Lux@
	D=3.0	S=2.5	D=2.5	S=2.25	D=2.0 S=1.8
9.0	1000		1190		1820
8.5	1040		1340		1780
8.0	1050		1400		2100
7.5	1060		1450		2190
7.0	1070		1420		2050
6.5	1040		1360		1830
6.0	1000		1240		1640
5.5	920		1100		1420
5.0	845		995		1230
4.5	750		860		1050
4.0	680		755		900
3.5	610		680		785
3.0	550		610		685
2.5	500		540		590
2.0	450		480		525
1.5	400		425		470
1.0	355		370		400
0.5	325		335		350
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S = Spacing D = Distance

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Product Dice Falls Well for Show Technology

continued from page 71

mine this otherwise) and weighs 28.5 kg. All verified by me, because I picked it up. Interesting fact: Martin have used a lot of composite plastic moulding technology in the MAC 600.

The Martin people kept running about stressing this was a prototype, but it was sitting there working away the whole time. Impressive. Priced at around 25% less than a Show Colour. Vari*Lite really need to shift focus away from the American court system, where they have exhausted much money trying to hurt High End Systems. Now Martin, with the Mac 600, look like a threat from Europe, somewhat Vari*Lite in potential.

Then there was the **Martin Lighting Director**, which is a tracking device not unlike the Wybron one. This was a complete surprise to all and sundry. If unfamiliar, tracking technology is where you plant a transmitter on a performer, whose movements are then tracked by a computer. The computer gives out DMX 512 to your moving lights which can then 'follow' the performer around the place.

Martin use ultrasonics, you mount four little speakers in your grid, to form a square or rectangle at the outer edge of your performance space. The speakers are fired from your control computer which squirts a sound pulse to each speaker in rotation, 30 times per second. Each pulse is heard by a tiny microphone worn by your performer which in turn feeds a wireless transmitter, which beams the signal back to the computer. The computer does A, B, C, D comparisons as it sends and monitors each speaker. It figures the position of the mic, and sends a DMX command to your moving lights, which 'track' the performer. You need line of sight from your mic to three speak-



Emmanuel Ziino, Pio Nahum (Martin) and Rod Salmon

ers at any time.

Martin have a similar problem Wybron do, which is that ultrasonics operate in the 19kHz to 22kHz audio bandwidth. This is above our hearing, but only just. Jacqueline Molloy's dog would not enjoy this gig, he would hear the pulse quite well. IF you have a very loud sound system with a cheap piezo top end (high frequency or tweeter device) it could interfere. Then the Martin Lighting Director will stall for a nano-second or two.

The Martin Lighting Director experts say their system is different to Wybron's, which uses infra-red and ultra-sonics. One difference is that the Martin system needs only a little small microphone on the performer to work. The other is that the Martin software will recognise an abhorrent audio signal - simple if you think about it, because if it is listening to four little speakers all working at -say- 75dB, then a blat of something outside that level will be abnormal. So the system rejects it. A very interesting technology.

CLAY PAKY DIVERSIFY

The leading Italian manufacturer kept the lightshow-in-the-box feature again at LDI, where you enter, sit and watch. I didn't, because outside they also had product accessible, and two were creating great interest.

The **Stage Scan HMI 1200** is a new moving light which fits between the Golden Scan 3 and the Super Scan. It is an evolutionary device which brings in more features - notably automatic focal adjustment from 25° to 13° in 6 selectable steps, and hot strike ability. Indeed you can have the unit power-down auto-

matically if you like.

But it was the little, static **VIP (Versatile Image Projector)** which was cooking up a production nightmare for the Italians. Because this sector of the lighting business, the architectural one, is on a huge roll.

Light is now the number one tool used by designers to enhance public spaces. Everywhere I went in the USA, new buildings featured lighting design. The VIP is actually a range of three models, small static 300 watt units which are perfect for retail stores, bars, foyers, airports, malls, churches, hotels, restaurants and so on.

The VIP has two metal bars out front where you can slide on colour wheels, gobo changers, mirrors - fixed or moving - prisms, etc. A variety of attachments can be used. You could skip a gobo across a wall to draw attention, or just gently light a focal area. It's a way

to do image projection of gobos, and mix colour, without the expense of a moving light.

Finally Clay Paky and Martin both introduced new fog / smoke / haze products, Martin announcing the fruits of their union with JEM, the **Hydrosonic 2000** is finally shipping.

Rod Salmon and Emanuel Ziino of Show Technology had much to be pleased with, this LDI 1996 in Orlando.

•JG



Martin MAC 600

**LDI**

lights and showbags

continued from page 71

This year's event was the first for Intertec Publishing, who purchased Lighting Dimensions magazine and Theatre Crafts International this year. They staged a good debut show, have some lessons to learn in terms of PR and perceptions. Otherwise let us all get about the business of The Trade Show, which is to look, learn, touch and listen.

More Aussie's and Kiwi's than I expected where there, less Asians. We had a good time, and look forward to the next one which is easier to get to because it's in Las Vegas. October 24 > 26, at the Sands Expo Centre.

• PS: we thought LDI this year started a day earlier than it did, so arrived earlier in Orlando. LDI is a 3 day show. The confusion came in 1995 when LDI opened in the afternoon of a setup day, a 'preview' which wasn't carried forward. Plus the preview literature was vague.

•JG



Former Riverdance front-man, Michael Flatley, toured Australia with his show entitled *Lord of the Dance*, a Celtic celebration. The lavish and stunning set, designed by Jonathan and Cheryl Park, dominated the Sydney Entertainment Centre with its impressive size. The 76ft wide stage, flanked by six 5m high towers, was necessary to accommodate the 36 Irish dancers

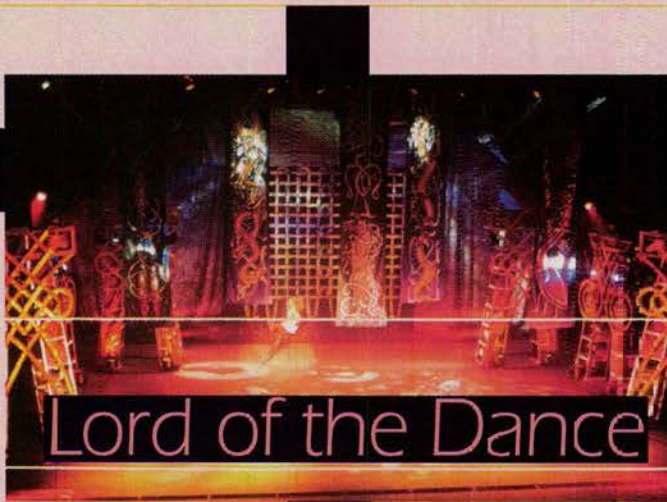
Patrick Woodroffe, together with lighting programmer Dave Hill, lit the set with flourish and Alan Parker was the touring operator. The show has been on the road since last June and Alan was dragged away from his "dream job" to join the show.

"I was lighting the European Football Championship in Newcastle, UK, which was the ideal boys gig," said Alan. "We just provided power and some lamps for the different TV studios. I thoroughly enjoyed it although I did want to do this show as I've not worked with Patrick before. It hasn't made me want to take up Irish dancing but I've learnt to appreciate it, slightly."

The last time I met Alan he was lighting Marillion, a far cry from Irish dance and I got the feeling he missed the world of rock'n'roll.

"Although the lighting is very rock'n'roll it's a different discipline," he said. "People come to see the dance so you don't need so many lighting changes. We've lit it so it can be seen more than as a light show. We've got a lot of marks onstage so the dancers can be in the same spot each night for lighting cues."

The rig had a front, mid and rear truss as well as a moving Vari*lite truss which sat behind everything else. Set pieces included



smoke machines in the same positions.

"For what they do, the Light Curtains are absolutely perfect especially when the dancers are in a line," said Alan. "They are quite difficult to work with if you don't know what you're doing - although they understand DMX, they have their own language. They are fairly reliable but we've had problems transporting them across Australia because the roads aren't that good."

The Cyberlights came from Meteorlites in the UK and the rest of the gear from Jands.

The towers move about five times during the show and they also spin round to give a more "post-industrial" look to the stage for the second half of the show. At the same time, the grey cyc comes up to reveal mesh netting giving the show a harder and darker look.

The large projector placed at the FOH position was a 6K Pan: DB6 which was imported from Production Arts in the US just for the one slide - a graphic of *Lord of the Dance* projected onto a downstage drape before the start of the show. Alan deployed a sophisticated fade-out device - a yellow folder swiped across the beam.

"Saves about \$500 a week doesn't it?!!!" laughed Alan. "The band are up on two risers either side of the stage and it's probably

the only time I'll ever light a band with such little gear - two par cans a side with colour changers on them.

"As I didn't have much notice to do the tour I wanted a desk I was familiar with and I've used the Wholehog before. Sparky, the Vari*lite operator, and I both run the washes - we use a merger at the racks to control the stage washes. I like the Hog although I don't know what its future is."

Having heard that Michael Flatley always had sex within one hour of the show, I asked Alan if the backstage area cleared quickly every night after the performance.

"He certainly doesn't have sex with me!" he joked. "I think what happens is everyone runs away, there's a mass exodus towards the bus."

● Cat Forcer

gauzes, a couple of scenic backdrops and a portcullis which flies in and out. The towers all have two V16s in them as well as seven par scrollers. They provide most of the side lighting which is used quite a lot.

"It works really well with so many people on stage to use side lighting," Alan said. "We have three washes on the front and mid but they only warm things up. It's a fairly basic lighting system.

Other lights were 11 Cyberlights, 42 V15s and V16s, nine DHA Light Curtains, ACLs and par cans, floor Molefays plus scrollers, three truss spots, some strobes, two cracked oil machines (one upstage and one downstage) and two F-100

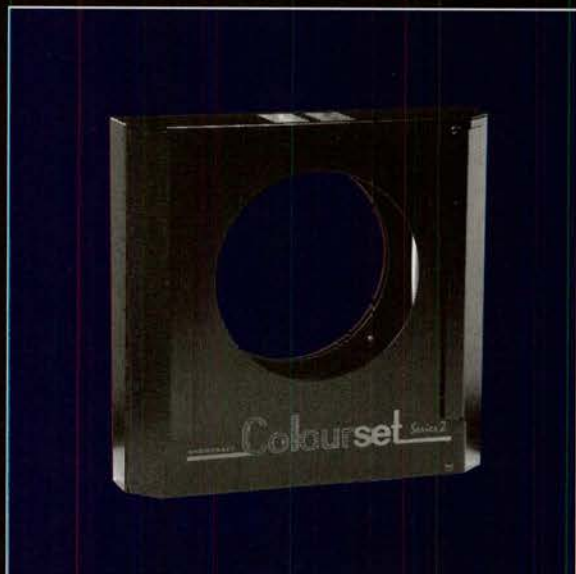
Alan Parker



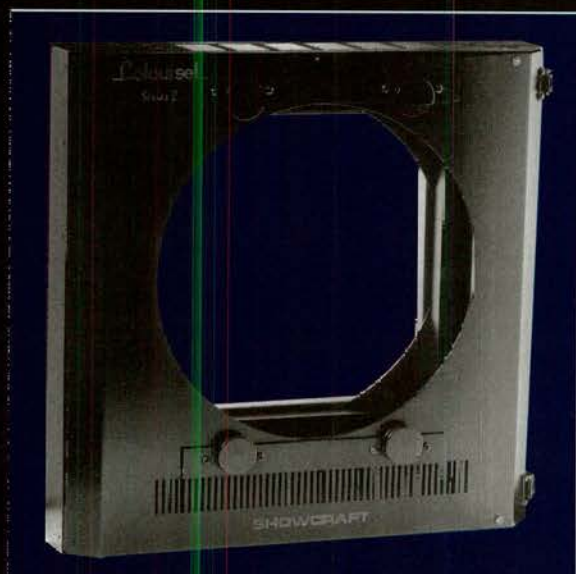
Photos: Johnathan Park, Studio Park

Colourset

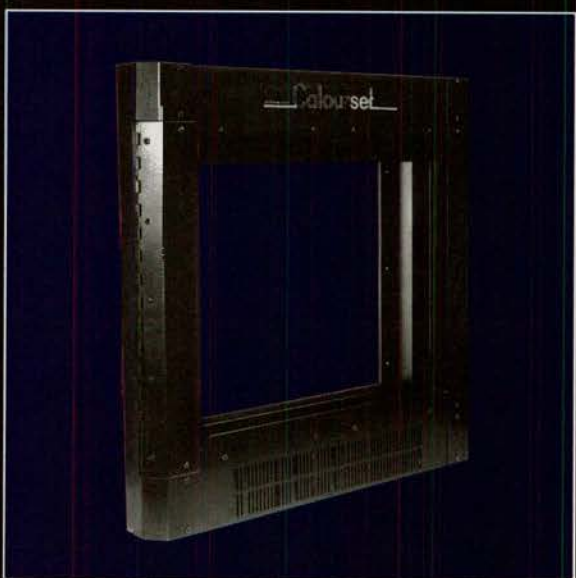
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1K for all profiles and PAR64



2K with wide 12 inch opening for fresnels



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4 lite, HMI fresnel and IRIS 1.

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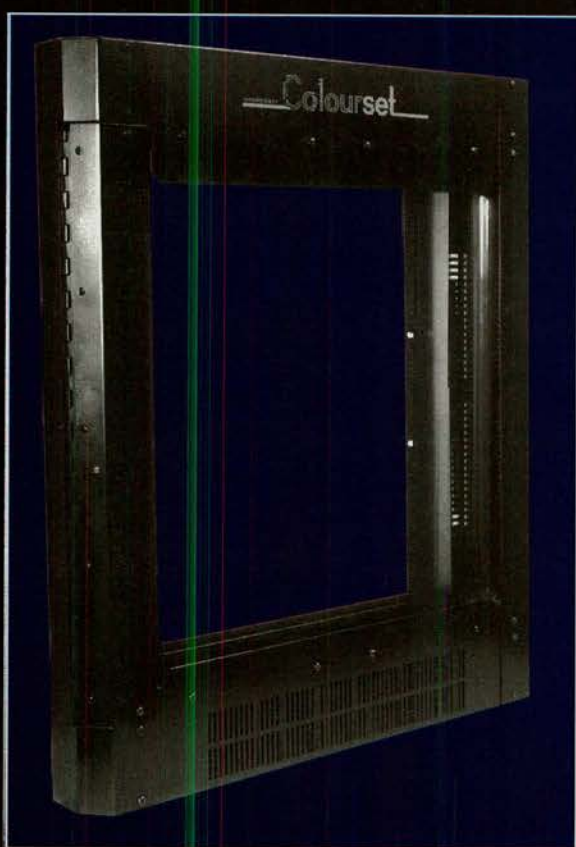
Thomas 8 lite.

9W model

Thomas 9 lite, Arena vision and Skytracker.

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**BUYERS GUIDE****SCROLLERS & COLOUR CHANGERS****SCROLLERS****WYBRON**

Bytecraft (03) 9587 2555.

The Scroller 4 basic models 7", 10", 8-light and large format models. Analogue or DMX512, 11 frame single motor drive colour changing. No separate PSU required. From \$1217.

The Coloram II top of the line fully digital scroller available in 4", 7.5", 10", 15" and large format models. From 2 to 32 frames. Remote PSU and fan control. Intelligent diagnostic system. From \$1983.

Aquarium 7.5" all the features of the Coloram II but built to withstand the elements including water resistant coatings and rubber sealed panels. Available also in large format. \$2440.

COLOURSET

Showcraft Australia (02) 9698 3009

Colourset Series 2 1K high speed gel scroller with up to 21 colours. Direct drive dual motor system provides electronic gel tension and easy set up. Control options allow for DMX512 linear for low speed and split colour effects or locked frame operation for accurate colour control. max change speed is 1/10 of a second per frame. Fits Par 64/56, all profiles and PC spots. \$1450.

Colourset Series 2 2K similar to 1K but with a wide 12" opening. Designed as a lightweight fitting to suit fresnels up to 2K in power. Control via DMX512 or the dedicated Colourset controller. Max change speed 1/5 of a second per frame. Supplied with rotating barn door adaptors and adjustable mount plates. \$1820.

Colourset 5K designed for high powered lanterns. Will suit 5K fresnels with 10"/12" lens and 6 way DWE/ACL molefays. Up to 12 colours, control via DMX512 or Colourset controller. Max speed 1/3 of a second per frame. Fits into the rotating barn door holder of most 5K lanterns or fitted with slide rails for 6 way units. Gel cooling with low noise, high velocity tangential fan. \$2765 (barn doors \$295).

Colourset 8W similar to the 5K, this unit suits 8 way DWE/ACL molefay fittings eg. Thomas, LSD. Can be fitted with up to 12 colours. Control via DMX512 or Colourset controller. Max speed 1/3 of a second per frame. Gel cooling with low noise, high velocity tangential fan. \$3250

RAINBOW

Selecon dealers

Pro 4" (new) 2-21 colours; DMX; fast at 3 seconds end to end; quiet; DMX controlled fan speed; universal adaptor fits 125-160mm lan-

terns. \$1090.

Pro 8" 2-33 colours; DMX; fast; quiet; remote control of fans; LEDs and calibration; enlarged front port heat shield; universal adaptor fits 185-255mm (Par 64). \$1480.

Alfresco 8" weatherised 8" for outdoor use. \$1800.

15" Plus 2-16 colours; DMX or analogue; 12 bit resolution on DMX for slow real time moves; quiet; remote; universal adaptor fits most 2K/5K units. \$2980.

STRAND LIGHTING

Bytecraft (03) 9587 2555.

Colour Call CCI suits Par, Cantata, Leko etc. DMX/Analogue control, 2-16 colour frames, max speed 11 frames per second, direct drive scroll position sensor. \$1922.

Colour Call CC2 suits 2/5kW. DMX/Analogue control, 2-16 colour frames, max speed 11 frames per second, direct drive scroll position sensor. \$3893.

ETC

Jands Electronics (02) 9516 3622

ColourSource for 156mm, 188mm and 250mm luminaires. DMX512 control. 10 colour gelstrings. Variable gel speed control from console. Auto loading. \$2045.

COMPULITE

Coemar De Sisti Australia (03) 9467 8666

Whisper Colour Changer High speed scroller, with quiet operation, twin DC motor drive for scrolls, 16 bit microprocessor, adapt to a wide variety of fixtures from 1K to 5K, including 8 lite Molefays, DMX or Analogue control, remote and local fan control. End to end speed on 1K is 1.7 seconds, with 0.72 second frame to frame. Variable gel string length. from \$1999.

Whisper E High speed scroller, with super-quiet operation, budget conscious features for 1K and PAR 64, 16 frame gelstring, autoloading function for quick gel string replacement, Daisy chain up to 18 units. from \$1600.

PANCOMMAND

Concert Lighting Systems (03) 9646 8444

Colour Ranger features quiet operation, variable speed colour changes, functions in any position, is compatible with most digital controllers and features a rugged aluminium housing. \$1400.

Colour Fader features new high output dichromic scrolls for brighter colour, interchangeable for 7" 1/2" or 10" colour frames and eliminates the need for costly colour scrolls. \$2500.

XL Ranger features innovative dichromic colour system, quiet colour change/calibration operation mode, digital electronics for consistency and accuracy with a durable, black anodised finish. \$3600.

PANCOMMAND COLORFADER**LXbizzBITS****NEWS/CONTRACTS****SELECON ZOOMS IN VIRGIN**

Selecon's UK dealer AJS report the sale of Entech award winning Arena zooms to the Virgin chain of cinemas. Installed to project logos onto the screens, these units along with the condensor projectors are now coming back in vogue as slide projectors are no longer installed.

LITHOPATTERN GLASS GOBOS

Bytecraft (Melb) have ordered in excess of 700 semi-custom and custom, black and white and full colour, Lightwave Research Lithopattern glass gobos to be employed for special effects in the 60 Cyberlight SV's of Melbourne's Crown Casino atrium lighting system.

CLEARLIGHT BUSY

Clearlight of Melbourne have been busily using their stock of Cyberlights, Studio Colors and Status Cue's on a variety of productions - Melbourne fashion Show, Melbourne Festival (*Dudley Moore, Betty Buckley and the VSO's Die Frau ohne Schatten*), Sunset Boulevard Opening Night Party, CUB Launch Carlton Cold and the AFI Awards.

VARI-LITE LISTSERVE

Vari-Lite Inc now have a Listserve Mailing List for the lighting industry. Now open on www.vari-lite.com is VLDMX-Talk, an open list for general discussions on using automated lighting with DMX control, as well as controlling DMX fixtures from Vari-Lite consoles. Lighting professionals and students alike are invited to take advantage of this way of communicating with people all over the world who share an interest in automated lighting. Joining the group is easy, simply log on to the Vari-Lite web page at www.vari-lite.com, click on Listserve, and type your name and e-mail address. Users can address their questions to List Mom Steve Ricks at sricks@vliint.com.

GOLDEN STAR PALACE

The new Golden Star Palace restaurant in Cabramatta has just completed an audio and lighting outfit including a Light Emotion intelligent and disco effects lighting rig, a FAL Galactica and Lite Puter control gear. All supplied by Lightsounds Sydney.

ELS EXPAND FURTHER

Entertainment Lighting Supplies (Gold Coast) have added a further 8 Studio Color wash luminaires and 4 Cyberlight CX fixtures to their hire inventory. ELS have also bought Selecon 7inch 1200w fresnels.

ACCESS AV

Access AV in Melbourne recently purchased Abstract Futurescan 3CED's and controller and other Abstract lighting effects to their hire department.



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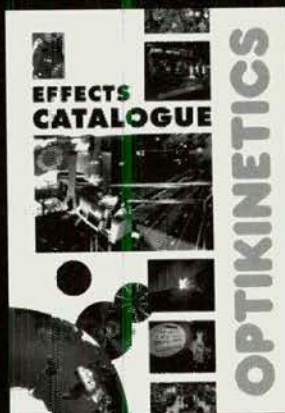
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BUYERS GUIDE SCROLLERS & COLOUR CHANGERS

TEATRO

Lightmoves Technologies (02) 9560 0000

Colourbox 2 to fit 150mm Profile, uses 6 sheets of gel, two per motor, provides 20 different combinations. DMX512, 240v with 3 modes on board, silent operation, no fans. \$2400.

Colourbox 2 to fit 200mm. Also available in Colourbox is gel gutter jig (\$260) and 1 inch tape (\$27.50 per roll). Opto-isolated DMX therefore no additional power supply or signal distribution needed. \$2600.

Diluvio 1000 to fit Teatro Diluvio Model 1000 cyclight, no lengthy gel cutting required, no hassles in rolling gel into scrollers. \$2600.

Versa Disc ideal for schools and amateur theatres. Option: DMX kit (\$350); template kit (\$35); plate for Teatro, command Punto's (\$150); plate for source 4 (\$30). \$695.

R.V.E. COLOURART

Ashton Admor (09) 478 3800

1kW 185mm DIA up to 24 colours, no power supply nor DMX splitter required, quiet, 2 motor drive, DMX or 0-10v control, standard adaptor plate suits par cans. \$1958.

2kW 230mm DIA Colourarts are completely stand alone, simply plug into any power source and hook up with DMX cable to controller. Up to 24 colours. \$2924.

5kW 380mm DIA no reset or initialisation time required on any Colourart. Positional test device included. Demultiplexed output available. Anti-wind cap. \$3453.

5/10kW Mini-Brute 500 x 500 aperture with all Colourart features, 10 colours recommended maximum usable outdoors if required. Shutters optional at \$620 extra. \$4100.

MOTION DEVELOPMENT INDUSTRIES

J.K.L. Productions Pty Ltd (03) 9572 2303

MerriMac fully submersible scrolling colour changer specifically designed for underwater applications as well as damp or corrosive environments. Currently designed for a 1K par style waterproof fixture. Other adaptors available on request. \$2300.

MDI 2'fer series comes in 4", 8" and 10" sizes and is equipped with innovative motor control technology, direct drive, user configuration design, 2-21 gel strings and DMX control. From \$815.

MDI Large Format 8 and 9 Lite Colour Changers designed to fit such fixtures as far cyc, 2K, 5K 8 and 9 lights. Scrolls 2-21 colours, operating via DMX control. Four fans for cooling the gel strings have 2 speeds for optimal cooling or minimal noise. \$2135.

COLOUR CHANGING LUMINAIRES

RYGER

Disco World (03) 9735 0588

Defender Colour 250w, 10 colours, 2 split colours, roto gobo, roto colour, strobe, fade in/out, dimmable, stand alone, DMX or MIDI. \$549.

Discovery Scene Setter 250w, 10 colours, 20

gobos, 2 split colours, gobo colour mixing, roto gobo, strobe, DMX or MIDI. \$1100.

Discovery HTI 400 Colour HTI 400w discharge lamp, 10 colours, 20 gobos, gobo colour mixing, roto gobo, roto colour, strobe, DMX or MIDI. \$1790.

FAL

ELSTA (02) 9568 2100

PF3003 9 dichroic colours plus white, bi-directional rainbow effect, split colour effects, 0-10v DC control, 20° beam spread, extruded aluminium housing, 240v 500W lamp. \$650.

UL LIGHTING

ELSTA (02) 9568 2100

COLC 6 colours plus white, 7 gobos, strobe effect, rainbow effect, dimmer effect, DMX controllable or stand alone, lamp ELC 24v 250W. \$650.

COEMAR

Coemar De Sisti Australia (03) 9467 8666

NAT Pro Colour Motorized projector with built-in CMY colour mixing for unlimited colours, iris diaphragm, electronic on-board dimmer, zoom lens (14-28 degrees and 28-45 options), remote focus, frost facility, gobo holder, 4 - 40m working distance in 1K, 1.2K tungsten, 1200HMI and 2500HTI versions. Control via DMX512. from \$4999.

Baby Colour Available in Pro or Eco versions. Projector with built-in dichroic colours, rotocolour effect, strobe effect, 4 gobos, motorised iris, 3 - 12m working distance in 250W 120V lamp. Control via dedicated controller, analogue signal, or DMX512. from \$675.

TAS Colore Available in Eco, Standard and

DeLux versions with various options. Projector with built-in dichroic colours, rotocolour effect, variable angle replaceable lenses, strobe effect, gobos, 3 - 15m working distance in 200MSD/HSD lamp. Control via dedicated controller, analogue signal, or DMX512. from \$999 ex-tax

APOLLO SPECTRUM

Coemar De Sisti Australia (03) 9467 8666

Tourlight Utilises 8 dichroic colours plus white, wide angle dispersion, designed for club use, controllable via DMX and midi signal. Uses a powerful M33 250w lamp with in-built reflector. \$TBA (new product).

Chameleon Utilises 9 dichroic colours plus white, wide angle dispersion, variable strobing, controllable via DMX and midi signal. Uses a powerful 200MSD/HSD lamp. \$TBA (new product).

Chameleon Pro Utilises 9 dichroic colours plus white, 4 rotating and 4 fixed gobos, wide angle dispersion, variable strobing, controllable via DMX and midi signal. Uses a powerful 200MSD/HSD lamp. \$TBA (new product).

S.G.M.

Ashton Admor (09) 478 3800

Colourlab 250 16 colours, 2 tone beams, rain-



MARTIN ROBOCOLOR PRO 400

LXbizzBITS

NEWS/CONTRACTS

FRONTIER AND MILLER

Frontier Lighting of Brisbane are now agents for Miller Professional products so if you need stands, clamps or other gaffer equipment call them on (07) 3357 3244.

ASTRALS IN SWEDEN

Swedens Natural History Museum in Stockholm has recently installed Selecon's "Astral" metal halide 150w Fresnels to light their "4.5 billion years - Evolution" exhibition.

LIGHTING LAB

Lighting Lab (Melb) have purchased further Trackspots and Universal controller.

WILDFIRE

Entertainment Installations (NSW) have purchased Wildfire WF401 Long Throw 400w UV flood fixtures together with Wildfire paints and make up.

MARTIN EVENTS

November saw Show Technology (NSW) host both their Martin Trade Night and their 2nd Annual Martin Dealer Conference. Martin Professional's Troels Volver flew in from Singapore especially for the events.

On the Martin Trade Night over 100 people made their way to ShowTechnology's premises to see the Australian debut of the latest offerings - MAC1200, Imagescan, Robocolor 3, Lynx, Punisher and Destroyer.

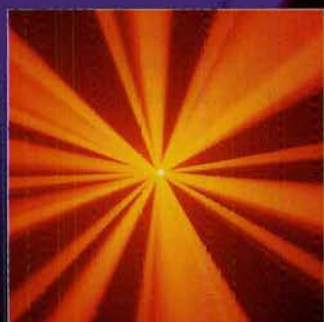
Martin dealers from all over Australia and NZ travelled to the two day Dealer Conference. Day one was spent looking in-depth at Martin and Show Technology and in the evening at the 3rd Annual Martin Dealer Dinner. Roger Clapton from CC's Stage & Studio (VIC) took out the 1996 Martin Dealer of the Year Award.

Day two kicked off with a light show featuring new Martin products followed by a hands-on look at each new product. In the afternoon everyone was ferried by coach to Oran Park raceway for fast and furious racing.



Rod Salmon (Show Technology), Roger Clapton (CC's Stage & Studio), Troels Volver (Martin Professional) and Emmanuel Ziino (Show Technology)

the DJ's number **one** choice



galactic moon II CE

The Abstract Galactic Moon projects 20 high powered beams in eight different colours (seven plus white), and through seven stunning microstepped gobo patterns to create a unique effect.

















It is fully programmable via DMX 512 or sound activated from an immense memory bank of pre-programs, and is further enhanced with on board synchronisation.

As with all other products in the CE range, the Galactic Moon has the capability to generate superior light shows without an external controller. It also has a variable speed shutter on white and all opposing colours.

The dip switches are set electronically on the Galactic Moon for ease of installation and operation. There is a cross fade of all micro stepped motors and a display mode with or without sound.

Galactic Moon CE: Specifications

Lamp Type:	150W/15v A1-232
AC Voltage:	EEC 230/240/250v 50/60 HZ US 110/120/130v 50 HZ
Power Consumption:	180 VA 0.8 amp @ 230v
Motorised colours:	White + 7 dichroic filters
Motorised Gobos:	Open + 7 patterns (fully micro stepped)
Beam Rotation:	0-60 RPM Dual Direction (micro stepped)
Variable speed:	0-256 DMX Levels
Number of Beams:	20 14 x 14mm Glass Reflectors + Dichroic filters
Remote:	Lamp on/off
Controlled:	Via standard DMX 512 Channels
Cooling:	High Flow 12v DC fan
Input:	3 Pin XLR (In/Through)
Casing:	Styled sheet metal 1.2mm / moulded end caps
Mounting:	3mm steel bar with locking adjuster
Dimensions:	(LxWxH) 300x230x230mm
Shipping Dimensions:	340x310x310mm
Weight:	6 kilo
Packed Weight:	6.6 kilo

	open		open white
	dot tunnel		red
	slash		blue
	segment		yellow
	triangle		green
	tunnel		orange
	bubbles		magenta
	stars		cyan



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BUYERS GUIDE SCROLLERS & COLOUR CHANGERS

bow effect, colour change in music sync, adjustable 0-10fps strobe, 0-100% dimmer, frost lens, DMX512 control, 250w halogen lamp. \$1226.

Colourlab 575 8 dichroic colours, 2 tone beams, rainbow effect, colour change in music sync, 0.5-12fps strobe, rapid 0.06 second colour change with or without blackout, frost lens, DMX512 control, HMI 575 lamp. \$2018.

Spinner 575 as per Colourlab 575 with addition of programmable speed single rotating gobo, UV filter, all colours easily replaceable dichroic. \$2190.

Newton 1200 professional followspot with 8 colours, iris, shutters/strobe, 0-100% dimmer, fast (0.04 second) colour change, supplied with controller. \$5589.

ABSTRACT

Universal Lighting & Audio (07) 5532 9922

Color Changer CED 12 colours, 12 gobos, full DMX512, GE Arcstream 150w 6000hr discharge globe, strobing on any colour, sound to light, half colours and adjustable focus. \$1022.

Color Changer CED V2 12 colour, 7 gobos, 4 beam angles, frost/flood effect, full DMX512, strobing, sound to light, half colour, GE Arcstream 150w 6000hr globe. \$1022.

JB LIGHTING

Universal Lighting & Audio (07) 5532 9922

Varycolor 2000 36 colours; 4°, 7°, 14° and 21°

beam angles; flood effect; 200 MSD globe; 2 colour wheels; high speed shutter; dimmer fade to black; full DMX512. \$1540.

CLAY PAKY

Show Technology (02) 9898 1111

Combicolor 300 compact and powerful unit offering 49 colours, 12 basic and 37 combinations. Uses an Osram HTI 300 discharge lamp, twin condenser optical system, linear mechanical dimmer to adjust beam between 0% and 100% plus instant blackout. One static and two interchangeable gobos; 2 frost defusers and strobe effect. \$2339.

Polycolor HMI 575 uses an HMI 575 lamp and offers an infinite colour range, fading diffuser, linear mechanical dimmer for precise light adjustment of 0%-100%. Has strobe effect, is 0-10v analogue; RS 232/423 (PMX) and DMX512 digital. \$5750.

Polycolor 1200 professional lighting unit for theatre, television and stage productions. With a 1200 HMI lamp, has infinite colours + power control, strobe effect, linear mechanical dimmer to instant black. \$6150.

MARTIN

Show Technology (02) 9898 1111

MAC 1200 moving yoke spot luminaire featur-

ing precise high-definition movement with a CMY colour mixing system. Colour correction, primary colours, different beam apertures and smooth dimmer. uses a 1200 MSR lamp, is DMX512 controlled or by Martins' 3032 controller. \$10,685.

Robocolor Pro 400 known as the "par can killer" it has 32 colour combinations, bi-colour and tri-colour, bright 2000 hour MSD 200 discharge lamp. Features colour correction, smooth dimmer, fast strobe, beam angle control from 7° to

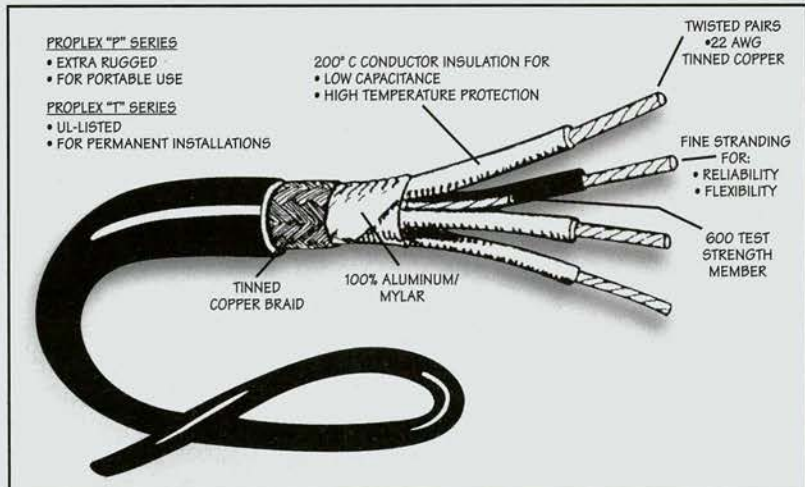


CLAY PAKY POLYCOLOR

21° and full wash. Accepts DMX512 control signals as well as Martins own 2308 and 3032 controllers. \$1325.

Robocolor 3 HTI 150 bright 6500°K light source from an HTI 150 lamp, 750 hour life. Delivers 11 dichroic colours plus white and blackout. Has

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ProPlex Control Cables are made to withstand years of pulling, twisting and hard-knocks. They coil and handle well in all conditions. They have superior transmission and noise-rejection characteristics. They are available in single or two pair configurations with black polyurethane jackets, ideal for DMX512 applications. A hi-spec Scroller cable with power and shielded data conductors is also available.

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BUYERS GUIDE SCROLLERS & COLOUR CHANGERS

strobe effect and is DMX512 and Martins RS-485 protocol. \$569.

MAD LIGHTING

GUVT (07) 3358 5022

Mad Colour (211A) 10 colours plus white and 2 colour shifters (up to 33 colours), 6 gobos, 4 beam widths and frost filter. DMX or stand alone audio and with 6000 hour discharge lamp. \$879.
Mad Colour (211H) same features as per (A) model except with 250w M33 300 hour lamp. \$698.70.

Mad Lenses optional 24° or 39° lens complete with focus ring should a wider beam angle than the standard 14° beam angle be required. \$54.09.

LIGHTWAVE RESEARCH/HIGH END SYSTEMS

GUVT (07) 3358 5022

Studio Color (MB) automated DMX colour changing wash luminaire, convection cooled (no fan noise), 2-1/2 times the output of 1000w halogen fixture, 100 million colour permutations, beam shaping, only 31kg in weight. \$11,104.66.
Color Pro colour changing fixture using no mechanical moving parts, accepts gobo and achieves colours adjustable in both hue and intensity from deep, vibrant primary colours to light pastels. \$1192.21.

CONTROLLERS

ETC

Jands Electronics (02) 9516 3622

ColorSource Power Supply controls up to 12 ETC ColorSource Scrollers. 5 pin DMX512 in and through with 6 pin XLR output to Scrollers. \$3684.

COLOURSET

Showcraft Australia (02) 9698 3009

Colourset Controller 16 channel micro touch keypad provides programmable control of colour and speed for any number of Colourset scrollers. 64 scene battery memory, programmable 99 step sequence can be cued from single button or via auto timing. Visual status indicators. Signal output via 5 pin XLR. \$1730.

Colourset Series 2 Power Supply 2U rack mount unit supplies up to 24 Colourset scrollers over four separate feeds. Power and signal is provided on 5 pin cannon connectors. Signal splits are integral to the power supply. International capability with 110v/240v mains input. \$1390.

R.V.E.

Ashton Admor (09) 478 3800

Chroma DMX512, 36 channels, 99 cues, up to 16 colours, 10 time fade settings, "All the

Changers" key allowing instant transmission of a selected colour to all changers. \$6649.

MAD LIGHTING

GUVT (07) 3358 5022

Mad Controller 60 channel DMX with 60 scenes and 12 chases pre-programmed plus 60 scenes and 12 chases available for user definition. MIDI record/playback and built in SMPTE decoder. \$879.

LIGHTWAVE RESEARCH/HIGH END SYSTEMS

GUVT (07) 3358 5022

Status Cue System control system comprising console, link-card and software. Requires 486 or Pentium™ based PC with Windows™ 3.1 or 95 installed. 1024 DMX channels, 6000 scenes and a host of user friendly features. \$14,192.92.

Color Pro Controller nine memory, 891 scene has user preset, manual or audio advance modes. Cycle and crossfade functions cater for architectural and music colour synthesis. \$2275.11.

all prices are ex tax unless stated otherwise

Next Months Buyers Guide:

TRUSS, FLYING SYSTEMS, RIGGING

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A new concept in colour projection. Glass Colorizer patterns for use alone or in conjunction with a metal 'B' size gobo to add colour splashes.

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A new refined technology allows Rosco to reproduce photos or other images on to heat resistant glass

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"LET THERE BE LIGHT..."

A Spotlight On God

Harvest is an Assemblies of God Church "Born Again" with a very strong focus on youth outreach and progressive values. Their music, which commences each service, is from a rock'n'roll band, (no old lady & organ scenario).

Raff Himing is the FOH Production Manager for the Harvest Christian Life Centre in Victoria. He first came to Harvest about 4 years ago, sat down the back and never really got involved in the core

functions of the place until someone found out that he had some experience in concert lighting. Harvest owned 8 Par 64's at that point but they were rarely used.

In May this year they completed the building of their own premises after having leased for many years. Around November 95 the plans were being drawn up and Raff was able to make some inputs for the provision of FOH equipment, regarding lighting and the general environment of the main auditorium.

The suspended ceiling above the 12.5m x 4.5m stage was to be recessed by about half a meter to allow for the tri-truss and cans hanging. A couple of 6" plastic conduits were laid into the slab to run from backstage to FOH riser and then up to the Bio box.

Most of the lights were bought second hand and fully refurbished to get the best light show possible on a very limited budget. Considering the stage size and auditorium of 20m x 25m they used 12m of CLS tri-truss at the front and rear of the stage, with 6m aluminium bars spanning across each end. LSC Electronics offered lots of good advice during the assembly phase and two Tour Series dimmers were chosen as well as the new Atom 24 console to control the rig.

As they approached the opening date, some of the older folks freaked out when they saw all the black cans and other lights hanging from



the tri-truss above the stage area. A suggestion was made to paint the lights the same as the church interior... beige. Raff obviously wasn't too keen on that idea! The first few weeks' services were illuminated with very gentle scenes (only one per song) and smooth crossfades.

By operating the lights with a lot of subtlety and consideration for those who find the whole thing a bit of a shock, Raff now has a more accepting attitude throughout the congregation.

In fact, after a recent Youth Rally where they hired in four Trackspots, F/Spot and Fogger, the general opinion of the congregation is to turn the fluoro's off more often and enjoy some colour. To set up this venue with the right FOH technology has made the church environment one of the most exciting and unique Raff has ever seen.

Raff believes that he has the best lighting rig of any Church in Australia. He points out that most of their muso's and FOH people come from non-Christian backgrounds! The numbers of people regularly attending Harvest is increasing and as such the size of the main auditorium may have to expand within the next year. New songs are learnt and rehearsed on Tuesday evenings at the "Creative Ministries" night led by the lead guitarist and CM Pastor, Peter Keeley, who is responsible for guiding the creative directions of the Church. "Creative" is also where new operators are trained for the sound, lighting and video systems. *New members are welcome, call (03) 3558 5980.*

LIGHTING - Front and rear trusses are CLS Tri-truss with cross bars joining each end. Front Truss: 16 x Par 64's, 4 x 500w Fresnels, 4 x Par 38's, 2 x 4ft UV Tubes, 2 x Blinders. Rear Truss: 8 x Par 56's, 8 x Raylights, 8 x Pinstots, 16 x Cyc Floods, 22 x Par 33's. Bio Box Front bar: 4 x Patt 23's Control: LSC Atom 24, 2 x LSC Tour Series Dimmers. For special events 4 Trackspots or Roboscans are hired.

LX PRO TALK

On : Venues!

LD Pro Talk this month is on Venues. The questions we asked were:

1. *What is the worst place you have ever worked in?*
2. *Why?*
3. *Do you have a good venue?*
4. *Any venue anecdotes?*

Derek Bovill of Production Dungeon replied:

1. Broadbeach Tavern on the Gold Coast.
2. Load in/out through stinky loading dock (3.1m max height), up sloooow lift through narrow door, then through kitchen and into room. No decent spot for mix position.
3. Princess Theatre, Brisbane - good staff, good access, big stage with heaps of fly bars and acoustically OK room.
4. I think venue operators/owners should communicate more with production crew when upgrading or renovating. Two recently upgraded venues I have seen in SE Queensland have 20A 3 phase outlets installed for sound/light power (BYO 20-32A adaptor).

Meri Took of Staging Rentals, Sydney:

1. Metro Theatre, Sydney.
2. Stair case access from hell!
3. Pier 7 (shed) because there are no house staff, you're in control of how you need things to be.
4. Sydney needs a larger, more practical privately owned venue before 2000.

Gregory Kean of Lots of Watts:

1. Regent Hotel.
2. The most stupid and dangerous load in. No legal parking, then down the exit ramp off the car park.
3. - no suggestions -
4. All architects should be made to do a load in and out of Regent Hotel, Castle Hill RSL, Revesby Workers Club and maybe then they will get it right.

Nigel Dutton of Intercity Gearhouse:

1. Southern Cross Hotel Melbourne.
2. It's tiny loading bay and antiquated goods lift created many problems on tight turnarounds when loading in.
3. The loading dock girls at the World Congress Centre in Melbourne are great to work with.
4. The occasion when we did a GMH launch, they had a lion in a perspex cage which they didn't feed so it would be more aggressive. The cage collapsed when the lion charged it during sound check when the noise frightened it. Needless to say, par-demonium broke out with a hungry lion running around the place! (Yeah, right. -Ed)



Raff Himing

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CHANNEL NINE (Brisbane)

FRANK LIDDY ELECTRICAL

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GREATER UNION (Brisbane)

THE PLAYER'S NIGHTCLUB

(Brisbane)

MCDONALD'S MANAGEMENT

(Brisbane)

CONNECTIONS MAGAZINE

GRAFTONS LIGHTING (Sydney)

AMETRAND PAINTING CONTRACTORS (Brisbane)





ENTECH LIGHTING AWARDS

Is there a Lighting Designer or Lighting Institution you think deserves an award?

Then why not nominate them for an Entech award. Theatre, rock'n'roll.....wherever lighting design or equipment is required.

Previous winners have included Rohan Thornton (Channel 9 Melbourne), Chris Newman (for John Farnham), the late Roger Barratt (for Into The Woods) and John Rayment (Sydney Dance Company).

Institutions who have won awards have included Chameleon Lighting and Phil Cullen at Electric Sunshine

Also, who will replace Felix as Road Warrior? Maybe this person doesn't quite fit in the category of lighting designer or sound engineer - but they know all about it. Could be an eternal roadie, head electrician, stage manager.....

Each nomination must include detail as to the nominee's achievement, and full contact details for the person making the nomination.

The awards will be announced at the Awards

Night Dinner to be held at the Plaza Ballroom, Collins St, Melbourne on April 24th.

Send nominations to: **Entech Awards, PO Box 439, Epping, NSW 2121 Australia**, fax +61 (0) 2 9876 5715, or email to: mail@conpub.com.au

Next Months Buyers Guide:

TRUSS, FLYING SYSTEMS, RIGGING

Got any good rigging stories to accompany the Buyers Guide? Unusual rigging, disaster stories, scandal.....let us know!

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IES AWARDS

The Illumination Engineering Society announced their 1996 Meritorious Lighting Awards this month with the results as follows:

Meritorious Lighting Award

Entry	Energy Australia Night Zoo' - Taronga Zoo
Lighting Designer(s)	Phillip Dunesky (Sydney Opera House) Colin Reid (Zoological Parks Board NSW)

Certificate of Commendation 1

Entry	'Club Paradise' - Dee Why RSL Club
Lighting Designer(s)	Murray Robson (Haron Robson)

Certificate of Commendation 2

Entry	'Lobby' - Governor Macquarie Tower
Lighting Designer(s)	NDY Light

Certificate of Commendation 3

Entry	'Clyde Upyard' - Lighting Upgrade
Lighting Designer(s)	David Finch (George Floth & Associates)

Certificate of Commendation 4

Entry	'Building Night Image' - No.1 O'Connell St
Lighting Designer(s)	Peter McLean (Barry Webb & Associates)

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VENUES

• Compiled by Caroline Grafton

REGIONAL NSW

○ Pokolbin in the Hunter Valley, NSW is the site of a new \$14million Resort and Conference Centre at the Cypress Lakes Golf and Country Club.

The development not only utilised local labour during the development construction, but has increased its workforce twofold (in a high unemployment area), to 91. ○ \$3.5 million later, the renovations of the Bathurst Rugby Leagues Club were officially unveiled, late in August. The Bathurst club services a very large regional area, with 8,000 members. I know..... I lived there for a while.

Established since 1950 the club has undergone both geographic and architectural changes, but the biggest change has been the annihilation of one of the last bastions of sexism with female membership now equalling that of the other gender.

Truly though, it's great to see the entertainment of a community taken seriously. The club has always maintained good standards, with two restaurants, several bars and a nightclub. But now they are even better.

SOUTHERN SHADOWS

The recently opened Shadows Entertainment Complex, Mount Gambier, South Australia, has become a resounding success.

The split level venue houses a crowd of up to 750, on four themed levels. The lower ground floor features the main dance floor, the ground floor - level two boasts an 18 metre bar, level three offers the classic pool hall while you can chill out in the level four coffee lounge.

The S.A. State Heritage listed Old Caledonian Society building's fascia has been retained but internally retro industrial decor, high end audio, lighting and noise control have replaced an era passed.



THEME FOOD



A strange phenomenon has hit Australia, especially Sydney, in recent years, with the introduction of themed dining. Lets face it. We have Hard Rock Cafes, Planet Hollywood, Lone Star (western style), not to mention the infamous Bobby McGees. You can eat to the tunes dixie land on a paddle steamer or get nauseous in the rotating heights of Australia Square.

But now, Jacfun, the developers of the 10,000m2 Sega World project have attracted two new themes to the Darling Harbour site. The first, by the Michael Lubner group, is the One World Sports Restaurant, featuring rock climbing, a basketball court and simulated skiing. The second is the Rainforest Cafe complete with rainforestesque audio tracks, snakes, birds and waterfalls. The later of course will stimulate the urinary system thus inducing a higher consumption of beverages. Gee, how did I become so cynical.

Here's how. Jacfun are also negotiating with director Steven Spielberg, to open the first Dive Restaurant in Australia. What better way to enjoy culinary delights, than floating around in a yellow submarine, submerging every half hour surrounded by flashing lights and frothing port holes. Enticing hey.

But seriously, these types of venues stimulate the use of a vast amount audio, lighting and special effects as well as employing a remarkable number of professional designers and installers. And that's before they even open.

CHURCH COMPLEX

The ever so fabulous Mal Nichols and Associates have pulled off yet another successful venue conversion with the reopening of the Kay Street Entertainment Complex in Traralgon, Latrobe Valley, Victoria on the site of the former St. Andrews Church.

Mal is famous for his architectural and set designs in both venue and television areas, he was the creator of the wacky 'Don't Forget Your Toothbrush' set among many more.

The complex will house 3 venues, Angels Nightclub, Chapels (alfresco) Restaurant & the Kay Street Saloon Bar, with a crowd capacity of 1000.

The Minster Construction commission guidelines were for the final design to incorporate old world English charm with the best of high technology, retaining and enhancing the original theme of the 1914 built church.

A GPO SUITE PLEASE

Just when you thought the Australia Post monopoly couldn't possibly suck any more profit from the system, here they come with a whole new concept. The classic GPO in Melbourne has been offered for long term lease as a potential 150 room boutique hotel with restaurant, meeting and banquet facilities. Australia Post intends to retain and utilise a section of the ground floor for normal trade.

CULTURE PLUS

Federation Square is a new proposal for a 3.2ha site on the bank of the Yarra River Melbourne, which includes plans for a civic plaza of around 700 sq m; a 400-seat performing arts theatre and 1500 sq m of exhibition space. A 'cinemedia' centre is also planned including film and video libraries and archives and two cinemas. Total expected cost is around \$128million.

SUBLIME SPEAKERS

Sublime, a Sydney dance club, has installed a Klipsch KPRO speaker system.

Owner Simon Page, a noted media personality and entrepreneur in the Australian entertainment business, believes that "the Barnes and Thacker designed sound system is second to none in the world".

Eight KPRO KP-362s are rigged to a moveable truss assemblage that provides exceptional coverage to either the dance floor or live stage set-ups. The main system is further reinforced by six KP-262s in three clusters and four KP-682 subwoofers. The restaurant and lounge section has 12 of KPRO's new KP-102s in six clusters supported by four KP-115 subwoofers. Two KP-262s are additionally available as DJ monitors, as are two KSM-15 II stage wedges for the LJ or VJ.

Klipsch KPRO is a leading manufacturer of loudspeaker systems and components for professional audio market, with corporate headquarters in Hope, Arkansas. Ian Thacker is yet another Australian ex-pat made good off shore.

NEW LOOK RAS

New exhibition and entertainment facilities are part of the \$384m proposal for the new showground at Homebush, Sydney. The proposed complex will have an area of 22,000 sq/m with four interconnecting halls. There will also be a circular presentation hall featuring a 42-metre high timber-domed ceiling. Numerous smaller pavilions will house everything from broadcast crews during the 2000 Olympics to animal stock during the traditional annual Royal Easter Show. The main exhibition areas will house trade and consumer shows whilst the halls are not used for the Royal Agricultural Society (RAS) events. Three consortiums will be invited to bid for the RAS construction in the prelude to the 2000 Olympic construction bids.

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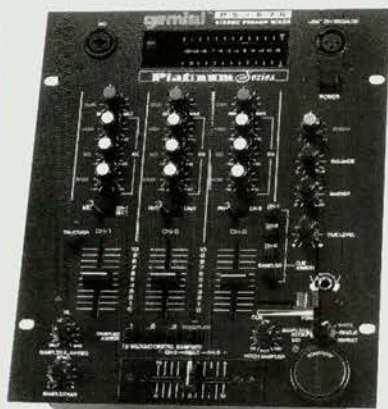
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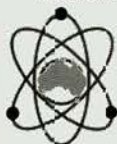
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CLUBSCENE AROUND THE NATION

• By Nicole Morris

Shaft has now found its way to Channel 13 in Fortitude Valley in QLD. After recently moving from Babble On, Shaft now brings you the funky sounds of the 70's every Saturday night from 9pm 'til late. Friday nights at Channel 13 is Popsceen with the best of Britpop all night. For those interested in easy listening 50's Music Art Deco Style, look out for Zebra 3. Due to open mid to late December, Zebra 3 is set to bring you easy listening jazz every Sunday afternoon, housed 50's Art Deco Style. Channel 13 is located in the Prince Consort Hotel, 230 Wickham St, Fortitude Valley. For more information call Becky on 07 3852 1767.

Patrick's Nightclub in Pennant Hills, NSW is looking forward to a huge facelift. Said to be worth over \$1m, renovations include the addition of a new dance floor, multiple levels, more pool tables, new DJ Boxes, new lighting and new interior decor. Patrick's reopens on the 11th December, trading as a bar 7 nights a week, with Club Patrick's happening 3 nights a week. For more info call 02 9484 2266. You will find Patrick's at the Pennant Hills Inn, Pennant Hills Rd, Pennant Hills.

To catch live and original bands in Adelaide head for the Crown and Scepture Hotel on King William Street. On Tuesday nights it's Backpackers Pub Night, with live local acts warming up the stage from around 7.30 and happy hour at about 8.30. Thursday nights the Crown and Scepture bring Steve Lennox in to provide you with the acoustic sounds of The Police, REM, Smashing Pumpkins and others. Friday nights there is always a band playing. From December 21 Saturday nights are rumoured to bring you an Indie night with music from the 80's. For more info on who's on phone 08 8212 4159.

At the Paragon Hotel in Sydney's Circular Quay, Monday Madness takes over with 2 for 1 drinks every Monday from 10pm 'til midnight. Later in the week is Flashback Thursday, bringing you the best of the 70's and 80's and \$1 pool 'til 5am Friday morning. On Friday and Saturday nights dance the night away with selected DJs. For more information call 02 9241 3522 or visit the Paragon on the corner of Alfred and Loftus Sts, Circular Quay.

Every Friday night head for Sydney's Castlereagh St, for Riva's version of Retro Night. In the Disco, DJ Sean Keble spills his selection of 'Solid Gold' hits from the 70s, 80s as well as the latest hits from today. In the back room it's 'Old Skool' where you can hear DJ Georgina Reed pump out the Bass and Soul of the 70's and 80's. Also in the back room you will hear the Riva Band playing groovy Motown tunes from the 70's. On Saturday nights at Riva is Inferno where you can hear the latest hits by some of the hottest DJs in town. Riva is opened from 10pm Wednesday to Saturday nights. You can find Riva in Castlereagh St, Sydney. Phone 02 9286 6666 for details.

The Empire Hotel in Fortitude Valley is satisfying the alternative dance club scene every Friday and Saturday nights with Super Delux. Super Delux kicks off at 9pm with a \$6 cover charge and provides you with the best of Alternative and Rock music until 5 the next morning. So for a big night of Alternative/Rock, head for The Empire Hotel, on the corner of Ann & Brunswick Sts, Fortitude Valley.

A club with a difference is Darlinghurst's 15 Minutes of Fame. Housed at The Orb, 15 Minutes of Fame lets club goers strut their style in one of five categories- Men, Women, Cross Dressing, Drag and You name it. Originality and self expression are what the judges are looking for, so if you think you've got the style to strut your stuff head for the Orb for 15 Minutes of Fame, going off every Friday night from 10. Entry is \$15 for non members, \$10 for those with a member and free for members. For more info call 02 9360 3571.

The Lunar Lounge at The Dendy in Sydney's Martin Place is another place for clubbing with a difference. Every Sunday Night from 7pm The Lunar Lounge goes Sci-Fi. From 7pm you can get a meal, play a board game, or a game of pool, have a drink or perhaps pick up the latest Science Journal!!! Door charge is \$5 with 2 for 1 drinks between 7 and 8. So for a night of intergalactic ambience head for the Dendy in Martin Place on Sundays.

Recently new on the streets of Melbourne is the Loft's Classic Disco. Housed at Bump 'n' Grind at Chasers the Loft features the hits of the 70's disco style every Friday night. Styled in the grand decor of the 70's The Loft classic disco is opened from 10pm 'til late. Cover charge is free before 11 for those with a pass, \$5 after 11 with a pass and \$10 for those without. For more info call 03 9827 6615. Chasers is at 380 Chappel St, Prahran.

For those who like variety in their club scene, head to Prahran for Delta Beats. Housed in Joey's Ministry of Sound, you can hear bands play the sounds of grunge and funk early in the evening. As the night moves on, selected DJs pump out some of the best electro house and techno for your dancing pleasure. So if you're looking for a new night of variety, head for Joey's Ministry of Sound on Thursday Nights for Delta Beats from 8pm. Cover charge is \$2. If you'd like to know more call 03 9521 3381 or see it for yourself at 138 Commercial Rd, Prahran.

Just recently opened in Brisbane is Ultra Lounge. Located at the Grand Orbit, Ultra Lounge provides you with the hits of the 50's and 60's and live bands every Sunday from about 2pm. So if you're looking for something to do on a Sunday afternoon, head for the Orbit, purchase a cocktail, sit back and enjoy the smooth sounds of the 50's and 60's. You will find the Grand Orbit at Eagle St Pier, Brisbane. For more info call 07 3236 1384.

VIEWES

The Playpen International

...more than a Niteclub!



The magnificent building housing Townsville's most popular nite spot was constructed in 1894 as a Brewery. The renovations which preserved much of the building's character started in 1994 and took 18 months to complete, leaving Townsville with a long awaited entertainment experience for all, over eighteen, to enjoy.

The complex boasts 5 separate environments, on three separate levels. Firstly, you find Figs on Flinders, an open air a la carte restaurant with bar facilities open from 6pm Tuesday to Saturday. The Fig Tree theme of the garden creates a relaxed dining area, on Sundays however, the Garden Bar is transformed and plays host to the now famous Wahoo Sunday Session. The Playpen's main room is constructed on 2 levels. The lower level houses the Dark Horse Bar the main dance floor and stage for continuous live entertainment. The dance floor is overlooked by Lion Bar, named after the Lion Brewery as the building was once known to Townsville. The Voodoo Lounge, Townsville's only non-smoking cocktail bar is also found on the first level. The brickwork and beams in this room are all original, creating a unique atmosphere for the patrons.

The newest bar, on the second and third levels, is O'Learys Basement Bar, a split level piano bar offering live entertainment with an up market atmosphere. O'Learys offers an exclusive club membership allowing members express entry to any time the bar is open. Operating on Tuesday to Thursday from 8pm till 1am, Friday from 5pm to 4am and Saturday 8pm to 4am.

The Playpen offers function facilities, on request, for small intimate cocktail parties to catered dinners parties for up to 200 people. Product launches, fashion parades, hair shows and other corporate events are a Playpen specialty.

THE AUDIO SPEC

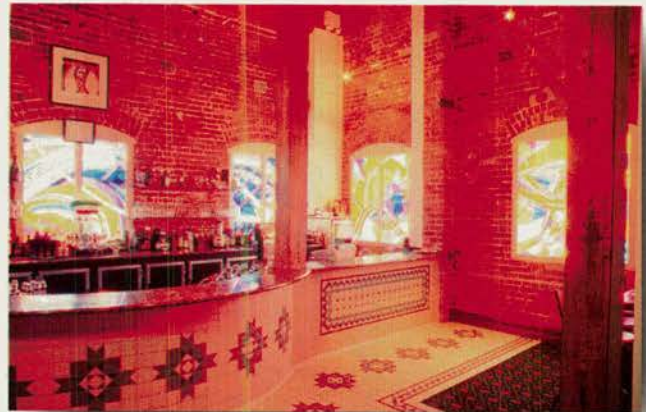
12 x EV1122 Deltamax Cabinets & 7 x Subs; 11 x QSC MX3000 & 1x MX1000 Amplifiers; 24 x JBL Control 8 SR Plus Speakers; 1 x Rane MP24 Disco Mixer; 4 x Yamaha YDG 2030 Digital EQ; 1x Soundcraft Rac Pac 14 Channel Mixer; 6x Deltamax 1152 & 3x Deltamax Sub Cabinet Processors; 1x Rane ME30 EQ for surround in cocktail bar.

THE VIDEO SPEC

2 x Sony VPH Projector & 12 x 9 Australux med/gain/screen.

THE LIGHTING SPEC

12 x Martin Roboscan Pro 218, 4 x Robocolour II MSDs, 12 x Robocolour II & 3 x Robocolour II Controller; 1 x Centrepiece; 2 x Astrodisco 3; 1 x3032 PC Package; 1x 2532 Direct Access; 2 x 516 Dimmers with 12 channel interface to run switch packs; 30 x Scatterspots; 8 x Twister; 2 x Magic Moons; 1 x P100 Computer; 4 x Megastar Strobes and Controllers; 2 x Fan Forced Equipment Racks.



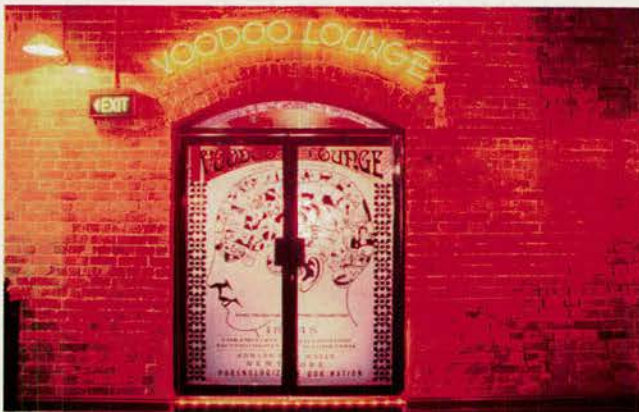
THE PEOPLE & THE PLACE

Owner: Brett Koppen General Manager: Clint Corbett Operations Manager: Brett Dalglish

Management Team: Wayne Greenwood, Nina Kenny, Jamie Fitzpatrick, Kylie Corbett

Audio & Lighting Design: Wild Gravity, Townsville Interior Design: Brett Koppen & Brett Dalglish DJ: Marky Mark

Location: 719 Flinders St West, Townsville Capacity: 1800 Hours: Tuesday to Sunday till late (5am Friday & Saturday) Music: Dance, Party, Top 40



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THE PA PAGE

A little bit of fry and worry.

(and why digital phones and PA's do not mix), by Michael Orland.

O.K. I admit it. I would spend half of each gig's set up wondering what I'd have to eat afterwards. People would see me wiring up with intense concentration on my face, and think, "Now there's a dedicated professional!" Of course, the little cartoon think bubble over my head would be reading "Hmmm...chicken or fish?" Love standing in front of the counter at the local greasy gourmet afterwards, listening to the sound of dinner frying.

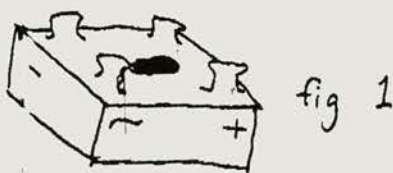
Not quite so keen on hearing that sound coming from my audio gear. Those sometimes faint, "fish frying" sounds. I can think of a few times they've appeared in my systems over the years, usually for totally different reasons.

We had such a noise with our first Soundtracs console, an M series, about 10 years ago. It was eventually traced to its powers supply. It seemed to be a common problem with many British desks of that era that they often used these crummy little plastic looking bridge rectifiers. Bridge rectifiers are the first step in the average power supply, after the transformer, in converting AC to DC. And when underrated ones get hot, things like crackles would result. The cool thing about bridges is that unlike other electronic type things, the only value to observe is bigness. As long as its rating is high enough, then it's right. When you upgrade, you can't actually go a bridge too far. Decent metal encased bridges are available in Sydney from Wagner Electronic Services (WES) for about five bucks, and well worth retrofitting. They look something like fig. 1 and should be bolted to the case; preferably to the heatsink if there is a big enough one and space allows. A smear of heatsink compound to the base before fastening is a nice touch. The appropriate secondary windings of the transformer can wire direct to the bridge's AC terminals; either way 'round. Careful not to get the DC terminals wrong though. Before you remove the old bridge,

look for the little '+' or '-' markings and mark the correct orientation on the board with a fine texta marker. Decent gauge wire can then be run from these points to the new bridge.

While we were doing this upgrade, way back when, I thought it would be a good opportunity to replace the power supply connectors, which were these flimsy looking 7 pin XLR type things. Fine for studio use, I thought, where they're plugged in and left undisturbed for months on end. But I didn't feel so confident about my income depending on them being plugged and unplugged with each use. I figured Cannon EP8s would be a cool substitution. Big pins. A man's pins (orgh, orgh).

A few months later, slowly but surely, the frying fish sound started creeping back in. Same sound, different cause. EP8s had turned out to be a poor choice. Although perfect for relatively high current applications like multipinning amplifier outputs to multi-way speaker cabinets, their strike rate and being prone to tarnishing made them totally unsuitable as power supply connectors. EP12s, often used for line level multi-pinning, proved to be far more suitable. Strictly speaking, I only needed 6 of the twelve pins for the job, so by doubling up on these I finally got what I considered to be a reliable connector for the job. There are of course many purpose built connectors to be found in RS and Farnell catalogues but the prices can be a little, umm, unexpected. Fortunately, XLR type power supply connectors on larger consoles seems to be a thing of the past.



A few months ago we had a low level but annoying crackling in our A rig during a cabaret perform-

ance. We spent half the gig trying anything and everything to track it down, without success. After the show, the disgruntled FOH operator grabbed the mobile phone he had sat on the master section of the console and slipped it into his pocket. Noise stopped. Groan. Lesson: never let anyone leave a mobile digital phone directly on any of your electronics, especially the desk. Hospitals don't even like you using them in the same building as their electronics!

Occasionally, the faint crackling sounds have been traced to my amplifiers. I have covered Perreux amps in a previous article. It's worth also mentioning the ARX 1200 amps I used to use. Never had any real problems with them except for this annoying crackle which would eventually come from the same side of each of them. This seemed really weird to a non-tech like myself, given that both sides of each amp seemed identical. Eventually, I contacted the nice people at ARX, who provided an easyish cure; upgrading three of the transistors on each of the main boards. The original transistors were getting too hot. The reason why it was always the same side which crackled was that that side had two of these underrated transistors further away from that channel's fan, so they got hotter quicker. This was only a problem in the earlier ARX1200s which used aluminium heatsinks for sides. It does not apply to the latter models which used the Crownish copper foil type heatsinking. The replacement procedure is not detailed here as I feel it crosses the thin line this page often treads between general and technical information. But I'm sure the nice ARX people will be just as happy to fax/post the details to your local technician as they were to myself.

Hope Santa brings you lots of goodies and don't forget to charge double for whatever you do on New Year's Eve! See you in '97.

Michael runs The Public Address Co in Sydney, call (02) 799-7219.



WHOLEHOG II



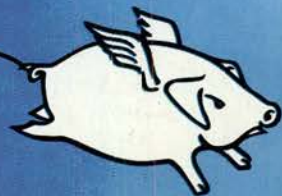
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